Bash 500MW Wind Farm
Republic of Uzbekistan

Environmental and Social Impact Assessment

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APPENDIX A – CONCLUSIONS FROM SCEEP ON NATIONAL EIA

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З А К Л Ю Ч Е Н И Е

Государственной экологической экспертизы

По объекту: Оценка воздействия на окружающую среду строительства ветряной электрической станции «ACWA POWER BASH WIND» мощностью 500 МВт в Гиждуванском районе Бухарской области (проект ЗВОС)
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копия: Управлению по экологии и охране окружающей среды Бухарской области

На государственную экологическую экспертизу представлены материалы первого этапа оценки воздействия на окружающую среду строительства ветряной электрической станции (ВЭС) «ACWA POWER BASH WIND» мощностью 500 МВт в Гиждуванском районе Бухарской области.

Основанием для проектирования объекта является Постановление Президента Республики Узбекистан от 23.02.2021 г. ПП-5003 «О мерах по реализации инвестиционного проекта «Строительство ветряной электростанции мощностью 500 МВт в Гиждуванском районе Бухарской области»».

Проектом намечается установить 111 единиц ветротурбин со всеми вспомогательными сооружениями и зданиями. К установке принимаются ветровые турбины модели «GW165-5,6 МВт» с высотой башни 120 м, которые

имеют горизонтальную ось, три лопасти, фронтальный ротор, регулятор переменной скорости и переменного шага, синхронный генератор с прямым приводом на основе постоянных магнитов с внешним ротором, а также устройство подключения к сети. Основные компоненты ветряной турбины состоят из: конических трубчатых секций башен из стали; лопастей ротора, изготовленных из стекловолокна, армированной эпоксидной смолы и углеродных волокон; гондолы, в которой находится генератор и коробка передач; ротора, который является центральной точкой, в которой три лопасти соединены с гондольной коробкой; генератора, который преобразовывает механическую энергию в электричество; коробки передач; преобразователя; трансформатора.

Ближайший населенный пункт село Куклам – располагается на расстоянии 1,5 км к юго-востоку от ветропарка. К материалам первого этапа прилагается письмо отдела службы санитарно-эпидемиологического благополучия и общественного здоровья за №20-8/3066 от 12.04.2021 г., в котором отмечается, что ветровые электростанции (ВЭС) отнесены к I классу с санитарно-защитной зоной в размере не менее 1000 м.

В 1,26 км к юго-востоку расположена территория нефтяной базы с резервуарами для хранения топливно-воздушной смеси (ТВС). На расстоянии 1 км в южном направлении, проходит коридор трубопровода; в 1,1 км к востоку от ВЭС, расположены существующие три линии электропередач; в 1,9 км к западу, проходит ветка железнодорожной линии; в 5,9 км к юго-востоку расположена существующая подстанция.

Согласно проектным материалам в ходе исследования, западнее территории ветропарка выявлена одна стоянка эпохи неолита, 7 каменных мастерских эпохи палеолита и 149 мест находок каменного века и классического периода. В зависимости от характеристик, археологические участки были разделены на 3 группы. Проектом предусматривается установить их буферные зоны следующим образом: первая группа (32 места археологических находок и каменные мастерские) на расстоянии 200 м, вторая группа (21 места концентрированных находок из камня и остатков керамики без определения культурных слоев) - 100 м, третья группа (104 места с небольшим количеством археологических находок и отсутствием культурных слоев) - 25 м. При строительстве ВЭС ветряные турбины будут размещаться с учетом вышеуказанных размеров буферных зон археологических находок, относящихся к вышеуказанным группам, также строительные и земляные работы в этих буферных зонах, будут проводиться под непосредственным археологическим надзором. Согласно письма от 09.04.2021 г. за №286 Бухарского регионального департамента культурного наследия, при Министерстве Культуры Республики Узбекистан, в радиусе 5 км от территории, выбранной для строительства ВЭС, отсутствуют объекты материального культурного и археологического наследия, находящиеся под государственной охраной.

Строительство ВЭС Bash 500 МВт планируется осуществить в северо-восточной части Аякагитминской впадины. Основная часть участка покрыта песчаными равнинами с сохранившимися невысокими горами.

Согласно проектным данным, ближайшим поверхностным водоемом, расположенным вблизи площадки строительства ВЭС на юго-западе, является озеро Агитма, расположенное в пределах ключевой зоны биоразнообразия. Ближайшую ветротурбину предусматривается установить на расстоянии не менее 2,265 км от озера Агитма. К проекту приложено письмо Министерства водного хозяйства за №01/17-2341 от 05.08.2021 г., об отсутствии возражений и где указывается, что на территории ветропарка не имеются объекты водного хозяйства.

Согласно результатам топографических и геотехнических исследований, проведенных СП «UzAssystem» (филиал международной проектно-инженерной компании «Assystem»), в ходе буровых изысканий (16 скважин глубиной до 50 м) на площадке ВЭС грунтовые воды на глубине до 50 м не были обнаружены.

В результате весенних и летних ботанических исследований на территории под строительство ВЭС и вдоль проектируемой ВЛЭП определены два краснокнижных вида растений: тюльпан Лемана и Жузгун Закирова, а также краснокнижные виды пресмыкающихся (среднеазиатская черепаха, серый варан и песчаный удавчик, гладкий геккончик) и млекопитающих (длинноиглый лысый ёж и джейран) которые также занесены в Красный список Международного Союза Охраны Природы. В ходе мониторинга птиц по методике Scottish Natural Heritage по орнитофауне, проведенного с 16 Марта 2020 года по 23 ноября 2020 года на территории ВЭС были выявлены следующие виды птиц, включенные в анализ моделирования риска столкновений (осень-весна): степной орел, беркут, стервятник, балобан обыкновенный, дрофа-красотка, орел-карлик, болотный лунь, полевой лунь, ястреб-перепелятник, туркестанский тювик, обыкновенный канюк, курганник, белоголовый сип, черный гриф, розовый пеликан, серый журавль, обыкновенная пустельга, степная пустельга, красная утка, серая утка, кряква, чирок-свистунок, лебедь-шипун, хохлатая чернеть, малый баклан, большой баклан и обыкновенная кваква. По результатам исследований было проведено «Моделирование риска столкновения». Мониторинг птиц проводился с учетом сроков миграции и размножения целевых видов птиц в регионе: весна (миграция): 16 марта - 15 мая; лето (размножение): 16 мая - 31 августа; осень (миграция): 1 сентября - 23 ноября. Анализ показывает, что частотой столкновений всех целевых видов уровня 1 не будет превышать 1 за 61 год. Для целевых видов уровня 2 анализ MPC прогнозирует частоту столкновений в размере одно столкновение за три года для Серых журавлей и 1 столкновение за 100 лет или реже для всех остальных видов этой группы. В целях минимизации воздействия на флору, фауну и орнитофауну по результатам исследования биоразнообразия для строительства будут выбраны участки, имеющие наименьшее значение для биоразнообразия.

ИП ООО «ACWA POWER BASH WIND» разработан план управления окружающей средой и план мониторинга окружающей среды во время строительства ветряной электростанции BASH мощностью 500 МВт в Гиждуванском районе Бухарской области, включающие мероприятия по сохранению естественной среды обитания (флора и фауна), качества воздуха, воды и почвы, верхнего слоя почвы, флоры и фауны, по гигиене и соблюдению

безопасности рабочих, не допущению столкновения и поражения электрическим током птиц при эксплуатации ВЛЭП и т.п., которые утверждены заместителем председателя Госкомэкологии РУз.

Согласно проектным решениям для монтажа ВЭУ предусматривается очистка территории строительства от растительности. Под строительство сооружений по возможности будут выбраны площадки с отсутствием растительного покрова. В период с 19 по 20 августа 2021 года специалистами Бухарского областного управления экологии совместно с представителем Кадастрового агентства Гиждуванского района была проведена предварительная оценка вырубки древесно-кустарниковой растительности на территории проектируемой ВЭС и вдоль трассы, проектируемой ВЛЭП и составлен Акт обследования территории. Согласно результатам проведенной оценки, при реализации проекта не ожидается вырубка деревьев и кустарников, указанных в списке ценных сортов деревьев и кустарников, не входящих в государственный лесной фонд согласно Приложению к Постановлению Кабинета Министров Республики Узбекистан №93 от 18.02.2020 г. «О дополнительных мерах по сохранению ценных сортов деревьев и кустарников, не входящих в государственный лесной фонд».

Согласно многолетним метеорологическим данным, район характеризуется ветрами северных и северо-западных направлений (18,87 и 11,48% соответственно). Среднегодовая повторяемость сильных ветров (12-15 м/с) невелика и составляет 0,38%. Повторяемость слабых ветров (0 - 1 м/с) составляет 12,29%. Ветер со скоростью 4-5 м/с способствует переносу примесей от высоких горячих источников. Среднегодовая повторяемость этих ветров составляет 23,13%. Наиболее часты такие ветры весной и летом.

Площадь, выделенная под ветряную станцию, составляет 285,1 га. В инфраструктуру площадки ВЭС входят дополнительные и вспомогательные объекты такие как – вход на территорию объекта и здание службы безопасности; административное здание, офисы и помещения; центральный пост управления; склад и ремонтная мастерская; система безопасности; система освещения; подъездные дороги между ВЭУ; транспортные средства и гараж; бетонированная площадка под навесом для временного хранения дизельного топлива, со сливной ямой для сбора разливов и площадка для временного хранения образуемых отходов.

Ветрогенераторы располагаются на расстоянии друг от друга расстоянием равным высоте нескольких башен. Это расстояние позволяет потоку ветра восстанавливаться, а турбулентность, созданная работой ротора одного ветряка, не влияет на работу соседнего ветряка, находящегося в подветренной стороне. Ветротурбины крепятся и стабилизируются с помощью железобетонных платформ. Фундаментные платформы строятся ниже уровня земли, и над платформой будет размещен грунт, чтобы вернуть видимую область почти в первоначальное состояние.

Принцип действия ВЭС заключается в преобразовании энергии ветра в механическую энергию и далее в электрическую энергию. Технология получения электроэнергии на ВЭС основана на следующих процессах: вращение лопастей с использованием ветра; при вращении лопастей их

движение генератор преобразует в электричество, которое аккумулируется в батарее. В этом процессе преобразования отсутствуют выхлопные газы, сточные воды и отходы.

На южной части территории ВЭС предусматривается строительство подстанции с воздушной изоляцией, напряжением 33/500 кВ. Расстояние от подстанции ВЭС до существующих объектов: в 1020 м в южном направлении, проходит коридор трубопровода; на расстоянии 1150 м справа, расположены существующие три (3) линии электропередач; на расстоянии 1900 м слева, проходит ветка железнодорожной линии; в 5950 м к юго-востоку расположена существующая подстанция. Расстояние от подстанции до села Аякагитма составит15,5 км и до села Куклам 14,4 км. Данным проектом рассматривается трасса прохождения ВЛЭП исходящая от подстанции 33/500 кВ ВЭС до существующей подстанции «Каракуль» 500 кВ, приблизительной протяженностью 162,5 км. Размер участка для проектируемой подстанции считается 200мх200м, а площадь составляет приблизительно 39900 $м^2$. Проектным решением был принят вариант прохождения ВЛЭП по маршруту: ВЭС «Dzhankeldy» - ВЭС «Bash» - существующая ПС «Каракуль» с номинальным напряжением 500 кВ в одной цепи. Проектируемая ВЛЭП проходит от 15,0 км до 18,0 км по орошаемой территории (около 13%). Остальная часть линии проходит по не орошаемой территории. Все пересечения с существующими ЛЭП, автомобильными дорогами, трубопроводами и железнодорожными линиями осуществляются под углом 80-90 ^{0}С.

Техническое обслуживание автотранспорта, имеющегося на балансе предприятия, будет производиться в специализированных организациях. Для заправки строительной техники, будет предусмотрена цистерна, емкостью 10 $м^3$, выброс углеводородов будет происходить неорганизованно через неплотности оборудования. Ориентировочный выброс углеводородов от цистерны временного хранения топлива составляет около 0,0036 т/год.

Резервным источником питания для подстанции является дизель-генератор. Небольшое количество дизельного топлива будет храниться в надземном резервуаре. Трансмиссионные масла для смазки поступают на склад в герметичной таре (катридж, емкостью до 250 гр). Одна заливка из одного герметичного катриджа масла хватает на 1 год, далее происходит доливка. Смазочное масло для доливки в маслонаполненное оборудование не хранится на складе, привозится от поставщика непосредственно в период его заливки. Выброс углеводородов масла минерального происходит неорганизованно при эксплуатации маслонаполненного оборудования через его неплотности и составляет около 0,0084 т/год.

Регулярное техническое обслуживание дорог будет включать в себя обводнение и сглаживание, необходимые для поддержания дорожного покрытия, а также осмотр и ремонт систем управления ливневыми водами, необходимых для обеспечения их надлежащего функционирования для борьбы с эрозией.

Для обслуживания ветряной электростанции будет задействовано 20 человек. Режим работы в три смены по 8 часов. В связи с тем, что график работы рабочего персонала ВЭС вахтовый, для размещения рабочего персонала

предусматриваются временные жилые помещения. Для приготовления пищи используется электрическая плита.

В процессе строительства ВЭС планируются выбросы загрязняющих веществ в атмосферу и образование строительных отходов, которые **следует рассчитать** в соответствии с параметрами, представленными в ПКМ РУз «О мерах по дальнейшему совершенствованию порядка проведения работ со строительными отходами» за №40 от 28.01.2021 г. (приложения за №№3-7).

При работе трансформатора будут выделяться, и поступать в атмосферу загрязняющие вещества в виде углеводородов – 0,0084 т/год.

При работе резервного источника питания ВЭС (дизельный генератор), работающего на дизельном топливе, при сжигании которого, будут выделяться загрязняющие вещества в виде оксида углерода, диоксида азота, углеводородов, сажи, сернистого ангидрида и бенз(а)пирена около 0,0004 т/год.

При последующем проектировании уточнить перечень, количество загрязняющих веществ и источников выделения и выброса загрязняющих веществ в атмосферный воздух намечаемой деятельностью.

Процесс получения электроэнергии ВЭС не предусматривает использование воды на производственные нужды и соответственно производственных стоков.

Источником водоснабжения ВЭС будет служить привозная вода из ближайшего поселка. Хозяйственно-бытовые сточные воды в количестве 4,03 м³/сут; 1470,22 м³/год будут очищаться на установке септик, которую планируется расположить на территории ВЭС. Полив территории осуществляется только в жаркий период года с мая по сентябрь привозной арычной водой либо очищенной водой из биосептика.

Для снижения пылевыделения при проведении строительных работ предусматривается гидрообеспыливание с применением одной поливомоечной машины.

В процессе производственной деятельности рассматриваемого объекта ожидается образование следующих отходов:

- отработанные масла, образующиеся при работе трансформаторов, II класс опасности;
- отработанные лопасти ветрогенераторов, образующиеся при эксплуатации ВЭС, IV класс опасности;
- отходы электродов, образующиеся при сварочных работах, V класс опасности;
- отходы силикагеля, образующиеся при работе трансформаторов, IV класс опасности;
- лом черного металла, образующийся в результате ремонтных работ и состоящий из отработавших свой срок деталей, V класс опасности;
- лом цветного металла, образующийся в результате ремонтных работ и состоящий из отработавших свой срок деталей, III класс опасности;
- промасленная ветошь более 15 %, образующаяся при обтирке механизмов, III класс опасности;
- отработанные светодиодные лампы, IV класс опасности;
- макулатура, образующаяся в здании АБК, V класс опасности;

- пищевые отходы, V класс опасности;
- твердо-бытовые отходы, IV класс опасности;
- мусор, образующийся при уборке территории в виде песчинок, сухой травы, листьев деревьев, IV и V класс опасности.

В настоящее время утилизация лопастей ветрогенераторов из композитных материалов, образующихся по истечению времени эксплуатации либо ликвидации объекта, является существенной проблемой ветроэнергетики. Предлагаемые методы утилизации лопастей генераторов находятся в стадии разработки, а применяемые методы (такие как механическое измельчение, сжигание и пиролиз) обладают рядом недостатков, что не позволило рассматриваемым проектом ЗВОС заявить о решении проблемы переработки лопастей в полной мере.

В качестве наиболее вероятных аварийных ситуаций проектом рассмотрены случаи пожара главного трансформатора и разлива ГСМ, для предотвращения которых разработаны мероприятия, включающие: организацию бетонированной площадки для хранения дизтоплива, применение оборудования, арматуры и антисейсмических трубопроводов, стойких к коррозийным свойствам грунтов, грунтовых и сточных вод и т.п. Для защиты птиц от поражения электрическим током, предотвращения перекрытия изоляции предусмотрены противоптичьи заградители. В качестве основного мероприятия предусматривается повышение видимости вращающихся лопастей в дневное время за счет нанесения контрастных полос на лопасти ВЭУ.

Экологическая экспертиза проекта показала, что материалы содержат информацию, достаточную для принятия решения о допустимости проведения строительства ВЭС в объёмах, предусмотренных проектом, а также **соответствие** требованиям природоохранного законодательства к первому этапу оценки воздействия на окружающую среду о допустимости реализации проекта.

Государственный комитет Республики Узбекистан по экологии и охране окружающей среды **согласовывает** проект заявления о воздействии на окружающую среду строительства ветряной электрической станции «ACWA POWER BASH WIND» мощностью 500 МВт в Гиждуванском районе Бухарской области.

До ввода объекта в эксплуатацию в соответствии с требованиями ПКМ РУз за №541 от 07.09.2020 г. следует разработать Заявление об экологических последствиях, содержащее экологические нормативы для всех видов воздействия проектируемых работ на окружающую среду и представить в установленном порядке для рассмотрения на Госэкоэкспертизу.

ООО «JURU ENERGY CONSULTING» необходимо:

- в материалах ЭОП представить акт обследования предприятия, утвержденный управлением по экологии и охране окружающей среды

Бухарской области, о выполнении вышеизложенных мероприятий: оснащение ветротурбин датчиками вибрации и противоптичьим заградителем, готовность систем водоотведения и специальной заправочной площадки, также площадки временного хранения строительных и твердых бытовых отходов;

- представить оценку воздействия на жителей п. Куклам наложение потоков воздуха при работе ВЭС; разработать структуру ветряных потоков, при одновременной работе двух станций;

- своевременно выполнять план управления окружающей средой и план мониторинга окружающей среды во время строительства ветряной электростанции BASH, мощностью 500 МВт в Гиждуванском районе Бухарской области, утвержденные Госкомэкологии РУз;

- в целях минимизации воздействия на флору, фауну и орнитофауну для строительства ВЭС выбрать участки, имеющие наименьшее значение для биоразнообразия;

- при строительстве ВЭС ветряные турбины размещать с учетом размеров буферных зон археологических находок, строительные и земляные работы в буферных зонах, проводить под непосредственным археологическим надзором;

- соблюдать требования письма отдела службы санитарно-эпидемиологического благополучия и общественного здоровья за №20-8/3066 от 12.04.2021 г.;

- разработать генеральный план территории с нанесением источников выбросов, сбросов и отходов и представить технологическое обоснование источников выбросов, сбросов также отходов и их количества и состава;

- уточнить перечень, количество загрязняющих веществ и источников выделения и выброса загрязняющих веществ в атмосферный воздух намечаемой деятельностью;

- разработать и утвердить в управлении по экологии и охране окружающей среды план технической и биологической рекультивации земель с последующим его выполнением после окончания строительных работ;

- предусматривать срезку почвенно-растительного слоя и обеспечивать его временное хранение до окончания строительных работ; использовать срезанный почвенно-растительный слой в период проведения благоустройства территории;

- при размещении ВЭС на данной территории соблюдать водоохранную зону оз.Агитма в соответствии с ПКМ №981 от 11.12.2019 г.;

- разработать и получить «Разрешение на специальное водопользование или водопотребление» (РСВ) в установленном законодательством порядке (ПКМ РУз №255 от 31.03.2018 г. «О порядке оформления и получения разрешения на специальное водопользование или водопотребление»);

- обеспечить выполнение требований ПКМ РУз «О мерах по дальнейшему совершенствованию порядка проведения работ со строительными отходами» за №40 от 28.01.2021 г. (приложения за №№3-7), для хранения строительных отходов необходимо организовать специальное место с бетонированным полом и навесом, предусмотреть отсеки для раздельного хранения отходов;

- заключить договор с ГУП «Тоза худуд» либо иными альтернативными компаниями (для содержания ТБО на санкционированном полигоне), с целью своевременного вывоза стоков и отходов.

Управлению по экологии и охране окружающей среды Бухарской области следует взять на контроль:

- готовность специальной заправочной площадки, также площадки временного хранения строительных и твердых бытовых отходов;
- выполнение плана управления окружающей средой и плана мониторинга окружающей среды во время строительства ветряной электростанции BASH, мощностью 500 МВт в Гиждуванском районе Бухарской области;
- соблюдение требований письма отдела службы санитарно-эпидемиологического благополучия и общественного здоровья за №20-8/3066 от 12.04.2021 г.;
- разработку плана технической и биологической рекультивации земель с последующим его выполнением после окончания строительных работ;
- соблюдение водоохранной зоны оз.Агитма в соответствии с ПКМ №981 от 11.12.2019 г. при размещении ветротурбин;
- получение «Разрешения на специальное водопользование или водопотребление» (РСВ) в установленном законодательством порядке (ПКМ РУз №255 от 31.03.2018 г. «О порядке оформления и получения разрешения на специальное водопользование или водопотребление»);
- обеспечение выполнения требований ПКМ РУз «О мерах по дальнейшему совершенствованию порядка проведения работ со строительными отходами» за №40 от 28.01.2021 г, (приложения за №№3-7), для хранения строительных отходов необходимо организовать специальное место с бетонированным полом и навесом, предусмотреть отсеки для раздельного хранения отходов;
- заключение договора с ГУП «Тоза худуд» либо иными альтернативными компаниями (для содержания ТБО на санкционированном полигоне), с целью своевременного вывоза стоков и отходов.

Не допускать ввода рассматриваемого объекта в эксплуатацию, без положительного заключения на проект «Заявление об экологических последствиях».

Заместитель председателя **И. Бокижонов**

Исп: Вагиева Н.С.
Тел. 71 203 00 22 (внутр. 1006)

Unofficial translation

THE CONCLUSION
of The State Ecological Expertise

On the object:	Environmental Impact Assessment for construction of ACWA POWER BASH WIND wind farm with the capacity of 500 MW in Gijduvan district of Bukhara region (Preliminary EIA project)
Customer:	JURU ENERGY CONSULTING LTD.
TIN:	303 454 532
Category:	I, p. 32, The Resolution of CoM of RUz No. 541 of 07.09.2020.
Developer:	JURU ENERGY CONSULTING LTD.
Expert:	Valiyeva N.S.

To Director of
JURU ENERGY CONSULTING LTD.
J.U. Yakubov

copy: Bukhara Regional Department of Ecology and Environment Protection

The materials of the first stage of environmental impact assessment of construction of wind farm "ACWA POWER BASH WIND" with the capacity of 500 MW in Gijduvan district of Bukhara region were submitted for the state ecological expertise.

The basis for facility planning is Decree of the President of Republic of Uzbekistan No. PP-5003 dated 23.02.2021 "On measures on implementation of investment project "Construction of wind power plant with capacity of 500 MW in Gijduvan district of Bukhara region".

The project envisages installation of 111 wind turbines with all auxiliary facilities and buildings. Wind turbines model "GW165-5,6 MW" with tower height of 120 m, which have horizontal axis, three blades, frontal rotor, variable speed and variable pitch controller, synchronous generator with direct drive based on permanent magnets with external rotor, as well as the network connection device. The main components of a wind turbine consist of: tapered tubular tower sections made of steel; rotor blades made of glass fibre, reinforced epoxy resin and carbon fibres; nacelle, which houses the generator and gearbox; rotor, which is the central point where the three blades are connected to the nacelle; generator, which converts mechanical energy into electricity; gearbox; converter; transformer.

The nearest settlement is the village of Kuklam - located at a distance of 1.5 km to the southeast of the wind farm. Letter from the Department of Sanitary and Epidemiological Wellbeing and Public Health Service dated 12.04.2021 that was attached to the report, categorised the wind

power plants as “Class I” (1st Category) with a minimum sanitary protection zone of 1000 m.

An oil storage area with fuel-air mixture storage tanks is located 1.26 km to the southeast of the Project area. At a distance of 1 km to the south there is a pipeline corridor; 1.1 km to the east of the wind farm - three existing transmission lines; 1.9 km to the west -railway branch line; and 5.9 km to the southeast, there is an existing substation.

According to the project materials, during the site surveys, one site of Neolithic period, 7 stone workshops of Paleolithic period and 149 sites of Stone Age and Classic period were determined to the west of the wind farm area. Depending on their characteristics, the archaeological findings have been divided into 3 groups. The project provides followings for establishing their buffer zones: the first group (32 sites of archaeological finds and stone workshops) at a distance of 200 m, the second group (21 sites of concentrated finds of stone and pottery remains without defining cultural layers) 100 m, the third group (104 sites with few archaeological finds and no cultural layers) 25 m. During construction of the wind turbines will be placed taking into account the above dimensions of the buffer zones of archaeological finds belonging to the above groups, also the construction and excavation works in these buffer zones, will be carried out under direct archaeological supervision. According to the letter No. 286 dated 09.04.2021 of the Bukhara Regional Department of Cultural Heritage, under the Ministry of Culture of the Republic of Uzbekistan, there are no objects of tangible cultural and archaeological heritage under state protection within a radius of 5 km from the area selected for construction of the wind farm.

The construction of the Bash 500 MW wind farm is planned in the northeastern part of the Ayakagitma depression. The main part of the site is covered by sandy plains with retained low mountains.

According to the project data, the nearest surface water body located near the wind farm site in the south-west is Lake Agitma, located within the key biodiversity area. The nearest wind turbine is envisaged to be installed at a distance of at least 2.265 km from lake Agitma. A letter from the Ministry of Water Resources No. 01/17-2341 dated 05.08.2021 is attached to the project stating that there are no water management facilities in the area of the wind farm.

According to the results of topographical and geotechnical surveys performed by UzAssystem JV (branch of Assystem international design and engineering company), no ground waters were detected up to the depth of 50m at the wind farm site during drilling surveys (16 wells up to 50m deep).

As a result of spring and summer botanical surveys, two Red Data Book species of plants were identified in the area under the wind farm construction and along the projected overhead power line: Lehmann’s tulip and Zakirov’s calligonum, as well as red-listed species of reptiles (Russian tortoise, Caspian Monitor and Desert sand boa, Southern Even-fingered Gecko) and mammals (Brandt's hedgehog and Goitered gazelle) which are also included in the International Union for the Conservation of Nature Red List. The following bird species included in the collision risk modelling analysis (autumn-spring) were identified during Scottish Natural Heritage bird monitoring conducted from 16 March 2020 to 23 November 2020 in the wind farm area: Steppe Eagle, Golden Eagle, Egyptian Vulture, Saker Falcon, Houbara Bustard, Booted Eagle, Eurasian Marsh-Harrier, Hen Harrier, Eurasian Sparrowhawk, Shikra, Common Buzzard, Long-legged Buzzard, Eurasian Griffon, Cinereous Vulture, Great White Pelican, Common Crane, Eurasian Kestrel, Lesser Kestrel, Ruddy Shelduck, Gadwall, Mallard, Green-winged Teal, Mute Swan, Tufted Duck, Pygmy Cormorant, Great Cormorant, Black-crowned Night-Heron. Based on the results of the surveys, a "Collision Risk Modeling" was conducted. Birds were monitored

according to the timing of migration and breeding of the target species in the region: spring (migration): March 16 - May 15; summer (breeding): May 16 - August 31; autumn (migration): September 1 - November 23. The analysis shows that the frequency of collisions of all Tier 1 target species will not exceed 1 in 61 years. For Tier 2 target species, “Collision risk modelling" analysis predicts a collision rate of one collision per three years for Common Cranes and 1 collision per 100 years or less for all other species in this group. In order to minimise impacts on flora, fauna and ornithofauna from the biodiversity survey, the areas of least biodiversity significance will be selected for construction.

IE "ACWA POWER BASH WIND" LLC developed the environmental management plan and the environmental monitoring plan during construction of wind farm BASH with capacity 500 MW in Gijduvan district of Bukhara region, including measures on preservation of natural habitat (flora and fauna), quality of air, water and soil, topsoil, flora and fauna, on hygiene and safety of workers, prevention of collision and electrocution of birds during operation of wind farm, etc, which are approved by the Deputy Chairman of the State Committee of Ecology of the Republic of Uzbekistan.

According to the design solutions for installation of wind turbines, the construction area will be cleared of vegetation. Sites with no vegetation cover will be selected for the construction of structures if possible. During the period from August 19 to 20, 2021 the specialists of Bukhara Regional Department of Ecology and Environmental Protection together with the representative of Cadastral Agency of Gijduvan district conducted a preliminary assessment of cutting down of tree and shrub vegetation on the territory of projected wind farm and along the route, projected overhead power line and made an Act of territory inspection. According to the results of the assessment, during project implementation it is not expected to cut down trees and shrubs specified in the list of valuable varieties of trees and shrubs that are not included in the state forest fund according to the Annex to the Decree of the Cabinet of Ministers of the Republic of Uzbekistan №93 dated 18.02.2020. "On additional measures for preservation of valuable varieties of trees and shrubs not included into the state forest fund".

According to long-term meteorological data, the area is characterized by winds of northern and northwestern directions (18.87 and 11.48%, respectively). The average annual frequency of strong winds (12-15 m/s) is low and amounts to 0.38%. The frequency of weak winds (0-1 m/s) is 12.29%. Winds with a speed of 4-5 m/s contribute to the transport of impurities from high hot sources. The average annual frequency of these winds is 23.13%. Such winds are most frequent in spring and summer.

The area allocated for the wind farm is 285.1 ha. The infrastructure of the wind farm site includes additional and auxiliary facilities such as - entrance to the site and security building; administration building, offices and premises; central control post; warehouse and repair workshop; security system; lighting system; access roads between wind turbines; vehicles and garage; concrete pad under a shed for temporary storage of diesel fuel, with drainage pit for collecting spills and area for temporary storage of waste generated.

The wind turbines are spaced at a distance equal to the height of several towers.This distance allows the wind flow to recover and the turbulence created by the rotor of one wind turbine does not affect the neighbouring wind turbine on the leeward side. The wind turbines are anchored and stabilised with reinforced concrete platforms. The foundation platforms are constructed below ground level and soil will be placed over the platform to return the visible area almost to its original state.

The operating principle of wind farm is to convert wind energy into mechanical energy and

then into electrical energy. The technology of electricity generation at wind farm is based on the following processes: rotation of the blades using the wind; as the blades rotate, their motion is converted by the generator into electricity, which is accumulated in the battery. In this conversion process there are no exhaust gases, waste water and waste.

An air-insulated 33/500 kV substation is envisaged to be constructed in the southern part of the wind farm area. Distance from the substation to existing facilities: at 1020 m to the south, there is a pipeline corridor; at 1150 m to the right, there are three (3) existing power lines; at 1900 m to the left, there is a railway branch line; at 5950 m to the southeast, there is an existing substation. The distance from the substation to Ayakagitma village will be 15.5 km and to Kuklam village 14.4 km. The transmission line route starting from the substation 33/500 kV to the existing substation "Karakul" 500 kV, with an approximate length of 165 km is considered by this project. The size of the planned substation is considered to be 200m x 200m and the area is approx. 39900 m2. The design solution adopted the option of passing the overhead power line along the route: Dzhankeldy wind farm - Bash wind farm - the existing Karakul substation with a nominal voltage of 500 kV in one circuit. The projected overhead power transmission line runs from 15.0 km to 18.0 km over irrigated area (about 13%). The rest of the line runs through non-irrigated area. All intersections with existing power transmission lines, automobile roads, pipelines and railway lines are carried out at an angle of $80\text{-}90^0$.

The maintenance of vehicles on the balance sheet of the enterprise will be carried out by specialized organizations. A 10 m^3 tanker will be provided for refuelling of construction equipment, hydrocarbon emission will take place irregularly through the equipment leaks. Approximate emission of hydrocarbons from the temporary fuel storage tank is about 0.0036 t/year.

The backup power source for the substation is a diesel generator. A small amount of diesel fuel will be stored in an aboveground tank. Transmission oils for lubrication will be supplied to the warehouse in a sealed container (cartridge, capacity up to 250 g). One fill from one hermetically sealed cartridge lasts for 1 year, and then the oil is topped up. Lubricating oil for refilling of oil-filled equipment is not stored in the warehouse, it is brought from the supplier directly at the time of its filling. Emission of hydrocarbons of mineral oil occurs irregularly during operation of oil-filled equipment through its leaks and amounts to about 0.0084 t/year.

Routine road maintenance will include the watering and smoothing necessary to maintain the pavement and the inspection and repair of stormwater management systems necessary to ensure they are functioning properly to control erosion.

The wind farm will be operated by 20 persons. The work mode is three shifts of 8 hours each. Due to the fact that the work schedule of the personnel is on a rotational basis, temporary living quarters are provided to accommodate the working personnel. An electric stove is used for cooking.

Emissions of pollutants into the atmosphere and formation of construction wastes are planned during construction, which **should be calculated** in accordance with the parameters presented in the Resolution of CoM RUz "On measures to further improve the procedure of work with construction wastes" No.40 dated 28.01.2021, (Annexes No.3- 7).

During transformer operation, pollutants in the form of hydrocarbons will be emitted into the atmosphere - 0.0084 t/year.

During operation of the reserve power source (diesel generator), operating on diesel fuel,

the combustion of which will emit pollutants in the form of carbon monoxide, nitrogen dioxide, hydrocarbons, soot, sulfur dioxide and benz(a)pyrene about 0.0004 t/year.

At a subsequent design, a list indicating the number of pollutants and sources of emissions and releases of pollutants into the atmosphere by planned activities shall be specified.

The process of electricity generation by the wind farm does not involve the use of water for operational needs and, accordingly, industrial effluents.

The source of water supply to the wind farm will be imported water from the nearest settlement. Domestic wastewater in the amount of 4,03 m^3/day; 1470,22 m^3/year will be treated at the septic installation, which is planned to be located on the territory of the wind farm. Watering of the territory is carried out only during the hot period of the year from May to September by imported irrigation water or treated water from the bioseptic.

In order to reduce dust emission during construction works, wet spraying with the use of one sprinkler machine is envisaged.

The following wastes are expected to be generated during the production activities of the facility in question:

- waste oils generated by transformers, II hazard class;
- waste blades of wind turbines generated by operation of the wind farm, hazard class IV;
- electrode waste generated during welding works, Hazard Class V;
- silica gel waste generated by transformers, hazard class IV;
- ferrous metal scrap resulting from repair work and consisting of end-of-life parts, Hazard Class V;
- Non-ferrous metal scrap generated as a result of repair work and consisting of end-of-life parts, hazard class III;
- oiled rags with oil content 15% or more, formed during wiping of mechanisms, hazard class III;
- waste LED lamps, hazard class IV;
- waste paper generated in the administrative building, Hazard Class V;
- food waste, hazard class V;
- municipal solid waste, hazard class IV;
- debris generated during cleaning of the territory in the form of sand grains, dry grass, leaves of trees, hazard class IV and V.

Currently, the utilization of wind turbine blades made of composite materials, formed after the operation time or liquidation of the facility, is a significant problem of wind energy. The proposed methods of utilization of generator blades are under development, and the applied methods (such as mechanical shredding, incineration and pyrolysis) have a number of drawbacks, which did not allow the preliminary EIA project under consideration to declare the solution to the problem of blades recycling in full.

As the most probable emergency situations the project considers cases of fire of the main transformer and fuel and lubricant spillage, to prevent which measures have been developed, including: the organization of a concreted area for storage of diesel fuel, the use of equipment, fittings and anti-seismic piping, resistant to corrosive properties of soil, ground and waste water, etc. To protect birds from electrocution, prevent overlapping of the insulation, anti-bird barriers are provided. As a main measure, the visibility of rotating blades in the daytime by applying

contrasting stripes on the blades of the wind turbine is envisaged.

The ecological expertise of the project has resulted that the materials contain sufficient information to make a decision on the permissibility of the wind farm construction in the volumes envisaged by the project, as well as **compliance** with the requirements of environmental legislation for the first stage of the environmental impact assessment on the permissibility of the project implementation.

The State Committee of the Republic of Uzbekistan on ecology and environment protection **approves** project statement on preliminary environmental impact assessment of construction of wind farm "ACWA POWER BASH WIND" with capacity of 500MW in Gijduvan district of Bukhara region.

Statement on "Consequences of Environmental Impacts" should be developed and submitted to the State Ecological Expertise prior to commissioning the facility. Statement should be prepared in accordance with the requirements of the Resolution of CoM RUz No.541 dated 07.09.2020 and include norms for all types of environmental impacts of the planned activities.

JURU ENERGY CONSULTING LLC is required:

- To ensure that an act of inspection of the enterprise, approved by the Department of Ecology and Environmental Protection of Bukhara region, on the implementation of the above measures: equipping wind turbines with vibration sensors and anti-bird barrier, readiness of drainage systems and special filling site, also the site of temporary storage of construction and solid waste are included to the report on "Consequences of Environmental Impacts";

- To provide an assessment of the impact on the residents of Kuklam village of the overlapping air flows during operation of the wind farm; to develop the structure of wind flows, with simultaneous operation of two stations;

- To ensure implementation of the environmental management plan and environmental monitoring plan in a timely manner during the construction of the 500 MW BASH wind farm in Gijduvan district of Bukhara region, approved by the State Committee of Ecology and Environmental Protection of the Republic of Uzbekistan;

- In order to minimize the impact on flora, fauna and ornithofauna, to select sites of the least importance for biodiversity for the construction of the wind farm;

- When constructing wind turbines, locate them with considering required buffer zones of archaeological finds; construction and excavation work in the buffer zones should be carried out under direct archaeological supervision;

- To comply with the requirements of the letter No. 20-8/3066 of 12.04.2021 of the Department of Sanitary and Epidemiological Welfare and Public Health Service;

- Develop a master plan of the territory with the drawing of sources of emissions, discharges and waste and provide technological substantiation of sources of emissions, discharges and waste and their quantity and composition;

- To specify the list of quantity of pollutants and sources of emission and release of pollutants

into the air by the planned activity;

- To develop and approve in the Department of Ecology and Environmental Protection a plan of technical and biological land reclamation with its subsequent implementation after completion of construction works;

- To envisage the cutting of the topsoil and ensure its temporary storage until the end of construction work; use the cut topsoil during landscaping (recovering project site after completion of construction works);

- To observe the water protection zone of Lake Agitma in accordance with The Resolution of CoM No. 981 of 11.12.2019 when construction of wind farm in this area;

- To develop and obtain "Permit for special water use or water consumption" in accordance with the procedure established by the legislation (The Resolution of CoM RUz №255 dated 31.03.2018. "On the order of drawing up and obtaining permission for special water use or water consumption");

- To ensure the fulfillment of the requirements of The Resolution of CoM RUz "On measures to further improve the procedure of work with construction waste" No.40 dated 28.01.2021 (Annexes No.3-7), a special place with concrete floor and shed should be arranged for storing construction waste, and compartments for separate waste storage should be provided;

- To sign a contract with SUE "Toza Hudud" or other alternative companies (to maintain household solid waste at the sanctioned landfill), in order to remove wastewater and waste in a timely manner.

The Bukhara Regional Department of Ecology and Environmental Protection should take control:

- readiness of special refueling site, as well as a site for temporary storage of constructional and household solid waste;

- implementation of the environmental management plan and environmental monitoring plan during the construction of the 500 MW BASH wind farm in Gijduvan district of Bukhara region;

- compliance with the requirements of the letter No. 20-8/3066 of 12.04.2021 of the Department of Sanitary and Epidemiological Welfare and Public Health Service;

- development of a technical and biological land reclamation plan with subsequent implementation upon completion of construction works;

- compliance with the water protection zone of Lake Agitma in accordance with the Resolution of CoM No. 981 of 11.12.2019 when locating wind turbines;

- obtaining "Permit for special water use or water consumption" in accordance with the procedure established by the legislation (the Resolution of CoM of RUz No. 255 dated 31.03.2018 "On the order of drawing up and obtaining permission for special water use or water consumption");

- to meet the requirements of the Resolution of CoM RUz "On measures to further improve the procedure of work with construction waste" No.40 dated 28.01.2021 (Annexes No. 3-7), a special place with concrete floor and shed should be arranged to store construction waste, and compartments for separate waste storage should be provided;

- contracting with SUE "Toza Hudud" or other alternative companies (to maintain household solid waste at the sanctioned landfill), in order to remove wastewater and waste in a timely manner.

Do not allow the commissioning stage of the current planned facility without obtaining a positive conclusion on the "Consequences on Environmental Impacts".

The Deputy Chairman *Signed and sealed* **I. Bokijonov**

Exec: Valiyeva N.S. (signed)

Tel. 71 203 00 22 (ext. 1006)

APPENDIX B- SCOPING REPORT

Bash 500MW Wind Farm

Uzbekistan

Environmental & Social Impact Assessment (ESIA):

Scoping Report

Prepared for:

March 2021

Document Information

Project Name	Bash 500MW Wind Farm
5Cs Project Number	1305/001/100
Document Title	Environmental & Social Impact Assessment: Scoping Report
Client	ACWA Power
5Cs Project Manager	Eva Muthoni Kimonye
5Cs Project Director	Ken Wade

Document Control

Version	Version Date	Description	Author	Reviewer	Approver
1.0	11/03/2021	E&S Scoping Report	EMK	MKB	KRW

1	Financial Capital
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CONTENTS

LIST OF ABBREVIATIONS

ABBREVIATION	MEANING
ADB	Asian Development Bank
COVID-19	Coronavirus Disease
DEG	Deutsche Investitions- und Entwicklungsgesellschaft
E&S	Environmental and Social
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
EPC	Engineering, Procurement and Construction
EPFIs	Equator Principles Financial Institutions
ESIA	Environmental & Social Impact Assessment
GBVH	Gender Based Violence and Harassment
GHG	Greenhouse Gas
IBA	Important Bird Area
IBA	Important Bird Areas
IFC	International Finance Corporation
ILO	International Labour Organisation
LAO	Land Allotment Order
LLA	Land Lease Agreement
NEGU	National Electric Grid of Uzbekistan
NENU	National Electric Networks of Uzbekistan
OHTL	Overhead Transmission Line
PEF	Purchase Electrical Facilities
PPA	Power Purchase Agreement
SPS	Safeguard Policy Statement
UNESCO	United Nations Educational, Scientific, and Cultural Organisation
WTG	Wind Turbine Generator
5 Capitals	5 Capitals Environmental & Management Consultancy

1 INTRODUCTION

1.1 National Context

The Uzbekistan 2030 Energy Strategy defines the mid-term and long-term objectives and directions for the development in the power sector for ensuring electricity supply in Uzbekistan between 2020-2030. One of the objectives of the Energy Strategy include the development and expansion of renewables use and their integration into the unified power system. In order to fulfil this objective, the government of Uzbekistan intends to:

- Ensure diversification in power and heat energy sectors through increased share of renewable energy sources and creation of renewable energy investment project mechanism utilising PPP approaches, enhancement of government policies related to development of renewable energy sources, demonstration of renewable projects

In regards to the development of wind farms the Energy Strategy states the following as priority:

"Creation of large-scale wind farms with single site capacities ranging from 100MW to 500MW mostly concentrated in North-Western region (Republic of Karakalpakstan and Navoi region) shall be the main priority of wind power development"

Figure 1-1 Uzbekistan renewables-based generation targets by 2030

Source: Uzbekistan 2030 Energy Strategy Concept Note, 2020

1.2 The Project

As part of the Uzbekistan 2030 Energy Strategy, ACWA Power has signed an implementation agreement with the Ministry of Energy in Uzbekistan for developing, building and operating 500MW wind farm in Bash. ACWA Power has since established a Project Company ' FE ACWA Power Bash Wind LLC' registered in the Republic of Uzbekistan with registration number 839862. ACWA Power Bash Wind LLC has entered into a 25-year Power Purchase Agreement (PPA) with JSC 'National Electric Grids of Uzbekistan', which is based on the ultimate operations of the Project.

The Project includes the development, financing, construction, operation and maintenance of the Wind Farm including the Wind Farm electrical substation. In addition, it will also include development, financing, construction and transfer of Purchase Electrical Facilities (OHTL and common electrical facilities shared with Dzhankeldy 500MW Wind Farm), switchyard (with transformers) or 500/220kV pooling station.

The full scope of work for the Purchase Electrical Facilities will be fully defined once the Power Evacuation Scheme is finalised.

1.3 Scope of Document

A key stage in the development of the Project, requires Environmental Impact Assessment (EIA) in compliance with Uzbekistan national EIA requirements (OVOS). As such, it is required to independently prepare an EIA for approval prior to the commencement of the project.

ACWA Power is also seeking an amount of project finance from financial Institutions who have their own internal environmental & social investment policies/standards, or may be members of voluntary agreements such as the Equator Principles. At this stage, it is understood that the European Bank for Reconstruction and Development (EBRD), Asian Development Bank and the Deutsche Investitions- und Entwicklungsgesellschaft (DEG) are involved in discussions relating to provisions of finance. Based on the requirements of these institutions, a process for undertaking Environmental & Social Impact Assessment (ESIA) (to assess potential impacts and determine suitable mitigation measures will be necessary as a process to reach financial close.

5 Capitals Environmental and Management Consulting (5 Capitals) has been engaged by ACWA Power to undertake the independent EIA and ESIA processes, as well as certain other environmental & social related scope. In order to undertake the EIA/ESIA, it is necessary to delineate the terms of reference (amongst other items), which is part of the basis for this 'Scoping Report'. 5 Capitals has partnered with a locally based consultant, 'Juru Energy' (Tashkent, Uzbekistan) to undertake certain elements of the scope, including baseline surveys,

consultations and submission of the EIA to the State Committee of the Republic of Uzbekistan on Environmental Protection.

1.4 Objectives of the ESIA Scoping Report

The main objectives of this report in relation to the "Project" are as follows:

- To provide an overview of the Project;
- To provide an overview of the regulatory framework requiring ESIA, other obligations and environmental & social standards applicable to the project (such as those required by the lenders);
- To outline preliminary environmental & social baseline conditions and receptors to ensure that proposed assessment techniques (including required baseline surveys) are designed to enable the establishment of representative environmental conditions for the Project and its areas of impacts/influence;
- To identify preliminary environmental & social potential impacts relating to the construction and operational phases of the Project, for the ESIA to assess these issues specifically; and
- To specify the structure and content of the subsequent ESIA.

This Scoping report has been informed by:

- Analysis of the Project details and proposed works (as advised by ACWA Power);
- Study of the relevant mapping and aerial photography;
- Site visits by 5 Capitals' sub-consultant (Juru Energy) from March 2020 onwards;
- Spring, Summer and Autumn bird and bat surveys for the Project;
- Review of available secondary information; and
- Experience of conducting ESIAs for similar wind projects and experience of working with lenders to ensure necessary financing requirements are met.

2 PROJECT INFORMATION

2.1 Key Project Information

Table 2-1 Key Project Information

PROJECT TITLE	Bash 500MW Wind Farm
PROJECT DEVELOPER	ACWA Power
PROJECT COMPANY	FE "ACWA Power Bash Wind" LLC
OFF TAKER	JSC National Electric Grid of Uzbekistan
EPC CONTRACTOR	To be Confirmed
O&M COMPANY	NOMAC
ENVIRONMENTAL CONSULTANT	5 Capitals Environmental and Management Consulting (5 Capitals) PO Box 119899, Dubai, UAE Tel: +971 (0) 4 343 5955, Fax: +971 (0) 4 343 9366 www.5capitals.com
	Juru Energy Consulting LLC Chust Str. 10, 100077, Tashkent, Uzbekistan Tel: +998 71 202 0440, Fax: +998 71 2020440
POINT OF CONTACT	Ken Wade (Director), Ken.wade@5capitals.com

2.2 Project Location

The 500MW Wind Farm is located in Gijduvon district in Bukhara region in Uzbekistan. The proposed Project coordinates and locations are provided in the table below:

Table 2-2 Project Site Coordinates (based on preliminary co-ordinates)

NORTHING	EASTING
4488709.16	637987.39
4489065.00	645911.20
4492662.15	646074.46
4493476.69	647325.10
4495585.81	646194.93
4498671.77	646323.63
4498528.88	646690.97
4499538.02	648248.52
4500867.54	648351.79
4503425.70	650137.28
4507450.24	649969.59
4507264.73	632532.51
4506189.41	631394.22
4503502.14	631176.63
4503073.76	635108.38
4499198.71	637482.55

Figure 2-1 Project Location – National Context

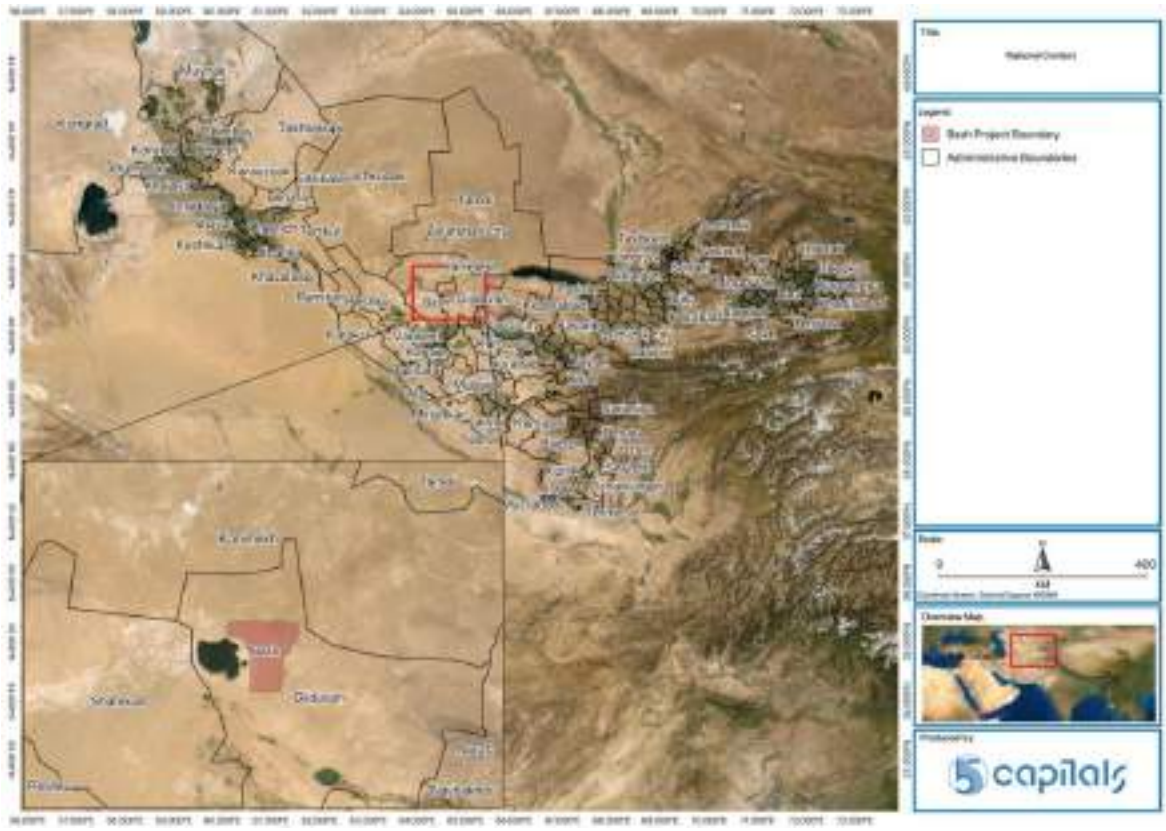


Figure 2-2 Project Location – Local Context

2.3 Land Use and Site Condition

2.3.1 Land Ownership

According to the 1998 Land Code of the Republic of Uzbekistan, all land in Uzbekistan is state property and permits for use of land are granted and monitored by the State through the rayon and oblast administrations.

ACWA Power has advised that it is expected that a Presidential Resolution will be issued instructing the Khokimiyat of Bukhara region to issue the Land Allotment Orders and allow the Project Company to execute the Land Lease Agreement (LLA) at a later stage. The LLA will be signed between Bukhara region and the Project Company.

2.3.2 Land Use and Site Condition

The Project plot is 285 ha in area. However, according to Appendix A of the Project PPA, this is subject to change and the final area will be reflected in the Land Allotment Order and the Land Lease Agreement.

Based on site visits conducted from March 2020 to date (for birds and bat surveys), it was observed that the site comprises of 'Natural Habitat', with some areas of 'Modified Habitat' due to existing infrastructure corridors (i.e., gas pipeline, OHTL & railway line). The site has an predominantly open landscape with low lying shrub vegetation spread across the site.

Plate 2-1 View of the Project site (centre)

View of the site in Spring (2020)

Plate 2-2 View of the Project site (north west)

Plate 2-3 View of the Project site (south)

Plate 2-4 View of the Project site (south west)

There are approximately 4 seasonally used structures for herders that are understood to be used during the spring and summer seasons. Further assessment on the ownership and usage will be determined at the ESIA stage.

Plate 2-5 Structures found at the Project site

There are Overhead Transmission Lines (OHTL) that crosses the site and a railway line running through the north central area of the Project site and a railway line slightly raised above the

ground level that splits the site in a south-east to north-west direction. The railway line connects the city of Navoi to Zarafshan city.

Plate 2-6 Overhead Transmission Lines at the Project site

Plate 2-7 Railway Line crossing the Project site

There are also cliffs found to the western side of the proposed Project site that slope towards Lake Ayakagitma as shown in the figure below.

Plate 2-8 Some of the cliffs to the west of the Project site

According to Appendix A of the PPA, there is a gas pipeline running through the southern section of the plot.

Plate 2-9 Gas Pipeline on the Project site(in blue)

Source: Appendix A of the PPA

2.4 Initial Receptor Identification

There are several infrastructure corridors and structures found within the project site which include; railway line, a small railway station, gas pipeline and single roomed structures used by seasonal herders from the local communities.

The Project site is also located 0.5km east of Lake Ayakagitma which is an Important Bird Area (IBA) and is identified as 'UZ051'. The lake covers approximately 11,000 hectares and is located at the bottom of the Ayakagytma depression. Since the lake does not freeze and provides a rich feeding ground for birds, it is important for passage and wintering water birds. It is also understood that the lake is used for fishing by community members from Ayakagytma village and to provide water for their livestock.

Additional receptors found within 5km of the Project site are provided in the figure and table below.

Table 2-3 Receptors

ID	Receptor Type	Proximity to Project	Description
R1	Infrastructure	Within the project site	Overhead transmission lines running through the north central area of the Project site.
R2			
R3			
R4	Infrastructure	Within the project site	A small railway station located towards the north-west of the site
R5	Seasonally used structures	Within the project site	Structures used by herders located towards the north of the site
R6		Within the project site	
R7	Seasonally used structures	Within the project site	Structure used by herders located to the east of the site
R8	Infrastructure	Within the project site	Railway line that splits the site in a south-east to north-west direction.
R9	Seasonally used structures	Within the project site	Structure used by herders located to the north of the site
R10	Seasonally used structures	Approx. 4.9km to the west	Animal holding area used by herders in Ayakagitma village
R11	Infrastructure	Runs through the project site	A dirt road that runs parallel to the railway line
R12	Residential	Approx. 1.6km south east	Residential apartments housing workers at the oil refinery (TBC)
R13	Commercial	Approx. 4.55 south east	A substation located to the south east of the site
R14	Commercial	Approx. 1.26km to the south east	An oil station with what appears to be large storage tanks (TBC)
R15	Ecological	Approx. 0.5km to the west	An IBA lake with important bird species
R16	Commercial	Approx. 1.5km south east	An oil station with what appears to be large oil storage tanks (TBC)
R17	TBC	Within the Project site	What appears to be abandoned structures found to the south west of the project site.
R18	TBC	Within the Project site	
R19	Commercial	Within the Project site	Gas pipeline running through the southern section of the site.
Mining Area 1	Commercial	Approx. 1.4km south east	The nature of these mining areas will be determined during site visits but Appendix A of the PPA states '*The plant should keep distance from mining activities existing as of the signing of this Agreement…*'
Mining Area 2	Commercial	Approx. 0.9km west	

Figure 2-3 Receptors found within 5km of the Project site

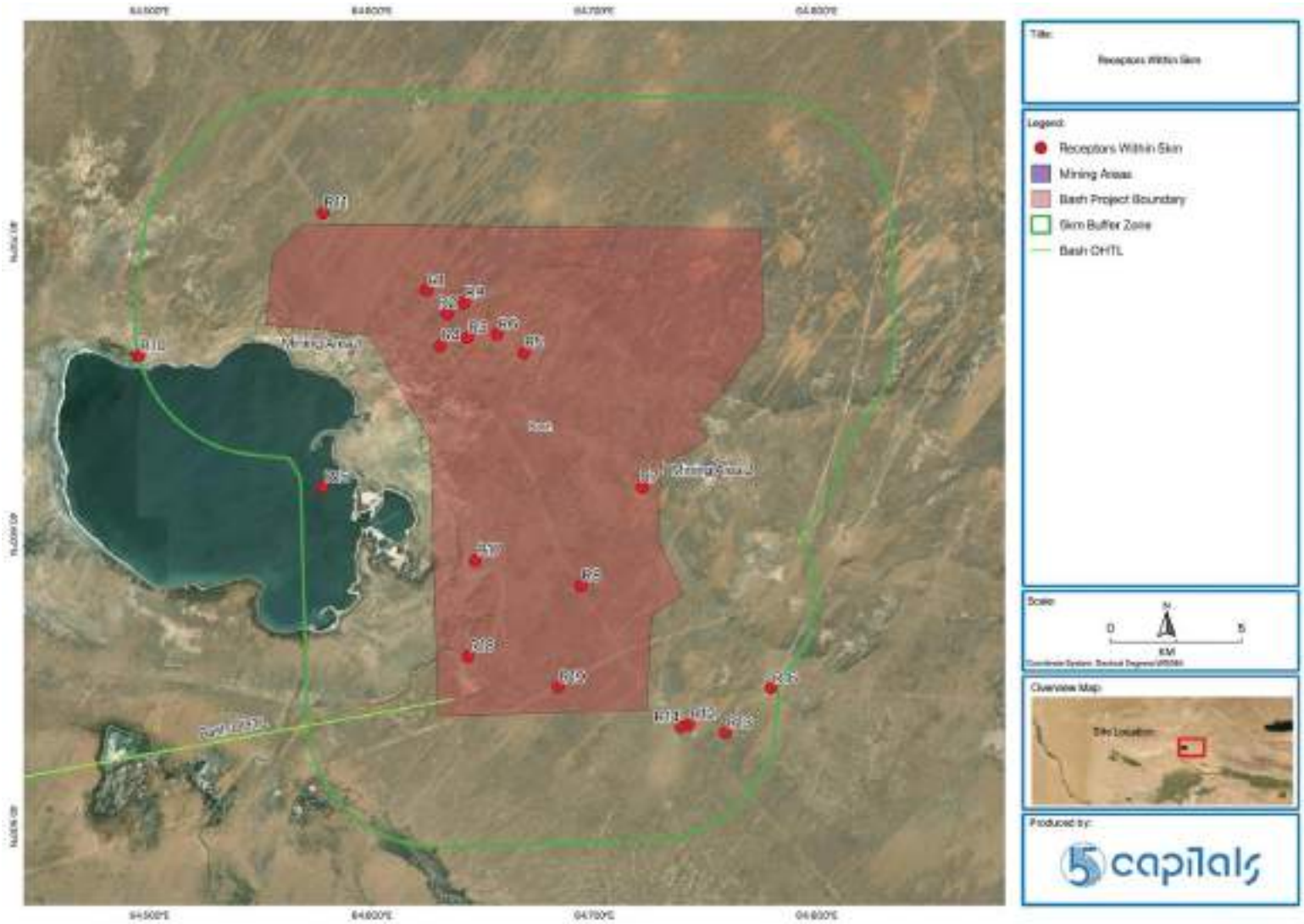


Plate 2-10 #R5 – Example of a seasonally used structure on site

Plate 2-11 #R6 – Animal holding area including a structure used by herders

Plate 2-12 #R11– Dirt road running through the site

Plate 2-13 #R13– Substation

Plate 2-14 #R14– Oil station/storage areas

Plate 2-15 #R15– Lake Ayakagitma

Plate 2-16 #R15– Camels along the shores of Lake Ayakagitma

2.5 Project Description

2.5.1 Wind Turbines Technology Overview

Wind turbines have been used to produce electricity on a commercial scale since the 1990s and are well established as a developed renewable energy technology.

Wind turbines harness the energy in the wind and convert it to electricity. The amount of energy produced by wind turbines increases dramatically with increased wind speed and modern turbines are able to adapt efficiently extract energy from the entire range of wind speeds.

Wind speeds increase with height above ground as turbulence intensity decreases at the same time. This allows turbines with higher hub-heights to produce more energy than a turbine with a lower height at the same location. In addition, longer blades (the rotor diameter from the turbine) significantly increase the swept area from which wind energy can be extracted.

The turbine technology, manufacturer and supplier for the proposed Project has not been defined at present.

The basic components of a wind turbine include the following components:

- Conical tubular tower sections made of steel;
- Rotor blades, made of fiberglass, reinforced epoxy and carbon fibres;
- Nacelle, which houses the generator and gearbox;
- Hub, which is the central point at which the three blades are connected to the nacelle;
- Generator, which converts mechanical energy into electricity;
- Gearbox;
- Converter; and
- Transformer.

Wind turbines are usually painted light-grey, with aviation safety lights at the top of the nacelle. The tips of the blades are sometimes painted orange or red to improve daytime visibility of the blade swept area while remaining unobtrusive to the character of the landscape as far as practical.

Turbines are fixed to the ground and stabilised using reinforced concrete platforms, which ensure that the turbine remains stable. Foundation platforms are constructed below ground level, and soil will be placed over the platform to return the visible area to nearly its original condition. A typical foundation diameter is 20 m, with a depth of 2.5 m, depending on the turbine design and the subsoil conditions.

Specific details regarding the wind turbines technology will be provided at the ESIA stage.

2.5.2 Technology Specifications from the PPA

According to Appendix A of the PPA, the design of the turbines will meet the following requirements.

Table 2-4 Wind turbine generators

STANDARD	DESCRIPTION
IEC 61400	All functional specifications and standards pertaining to the Wind Turbine Generators of the Plant should follow and conform to all relevant parts of International Electrotechnical Commission standard IEC 61400

Table 2-5 Wind turbine generator foundations

STANDARD	DESCRIPTION
DNV GL-ST-0126	Support structures for wind turbines. Edition April 2016
BS EN 1998-1:2004	Eurocode 8 design of structures for earthquake resistance
BS EN 1992-1-1:2004	Eurocode 2: Design of concrete structures
	WTG manufacturer requirements and recommendations

Table 2-6 Transformers

STANDARD	DESCRIPTION
IEC 60076-16	Power transformers – Part 16; transformers for wind turbine application.

Table 2-7 Electrical Equipment

STANDARD	DESCRIPTION
IEC 61936-1	Power installations exceeding 1 kV a.c. – Part 1: common rules.

2.5.3 Project Facilities

Some of the Project facilities will be shared between ACWA Power's Bash 500MW Wind Farm and the Dzhankeldy 500MW Wind Farm which is located approximately 94km north west of the Bash site. Preliminary details about the shared facilities are provided below.

OVER HEAD TRANSMISSION LINE & SUBSTATION

At this stage, ACWA Power has advised that the details of the OHTL are still under investigation. It is understood that there are two options under consideration for the routing of the proposed OHTL under the 'Power Evacuation Scheme' for consideration by JSC National Electric Networks of Uzbekistan. The options under consideration include:

- **Option A**: 95km OHTL from the Project site either with a rating of 220kV double-circuit or 500kV single-circuit.
  - This option will include the construction of a new substation where a 60km 220kV double-circuit or 500kV single-circuit OHTL from the Dzhankeldy site will also connect to.
- **Option B:** 250km OHTL (from Dzhankeldy to Bash Project site to an existing substation) with a rating of 500kV single circuit.

Figure 2-4 Location of OHTL & substation (Option A)

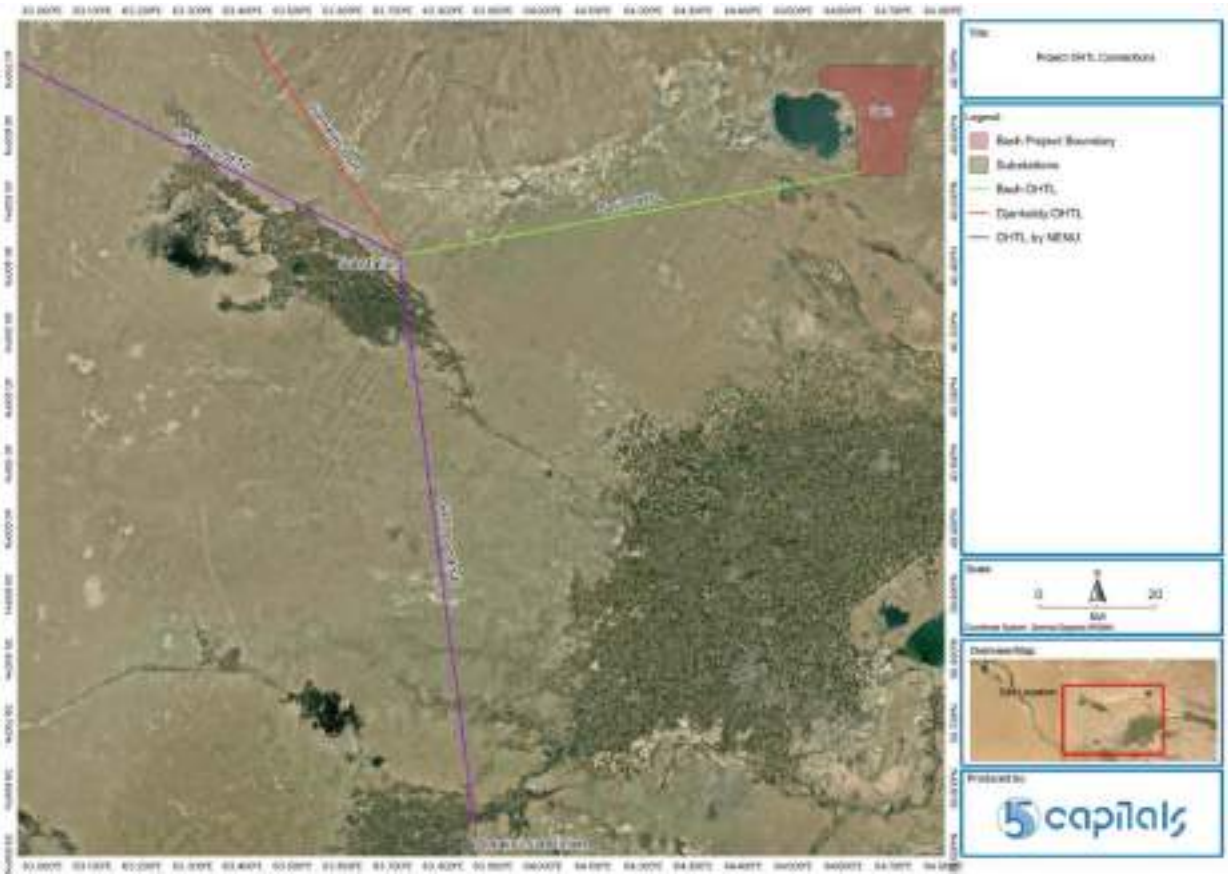
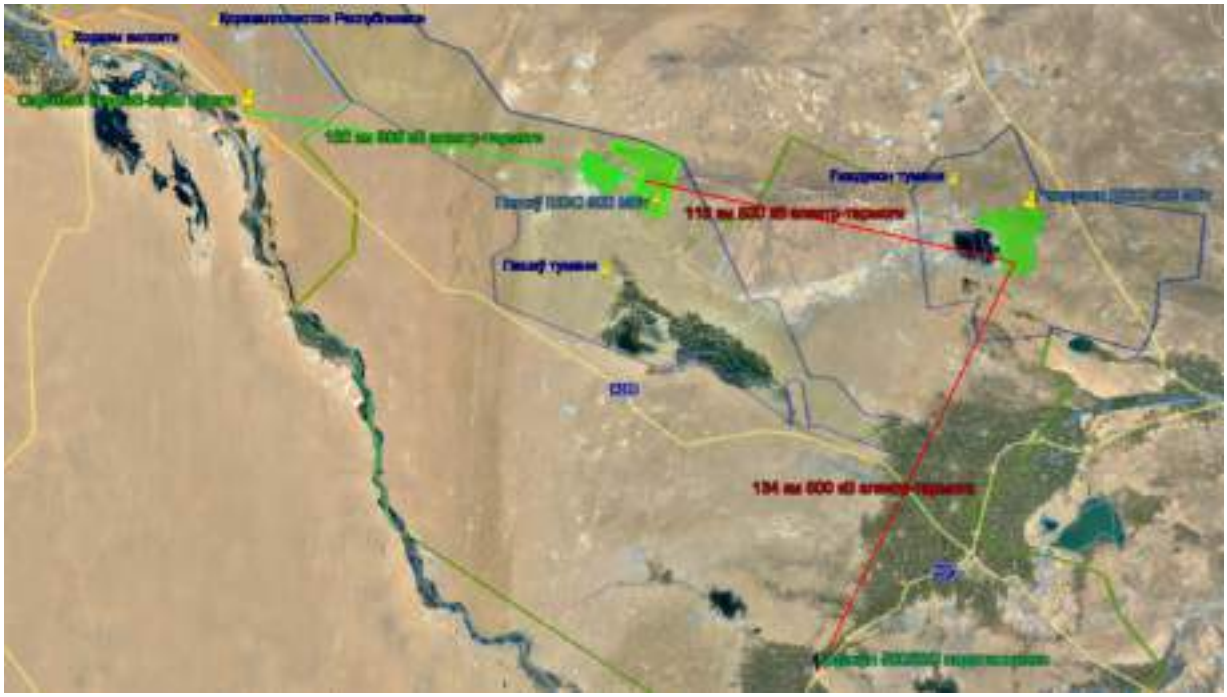


Figure 2-5 Location of OHTL & substation (Option B-in red)



Note: *The options of the alignment of the OHTLs provided above are indicative and have not been finalised. It is understood from ACWA Power that this is subject to change based on the outcome of the 'Power Evacuation Scheme' and approval by JSC National Electric Networks of Uzbekistan. As a result, this scoping report is unable to define the OHTLs and substation's area of influence and therefore to delineate the baseline surveys to be undertaken. This scoping report does include an expected scope of work based on general potential impacts and understanding of the Project area. Once the alignments are confirmed, further considerations will be made in regards to additional studies*

ACCESS ROADS

According to Appendix A of the PPA, the design of the project site will include vehicle access road to facilitate transportation of equipment to site. The design will allow for the maintenance, and public safety access for the service life (assuming regular maintenance) that will comply with state and local surface requirements.

2.5.4 Ancillary/Support Facilities

The following ancillary facilities will be included in the Project design:

- Site entrance and security building
- Administration building, offices and amenities
- Central Control Room
- Warehouse and stores
- Security

- Lighting
- Access roads between turbines
- Other mobile plant and vehicles

2.5.5 Associated Facilities

As discussed under section 2.5.3 above, there are two options under consideration for the construction of the Project's OHTL. Under Option A, the National Electric Network of Uzbekistan (NENU) will construct two 500kV lines to Karakul (approximately 99.5km) and to Sarymay (165km). Details regarding associated facilities under Option B are not available at this point and will be included in the ESIA where applicable.

2.6 Construction of the Wind Farm

2.6.1 Construction Activities

Typical activities during the planning and construction phases for wind farms are listed below:

- Detailed Project planning and design and consideration of Project components by the EPC Contractor;
- Transportation of components to the Project site;
- Site preparation (comprising excavation, grading, levelling, and land clearing at WTG platforms) to create flat land area for installation of wind turbine towers and various project components;
- Primary Project construction work (comprising excavation and levelling etc.) for installation and laying of transmission cables, collector/switchgear, and the installation of electrical substation(s);
- Additional facilities construction work (comprising excavation and levelling etc.) for access road, internal road network, construction of any building infrastructure (if required); and
- Commissioning tests of electrical infrastructure (including wind turbine generators) and inspection of civil engineering quality records.

2.6.2 Temporary Construction Facilities

The temporary construction facilities have not been finalised but will be potentially located within the Projects' allotted land area. The location of the temporary facilities and layout will be provided at the ESIA stage.

2.6.3 Construction Workforce

According to preliminary information, the Project workforce will include approximately 700 to 1000 personnel during the peak construction phase with opportunity to hire approximately 350 to 500 personnel from the local workforce.

ACCOMMODATION

Based on the remoteness of the Project area, the workers accommodation facilities will be located within the Project footprint. Based on experience from other construction sites, this accommodation is expected to be dedicated for EPC Contractor and possibly Project Company and other specialist staff. It is likely that the sub-contractors if necessary, will need to arrange for alternative accommodation facilities for their workers.

Where available, further details of worker accommodation will be included in the ESIA.

2.7 Operation and Maintenance

Wind farms generally require limited operational activities such as the following:

- Operation and maintenance to include normal daily operation of equipment including maintenance (electromechanical and housekeeping) to optimise energy yield and life of the system;
- Remotely activated turbine shutdown during excessive wind speeds;
- Management of operations in relation to resident bird and bat species (summer and winter) and migration periods during Spring and Autumn.

Specific details regarding the operation and maintenance of the wind farm will be provided in the Project ESIA.

2.8 Project Milestone

Based on the details provided by ACWA Power and Appendix C of the PPA (Project Implementation Schedule), the following timeline is currently in place for the Project.

Table 2-8 Key Project Milestone/Timeline Dates

MILESTONE	DATE
Effective Date (ED)	24th January 2021
Closing Date (CD)	4th Quarter 2021
Financial Closing	4th Quarter 2021
Start of site mobilisation	2-4 months before Closing Date
Site preparation	2-4 months before CD
Earliest Connection Date	19 months after CD

MILESTONE	DATE
Early Generation	21 months after CD
Scheduled Group 1 (First Group) Commercial Operation Date	21-22 months after Closing Date
Scheduled Group 2 Commercial Operation Date	
Scheduled Group 3 Commercial Operation Date	
Scheduled Group 4 Commercial Operation Date	22-23 months after Closing Date
Scheduled Group 5 Commercial Operation Date	
Scheduled Group 6 Commercial Operation Date	
Scheduled Group 7 Commercial Operation Date	23-24 months after Closing Date
Scheduled Group 8 Commercial Operation Date	
Scheduled Group 9 Commercial Operation Date	
Project Commercial Operation Date (PCOD)	24 months after Closing Date

3 REGULATORY FRAMEWORK

3.1 National Regulations

3.1.1 Constitution of Uzbekistan

The constitution of Uzbekistan has the following provisions relating to environmental aspects:

- Article 50: All citizens shall protect the environment.
- Article 54: Any property shall not inflict harm to the environment.
- Article 55: Land, subsoils, flora, fauna, and other natural resources are protected by the state and considered as resources of national wealth subject to sustainable use.

3.1.2 Law on Nature Protection, 1992 as Amended in 2019

This law is the key national environmental law for the protection of the environment and the sustainable use of resources and the right for the population to a clean healthy environment. This law states legal, economic, and organisational basis for the conservation of the environment and the rational use of natural resources. Article 25 of this law states that the State Environmental Expertise (SEE) is a mandatory measure for environmental protection, preceded to decision making process. In addition, the law prohibits the implementation of any Project without approval from SEE.

3.1.3 Law on Environmental Control, 2013

The main objectives of this law include:

- Prevention, detection and suppression of violation of legislative requirements relating to environmental protection and rational use of natural resources.
- Monitoring the state of the environment, identifying situations that can lead to environmental pollution, irrational use of natural resources, pose a threat to the life and health of citizens.
- Determination of compliance with environmental requirements of any ongoing economic development activities.
- Ensuring compliance with the rights and legitimate interests of legal entities and individuals performing their duties in relation to environmental protection and sustainable use of natural resources.

Other relevant national laws and regulations to the Bash Wind Farm include:

PRESIDENTIAL DECREES SPECIFIC TO THE PROJECT

- Decree of the President of the Republic of Uzbekistan
  - Includes measures to implement the investment of the project on construction of a 500MW wind power plant in Gijduvan district in Bukhara region No.5003 (23/02/2021).

ENVIRONMENT

- The Law of the Republic of Uzbekistan "On water and water use" (1993) as amended in 2019.
- The Law of the Republic of Uzbekistan "On Ecological Expertise" (2001) as amended in 2017.
- The Law of the Republic of Uzbekistan "On Protection and Use of Vegetation" (1997) as amended in 2016.
- The Law of the Republic of Uzbekistan "On Protected Natural Reserves" (2004) as amended in 2019.
- The Law of the Republic of Uzbekistan "On Protection and Use of the Wildlife" (1997) as amended in 2016.
- The Law of the Republic of Uzbekistan "On Wastes" (2002) as amended in 2019.
- The Resolution of the Cabinet of Ministries of the Republic of Uzbekistan №541 "On further improvement of the environmental impact assessment mechanism'.
- The Resolution of Cabinet of Ministries of the republic of Uzbekistan №820 "On measures to further improve the economic mechanisms for ensuring nature" dated on 11th October, 2018.
- The Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No 14. "On approval of the regulation on the procedure for the development and agreement of projects with environmental standards".
- Law "On Environmental Expertise" No.73-II of 25.05.2000 (as amended on 22.11.2018).
- The Law of the Republic of Uzbekistan "On Atmospheric Air Protection" (1996, amended on 13.03.2019)
- Resolution of Cabinet of Ministers of Republic of Uzbekistan No.95 "On approval of general technical regulations of environmental safety" (2020).

LABOUR AND EMPLOYMENT

- Ordinance No. 30-31 of the Ministry of Labour and Social Security and the Ministry of Health of the Republic of Uzbekistan approving the list of hazardous jobs mentioned in Article 355, for which the employment of persons under the age of eighteen years is prohibited

- Joint Decree of the Ministry of Labour and Social Protection of the Population (No. 7) and the Ministry of Healthcare (No. 1) of Uzbekistan dated 30 May 2001 to approve the list of occupations with unfavourable working conditions to which it is forbidden to employ persons under 18 years of age.
- Decree No. 133 of 11 March 1997 to approve normative acts necessary for the realization of the Labour Code of the Republic of Uzbekistan
- Decree of the Cabinet of the Ministers No. 1011 of 22 December 2017 "On Perfection of the Methodology of Definition of Number of People in Need of Job Placement, including the Methodology for Observing Households with Regard to Employment Issues, also for the Development of Balance of Labour Resources, Employment and Job Placement of Population".
- Decree of the Cabinet of the Ministers No. 965 of 5 December 2017 "On the Measures of Further Perfection of the Procedure of Establishment and Reservation of Minimum Number of Job Places for the Job Placement of Persons who are in need of Social Protection and Face Difficulties in Searching Employment and Incapable of Competing in Labour Market with Equal Conditions".
- Decree No. 964 of 5 December 2017 "On the Measures for Perfection of the Activity of Self-Government Bodies Aimed at Ensuring Employment, Firstly for the Youth and Women".

THE NATIONAL/LOCAL REQUIREMENTS THAT REQUIRE THE PREPARATION AND SUBMISSION OF AN EIA/ESIA;

- The national Environmental Impact Assessment (EIA) procedure is principally required and regulated by the:
- Law "On Environmental Expertise" No.73-II of 25.05.2000 (as amended on 04.01.2011)
- Resolution of Cabinet of Ministers of Republic of Uzbekistan No.541 "On further improvement of the environmental impact assessment mechanism, 2020".

OVERHEAD TRANSMISSION LINES & SUBSTATION

- Resolution of Cabinet of Ministers of Republic of Uzbekistan No.95 "On approval of general technical regulations of environmental safety" (2020).
  - Requires the implementation of environmental safety measures for the protection of flora and fauna. This includes the prevention of death of wildlife species due to magnetic fields of power transmission lines and sanitary protection zones.
  - Requires transformer substations in power transmission lines, their grids to have equipment (barriers, fences etc.,) to prevent animals from entering the territory of the substation.
- Decree of the Cabinet of Ministers of the Republic of Uzbekistan No.1050 "On approval of Rules for Protection of Power Grid Facilities, 2018".
  - This determines the procedure for establishing protected zones for power grid facilities, as well as special conditions for using land located within the protected zones and ensure the functioning and operation of the said facilities.

- Construction of power grid facilities with 110, 220 or 500kV in protected areas of state nature reserves, protected areas of nature parks and state biosphere reserves etc shall be allowed with the permission of the Cabinet of Ministers of the Republic of Uzbekistan.
- Protected zones of power grid facilities shall be established on both sides of the power transmission line from the outermost wires and along the perimeter of substations at the following distances for voltages;
    - 110kV: 20 meters;
    - 220kV: 25 meters; and
    - 500kV: 30 meters.

- San Rules & Norms No. 0236-07 "Sanitary norms and rules to ensure safety for people living near high voltage power transmission lines, 2007".
    - This regulation sets the requirements for ensuring public safety when overhead power lines pass over populated, unpopulated or inaccessible territories.
    - It requires sanitary norms and rules to be followed in the design, construction and operation of overhead power lines.
    - The distances corresponding to the projection onto the ground of the outer phase wires in a direction perpendicular to the overhead line as follows:
        - Up to 110kV/m: 10 meters;
        - Up to 220kV/m: 15 meters;
        - Up to 330kV/m: 20 meters;
        - Up to 500kV/m: 30 meters; and
        - Up to 570kV/m: 40 meters.

LAND RIGHTS, ACQUISITION AND RESETTLEMENT

- Civil Code of the Republic of Uzbekistan "Civil code" (№ 163- I, 21.12.1995, as amended on 22.01.2020);
- Land Code (1998 as amended 2010) (№ 598-I, 30.04.1998, as amended on 28.08.2019);
- Law of the Republic of Uzbekistan on State Land Cadastre No.666-I of 28.08.1998

3.1.4 Environmental Regulator

The main regulatory body for national EIA in Uzbekistan is the State Committee of the Republic of Uzbekistan for Ecology and Environmental Protection of the Republic of Uzbekistan.

The committee performs its activities on the basis of the following legal acts:

- Presidential Decree of April 21, 2017 No. UP-5024 "On improving the system of public administration in the field of ecology and environmental protection."
- Resolution of the President of the Republic of Uzbekistan of April 21, 2017 No. PP-2915 "On measures to ensure the organization of the activities of the State Committee of the Republic of Uzbekistan on Ecology and Environmental Protection".

- Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated January 15, 2019 No. 29 "On Approving the Provision on the State Committee of the Republic of Uzbekistan on Ecology and Environmental Protection".
- Resolution of the President of the Republic of Uzbekistan dated October 3, 2018 No. PP-3956 "On measures to ensure the organization of the activities of the State Committee of the Republic of Uzbekistan on Ecology and Environmental Protection".

3.2 International Conventions/Protocol

The proposed Project must comply with the environmental requirements of the following protocols and conventions listed in the Table below of which the Uzbekistan is a signatory:

Table 3-1 International Protocols and Conventions

NAME OF INTERNATIONAL PROTOCOL/CONVENTION	SIGNED/ RATIFIED	RELEVANCE TO THE PROJECT
UN Framework Convention on Climate Change	Accession: 20 June 1993	The Project will comply contribute to Uzbekistan's GHG emission reduction targets.
Kyoto Protocol to UNFCCC	Ratified: 12th October 1999	
Paris Agreement to UNFCCC	Signed: 19th April 2017	
Montreal Protocol on Substances that Deplete the Ozone Layer (with London, Copenhagen, Montreal amendments)	Accession: 10th June 1998	The Project will support Uzbekistan's contribution towards the protection of the ozone layer by refraining from use of ozone depleting substances.
Vienna Convention on the Protection of Ozone Layer	Accession: 18 May 1993	
UN (Rio) Convention on Biological Diversity	Accession: 19th July 1995	The Project will implement mitigation and management measures to ensure the conservation and protection of terrestrial ecology during the Project lifecycle.
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	Accession: 10th July 1997	The Project staff and workers will be strictly forbidden from trading in any wild flora and fauna found in the Project site or outside the Project boundaries.
Convention on Migratory Species of Wild Animals	1 May 1998	The project will implement mitigation and management measures to ensure conservation of terrestrial and avian migratory species especially because the

Name of International Protocol/Convention	Signed/ Ratified	Relevance to the Project
		Wind Farm will be located along the Asian bird migration route and IBA site.
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal	Accession: 7th February 1996	The Project will be required to adhere to all national and international standards for hazardous waste generation and management.
United Nations Convention to Combat Desertification	Ratified: 31 August 1995	The Project will not result in accelerated desertification through sourcing of its materials and will contribute to sustainable development.
Paris Convention on Protection of the World Cultural and Natural Heritage	Succession: 13th January 1993	The Project will implement mitigation and management measures where items/sites/monuments of cultural or natural heritage are identified within or near the Project boundaries and notify the relevant authorities immediately.
Stockholm Convention on Persistent Organic Pollutants	Accession: 28th June 2019	The Project will implement control measures to eliminate any use of chemicals under Annex A and B and reduce the unintentional release of those under Annex C.

3.3 Lender Requirements

ACWA Power are pursuing an amount of Project Finance from financial institutions who either:

- Have their own internal E&S investment guidelines;
- Are members of the collective environmental and social agreements such as the Equator Principles; or

At this stage, it is known that the European Bank for Reconstruction and Development (EBRD), the Asian Development Bank and the Deutsche Investitions- und Entwicklungsgesellschaft (DEG) are interested in providing finance for the Project. The key E&S requirements for these financial institutions, as well as for any other Equator Principles Financial Institutions (EPFIs) that may also be involved are summarised below.

3.3.1 EBRD

POLICY AND PERFORMANCE REQUIREMENTS

The European Bank for Reconstruction and Development (EBRD) has an internal Environmental and Social Policy (2019) and a set of specific Performance Requirement (PRs) covering key environmental and social components for consideration, assessment and management in their investments. These reflect EBRD's commitments to promote EU environmental standards as well as the European Principles for the Environment in their investments. The PRs are outlined below:

- PR1: Assessment and Management of Environmental and Social Impacts and Issues;
- PR2: Labour and Working Conditions;
- PR3: Resource Efficiency and Pollution Prevention and Control;
- PR4: Health and Safety;
- PR5: Land Acquisition, Involuntary Resettlement and Economic Displacement;
- PR6: Biodiversity Conservation and Sustainable Management of Living Natural Resources;
- PR7: Indigenous People;
- PR8: Cultural Heritage;
- PR9: Financial Intermediaries, and
- PR10: Information Disclosure and Stakeholder Engagement

PROJECT CATEGORISATION

As per EBRD's Environmental and Social Policy (2019), 'EBRD categorises each project to determine the nature and level of environmental and social investigations, information disclosure and stakeholder engagement required'.

Appendix 2 of EBRD's E&S Policy outlines an indicative list of project types that would fall under Category A, which is defined as '*projects with potentially significant adverse future environmental and/or social impacts which require a formalized and participatory environmental and social impact assessment process*'. This includes '*Large scale wind power installations for energy production (wind farms)*' and '*Construction of high voltage overhead electrical power lines*'.

Based on the above, it is expected that the ACWA Power Bash 500MW Wind Farm falls under **Category A**.

3.3.2 ADB

ADB SAFEGUARD POLICY STATEMENT (SPS 2009)

The main objectives of the ADB's safeguards are:

- To avoid adverse impacts of projects on the environment and affected people, where possible;
- To minimise, mitigate, and/or compensate for adverse project impacts on the environment and affected people when avoidance is impossible; and
- Help borrowers/clients to strengthen their safeguard systems and develop the capacity to manage environmental and social risks.

ADB's SPS sets out the policy objectives, scope and triggers, and principles for three key safeguard areas:

- Environmental safeguards;
- Involuntary resettlement safeguards; and
- Indigenous Peoples safeguards.

PROJECT CATEGORISATION

ADB Projects categorisation is based on 3 specific safeguards: Environmental; Involuntary Resettlement; Indigenous People as provided above and based on these; the Wind Farm falls within the following categorisations:

- Environment: The Project will fall under **Category A** because it is expected to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts will potentially affect an area larger than the site or facilities subject to physical works.
- Involuntary Resettlement: Based on preliminary information obtained regarding the project site, there are several structures on site used by local herders and they also use the site for grazing. As a result, the project falls under **Category B.**
- Indigenous People: Based on early screening, the project is not expected to have impacts on Indigenous People. Therefore, the project is classified under **Category C.**

3.3.3 Equator Principles

The Equator Principles (EP) is a risk assessment framework used by financial institutions to determine, assess and manage the environmental and social risk in Project's financing. Currently, over seventy-five major financial institutions from around the world have adopted the EPs. These financial institutions operate in more than 100 countries worldwide.

The Equator Principles were updated in 2006 (EPII), 2013 (EPIII) and a further update EPIV came into effect in October 2020. The EPs currently include provisions for the following:

- Principle 1: Review and Categorisation;
- Principle 2: Environmental and Social Assessment;
- Principle 3: Applicable Environmental and Social Standards;
- Principle 4: Environmental and Social Management System and Equator Principles Action Plan;
- Principle 5: Stakeholder Engagement;
- Principle 6: Grievance Mechanism;
- Principle 7: Independent Review;
- Principle 8: Covenants;
- Principle 9: Independent Monitoring and Reporting; and
- Principle 10: Reporting and Transparency.

The Equator Principles are applicable to the proposed Project since part of the Project financing will be provided by DEG.

APPLICABLE STANDARDS

EPIV establishes the minimum E&S standards to be adopted by EP Financial Institution (EPFIs) as those from IFC Performance Standards on Environmental and Social Sustainability (Performance Standards), the World Bank Group Environmental, Health and Safety Guidelines (EHS Guidelines) and/or the relevant host country laws, regulations and permits that pertain to environmental and social issues.

IFC Performance Standards

The IFC Performance Standards are a key component of the IFC's Sustainability Framework and directed towards clients (i.e. party responsible for implementing and operating the project that is being financed), providing guidance on how to identify risks and impacts. The IFC Performance Standards are designed to help avoid, mitigate, and manage risks and impacts throughout the life of a project as a way of doing business in a sustainable way, including stakeholder engagement and disclosure obligations of the client in relation to project-level activities.

The IFC Performance Standards (2012) are listed below:

- Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts
- Performance Standard 2: Labour and Working Conditions
  - Including International Labour Organisation (ILO) Conventions

- Performance Standard 3: Resource Efficiency and Pollution Prevention
- Performance Standard 4: Community Health, Safety, and Security
- Performance Standard 5: Land Acquisition and Involuntary Resettlement
- Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
- Performance Standard 7: Indigenous Peoples
- Performance Standard 8: Cultural Heritage

WBG EHS Guidelines (2007)

The World Bank Group International Finance Corporation (IFC), Environmental, Health and Safety (EHS) General Guidelines of April 2007 superseded the World Bank Handbook issue of 1998.

In terms of specific guidelines to control environmental externalities (e.g. wastewater quality etc.), EHS guidelines have been set out by IFC and the World Bank Group to provide general guidelines for its members when involved in a project or when providing financial support to a project. These guidelines contain general and industry-specific examples of Good International Industry Practice (GIIP). In summary, it should be noted that the following IFC EHS Guidelines are relevant to this project:

- General EHS Guidelines, Environmental:
  - Air Emissions and Ambient Air Quality;
  - Energy Conservation;
  - Wastewater and Ambient Water Quality;
  - Water Conservation;
  - Hazardous Materials Management;
  - Waste Management;
  - Noise; and,
  - Contaminated Land.
- General EHS Guidelines, Occupational Health & Safety:
  - General Facility Design and Operation;
  - Communication and Training;
  - Physical Hazards;
  - Chemical Hazards;
  - Radiological Hazards;
  - Personal Protective Equipment (PPE);
  - Special Hazard Environment; and,
  - Monitoring.
- Community Health & Safety:

- Water Quality and Availability;
- Structural Safety of Project Infrastructure;
- Life and Fire Safety (L&FS);
- Traffic Safety;
- Transport of Hazardous Materials;
- Disease prevention; and,
- Emergency Preparedness and Response

- Industry Sector Guidelines, Power:
  - Electric Power Transmission and Distribution (2007)
  - Wind Energy (2015)
- Guidelines for Water and Sanitation (2007)

PROJECT CATEGORISATION

Under the IFC Performance Standards, the proposed project falls under **Category A**. This is described as below:

'Business activities with potential significant adverse environmental or social risks and/or impacts that are diverse, irreversible or unprecedented.'

> ***Note:*** *The Project categorization is subject to confirmation by EBRD, ADB and DEG. However, it is noted that this scoping report has been prepared on the basis of undertaking a full ESIA commensurate with a Category A requirement.*

3.4 Applicable Environmental Standards

Applicable standards required for Project compliance are included to the respective environmental parameter sections of this report. This includes national standards and those expected for the lenders.

3.4.1 Lenders Standards

An overview of the lender standards is presented below, whilst the applicable standards are presented in the respective environmental parameter sections of this report.

EBRD

In accordance with the EBRD Environmental and Social Policy (2019), *'The EBRD, as a signatory to the European Principles for the Environment, is committed to promoting the adoption of EU environmental principles, practices and substantive standards6 by EBRD-financed projects, where these can be applied at the project level, regardless of their geographical location.*

When host country regulations differ from EU substantive environmental standards, projects will be expected to meet whichever is more stringent.'

EPFIs

In accordance with EPIV, EPFI's require compliance with both national regulations/standards and the applicable World Bank Group EHS Guidelines relevant to the Project. These include:

- General EHS Guidelines (2007);
- Wind Energy (2015)
- EHS Guidelines for 'Electric Power Transmission and Distribution' (2007).

3.5 EIA/ESIA Requirements

3.5.1 National Requirements

PROJECT CATEGORISATION

Project categorisation under the national requirements is determined in accordance with the Resolution of the Cabinet of Ministries of the Republic of Uzbekistan No 541 "On measures for the further improvement of environmental impact assessment procedures".

The indicative list of Category 1 projects with 'high-risk' of environmental impacts, includes:

- Wind farms with a capacity of 300MW or more.
- Power lines of republican and interstate significance.

According to the Resolution, the proposed project falls under **Category 1** which is equal to **Category A** in accordance with international categorization.

EIA PROCESS

In accordance with the resolution of the Cabinet of Ministries of the Republic of Uzbekistan No. 541 "On further improvement of the environmental impact assessment mechanism, 2020", the national EIA process consists of three stages:

- Stage I: "A Preliminary Statement of the Environmental Impact ("PSEI") - this is performed at the planning stage of the proposed Project prior to the allocation of funds for development.
- Stage II: The "Statement of the Environmental Impact" ("SEI") - this is prepared following Stage 1 and where the outcome of Stage 1 identified the need for additional studies or analyses. The SEI shall be submitted to State committee on

ecology and environmental protection prior to the Feasibility Study or financing of the Project and, therefore, prior to the beginning of construction.

- Stage III: The "Statement on Environmental Consequences" ("SEC") is the final stage of the SEE process and is performed prior to approval of the Project. The report describes in detail the changes in the project made as a result of the outcomes of Stage 1 and Stage 2, the comments received during public consultations, the environmental standards applicable to the project (as defined by the modelling and assessment process), the environmental monitoring requirements and the main conclusions.

State ecological expertise approval: The State Committee on Ecology and Environmental Protection provides their opinion at Stage I and II is a typically a mandatory document for project financing by Uzbek banks, other Lenders and for Project commissioning at Stage III. The conclusion of the State Committee is typically valid for three years from the date of its issuance. If the project is not implemented within three years from the date of issue of the conclusion, the EIA report needs to be revised and re-submitted for approval.

EBRD

In accordance with PR 1, there is a requirement for EBRD financed projects to undertake an appropriate Environmental and Social Assessment in order to:

- Identify and evaluate environmental and social impacts and issues of the Project.
- Adopt a mitigation hierarchy approach to address adverse environmental or social impacts and issues to workers, affected communities, and the environment from Project activities.
- Promote improved environmental and social performance of clients through the effective use of management systems.
- Develop an ESMS tailored to the nature of the Project, for assessing and managing environmental and social issues and impacts in a manner consistent with the relevant PRs.

According to PR 1 "*The ESIA will include an examination of technically and financially feasible alternatives to the sources of such impacts, including the non-project alternative, and document the rationale in selecting the particular course of action proposed. It will also identify potential improvement opportunities and recommend measures needed to avoid, or where avoidance is not possible, minimise and mitigate adverse impacts.*"

EU EIA LEGISLATION

EBRD is committed towards the promotion of the European Union's (EU) environmental requirements and is a signatory of the European Principles for the Environment. The Principles endorse and reinforce the European consensus on the values attached to the fundamental right for both present and future generations throughout the world to live in a healthy environment.

EIA Directive 85/337/EEC was introduced in 1985 and applied to a wide range of defined public and private projects. Since then, the initial Directive of 1985 and its three amendments have been codified by Directive 2011/92/EU of 13 December 2011. Directive 2011/92/EU was amended in 2014 by Directive 2014/52/EU.

Article 3 of the Directive states:

The environmental impact assessment shall identify, describe and assess in appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors:

a) *Population and human health;*

b) *Biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;*

c) *Land, soil, water, air and climate;*

d) *Material assets, cultural heritage and the landscape; and*

e) *The interaction between the factors referred to in points (a) to (d).*

The ACWA Power Bash Wind Farm falls under Annex II of the EIA Directive as '*Installation for the harnessing of wind power for energy production (wind farms)*' while the OHTL is under Annex I '*Construction of overhead electrical power lines with a voltage of 220kV or more and a length of more than 15km*'. The Project will therefore undergo through a full EIA assessment.

ADB

Since the proposed ACWA Power Wind Farm falls under Category A (under the environmental safeguard), an environmental impact assessment (EIA) including an environmental management plan (EMP) is required.

EPFIs

According to EP2, '*The EPFI will require the client to conduct an appropriate Assessment process to address, to the EPFI's satisfaction, the relevant environmental and social risks and scale of impacts of the proposed Project*'.

4 APPROACH TO ESIA

4.1 Scope of Work and Key Deliverables

The key deliverables of the ESIA process for the lenders are:

- Environmental and Social Scoping Report; and
- ESIA Report.

The key deliverables of the EIA process as required by the national legislation are:

- Preliminary Statement of the Environmental Impact (PSEI);
- Statement of the Environmental Impact (SEI); and
- Statement on Environmental Consequences (SEC)

The purpose of this Environmental & Social Scoping Report is to identify the key environmental and social issues and sensitive receptor sites at an early stage to ensure that the baseline surveys and assessment techniques for the subsequent ESIA address these issues. In addition, it identifies the structure and content of the ESIA.

The general content of the Environmental Scoping report includes:

- The key features of the proposed project;
- The environmental and social assessment, documentation and approval requirements for the proposed project;
- A brief description of the existing environmental and social conditions of the project site and an evaluation of existing environmental information on the area;
- A gap analysis to determine the additional information that needs to be gathered;
- Potential environmental and social issues and constraints (and opportunities) associated with the proposed project facilities based on the existing information; and
- An outline of the terms of reference, structure and content of the ESIA Report.

4.2 ESIA Methodology

4.2.1 Scope of Assessment

ASSESSMENT OF THE PROJECT, FACILITIES AND OPERATIONAL ACTIVITIES

The primary study area comprises the Project footprint, which includes, the proposed WTGs, associated roads (internal), substations, laydown areas, equipment and construction/operational activities inside this area. This will also include the alignment of the OHTLs and the substation.

The study area is determined based on the Project's and Project's facilities area of influence. For this Project, the study area will be at least a 2 km buffer around the wind turbine areas and substation and 1km on each side of the OHTLs. However, the exact area of effect may vary for certain impacts. This is further described in the subsequent sections in Chapter 5.

ASSESSMENT OF ASSOCIATED FACILITIES

The associated facilities for assessment will include the OHTLs to be constructed by National Electric Networks of Uzbekistan (NENU). The alignment of these OHTLs is still to be confirmed.

CONSTRUCTION ACTIVITIES

Construction of the Project is expected to result in certain environmental and social impacts, which will be assessed in the ESIA.

Temporary Construction Facilities

Temporary construction facilities to include in the ESIA will be:

- Project offices and temporary facilities;
- Contractor compounds and laydown areas;
- Any temporary construction access road(s); and
- Expected construction transportation routes.

Temporary Construction Worker Accommodation

Where details concerning worker accommodation facilities are available, the ESIA will intend to assess related impacts.

It is however expected that the locations of such worker accommodation areas will not be fully confirmed at the ESIA stage. Where information is not available, the ESIA will establish management provisions for these areas to be in accordance with the IFC & EBRD Worker Accommodation: Processes and Standards.

4.2.2 Consideration of Project Alternatives

As a minimum the ESIA will include assessment of:

- No Project option;
- Site selection and layout of WTGs; and
- Alternative technology

4.2.3 Baseline Studies

Forming an integral part of the ESIA, the baseline studies provide a benchmark of existing conditions and allow a platform for which Project potential impacts can be assessed.

The baseline studies will correspond to those outlined in this ESIA Scoping Report and in accordance with any comments received from the lenders (or regulator) following the scoping report review. The intention is for the studies to capture a representative baseline within the Project's potential area of influence (which will differ for between parameters).

The baseline studies will be described in each relevant chapter of the ESIA, with analysis provided, and necessary results/reports included to the main report or applicable appendices.

4.2.4 Stakeholder Engagement

REQUIREMENTS

National Requirements

According to the Resolution of Cabinet of Ministers or Republic of Uzbekistan No.541 "On further improvement of the environmental impact assessment mechanism", mandatory public consultations is required regarding the project's environmental impact assessment and planned activities relating to Category I and Category II projects.

Lender Requirements

Engagement with stakeholders is an essential part of the environmental and social assessment process and there are specific requirements for this stated by both EBRD and ADB. The main objective is to establish dialogue with those parties who may be involved in aspects of the Project or may have an interest in the outcome of the ESIA process.

STAKEHOLDER MAPPING & ESIA ENGAGEMENT PLANNING

This aim of the stakeholder mapping is to identify relevant stakeholders and to assess each stakeholder to understand their relevance so that consultation can be targeted and prioritised.

Due to the current COVID–19 pandemic, the typical face-to-face process for stakeholder engagement may be varied to contact stakeholders by video/phone calls as well as sending/receiving official letters. Due to uncertainty, the exact methods cannot be confirmed at this stage and several options are available as outlined in the table below.

Table 4-1 Stakeholder Mapping & ESIA Engagement Planning

Stakeholder Group	Stakeholder Bodies	Relevance to Project: Impact-based (A), Interest-based (I), or Decision Maker (D)	Agenda for Consultations and Methods
Directly Affected Communities	Local communities	A: The closest communities to the site with	Issues regarding the environmental and social impacts from the planned Wind Farm. **Public Meetings/ Phone Calls**
	Ayakagitma village	I: Located approximately 7km from the project site.	
	Oil station workers	A: Impacts from the construction activities at the project site.	
	Miners (workers working on the two mines near the project site)	A: Impacts from the construction activities at the project site.	Issues regarding the environmental and social impacts from the planned Wind Farm. **Public Meetings/ Phone Calls**
Land Users	Herders using the site	A: Adverse effect from construction activity and land use restriction.	Issues regarding the land use and ownership **Formal Meetings & Bi-Lateral/ Phone Calls**
	Railway Authority	A: There is a railway line and a small railway station found on site.	
Vulnerable Groups	At the moment there are no known vulnerable groups. The need for further inclusion in the ESIA process and the future SEP (to be developed) will be determined during the social and economic baseline studies. **Focus Groups (if identified)**		
Local governmental authorities	Bukhara region Khokimiyat	D: Responsible for development of the project	These organisations will have certain involvement with the Project development. No specific consultation planned for E&S elements **Formal Meetings / Letter Correspondence / Phone Calls**
	Gijduvon district khokimiyat	D: Responsible for development of the project	
	Regional Sanitary Epidemiological Peace and Public Health Service	I: Statutory Consultees	
State Organisations	"Uztransgas" JSC	A: There is a gas pipeline at the south of the site.	**Letter Correspondence / Phone Calls**
	"National Power Networks of the Republic of Uzbekistan" JSC	D: Responsible for the operations and maintenance of Purchase Electric Facilities (PEF) following transfer from ACWA Power and development of OHTLs upstream from the PEF.	**Ongoing Consultations with ACWA Power**

Stakeholder Group	Stakeholder Bodies	Relevance to project: impact-based (A), Interest-based (I), or decision maker (D)	Agenda for consultations and Methods
Government Bodies	Ministry of Energy of the Republic of Uzbekistan	D: Responsible for development of the project	Issues regarding overall process of the Wind Farm construction (if necessary, at the scoping stage) **Formal Meetings / Letter Correspondence / Phone Calls** **(consultation on-going between ACWA Power and MoE)**
	Ministry of Transportation	I: Statutory consultees	Issues regarding the delivery of equipment and machinery (if necessary) **Formal Meetings / Letter Correspondence / Phone Calls**
	Ministry of Employment and Labour Relations of the Republic of Uzbekistan	I: Statutory consultees	Issues regarding the labour relations (if necessary, at the scoping stage) **Formal Meetings / Letter Correspondence / Phone Calls**
	Ministry of Culture of the Republic of Uzbekistan	I: Statutory consultees	Issues regarding cultural and archaeological sites in the project area. **Formal Meetings / Letter Correspondence / Phone Calls**
	Ministry of Health	I: Statutory consultees Protection of employee and public safety; establishment of the sanitary zone along the OHTL and substation	Issues regarding health during the scoping process (if necessary, at the scoping stage) **Formal Meetings / Letter Correspondence / Phone Calls**
	Ministry of Emergency Situations of the Republic of Uzbekistan	I: Statutory consultees (Planning preparedness for emergencies)	Issues regarding the safety (if necessary, at the scoping stage) **Formal Meetings / Letter Correspondence / Phone Calls**
State Committees	State committee of the Republic of Uzbekistan on Ecology and Environmental protection	D: Statutory consultees. Control with National environmental policy and protection standards. Responsible for approval national EIA.	All issues regarding the preparation and submission of national EIA **Formal Meetings / Letter Correspondence & Study Submissions / Phone Calls**
	Kara-Kir State Wildlife Sanctuary under the Committee of the Republic of	D: Statutory consultees.	Interested in the development of the proposed substation (if confirmed)

Stakeholder Group	Stakeholder Bodies	Relevance to project: impact-based (A), Interest-based (I), or decision maker (D)	Agenda for consultations and Methods
	Uzbekistan on Ecology and Environmental Protection.		**Formal Meetings / Letter Correspondence & Study Submissions / Phone Calls**
	State Committee for Land Resources, Surveys, Cartography and the State Cadaster (or Goskomgeodezkadastr)	I: Statutory consultees.	Requesting information and discussion of the issues regarding the land use **Formal Meetings / Letter Correspondence / Phone Calls**
	Institute of Archaeology	I: Statutory Consultees	Issues regarding cultural and archaeological sites in the project area. **Formal Meetings / Letter Correspondence / Phone Calls**
Research Institutions	Public research institutions working in the region especially in relation to the environmental impacts relating to the impact of WTG on birds and bats	I: Will be interested in the environmental impacts of the Project.	**No specific consultation**, but may have an interest in publicly disclosed documents
Media	List Regional and local mass media	I: Will potentially be involved in disseminating information about the Project.	Issues regarding the media cover of planned Project (if necessary, at the scoping stage) **Public Meeting / Phone Calls /Letter Correspondence**
Political parties of environmental focus	Ecological party of Uzbekistan	I: Will be interested in the execution of the Project and its environmental impacts and mitigation measures.	No specific consultation, but may have an interest in publicly disclosed documents **Formal Meetings / Letter Correspondence**
NGOs	Uzbekistan Society for the protection of birds	I: interest in the development of the project near an IBA site	Issues regarding existing studies on birds in the region and project impacts. **Letter Correspondence/Phone Calls**
	Emirates Center for Conservation of Bustard Beauty		

Stakeholder Group	Stakeholder Bodies	Relevance to project: impact-based (A), Interest-based (I), or decision maker (D)	Agenda for consultations and Methods
	Other NGOs at a global level	I: Will be interested in the execution of the Project and its environmental impacts and mitigation measures.	**No specific consultation**, but may have an interest in publicly disclosed documents
Financial institutions	EBRD/ADB/DEG (and possibly others**)**	D: Providing finance for the Project	**On-going dialogue** throughout the process to ensure EBRD Performance Requirements and ADB Safeguards are met

4.2.5 Stakeholder Engagement – Grievance Mechanism

From the national legislation level there is a centralized complaints mechanism (online portal) for all public utility providers that was opened in 2017 by Presidential Decree No728 of 15.09.2017. As this online portal is intended for wide range of issues brought to government attention, it is considered more appropriate to develop a single system/approach for receiving feedback and complains from stakeholders.

It is proposed to provide a grievance redress mechanism as part of the stakeholder engagement process specifically for the Bash 500MW Wind Farm. This will be included in the agenda of meetings. Proposed approach:

- Applications/complaints from local individuals or groups will be accepted both in written and verbal forms after conducting the meeting with affected community.
- 5 Capitals as well as local consultant Juru Energy will review and, within their authority be responsible for resolving submitted grievances (in co-ordination with ACWA Power).

Where screened as applicable, the grievance may be passed onto the representatives of Public Administration, People's Representatives. The details below will be provided to the stakeholders.

Table 4-2 Stakeholder Engagement - Grievance Mechanism Contact Details

COMPANY	CONTACT DETAILS
Juru Energy Umida Rozumbetova – Acting Head of E&S Practice Group	Email: u.rozumbetova@juruenergy.com Mob: +998903487523 Work: +998712020440
Juru Energy Gulchekhra Nematullayeva – Social Specialist	Email: g.nematullaeva@juruenergy.com Mob: +998974459505 Work: +998712020440
Representative of local khokimiyat (administration)	Detail will be provided to participants

4.2.6 Impact Assessment & Significance Criteria

In order to obtain a credible assessment of environmental and social impacts, the assignment of "effect significance" to each identified impact needs to be a robust, consistent and transparent process. The methodology to assess 'effect significance' is outlined below and follows an International Best Practice based on the assumption that the significance of an impact on resources or receptors is considered to result from an interaction between three factors:

- The nature and magnitude of the impact (i.e., a change in the environment, social and/or health baseline conditions);
- The number of resources or receptors affected (i.e., humans and the environment); and
- The environmental value or sensitivity of those resources or receptors to the change.

A three-step approach has been used to determine the significance of environmental effects, as follows:

- Step 1 – Evaluation of value/sensitivity of resource or receptor;
- Step 2 – Assessing the magnitude of the impact on the resource or receptor; a
- Step 3 – Determining the significance of effects.

IDENTIFICATION AND EVALUATION OF SENSITIVE RECEPTORS

Sensitive receptors are defined as:

- Elements of the ***environment*** that are of value to the functioning of natural systems (i.e., areas or elements of ecological, landscape or heritage value, species, habitats and ecosystems, soil, air and water bodies or land-use patterns);
- ***Human*** receptors, such as stakeholders (i.e., users of dwellings, places of recreation, places of employment, community facilities or household relocation) and human systems (e.g., employment market, population disease susceptibility and disease communicability, exposure to toxicity of chemicals).

Table 4-3 Environmental Value of Receptor or Resources

VALUE (SENSITIVITY)	DESCRIPTION OF VALUE
Very High	High importance and rarity on an international scale and limited or no potential for substitution. The receptor has already reached its carrying capacity, so any further impact is likely to lead to an excessive damage to the system that it supports. Locations or communities that are highly vulnerable to the environmental impact under consideration or critical for society (e.g. indigenous peoples, hospitals, schools).
High	High importance and rarity on a national scale, and limited potential for substitution. The receptor is close to reaching its carrying capacity, so a further impact may lead to a significant damage to the system that it supports. Locations or communities that are particularly vulnerable to the environmental impact under consideration (e.g. residential areas, vulnerable/marginalized groups).
Medium	High or medium importance and rarity on a regional scale, limited potential for substitution. The receptor is already significantly impacted, but it is not close to reaching its carrying capacity. Further impacts will get increase the stress of the underlying system, but evidence does not suggest that it is about to reach a critical point. Locations or groups that are relatively vulnerable to the environmental impact under consideration (e.g. commercial areas).
Low (or Lower)	Low or medium importance and rarity on a local scale. The receptor is not significantly impacted and shows a large spare carrying capacity. Impacts are not likely to generate any noticeable stress in the underlying system. Locations or groups that show a low vulnerability to the environmental impact under consideration (e.g. industrial areas).
Very Low	Very low importance and rarity on a local scale. The receptor is not impacted and shows a very large spare carrying capacity. Impacts are very unlikely to generate any noticeable stress in the underlying system. Locations or groups that show a very low vulnerability to the environmental impact under consideration (e.g. industrial areas).

IDENTIFICATION AND EVALUATION OF POTENTIAL IMPACTS

During the evaluation undertaken, the following types of impacts will be considered:

- Direct Impacts - Potential impacts that may result from the construction, commissioning, and operations of the Project acting directly on an environmental or social receptor;
- Indirect Impacts – Potential impacts which are not a direct result of a Project activity, that may be realised later in time or at distances further removed from the project footprint, but are normally a result of a complex pathway;
- Cumulative Impacts – Changes to the environment that are caused by an action in combination with other past present and future actions.
- Beneficial Impacts – Those impacts that have a positive, desirable or favourable effect on the sensitive resources or receptors (e.g. landscape providing artificial habitat for a variety of species, jobs opportunities during the construction and/or occupation phases of a project);

- Adverse Impacts – Those impacts that are detrimental and have a negative influence on the environment, social structures, resources or other receptors;
- Secondary Impacts - Potential impacts that may result from the implementation of protection measures applied to mitigate potential direct impacts;
- Event Related Impacts - Potential unplanned or accidental impacts stemming from an unintentional event such as fire, explosion, oil spill, etc.; and

DEFINING IMPACT MAGNITUDE

The magnitude of the impact will be defined wherever possible in quantitative terms. The magnitude of an impact has a number of different components, for example:

- The extent of physical change;
- The level of change in an environmental condition;
- The permanence of impact and the reversibility of the impacted condition;
- Its spatial footprint;
- Its duration, its frequency; and
- Its likelihood of occurrence where the impact is not certain to occur.

Where necessary, the determination of impact magnitude may be assisted through the use of computer modelling (as outlined in the Terms of Reference sections herein). The criteria used for identifying the magnitude of impacts is provided within the table below.

Table 4-4 Criteria for magnitude of Impacts

MAGNITUDE	DESCRIPTION OF MAGNITUDE
Major	Adverse: Loss of resource and/or quality and integrity; severe damage to key characteristics, features or elements. A major impact is usually large scale, permanent and irreversible. Beneficial: Large scale or major improvement of resource quality; extensive restoration or enhancement; major improvement of attribute quality.
Moderate	Adverse: Significant impact on the resource, but not adversely affecting the integrity; Partial loss of/damage to key characteristics, features or elements. Moderate impacts usually extend above the site boundary, and are usually permanent, irreversible or cumulative. Beneficial: Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality.
Minor	Adverse: Some measurable change in attributes quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements. Minor impacts usually are only noticeable within the site and are temporary and reversible. Beneficial: Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring.
Negligible	Adverse: Very minor loss or detrimental alteration to one or more characteristics, features or elements. Beneficial: Very minor benefit to or positive addition of one or more characteristics, features or elements.
No change	No loss or alteration of characteristics, features or elements; no observable impact in either direction.

4.2.7 Determining Significance of Effects

The significance of effects is a combination of the environmental value (or sensitivity) of a receptor or resource and the magnitude of the project impact value (change). In other words, it is this product of the impact acting on the receptor that produces an environmental effect. The table below provides criterion used for determining the significance of environmental effects through consideration of the potential magnitude of impact and sensitivity of the associated receptor. Definitions of each significance categories are provided.

Table 4-5 Criteria for Determining Significance of Effects

		MAGNITUDE OF IMPACT (DEGREE OF CHANGE)				
		No change	**Negligible**	**Minor**	**Moderate**	**Major**
SENSITIVITY OF RECEPTOR	**Very High**	Neutral	Minor	Moderate to Major	Major	Major
	High	Neutral	Minor	Minor to moderate	Moderate to Major	Major
	Medium	Neutral	Negligible to minor	Minor	Moderate	Moderate to Major
	Low	Neutral	Negligible to minor	Negligible to minor	Minor	Minor to moderate
	Very Low	Neutral	Negligible	Negligible to minor	Minor	Minor

Table 4-6 Definition of Significance of Effects

SIGNIFICANCE CATEGORY	CRITERIA
Very Large	Only adverse effects are normally assigned this level of significance. They represent key factors in the decision-making process. These effects are generally, but not exclusively, associated with sites or features of international, national or regional importance that are likely to suffer a most damaging impact and loss of resource integrity. However, a major change in a site or feature of local importance may also enter this category.
Large	Important considerations at a local scale but, if adverse, are potential concerns to the project and may become key factors in the decision-making process.
Moderate	These effects, if adverse, while important at a local scale, are not likely to be key decision-making issues. Nevertheless, the cumulative effect of such issues may lead to an increase in the overall effects on a particular area or on a particular resource.
Slight	Local issue unlikely to be of importance in the decision-making process. Effects do not exceed statutory limits. Nevertheless, they are of relevance in enhancing

Significance Category	Criteria
	the subsequent design of the project and consideration of mitigation or compensation measures.
Neutral	No effect or effect that is beneath the level of perception, within normal bounds of variation or within the margin of forecasting error. No mitigation is required.

4.2.8 Mitigation & Management Measures

It is noted that the Project will incorporate certain mitigation as a function of its design (e.g. air emissions control, wastewater treatment plants). Where applicable, these measures will be included to the Project description.

In addition to the mitigation incorporated in the Project design, the ESIA will consider the assessed impacts to develop further measures (where necessary) for applicable construction and the operational phase impacts.

4.2.9 Residual Impacts

The residual impacts section will consider the overall significance of impacts following the implementation of the mitigation & management measures not already included to the design. The significance of such impacts will be re-evaluated based upon the same criteria used to determine the impact significance stated above.

4.3 Framework for Environmental and Social Management

The ESIA will include a standalone framework to guide the Project parties in establishing structures for the management of Environmental and Social risks, impacts, opportunities and compliance associated with both the construction and operational phases of the Project.

The Framework will outline systematic structures and management programmes that will ultimately be prepared to comprise the respective construction and operational phase Environmental and Social Management Systems (ESMS).

This framework will ensure alignment with applicable elements of the established ACWA Power corporate level Health, Safety Security and Environment (HSSE) Management System Framework, which is intended to ensure consistent and structured HSSE project management between ACWA Power projects.

It is intended that the EPC Contractor and O&M Company will prepare their respective CESMP and OESMPs as part of their wider ESMS'.

4.4 ESIA Reporting Structure

In order to align the ESIA with the requirements for environmental and social assessment established by the various lenders and expectations of the Uzbekistan environmental regulator, the ESIA report is proposed to be presented in the following format developed by 5 Capitals:

- **Volume 1: Non-Technical Summary**
- **Volume 2: ESIA - Main Text, Tables and Figures**
- **Volume 3: Framework for Environmental & Social Management**
- **Volume 4: Appendices**

Volume 1 will include a Non-Technical Summary (NTS) of the ESIA, including the main outcomes, and conclusions.

Volume 2 will comprise the main text of the ESIA and full impact assessment, with mitigation, management and monitoring measures identified.

Volume 3 will provide the Framework for Environmental and Social Management as outlined above.

Volume 4 will comprise all technical appendices relevant to the studies and ESIA.

5 ESIA TERM OF REFERENCE

5.1 Terrestrial Ecology (and Avifauna)

NATIONAL REGULATIONS

- The Law of the Republic of Uzbekistan "On Nature Protection" (1992)
- The Law of the Republic of Uzbekistan "On Protection and Use of Vegetation" (1997),
- The Law of the Republic of Uzbekistan "On Protected Natural Reserves" (2004)
- The Law of the Republic of Uzbekistan "On Protection and Use of the Wildlife" (1997)
- Decree of the Cabinet of Ministers "Regulation on the procedure for using plant world objects and passing licensing procedures in the field of using plant world objects" No. 290 of 10.10.2014
    - Sets out the requirements to obtain permission to cut wood and shrub plantations that are in the zone of the construction site.

LENDER REQUIREMENTS

EBRD

EBRD PR6 on Biodiversity Conservation and Sustainable Management of Living Natural Resources establishes general requirements for the conservation of biodiversity and sustainable management of living natural resources covering aspects such as the assessment of issues and impacts on biodiversity.

Where applicable, the Project will intend to follow the targets set out by the EU Biodiversity Strategy including the Habitats Directive 92/43/EEC, the Birds Directive 2009/147/EC and the EU Regulation 1143/2014 on Invasive Alien Species. It is noted however that the targets are unlikely to be triggered by the Project due to the nature and scale of the Project and the existing ecological conditions within the Project site (primarily modified habitat due to farming).

ADB

An element of the ADB Safeguard Requirement 1: Environment includes, 'Biodiversity Conservation and Sustainable Natural Resource Management'.

It is stated that, *'The borrower/client will assess the significance of project impacts and risks on biodiversity and natural resources as an integral part of the environmental assessment process... The assessment will focus on the major threats to biodiversity, which include destruction of habitat'*… Further, *'The borrower/client will need to identify measures to avoid, minimize, or mitigate potentially adverse impacts and risks*…

Concerning the proposed Project site, as the land has been used for agriculture, *'the borrower/client will exercise care to minimize any further conversion or degradation of such habitat, and will, depending on the nature and scale of the project, identify opportunities to enhance habitat and protect and conserve biodiversity as part of project operations.'*

EPFI's

The assessment of impacts upon terrestrial ecology is required with due consideration to IFC Performance Standard 6 on Biodiversity Conservation and Sustainable Natural Resource Management. PS6 establishes requirements for protecting and conserving biodiversity, maintaining ecosystem services, and sustainably managing living natural resources.

5.1.1 Initial Observations and Baseline Conditions

The Project site is located in a remote area of Uzbekistan that has few anthropogenic influences. The site has been observed to comprise primarily 'Natural Habitat', with some areas of 'Modified Habitat' due to the presence of infrastructure corridors (i.e. railway line, OHTL and gas pipeline). There are minimal agricultural practices, however, grazing does take place in the spring and summer in areas of the site.

Based on the initial OHTL options advised by ACWA Power, these also appear to be in a similar habitat classification, with some areas of arable agriculture.

Lake Ayakaghytma - IBA

Based on initial review, the nearest and most significant ecological receptor to the Project site is Lake Ayakaghytma, which is located as close as 500m from the western boundary of the Project site.

Ayakagytma drainage lake covers approximately 11,000 hectares and is located at the bottom of the Ayakagytma depression to the south east of the Kuljuktau ridge. The status of the lake as an Important Bird Area (IBA) was confirmed by the BirdLife Secretariat in September 2011 as "UZ051". Since the lake does not freeze and provides a rich feeding ground for birds, it is important for passage and wintering waterbirds.

According to Ten et al., 2012, the cliffs fringing the Ayakaghytma depression provide breeding spaces for the birds of prey particularly the Egyptian Vulture (*Neophron percnopterus*), Saker Falcon (*Falco Cherrug*), Common Kestrel (Falco tinnunculus) and Eagle Owl (Bubo bubo). Studies conducted between 2000-2011 recorded 198 bird species of which 25 are classified as rare, 11 on the IUCN Red List and 23 in the Red Data Book of Uzbekistan.

According to Bird Life International (2020), the site falls within native non-breeding and native breeding areas for the White-headed Duck and the Egyptian Vultures both of which are

considered Endangered under the IUCN Red List. The White-headed Duck is also protected under the Law in Uzbekistan on protection and usage of animals 1997.

Other IBAs are located over 70km from the Project site.

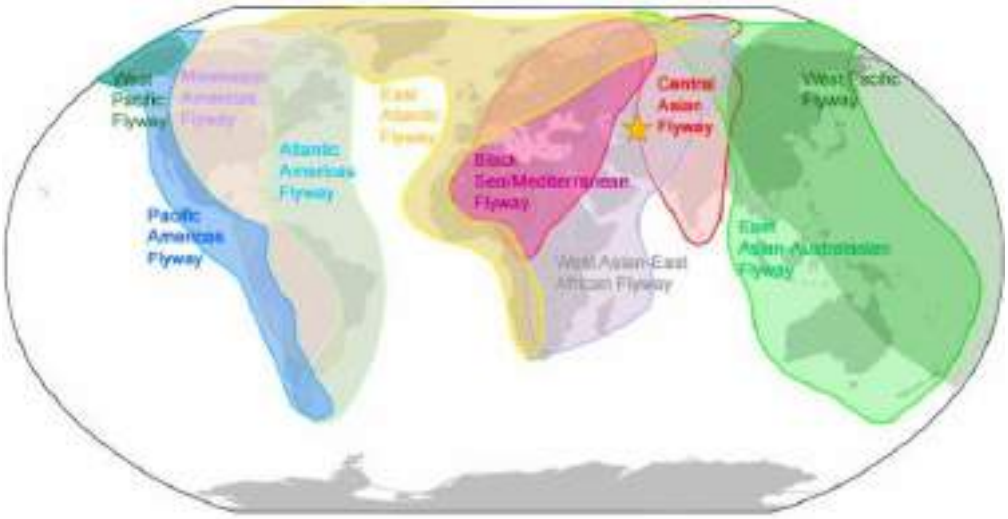
It is understood that the cliffs near the Lake Ayakagitma is one of the most important key habitats of the Southern Even- fingered Gecko (IUCN red list-CR).

Bird Surveys and Collison Risk

Note: *A summary has been provided below for the purposes of the ESIA scoping. Full analysis will be presented in the ESIA.*

The Project site is located within the convergence of two major migratory flyways; the Central Asian Flyway and the West Asian/East African Flyway.

Figure 5-1 Project location in Relation to Global Migratory Bird Flyways

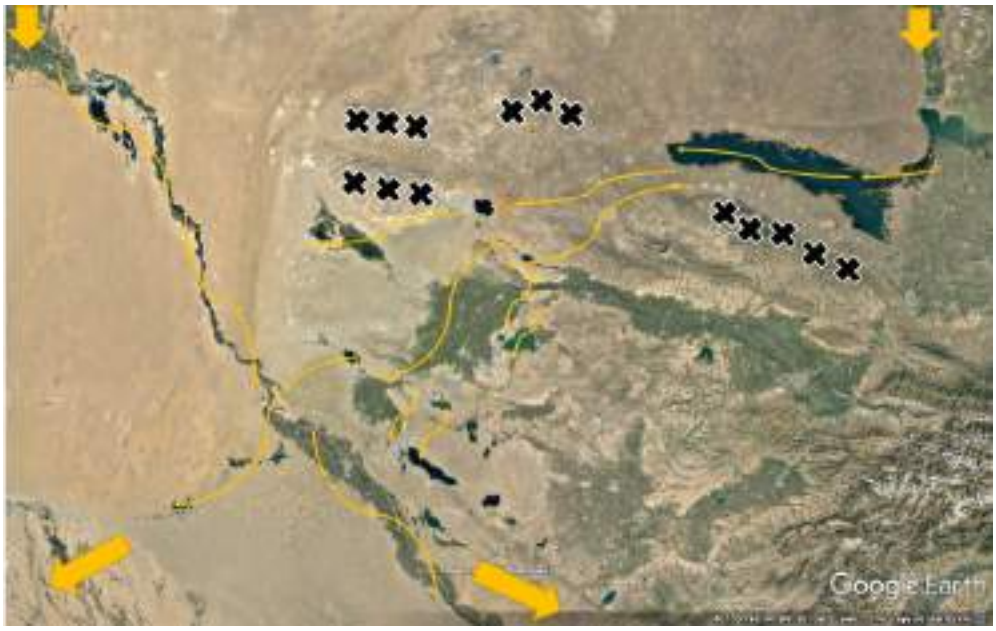


An assessment of the landforms surrounding the Project enables a prediction of the general flight path of migratory flocks, which typically avoid expanses of flat desert and mountain features, follows coastlines or river deltas to wetland staging areas and stopover sites.

The following figures showcase the likely pathways that migrating birds may follow when heading south towards wintering grounds during early autumn.

Figure 5-2 Predicted flight path analysis for migratory birds (1)

Figure 5-3 Predicted flight path analysis for migratory birds (2)



Based on the location of Aydarkul Lake, and the mountain landforms to the north and west of the project site, it is likely that migratory birds would cross the site from the northeast heading towards Ayakagytma Lake or further south.

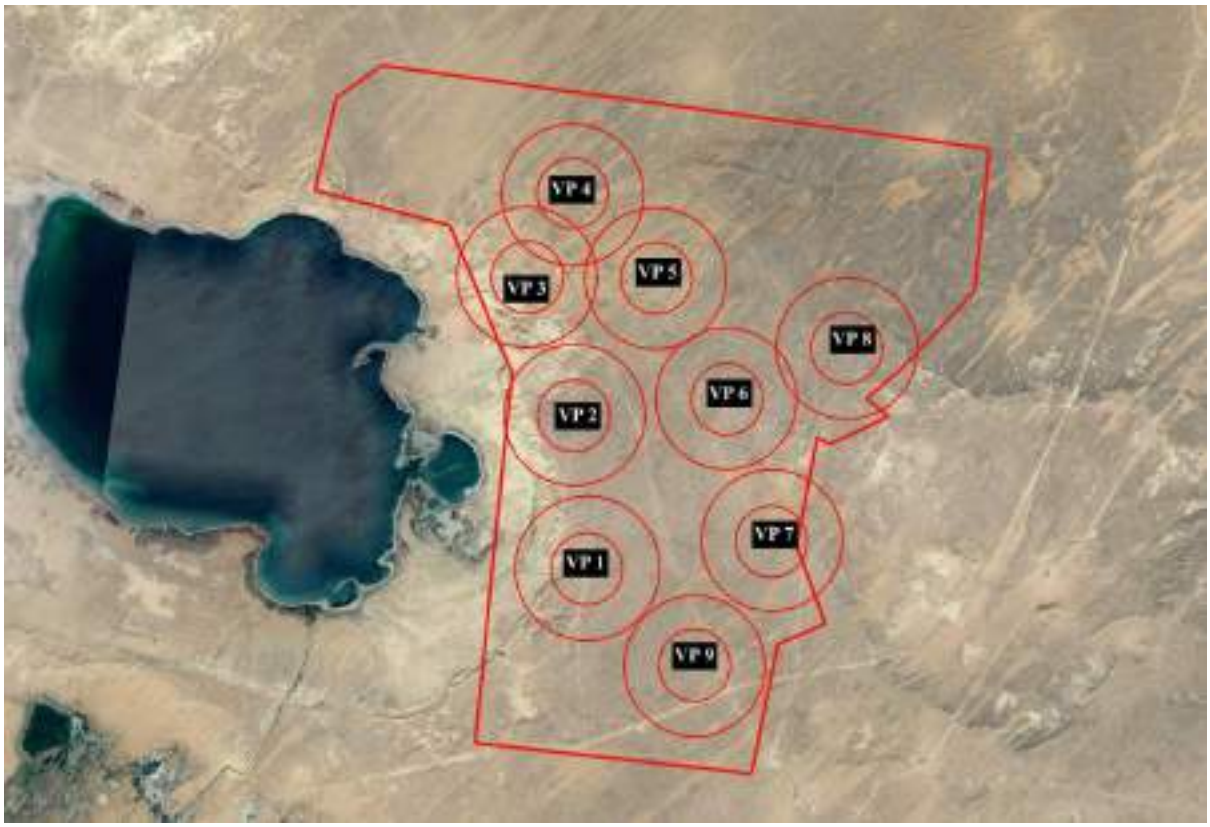
Figure 5-4 Predicted flight path analysis for migratory birds (3)

The predicted migratory flight paths anticipate high levels of flight activity occurring in the Project site airspace, especially during autumn migration.

It was determined that seasonal bird surveying would be required in order to verify the amount of bird activity and types of species occurring at the project site and area of influence.

Bird surveys were undertaken with reference to the guidance, "Scottish Natural Heritage: recommended bird survey methods to justify the assessment of the impact of surface wind farms. Observations were carried out at a total of 9 Vantage Points, with the duration of all observations over all seasons. Surveys took place throughout the months of March through November, capturing spring, summer and autumn seasons.

Figure 5-5 Vantage Point Locations (1 & 2 km zones shown)



In order to focus the surveying effort, Target species were identified (priority and secondary species) which were recorded in detail during the observations. In particular, priority species were observed and flight path characteristics were recorded. Target species were identified based on the following criteria:

- Threatened species with critical listings on the IUCN Global Red List of Threatened Species and the Uzbekistan National Red List of Threatened Species;
- Species likely breeding in the area;
- Raptor species, which are prone to wind turbine collision due to visual blind spots, attraction to tall structures for perching, larger wingspan;
- Species prone to wind turbine collision due to limited agility or large body size; and
- Species that are sensitive to disturbance and exhibit extreme avoidance behavior.

A total of 11,786 individual birds were observed passing through the site throughout the surveying period of 1,092 hours of observation.

Target species represented 1.2% of the total birds observed, while secondary species represented 8.2% of the total birds observed and others 90% of the total birds observed.

Target species were recorded during flight paths at altitudes from 10m (minimum recorded) to 165m (maximum altitude recorded), generally averaging at 76 meters (average of all target species records).

The flight path data collected throughout the surveying period indicates that the northeast of the site experiences high amounts of flight activity, especially during the migratory months. A summary of the target species from the survey are presented in the table below.

Table 5-1 Summary table of the findings

LATIN NAME	ENGLISH NAME	IUCN STATUS	NUMBER OF BIRDS RECORDED	HEIGHT RANGE (M)
Aquila nipalensis	Steppe Eagles	EN	55	10 - 165
Neophron percnopterus	Egyptian Vultures	EN	64	10 - 90
Chlamydotis macqueenii	Houbara Bustard	VU	3	10m or less
Pelecanus crispus	Dalmatian Pelican	NT	16	-
Aegypius monachus	Cinereous Vulture	NT	14	120 - 160
Gyps fulvus	Eurasian Griffon	NT	2	140 - 145

Collision Risk Modelling

Note: *A summary has been provided below for the purposes of the ESIA scoping. Full analysis will be presented in the ESIA.*

Based on the outcome of the bird survey, Collision Risk Modelling (CRM) was undertaken following Scottish Natural Heritage Guidance recommendations. Collision avoidance rate parameters were derived from an original review of technical literature, supported by expert judgment, where specific information on certain species of interest was not available in previously published studies.

Seasons were defined based on general timing of migratory and breeding periods for target bird species within the region as follows:

- Spring (migration): March 16 - May 15
- Summer (breeding): May 16 - August 31
- Autumn (migration): September 1- November 23

The results of the CRM analysis indicated that the Project site has a low-moderate level of collision risk with wind turbines for target bird species. No tier 1 target bird species are predicted to experience a 9-month (spring through fall) collision frequency greater than one fatality per 30 years under the most likely collision avoidance rate scenarios modelled. Of the tier 2 target species modelled, only the Common Crane (*grus grus*) was predicted to experience greater than one fatality per 30 years under the most likely collision avoidance rate scenarios modelled. Collision rates above 1 per 30 years are predicted for some tier 1

and tier 2 target species under hypothetical, or most conservative collision avoidance scenarios modelled, as well as for some non-target bird species that were modelled.

Overall, it is concluded that the impact from direct collision for target species with wind turbines is of low significance on those individual species. However, the impact on bird populations as a whole is considered to be of moderate significance.

Bat Survey

Bat surveying was carried out using an acoustics song meter to record bat calls at a total of 6 locations for three nights during summer and autumn.

A total of 7 species of bat were identified based on analysis of recorded calls. These include *Eptesicus bottae*, *Eptesicus serotinus, Hypsugo savii*, *Pipistrellus pipistrellus*, *Plecotus sp*. (likely *strelkovi*), *Rhinolophus bocharicus* /sp. and *Vespertilio murinus*; with *Pipistrellus pipistrellus* identified as the most abundant based on call frequency.

It is considered that the area, located near suitable roosting cliffs as well as adjacent to a large inland water body (optimal foraging), hosts large populations of Chiroptera. The introduction of a wind farm in the area has potential for a number of turbine collisions.

5.1.2 Potential Impacts

Table 5-2 Potential Terrestrial Ecology & Avifauna Impacts

ACTIVITY	ENVIRONMENTAL ASPECT	IMPACTS AND ZONE OF INFLUENCE	POTENTIAL RECEPTORS
Construction Phase			
Preparation of Site	Habitat & flora loss, with disturbance to any fauna	Within the Project footprint and areas of associated facility works.	Habitats. Flora and Fauna.
Erection of Wind Turbines	Habitat and disturbance to soaring avifauna	Within the Project footprint, in proximity to each wind turbine generator	Avifauna & Bats
Installation of OHTL	Collision and electrocution of birds	Within the OHTL footprint	Avifauna
Operational Phase			
Operation of wind turbine	Collisions of birds and bats as well as bat related pulmonary barotrauma	Within the Project footprint, in proximity to each wind turbine generator	Avifauna & Bats
Installation of OHTL	Collision and electrocution of birds	Within the OHTL footprint	Avifauna

5.1.3 Proposed ToR for the ESIA

BASELINE STUDIES

Bird and Bat Surveys

As summarised above, bird and bat surveys for the Project. Further surveys are only proposed for the OHTL corridor, which poses a potentially fatal risk to birds through collision. Avian collisions with power lines can occur in large numbers if located within daily flyways or migrations corridors.

The bird monitoring survey will include:

- Desktop study to determine distribution and abundance of breeding, resident, migrant and wintering birds; and to identify species susceptible to OHTL collisions: raptor species, large water birds, Houbara bustard, etc.
- Transect survey

The transect survey will include 2 km long transects every 5 km along the OHTL and one at the substation (final locations TBC). Surveys on the selected transects will be conducted for 3 days in mid-April (spring migration season) and 3 days in early June (summer breeding season).

The survey will include in-flight monitoring by passage of migrant bird species and resident bird species and the record of the presence and abundance within the study area of other bird species of conservation importance, such as globally threatened species according to the International Union for the Conservation of Nature (IUCN) and in the Red Book of Uzbekistan.

Weather, flight direction and flight height will be recorded for the species susceptible to OHTL collisions: raptor species, large water birds, Houbara bustard, etc.

A specific bat survey will also be undertaken along the proposed OHTL. This will involve roost searches; activity transects and deployment of static bat detectors along OHTL and planned substation. The following surveys will be undertaken through the Spring-Summer seasons:

- Roost Search
    - The survey area of the Roost Search is defined as the area along OHTL. All structures suitable for use by bats (trees/other structures) will be searched. All structures and features having potential to support roosting bats shall be identified and assessed.
- Transect Survey
    - The transect routes will be identified by in country experts based on current OHTL layout, access for driven and walked transect and known habitats of possible importance for bats.
    - Accounting on transects with two mobile detectors will allow the assessment of bat activity along the planned power lines. Transects are possible in either Walking Survey or Driven Transect Survey method.
- Static Detector Surveys

- Two Static detectors (Passive Monitoring Survey method) will be installed in places of potential activity of bats – the potential feeding places, the vicinity of shelters, and areas between shelters and feeding places. The detectors will work from mid-March to mid-June (~3 months). Each detector will work alternately at 5 points (for 9 days each), including two sub seasons of 1.5 months ("migration" – from mid-March to May and "breeding" - from May to mid-June).
- Data will be analysed by the bat specialist using Kaleidoscope Pro Auto Analysis (or similar software) and tabulated after cycle of deployments.

In addition, a minimum of 5km length of existing Overhead Transmission Line (OHL) that runs through the Project area will be sampled, once during each monthly visit (March to June). Carcasses of birds potentially killed due to collision with OHTL or through electrocution will be recorded along the length of the sampled distance.

Terrestrial Ecology

The objectives of terrestrial ecology survey is to conduct site surveys and collect data to:

- Provide clear identification of project area of influence and assessment of any corresponding areas of biodiversity value;
- Identify the value/status of any wetlands, feeding areas, lake or ponds, community forests as per national/international conservation standards.

Terrestrial ecological surveys will be performed by conducting desk study and direct field surveys/observation.

a) Desk study will be performed by collecting available environmental information, monitoring results, regional reports regarding habitants (flora and fauna) of the site area, including surrounding area too. Furthermore, there will be collected information regarding protected environmental sites of national and international designations. Data collection will be performed by contacting regional department of State committee of ecology and environmental protection as well as Navoi region khokimiyat (administration).

b) Direct field surveys for Project site and along OHTL, substation will be conducted as follows:

- Botanical survey/Habitat survey
  - A specialist will undertake a walkover for 4 days in mid-April and 4 days in early-June to broadly categorise the habitat types of the Project site, OHTL and planned substation and compile species lists.
- Mammal survey
  - Conducting ground survey on mammal species (except for bats) in project area;
    - Ground survey will be conducted twice: in Spring (3 days on the project territory and for 1 day along OHTL and planned substation in mid-April) and in Summer (3 days on the project territory and for 1 day along OHTL

and planned substation in June). During ground survey the mammal species number and species composition will be studied by walking survey transect. The length of each walking transect will be 2 km in each monitoring point, the precise locations for transect surveys will be determined during preparatory work based on the maps and literature data.

- Installing camera traps (8 camera traps (not baited) will be installed for 2.5 months in April - June) in the most suitable locations and collecting data from camera traps to get information about mammal species presence, distribution, seasonal dynamic and behaviour;
- Collecting questionnaire data from local people on mammal species presence/absence, status and threats;
- Analysis of the preliminary field data including species number and distribution;
- Making a mammal species list based on field data, questionnaire data and data from literature sources, including endangered and non-endangered species.

- Herpetological survey
  - Field studies will be carried out for 3 days in April on the project territory and for 1 day along OHTL and planned substation according to generally accepted zoological methods for identifying species composition.
- Entomological survey
  - Entomological survey will include the fieldwork and laboratory work. The field work will be conducted for 3 days on the project site and for 1 day along OHTL and planned substation in April.

CONSTRUCTION PHASE IMPACTS ASSESSMENT

A qualitative impact assessment will be made in regard to construction phase impacts on habitats and terrestrial species based on the outcomes of the baseline surveys and the expected construction works for both the site and OHTL.

OPERATIONAL PHASE IMPACTS ASSESSMENT

A qualitative impact assessment will be made in regard to operational phase impacts on habitats and terrestrial species based on the outcomes of the baseline surveys. Such impacts are not expected to be of high significance for operations.

Bird and Bat - Collision Risk Modelling

As summarised above, collision risk modelling for avifauna has been undertaken based on the survey data collected for the Project. Analysis of the outcomes is on-going and will also relate to the final alignment of the OHTL, including outcomes from the OHTL surveys.

5.2 Noise & Vibration

5.2.1 Applicable Requirements & Standards

NATIONAL REGULATIONS

- SanPin No. 0267-09 relating to rules on acceptable levels for habitable areas in Uzbekistan.
- SanPinNo. 0120-01 relating to noise levels from industrial equipment.
- SanPiN No. 0339-16. "Sanitary rules and norms of planning and development of settlements of Uzbekistan.
- SanPiN No. 0325-16 relating to sanitary standards for permissible noise levels in the workplace.

LENDER REQUIREMENTS

EBRD

- Directive 2002/49/EC relating to the assessment and management of environmental noise (the Environmental Noise Directive – END)
    - The Directive does not set limits or target values, nor does it prescribe the measures to be included in EU Member State (or Uzbekistan) action plans for noise, thus leaving such items at the discretion of the competent authorities.

EPFI's

- The World Bank Group General EHS Guidelines (2007) – Table 1.7.1.

5.2.2 Initial Observations and Baseline Conditions

NOISE

The proposed Project area is located in a remote region of Uzbekistan and is away from major population clusters. There are a limited number of anthropogenic noise sources locally.

Key noise does occur intermittently during periods of transit for locomotives and their trains along the railway line that crosses the Project area. Due to the remote nature of the Project area, there are a handful of land users and very few vehicles that are active in the area, which has some visible vehicle tracks, but does not include paved roads. Small-scale seasonal farming practices (primarily the herding of animals during spring and summer) are present in some parts of the site, but are very limited in scale and isolated. Both the vehicle use and farming practices are not expected to result in existing noise influences.

Based on observations made during initial site visits, there is minimal noise throughout the Project area, although this can vary in areas in proximity of the railway at times of transit. Where there is no rail transit, observed noise is consistent with open-field noise levels.

VIBRATION

Although it has not been noticed, it is expected that a limited amount of vibration may be discernible in areas immediately adjacent to the railway line at times of rail transit. Other vibratory influences are not expected in the Project area.

5.2.3 Potential Impacts

Table 5-3 Potential Noise & Vibration Impacts

ACTIVITY	ENVIRONMENTAL ASPECT	IMPACTS AND ZONE OF INFLUENCE	POTENTIAL RECEPTORS
Construction Phase			
Construction activities on-site and at OHTL construction (including temporary plant and use of mobile equipment)	Noise propagation	Increased noise influence at receptors expected up to 500m or to a maximum of 2km in very calm and quiet ambient conditions.	Human and ecological receptors in zone of influence, including residences
	Vibration	Impacts within the site footprint and immediately adjacent to the site.	
Movement of vehicles to the site (i.e. along access roads)	Noise propagation	Impacts along road corridors used by construction vehicles to the site. Particularly due to HGV movements	
Operational Phase			
Wind turbine operations (continuous, but varied depending on wind intensity)	Noise propagation	Increased noise influence at receptors primarily expected up to 500m from turbines or to a maximum expected range of 2km.	Human and ecological receptors in zone of influence, including residences
Crackling/corona from OHTL and electrical facilities	Noise propagation	Increased noise influence at receptors primarily expected up to 200m from OHTL.	
Movement of vehicles for maintenance purposes	Noise propagation	Impacts along road corridors used by operational vehicles to the site. Few operational vehicles are expected, so impacts are likely to be minimal.	

5.2.4 Proposed ToR for the ESIA

BASELINE STUDIES

Two separate noise monitoring surveys are proposed below. Noise monitoring related to construction noise impacts assessment will be undertaken in all cases, however, more detailed noise monitoring for noise modelling purposes will only be undertaken where preliminary modelling has identified the need for a detailed noise model at sensitive receptors.

In the context of the Project, potentially sensitive receptors may only possibly relate to the seasonal used structures that are understood to be 4 in total within the defined project site boundary. It is likely that these will be within 2,000 m of final location when the turbines. It is known that during specific times of the year (typically spring and summer) animal herders are present and occasionally stay in the structures; and therefore may be subject to noise related impacts.

Noise monitoring related to construction noise impacts assessment:

Noise monitoring will be measured by sound level meter Class 1 (Type 1), which will correspond to IEC 61672, as per requirements of ToR. Due to the lack of receptors locally and the limited noise sources, monitoring is expected to be undertaken at four location will be undertaken with the following parameters:

- Each location will be monitored for 24 hours continuously;
- The meter will be placed on a tripod so that the microphone is 1.2m to 1.6m above the local ground level (and no closer than 3m to any reflecting surface (e.g. wall) when measuring near a house, for example);
- Measurements will not be undertaken during periods of rain;
- There will be taken photo of the noise meter at each monitoring location and also at the nearest receptors (e.g. if near a house) at each location;
- The actual wind parameters will be conditions for each location at the time of monitoring will be noted in the report by providing wind speed and direction.

Raw data and graphical representations of the data will be included to the ESIA. Notes on noise influence (such as noise from any vehicle, human activity or from local infrastructure) will be reflected.

Noise monitoring for operational modelling assessment of noise impacts assessment:

Note: *If the preliminary noise model suggests that turbine noise at any sensitive receptor is likely to be above an LA90 of 35 decibels (dB) (A) at a wind speed of 10 meters/second (m/s) at 10 m height during day and night time, then more detailed modelling be carried out, which would include a background ambient noise measurement survey outlined below.*

Noise Measurements will be undertaken as a minimum at the nearest sensitive receptor to the wind turbines. This will follow the general monitoring process outlined above for the baseline monitoring (for construction phase impacts), but will also intend to capture noise measurements for 10-miunte periods during varying speeds of wind up to 12m/s. Such measurements will be undertaken for 10-minutes in duration for each integer wind speed that is captured.

CONSTRUCTION PHASE IMPACTS ASSESSMENT

Noise impacts during the construction phase will be assessed by using calculations established in BS 5228-1:2009 'Code of practice for noise and vibration control on construction and open sites – Noise'. This will be undertaken for construction works at a wind turbine pad & turbine erection location and an OHTL gantry footing & gantry erection location. The predicted noise levels will be based on the expected construction equipment and will incorporate reductions in noise due to distance propagation.

Due to the number of turbines and OHTL gantry footings with near identical required construction works, this will be undertaken for one location each and will generate expected noise levels at set distances from these works. It will then be possible to evaluate potential noise impacts at receptors, where these are located within the zone of influence from the works.

Potential impacts will be based upon the degree of change in decibels at receptor locations and will also be compared against applicable noise standards.

Due to the remoteness of the Project site and works, vibration impacts are generally not expected and will not be assessed in the ESIA.

OPERATIONAL PHASE IMPACTS ASSESSMENT

Preliminary Noise Modelling Study

Preliminary noise modelling will be undertaken on a calculation basis and will consider distance attenuation from individual turbine sources to provide resulting noise levels at identified sensitive receptors. The preliminary modelling intends to determine any sensitive receptors that may be exposed to process noise contributions of ≥35dB(A).

Detailed Noise Modelling Study

If the preliminary noise model predicts that turbine noise impacts at any sensitive receptor is likely to be above an LA90 of 35 decibels (dB) (A) (at a wind speed of 10 meters/second (m/s) at 10 m height during day and night time), then more detailed modelling would be conducted.

If detailed noise modelling is required, this will be undertaken using predictive modelling software such as DECIBEL, IMMI or CADNA(A), which are 3D models incorporating terrain and would model the cumulative impacts of all project turbines. The software will also consider parameters which interferes with sound propagation, i.e. noise shielding, acoustic reflection, ground acoustic attenuation, meteorology, wind direction, wind speed, acoustic diffraction and others. Input data for the model would include noise guarantee levels as provided by the turbine manufacturer.

Modelling plots would be prepared and calculations of predicted noise at sensitive receptor locations will be made incorporating measured baseline conditions.

Other Noise Sources

Electrical Crackling/Corona Noise

Where receptors are identified in proximity to OHTL lines and/or substations, a calculation of the expected noise level at the receptor will be made, accompanied with a qualitative description of the impacts.

Vehicle Noise

Noises emanating from maintenance vehicles will be assessed qualitatively, as these are expected to be few in number and potentially not discernible from existing traffic flows.

5.3 Landscape and Visual Impacts

5.3.1 Applicable Requirements & Standards

NATIONAL REGULATIONS

There are no known regulations or standards in Uzbekistan that provide requirements for landscape character, visual impacts and shadow flicker from wind turbines.

LENDER REQUIREMENTS

EPFIs

- IFC EHS Guidelines for Wind Energy (2015)

Landscape & Visual Impacts

The above EHS Guidelines for Wind Energy outline that *'preparing zones of visual influence maps and preparing wire-frame images and photomontages from key viewpoints is recommended to inform both the assessment and the consultation processes.'*

'Consideration should also be given to the proximity of turbines to settlements, residential areas, and other visual receptors to minimize visual impacts and impacts on residential amenity, where possible. All relevant viewing angles should be considered when considering turbine locations, including viewpoints from nearby settlements.'

Shadow Flicker

The above EHS Guidelines for Wind Energy, outline requirements for the modelling of shadow flicker to determine the duration and timing of shadow flicker occurrence under real weather conditions at specific receptors located within the zone of potential shadow flicker impact.

The guidelines require the model to predict flicker based on an astronomical worst-case scenario, which is defined as follows:

- There is continual sunshine and permanently cloudless skies from sunrise to sunset.
- There is sufficient wind for continually rotating turbine blades.
- Rotor is perpendicular to the incident direction of the sunlight.
- Sun angles less than 3 degrees above the horizon level are disregarded (due to likelihood for vegetation and building screening).
- Distances between the rotor plane and the tower axis are negligible.
- Light refraction in the atmosphere is not considered.

The IFC criteria for acceptability of flicker is:

- Not more than a combined 30 hours of flicker per year, and no more than 30 minutes of flicker on the worst-case day of the year.

5.3.2 Initial Observations and Baseline Conditions

Based on initial site observations and review of satellite imagery, the general characteristics of the Project site is predominantly undeveloped open landscape with low lying shrub vegetation spread across the site.

Views are extensive where unblocked by topography. Significant anthropogenic features are all linear and include the existing OHTL running through the north central area the plot, the railway line that splits the plot in a south-east to north-west direction, and a gas pipeline that runs through the southern section of the plot. The OHTL presents an existing vertical intrusion into the landscape. The railway is also slightly raised above the ground level.

There are no wind turbines in the existing Project area and as such, receptors are not subject to flicker impacts.

There are approximately 4 seasonally used structures for herders that are understood to be used during the spring and summer seasons. At these times it is possible that the structures are used as temporary residences.

5.3.3 Potential Impacts

Table 5-4 Potential Landscape and Visual Impacts

Activity	Environmental Aspect	Impacts and Zone of Influence	Potential Receptors
Construction Phase			
General Construction Activities	Changes in Landscape Character	Area of project development and immediate surroundings that provide a buffer to this landscape area.	The wider landscape character as experienced by humans
	Visual impacts to receptors	Receptors with direct, or partial views of the construction works. Potentially extensive under good visibility conditions and dependent on topography.	Human receptors in the zone of influence
Operational Phase			
Turbine Operation	Changes in Landscape Character	Area of project development and immediate surroundings that provide a buffer to this landscape area.	The wider landscape character as experienced by humans
	Visual impacts to receptors	Receptors with direct, or partial views of the turbines and OHTL. Potentially	Human receptors in the zone of influence

		extensive under good visibility conditions and dependent on topography (due to height of the WTGs & OHTL, and due to the length of the OHTL).	
Turbine operation during specific daytime periods (i.e. low sun) under certain meteorological conditions	Shadow flicker	Queensland Wind Farm Planning Guidelines (Australia), provide screening guidelines for modelling assessment, which only consider sensitive receptors within a distance equivalent to 265 maximum blade chords (the thickest part of the blade).	Human receptors in the zone of influence

5.3.4 Proposed ToR for the ESIA

Studies for flicker modelling can only be confirmed once the layout of the turbines is confirmed. However, based on preliminary turbine layouts provided by ACWA Power and the known location of herder structures, it is expected that these receptors will fall within the screening criteria outlined in the table above. Hence, modelling of shadow flicker is expected.

BASELINE STUDIES

Landscape Character and Visual Impacts

A landscape character and visual impacts survey will be undertaken to characterize the landscape, topography, and visual character and sensitivity of receptors on or surrounding the project site. The methodology will be based on the UK guidance for Landscape and Visual Impact Assessments and would include context at the Project site, the wider area and along the OHTL (once alignment is confirmed).

The objective of the survey will be to establish the existing landscape character of the project area and the likely visual impacts imposed upon sensitive receptors that overlook the proposed project area, and areas of construction works. A description of the landscape character will be derived from on-site observations and satellite imagery.

Shadow Flicker

The baseline survey will be specific to those receptors screened as being required for shadow flicker modelling. The baseline would inventorise local receptors in the potential area of impacts for flicker and characterize their type (i.e. commercial vs. residential etc.) and the alignment of any windows, for input to the model.

CONSTRUCTION & OPERATIONAL PHASE IMPACTS

Landscape and Visual Impacts

The ESIA will apply a measure of value/sensitivity to identified receptors and determine the likely associated magnitude of impacts in order to quantify significance of effects and also identify opportunities for mitigation to reduce the magnitude of any identified impacts.

This will include consideration of the viewpoints from applicable receptors and both potential daytime and night time impacts outlined above.

OPERATIONAL PHASE IMPACTS

Shadow Flicker

Assuming sensitive receptors are identified within the above screening area, the effects of shadow flicker will be assessed by predictive modelling software such as SHADOW (as part of Wind Pro software). The model will calculate how often and in which intervals a specific receptor will be affected by shadows generated by one or more wind turbines. These calculations are worst case scenarios (i.e. based on astronomical maximum shadow - calculations which are solely based on the positions of the sun relative to the wind turbine).

Shadow-flicker effects on receptors to be expressed in terms of predicted frequency (hours per year). Shadow isolines on a 'shadow map' (i.e., contours indicating total number of hours of shadowing per average year) will be calculated based on the data and assumptions outlined above.

Based on the outcomes of the study, the results may be required to feedback into the project design in order to reduce potential impacts and to highlight any necessary mitigation/management measures.

5.4 Air Quality

5.4.1 Applicable Requirements & Standards

NATIONAL REGULATIONS

Ambient Air Quality

- The Law of the Republic of Uzbekistan "On Atmospheric Air Protection" (1996, amended on 10.10.2006)
- SanPiN № 0293-11 "Hygienic regulations. List of maximum permissible concentrations (MPC) of contaminants in the atmospheric air of inhabitant areas in the territory of the Republic of Uzbekistan"
- SanPiN Ruz No.0179-04 – 'Hygienic norms: List Maximum Allowable Concentrations (MACs) of pollutants in ambient air of communities in the Republic of Uzbekistan

LENDER REQUIREMENTS

Ambient Air Quality

EBRD

- Directive 2008/50/EC of the European Parliament and of the Council on ambient air quality and cleaner air for Europe.

Note: Not being a member State of the EU, it is noted that the Uzbekistan government does not manage ambient air quality in line with these standards, and as such the applicability of these standards in this ESIA assessment will only be for good practice benchmarking purposes, and not compliance assessment.

EPFI's

- WHO Ambient Air Quality Guidelines (as referenced by the World Bank Group General EHS Guidelines, 2007)

5.4.2 Initial Observations and Baseline Conditions

The proposed Project area is located in a remote region of Uzbekistan away from major population clusters. There are a limited number of local pollution sources or other factors that could influence ambient air quality. The nearest populations clusters of significance are in the agricultural areas approximately 40km to the south of the Project area. Regional air quality influences in the Project area due to these distant communities are also not expected.

Besides a railway line that crosses the Project area, there are few (if any) point sources of any emissions. Occasional locomotive emissions are expected to be the principal emissions source from within the boundary of the Project, but this would only occur at times of railway use.

Due to the isolated nature of the Project area, there are a handful of land users and very few vehicles that are active in the area, which has some visible vehicle tracks, but does not include paved roads. Small-scale farming practices (primarily the rearing of animals) are present in some parts of the site, but are very limited in scale and isolated. Both the vehicle use and farming practices are not expected to result in discernible impacts to ambient air quality.

A facility that includes visible tanks (understood to be an oil storage) are located approximately 1.5km south-east of the south-east corner of the Project boundary.

Overall, the existing potential emission sources (i.e. mobile vehicular emissions and limited diffuse sources) are not expected to result in discernible impacts to ambient air quality in the area. The air shed in the Project area is expected to be non-degraded.

5.4.3 Potential Impacts

Table 5-5 Potential Air Quality Impacts

ACTIVITY	ENVIRONMENTAL ASPECT	IMPACTS AND ZONE OF INFLUENCE	POTENTIAL RECEPTORS
Construction Phase			
Ground preparation and earthworks (for both turbine pads and OHTL gantries)	Dust/Particulate generation	Increased suspended particles in air and dust deposition (350m from source – *UK IAQM*)	Human and ecological receptors in zone of influence. May only impact existing receptors, where these are in close proximity to construction works.
Vehicle movements on unpaved tracks			
Use of vehicles, mobile equipment and fuel driven plant	Emission of gases (e.g. NOx, SO_2, CO_2, BTEX, other VOCs etc.)	Increased concentration of gaseous pollutants (distinguishable from background within a of 200m from source - *DMRB*)	
	Emissions of Greenhouse Gases (GHGs)	Contribution to global warming on a global scale	
Use of temporary sanitation facilities and wastewater containment	Odour from sanitary wastewater (only if poorly managed)	Only expected a maximum of 100m from source for distributed and various temporary toilets/septic tanks.	
Storage of fuels, chemicals and other volatile substances	VOC emissions and odour (only if poorly managed)	Only expected a maximum of 100m from source for small quantity and distributed storage during construction.	
Operational Phase			

Activity	Environmental Aspect	Impacts and Zone of Influence	Potential Receptors
Use of vehicles, mobile equipment and fuel driven plant for maintenance purposes	Emission of gases (e.g. NOx, SO_2, CO_2, BTEX, other VOCs etc.)	Increased concentration of gaseous pollutants (distinguishable from background within a of 200m from source - *DMRB*)	Human and ecological receptors in zone of influence, including residences
	Emissions of Greenhouse Gases (GHGs)	Contribution to global warming on a global scale	Non-specific

5.4.4 Proposed ToR for the ESIA

Baseline Studies

Baseline studies for ambient air quality are not proposed on the basis that quantitative assessment will not be required, to assess the limited expected potential impacts upon receptors and ambient air quality during both construction and operations phases of the Project (for both the turbines and associated facilities).

Construction Phase Impacts Assessment

Qualitative assessment will be made concerning the potential impacts of construction dust, pollutant emissions and odour; relative to identified receptors that may (or may not) be in the zone of influence from working areas, for wind turbine and OHTL construction and related emissions that may affect receptors from access roads. Where potentially significant impacts are determined, applicable mitigation measures will be proposed in the ESIA for further incorporation to the EPC Contractor's CESMP. Such measures are expected to align with typical construction good practices for emissions management.

Where information is available, an estimate regarding the consumption of fuel during the construction phase will be used to predict greenhouse gas emissions for the construction phase.

Operational Phase Impacts Assessment

No specific assessment of air quality impacts are proposed, as impacts from maintenance activities are not expected to be discernible at any receptors.

5.5 Soil, Geology and Groundwater Quality

5.5.1 Applicable Requirements & Standards

NATIONAL REGULATIONS

The following regulations are applicable to the storage of both hazardous materials and waste on the site, which may have an influence soil and groundwater quality:

- SanPiN № 0157-04 "Sanitary requirements to the storage and neutralization of solid domestic waste on special grounds in Uzbekistan"
- SanPiN No 0127-02 – "Sanitary rules for inventory making, classification, storing and rendering harmless of industrial wastes"
- SanPiN of the Republic of Uzbekistan dated 29/7/2002 No 0128-02 – "Hygienic classifier of toxic industrial wastes in the Republic of Uzbekistan
- SanPiN of the Republic of Uzbekistan dated 16/11/2011 No 0300-11 "Sanitary Rules and Standards for managing collection, inventory, classification, treatment, storage and disposal of industrial waste in the context of Uzbekistan

Further research will be undertaken into the applicability of any domestic soil and groundwater quality standards.

LENDER REQUIREMENTS

EBRD

Performance Requirement 3 on Resource Efficiency and Pollution Prevention and Control establishes general requirements for pollution prevention as follows:

- The assessment process must identify technically and financially feasible pollution prevention and control techniques that are best suited to avoid or minimise adverse impacts on human health and the environment. Such techniques will be appropriate to the nature and scale of the project's adverse impacts and issues; and
- The Project must meet the relevant EU substantive environmental standards, where these can be applied at the project level. Where no EU substantive environmental standards at project level exist, the Project will identify, in agreement with the EBRD, other appropriate environmental standards in accordance with GIP.

As there may be no defined soil and groundwater standards for Uzbekistan, it is proposed to benchmark existing soil and groundwater against the Dutch standards.

ADB

ADB Safeguard Requirements for Environment includes specific requirements to prevent pollution and to minimise or control the intensity or loads of pollutant emissions and discharge.

This includes effective management of hazardous materials and wastes, which can all have an influence on soil and/or groundwater quality.

EPFI's

IFC Performance Standard 3 on 'Resource Efficiency and Pollution Prevention' requires the client and/or the Project to:

- Avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities; and
- Prevent the release of pollutants to water and land due to routine, non-routine, and accidental circumstances, or when not feasible, minimize and/or control the intensity and mass flow of their release.

5.5.2 Initial Observation and Baseline Conditions

In general (and besides some existing infrastructure corridors), the proposed site for development is undeveloped with varying elevation.

Initially, there are no obvious areas of current or past human activity to the land that may have resulted in contamination. The presence of infrastructure (including the railway line) provides the potential for the presence of vehicle residues (e.g. oils & greases, hydrocarbons) on the surface soils/topsoil causing soil contamination. Other legacy pollutants may be located in the soils from the construction and/or operations of such infrastructure. Isolated impacts may occur at the seasonally used structures on-site for herders.

At the time of writing, no baseline soil (or groundwater) investigation have been undertaken as such, the characteristics of the soil & groundwater within the Project site in unknown at this stage.

5.5.3 Potential Impacts

Table 5-6 Potential Soil, Geology and Groundwater Impacts

Activity	Environmental Aspect	Impacts and Zone of Influence	Potential Receptors
Construction Phase			
Existing site soil condition	Legacy spills & leaks from past infrastructure construction and maintenance (e.g. oils & greases, hydrocarbons and heavy metals)	Areas for construction. Cross-contamination during site clearance or removal of any site soils.	Other soils from cross contamination.
Movement of vehicles, removal of vegetation	Soil erosion	Areas in direct footprint of works or project related vehicle movements	Site soils. Impacts may occur to nearby waterbodies in the

ACTIVITY	ENVIRONMENTAL ASPECT	IMPACTS AND ZONE OF INFLUENCE	POTENTIAL RECEPTORS
			event that there are flow pathways for sediment transfer.
Storage, handling and use of hazardous materials, chemicals, fuels and inadequate waste management	Potential spills & leaks associated with construction	Direct impacts to soil (and potentially groundwater) with potential for runoff to flow paths	Site soils and potentially groundwater (if shallow). Impacts may occur to nearby waterbodies in the event that there are flow pathways connecting to the source of pollution.
Operational Phase			
Storage, handling and use of hazardous materials, chemicals, fuels, and inadequate waste management	Potential spills & leaks associated with operations	Direct impacts to soil (and potentially groundwater) with potential for runoff to flow paths.	Site soils and potentially groundwater (if shallow). Impacts may occur to nearby waterbodies in the event that there are flow pathways connecting to the source of pollution.

5.5.4 Proposed ToR for the ESIA

BASELINE STUDIES

Geology

Reference will be provided in the ESIA to available secondary data sources to identify the geological condition of the Project area. Where this has an impact upon the effects of potential pollution, pollution pathways or erosion, this will also be discussed in the relevant assessment sections of the ESIA.

Soil

Project Site

It is expected that an amount of information concerning the physical elements of the soil will be available from the geotechnical study that will be made available prior to conducting the ESIA. Relevant items will be referenced where available. The ESIA will include an Initial conceptual model to identify the risk of source-pathway-receptor linkage based on a Phase 1 land contamination walkover.

As a precautionary approach to assess existing soil quality, topsoil samples will be collected at six (6) representative locations within the Project footprint. These samples will be taken from top 10cm of topsoil (after scraping off the upper most layer) and will be analysed for a suite of physical parameters, indicators, heavy metals such as Chloride, Nitrate, Sodium, Potassium, Arsenic, Cadmium, Chromium, Copper, Lead, Manganese, Mercury, Nickel, Iron, Zinc, etc.

OHTL

Visual inspection along the confirmed OHTL will be undertaken to determine the level of contamination along the alignment. The observations on any of the following will be recorded:

- Surface disturbance, subsidence and discoloration;
- Chemical pollution, if applicable;
- Topography and surface condition – open ground, hardstanding and other geotechnical or surface features;
- Polluted areas, etc.

Groundwater

It is expected that certain details, including depth of groundwater will be referenced in the ESIA from the site geotechnical survey.

Impacts that could be attributable to the construction phase are common for any construction project and considered to be manageable through the implementation of a robust CESMP. As such, appropriate controls relating to construction processes will be included to the mitigation and management section of the ESIA. The same will be applied in the ESIA for operations.

5.6 Solid Waste and Wastewater Management

Please note: this section considers the management of solid waste and wastewater and not its impacts to environmental receptors (besides surface water quality). Considerations of such impacts are made in the respective sections for Water Environment and Soil, Geology and Groundwater.

5.6.1 Applicable Requirements & Standards

NATIONAL REGULATIONS

- The Law of the Republic of Uzbekistan "On Wastes" (2002)
- SanPiN № 0157-04 "Sanitary requirements to the storage and neutralization of solid domestic waste on special grounds in Uzbekistan"
- SanPiN No 0127-02 – "Sanitary rules for inventory making, classification, storing and rendering harmless of industrial wastes"
- SanPiN of the Republic of Uzbekistan dated 29/7/2002 No 0128-02 – "Hygienic classifier of toxic industrial wastes in the Republic of Uzbekistan
- SanPiN of the Republic of Uzbekistan dated 16/11/2011 No 0300-11 "Sanitary Rules and Standards for managing collection, inventory, classification, treatment, storage and disposal of industrial waste in the context of Uzbekistan
- Regulation "On the Procedure for the Disposal, Collection, Pay Settlement, Storage and Removal of Waste Industrial Oils" annexed to the Decree of the Cabinet of Ministers dated 04/09/2012 No.258

LENDER REQUIREMENTS

Solid Waste

EBRD

EBRD PR3 on Resource Efficiency and Pollution Prevention and Control establishes general requirements with regards to waste management as follows:

- The Project must strive to avoid the generation of hazardous and non-hazardous waste materials and reduce their harmfulness as far as practicable. Where waste generation cannot be avoided, the waste must be reused, recycled or recovered, or used it as a source of energy. Where waste cannot be recovered or reused, the waste must be treated and disposed of it in an environmentally sound manner;
- The Project must identify technically and financially feasible alternatives for the environmentally sound disposal of any hazardous waste considering the limitations applicable to trans boundary movement; and
- When waste disposal is transferred offsite and/or conducted by third parties, chain of custody documentation to the final destination must be obtained and only contractors that are reputable and legitimate enterprises licensed by the relevant regulatory agencies must be commissioned. The Project must ascertain whether

licensed disposal sites are being operated to acceptable standards. Where this is not the case, alternative disposal options must be considered, including the possibility of the Project developing its own recovery and disposal facilities at the project site.

ADB

The Environmental Safeguard requires the borrower/client to avoid, or where avoidance is not possible, to minimise or control the generation of hazardous and non-hazardous wastes and the release of hazardous materials resulting from project activities. Where waste cannot be recovered or reused, it will be treated, destroyed, and disposed of in an environmentally sound manner.

Where the waste disposal is conducted by third parties, the borrower/client is required to use reputable and legitimate enterprises licensed by the relevant regulatory agencies.

EPFIs

Section 1.6 of "the IFC General EHS Guidelines" is entitled Waste Management and is applicable to all projects that generate, store or handle any quantity of waste; whilst Section 1.5 of the IFC EHS Guidelines covers Hazardous Materials Management. The waste management guidelines state that facilities that generate and store wastes should practice the following:

- Establish waste management priorities at the outset of activities;
- Identify EHS risks and impacts and consider waste generation and its consequences;
- Establish a waste management hierarchy that considers prevention, reduction, reuse, recovery, recycling, removal and finally disposal of wastes;
- Avoid or minimize the generation of waste materials, as far as practicable;
- Identify where waste generation cannot be avoided but can be minimized or where opportunities exist for, recovering and reusing waste; and
- Where waste cannot be recovered or reused, identify means of treating, destroying, and disposing of it in an environmentally sound manner.

<u>Waste Water</u>

EBRD

EBRD PR3 on Resource Efficiency and Pollution Prevention and Control establishes general requirements for wastewater management as follows:

- The Project must seek to minimise water usage in order to minimise wastewater generation; and

- The Project must identify technically and financially feasible techniques for reusing and recycling effluents in accordance with GIP, which should be implemented as part of the project design.

EPFIs

The World Bank General EHS Guidelines (2007) establish general requirements for direct or indirect discharge of wastewater from utility operations or storm water to the environment.

'Projects with the potential to generate process wastewater, sanitary (domestic) sewage, or storm water should incorporate the necessary precautions to avoid, minimize, and control adverse impacts to human health, safety, or the environment'.

However, wastewater effluent pollutant limits are only established for sanitary wastewater for discharge to the sanitary sewer systems. World Bank General EHS Guidelines (2007) (ref. Table 1.3.1 of IFC EHS Guidelines), provides indicative values for treated sanitary wastewater effluent.

5.6.2 Potential Impacts

Table 5-7 Potential Waste & Wastewater Impacts

ACTIVITY	ENVIRONMENTAL ASPECT	IMPACTS AND ZONE OF INFLUENCE	POTENTIAL RECEPTORS
Construction Phase			
Project construction activities	Solid waste generation (hazardous and non-hazardous)	Suitable contractors and facilities for the handling and treatment of such waste and wastewater streams	Waste facilities and Environmental receptors
	Construction Wastewater		
Operational Phase			
Plant operations	Small amounts of solid waste generation (hazardous and non-hazardous) from the operation of the administration facilities and activities of the employees	Suitable contractors and facilities for the handling and treatment of such wastes	Waste facilities and Environmental receptors
	Sanitary and domestic wastewater generated from on-site administration areas		
	Stormwater	Potential runoff into any areas containing hazardous materials and eroded soil	Surrounding environment and water bodies

5.6.3 Proposed ToR for the ESIA

BASELINE STUDIES

Details of available local waste/wastewater treatment/disposal sites and service providers will be outlined.

Water Quality

In relation to potential runoff pathways from the site (e.g. for sediment and/or other pollutant residue transfer) to Lake Ayakaghytma, which is located as close as 500m from the western boundary of the Project site, it is intended to analyse water quality as a precautionary approach. This is primarily due to the designation of the lake as an IBA.

It is proposed that 4 water samples are collected from a mid-water column depth in proximity to the shoreline that is closest to the site. These samples will be spaced at different locations along the lake. Samples will be taken to an accredited local laboratory in Uzbekistan for analysis of Conductivity, DO, TSS, Turbidity, As, Al, Cd, Pb, Cu, Ni, Cr III & VI and Zn.

CONSTRUCTION AND OPERATIONAL PHASES IMPACTS ASSESSMENT

The ESIA will inventories the types of waste and wastewater that is expected to be generated by the Project's construction and operations respectively. Where estimates of waste and wastewater volumes are available these will be provided and broken to specific streams (at least to outline non-hazardous and hazardous streams, or other streams requiring special handling.

Based upon the baseline details of available waste and waste water service providers and disposal/treatment sites, an assessment can be made as to the needs for the management of such waste and wastewater streams.

The ESIA will include good practice mitigation and management measures for such waste streams, which can then be implemented on-site via the CESMP, OESMP and wider ESMS management programmes.

5.7 Traffic and Transportation

5.7.1 Applicable Requirements & Standards

NATIONAL REGULATIONS

The Ministry of Transportation is responsible for all transport related activities and their requirements should be fully complied with in terms of routing of HGVs and site vehicles, licensing, road diversions, heavy/wide loads etc. Some of the relevant national requirements for the Project include:

- Law "About traffic safety" of the Republic of Uzbekistan August 19, 1999 No. 818-I (as amended on 29-12-2015): The main objective of this law is to ensure protection of life and health of citizens and their protection.
- Regulations on road safety during transportation of large and heavy loads by road transport (Annex No.2 to the Decree of Cabinet of Ministers No. 342 of December 26, 2011): This law determines the requirements of ensuring and coordinating traffic safety during the transportation of large size and heavy loads on public roads on the territory of the Uzbekistan. It also details the basic requirements for the technical condition equipment and furnishing of vehicles used for the transport of large and heavy loads as well as safety.
- Criteria and Procedure for Determining International Road Transportation of Loads (approved by the Decree of Ministry of Transport of the Republic of Uzbekistan and State Customs Committee of the Republic of Uzbekistan dated October 31, 2019, No. 6).
- Regulations on transport of loads by road in the Republic of Uzbekistan (Annex to Decree of Cabinet of Ministers No. 213 of 01.08.2014)

LENDER REQUIREMENTS

EBRD

The EBRD PR 4 on Health and Safety establishes management requirements with regards to traffic and road safety risks to workers and potentially affected communities. Relevant EU road and traffic safety management standards must therefore be taken into consideration.

"*For Projects that operate moving equipment on public roads and other forms of infrastructure, the client will seek to prevent the occurrence of incidents and injuries to members of the public associated with operation of such equipment*."

EPFIs

The assessment will be undertaken with due consideration of the recommendations set out within the IFC/World Bank General EHS Guidelines (2007) Section 3.4 Traffic Safety, within Section 3: Community Health and Safety.

Separate considerations regarding Community Health and Safety are also provided in the IFC EHS Guideline for Wind Energy (2015). This includes relevant items for 'Abnormal Load Transportation'.

5.7.2 Initial Observations and Baseline Conditions

Due to the isolated nature of the Project area, there are very few vehicles that are active in the area, which has some visible vehicle tracks, but does not include paved roads. There is also a railway line that splits the plot in a south-east to north-west direction.

The closest highway to the Project site is the A379 which is located approximately 9km to the south-east of the site and connects Navoi to Zarafshan. It is noted that a dirt road connects the site to A379. There is also an A380 highway which is located approximately 78km south-west of the site that connects Bukhara to Nukus. This road also connects Uzbekistan to Turkmenistan.

5.7.3 Traffic and Logistics for Transportation of WTGs

A transportation routing survey for the WTGs and equipment is currently being undertaken. The outcome of this survey will be included in the ESIA.

5.7.4 Potential Impacts

Table 5-8 Potential Traffic & Transportation Impacts

ACTIVITY	ASPECT	IMPACTS AND ZONE OF INFLUENCE	POTENTIAL RECEPTORS
Construction Phase			
Movement of vehicles and machinery/equipment/ staff	Transportation of equipment i.e., oversized wind turbines components (blades, turbine tower sections, trnasformers), cranes etc	Transportation of wide and heavy loads may present a challenge to other road users such as temporary lane closures or increased traffic.	Highway and local road users including local communities
	Increased vehicular flow (particularly HGVs)	Increase in number of vehicles transporting materials and workers may potentially increase the flow of traffic on local roads.	
		Increased potential for incidents and increased road safety risks to communities.	
Operational Phase			

ACTIVITY	ASPECT	IMPACTS AND ZONE OF INFLUENCE	POTENTIAL RECEPTORS
Movement of operation phase vehicles	Increased vehicular flow	Transportation impacts are not expected to be significant but movement of maintenance materials, waste removal and staff may lead to minimal addition of vehicle flow on local roads.	Local road users and local communities

5.7.5 Proposed ToR for the ESIA

The ESIA will include the findings of the transportation/routing survey for the Project and the potential impacts upon the local transportation network and road users in particular.

As stated in the IFC EHS Guidelines for Wind Energy (2015), '*the logistics, traffic, and transportation study should assess impacts on existing offsite roadways, bridges, crossings over culverts, overpasses/underpasses, turning radii, and utilities, as well as whether surface replacements, upgrades, or resettlements will be required*'. Such requirements will be discussed with the client and their selected EPC Contractor to determine any specific mitigation requirements that will be provided as part of the Traffic Management Plan.

5.8 Cultural Heritage

5.8.1 Applicable Requirements & Standards

NATIONAL REGULATIONS

The Ministry of Culture of the Republic of Uzbekistan is responsible for preserving, developing and promoting the cultural wealth and the national tourism attractions of the nations, nationalities and peoples of Uzbekistan.

Relevant legislation in Uzbekistan relating to archaeology and cultural heritage include:

- The Law of the Republic of Uzbekistan № 269-II dated August 2001 "On the protection and use of the sites and objects of cultural heritage."
- Resolution of the President of the Republic of Uzbekistan № RP-4068 dated December 19, 2018 "On measures for improving actions for protection of material cultural heritage objects."
- Resolution of the Cabinet of Ministers of the Republic of Uzbekistan № 846 dated October 4 2019 "On approval of the national list of real state sites and objects of material cultural heritage."

The above laws seek to protect and sites and objects of cultural heritage which are considered as part of the national heritage for all the people in Uzbekistan.

LENDER REQUIREMENTS

EBRD

EBRD Performance Requirement 8 recognises the importance of cultural heritage, both tangible and intangible for present and future generations. The aim is to protect cultural heritage and to guide clients in avoiding or mitigating adverse impacts on cultural heritage in the course of their business operations. The clients are expected to be precautionary in their approach to the management and sustainable use of cultural heritage.

ADB

ADB's Safeguard Policy Statement and related Safeguards, include various requirements for cultural resources, both physical (and assumed to include intangible resources) – of importance locally, provincially, nationally and internationally. Where such resources are identified the ADB safeguards highlight the importance of consulting with the communities who use such facilities, as well as the regulatory agencies entrusted with protecting such resources.

EPFI's

In accordance with the Equator Principles, the assessment will refer to applicable IFC Performance Standards on Social and Environmental Sustainability, specifically with due consideration of Performance Standard 8 – Cultural Heritage. PS8 aims to protect the adverse impacts of project activities and support its preservation and to promote equitable sharing of benefits from the use of cultural heritage. Cultural heritage in this standard refers to:

- Tangible forms of cultural heritage, such as tangible moveable or immovable objects, property, sites, structures, or groups of structures, having archaeological (prehistoric), paleontological, historical, cultural, artistic, and religious values;
- Unique natural features or tangible objects that embody cultural values, such as sacred groves, rocks, lakes, and waterfalls; and
- Certain instances of intangible forms of culture that are proposed to be used for commercial purposes, such as cultural knowledge, innovations, and practices of communities embodying traditional lifestyles.

5.8.2 Initial Observations and Baseline Conditions

PROJECT SITE

Based on the desktop research conducted, there are no recorded cultural or archaeological sites in the vicinity of the Project. This includes no recorded UNESCO World Heritage sites and other publicly identified archaeological sites within 30km radius of the Project site.

OHTL

The alignment of the OHTL is not yet confirmed. Based on the potential OHTL options provided, it is not expected to run in proximity to the nearest UNESCO World Heritage site, which is the Historic Centre of Bukhara, located approximately 97km south east of the proposed Project site.

5.8.3 Potential Impacts

Potential impacts described below are consistent for both the Project site and OHTL.

Table 5-9 Potential Cultural Heritage Impacts

ACTIVITY	ENVIRONMENTAL ASPECT	IMPACTS AND ZONE OF INFLUENCE	POTENTIAL RECEPTORS
Construction Phase			
Earthworks	Excavations of soil	Potential damage or destruction of any unknown buried artefacts in footprint of all works	Unknown buried artefacts
Operational Phase			
Impacts to cultural heritage are not envisaged during the operational phase unless an intangible cultural receptor is used in this area or as part of a cultural landscape.			

5.8.4 Proposed ToR for the ESIA

BASELINE STUDIES

Consultation will be conducted with relevant governmental bodies and institutes (i.e. the Ministry of Culture of the Republic of Uzbekistan and institute of Archaeological Research under the Science Academy of the Republic of Uzbekistan) in order to gain official confirmation regarding the absence/presence of archaeological and cultural heritage at the site and surrounding areas.

The socio-economic surveys will also help establish if the land has any specific physical cultural resources or other intangible cultural value.

CONSTRUCTION PHASE IMPACTS ASSESSMENT (PROJECT SITE AND OHTL)

Unless further information is gathered to identify specific cultural features of importance in/or near to the footprint of works (including temporary facilities), there is not expected to be a need for a detailed assessment of impacts to cultural heritage in the ESIA.

The ESIA will rather establish the need for a 'Chance Finds Procedure' to be developed, so that any potential interactions with unknown buried archaeology can be managed in accordance with a defined process and the applicable regulatory stakeholders.

5.9 Socio-Economics

5.9.1 Applicable Requirements & Standards

NATIONAL REGULATIONS

The following laws are applicable concerning land rights, acquisition and resettlement:

- Civil Code of the Republic of Uzbekistan "Civil code"
- Land Code (1998 as amended 2010)
- Law of the Republic of Uzbekistan on State Land Cadastre No.666-I of 28.08.1998
- Presidential Decree "On Measures for The Efficient Use of Land and Water Resources in Agriculture"
- Resolution № 146 of the Cabinet of Ministers "On the Procedure for Compensation for Losses of Land Owners, Users, Tenants and Owners, As Well As Losses of Agricultural and Forestry Production".

LENDER REQUIREMENTS

EBRD

Performance Requirement 1 outlines the need for assessing social impacts as part of ESIA. This is interpreted to include socio-economic effects to individuals/groups/populations that may be impacted by a project.

Performance Requirement 5 on land acquisition, involuntary resettlement and economic displacement refers to Involuntary resettlement as both physical displacement (relocation or loss of shelter) and economic displacement (loss of assets or resources, and/or loss of access to assets or resources that leads to loss of income sources or means of livelihood) as a result of project-related land acquisition and/or restrictions on land use.

Where resettlement is government led, PS5 requires, *'the client (to) collaborate with the responsible government agency, to the extent permitted by the agency, to achieve outcomes that are consistent with the objectives of this PR.'*

ADB

The ADB Environmental Safeguards include the need to assess socio-economic project impacts in ESIA (including impacts on livelihood through environmental media, health and safety, vulnerable groups, and gender issues).

Specifically, '*The borrower/client will identify and assess the risks to, and potential impacts on, the safety of affected communities during the design, construction, operation, and decommissioning of the project, and will establish preventive measures and plans to address them in a manner commensurate with the identified risks and impacts.'*

ADB's involuntary resettlement safeguard also aims to avoid involuntary resettlement where possible; to minimise involuntary resettlement by exploring project and design alternatives; to enhance at least restore, the livelihoods of all displaced persons in real terms relative to pre-project levels; and to improve the standards of living of the displaced poor and other vulnerable groups.

The safeguard also requires adverse economic, social or environmental impacts from project activities other than land acquisition such as loss of access to assets or resources or restrictions on land use to be avoided, or at least minimized, mitigated or compensated for through the environmental assessment process. Where such impacts are found to be adverse, the borrower/client is required to develop and implement a management plan to restore the livelihood of affected persons to at least pre-project level or better.

EPFI's

Several of the IFC Performance Standards have elements that relate to socio-economics. Key requirements for the assessment of socio-economic impacts are outlined in PS1, whilst PS5 on Land Acquisition and Involuntary Resettlement has important requirements relating to projects that acquire land or will necessitate physical or economic displacement to PAPs, including compensatory measures.

5.9.2 Initial Observations and Baseline Conditions

The Project site is located away from population clusters and is quite remote. A small number of herders are understood to use the land at the Project site informally during the spring and summer seasons for animal grazing. There are some structures on the site (up to 4), which can provide shelter.

Locally (but outside of the Project site are areas for mining and there are also facilities linked to oil storage in close proximity to the site boundary.

SOCIO-ECONOMIC STATUS

Specific observations and baseline details concerning socio-economic status are not available at this stage, however such information will be collected as part of the ESIA socio-economic baseline surveys, outlined in the sub-section below.

LAND USE AND RESETTLEMENT

As the land for the Project site will be leased from the Government of The Republic of Uzbekistan, there is no requirement for land acquisition. It is understood that this will be the same for the OHTL. Survey are currently being undertaken to determine if any land at the Project site is under lease agreements with private users and whether any resettlement will be required. Once the OHTL alignment is confirmed, the same process will need to be undertaken and will form part of the ESIA.

Some land within the Project site is used for infrastructure (i.e., railway line, OHTL corridor and gas pipeline corridors), other land is used seasonally by herders, as outlined above.

5.9.3 Potential Impacts

Table 5-10 Potential Socio-Economic Impacts

ACTIVITY	ASPECT	IMPACTS AND ZONE OF INFLUENCE	POTENTIAL RECEPTORS
Construction Phase			
Project construction	Project employment	Provision of temporary jobs during construction	Local populations
	Skills training to local communities and the Project workforce	Increase in skills sets of population	
	Use of local goods and services	Positive indirect benefits and uplift to local economy from increased local spending	Local businesses and populations
	Land use change	Local herders may not be able to use the site during the construction phase.	Herders
	Disruption of local customs	Influx of workers could potentially introduce new habits or practices that are not consistent with local beliefs	Local populations
Worker Influx	Increase of demand and purchasing locally may inflate process of basic commodities	Increased cost of living for local populations and benefits to local home owners	Local populations
Operational Phase			
Plant operations	Project employment	Provision of employment	Local populations
	Skills training to local communities and the Project workforce	Increase in skills sets of population	

5.9.4 Proposed ToR for the ESIA

Land Use

As specified in the 'Land Use and Site Condition' section here in this scoping report, The Khokimiyat of Bukhara region will issue land allotment order that will allow the Project Company and its contractors to use the site without restriction. Following issuance of the land allotment order, the Project Company will enter into a Land Lease Agreement with The Government of The Republic of Uzbekistan as represented by the Khokimiyat of Bukhara Region.

It is expected that the Land Lease Agreement would have been signed during the ESIA stage. Where this is the case, evidence of Land Lease Agreement will be provided.

Socio-Economic Status Surveys

A key task of the ESIA baseline surveys is to gather data to:

- Confirm use of land, including past uses (land registry, conditions of land agreements, land valuation, compensation procedures, resettlement issues and etc.).
- Identity socio-economic characteristics of the population in the project area – size, gender and age structure, ethnic composition (including minorities and their vulnerability assessment);
- Characterise the living standards of the population in the project area - size and structure of income, property/other assets and their use, poverty level, living conditions (housing type and amenity);
- Assess access to social (health care, education, social programs) and public (water pipe, sanitary facilities, heat, electricity and gas supply) services;
- Identify the availability of social and cultural facilities (roads, transport, retail outlets);
- Assess existing knowledge about the Project within the communities and land users.

The key informants during the assessment will be:

- Current land users within the project area (if any);
- Populations in the nearby communities and settlements;
- Representatives of responsible institutions;
- Local governments managers, representatives of public and non-governmental organizations; When required, other stakeholders (representatives of local Khokimiyats, labour authorities etc.) will be involved in the assessment.

CONSTRUCTION PHASE IMPACTS ASSESSMENT

Worker Influx

The ESIA will aim to establish the likely extent of worker influx as a result of the Project, and how these workers will be housed and catered for to assess impacts upon local populations, particularly in terms of commodity prices.

Project Construction Positive Impacts

The outcomes of the survey of socio-economic condition, are expected to highlight and target methods that can be implemented to enhance such benefits of local employment, training provisions and use of local business and services. Where applicable the ESIA will outline provisions that can be implemented during construction.

OPERATIONAL PHASE IMPACTS ASSESSMENT

The same context (as for construction, above) is applicable for the ESIA concerning the positive project impacts linked to local employment, training provision and use of local business and services.

5.10 Community Health, Safety & Security

5.10.1 Applicable Requirements & Standards

NATIONAL REGULATIONS

- Resolution of Cabinet of Ministers of Republic of Uzbekistan No.95 "On approval of general technical regulations of environmental safety" (2020).
    - Requires the implementation of environmental safety measures for the protection of flora and fauna. This includes the prevention of death of wildlife species due to magnetic fields of power transmission lines and sanitary protection zones.
    - Requires transformer substations in power transmission lines, their grids to have equipment (barriers, fences etc.,) to prevent animals from entering the territory of the substation.
- Decree of the Cabinet of Ministers of the Republic of Uzbekistan No.1050 "On approval of Rules for Protection of Power Grid Facilities, 2018".
    - This determines the procedure for establishing protected zones for power grid facilities, as well as special conditions for using land located within the protected zones and ensure the functioning and operation of the said facilities.
    - Construction of power grid facilities with 110, 220 or 500kV in protected areas of state nature reserves, protected areas of nature parks and state biosphere reserves etc shall be allowed with the permission of the Cabinet of Ministers of the Republic of Uzbekistan.
    - Protected zones of power grid facilities shall be established on both sides of the power transmission line from the outermost wires and along the perimeter of substations at the following distances for voltages;
        - 110kV: 20 meters;
        - 220kV: 25 meters; and
        - 500kV: 30 meters.
- San Rules & Norms No. 0236-07 "Sanitary norms and rules to ensure safety for people living near high voltage power transmission lines, 2007".
    - This regulation sets the requirements for ensuring public safety when overhead power lines pass over populated, unpopulated or inaccessible territories.
    - It requires sanitary norms and rules to be followed in the design, construction and operation of overhead power lines.
    - The distances corresponding to the projection onto the ground of the outer phase wires in a direction perpendicular to the overhead line as follows:
        - Up to 110kV/m: 10 meters;
        - Up to 220kV/m: 15 meters;
        - Up to 330kV/m: 20 meters;
        - Up to 500kV/m: 30 meters; and
        - Up to 570kV/m: 40 meters.

LENDERS REQUIREMENT

EBRD

Performance Requirement 4 establishes the importance of avoiding or mitigating adverse health and safety impacts and issues associated with project activities on workers, project affected communities and consumers. The objectives of EBRD PR4 are:

- To protect and promote the safety & health of workers by ensuring safe and healthy working conditions and implementing a health and safety management system, appropriate to the relevant issues and risks associated with the Project.
- To anticipate, assess and prevent or minimise adverse impacts on the health and safety of project affected communities and consumers during the project lifecycle from both routine and non-routine circumstances.

ADB

Under ADB Safeguard Requirement 1: Environment, the assessment of community health and safety is required in ESIA.

Specifically, *'The borrower/client will identify and assess the risks to, and potential impacts on, the safety of affected communities during the design, construction, operation, and decommissioning of the project, and will establish preventive measures and plans to address them in a manner commensurate with the identified risks and impacts.'*

This includes reasonably foreseeable incidents, accidents and natural impacts (due to the Project) and requires affected communities to be informed. Preparation is also required to be made to plan for such events.

EPFIs

IFC Performance Standard 4 establishes requirements to safeguard local communities from potential risks associated with the Project including impacts associated with introduction of communicable disease, site access and operation, material use etc. The key objectives of PS4 are:

- To anticipate and avoid adverse impacts on the health and safety of the Affected Community during the project life from both routine and non-routine circumstances.
- To ensure that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimizes risks to the Affected Communities.

5.10.2 Initial Observation and Baseline Conditions

PROJECT SITE

The Project site has no communities within the land footprint or in the immediate surrounding area. There are approximately 4 shelter structures on the site that may be used during spring and summer seasons by local herders, who informally use the land for grazing of animals.

Infrastructure for a railway, OHTL corridor and gas pipeline corridor also run across the Project site. There are no observable telecommunications masts/networks locally.

OHTL

The alignment of the OHTL has not yet been confirmed by ACWA Power. It is possible that the ultimate alignment may coincide with areas used by humans, such as farms, or could run close to properties. This would only be confirmed at a later stage.

5.10.3 Potential Impacts

This chapter will outline and assess the impacts relating to the safety and security of the public who access the surrounding areas and may be subject to project related impacts. Secondary impacts relating to public health in terms of air quality, noise, waste etc., will be addressed in specific chapters elsewhere in this report.

Table 5-11 Potential Community, Health, Safety and Security Impacts

ACTIVITY	ASPECT	IMPACTS AND ZONE OF INFLUENCE	POTENTIAL RECEPTORS
Construction Phase			
Influx of workers	Community disgruntlement and conflict with staff and security (potentially including expatriate workers)	Conflict, disease spread, initially on a local basis (potentially wider)	Local populations (where this coincides with Project workers) and those herders that use the site.
	Community health risks		
	Gender Based Violence and Harassment/Sexual Exploitation & Abuse/ Sexual Harassment	Risk posed to local women, young boys and girls by migrant workers from other parts of Uzbekistan and overseas.	
Construction Works	Exposure of community to construction and commissioning hazards (including equipment, electrical hazards, hazardous materials, chemicals and fuels, hazardous wastes etc.)	In areas of the WTGs and substation or at associated facilities that may not be fully secure, or where there are poor security management practices.	
	Emergency situations (e.g. fire, explosion etc.)	Project footprint and external to the Project areas	Nearby residences and ecological receptors

ACTIVITY	ASPECT	IMPACTS AND ZONE OF INFLUENCE	POTENTIAL RECEPTORS
		(depending on type and magnitude of emergency)	
Movement of construction vehicles	Increased vehicles on local road (particularly HGVs)	Increased potential for incidents and increased road safety risks to communities.	Local communities and other road users
Operational Phase			
Public Access	Safety issues may arise with public access to wind turbines (e.g., unauthorized climbing of the turbine)	WTG's	Public
Blade/ Ice Throw	Failure of the rotor blade can result in the "throwing of a rotor blade or part and during certain cold weather conditions accretion of ice on the blades and risk of pieces of ice thrown from rotor during operation or dropped if turbine is idle (IFC EHS Guideline on Wind Energy, 2015)	The IFC EHS Guideline on Wind Energy, 2015 outlines minimum set back distances should be 1.5 times the height of the turbine (tower + rotor radius).	Nearby land users (e.g. herders and farmers) and ecological receptors
Plant Operations	Emergency situations (e.g. structural damage and possible collapse, spills of any back up fuels (from operational buildings), un-warranted releases of wastewater etc.)	Project footprint (WTGs, access roads and substations) and external to the Project areas (depending on type and magnitude of emergency)	Nearby land users (e.g. herders and farmers) and ecological receptors

5.10.4 Proposed ToR for the ESIA

Reasonably foreseeable risks to community health, safety and security will be delineated in the ESIA and where appropriate, provisions for the management of such circumstances will be outlined, with applicable mitigation and management measures.

The ESIA will highlight the need for preparedness and response mechanisms for reasonably foreseeable emergency situation to be addressed in specific construction and operational phase management plans.

5.11 Human Rights, Labour & Working Conditions

5.11.1 Applicable Requirements & Standards

NATIONAL REGULATIONS

Labour and Working Conditions

- Ordinance No. 30-31 of the Ministry of Labour and Social Security and the Ministry of Health of the Republic of Uzbekistan approving the list of hazardous jobs mentioned in Article 355, for which the employment of persons under the age of eighteen years is prohibited
- Joint Decree of the Ministry of Labour and Social Protection of the Population (No. 7) and the Ministry of Healthcare (No. 1) of Uzbekistan dated 30 May 2001 to approve the list of occupations with unfavourable working conditions to which it is forbidden to employ persons under 18 years of age.
- Decree No. 133 of 11 March 1997 to approve normative acts necessary for the realization of the Labour Code of the Republic of Uzbekistan
- Decree of the Cabinet of the Ministers No. 1011 of 22 December 2017 "On Perfection of the Methodology of Definition of Number of People in Need of Job Placement, including the Methodology for Observing Households with Regard to Employment Issues, also for the Development of Balance of Labour Resources, Employment and Job Placement of Population".
- Decree of the Cabinet of the Ministers No. 965 of 5 December 2017 "On the Measures of Further Perfection of the Procedure of Establishment and Reservation of Minimum Number of Job Places for the Job Placement of Persons who are in need of Social Protection and Face Difficulties in Searching Employment and Incapable of Competing in Labour Market with Equal Conditions".
- Decree No. 964 of 5 December 2017 "On the Measures for Perfection of the Activity of Self-Government Bodies Aimed at Ensuring Employment, Firstly for the Youth and Women".

Human Rights

- As a member of the United Nations, Uzbekistan supports and implements all the main international instruments of the United Nations relating to the protection of human rights and freedoms, including UN Universal Declaration of Human Rights, Human Rights Council Resolution No. 30/15 on human rights and preventing and countering violent extremism, Convention on the Elimination of all Forms of Discrimination against Women among others.
- Uzbekistan's State Policy on human rights is aimed at preventing violations or any restriction on human rights and freedoms and at establishing the necessary organizational, legal, social, economic, spiritual and moral foundations for the protection of human rights.

LENDERS REQUIREMENT

EBRD

PR2 is applicable to Labour and Working Conditions and has the following key objectives:

- *Respect and protect the fundamental principles and rights of workers;*

- *Promote the decent work agenda, including fair treatment, non-discrimination and equal opportunities of workers;*
- *Establish, maintain and improve a sound worker-management relationship;*
- *Promote compliance with any collective agreements to which the client is a party, national labour and employment laws;*
- *Protect and promote the safety and health of workers, especially by promoting safe and healthy working conditions; and*
- *Prevent the use of forced labour and child labour (as defined by the ILO) as it relates to project activities.*

Concerning dedicated accommodation, compliance is required with:

- IFC & EBRD Workers Accommodation: Processes and Standards (2009).

In regard to human rights:

- According to EBRD's Environmental and Social Policy, EBRD is committed to the respect of human rights in the Project they finance. EBRD is also guided by the International Bill of Human Rights and the eight core conventions of the International Labour Organization.

ADB

The Environmental Safeguard requirements necessitate The Borrower/client to, '*provide workers with safe and healthy working conditions and prevent accidents, injuries, and disease. Establish preventive and emergency preparedness and response measures to avoid, and where avoidance is not possible, to minimize, adverse impacts and risks to the health and safety of local communities.*'

ADB have stated that compliance with the IFC & EBRD Worker Accommodation: Processes and Standards (2009) will also be required.

EPFIs

The following applicable IFC Performance Standards aim to identify and ensure that social and economic impacts of a project are addressed in the relevant areas, in particular:

- Performance Standard 2: Labour and Working Conditions;

In accordance with IFC Performance Standard 2 (Labor and Working Conditions) there is a requirement to align with the following conventions:

- ILO Convention 29 on Forced Labor;
- ILO Convention 87 on Freedom of Association and Protection of the Right to Organize;
- ILO Convention 98 on the Right to Organize and Collective Bargaining;
- ILO Convention 100 on Equal Remuneration;

- ILO Convention 105 on the Abolition of Forced Labor;
- ILO Convention 138 on Minimum Age (of Employment);
- ILO Convention 182 on the Worst Forms of Child Labor;
- ILO Convention 111 on Discrimination (Employment and Occupation);
- UN Convention on the Rights of the Child, Article 32.1; and
- UN Convention on the Protection of the Rights of all Migrant Workers and Members of their Families.

In regard to human rights:

- In line with EP IV requirements, the United Nations Human Rights Guiding Principles apply to the Project. HRGP II on "The corporate responsibility to respect human rights" recognises that it is the responsibility of businesses and corporations to respect human rights. It is a global standard of expected conduct for all business enterprises wherever they operate. It exists independently of a States' ability and/or willingness to fulfil their human rights obligations and does not diminish those obligations.

5.11.2 Initial Observation and Baseline Conditions

Uzbekistan operates on the basis of its national policies, the constitution and applicable regulations concerning both human rights and labour & working conditions on the basis. Uzbekistan is a signatory of the International Labour Organisation (ILO).

Human Rights Watch an international NGO states that, '*Since Uzbekistan's President Shavkat Mirziyoyev assumed the presidency in 2016, the government has taken some concrete steps to improve the country's human rights record.*'

5.11.3 Potential Impacts

Table 5-12 Potential Labour & Working Conditions Impacts

ACTIVITY	ASPECT	IMPACTS AND ZONE OF INFLUENCE	POTENTIAL RECEPTORS
Construction Phase			
Employment of staff	Contracting	Discrimination and exploitation. Risk of poorly formed contracts (or no contracts), risks of non-compliance with labour law and lender requirements, employment of labour that is forced or child labour.	Project workforce (PC, EPC Contractor and Sub-Contractors)
Day-to-day and specific construction & commissioning activities	Risks to worker occupational health and safety	Injury or death to workers where key risks are not suitably managed.	Project workforce
	Working Conditions	Poor conditions provided to workers with lack of welfare facilities, first aid, or other typical working amenities.	Project workforce
	Gender Based Violence and Harassment/Sexual Exploitation & Abuse/ Sexual Harassment	Within the workforce and potentially applicable to both women and men.	Project workforce
Worker Accommodation	Camps	Poor quality housing without access to all (or some/inadequate) required amenities and/or other non-compliance with the EBRD and IFC Worker Accommodation Guidelines.	Applicable to Project workforce requiring dedicated accommodation
Operational Phase			
Employment of staff	Contracting	Discrimination and exploitation. Risk of poorly formed contracts (or no contracts), risks of non-compliance with labour law and lender requirements, employment of labour that is forced or child labour.	Project workforce (PC, O&M Company and Sub-Contractors)
Day-to-day and specific operational and maintenance activities	Risks to worker occupational health and safety	Injury or death to workers where key risks are not suitably managed.	Project workforce
	Working Conditions	Poor conditions provided to workers with lack of welfare facilities, first aid, or other typical working amenities.	Project workforce

5.11.4 Proposed ToR for the ESIA

The ESIA will highlight applicable requirements and risks that the Project may encounter related to labour and working conditions, similar to those outlined above. This will also include necessary compliance requirements to meet lender guidelines.

It will aim to identity appropriate mitigation and management measures to ensure that such risks are minimised and/or appropriately managed throughout the entire project workforce and any key supply chains.

APPENDIX C – PRESIDENTIAL DECREE (JULY 2022)

Unofficial translation

DECREE
OF PRESIDENT OF THE REPUBLIC OF UZBEKISTAN

08/07/2022 **PD-314**

On amendments and additions to some acts of the President of the Republic of Uzbekistan in order to allocate the necessary land plots for the development of renewable energy sources

As a result of the formation of the legal framework over the past three years and the creation of favorable conditions for the development of renewable energy, work has begun to date on the construction of 10 solar and wind power plants with a total capacity of 2,897 MW at the expense of foreign direct investment in the amount of 2.9 billion US dollars.

At the same time, in order to ensure the stability of property and legal relations on land issues, land protection, guaranteeing the property rights of landowners, as well as introducing them into free circulation as an object of civil law relations by determining the economic value of land, a transparent, market-based and equal procedure for allocating land plots has been introduced.

In order to allocate land plots for the construction of newly built solar and wind power plants to expand the use of renewable energy sources on the basis of current legislation, as well as in accordance with the Decree of the President of the Republic of Uzbekistan dated June 8, 2021 No. UP-6243 "On measures to ensure equality and transparency in land relations, reliable protection of land rights and their transformation into a market asset":

1. Make amendments and additions to some acts of the President of the Republic of Uzbekistan according to the annex, providing:

allocation to the Ministry of Energy on the right of permanent use for state and public needs of land plots necessary for the construction of wind farms, substations and power lines in accordance with the conditions specified in the Investment Agreement and the Agreement on Electricity Purchase concluded with foreign investors;

provision by the Ministry of Energy of land plots for rent to investors for a period equal to the construction and operation of wind farms;

within the framework of the construction and operation of wind power plants, if the land plots allocated for state and public needs belong to the category of agricultural land, their transfer to the category of non-agricultural industrial land;

granting the Minister of Finance, the authority to sign on behalf of the Government of the Republic of Uzbekistan an agreement on reimbursement of expenses of the Asian Development Bank within the framework of the investment project "Construction of a 500 MW wind power plant in Navoi region".

1. Control over the implementation of this resolution shall be entrusted to the Prime Minister of the Republic of Uzbekistan A.N.Aripov.

President
of the Republic of Uzbekistan **Sh. Mirziyoyev**

Annex
to the Decree of the President of the Republic
of Uzbekistan dated July 8, 2022 No. PP-314

Amendments and additions to some acts of the President of the Republic of Uzbekistan

1. In the Decree of the President of the Republic of Uzbekistan dated December 22, 2020 No. PD-4933 "On measures for the implementation of the investment project "Construction of a 500 MW wind power plant in Navoi region":

a) in paragraph 5, replace the words "khokimiyat of Navoi region" with the words "Ministry of Energy";

b) add paragraph 7^1 as follows:

"7^1. To authorize the Minister of Finance to sign, on behalf of the Government of the Republic of Uzbekistan, an agreement with the Asian Development Bank on reimbursement of expenses of the Asian Development Bank in a form acceptable to the Government of the Republic of Uzbekistan, in case of fulfillment by JSC "National Electric Networks of Uzbekistan" of payment obligations to a foreign bank opening a letter of credit under the guarantee of the Asian Development Bank";

c) paragraph 8 should be worded as follows:

"8. The Khokimiyat of Navoi region, by July 30, 2022, to ensure the allocation to the Ministry of Energy of a land plot on the right of permanent use, as well as the land area necessary for the construction of a wind farm, substation, and overhead power lines based on the coordinates of the land occupied by supporting structures that meet the conditions specified in the Investment Agreement and the Agreement on purchase of electric energy".

The Ministry of Energy in accordance with this paragraph for state and public needs to ensure the transfer of lease:

Project company - a land plot allocated for the construction of a wind power plant and substation for a period equal to the period of implementation of the Investment Project;

JSC "National Electric Networks of Uzbekistan" - a land plot allocated for the construction of overhead transmission lines.

Determine that the payment for the right to lease land at market value is expressed in the form of rent applicable to the land and paid by the Project Company.

At the same time, release the Project Company and JSC "National Electric Networks of Agricultural Uzbekistan" production from compensation (compensation losses of payments) when using agricultural land as part of the implementation of an investment project";

d) add paragraph 8^1 as follows:

"8^1. To agree with the proposal of the Ministry of Investment and Foreign Trade, the Ministry of Agriculture, the Ministry of Water Resources, the Khokimiyat of Navoi region on the transfer of land allocated for the placement of an investment project with an area of 293.35 hectares in the Tamdyn district of Navoi region from the category of agricultural land to the category of industrial land according to the annex to this resolution".

The Khokimiyat of Navoi region should ensure the development of new agricultural lands equal to the area of land plots, the category of which is changing according to this resolution, by the end of 2022";

e) add the following appendix:

Appendix
to the Decree of the President of the Republic of Uzbekistan
dated December 22, 2020 No. PP-4933

The list of land plots, the category of which is being transferred from agricultural to industrial and other purposes within the framework of the Investment project "Construction of a 500 MW wind power plant in the Tamdy district of Navoi region"

Name of territory	Contour number	Land area (hectare)	Pastures	Ball bonitet
For a wind farm				
Tamdy district, Tomdibulok community	364к	12,97	12,97	Not valuated
	371к	33,99	33,99	Not valuated
	566к	9,25	9,25	Not valuated
	565к	1,35	1,35	Not valuated
	571к	18,56	18,56	Not valuated
	572к	35,04	35,04	Not valuated
	573к	8,0	8,0	Not valuated
	576к	4,2	4,2	Not valuated
	577к	24,26	24,26	Not valuated
	584к	28,34	28,34	Not valuated
	585к	48,75	48,75	Not valuated
Total by territory		**224,71**	**224,71**	

Name of territory	Contour number	Land area (hectare)	Pastures	Ball bonitet
Tamdy district Octav community	29к	13,56	13,56	Not valuated
	33к	14,96	14,96	Not valuated
	34к	4,58	4,58	Not valuated
Total by territory		**33,1**	**33,1**	
Total		**257,81**	**257,81**	
For the construction of a substation				
Tamdy district, Tomdibulok community	571к	11,25	11,25	Not valuated
Total		**11,25**	**11,25**	
For the construction of supporting structures of overhead transmission lines				
Tamdy district, Tomdibulok community	571к	0,05	0,05	Not valuated
Total		**0,05**	**0,05**	
For bird survey and wind survey system				
Tamdy district, Tomdibulok community	364к	2,59	2,59	Not valuated
	371к	3,01	3,01	Not valuated
	566к	0,33	0,33	Not valuated
	571к	2,51	2,51	Not valuated
	572к	2,76	2,76	Not valuated

Name of territory	Contour number	Land area (hectare)	Pastures	Ball bonitet
	573к	2,18	2,18	Not valuated
	576к	0,17	0,17	Not valuated
	577к	2,26	2,26	Not valuated
	584к	2,59	2,59	Not valuated
	585к	2,92	2,92	Not valuated
Total by territory		**21,32**	**21,32**	
Tamdy district Octav community	29к	0,5	0,5	Not valuated
	33к	2,34	2,34	Not valuated
	34к	0,08	0,08	Not valuated
Total by territory		**2,92**	**2,92**	
Total		**24,24**	**24,24**	
Total by territory		**293,35**	**293,35**	

1. In the Decree of the President of the Republic of Uzbekistan dated February 23, 2021 No. PD-5001 “On measures for the implementation of the investment project Construction of a wind power plant with a capacity of 300 - 500 MW in the Peshku district of Bukhara region":

a) in paragraph 5, replace the words "khokimiyat of Bukhara region" with the words "Ministry of Energy";

b) paragraph 8 should be worded as follows:

"8. The Khokimiyat of the Bukhara region, by July 30, 2022, to ensure that the Ministry of Energy is allocated a land plot on the right of permanent use, as well as the land area necessary for the construction of a wind power plant, substation, and overhead power lines based on the coordinates of the land occupied by supporting structures that meet the conditions specified in the Investment Agreement and the Agreement on purchase of electric energy.

The Ministry of Energy in accordance with this paragraph for state and public needs to ensure the transfer of lease:

The project company of the land plot allocated for the construction of the wind power plant and substation for a period equal to the period of implementation of the Investment Project;

JSC "National Electric Networks of Uzbekistan" - a land plot allocated for the construction of overhead power lines.

Determine that the payment for the right to lease land at market value is expressed in the form of rent applicable to the land and paid by the Project Company.

At the same time, to exempt the Project Company and JSC "National Electric Networks of Uzbekistan" from compensation for losses of agricultural production (compensation payments) when using agricultural land as part of the implementation of the Investment Project";

b) add paragraph 8^1 as follows:

"8^1. To agree with the proposal of the Ministry of Investment and Foreign Trade, the Ministry of Agriculture, the Ministry of Water Management, the khokimiyats of Bukhara and Navoi regions on the transfer of land allocated for the placement of an investment project with a total area of 154.2 hectares in the Peshkun and Gijduvan districts of Bukhara region and Kanimekh district of Navoi region from the category of agricultural land to the category of industrial land according to the annex to this resolution.

The khokimiyats of Bukhara and Navoi regions should ensure the development of new agricultural lands equal to the area of land plots, the category of which is changing according to this resolution, by the end of 2022";

d) add the following appendix:

Appendix
to the Decree of the President of the Republic of Uzbekistan
dated February 23, 2021 No. PP-5001

The list of land plots, the category of which is being transferred from agricultural to industrial and other purposes as part of the implementation of the Investment project "Construction of a wind power plant with a capacity of 300 - 500 MW in the Peshku district of the Bukhara region".

Name of territory	Contour number	Land area (hectare)	Pastures	Ball bonitet
For wind farm				
Peshku district, Dzhankeldy village	39к	4,63	4,63	Not valuated
	86к	11,65	11,65	Not valuated
	42к	0,5	0,5	Not valuated
	44к	32,84	32,84	Not valuated
	45к	26,04	26,04	Not valuated
	87к	41,84	41,84	Not valuated
Total		**117,5**	**117,5**	
For the construction of supporting structures of overhead transmission lines				
Peshku district, Dzhankeldy village	86к	0,1	0,1	Not valuated
	87к	1,25	1,25	Not valuated

Name of territory	Contour number	Land area (hectare)	Pastures	Ball bonitet
Total by territory		**1,35**	**1,35**	
Gijduvan district, Kukcha community	117к	0,73	0,73	Not valuated
	118к	0,35	0,35	Not valuated
	120к	0,32	0,32	Not valuated
	123к	0,59	0,59	Not valuated
	161к	0,38	0,38	Not valuated
	159к	0,14	0,14	Not valuated
	160к	0,29	0,29	Not valuated
	175к	0,33	0,33	Not valuated
	176к	0,32	0,32	Not valuated
	177к	0,61	0,61	Not valuated
Total by territory		**4,06**	**4,06**	
	125к	0,65	0,65	Not valuated
	126к	1,05	1,05	Not valuated
	127к	0,9	0,9	Not valuated
	128к	0,15	0,15	Not valuated
	129к	0,45	0,45	Not valuated

Name of territory	Contour number	Land area (hectare)	Pastures	Ball bonitet
Navoi region, Kanimekh district Aul "Karakata"	130к	0,6	0,6	Not valuated
	131к	0,1	0,1	Not valuated
	132к	0,75	0,75	Not valuated
	142к	0,2	0,2	Not valuated
	164к	0,9	0,9	Not valuated
	166к	0,85	0,85	Not valuated
	167к	0,05	0,05	Not valuated
	168к	1,65	1,65	Not valuated
	169к	0,9	0,9	Not valuated
	176ак	1,3	1,3	Not valuated
	183а к	0,45	0,45	Not valuated
	182а к	**1,05**	**1,05**	Not valuated
	180к	0,3	0,3	Not valuated
	181к	1,2	1,2	Not valuated
Total by territory		**13,5**	**13,5**	
Total		**18,91**	**18,91**	
For the construction of substation				

Name of territory	**Contour number**	**Land area (hectare)**	*Pastures*	**Ball bonitet**
Peshku district, Dzhankeldy village	87к	17,79	17,79	Not valuated
Total by territory		**17,79**	**17,79**	
Total for project		**154,2**	**154,2**	

,,

1. In the Decree of the President of the Republic of Uzbekistan dated February 23, 2021 No. PP-5003 "On measures for the implementation of the investment project "Construction of a 500 MW wind power plant in Gijduvan district of Bukhara region":

a) in paragraph 5, replace the words "khokimiyat of Bukhara region" with the words "Ministry of Energy";

b) paragraph 8 should be worded as follows:

8. The Khokimiyat of the Bukhara region, by July 30, 2022, to ensure the allocation to the Ministry of Energy of a land plot on the right of permanent use, as well as the land area necessary for the construction of a wind power plant, substation, and overhead power lines based on the coordinates of the land occupied by the supporting structures corresponding to the conditions specified in the Investment Agreement and the Agreement about the purchase of electric energy.

The Ministry of Energy in accordance with this paragraph for state and public needs to ensure the transfer of lease:

The project company of the land plot allocated for the construction of the wind power plant and substation for a period equal to the period of implementation of the Investment Project;

JSC "National Electric Networks of Uzbekistan" - a land plot allocated for the construction of overhead power lines.

Determine that the payment for the right to lease land at market value is expressed in the form of rent applicable to the land and paid by the Project Company.

At the same time, release the Project Company and JSC "National Electric Networks of Uzbekistan" production from compensation (compensation losses of payments) when using agricultural land as part of the implementation of an investment project";

c) add the following paragraph 8^1:

"8^1 To agree with the proposal of the Ministry of Investments and Foreign Trade, the Ministry of Agriculture, the Ministry of Water Management, the Khokimiyat of Bukhara region on the transfer of land allocated for the placement of an investment project with an area of 172.55 hectares, 0.18 hectares of which are irrigated, in Gijduvan, Shafirkan, Peshkun, Ramitan, Jandar and Karakul districts of Bukhara region from the category of agricultural appointments to the category of industrial lands in accordance with the annex to this resolution.

The Khokimiyat of the Bukhara region, by the end of 2022, to ensure the development of new irrigated land plots in an amount equal to ten times the size of irrigated land plots, as well as new agricultural lands equal to the area of pasture lands1 the category of lands of which is changing according to this resolution";

d) add the following appendix:

Appendix

to the Decree of the President of the Republic of Uzbekistan dated February 23, 2021 No. PP-5003

The list of land plots, the category of which is being transferred from agricultural to industrial and other purposes within the framework of the Investment project "Construction of 500 MW wind power plant in Gijduvan district of Bukhara region"

Name of territory	Contour number	Land area (hectare)	From them		Ball bonitet
			irrigated croplands	Pastures	
For wind farm					
Gijduvan district, Kukcha community	193к	9,97		9,97	Not valuated
	194к	4,97		4,97	Not valuated
	178к	28,23		28,23	Not valuated
	183к	1,65		1,65	Not valuated
	171к	1,65		1,65	Not valuated
	176к	6,66		6,66	Not valuated
	163к	1,65		1,65	Not valuated
	256к	4,97		4,97	Not valuated
	257к	1,66		1,66	Not valuated
	254к	1,66		1,66	Not valuated
	244к	1,66		1,66	Not valuated
	258к	1,66		1,66	Not valuated

Name of territory	Counter number	Land area (hectare)	From them		Ball bonitet
			Irrigated croplands	Pastures	
Gijduvan district, Kukcha community	260к	1,66		1,66	Not valuated
	261к	1,66		1,66	Not valuated
	243к	1,65		1,65	Not valuated
	242к	3,35		3,35	Not valuated
	263к	1,65		1,65	Not valuated
	264к	1,65		1,65	Not valuated
	170к	36,54		36,54	Not valuated
	276к	3,32		3,32	Not valuated
	238к	3,32		3,32	Not valuated
	239к	3,32		3,32	Not valuated
	275к	1,66		1,66	Not valuated
	262к	4,97		4,97	Not valuated
Total		**131,14**		**131,14**	
For the construction of supporting structures of overhead transmission lines					
Gijduvan district, Kukcha community	178к	0,67		0,67	Not valuated
	240к	0,38		0,38	Not valuated
	239к	0,45		0,45	Not valuated
	237к	0,43		0,43	Not valuated
	176к	0,30		0,3	Not valuated

Name of territory	Counter number	Land area (hectare)	From them		Ball bonitet
			Irrigated croplands	Pastures	
Gijduvan district, Kukcha community	271к	0,22		0,22	Not valuated
	265к	0,17		0,17	Not valuated
	266к	0,39		0,39	Not valuated
	273к	0,42		0,42	Not valuated
	274к	0,45		0,45	Not valuated
	275к	0,24		0,24	Not valuated
	276к	0,29		0,29	Not valuated
	277к	0,39		0,39	Not valuated
Total		**4,80**		**4,80**	
Shofirkon district, Galaba community	10980к	0,3		0,3	Not valuated
	10984к	0,38		0,38	Not valuated
	10988к	0,35		0,35	Not valuated
	10990к	0,48		0,48	Not valuated
	10991к	0,2		0,2	Not valuated
	10992к	0,11		0,11	Not valuated
	12436к	0,18		0,18	Not valuated
	12490к	0,04		0,04	Not valuated
	12491к	0,09		0,09	Not valuated
	12492к	0,24		0,24	Not valuated
	12501к	0,59		0,59	Not valuated

Name of territory	Counter number	Land area (hectare)	From them		Ball bonitet
			Irrigated croplands	Pastures	
Shifirkon district, Galaba community	12503к	0,54		0,54	Not valuated
	12504к	0,34		0,34	Not valuated
	12505к	0,2		0,2	Not valuated
	12506к	0,34		0,34	Not valuated
Total by territory		**4,38**		**4,38**	
Peshku district, Dzhankledy community	107к	1,1		1,1	Not valuated
	109к	0,47		0,47	Not valuated
	110к	1,32		1,32	Not valuated
Total by territory		**2,89**		**2,89**	
Romitan district, E.Khojaev and Yangiobod community	9к	0,23		0,23	Not valuated
	10к	0,2		0,2	Not valuated
	11к	0,59		0,59	Not valuated
	14к	0,51		0,51	Not valuated
	17к	0,2		0,2	Not valuated
	19к	0,13		0,13	Not valuated
	26к	0,25		0,25	Not valuated
	30к	0,1		0,1	Not valuated
	31к	0,04		0,04	Not valuated
	32к	0,1		0,1	Not valuated
	33к	0,22		0,22	Not valuated
Total by territory		**2,57**		**2,57**	

Name of territory	Counter number	Land area (hectare)	From them		Ball bonitet
			Irrigated croplands	Pastures	
Jandar district, A.Temur community	19071к	0,61		0,61	Not valuated
	19072к	0,25		0,25	Not valuated
	19077к	1,6		1,6	Not valuated
	19080к	0,67		0,67	Not valuated
	19087к	0,35		0,35	Not valuated
	19100к	0,25		0,25	Not valuated
	19101к	0,87		0,87	Not valuated
	19109к	0,44		0,44	Not valuated
	19136к	0,35		0,35	Not valuated
	19137к	0,91		0,91	Not valuated
	19138к	0,43		0,43	Not valuated
Total by territory		**6,73**		**6,73**	
Karakul district, Karakul community	2094к	0,07		0,07	Not valuated
	2092к	0,15		0,15	Not valuated
	2093к	0,06		0,06	Not valuated
	2135к	0,28		0,28	Not valuated
	2136к	0,09		0,09	Not valuated
	2137к	0,01		0,01	Not valuated
	2141к	0,03	0,03		49 ball
	2160к	0,02	0,02		40 ball

Name of territory	Counter number	Land area (hectare)	From them		Ball bonitet
			Irrigated croplands	Pastures	
Karakul district, Karakul community	2167к	0,14		0,14	Not valuated
	2173к	0,27		0,27	Not valuated
	2207к	0,02	0,02		49 ball
	2209к	0,02	0,02		55 ball
	2316к	0,03	0,03		55 ball
	2368к	0,03	0,03		55 ball
	2370к	0,03	0,03		44 ball
Total by territory		**1,25**	**0,18**	**1,07**	
Total		**22,62**	**0,18**	**22,44**	
For the construction of substation					
Gijduvan district, Kukcha community	172к	1,81		1,81	Not valuated
	178к	16,98		16,98	Not valuated
Total by territory		**18,79**		**18,79**	
Total for the project		**172,55**	**0,18**	**172,37**	

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APPENDIX D – CONSULTATION LETTERS CLARIFYING THE ISSUE OF LAND LEASE AGREEMENT

FE "ACWA POWER BASH WIND" LLC

The Republic of Uzbekistan, Tashkent city, Yunusabad district, Amir Temur Avenue, 107-B, International Business Centre, floor No. 13 office No. A-2.

ИП ООО «ACWA POWER BASH WIND»

Республика Узбекистан, город Ташкент, Юнусабадский район, проспект Амира Темура, 107-Б, Международный Бизнес Центр, этаж № 13 офис № А-2.

№49 20 sentabr 2021 y.

Buxoro viloyati hokimligiga

Buxoro viloyati G'ijduvon tumanida quvvati 500 MVt bo'lgan shamol stansiyasini qurish loyihasi masalasida

Nusxasi: Buxoro viloyati G'ijduvon tumani hokimligiga

XK "ACWA POWER BASH WIND" MChJ Sizga bo'lgan hurmatini va korxonamiz faoliyatini qo'llab-quvvatlagani uchun minnatdorchilik bildiradi.

Hereby, FE "ACWA POWER BASH WIND" LLC expresses its respect to you and thanks you for the support provided to the activities of our companies.

Binobarin, Buxoro viloyatida shamol elektr stansiyalarini qurish loyihalari bo'yicha O'zbekiston Milliy Elektr Tarmoqlari bilan elektr energiyasini sotib olish bo'yicha shartnoma va O'zbekiston Respublikasi Investitsiya va Tashqi Savdo Vazirligi bilan investitsiya bitimi imzolandi. Yuqoridagi kelishuvlar asosida ushbu loyihani amalga oshirish bo'yicha keyingi chora-tadbirlar to'g'risida O'zbekiston Respublikasi Prezidentining PQ-5003 - sonli Qarori imzolandi (1-ilova 10-bet).

Accordingly, on projects for the construction of wind power plants in the Bukhara region, PPA was signed with NEGU and Investment Agreement with MIFT of the Republic of Uzbekistan. Based on the above agreements, Resolution of the President of the Republic of Uzbekistan No. 5003 on further measures for the implementation of this project was adopted (Annex 1, 10-pages).

Investitsiya loyihalari doirasida shamol stansiyalarini qurish uchun maqbul yer uchastkalari aniqlandi va 2021 yil 19-mart sanasida Buxoro Viloyati G'ijduvon tumani Hokimligining 173-sonli yer ucahstkasi ajratish Qarori qabul qilindi (2-ilova 2-bet). Shu tariqa, bu qaror Buxoro viloyati hokimligi tomonidan 2021 yil 23-mart sanasida 129-son qaror bilan tasdiqlandi (3-ilova 3-bet). Holbuki, Pillachilik va Qorako'lchilikni Rivojlantirish Qo'mitasi bu yerlarga egalik huquqi borligini ta'kidlab, yer ajratish qarorlari qaytadan qo'mita tomonidan berilishi kerakligi va keyinchalik yer ijara shartnomasi ham uchbu qo'mita bilan imzolanishi kerakligini aytib o'tishdi.

As part of the investment projects, suitable land plots for the construction of wind farms were identified, and on March 19, 2021, the Khokimiyat of Gijduvan district of Bukhara region adopted a Resolution No. 173 on the allocation of land (Annex 2, 2-pages). Thus, this decision was approved by the Bukhara Region Khokimiyat on March 23, 2021 by Resolution No. 129 (Annex 3, 3-pages). However, Sericulture and Karakul Farming Development Committee said that land ownership rights were in place and that land allocation decisions should be re-issued by the Committee and a land lease agreement should be signed with the Committee later.

Yuqoridagilardan kelib chiqib, Sizdan qisqa muddat ichida masalaga oydinlik kiritish va yer ijara shartnomasi kim bilan tuzilishi kerakligi haqida ma'lumot berishingizni so'raymiz.

Based on the above, we ask you to clarify the issue as soon as possible and provide information on with whom the land lease agreement should be concluded.

Hurmat ila,

Bosh direktor

Sincerely,

Onarqulov Sh. K.

Ijrochi: Mavlonov A
+99890 026 9960

O‘ZBEKISTON RESPUBLIKASI PREZIDENTINING
QARORI

2021 yil « 23 » февраль № ПҚ–5003

“Бухоро вилоятининг Ғиждувон туманида қуввати 500 МВт бўлган шамол электр станциясини қуриш” инвестиция лойиҳасини амалга ошириш чора-тадбирлари тўғрисида

Қайта тикланадиган энергияни ривожлантиришни таъминлаш, электр энергияси ишлаб чиқаришда табиий газдан фойдаланишни камайтириш ҳамда ишлаб чиқаришни диверсификациялаш, шунингдек, электр энергетика тармоғига тўғридан-тўғри хорижий инвестицияларни кенг жалб қилиш мақсадида:

1. Қуйидагилар:

а) “International Company for water and power projects” (Саудия Арабистони) компанияси томонидан (кейинги ўринларда – Инвестор) “Бухоро вилоятининг Ғиждувон туманида қуввати 500 МВт бўлган шамол электр станциясини қуриш” инвестиция лойиҳаси (кейинги ўринларда – инвестиция лойиҳаси) доирасида Ўзбекистон Республикасида “ACWA Power Bash Wind” МЧЖ (кейинги ўринларда – Лойиҳа компанияси) таъсис этилганлиги;

б) Ўзбекистон Республикаси Ҳукумати номидан Инвестициялар ва ташқи савдо вазирлиги, Инвестор ва Лойиҳа компанияси ўртасида 2021 йил 24 январда инвестиция битими имзоланганлиги (кейинги ўринларда – Инвестиция битими) ҳамда унга мувофиқ Инвестор ва Лойиҳа компанияси:

инвестиция лойиҳасини амалга оширишнинг бутун даври мобайнида Бухоро вилоятининг Ғиждувон туманида қуввати 500 МВт бўлган шамол электр станциясини (кейинги ўринларда – ШЭС) лойиҳалаштириши, молиялаштириши, қуриши ҳамда эксплуатация қилиши;

юзага келиши мумкин бўлган хавф-хатарларни ўз зиммаларига олган ҳолда, жами дастлабки баҳолаш бўйича 650 млн АҚШ доллари миқдорида тўғридан-тўғри хорижий инвестицияларни жалб этиши;

в) "Ўзбекистон миллий электр тармоқлари" АЖ ва Лойиҳа компанияси ўртасида 2021 йил 24 январда Электр энергиясини сотиб олиш тўғрисидаги битим (кейинги ўринларда – Электр энергиясини сотиб олиш тўғрисидаги битим) тўғридан-тўғри музокаралар натижасида имзоланганлиги ҳамда унга мувофиқ:

Лойиҳа компанияси ишлаб чиқарилган электр энергиясини ягона харидор бўлган "Ўзбекистон миллий электр тармоқлари" АЖга кафолатланган тарзда сотиш мажбуриятини олиши;

Лойиҳа компанияси қурилиш давридаги ўз мажбуриятлари лозим даражада бажарилишининг таъминоти сифатида 18 млн АҚШ доллари миқдорида банк кафолатини тақдим этиши;

инвестиция лойиҳаси доирасида ШЭСни ягона электр энергияси тармоғига улаш учун қуриладиган ҳаво электр узатиш тармоқлари ва бошқа электр иншоотлари Инвестор ва Лойиҳа компанияси томонидан қурилиши ва ушбу ишлар учун сарфланган харажатлар "Ўзбекистон миллий электр тармоқлари" АЖ томонидан 10 йил давомида ойлик тўловлар асосида қопланиши;

"Ўзбекистон миллий электр тармоқлари" АЖ 25 йил давомида электр энергиясини кафолатланган тарзда харид қилиш мажбуриятини олганлиги ва электр энергияси учун тўловни миллий валютада амалга ошириши назарда тутилганлиги маълумот учун қабул қилинсин.

2. Ўзбекистон Республикаси Ҳукумати номидан Инвестициялар ва ташқи савдо вазирлиги, Инвестор ва Лойиҳа компанияси ўртасида тузилган Инвестиция битими тасдиқлансин.

Белгилансинки, Инвестиция битими унда кўрсатилган шартлар асосида кучга киради.

3. "Ўзбекистон миллий электр тармоқлари" АЖ ва Лойиҳа компанияси ўртасида тўғридан-тўғри музокаралар натижасида имзоланган Электр энергиясини сотиб олиш тўғрисидаги битим маъқуллансин.

4. Инвестиция битими ва Электр энергиясини сотиб олиш тўғрисидаги битимга мувофиқ уларнинг амал қилиш муддати давомида электр энергиясининг сотиб олиниши чет эл валютасида деноминацияланган қатъий тариф бўйича амалга оширилиши белгилаб қўйилсин.

5. Инвестициялар ва ташқи савдо вазирлиги, "Ўзбекистон миллий электр тармоқлари" АЖ ва Бухоро вилояти ҳокимлигига Инвестор, Лойиҳа компанияси ва инвестиция лойиҳасини молиялаштиришда иштирок этадиган кредиторлар билан инвестиция лойиҳасини амалга ошириш доирасида имзоланган битимлар бўйича мажбуриятлар Лойиҳа компанияси томонидан бажарилмаган тақдирда Лойиҳа компанияси ва Инвестор ҳуқуқларини кредиторларга бериш юзасидан битимлар тузиш ҳуқуқи берилсин.

6. Электр энергиясини сотиб олиш тўғрисидаги битимга мувофиқ "Ўзбекистон миллий электр тармоқлари" АЖга:

Лойиҳа компанияси билан биргаликда Электр энергиясини сотиб олиш тўғрисидаги битимда белгиланган тартибга мувофиқ халқаро мустақил инжиниринг компанияларини жалб қилишга;

халқаро мустақил инжиниринг компаниялари билан инвестиция лойиҳаси доирасида белгиланган тартибда мажбурий экспертиза ва рўйхатдан ўтказмаган ҳолда, истисно тариқасида, тўғридан-тўғри шартномалар тузишга;

Лойиҳа компанияси томонидан ишлаб чиқариладиган электр энергиясини уч ой мобайнида сотиб олишни қоплаш учун мажбуриятлар бажарилишининг таъминоти сифатида Лойиҳа компанияси фойдасига Ўзбекистон Республикаси тижорат банкининг чет эл валютасида тасдиқланган, тикланадиган аккредитивини очишга рухсат берилсин.

7. Инвестиция битимига мувофиқ инвестиция лойиҳасини амалга ошириш доирасида Лойиҳа компаниясига қуйидагиларга рухсат берилсин:

кредитлаш, чет эл валютасидаги маблағларни олиш ва улардан фойдаланиш (шу жумладан, бошқалардан ташқари чет эл валютасида кредит тушумлари) учун чет элдаги хорижий банкларда банк ҳисобварақлари очиш;

чет элдаги банк ҳисобварақларидан чет эл валютасида кредит олиш;

инвестиция лойиҳаси доирасида бош пудратчи билан тузилган шартномада (EPC шартномаси) белгиланган кафолат муддати тугагунга қадар Лойиҳа компанияси иштирокчилари билан тузилган қарз битимлари ва оралиқ қарз битимлари бўйича чет эл валютасида пул маблағларини қабул қилиш;

Ўзбекистон Республикасининг ташқарисидаги хорижий пудратчиларга, етказиб берувчиларга ёки хорижий кредиторларга тўловларни тўғридан-тўғри чет элдаги банк ҳисобварақларидан амалга ошириш.

8. Бухоро вилояти ҳокимлиги (Б.К. Зарипов) Қишлоқ хўжалиги вазирлиги (Ж.А. Ходжаев) билан биргаликда бир ой муддатда Лойиҳа компаниясига Инвестиция битими ва Электр энергиясини сотиб олиш тўғрисидаги битимда кўрсатилган шартларда белгиланган тартибда ерни ижарага бериш бўйича шартнома имзоласин ва инвестиция лойиҳасини амалга ошириш муддатига тенг даврга ер участкасини ажратиб берсин.

Бунда, Лойиҳа компанияси инвестиция лойиҳасини амалга ошириш доирасида қишлоқ хўжалиги ва ўрмон хўжалиги ишлаб чиқариши нобудгарчиликлари ўрнини қоплашдан (компенсация тўловларидан) озод қилинсин.

9. Адлия вазирлиги (Р.К. Давлетов) инвестиция лойиҳасини амалга ошириш доирасида Инвестиция битими юзасидан юридик хулоса берсин.

10. Инвестициялар ва ташқи савдо вазирлиги (Ш.А. Вафаев) инвестиция лойиҳасининг амалга оширилиши, шунингдек, томонларнинг Инвестиция битими ва Электр энергиясини сотиб олиш тўғрисидаги битим доирасидаги мажбуриятларини бажариши устидан доимий назорат ўрнатсин.

11. Ташқи ишлар вазирлиги (А.Х. Комилов) Лойиҳа компаниясининг буюртманомаларига асосан инвестиция лойиҳасини амалга оширишда иштирок этадиган хорижий мутахассисларга, шунингдек, уларнинг оила аъзоларига кириш визалари расмийлаштирилишини (муддати узайтирилишини) белгиланган тартибда таъминласин.

12. Ички ишлар вазирлиги (П.Р. Бобожонов) Лойиҳа компанияси буюртманомаларига асосан инвестиция лойиҳасини амалга оширишда иштирок этадиган хорижий мутахассисларга, шунингдек, уларнинг оила аъзоларига кўп марталик визалар расмийлаштирилишини, берилишини (муддати узайтирилишини) ҳамда вақтинча яшаш жойи бўйича вақтинчалик рўйхатдан ўтишини ва унинг муддати узайтирилишини белгиланган тартибда таъминласин.

13. Бандлик ва меҳнат муносабатлари вазирлиги (Н.Б. Хусанов) Лойиҳа компанияси буюртманомаларига асосан Ўзбекистон Республикасига хорижий ишчи кучини (Ўзбекистон Республикаси фуқаролари бўлмаганлар орасидан) жалб этишга рухсатномалар берилишини (муддати узайтирилишини), шунингдек, хорижий фуқароларга Ўзбекистон Республикаси ҳудудида меҳнат фаолияти билан шуғулланиш ҳуқуқини берувчи тасдиқномалар берилишини (муддати узайтирилишини) белгиланган тартибда таъминласин.

14. Мазкур қарорнинг ижросини самарали ташкил этишга масъул ва шахсий жавобгар этиб энергетика вазири А.С. Султанов белгилансин.

Қарор ижросини ҳар чоракда муҳокама қилиб бориш, ижро учун масъул идоралар фаолиятини мувофиқлаштириш ва назорат қилиш Бош вазир ўринбосари С.У. Умурзаков зиммасига юклансин.

Амалга оширилаётган чора-тадбирлар натижадорлиги юзасидан ҳар чорак якунида Ўзбекистон Республикаси Президентига ахборот берилсин.

Ўзбекистон Республикаси Президенти **Ш. Мирзиёев**

Тошкент шаҳри

O‘ZBEKISTON RESPUBLIKASI PREZIDENTINING
QARORI

2021 yil « 23 » февраля № ПП–5003

О мерах по реализации инвестиционного проекта «Строительство ветряной электростанции мощностью 500 МВт в Гиждуванском районе Бухарской области»

В целях обеспечения развития возобновляемой энергии, уменьшения потребления природного газа при производстве электрической энергии, диверсификации производства, а также широкого привлечения прямых иностранных инвестиций в электроэнергетическую отрасль:

1. Принять к сведению, что:

а) компанией «International Company for water and power projects» (Саудовская Аравия) (далее – Инвестор) в рамках Инвестиционного проекта «Строительство ветряной электростанции мощностью 500 МВт в Гиждуванском районе Бухарской области» (далее – Инвестиционный проект) в Республике Узбекистан учреждено ООО «ACWA Power Bash Wind» (далее – Проектная компания);

б) между Правительством Республики Узбекистан в лице Министерства инвестиций и внешней торговли, Инвестором и Проектной компанией 24 января 2021 года подписано Инвестиционное соглашение (далее – Инвестиционное соглашение), предусматривающее взятие Инвестором и Проектной компанией обязательств, в соответствии с которыми:

проектирование, финансирование, строительство и эксплуатация ветряной электростанции мощностью 500 МВт в Гиждуванском районе Бухарской области (далее – ВЭС) осуществляются на протяжении всего периода реализации Инвестиционного проекта;

привлечение прямых иностранных инвестиций на сумму по предварительным расчетам 650 млн долларов США осуществляется с принятием возможных рисков на себя;

в) в результате прямых переговоров между АО «Национальные электрические сети Узбекистана» и Проектной компанией 24 января 2021 года заключено Соглашение о закупке электрической энергии (далее – Соглашение о закупке электрической энергии), в соответствии с которым:

Проектная компания принимает обязательство гарантированной продажи произведенной электрической энергии единому покупателю в лице АО «Национальные электрические сети Узбекистана»;

Проектная компания предоставляет банковскую гарантию по надлежащему исполнению своих обязательств в период строительства в размере 18 млн долларов США;

Инвестор и Проектная компания в рамках Инвестиционного проекта осуществляют строительство воздушных линий электропередач и других электрических сооружений для подключения ВЭС к единой сети электроэнергии, АО «Национальные электрические сети Узбекистана» – покрывает расходы, затраченные на указанные работы, в течение 10 лет на основе ежемесячных платежей;

АО «Национальные электрические сети Узбекистана» принимает обязательство гарантированной закупки электрической энергии в течение 25 лет и осуществления оплаты за электрическую энергию в национальной валюте.

2. Утвердить Инвестиционное соглашение между Правительством Республики Узбекистан в лице Министерства инвестиций и внешней торговли, Инвестором и Проектной компанией.

Определить, что Инвестиционное соглашение вступает в силу на основе указанных в нем условий.

3. Одобрить Соглашение о закупке электрической энергии, подписанное в результате проведения прямых переговоров между АО «Национальные электрические сети Узбекистана» и Проектной компанией.

4. Установить, что в соответствии с Инвестиционным соглашением и Соглашением о закупке электрической энергии на срок их действия установлен фиксированный тариф на закупку электрической энергии, деноминированный в иностранной валюте.

5. Предоставить Министерству инвестиций и внешней торговли, АО «Национальные электрические сети Узбекистана» и хокимияту Бухарской области право на заключение с Инвестором, Проектной компанией и кредиторами, принимающими участие в финансировании Инвестиционного проекта, соглашений по уступке прав Проектной компании и Инвестора кредиторам в случае неисполнения Проектной компанией обязательств по соглашениям, подписанным в рамках реализации Инвестиционного проекта.

6. Разрешить АО «Национальные электрические сети Узбекистана» в соответствии с Соглашением о закупке электрической энергии:

привлечение совместно с Проектной компанией международных независимых инжиниринговых компаний в соответствии с порядком, установленным в Соглашении о закупке электрической энергии;

заключение в установленном порядкев рамах Инвестиционного проекта в порядке исключения прямых договоров с международными независимыми инжиниринговыми компаниями без проведения обязательной экспертизы и регистрации;

открытие подтвержденного в иностранной валюте, возобновляемого аккредитива коммерческого банка Республики Узбекистан в пользу Проектной компании в качестве обеспечения исполнения обязательств по покрытию закупки производимой Проектной компанией электрической энергии на протяжении трех месяцев.

7. Разрешить Проектной компании в соответствии с Инвестиционным соглашением в рамках реализации Инвестиционного проекта:

открывать банковские счета в зарубежных банках для кредитования, получения и использования денежных средств в иностранной валюте (включая, помимо прочего, поступления кредитных средств в иностранной валюте);

получать кредитные средства в иностранной валюте на банковские счета за рубежом;

принимать денежные средства в иностранной валюте по договорам займа и промежуточным заемным соглашениям, заключенным с участниками Проектной компании до истечения гарантийного срока, установленного в договоре (EPC-контракте), заключенном с генеральным подрядчиком в рамках Инвестиционного соглашения;

осуществлять платежи зарубежным подрядчикам, поставщикам или иностранным кредиторам за пределами Республики Узбекистан напрямую с банковских счетов за рубежом.

8. Хокимияту Бухарской области (Зарипов Б.К.) совместно с Министерством сельского хозяйства (Ходжаев Ж.А.) в месячный срок в установленном порядке подписать договор о передаче Проектной компании земли на условиях Инвестиционного соглашения и Соглашения о закупке электрической энергии с выделением земельного участка на срок реализации Инвестиционного соглашения.

При этом освободить Проектную компанию от возмещения потерь сельскохозяйственного и лесохозяйственного производства (компенсационных выплат) в рамках реализации Инвестиционного проекта.

9. Министерству юстиции (Давлетов Р.К.) выдать юридическое заключение по Инвестиционному соглашению в рамках реализации Инвестиционного проекта.

10. Министерству инвестиций и внешней торговли (Вафаев Ш.А.) установить постоянный контроль за реализацией Инвестиционного проекта и исполнением сторонами обязательств в рамках Инвестиционного соглашения и Соглашения о закупке электрической энергии.

11. Министерству иностранных дел (Комилов А.Х.) на основании заявок Проектной компании в установленном порядке обеспечить оформление (продление) въездных виз иностранным специалистам, принимающим участие в реализации Инвестиционного проекта, и членам их семей.

12. Министерству внутренних дел (Бобожонов П.Р.) на основании заявок Проектной компании в установленном порядке обеспечить оформление, выдачу (продление) многократных виз, а также временную регистрацию по месту временного проживания и ее продление иностранным специалистам, принимающим участие в реализации Инвестиционного проекта, и членам их семей.

13. Министерству занятости и трудовых отношений (Хусанов Н.Б.) на основании заявок Проектной компании в установленном порядке обеспечить выдачу (продление) разрешений на привлечение в Республику Узбекистан иностранной рабочей силы (не из числа граждан Республики Узбекистан), а также выдачу (продление) иностранным гражданам подтверждений на право трудовой деятельности на территории Республики Узбекистан.

14. Возложить на министра энергетики Султанова А.С. персональную ответственность за эффективную организацию исполнения настоящего постановления.

Ежеквартальное обсуждение хода исполнения настоящего постановления, а также осуществление координации и контроля за деятельностью ведомств, ответственных за его исполнение, возложить на заместителя Премьер-министра Умурзакова С.У.

О результативности осуществляемых мер информировать Президента Республики Узбекистан по итогам каждого квартала.

Президент
Республики Узбекистан **Ш. Мирзиёев**

город Ташкент

O'ZBEKISTON RESPUBLIKASI BUXORO VILOYATI G'IJDUVON TUMANI HOKIMINING

Q A R O R I

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2021-yil "19" mart 173-son G'ijduvon tumani

Бухоро вилояти Ғиждувон тумани Барака маҳалла фуқаролар йиғини худудида қуввати 500 МВт бўлган шамол электр станциясини қуриш учун "ACWA POWER BASH WIND" масъулияти чекланган жамият шаклидаги хорижий корхонасига шартнома асосида ижарага ер участкаси ажратиш тўғрисида

Ўзбекистон Республикаси Президентининг 2021 йил 23 февралдаги ПҚ-5003-сонли қарори, Ўзбекистон Республикаси Вазирлар Маҳкамаси Раёсати мажлисининг 2020 йил 15 декабрдаги 164-сонли баёни, Ўзбекистон Республикаси Пиллачилик ва қоракўлчиликни ривожлантириш кўмитасининг 2020 йил 31 декабрдаги 1-2/241-сонли розилик хатини кўриб чиқиб, Ўзбекистон Республикаси "Ер кодекси"нинг 6-, 49-моддалари ва "Маҳаллий давлат ҳокимяти тўғрисида"ги Қонунининг 6-моддасига асосан

ҚАРОР ҚИЛАМАН:

1. Ўзбекистон Республикаси Президентининг 2021 йил 23 февралдаги "Бухоро вилоятининг Ғиждувон туманида қуввати 500 МВт булган шамол электр станциясини қуриш" инвестиция лойиҳасини амалга ошириш чора-тадбирлари тўғрисда"ги ПК-5003-сонли қарори раҳбарлик ва ижро учун қабул қилинсин.

2. Туман ҳокимининг ўринбосари Ф.Жабборов, Кадастр агентлиги Ғиждувон туман бўлими (О.Ҳакимов) Ғиждувон туман "Барака" маҳалла фуқаролар йиғини худудида жойлашган туман ҳокимлиги захира ерлар ҳисобидан "ACWA POWER BASH WIND" масъулияти чекланган жамият шаклидаги хорижий корхонасига қуввати 500 МВт бўлган шамол электр станциясини қуриш учун жами майдони 285,1 гектар (икки юз саксон беш гектар) бўлган (шундан 285,1 яйлов ерлари) ер участкасини шартнома асосида ижарага ажратиб берсин. Бунда:

ажратилган ер участкаси "қишлоқ хўжалигига мўлжалланган ерлар" тоифасидан "саноат, транспорт, алоқа, мудофаа ва бошқа мақсадларга мўлжалланган ерлар" тоифасига ўтказилсин;

ижара шартномаси "Бухоро вилоятининг Ғиждувон туманида қуввати 500 МВт бўлган шамол электр станциясини қуриш" инвестиция лойиҳаси доирасида тузилган инвестиция битими ва Электр энергиясини сотиб олиш тўғрисидаги битимда белгиланган шартларга ва муддатларга мувофиқ тузилиши таъминлансин.

3. "ACWA POWER BASH WIND" масъулияти чекланган жамият шаклидаги хорижий корхонаси зиммасига ажратилган ер майдони давлат рўйхатидан ўтказиш юклатилсин.

4. Ер участкасидан белгиланганидан бошқа мақсадларда фойдаланилганда ва Ер участкасидан икки йил мобайнида фойдаланилмаганда Ўзбекистон Республикаси Ер Кодексининг 4-боб 36-моддасига асосан ер участкасига бўлган ҳуқуқнинг бекор қилиниши ҳақида огоҳлантирилсин.

5. Ўзбекистон Республикаси Президентининг 2021 йил 23 февралдаги "Бухоро вилоятининг Ғиждувон туманида қуввати 500 МВт бўлган шамол электр станциясини қуриш" инвестиция лойиҳасини амалга ошириш чора-тадбирлари тўғрисида"ги ПҚ-5003-сонли қарорига мувофиқ "ACWA POWER BASH WIND" масъулияти чекланган жамияти шаклидаги хорижий корхонаси инвестиция лойиҳасини амалга ошириш доирасида қишлоқ хўжалиги ва ўрмон хўжалиги ишлаб чиқариш нобудгарчиликлари ўрнини қоплашдан (компенсация тўловларидан) озод қилинганлиги маълумот учун қабул қилинсин.

6. Кадастр агентлиги Ғиждувон туман бўлими бошлиғи О.Хакимовга "ACWA POWER BASH WIND" масъулияти чекланган жамият шаклидаги хорижий корхонасига қуввати 500 МВт бўлган шамол электр станциясини қуриш учун ер участкаси ажратилиши муносабати билан туман ер ҳисоботига тегишли ўзгартириш киритиш ҳамда лойиҳа объектларини жойлаштириш буйича аниқ координаталарини шамол тадқиқотлари якунлангандан сўнг жойида ўлчаб бериш топширилсин.

7. Ушбу қарорнинг тасдиғи вилоят ҳокимлигидан сўралсин.

8. Ушбу қарор бажарилишини назорат килиш туман ҳокимининг ўринбосарлари Ф. Жабборов ҳамда А. Юлдашовлар зиммаларига юклатилсин.

Туман ҳокими: **М.Умаров**

O'ZBEKISTON RESPUBLIKASI BUXORO VILOYATI HOKIMINING

Q A R O R I

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2021-yil "23" 03 129-son Buxoro sh.

Пешкў ва Ғиждувон туманлари ҳокимининг шамол электр станцияси қуриш учун ер ажратиш тўғрисидаги қарорларини тасдиқлаш тўғрисида

Ўзбекистон Республикаси "Ер Кодекси"нинг 5-моддаси, Ер участкалари бериш (реализация қилиш) масалаларини кўриб чиқувчи Бухоро вилояти комиссияси йиғилишининг 2021 йил 26 03 1/1370-сонли баённига асосланиб,

ҚАРОР ҚИЛАМАН:

1. Ғиждувон туман ҳокимининг;

- 2021 йил 19 мартдаги ""Бухоро вилояти Ғиждувон тумани Барака маҳалла фукаролар ҳудудида қуввати 500 МВт бўлган шамол электр станциясини қуриш" учун "ACWA POWER BASH WIND" масъулияти чекланган жамияти шаклидаги хорижий корхонаси (Саудия Арабистон)га шартнома асосида фойдаланишга ер майдони ажратиш тўғрисида"ги 173-сонли;

Пешкў туман ҳокимининг;

- 2021 йил 23 мартдаги "ACWA POWER DZYANKELDY" масъулияти чекланган жамияти шаклидаги хорижий корхонасига Пешкў туманида қуввати 300-500 МВт бўлган шамол электр станциясини қуриш мақсадида ер майдони ажратиб бериш тўғрисида"ги 227-сонли қарорлари тасдиқлансин.

2. "ACWA POWER BASH WIND" масъулияти чекланган жамияти шаклидаги хорижий корхонаси ажратилган жами 285,1 гектар, "ACWA POWER DZYANKELDY" масъулияти чекланган жамияти шаклидаги хорижий корхонасига 280,0 гектар яйлов ер майдонларидан мақсадли ва самарали фойдалансин.

3. Кадастр агентлиги вилоят бошқармаси (Ҳ.Ражабов) барча ҳужжатлар расмийлаштирилгандан кейин ер ажратиб беришни таъминласин ҳамда ер ҳисоботига тегишли ўзгартиришлар киритсин.

4. Ушбу қарор тасдиғи халқ депутатлари вилоят Кенгашининг навбатдаги сессияси мухокамасига киритилсин.

5. Мазкур қарор ижросининг назорати вилоят ҳокимининг қишлоқ ва сув хўжалиги масалалари бўйича ўринбосари А.Назаров зиммасига юклатилсин.

Вилоят ҳокими **Б.Зарипов**

Ер участкалари бериш (реализация қилиш) масалаларини кўриб чиқувчи Бухоро вилояти комиссияси йиғилишининг

1/1379- сонли баёни

2021 йил 19 03 2021.23.03.

Бухоро вилоят ҳокимлиги кичик мажлислар зали.

Раислик қилди: **Б.Зарипов - вилоят ҳокими, комиссия раиси.**

Қатнашдилар:

Вилоят ҳокимининг ўринбосари А.Назаров, Кадастр агентлиги вилоят бошқармаси (Ҳ.Ражабов), қишлоқ хўжалиги (А.Жавадов), марказий банк (Ж.Шаропов), статистика (У.Жуманазаров), ветеринария (Н.Собиров), молия (Б.Адилов), "Аму-Бухоро" ирригация тизимлари ҳавза (Э.Файзиллаев), Ўрмон хўжалиги (С.Жабборов) бошқармалари бошлиқлари, вилоят электр тармоқлари корхонаси (Б.Ҳаётов), "Ҳудудгаз Бухоро" газ таъминоти филиали (Ў.Абдиев), вилоят санитария-эпидемиология назорати маркази (А.Тўхтаев), Пиллачилик ва Қоракўлчилик бошқармаси (Ф.Қудратов) (рўйхат асосида).

Кун тартиби:

Ўзбекистон Республикаси "Ер Кодекси"нинг 5-моддасига асосан Пешкў ва Ғиждувон туманлари ҳокимларининг шамол электр станцияси қуриш учун ер майдони ажратиш тўғрисида"ги қарорларини тасдиқлаш ҳақида.

(Б.Зарипов, А.Назаров, Ҳ.Ражабов, В.Қаххоров, М.Умаров, Б.Зарипов)

Йиғилишда вилоят ҳокимининг ўринбосари А.Назаров сўзга чиқиб, Ўзбекистон Республикаси Президентининг 2021 йил 23 февралдаги "Бухоро вилоятининг Ғиждувон ва Пешкў туманида қуввати 300-500 МВт бўлган шамол электр станцияси қуриш" инвестиция лойиҳасини амалга ошириш чора-тадбирлари тўғрисида"ги ПҚ-5001 ва ПҚ-5003-сонли қарори ижросини таъминлаш мақсадида қайта тикланадиган энергияни ривожланантиришни таъминлаш, электр энергияси ишлаб чиқаришда табиий газдан фойдаланишни камайтириш ҳамда ишлаб чиқаришни диверсификациялаш, шунингдек, электр энергетика тармоғига тўғридан-тўғри хорижий инвестицияларни кенг жалб қилиш, кундан-кунга ривожланаётган мамлакатимизда ишлаб чиқариш ҳажмини кўпайишида зарур бўладиган электр энергиясига бўлган талабини қондириш мақсадида Пешкў ва Ғиждувон туманлари ҳудудларидан белгиланган тартибда ер майдон ажратиб берилганлиги айтиб, ушбу ер майдонларида лойиҳа компанияси инвестиция лойиҳасини амалга ошириш доирасида қишлоқ хўжалиги ва ўрмон хўжалиги ишлаб чиқариши нобудгарчиликлари ўрнини қоплашдан (компенсация тўловларидан) озод қилинганлиги йиғилиш қатнашчилари гапириб берди.

Шундан сўнг, Кадастр агентлиги вилоят бошқармаси бошлиғи вазифасини Ҳ.Ражабов сўзга чиқиб, ушбу мақсадда қабул қилинган Ғиждувон тумани

ҳокимининг “ACWA POWER BASH WIND” масъулияти чекланган жамияти шаклидаги хорижий корхонасига 2021 йил 19 мартдаги 173-сонли қарори билан 285,1 гектар ва “ACWA POWER DZYANKELDY” масъулияти чекланган жамияти шаклидаги хорижий корхонасига 2021 йил 23 мартдаги 227-сонли қарори билан 280,0 гектар яйлов ер майдонига шамол электр станцияси қуриш учун ер майдонларини Ўзбекистон Республикасининг “Ер кодекси” талаблари асосида расмийлаштирилганлиги ва қурилиш ишларига тадбиркорларнинг молиявий имкониятлари ўрганиб, лойихаларни ўз вақтида амалга оширишини айтиб бериб, ушбу қарорларнинг тасдиғини вилоят комиссияси муҳокамасига тақдим этди.

Муҳокама асосида комиссия аъзоларининг фикр ва мулоҳазаларини инобатга олиб, Ер участкалари бериш (реализация қилиш) масалаларини кўриб чиқувчи вилоят комиссияси йиғилиши

ҚАРОР ҚИЛАДИ:

1. Ўзбекистон Республикаси “Ер Кодекси”нинг 5-моддасига мувофиқ Ғиждувон туман ҳокимининг;

- 2021 йил 19 мартдаги ““Бухоро вилояти Ғиждувон тумани Барака маҳалла фуқаролар ҳудудида қуввати 500 МВт бўлган шамол электр станциясини қуриш” учун “ACWA POWER BASH WIND” масъулияти чекланган жамияти шаклидаги хорижий корхонаси (Саудия Арабистон)га шартнома асосида фойдаланишга ер майдони ажратиш тўғрисида”ги 173-сонли;

Пешкў туман ҳокимининг;

- 2021 йил 23 мартдаги “ACWA POWER DZYANKELDY” масъулияти чекланган жамияти шаклидаги хорижий корхонасига Пешкў туманида қуввати 300-500 МВт бўлган шамол электр станциясини қуриш мақсадида ер майдони ажратиб бериш тўғрисида”ги 227-сонли қарорлари тасдиқлансин.

2.Ушбу баён қарорининг тасдиғи вилоят ҳокимидан сўралсин.

Комиссия раиси **Б.Зарипов**

BUKHARA REGION MUNICIPALITY

N660

30.09.2021

To: Sh.Onarkulov, director of "ACWA Power Dzhankeldy Wind" LLC and "ACWA Power Bash Wind" LLC

Copy: Committee of the Republic of Uzbekistan on development of Sericulture and karakul farming

In response to letter N49 and N50 on 20.102021:

We are glad to know that your company is going to construct wind power plants in Bukhara region.

We have examined your request sent to municipality in close coordination with representatives of relevant sectors.

Based on chapter 4 of Presidential Decree 4422 dated on 22.08.2019 " Measure on increasing the effectiveness of electricity generation, development of facilities that economises usage of natural resources" it was agreed with Ministry of Energy that **Saudi Arabian company "ACWA Power" will construct wind power plants with a capacity from 500 MW up to 1000 MW based on public private partnership.**

Moreover, based on resolution of Cabinet of Ministries N164 (paragraph 4.b) on 15.12.2020 it was agreed to sign an agreement with ACWA Power on construction of wind power plants in Bukhara and Navoi regions with total capacity of 1000 MW.

Based on these assignments, relevant representatives examined available as well as suitable lands across the republic.

In particular, 31 000 ha of land in Peshku district and 21 500 ha of land near Ayakagitma lake in Gijduvan district were considered as the most suitable ones/ Overall, it was decided that for constructing wind farms as well as placing wind turbines will be necessary 1 100 ha of land.

These lands are allocated to the Committee on developing sericulture and karakul farming.

As per paragraph 13 of PD-4420 dated on 16.08.2019 "On measures of karakul farming development" it is indicated that that lads allocated for karakul farming development should be returned to the state reserve fund within receiving of agreement of "karakul farming associations".

In this regard, for implementation of PD 4422 dated on 22.08.2019 in a timely manner, Ministry of Energy and Saudi Arabian company "ACWA Power" sent request to the Bukhara region

municipality asking to allocate land plots required **for construction of power plant facilities in Gijduvan and Peshku districts on selected land plot considering that these plants will need only some parts, as per coordinates, for placing wind turbines and other facilities.**

As per letter received from **Committee on sericulture and karakul development farming No1-2/241 dated on 31.12.2020,** Committee has agreed on allocation of 1100 ha of land for construction of wind farms in Gijduvan and Peshku districts in case if it doesn't not affect on Committees activities.

As per paragraph 8 of PD-5001 on 23.03.2021 "On construction of wind power plant with a capacity of 300-500 MW in Peshku district of Bukhara region" and PD-5003 on 23.02.2021 "On construction of wind power plant with a capacity of 500MW in Gijduvan district of Bukhara region", local authorities are obliged to allocate required land plots to Investing company for realisation of these projects.

To execute these assignments, based on instructions given in PD-5001 on 23.02.2021 "ACWA Power Dhankeldy Wind" LLC ACWA Power as well as in signed investment agreement and PPA agreement, Dzhankeldy municipality has allocated required 280 ha of land under the mayor order N129 on 23.03.2021.

Furthermore, based on PD-5003 on 23.02.2021 as well as PPA agreement signed by Project developer – "ACWA Power Bash Wind", Gijduvan municipality has issued an order by allocating 285.0 for project implementation under order No129 dated 23.03.2021.

Considering above mentioned, we inform you that land lease agreements should be signed with relevant district municipalities as per land lease orders.

Aneex in 25 pages.

Deputy mayor

A.Nazarov

Municipality of Gijduvan District

No1/470

20.01.2021

To Mayor of Bukhara region municipality

In response to your letter No429 on 16.01.2021,

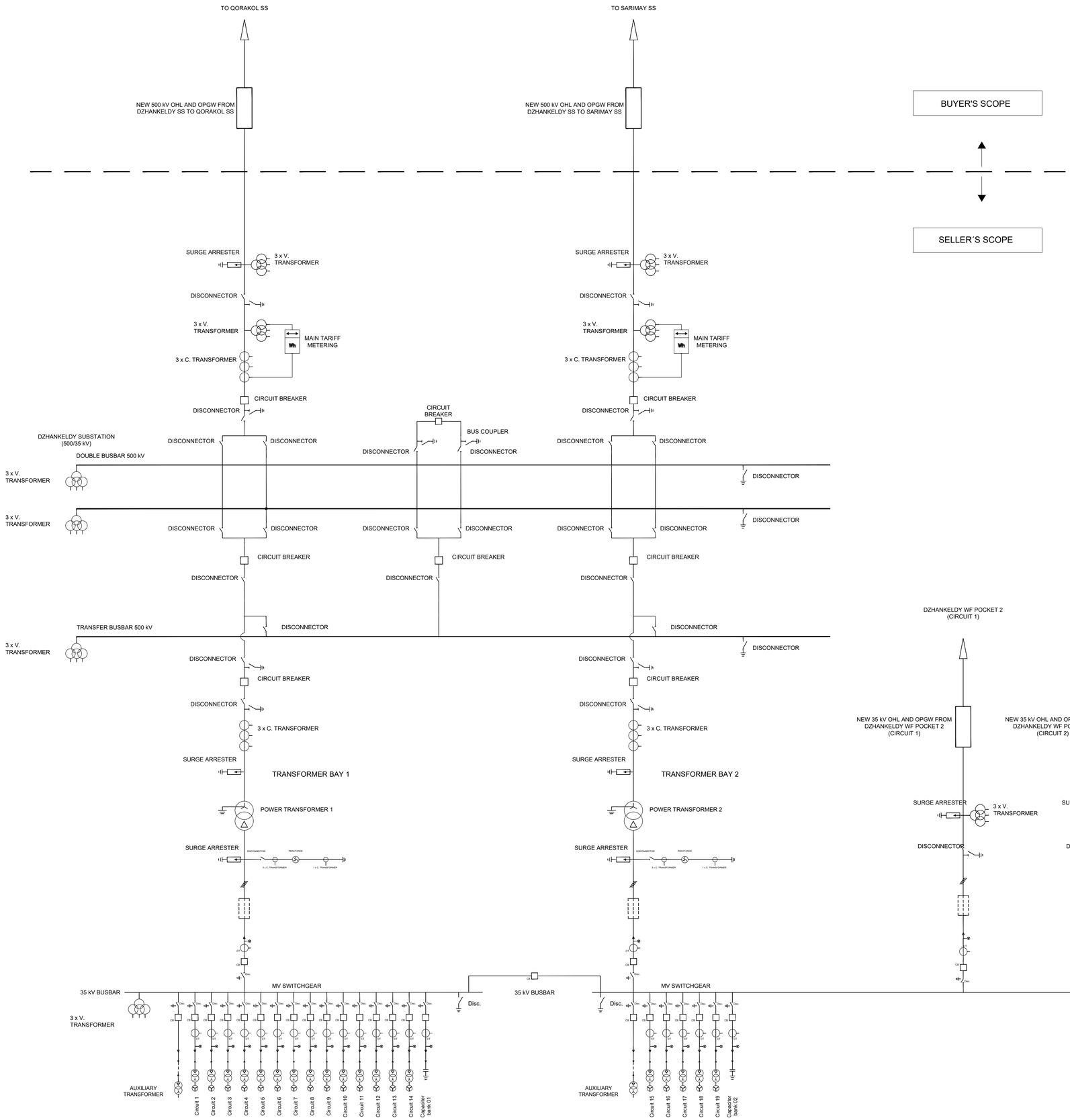
For execution of chapter 4 of the PD 4422 dated 22.08.2019 , we would like to inform you that land in on north-western part of Ayakagitma lake examined by representatives of Ministry of Energy will be allocated to investor as per request.

Best regards,

Mayor of district,

M.Umarov

APPENDIX E – AIR INSULATED SUBSTATION (AIS)



LEGEND

- CIRCUIT BREAKER
- CURRENT TRANSFORMER
- DISCONNECTOR
- EARTHING DISCONNECTOR
- FUSE
- GROUNDING DEVICE
- SURGE ARRESTER
- VOLTAGE DETECTOR
- THREE PHASE
- POWER TRANSFORMER
- VOLTAGE TRANSFORMER

REV.	DATE	DRAFTED	CHECKED	APPROVED	DESCRIPTION
00	23/07/2021	ACF	GDS	ABA	INITIAL VERSION

CLIENT

AUTHOR

MS Enertech S.L.
C/ San Roque 4, 09006 Burgos, España
Tel. +(34) 947 041 052
Tel. +(34) 947 218 542
www.ms-enertech.com

PROJECT

DZHANKELDY WIND FARM (UZBEKISTAN)

FILE NAME: E-DZH-RMT-B-P-I-91-R00-Plant SLD.dwg

SCALE: A1 N/A

GRAPH

DATE: JULY 2021

DRAWING TITLE

PLANT CONCEPT SLD
WITH INTERCONNECTION TO GRID

REVISION: 00

DRAWING NUMBER: 91

SHEET 01 OF 01

APPENDIX F - CRITICAL HABITAT ASSESSMENT REPORTS AND PRESENTATIONS

Please Refer to Appendices: Part B

APPENDIX G - DETAILED TERRESTRIAL ECOLOGY SURVEY REPORT

Please Refer to Appendices: Part B

APPENDIX H – INTERIM BIRD REPORT

Please Refer to Appendices: Part B

APPENDIX I - SOUND METER CALIBRATION CERTIFICATE

SCARLET | TECH

CERTIFICATE OF CALIBRATION

Model Name ..... Integrating Sound Level Meter

Model Number..... ST-105

Serial Number L80004

Microphone Serial No. 011272

Microphone Sensitivity..... -26.34 dB

Accuracy Class..... IEC61672 & IEC61260 Class 1

Date of Calibration 2021/03/12

Due Date 2022/03/11

SCARLET TECH CO., LTD.

Calibrated by:

I. This report certifies that all calibration equipment used in the test is traceable with the internal ISO9001 procedures and meets all specification given in the Manual(s) or respectively surpass them, and applies only to the unit identified above.

II. This certificate is produced with advanced equipment & procedures which permit comprehensive quality assurance verification of all data supplied herein.

III. This certificate of calibration shall not be reproduced except in full, without written permission of the Scarlet Tech Co Ltd Taiwan.

Test Environment Air Temperature: 23°C, Relative Humidity: 60%, Air Pressure: 101.1 kPa.

Instrument Noise

Nominal	Actual Value	Upper Lim.
A Weighting	7.2 dB	16dB
C Weighting	7.6dB	23dB
Z Weighting	15.3dB	28dB

126-130 dB Deviation

Nominal	126	127	128	129	130
Actual Value	126.0	127.0	128.0	129.0	130.0

Peak C Noise (500Hz)

	Full Cycle	Half Cycle P+	Half Cycle P-
Nominal	3.5	2.4	2.4
Actual Value	3.5	2.2	2.3

Impulse (A Weight)

Single Impulse	L_{Amax}-L_A	L_{Amax}-L_A	L_{Aeq}-L_A	L_{Aeq}-L_A
500 ms	-0.2	-4.4	-3.0	-7.0
10 ms	-11.8	-20.5	-20.0	-27.0

Frequency Response (A, C Electric Signals & Z Sound Signal)

Frequency	10	16	31.5	63	125	250	500	1k	2k	4k	8k	16k	20k
A Weight (dB)	-70.4	-56.8	-39.4	-26.3	-16.2	-8.7	-3.3	0.0	1.2	1.2	-0.5	-9.7	-21.0
C Weight (dB)	-14.0	-8.8	-3.2	-0.9	-0.2	-0.1	0.0	0.0	-0.1	-0.6	-2.3	-11.6	-23.0
Z Weight (dB)	-0.5	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1

Function Check:

Appearance Check	OK
Accessories Check	OK
Button Key Check	OK
Low BAT Check	OK
Back Light Check	OK
Contrast Check	OK
USB Connector Check	OK
AC Output	OK
Flash Disk Transfer	OK
Clock	OK

SCARLET | TECH

Calibration & Test Certificate

To whom it may concern

We hereby certify that the instrument under mentioned has been certainly calibrated according to our calibration standard and the testing result in the calibration procedure has been good enough within the tolerance regulated in our specification.

Test conditions

Model name ..... Class 1 Sound Level Calibrator
Model number..... ST-120
Serial number 210102612
Temperature ..... 29° C
Humidity .....60 %rh
Date of calibration 2021/03/12

Test data

Actual Value	Measure Value	Result
94 dB	94 dB	PASS
114 dB	114 dB	PASS

Calibrator

Model	Model Number	Serial Number	Due date
Standard SOUND LEVEL METER	B&K 2239	181001698	MAR/11/2022

The standard generators used for calibration procedure are proofed once a year and can be traceable to the standard authorized by public organization.

SCARLET TECH CO., LTD.

Approved by
Tim Lin, Head of Engineering Department

SCARLET | TECH

CERTIFICATE OF CALIBRATION

Model Name ..... Integrating Sound Level Meter

Model Number ST-105

Serial Number M70002

Microphone Serial No. 011255

Microphone Sensitivity ..... -26.52 dB

Accuracy Class ..... IEC61672 & IEC61260 Class 1

Date of Calibration 2021/03/12

Due Date 2022/03/11

SCARLET TECH CO., LTD. SCARLET TECH

Calibrated by:

I. This report certifies that all calibration equipment used in the test is traceable with the internal ISO9001 procedures and meets all specification given in the Manual(s) or respectively surpass them and applies only to the unit identified above.

II. This certificate is produced with advanced equipment & procedures which permit comprehensive quality assurance verification of all data supplied herein.

III. This certificate of calibration shall not be reproduced except in full, without written permission of the Scarlet Tech Co. Ltd Taiwan.

Test Environment Air Temperature: 23°C, Relative Humidity: 60%, Air Pressure: 101.1kPa.

Instrument Noise

Nominal	Actual Value	Upper Lim.
A Weighting	7.0 dB	18dB
C Weighting	9.6dB	23dB
Z Weighting	23.7dB	28dB

126-130 dB Deviation

Nominal	126	127	126	129	130
Actual Value	126.0	127.0	128.0	129.1	130.1

Peak C Noise (500Hz)

	Full Cycle	Half Cycle P+	Half Cycle P-
Nominal	3.5	2.4	2.4
Actual Value	3.5	2.2	2.2

Impulse (A Weight)

Single Impulse	Level L	Level L	Level L	Level L
50ms	-0.1	-4.3	-9.9	-6.9
10ms	-16.7	-20.3	-20.1	-7.0

Frequency Response (A, C Electric Signals & Z Sound Signal)

Frequency	10	16	31.5	63	125	250	500	1k	2k	4k	8k	16k	20k
A Weight (dB)	-70.5	-54.9	-39.4	-26.2	-16.2	-8.7	-3.2	0.0	1.3	1.2	-0.5	-9.8	-27.1
C Weight (dB)	-15.1	-8.7	-3.2	-0.8	-0.2	-0.2	0.0	0.0	-0.1	-0.6	-2.3	-11.5	-23.0
Z Weight (dB)	-0.7	-0.5	-0.5	-0.4	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Function Check:

Appearance Check	OK
Accessories Check	OK
Button Key Check	OK
Low BAT Check	OK
Back Light Check	OK
Contrast Check	OK
USB Connector Check	OK
AC Output	OK
Flash Disk Transfer	OK
Clock	OK

SCARLET | TECH

Calibration & Test Certificate

To whom it may concern

We hereby certify that the instrument under mentioned has been certainly calibrated according to our calibration standard and the testing result in the calibration procedure has been good enough within the tolerance regulated in our specification.

Test conditions

Model name ..... Class 1 Sound Level Calibrator
Model number..... ST-120
Serial number 210102633
Temperature ..... 23° C
Humidity ..... 60 %rh
Date of calibration 2021/03/12

Test data

Actual Value	Measure Value	Result
94 dB	94 dB	PASS
114 dB	114 dB	PASS

Calibrator

Model	Model Number	Serial Number	Due date
Standard SOUND LEVEL METER	B&K 2238	1810001638	MAR/11/2022

The standard generators used for calibration procedure are proofed once a year and can be traceable to the standard authorized by public organization.

SCARLET TECH CO., LTD.

Approved by

Tim Lin, Head of Engineering Department

SCARLET TECH

Certificate of Conformity

for ST-WL11 Wireless Anemometer

The ST-WL11 Wireless Anemometer was produced following precise factory standard procedure. The accuracy of wind speed sensor was tested and calibrated against internal standards following the methods below. This Certificate of Conformity is issued to certify that the device performed in compliance with the specification provided in ST-WL11 User Manual at the time of manufacture.

Manufacturer: Scarlet Tech Ltd
Address: 3&7, 4F-3 HePing E Rd. 2nd Sec. DaAn Dis. Taipei City, Taiwan
Description of EUT: Wireless Wind Logger
Model Name: ST-WL11

Electronics Technical Standard

CE

Emission

EN 61326-1:2006 Class B
CISPR 11:2003/A1:2004/A2:2006 Group 1 Class B Specification for radio disturbance and immunity measuring apparatus and methods

Immunity

EN 61326-1:2006
EN 61000-3-2:2006 Electromagnetic compatibility (EMC)
EN 61000-3-3:2008

The EUT described above has been tested by us with listed standards and found in compliance with the council EMC directive 2004/108/EC. It is possible to use CE marking to demonstrate the compliance with this EMC Directive. These products have been independently tested and demonstrated to comply with the technical requirements concerning the applied sections of the above test standards for electrical equipment for measurement, control and laboratory use.

Methods and Testing Environment

Methods Used in Calibration and Testing Wind Speed / Air Flow Every Scarlet anemometer is individually tested in a subsonic wind tunnel operating at approximately 1200 fpm (6.1 m/s) monitored by an ultrasonic hemispherical anemometer calibrated at low and high speeds to a minimum of +/-0.5% and further verified on a regular schedule by Scarlet's internal measurement assurance program.

Approved by Ethan Lin
Ethan Lin, Head of Engineering Department

CE Certificate Proved in July 2020

SCARLET | TECH

Certificate of Calibration

WL-11 Wireless Anemometer

Scarlet Tech Ltd. hereby certifies that the WL-11 wireless anemometer listed below was thoroughly calibrated, tested and inspected following the standard calibration procedure (st-wl-11) and is within manufacturer's specification at the time when the calibration is done

Atmosphere Pressure: 1008.6 mmHg

Serial Number: SN1402XD

Calibration Date: 03/19/2021

Calibration Expiry Date: 03/18/2022

Calibration Details:

Measured Value (m/s)	Actual Value (m/s)	Deviation	Tolerance	Result
1.0	1.0	0.0	0.9 – 1.1	Pass
2.0	2.0	0.0	1.8 – 2.2	Pass
5.0	5.0	0.0	4.7 – 5.3	Pass
10.0	10.0	0.0	9.5 – 10.5	Pass
20.0	19.9	0.1	19.0 – 21.0	Pass

Performed by:

SCARLET TECH CO., LTD. SCARLET | TECH

Certified by
Head of Engineering department

SCARLET | TECH

Certificate of Conformity

for ST-WL11 Wireless Anemometer

The ST-WL11 Wireless Anemometer was produced following precise factory standard procedure. The accuracy of wind speed sensor was tested and calibrated against internal standards following the methods below. This Certificate of Conformity is issued to certify that the device performed in compliance with the specifications provided in ST-WL11 User Manual at the time of manufacture.

Manufacturer: Scarlet Tech Ltd.
Address: 3F7, 4F-3 HePing E Rd, 2nd Sec, DaAn Dis, Taipei City, Taiwan
Description of EUT: Wireless Wind Logger
Model Name: ST-WL11

Electronics Technical Standard

CE

Emission

EN 61326-1:2006 Class B
CISPR 11:2003/A1:2004/A2:2006 Group 1 Class B Specification for radio disturbance and immunity measuring apparatus and methods

Immunity

EN 61326-1:2006
EN 61000-3-2:2006 Electromagnetic compatibility (EMC)
EN 61000-3-3:2008

The EUT described above has been tested by us with listed standards and found in compliance with the council EMC directive 2004/108/EC. It is possible to use CE marking to demonstrate the compliance with this EMC Directive. These products have been independently tested and demonstrated to comply with the technical requirements covering the applied sections of the above test standards for electrical equipment for measurement, control and laboratory use.

Methods and Testing Environment

Methods Used in Calibration and Testing Wind Speed / Air Flow: Every Scarlet anemometer is individually tested in a subsonic wind tunnel operating at approximately 1200 fpm (6.1 m/s) monitored by an ultrasonic time-of-flight anemometer calibrated at low and high speeds to a minimum of +/- 0.5% and further verified on a regular schedule by Scarlet's internal measurement assurance program.

Approved by Ethan Lin
Ethan Lin, Head of Engineering Department

CE Certificate Proved in July 2020

SCARLET | TECH

Certificate of Calibration

WL-11 Wireless Anemometer

Scarlet Tech Ltd. hereby certifies that the WL-11 wireless anemometer listed below was thoroughly calibrated, tested and inspected following the standard calibration procedure (sl-wl-11) and is within manufacturer's specification at the time when the calibration is done.

Atmosphere Pressure: 1008.6 mmHg

Serial Number: SN1401XD

Calibration Date: 03/19/2021

Calibration Expiry Date: 03/18/2022

Calibration Details:

Measured Value (m/s)	Actual Value (m/s)	Deviation	Tolerance	Result
1.0	1.0	0.0	0.9 – 1.1	Pass
2.0	2.0	0.0	1.8 – 2.2	Pass
5.0	5.1	0.1	4.7 – 5.3	Pass
10.0	10.0	0.0	9.5 – 10.5	Pass
20.0	20.1	0.1	19.0 – 21.0	Pass

Performed by:

SCARLET TECH CO., LTD. 思嘉科技有限公司 SCARLET | TECH

Certified by
Head of Engineering department

APPENDIX J - NOISE MODELLING STUDY

Bash Wind Farm, Uzbekistan

Noise Assessment

December 2021

Bash Wind Farm, Uzbekistan

Noise Assessment

Revision	Date	Notes	Author	Checked	Approved
Ver. 6a	07-12-21	Env - Noise	Sunil Patel 	Nick Davey 	Nick Davey 

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www.entranltd.co.uk

CONTENTS **PAGE**

1 INTRODUCTION

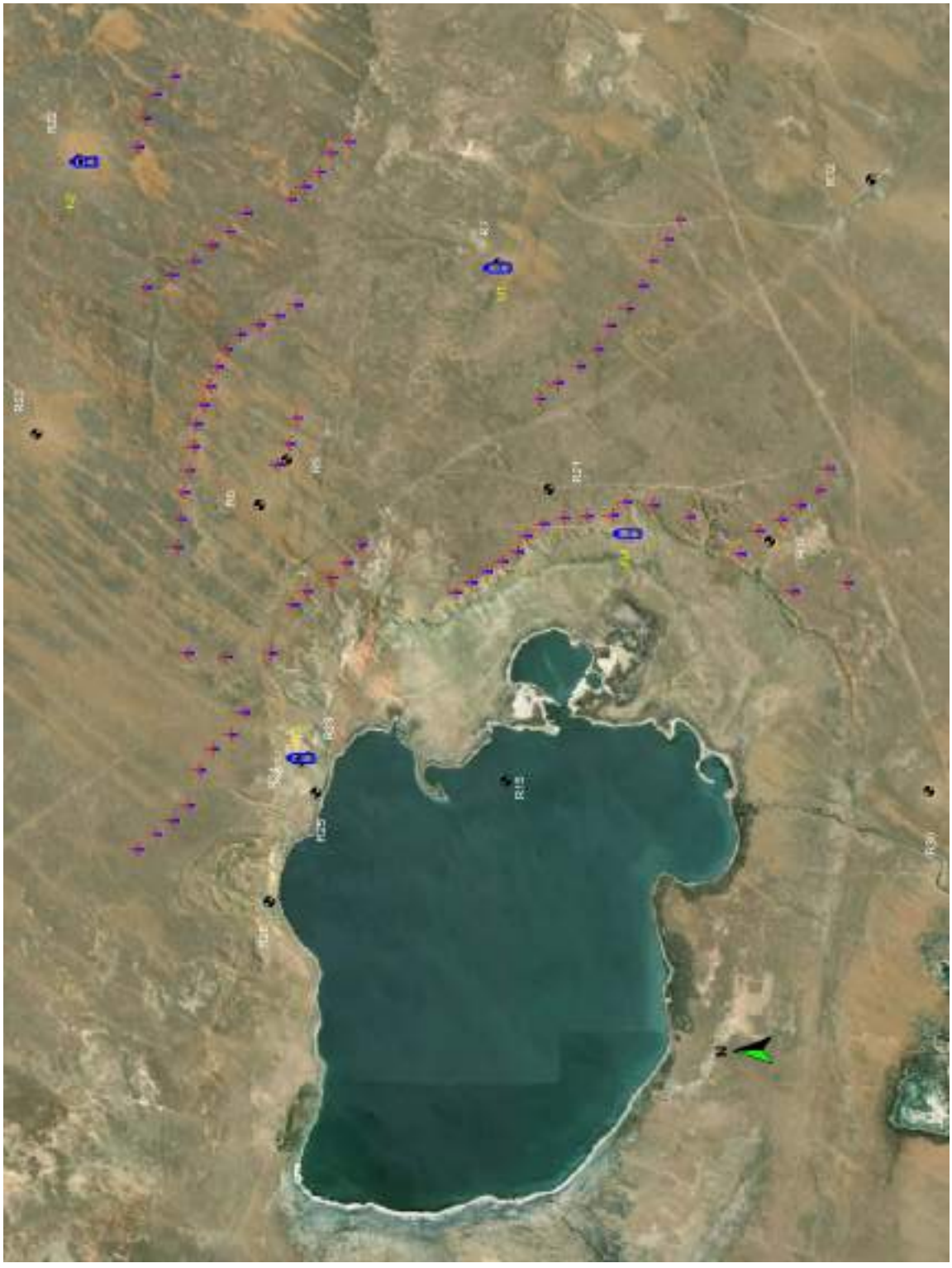
1.1 Entran Ltd have been commissioned to provide a noise assessment for the project known as the 'Bash Wind Farm', Uzbekistan. The project site is in the Gijduvon district of the Bukhara region of Uzbekistan. This report presents the results of the noise model constructed to identify potential effects at nearby noise sensitive receptors.

1.2 This noise assessment has been undertaken in accordance with the World Bank Group/International Finance Corporation's (IFC) environmental guidelines on Wind Energy projects.

1.3 The 500MW wind farm will comprise 79 Envision EN171 (6.5MW) turbines and ancillary equipment. The general site location is presented in Figure 1 and the receptors are presented in Table 1.1.

1.4 This Report is necessarily technical in nature and contains terminology relating to acoustics and noise. Therefore, a glossary together with a brief introduction to the subject of noise has been provided in Appendix A.

Figure 1 Bash Wind Farm Project, Locations of Wind Turbines, Receptors and Noise Survey Locations



1.5 For the purposes of this study all nearby human settlements and ecological sites that are considered to be noise sensitive as shown in Table 1.1.

Table 1.1 Identification of Sensitive Receptors

Receptor	Location WGS84 (Zone41N) UTM	Nearest WTG	Distance to Nearest WTG, m	Ground height at receptor, m	Description
R5	641016.8,4502567.7	BAS32	265	295	Residential use by herders (within the project site)
R6	639992.1,4503251.3	BAS32	1047	267	Residential use by herders (within the project site)
R7	645640.4,4497535.9	BAS76	3038	240	Residential use by herders (within the project site)
R12	647579.1, 4488583	BAS71	4720	263	Kuklam Village
R18	639117.4,4491013.7	BAS63	382	255	Residential use by herders (within the project site)
R15	633497.1, 497330.4	BAS49	4605	155	Ecological Use, Lake Ayakagitma
R22	648054.6,4507580.7	BAS1	1434	271	Residential use by herders (just outside project site)
R21	640320.8,4496324.5	BAS56	730	261	Residential use by herders (within the project site)
R23	641626.9,4508563.8	BAS19	3696	256	Residential use by herders
R24	633986.1,4502241.9	BAS40	1804	185	Residential use by herders
R25	633224.3,4501879.8	BAS39	2492	159	Residential accommodation by fishermen at Lake Ayakagitma
R28	630664.3,4503025.3	BAS35	3015	168	Ecological Use (water-well for livestock)
R29	634069.3,4502084.4	BAS40	1882	179	Ecological Use (water-well for livestock)
R30	633302, 4487227	BAS68	5236	221	Residential use by herders

2 NOISE ASSESSMENT CRITERIA

World Bank Group/International Finance Corporation

2.1 The Environmental, Health and Safety' Guidelines for Wind Energy (2015) sets the following screening criteria for wind farms:

> *"Preliminary modelling should be carried out to determine whether more detailed investigation is warranted. The preliminary modelling can be as simple as assuming hemispherical propagation (i.e., the radiation of sound, in all directions, from a source point). Preliminary modelling should focus on sensitive receptors within 2,000 meters of any of the turbines in a wind energy facility."*
>
> *"If the preliminary model suggests that turbine noise at all sensitive receptors is likely to be below an* ***LA90 of 35 decibels (dB) (A) at a wind speed of 10 meters/second (m/s) at 10 m height*** *during day and night times, then this preliminary modelling is likely to be sufficient to assess noise impact; otherwise it is recommended that more detailed modelling be carried out, which may include background ambient noise measurements.".*

2.2 The EHS Guidelines for Wind Energy (2015) do not provide a noise limit other than the screening limit and therefore the general IFC guidance has be applied in common with other such projects.

2.3 The IFC / World Bank Environmental, Health, and Safety General Guideline (1.7 Noise (2007) is therefore applied for the Bash Wind Farm project and presented below in Table 2.1.

Table 2.1 IFC/World Bank Group Noise Level Guideline (adopted from WHO guidance)

Receptor	$L_{Aeq,T}$ (dB)	
	Daytime 07:00 – 22:00	Night time 22:00 – 07:00
Residential, Institutional, Educational	55	45
Industrial, Commercial	70	70

2.4 The above guideline values are expressed in terms of $L_{Aeq,T}$ and for the comparison with the $L_{A90,T}$ parameter used for the preliminary assessment, a correction of -2 dB has to be applied (the limit for residential use is therefore 53 dB $L_{A90,T}$ during the day and 43 dB $L_{A90,T}$ during the night).

2.5 The above noise limits can be revised to allow for a 5 dB increase over ambient noise levels in the following manner:

- Daytime: The higher of 53 dB(A) or 5 dB(A) above the prevailing day-time background noise level;
- Night-time: The higher of 43 dB(A) or 5 dB(A) above the prevailing night-time background noise level. Good practice is not to normally exceed the absolute noise criteria or the background noise level.

Uzbekistan National Standards

2.6 Given the proximity of the nearby communities, it is expected that the applicable residential standards will be applicable to the Project. SanPiN No. 0339-16 “Sanitary rules and norms of planning and development of settlements of Uzbekistan provides criteria for noise levels at residential areas.

2.7 The guideline criteria for residential areas are set out in Table 2.2 below.

Table 2.2 National Noise Standards

Receptor	Uzbekistan, SanPiN No. 0325-16.	
	Daytime (07:00 to 23:00) $L_{Aeq,T}$ dB	Night-time (23:00 to 07:00) $L_{Aeq,T}$ dB
Residential, institutional, educational	55	45
Industry, commercial	75	70

2.8 For sensitive locations (e.g., residential use buildings), the noise limits for the Uzbekistan's National guidance are the same as the IFC guidance.

2.9 The above guideline values are expressed in terms of $L_{Aeq,T}$ and for the comparison with the $L_{A90,T}$ parameter used for the preliminary assessment, a correction of -2 dB has to be applied.

2.10 The calculation methodology for assessment purposes is outlined in International Standard ISO 9613-2:1996 ('Acoustics — Attenuation of sound during propagation outdoors — Part 2: General method of calculation'). The standard specifies an engineering method for calculating noise at a known distance from a variety of sources under meteorological conditions favourable to sound propagation. The standard defines favourable conditions for light downwind propagation where the wind blows from all the turbines to the receiver(s) within an angle of +/-45 degrees from a line connecting each turbine to each receiver, at wind speeds between approximately 1 m/s and 5 m/s, measured at a height of 3 m to 11 m above the ground. Equivalently, the method accounts for average propagation under a well-developed moderate ground based thermal inversion. In this respect, it is noted that at the wind speeds relevant to noise levels from wind turbines, atmospheric conditions do not favour the development of thermal inversions throughout the propagation path from the source to the receiver.

2.11 The general calculation method considers the following attenuation corrections:

- Geometric divergence
- Air absorption
- Reflecting obstacles
- Screening
- Vegetation
- Ground reflections

2.12 Attenuation due to the above factors is applied to the sound power levels of the noise sources to derive the resulting noise levels at the receptors.

2.13 Wind turbines are sound sources with special characteristics, such as wind speed dependent sound power levels, high source heights etc., which require special considerations. These parameter adjustments are chosen in combination (see Table 2.3) to give a more reliable calculation methodology.

Table 2.3 ISO9613 Parameters used in the Preliminary Noise Assessment.

Calculation Parameter ISO 9613	Observation
Agr = -3 (Geometrical divergence)	Normal correction for wind farms
Cmet = 0 (Metrological corrections)	Normal correction for wind farms (downwind propagation)
Terrain obstacles correction = 0 (site specific)	Normal correction for wind farms (site specific for a worst-case assessment)
Temperature = 10^0 C; Relative Humidity = 70%	Normal correction for a worst-case assessment for sound propagation.
Correction of results from $L_{Aeq,T}$ to $L_{A90,T}$ by -2dB.	Normal correction in the UK and some other countries but not universally applied by all countries.
For propagation of turbine sound to a receptor across a valley with a concave profile, a correction of +3 dB must be applied.	Normal correction for wind farms.
Ground Absorption Factor, G=0.5	The normal correction for wind farms in the UK, Germany, NZ and Australia is G=0.5.

3 NOISE SURVEYS

3.1 As mentioned earlier in this report, criteria based upon the ambient noise levels at reference speeds (e.g. 10 m/s at 10m) are routinely applied with an allowance of 5 dB above the prevailing noise level or the criteria presented in Tables 2.1 and 2.2 (whichever is the highest).

3.2 Background noise monitoring was conducted by contractors employed by 5C Limited at four proxy locations (N1 to N4) in lieu of the human settlements/ecological sites shown in Figure 1. The monitoring survey duration was between 10th August 2021 and 9th September 2021. Survey details are published elsewhere. Ten-minute intervals were recorded, with the $L_{A90,10min}$ readings synchronised with the site's wind mast data to determine background noise levels.

3.3 It is understood that all acoustic measurement equipment used during the noise surveys conformed to Type 1 specification of British Standard 61672: 2013: *Electroacoustics. Sound level meters*. Part 1 *Specifications.* The noise measurement equipment used during the surveys were calibrated at the start and end of the measurement period. No significant drift in calibration was found to have occurred on the sound level meter.

3.4 The regression analysis of the monitored noise levels is presented below (for a standardised wind speed at 10m/s and a height of 10m). As observed over the course of the monitoring survey, it was evident that there was, apart from wind noise, an absence of any other significant noise source(s). Therefore, to gather sufficient data for the regression analysis, daytime and evening periods were aggregated to the period 0700 to 2300 hrs (as per the adopted criteria). The night-time period remains between 2300 to 0700 hrs.

3.5 The regression analysis is presented below in Figures 3.1 to 3.8.

Figure 3.1 Daytime Noise Levels for Survey Location N1

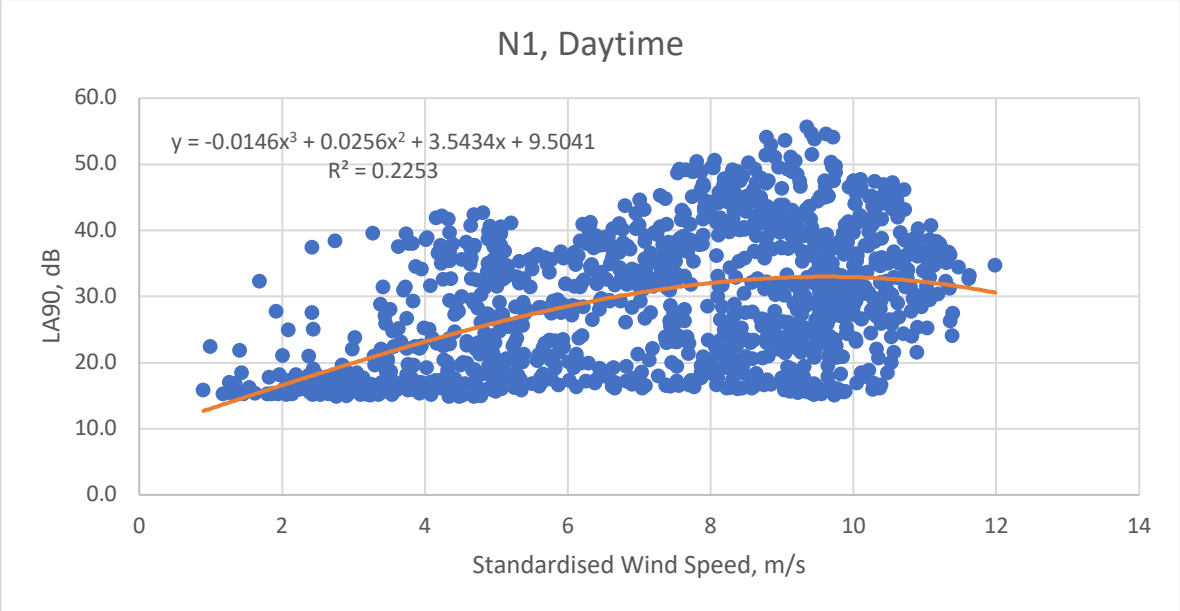


Figure 3.2 Night-time Noise Levels for Survey Location N1

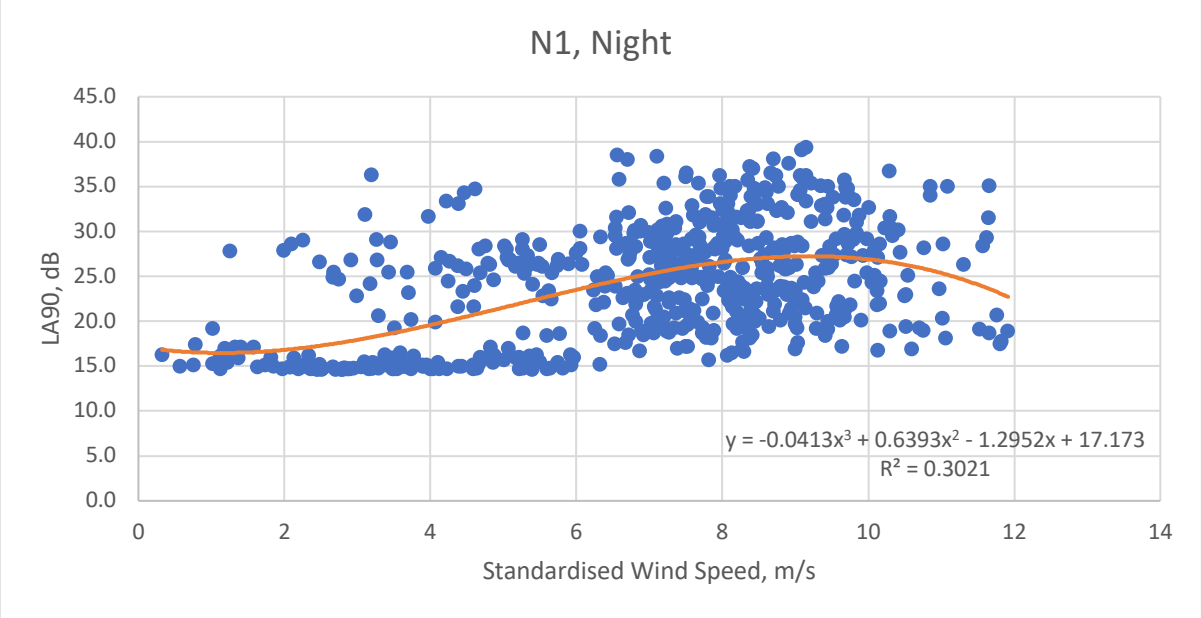


Figure 3.3 Daytime Noise Levels for Survey Location N2

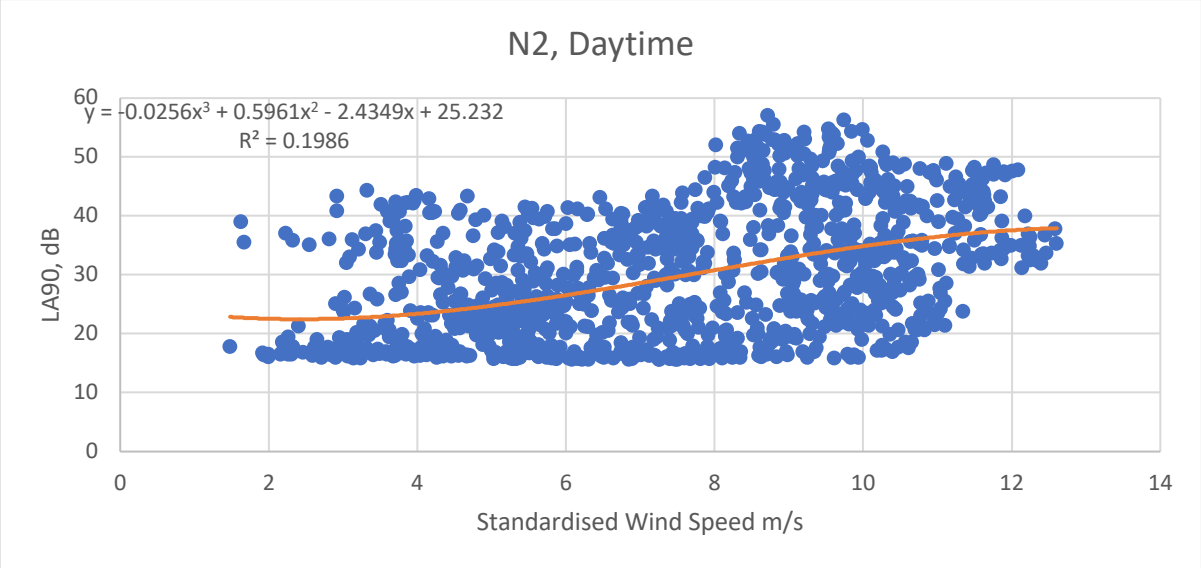


Figure 3.4 Night-time Noise Levels for Survey Location N2

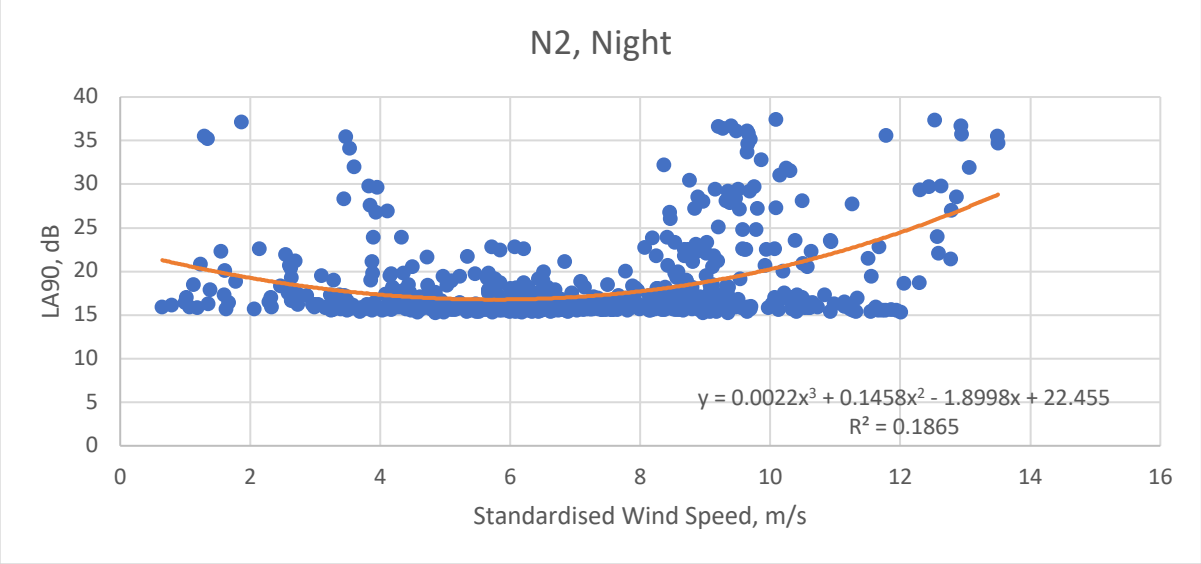


Figure 3.5 Daytime Noise Levels for Survey Location N3

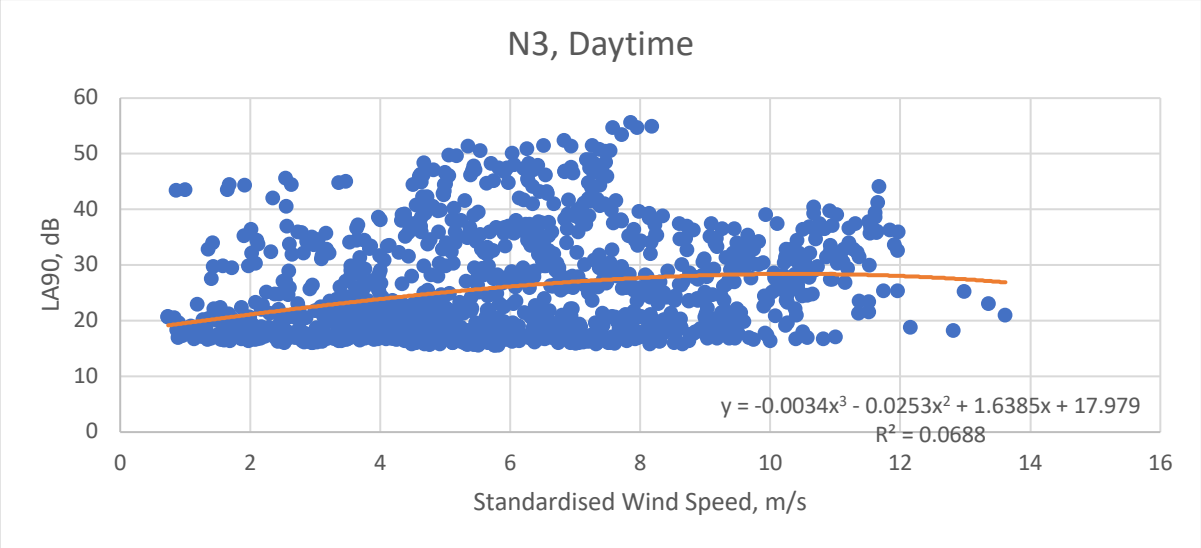


Figure 3.6 Night-time Noise Levels for Survey Location N3

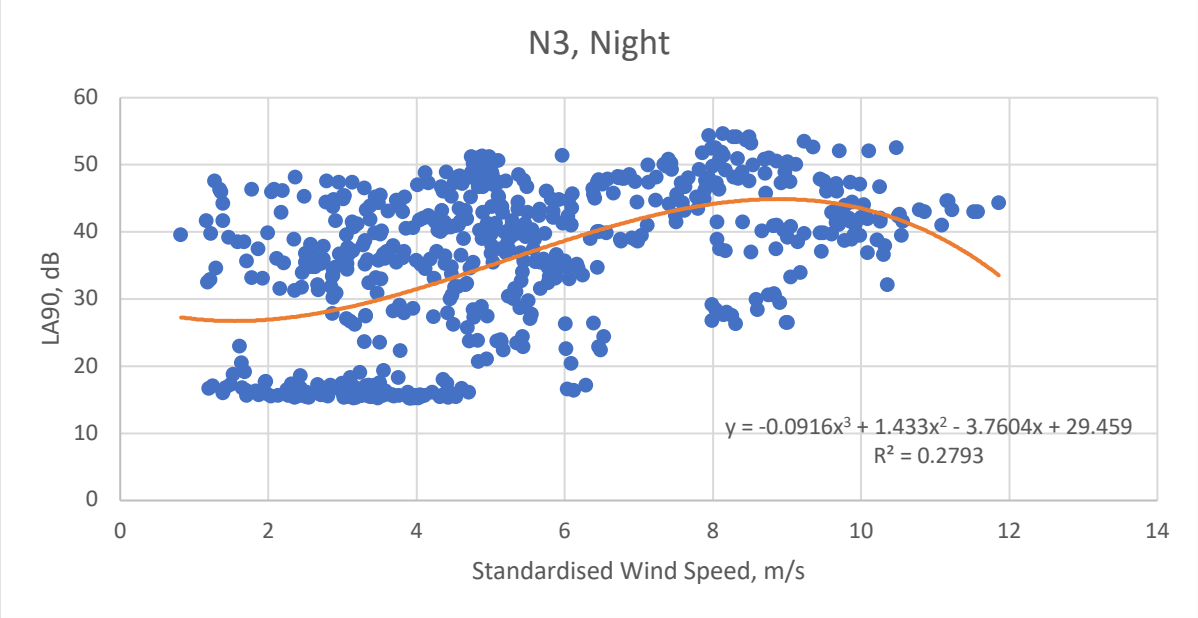


Figure 3.7 Daytime Noise Levels for Survey Location N4

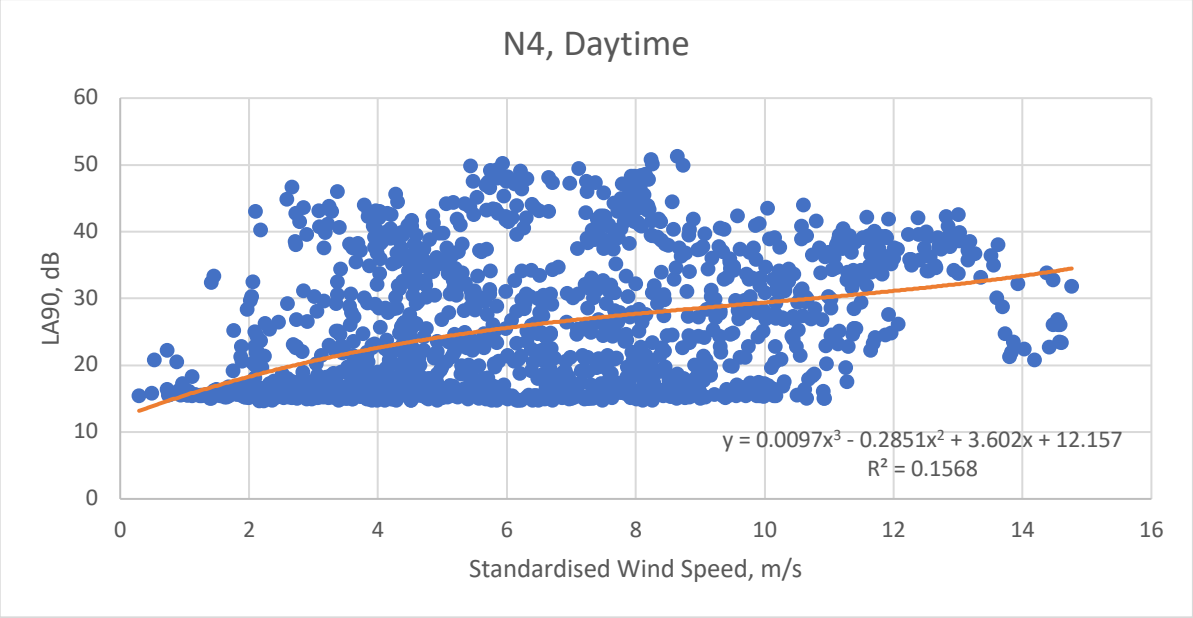
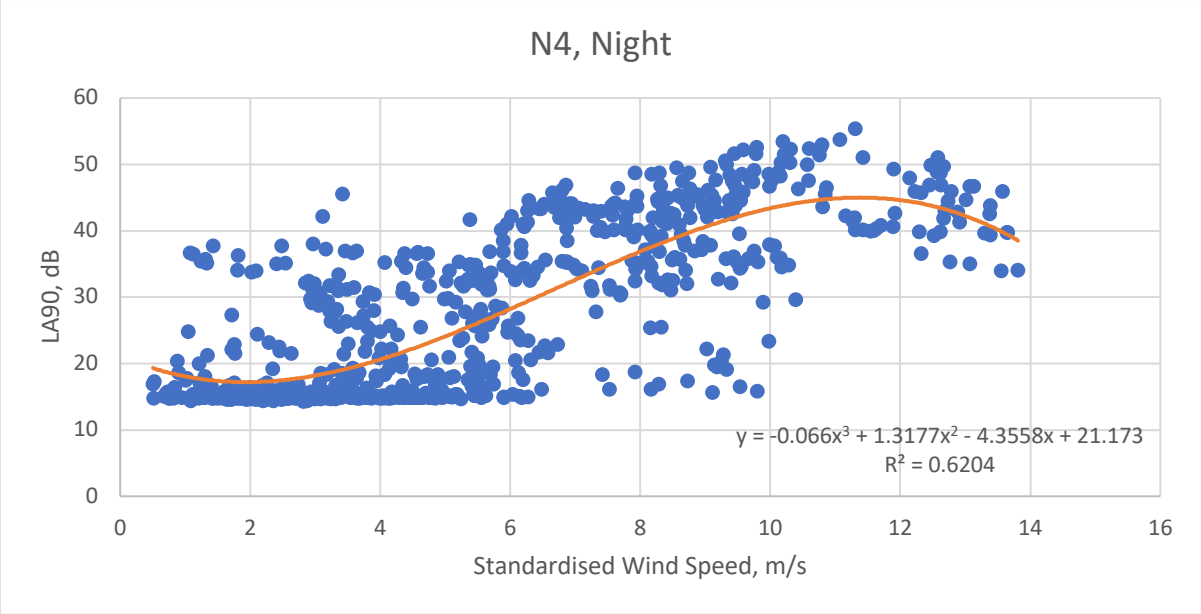


Figure 3.8 Night-time Noise Levels for Survey Location N4



3.6 The derived background noise limits are shown below. Survey location N1 is a proxy site for receptors R7 and R12 (herder use). Location N2 is a proxy site for receptor R22, R23 and R26 (herder use). Location N3 is a proxy site for R24 (herder use), R25 (fishermen accommodation), R28 and R29 (ecological use). Location N4 is a proxy site for R5, R6, R18, R21, R30 (herder use) and R15 (ecological use). As noted above during the noise surveys, it was evident that there was, apart from wind noise, an absence of any other significant noise source(s).

Table 3.1 Derived Background Noise Limits

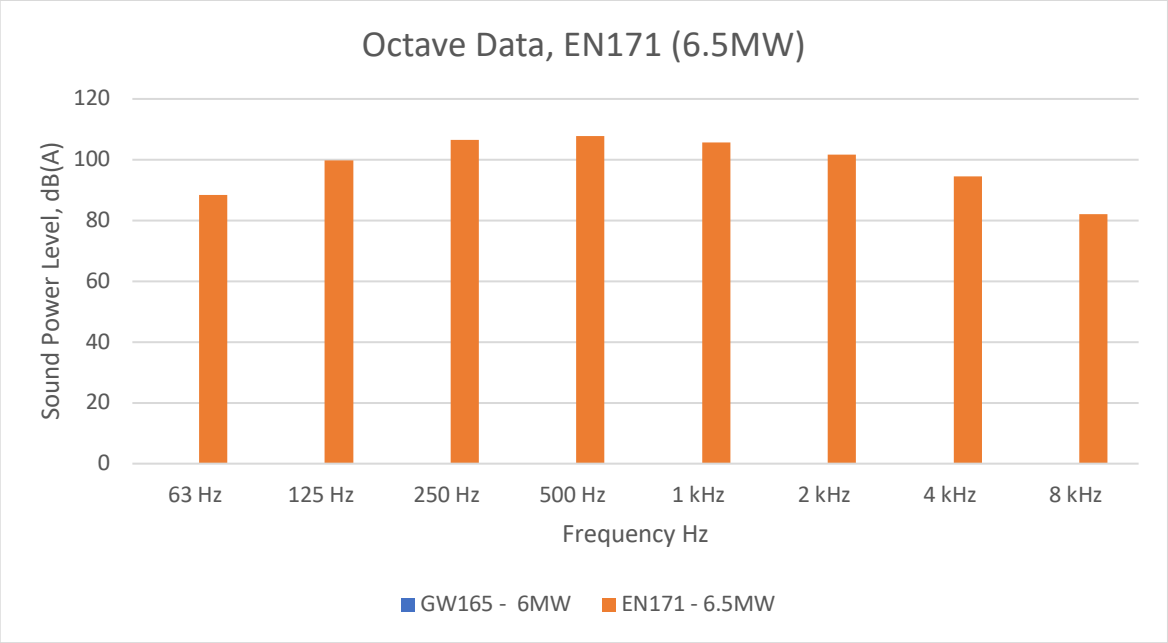
Location	Noise Level at Standardised Wind Speed (10 m/s at 10m), $L_{A90,T}$ dB Day/Night	Derived Criteria based on Background Noise levels, $L_{A90,T}$ dB (10 m/s). See Paragraph 2.5. Day/Night
R5	28/39	53/43
R6	28/39	53/43
R7	33/27	53/43
R12	33/27	53/43
R15	29/43	53/43
R18	29/43	53/43
R21	29/43	53/43
R22	29/43	53/43
R23	29/43	53/43
R24	28/39	53/43
R25	28/39	53/43
R28	28/39	53/43
R29	28/39	53/43
R30	29/43	53/43

4 NOISE ASSESSMENT

Turbine Data

4.1 The sound power levels of the turbines in octave bands are presented below in Figure 4.1 for the hub height wind speed of 10m/s. The hub heights of the EN171 turbine are at 100m relative to the ground. The layout details are presented in Appendix B.

Figure 4.1 Octave Data for the turbines (hub height, 10m/s, not adjusted for uncertainty)



4.2 All the above sound power levels are not guaranteed by the manufacturer and therefore, for the purposes of noise modelling, an uncertainty of +2 dB has been applied for a worst-case assessment. The +2 dB addition to the sound power levels is in accordance with good practice guidance and is routinely applied for wind farm projects where there is no manufacturer's warranty.

Other Acoustic Considerations

4.3 The IFC guidance does not consider other factors such as tonality. It is understood from the turbine manufacturers' advice that tonality will not be an issue for receptors beyond 300m from the nearest turbine. For receptors within 300m of a turbine, a tonal penalty of 5 dB is applied as per normal international guidance.

Calculation of Noise Levels at Receptors

4.4 Noise levels at the receptors has been calculated using the noise-modelling suite IMMI2021 (recognised by the European Union and the UK Government), in accordance with the ISO 9613 prediction methodology (applied with the above-mentioned calculation modifications).

4.5 In addition to the uncertainty adjusted turbine sound power levels used in the calculations, the model also considers the effects of the topographical conditions throughout the area as well as applying a light downwind propagation correction to represent worst case. The model considers the noise 'emission' of each turbine and calculates the accumulative noise level at each receptor in accordance with the ISO9613 methodology discussed in Table 2.3.

4.6 The topography model was obtained from the (Space) 'Shuttle Radar Topography Mission', (SRTM), at 30m resolution. The turbine layout supplied by the client is presented in Appendix B. Noise levels have been calculated at the first-floor height (4m above ground). None of the receptors fit the 'concave' profile and therefore further corrections have not been added.

4.7 The results of the noise model (for Bash Wind Farm) are shown below in Table 4.1. The difference in ground level to the first floor is not significant due to the high noise sources and therefore long slant distances as well as long horizontal distances as well as the limitations imposed on the ISO9613 methodology set out in Table 2.3. Noise contours for six receptor areas at wind speeds 5 m/s and 10 m/s are presented in Appendix C.

Table 4.1 Noise Levels at Receptors (rounded) - First Floor (4m above ground)

Receptor	Location	Nearest Turbine	Distance to Nearest Turbine	5m/s	6m/s	7m/s	8m/s	9m/s	10m/s
			(m)	$L_{A90,T}$ dB					
R5	641016.8,4502567.7	BAS32	265	49.1	51.5	54.9	57.7	59.1	59.4
R6	639992.1,4503251.3	BAS32	1047	34.8	37.3	40.6	43.5	44.9	45.2
R7	645640.4,4497535.9	BAS76	3038	27.5	29.9	33.3	36.1	37.5	37.8
R12	647579.1, 4488583	BAS71	4720	18.8	21.2	24.6	27.4	28.8	29.1
R18	639117.4,4491013.7	BAS63	382	41.8	44.2	47.6	50.4	51.8	52.1
R15	633497.1, 497330.4	BAS49	4605	22.1	24.6	27.9	30.8	32.2	32.5
R22	648054.6,4507580.7	BAS1	1434	30.0	32.4	35.8	38.6	40.0	40.3
R21	640320.8,4496324.5	BAS56	730	38.2	40.6	44.0	46.8	48.2	48.5
R23	641626.9,4508563.8	BAS19	3696	25.3	27.8	31.1	34.0	35.4	35.7
R24	633986.1,4502241.9	BAS40	1804	30.3	32.7	36.1	38.9	40.3	40.6
R25	633224.3,4501879.8	BAS39	2492	27.6	30.0	33.4	36.2	37.6	37.9
R28	630664.3,4503025.3	BAS35	3015	25.0	27.4	30.8	33.6	35.0	35.3
R29	634069.3,4502084.4	BAS40	1882	29.8	32.3	35.6	38.5	39.9	40.2
R30	633302, 4487227	BAS68	5236	16.5	18.9	22.3	25.1	26.5	26.8

4.8 For the Bash Wind Farm project, compliance with the relevant criteria is set out in Table 4.2.

Table 4.2 Compliance with IFC/Uzbekistan Assessment Limits (10m/s)

Receptor	Compliant with the Initial IFC 35 dB $L_{A90,T}$ criterion	Compliant with the IFC General / Uzbekistan Daytime 53 dB criteria?	Compliant with the IFC General / Uzbekistan Night-time 43 dB criteria?	Receptor Classification
R5	N	N	N	Residential use by herders (within the project site)
R6	N	Y	N	Residential use by herders (within the project site)
R7	N	Y	Y	Residential use by herders (within the project site)
R12	Y	Y	Y	Kuklam Village
R18	N	Y	N	Residential use by herders (within the project site)
R15	Y	Y	Y	Ecological Use, Lake Ayakagitma
R22	N	Y	Y	Residential use by herders (just outside project site)
R21	N	Y	N	Residential use by herders (within the project site)
R23	N	Y	Y	Residential use by herders
R24	N	Y	Y	Residential use by herders
R25	N	Y	Y	Residential accommodation by fishermen at Lake Ayakagitma
R28	N	Y	Y	Ecological Use (water-well for livestock)
R29	N	Y	Y	Ecological Use (water-well for livestock)
R30	Y	Y	Y	Residential use by herders

4.9 As can be seen from Table 4.2, only three receptors comply with the WBG/IFC's initial 35 dB $L_{A90,T}$ criterion and further detail studies including noise surveys have undertaken for these and other receptors. However, as shown in Section 2 of this report, the WBG/IFC General guidelines as well as the Uzbekistan National Standards limits still apply. To comply with the WBG/IFC guidelines as well as the Uzbekistan national guidelines, the following receptors will require mitigation measures if these receptors are considered to be noise sensitive:

- Compliance with day and night-time IFC/Uzbekistan guidelines: R5;
- Compliance with night-time (only) IFC/Uzbekistan guidelines: R6, R18 and R21.

Mitigation Measures

4.10 It is understood that receptors R5, R6, R18 and R21 are in a Health Protection Zone and due to the adverse Social Impact, these receptors will be relocated 500m or further away and therefore, be within the IFC/Uzbekistan Guidelines.

4.11 It should also be noted that the noise output of a turbine varies with the wind speed and therefore the noise climate attributable to the wind farm will not always be at a worst-case output at 10m/s or greater.

5 CONCLUSIONS

5.1 A noise assessment has been undertaken for the proposed Bash Wind Farm project in accordance with the World Bank Group/International Finance Corporation's guidelines for Wind Energy. The project will consist of 79 Envision EN171 turbines (6.5MW) at hub-height of 100m.

5.2 Noise levels at a sample set of receptors was calculated using a modified version (for wind farms) of ISO 9613-2:1996, for each of the turbine options and assessed against the criteria outlined by World Bank Group/International Finance Corporation's environmental guidance on Wind Energy projects. The WBG/IFC guidance is considered in two parts; part one is for the initial study to ascertain whether any of the receptors are above a threshold value of 35 dB $L_{A90,T}$ and part two is the assessment of receptor noise levels against the general guidance criteria of, for example, residential receptors, 55 dB $L_{Aeq,day}$ or 45 dB $L_{Aeq,night}$ (corrected to 53 dB $L_{A90,day}$ and 43 dB $L_{A90,night}$). Similarly, national Uzbekistan guidance also outlines the noise limits 55 dB $L_{Aeq,day}$ and 45 dB $L_{Aeq,night}$ for sensitive areas.

5.3 The assessment concludes that the majority of receptors under consideration are above the initial IFC guideline value of 35 dB $L_{A90,T}$ and therefore further studies including background noise surveys have been considered. However, as shown in Section 2 of this report, the WBG/IFC General Guidelines as well as the Uzbekistan limits still apply. Four receptors (R5, R6, R18 and R21) that do not comply with the WBG/IFC guidelines or the Uzbekistan national guidelines, will be relocated (by more than 500m) as these receptors are in a Health Protection Zone or/and deemed to have an adverse Social Impact.

APPENDIX A – INTRODUCTION TO NOISE

In order to assist the understanding of acoustic terminology and the relative change in noise, the following background information is provided.

The human ear can detect a very wide range of pressure fluctuations, which are perceived as sound. In order to express these fluctuations in a manageable way, a logarithmic scale called the decibel, or dB scale is used. The decibel scale typically ranges from 0 dB (the threshold of hearing) to over 120 dB.

The ear is less sensitive to some frequencies than to others. The A-weighting scale is used to approximate the frequency response of the ear. Levels weighted using this scale are commonly identified by the notation dB(A).

A noise impact on a community is deemed to occur when a new noise is introduced that is out of character with the area, or when a significant increase above the pre-existing ambient noise level occurs. For levels of noise that vary with time, it is necessary to employ a statistical index that allows for this variation. These statistical indices are expressed as the sound level that is exceeded for a percentage of the time period of interest.

The L_{A90} is the level exceeded for 90% of the time and has been adopted to represent the background noise level in the absence of discrete events. An alternative way of assessing the time varying noise levels is to use the equivalent continuous sound level, L_{Aeq}. This is a notional steady level that would, over a given period of time, deliver the same sound energy as the actual fluctuating sound.

To put these quantities into context, where a receiver is predominantly affected by continuous flows of road traffic, a doubling or halving of the flows would result in a just perceptible change of 3dB, while an increase of more than 25%, or a decrease of more than 20%, in traffic flows represent changes of 1dB in traffic noise levels (assuming no alteration in the mix of traffic or flow speeds).

Table A1: Glossary of Terms

Term	Definition
Decibel (dB)	A scale for comparing the ratios of two quantities, including sound pressure and sound power. The difference in level between two sounds s1 and s2 is given by 20 log10 (s1/s2). The decibel can also be used to measure absolute quantities by specifying a reference value that fixes one point on the scale. For sound pressure, the reference value is 20μPa.
A-weighting, dB(A)	The unit of sound level, weighted according to the A-scale, which takes into account the increased sensitivity of the human ear at some frequencies.
Noise Level Indices	Noise levels usually fluctuate over time, so it is often necessary to consider an average or statistical noise level. This can be done in several ways, so a number of different noise indices have been defined, according to how the averaging or statistics are carried out.
$L_{eq,T}$	A noise level index called the equivalent continuous noise level over the time period T. This is the level of a notional steady sound that would contain the same amount of sound energy as the actual, possibly fluctuating, sound that was recorded.
$L_{max,T}$	A noise level index defined as the maximum noise level during the period T. L_{max} is sometimes used for the assessment of occasional loud noises, which may have little effect on the overall L_{eq} noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.
$L_{90,T}$	A noise level index. The noise level exceeded for 90% of the time over the period T. L_{90} can be considered to be the "average minimum" noise level and is often used to describe the background noise.
Free-Field	Far from the presence of sound reflecting objects (except the ground), usually taken to mean at least 3.5m
Ambient Noise Level	The totally encompassing sound in a given situation at a given time, usually composed of a sound from many sources both distant and near ($L_{Aeq,T}$).

APPENDIX B – WIND FARM LAYOUT

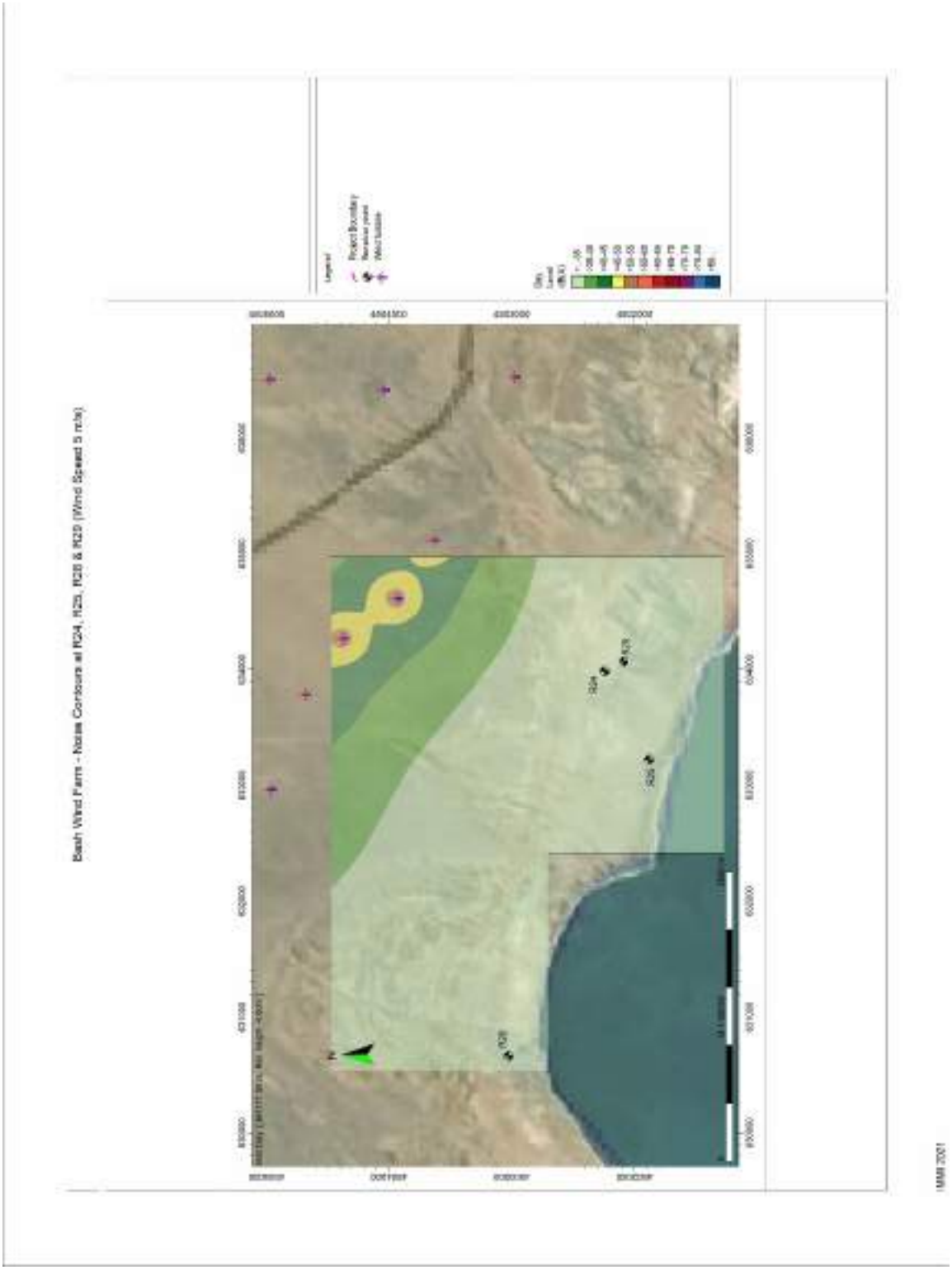
Turbine Layout

Turbine Id	UTM X-co-ord	UTM Y- co-ord	Absolute Height, m
BAS1	648373	4506185	298
BAS2	649045	4506020	304
BAS3	649597	4505755	311
BAS4	650015	4505307	306
BAS5	648500	4501127	318
BAS6	648244	4501558	315
BAS7	647793	4501840	316
BAS8	647452	4502178	318
BAS9	647142	4502536	313
BAS10	646808	4503590	325
BAS11	646403	4503988	333
BAS12	646069	4504406	336
BAS13	645698	4504834	330
BAS14	645368	4505369	324
BAS15	645106	4505987	305
BAS16	638995	4505245	299
BAS17	639665	4505171	307
BAS18	640283	4505084	315
BAS19	640795	4504970	314
BAS20	641343	4504845	318
BAS21	641886	4504779	324
BAS22	642325	4504612	338
BAS23	642773	4504448	347
BAS24	643226	4504282	341
BAS25	643626	4504073	339
BAS26	643968	4503730	335
BAS27	644203	4503278	327
BAS28	644429	4502820	319
BAS29	644688	4502362	313
BAS30	642034	4502391	301
BAS31	641422	4502557	301
BAS32	640946	4502822	306
BAS33	631909	4506191	270
BAS34	632255	4505763	273
BAS35	632598	4505334	277
BAS36	632967	4504976	281
BAS37	633786	4504691	270

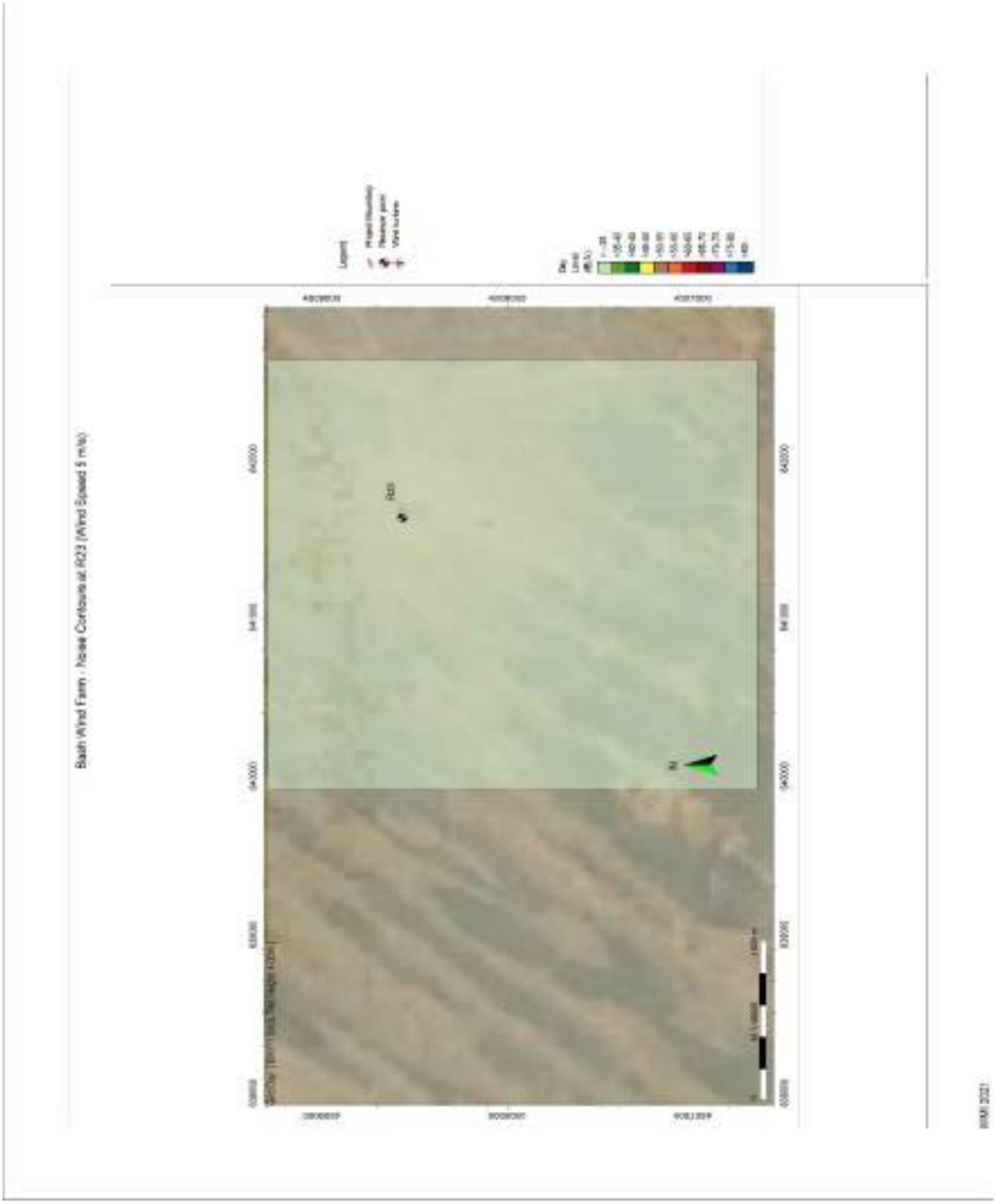
BAS38	634270	4504385	271
BAS39	634615	4503943	272
BAS40	635118	4503644	271
BAS41	636510	4504989	297
BAS42	636416	4504050	284
BAS43	636529	4502987	264
BAS44	637653	4502459	266
BAS45	637967	4502130	265
BAS46	638274	4501543	269
BAS47	638630	4501177	262
BAS48	639042	4500835	261
BAS49	637933	4498563	265
BAS50	638172	4498197	265
BAS51	638418	4497824	263
BAS52	638656	4497458	263
BAS53	638891	4497090	264
BAS54	639268	4496882	264
BAS55	639530	4496487	264
BAS56	639677	4495981	263
BAS57	639726	4495417	262
BAS58	639738	4494819	258
BAS59	640050	4494488	259
BAS60	639989	4493841	259
BAS61	639696	4492978	257
BAS62	638847	4491758	259
BAS63	639379	4491292	260
BAS64	639626	4490771	263
BAS65	639993	4490329	265
BAS66	640331	4489887	268
BAS67	640839	4489660	266
BAS68	638159	4489177	263
BAS70	637950	4490476	264
BAS71	646678	4493206	259
BAS72	646210	4493511	260
BAS73	645705	4493870	255
BAS74	645118	4494123	261
BAS75	644589	4494447	260
BAS76	644186	4494874	261
BAS77	643628	4495173	260
BAS78	643244	4495601	262
BAS79	642835	4496125	260
BAS80	642460	4496544	261

APPENDIX C – NOISE MAPS

Noise Contours at Receptors R24, R25, R28 & R29 (Wind speed, 5m/s)



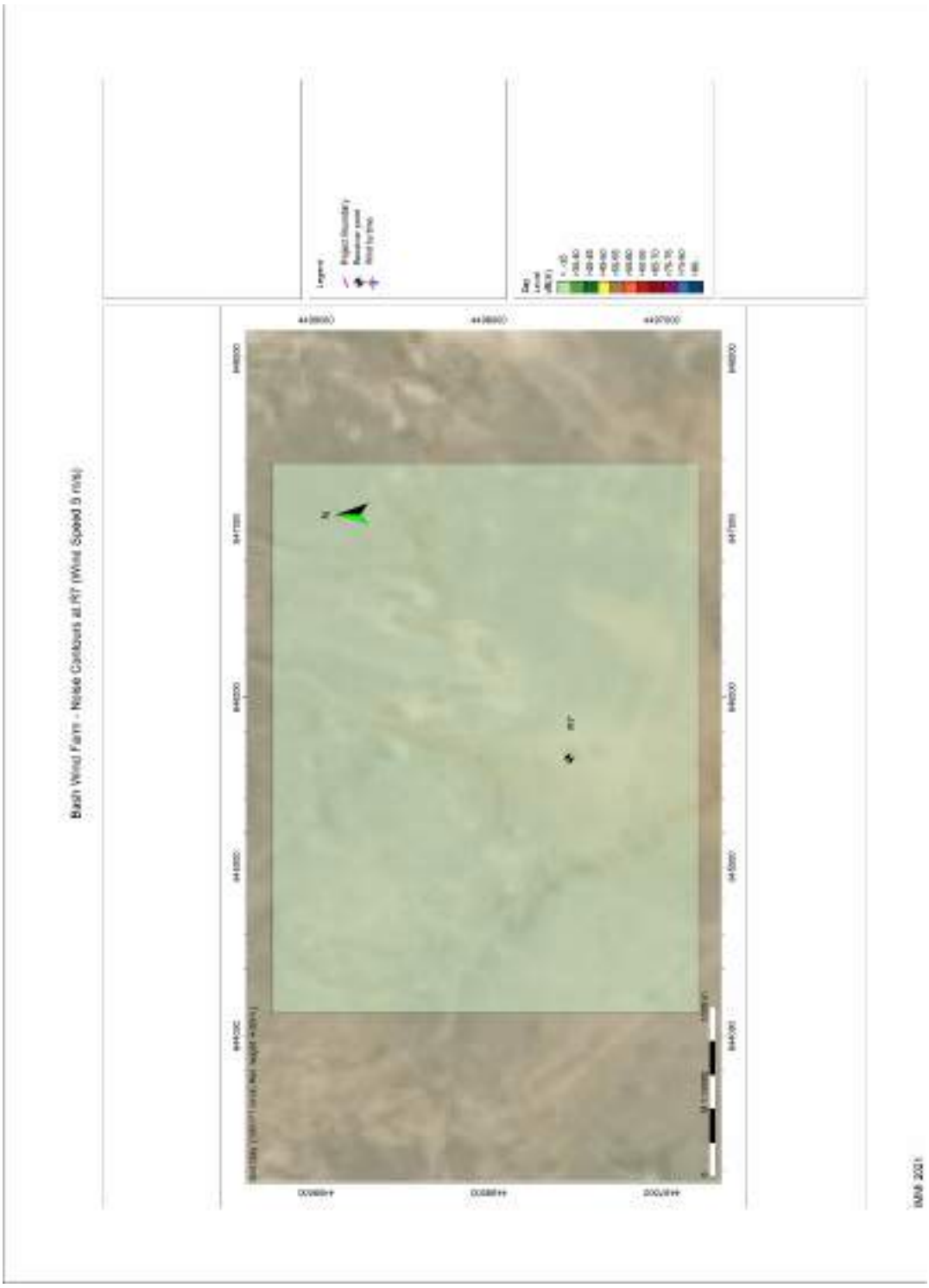
Noise Contours at Receptor R23 (Wind speed, 5m/s)



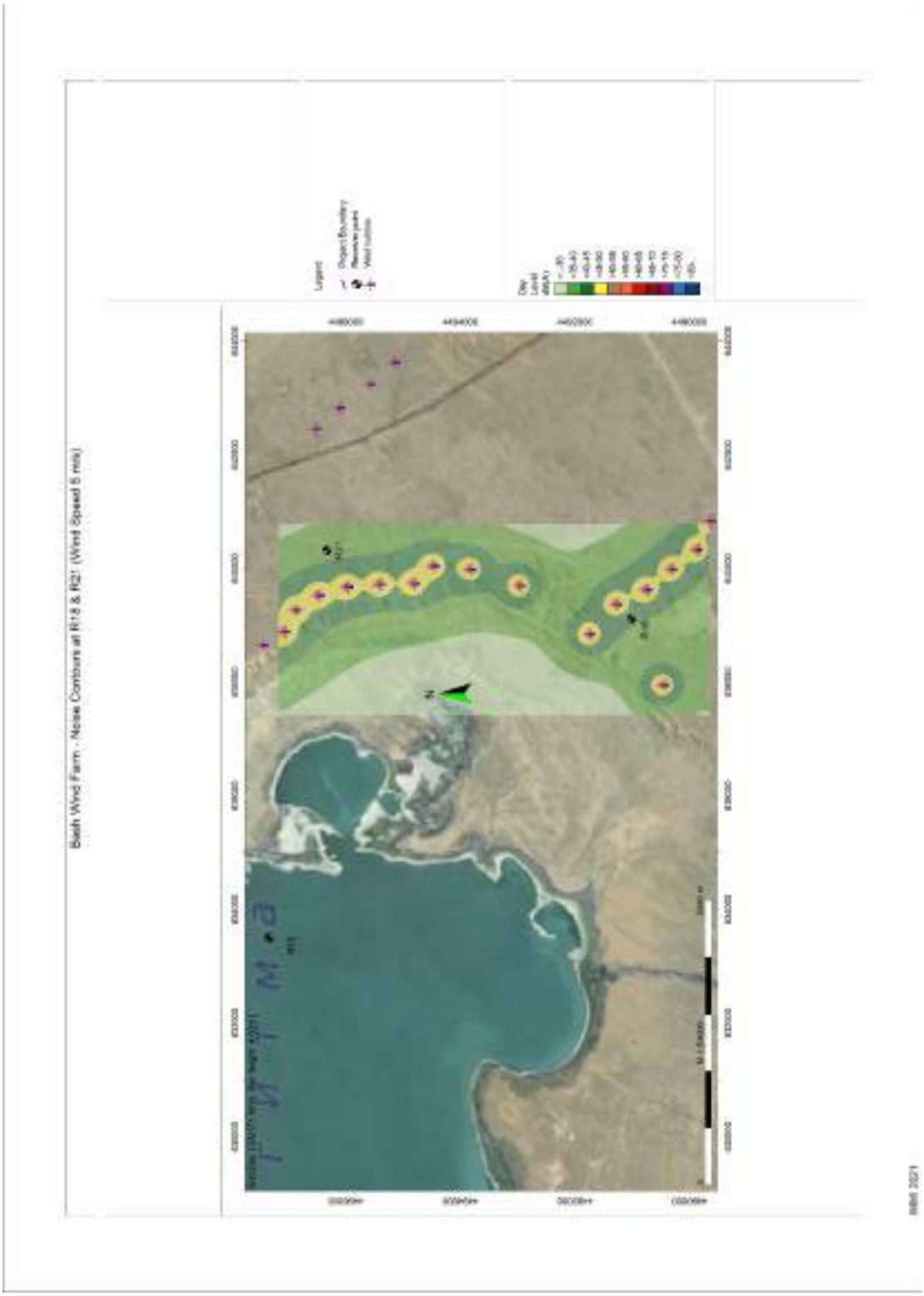
Noise Contours at Receptor R22 (Wind speed, 5m/s)

Noise Contours at Receptors R5 & R6 (Wind speed, 5m/s)

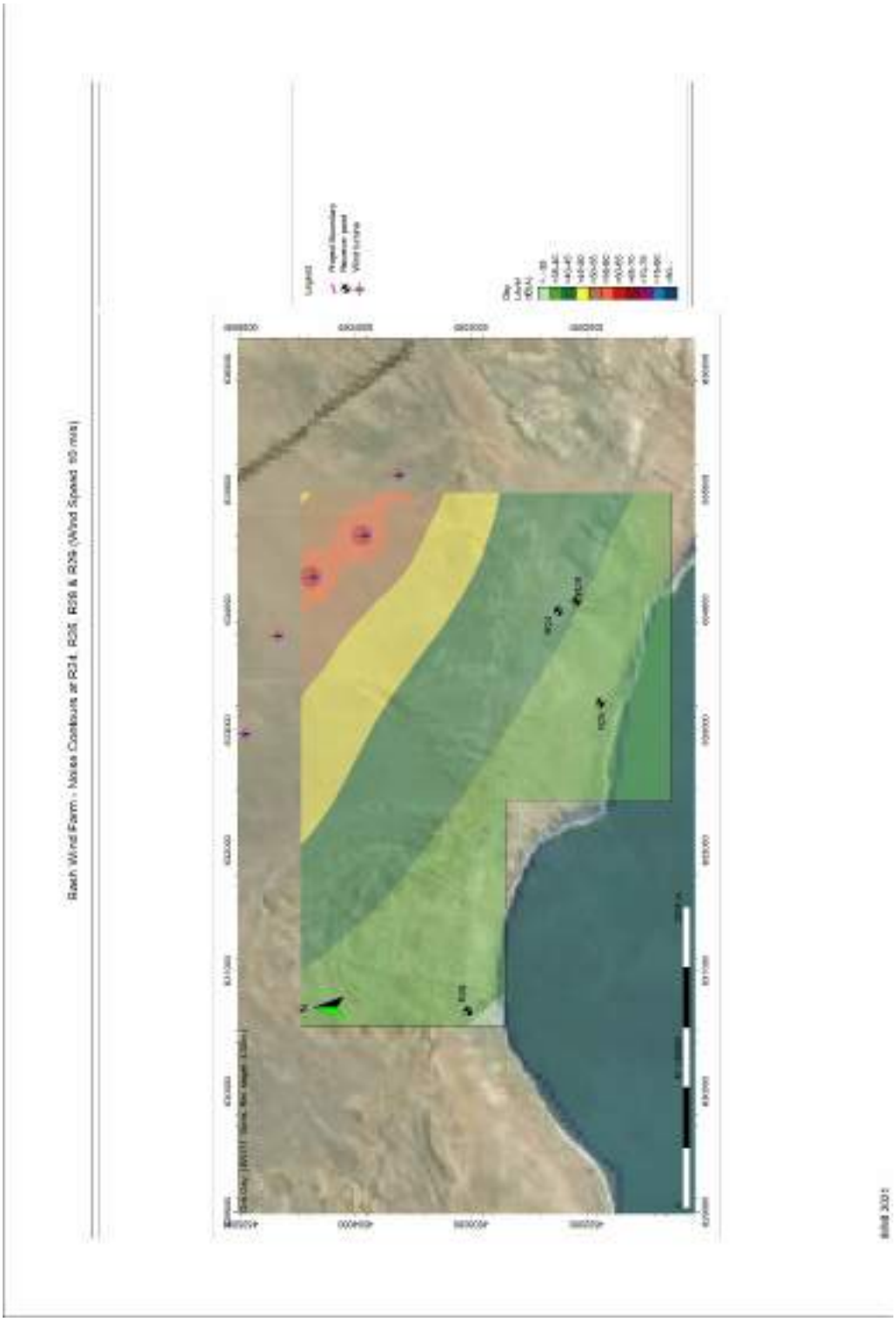
Noise Contours at Receptor R7 (Wind speed, 5m/s)



Noise Contours at Receptors R18 & R21 (Wind speed, 5m/s)



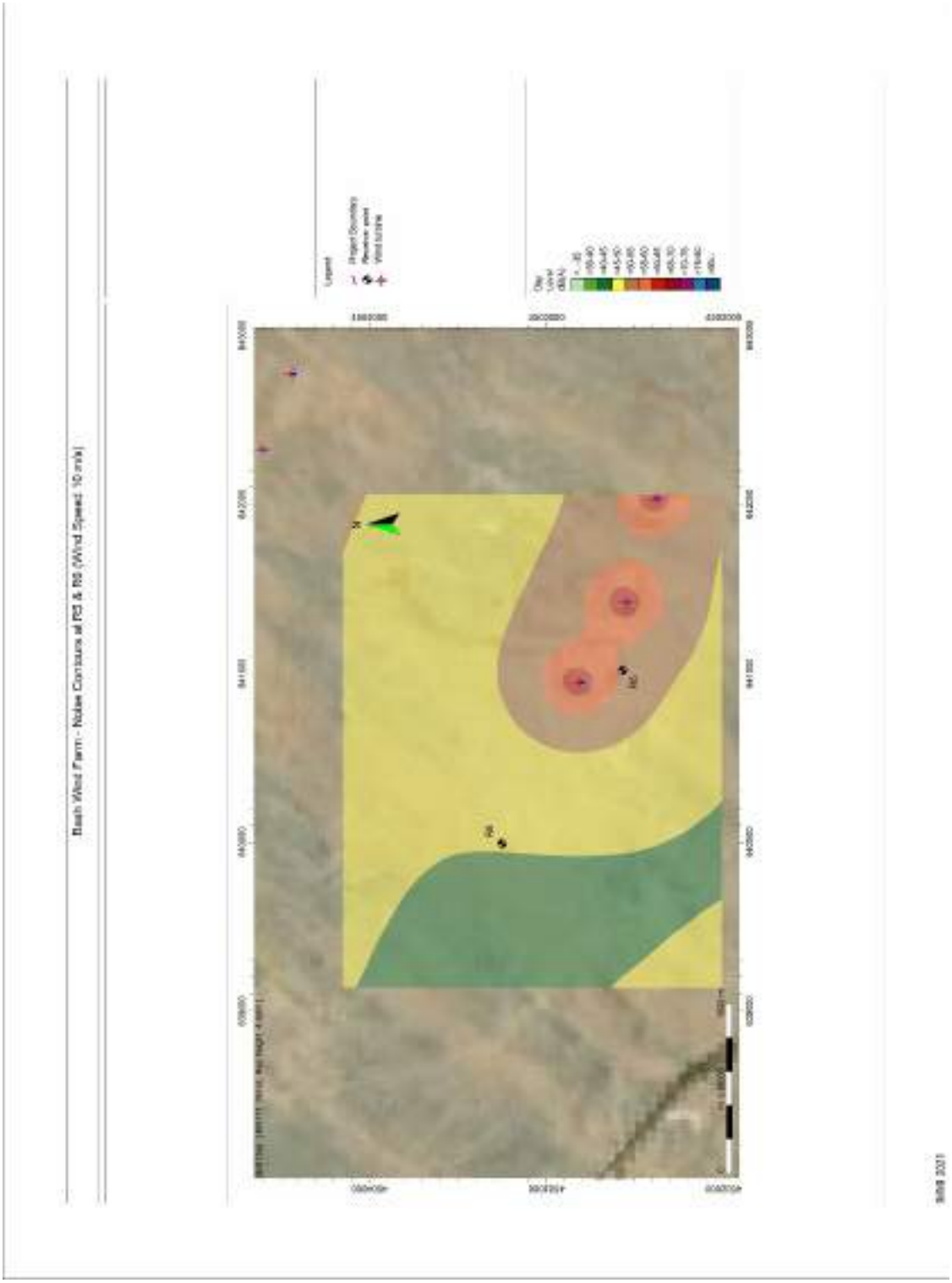
Noise Contours at Receptors R24, R25, R28 & R29 (Wind speed, 10m/s)



Noise Contours at Receptor R23 (Wind speed, 10m/s)

Noise Contours at Receptor R22 (Wind speed, 10m/s)

Noise Contours at Receptors R5 & R6 (Wind speed, 10m/s)



Noise Contours at Receptor R7 (Wind speed, 10m/s)

Noise Contours at Receptors R18 & R21 (Wind speed, 10m/s)

APPENDIX K - CONSULTATION LETTERS TO & FROM LUCENT CENTRE LLC AND NAVOI SANOAT SADVO LLC

ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ

JURU ENERGY CONSULTING

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

JEC-OUT-21-146
26.05.2021

To "Lucent Centre" LLC

Under Presidential Decree of the Republic of Uzbekistan No.5003 dated 23.02.2021 "On measures to implement the investment of the Project on construction of a 500MW wind power plant in Gijduvon district in Bukhara region", FE 'ACWA Power Bash Wind' LLC (Tashkent)' has entered into a 25-year Power Purchase Agreement with JSC National Electric Networks of Uzbekistan. This agreement was entered into on 24th January 2021 for the development, financing, construction and operation of a 500MW Wind Farm in Gijduvon district of Bukhara region (See Annex 1).

The project also includes the development of an Overhead Transmission Line (OHTL) with a rating of 500kV single circuit. This OHTL will be shared between ACWA Power's Bash 500MW Wind Farm and the ACWA Power Dzhankeldy 500MW Wind Farm. The alignment of the OHTL is being finalised by JSC National Electric Networks of Uzbekistan and will connect to an existing substation in Qurako'l.

As part of the ESIA, Juru Energy is consulting with "Lucent Centre" LLC to request any data or comments that will be relevant to the preparation of the Project ESIA. We would also like to request for your assistance in obtaining information on "Sanjar" mining activities in proximity to the Project site (See Annex 2). Such information will be based on the questionnaire in Annex 3.

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely,

Director **J.Yakubov**

For the further information please contact:
Gulchekhra Nematullaeva

Phone: +99871 202 04 40
Mob.: +99897 445 95 04

Annex 1
To the letter JEC-OUT-21-146
25.05.2021

The project is located in Gijduvon district of Bukhara region

Project Coordinates (based on preliminary co-ordinates)

NORTHING	EASTING
ACWA Power 500MW Project Site	
4488709.16	637987.39
4489065.00	645911.20
4492662.15	646074.46
4493476.69	647325.10
4495585.81	646194.93
4498671.77	646323.63
4498528.88	646690.97
4499538.02	648248.52
4500867.54	648351.79
4503425.70	650137.28
4507450.24	649969.59
4507264.73	632532.51
4506189.41	631394.22
4503502.14	631176.63
4503073.76	635108.38
4499198.71	637482.55

Annex 2
To the letter JEC-OUT-21-146
26.05.2021
Mining area "Sanjar"

Coordinates of "Sanjar" Mining Area

NORTHING	EASTING
40.661006°	64.589351°
40.660955°	64.589823°
40.660964°	64.591148°
40.662608°	64.592122°
40.663570°	64.592204°
40.663912°	64.592224°
40.663985°	64.592167°
40.664050°	64.592014°
40.664095°	64.591365°
40.664096°	64.590702°
40.664071°	64.590536°
40.663875°	64.590378°
40.662936°	64.589882°
40.661808°	64.589335°
40.661100°	64.589058°

Annex 3
To the letter JEC-OUT-21-146
26.05.2021
Questionnaire

Mining area "Sanjar"		
1.	How many workers are involved in the mining activities?	
2.	Would you please confirm the location of the accommodation facilities for workers who work in the mining?	
3.	Could you please provide a cadastral map of mining area?	
4.	Do the workers at the mining area use the project site: - As an access route - Transportation of the mined raw materials/minerals - Other uses (please clarify)	
5.	Where is waste from the mining activities including any wastewater, hazardous materials and other wastes disposed?	
6.	Do the mining area employ any local residents from Ayakagytma village or any other communities within the project area? If yes, would you please provide us with an estimate?	
7.	Would you please clarify whether the mining area rely on the local communities for the following: - Source of water (please provide the source and volume) - Waste disposal - Local medical clinic - Food supply - Other (please clarify)	
8.	Which access roads are used in the transportation of the raw materials from the mining areas?	
9.	Does the mining area use any area of the project site as an access road, transportation of mined materials and other activities?	
10.	Please provide us with additional comments/feedback (if applicable).	

ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ

JURU ENERGY CONSULTING

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

JEC-OUT-21-149
26.05.2021

To "Navoi sanoat savdo" LLC

Under Presidential Decree of the Republic of Uzbekistan No.5003 dated 23.02.2021 "On measures to implement the investment of the Project on construction of a 500MW wind power plant in Gijduvon district in Bukhara region", FE 'ACWA Power Bash Wind' LLC (Tashkent)' has entered into a 25-year Power Purchase Agreement with JSC National Electric Networks of Uzbekistan. This agreement was entered into on 24th January 2021 for the development, financing, construction and operation of a 500MW Wind Farm in Gijduvon district of Bukhara region (See Annex 1).

The project also includes the development of an Overhead Transmission Line (OHTL) with a rating of 500kV single circuit. This OHTL will be shared between ACWA Power's Bash 500MW Wind Farm and the ACWA Power Dzhankeldy 500MW Wind Farm. The alignment of the OHTL is being finalised by JSC National Electric Networks of Uzbekistan and will connect to an existing substation in Qurako'l.

As part of the ESIA, Juru Energy is consulting with "Navoi sanoat savdo" LLC to request any data or comments that will be relevant to the preparation of the Project ESIA. We would also like to request for your assistance in obtaining information on "Qorasigir" mining activities in proximity to the Project site (See Annex 2). Such information will be based on the questionnaire in Annex 3.

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely,

Director **J.Yakubov**

For the further information please contact:
Gulchekhra Nematullaeva

Phone: +99871 202 04 40
Mob.: +99897 445 95 04

Annex 1
To the letter JEC-OUT-21-149
26.05.2021

The project is located in Gijduvon district of Bukhara region

Project Coordinates (based on preliminary co-ordinates)

NORTHING	EASTING
ACWA Power 500MW Project Site	
4488709.16	637987.39
4489065.00	645911.20
4492662.15	646074.46
4493476.69	647325.10
4495585.81	646194.93
4498671.77	646323.63
4498528.88	646690.97
4499538.02	648248.52
4500867.54	648351.79
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4507450.24	649969.59
4507264.73	632532.51
4506189.41	631394.22
4503502.14	631176.63
4503073.76	635108.38
4499198.71	637482.55

Annex 2
To the letter JEC-OUT-21-149
26.05.2021
Mining area "Qorasigir"

Coordinates of "Qorasigir" Mining Area

NORTHING	EASTING
ACWA Power 500MW Project Site	
40.661006°	64.589351°
40.660955°	64.589823°
40.660964°	64.591148°
40.662608°	64.592122°
40.663570°	64.592204°
40.663912°	64.592224°
40.663985°	64.592167°
40.664050°	64.592014°
40.664095°	64.591365°
40.664096°	64.590702°
40.664071°	64.590536°
40.663875°	64.590378°
40.662936°	64.589882°
40.661808°	64.589335°
40.661100°	64.589058°

Annex 3
To the letter JEC-OUT-21-149
26.05.2021
Questionnaire

Mining area "Qorasigir"		
1.	How many workers are involved in the mining activities?	
2.	Would you please confirm the location of the accommodation facilities for workers who work in the mining?	
3.	Could you please provide a cadastral map of mining area?	
4.	Do the workers at the mining area use the project site: - As an access route - Transportation of the mined raw materials/minerals - Other uses (please clarify)	
5.	Where is waste from the mining activities including any wastewater, hazardous materials and other wastes disposed?	
6.	Do the mining area employ any local residents from Ayakagytma village or any other communities within the project area? If yes, would you please provide us with an estimate?	
7.	Would you please clarify whether the mining area rely on the local communities for the following: - Source of water (please provide the source and volume) - Waste disposal - Local medical clinic - Food supply - Other (please clarify)	
8.	Which access roads are used in the transportation of the raw materials from the mining areas?	
9.	Does the mining area use any area of the project site as an access road, transportation of mined materials and other activities?	
10.	Please provide us with additional comments/feedback (if applicable).	

MA'SULIYATI CHEKLANGAN JAMIYAT	LUCENT CENTR	LIMITED LIABILITY COMPANY

№17
«24» 09.2021й.

МЧЖ "Juru energy consulting"га

«LUCENT CENTR» МЧЖ ушбу оркали Сизга шуни маълум киламизки, Бухоро вилояти Гиждувон туманида жойлашган «Санжар» гипс конига фойдали казилмани казиб олиш учун 2020 йил 08 майдаги ВН 0087 F 5 -сонли лицензия олинган.

Хозирги кунга келиб жамиятимиз томонидан кон учун ишчи лойиха ва йиллик кон ишлар режаси ишлаб чикилмокда.

Юкоридагиларни инобатга олган холда ва жамиятимиз томонидан конда казиб олиш ишлари 2022 йили амалга оширилиши сабабли **МЧЖ "Juru energy consulting"** нинг №21-146 сон 26.05.2021 йил хатига асосан иловани тақдим киламиз.

Хурмат билан;

Директор **Абдухаликов А.Б.**

JEC-OUT-21-146
26.05.2021 xatiga 3-ilova
So'rovnoma

"Sanjar" koni		
1.	Konchilik ishlariga qancha ishchi jalb qilingan?	27
2.	Kon ishchilari uchun mo'ljallangan turar joylar joylashuvi joylarini ko'rsatib bera olasizmi?	кон майдони ичида
3.	Kon uchun ajratilgan maydonning kadastr xaritasini taqdim eta olasizmi?	[illegible] мавжуд
4.	Kondagi ishchilar loyiha maydonidan quyidagilar uchun foydalanadilarmi: - Kirish yo'li sifatida; - Qazib olingan xom ashyo/ minerallarni tashish uchun; - Boshqa maqsadlarda (iltimos yozing)	
5.	Kon faoliyatidan hosil bo'ladigan har qanday chiqindi suv, xavfli materiallar va boshqa chiqindilar qayerga olib borib tashlanadi?	Чиқиндилар [illegible]
6.	Kon faoliyatida loyiha maydoniga yaqin joylashgan mahallalardan yoki Og'itma qishlog'ida yashovchi mahalliy aholi yollanadimi? Agar yollansa, sonini ko'rsating.	ёлланади 7-8 киши
7.	Quyidagi masalalar bo'yicha kon faoliyati mahalliy jamoalar yordamiga tayanadimi? - Suv manbai (manba va olinadigan suv hajmini taqdim eting); - Chiqindilarni tashiash; - Mahalliy tibbiyot klinikasidan; - Oziq-ovqat ta'minoti; - Boshqa (iltimos, aniqlik kiriting)	Сув (ойига 10 тонна) озиқ овқат маҳсулоти олинади
8.	Xom ashyoni qazib olish maydonlaridan tashishda qaysi kirish yo'llaridan foydalaniladi?	[illegible] ташилади
9.	Kon faoliyati davomida loyiha maydonidan kirish yo'li, qazib olingan materiallarni tashish va boshqa maqsadlarda foydalanadimi?	фақат машинада
10.	Iltimos, bizga qo'shimcha izohlar/mulohazalar bildiring (agar mavjud bo'lsa).	

Unofficial translation

No.17 dated 24.09.2021

To “Juru Energy consulting” LLC

“Lecent Centr” LLC informs you that for mining activities at “Sanjar” gypsum mining area located in Gijduvon district of Bukhara region the licence BH 0087 F5 dated 08.05.2021 was obtained.

At the moment, our team is working on annual work plan for mining activities.

Mining work will commence in 2022, as such as a response to the letter No.21-146 dated 26.05.2021 sent by Juru energy consulting LLC, we are sending our responses according to the annex 1.

Annex 1.

Mining area 1		
1.	How many workers are involved in the mining activities?	27
2.	Would you please confirm the location of the accommodation facilities for workers who work in area 1?	Within the mining area
3.	Could you please provide us a cadastral map of mining area?	We have the licence
4.	Do the workers in area one uses the project site: - As an access route - Transportation of the mined raw materials/minerals - Other uses (please clarify)	For transportation of the mined raw materials/minerals
5.	Where do the mining area dispose its waste including any wastewater, hazardous materials etc?	For waste disposal municipality allocates a separate land plot
6.	Do the mining area employ any local residences from Ayakagytma village or any other communities within the project area? If yes, would you please provide us with an estimate?	Yes, 7-8 people
7.	Would you please clarify whether the mining area rely on the local communities for the following: - Source of water (please provide the source and volume) - Waste disposal - Local medical clinic - Food supply	Yes, for source of water 10 tons per month and for food supply

	- Other (please clarify)	
8.	Which access roads are used in the transportation of the raw materials from the mining areas?	Raw materials are taken to the point of goods delivery of train departure
9.	Does the mining area use any of the project site i.e., an access road, transportation of mined materials etc?	For transportation of mined materials only
10.	Please provide us with additional comments/feedback (if applicable).	-

O'ZBEKISTON RESPUBLIKASI
DAVLAT GEOLOGIYA VA MINERAL RESURSLAR QO'MITASI

Noruda foydali qazilmalarni o'z ichiga olgan
yer qa'ri uchastkasidan foydalanish huquqi uchun

LITSENZIYA

SERIYASI: 08 TARTIB RAQAMI: 0011 LITSENZIYA TURI: F5

Litsenziya "NAVOIY SANOAT SAVDO" mas'uliyati cheklangan jamiyati ga berildi.

Litsenziya foydali qazilmalarni qazib olish uchun yer qa'ri uchastkasidan foydalanish huquqini tasdiqlaydi.

Yer qa'ri uchastkasi "Qorasigir" gips koni Buxoro viloyati G'ijduvon tumani da joylashgan.

Yer qa'ri uchastkasi chegaralarining tavsifi, burchak nuqtalari koordinatalari, topografiya plani, kesimlar nusxalari va boshqalar ilovada keltiriladi. I - Konning geologik xaritasi, koordinatlari bilan; II. O'zbekiston Respublikasi Vazirlar Mahkamasining 2018 yil 12 iyundagi 443-sonli qarori; III – Buxoro viloyati hokimining o'rinbosarining 2018 yil 25 sentabrdagi 3/5306-son kafolat xati

asosida yer qa'ridan foydalanish bilan bog'liq ishlarni olib borish uchun yer uchastkasi berish kafolatlangan.

Litsenziyaning amal qilish muddati 2040 yil 19 yanvar

Quyidagilar litsenziyaning ajralmas tarkibiy qismlari hisoblanadi:

Yer qa'ridan foydalanish shartlari IV - sonli ilova (4 varaq)

Matnli ilovalar V - sonli ilova (11A 57 varaq)

Chizma ilovalar VI - sonli ilova (4 varaq)

Litsenziya berilgan sana 2018 y. "19" oktabr

Litsenziya olgan shaxs yoki uning vakolatli vakili

A. Xusanov

"19" oktabr 2018

O'zbekiston Respublikasi Davlat geologiya va mineral resurslar qo'mitasi Raisi

B. Islamov

19 oktabr 2018 y.

NAVOIY SANOAT SAVDO

Document translation: **English**

State Committee of the Republic of Uzbekistan for Geology and Mineral Resources

LICENSE

For the right to use a subsoil block containing minerals.

serial number: **BH**

serial number: **0011**

license type: **F5**

The license was issued to Navoi Industrial Trade LLC.

The license confirms the right to use the subsoil block for mining.

The “Qorasigir” gypsum deposit is located in Gijduvan district of Bukhara region.

A description of the boundaries of the subsoil, coordinates of the corner points, topographic plan, copies of sections, etc. are provided in the appendix.

I. Geological map of the deposit, with coordinates;

II. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated June 12, 2018 No 443;

III. Letter of guarantee from the Deputy Khokim of Bukhara region No. 3/5306 dated September 25, 2018. *The decree guarantees the allocation of land plots for subsoil use.*

License Validity: January 9, 2040

The following are an integral part of the license:
Subsoil Use Terms: Appendix IV (4 pages)
Text Applications: Appendix V (TIA 57 pages)
Drawing Applications: Appendix VI (4 pages)
License Date: October 19, 2018

Licensee and his/her authorized representative:
A.Khusanov

Chairman of State Committee of the Republic of Uzbekistan for Geology and Mineral Resources:
B.Islamov

Ер участкасига бўлган ҳуқуқнинг
давлат рўйхатидан ўтказилганлиги тўғрисида
ГУВОҲНОМА
BU0033096

Мазкур гувоҳнома "NAVOIY SANOAT SAVDO"
масъулияти чекланган жамияти
жойлашган (яшаётган) манзили "Барака" МФЙ (Кўча МҒЙ)
паспорт серияси ______ рақами ______
доимий фойдаланиш берилган
шу ҳақдаким, унга 30,0000 ҳуқуқи билан
илова қилинган планга мувофиқ ______ гектар
"Барака" МФЙ (Кўча МҒЙ)
20:11:13:07:02:0135 жойлашган Ғиждувон
кадастр рақами берилган ва
Кўчмас мулкка бўлган ҳуқуқлар ва у ҳақда тузилган битимлар
реестрига ______ -сон билан киритилган ер участкаси тегишли.
Мазкур гувоҳнома Ғиждувон Ер тузиш ва кўчмас мулк
кадастри давлат корхонасининг ______ филиали
Ғиждувон туман ҳокимининг 10.12.2018 й. 2807-сонли қарори
томонидан ______ га
асосан берилди.

Филиал бошлиғи ______ Ф.Холов

Рўйхатга олувчи ______ В.Жумаев

14.12.2018 й.

М.Ў.

Document translation: **English**

CERTIFICATE

Of the rights to a land plot on state registration

The certificate given to “Navoy sanoat savdo” LLC and applies to real estate rights of using land.

This certificate was issued by the Gijduvan district branch of the State Enterprise of Land Management and Real Estate Cadastre.

Head of branch: F.Kholov

Registered by: B.Jumaev

December 14,2018

СВЕДЕНИЯ
о юридическом лице из Единого государственного регистра предприятий и организаций

Общие сведения

ИНН	302060257
Регистрирующий орган	Хокимият района (города)
Дата регистрации	20.07.2011
Номер регистрации	1517
Наименование юридического лица	"NAVOIY SANOAT SAVDO" mas'uliyati cheklangan jamiyati
Код ОПФ	152 - Общество с ограниченной или дополнительной ответственностью
Код ОКЭД (Вид(ы) осуществляемой деятельности)	78300 - Деятельность прочих организаций по работе с персоналом
Код СООГУ	79994 - Субъекты предпринимательства, не входящие в структуры органов государственного и хозяйственного управления
Принадлежность к субъектам малого предпринимательства	Да
Состояние активности	Действующее предприятие
Уставный фонд	71 181 400,00 UZS

Информация о руководителе

Имя руководителя	
ИНН руководителя	

Информация об учредителях и их доле в уставном фонде

1. NEFTEKIMYO MCHJ	96,00 %
2. Xusanov Najmiddin Usmonovich	3,70 %
3. Jumayev Bakodir Rasmatovich	0,30 %

Контактные данные

Адрес электронной почты	YASIN@UMAIL.UZ
Контактные телефоны	908088872
Код СОАТО	1706215501 - Buxoro viloyati, G'ijduvon tumani, G'ijduvon shahri
Улица, тупик, дом	Ibn Sino ko'chasi

Данные актуальны на 05/02/2019

A legal entity from the Unified State Register of Enterprises and Organizations

General information
INN (identification number of tax payer): 302060257
The registering authority: District Khokimiyat
Registration date: 20.07.2011
Registration number: 1517
Name of the legal entity: “Navoi savdo sanoat” LLC
INN (Identification Number of Tax Payer) code: 152 Company with limiter or additional liabilities.
OKED (Nationwide Classification of Economic Activities) code: 7800-activities of other organizations for working with personal
SOOGU (Government designation System) code: 79994-business entities that are not included in the structures of state and economic management bodies.
Belonging to small business entities: yes
Activity status: operating enterprises
Authorities capital: 71 181 400,00 UZS
Information about the founder and their share in the authorities’ fund:

1. “NEFTEKIMYO” LLC: 96,00%
2. Xusanov Najmiddin Usmonovich: 3,70%
3. Jumaev Bakhodir Rakhmatovich: 0,30%

APPENDIX L- SOIL LABORATORY RESULTS – WIND FARM

Assessment of soil and water quality

UZBEKISTAN BASH 500 MW WF PROJECT:
LOCAL SUPPORT IN THE DEVELOPMENT, SUBMISSION AND APPROVAL OF ESIA
CLIENT: 5CAPITALS
Date: May 2021

Juru Energy Ltd.
Suite 1, One George Yard, London
United Kingdom, EC3V 9DF
T: +44 207 859 4028,

May – 2021

Contents

Abbreviations/Acronyms

ICP-MS – Inductively coupled plasma mass spectrometry

ISE's - Ion-selective electrodes

JE – Juru Energy

MS – Mass spectrometry

SE - State Enterprise

WF – Wind Farm

INTRODUCTION

The project area is located in the southern part of the Kyzylkum desert. The site comprises of an extensive plain with desert sandy soils. The landscape of the project area is steppe, rather homogeneous and arid. Accordingly, steppe and desert species of animals and plants live here. The nearest surface water to the project is represented by Lake Ayakagitma. Lake placed at north-eastern part of Ayakagitma reservoir (depression).

The road network is poorly developed and consists of separate unpaved roads, which can be used only by off-road transport equipment with significant detours, and partially only on foot.
The climate of the area is extreme continental with dry hot summer and cold winter. The maximum temperature in summer reaches +49,5°C. The average annual precipitation, which usually falls in the autumn and winter, and spring periods, is 100-150 mm

The settlement Agitma village is located 5.26 km from the project site. The territory of the future WF is used by several shepherds to graze livestock.
Agitma village has around 380 villagers. Households at the village are primarily led by male. Almost all households own some cattle, such as cows and sheep.

The Environmental Assessment of soil and water from lake Ayakagitma providing information on qualitative and quantitative content of pollutants.

1. METHODS OF FIELD AND LABORATORY RESEARCH

1.1 Organization of field research

As per the Terms of Reference, on 6th of April, 2020 on the territory of the planned Bash WF in Bukhara region, the field works were carried out to take samples. Eight (8) soil samples and four (4) water samples from lake Ayakagitma were taken at the project site.

1.2. Description of methods for sampling of water.

Four water samples were collected within available radial distance of the study area and were analysed to study the water quality.

Figure 1. Water sampling locations

Table 1. Coordinates of collected soil and water samples

No.	Sample number	Coordinates
Ayakagitma water		
1.	Water No.1	40.662392° 64.552717°
2.	Water No.2	40.567667° 64.571633°
3.	Water No.3	40.645586° 64.588751°
4.	Water No.4	40.606723° 64.615602°

Sampling and analysis were carried out in accordance with the established state standards, regulatory and methodological and instructional documents.

The samples of surface waters were taken as per State standard 31861-2012 “Water. General requirements for sampling”.

The following steps were performed:

Step 1: location for each water sample was determined by using handheld GPS navigator. Sampling was carried out as further as possible from the shore. It necessary to highlight that due to the windy weather local fisherman preferred not to get far from shore in terms of safety.
At WQ_3 and WQ_1 locations JE used boat of local fisherman to reach the distance at around 250 meters from the shore.
At the WQ_4 location there were no fisherman, even boats. Previous fisherman refused to move from one location to another as it was windy. Therefore, JE used a help of local fisherman by using special waterproof uniform to collect water at 30 meters distance from shore.
WQ_2 location was at the canal that supplies Ayakagitma lake with water. The length of canal was around 7-8 meters and there was no need to use a boat.
Step 2: By using a bathometer, water was taken from a depth of 5 and 2 meters (WQ1).
Step 3: Water from was collected to borosilicate glass bottles. Based on the demand of local labs, there were collected 2 liters of water for each location.
Step 4: Each bottle was labelled in accordance with water sample location (e.g. WQ_1 WQ_2 and etc.) and signed with date of collection

The lake shore was clean and no anthropogenic pollution was observed.

Figure 2. The lake shore

For water sampling at the WQ_1 locations JE used boat of local fisherman.

Figure 3. Sampling of water from Ayakagitma No.1

WQ_2 location was in the input to the lake of Ayakagitma

Figure 4. Sampling of water from Ayakagitma No.2

Figure 5. Sampling of water from Ayakagitma No.3

Figure 6. Sampling of water No.4

1.3. Description of methods for sampling of soil.

Eight soil samples were collected from following locations

Figure 7. Soil sampling locations

Table 2. Coordinates of collected soil sample

No.	Sample number	Coordinates
Soil samples		
1.	Soil No.1	40.678374° 64.603904°
2.	Soil No.2	40.657039° 64.653990°
3.	Soil No.3	40.643303° 64.700523°
4.	Soil No.4	40.626497° 64.725644°
5.	Soil No.5	40.552418° 64.653035°
6.	Soil No.6	40.622771° 64.654993°
7.	Soil No.7	40.587550° 64.715565°
8	Soil No.8	40.667283° 64.722731°

Sampling was carried out in accordance with the established State standard 17.4.4.02-2017 “Nature protection. Soils. Methods for sampling and preparation of soil for chemical, bacteriological, helminthological analysis”, as well as requirements indicated in ToR for collecting soil samples.
The following steps were performed:
Step 1: Location for each soil sample was determined by using Garmin navigator. Then surface was cleaned from stones and other waste on the surface.
Step 2: By using small scapula the surface layer of ground was removed up to 10 cm. To define the depth for 10 cm was used meter measurer.
Step 3: Soil from top 10 cm was collected to special canvas bag. Stones and roots of weed grass were removed. Based on the demand of local labs, there were collected 200 grams of soil for each location.
Step 4: Each bag was labelled in accordance with soil sample location (e.g. SQ_1 SQ_2 and etc) and signed with date of collection
The coordinates of sample locations were determined by the personal navigation device ETREX 32x «GARMIN » (Figure 8).

Figure 8. Navigation device ETREX 32x «GARMIN »
Eight soil locations consisted of sandy sands with light vegetation

Figure 9. Sampling of soil from location No.1

Figure 10. Sampling of soil from location No.2

Figure 11. Sampling of soil from location No.3

Figure 12. Sampling of soil from location No.4

Soil samples at sites 3 and 4 were collected after sunset; they were similar in texture because of their close proximity to each other

Figure 13. Sampling of soil from location No.5

Figure 14. Sampling of soil from location No.6

Fig.15. Sampling of soil from location No.7

Figure 16. Sampling of soil from location No.8

1.4 Chemical studies of the composition of soil and water.

The samples were sent to a "Central laboratory" for analysis of the following parameters:

Table 2. Parameters for qualitative and quantitative analyses

Parameters for soils:	Parameters for water:
• Chlorides (Cl^-) • Nitrates (NO_3) • Metals: - Sodium (Na) - Potassium (K) - Arsenic (As) - Cadmium (Cd) - Chromium (Cr) - Copper (Cu) - Mercury (Hg) - Nickel (Ni) - Ferrum (Fe) - Lead (Pb) - Zinc (Zn)	• pH. • turbidity • Metals: - Arsenic (As) - Aluminium (Al) - Cadmium (Cd) - Chromium (Cr) - Copper (Cu) - Mercury (Hg) - Nickel (Ni) - Ferrum (Fe) - Lead (Pb) - Zinc (Zn)

Basic physical and chemical methods were used to analyze pollutants:

- Photometric – based on chemical conversion of harmful substances (nitrates, aluminum, chromium (+6),) in color-intensive compounds when interacting with corresponding reagents, with subsequent measurements of the density of the colored compounds at a certain wavelength and allowing to make quick measurements with a sufficiently high accuracy;

- Inductively coupled plasma mass spectrometry (ICP-MS) – an analytical method that is used to detect metals and several non-metals in liquid samples at very low concentrations. MS analysis is the most sensitive of all modern multi-element analysis methods. The basic principle of mass spectrometry (MS) is to generate ions from inorganic or organic compounds, to distribute these ions by mass-to-charge ratio and to detect their qualitative and quantitative characteristics.

- Potentiometry –one of the electroanalytical methods. Potentiometry based on measures the difference in electrode potentials. One electrode is called the reference electrode and has a constant potential, while the other one is an indicator electrode whose potential changes with the composition of the sample. Therefore, the difference of potential between the two electrodes gives an assessment of the composition of the sample. Ion-selective electrodes (ISE's) possess a high degree of selectivity. In the laboratory, the electrode used is specific for chloride ion.

- titrimetric – a method of quantitative/mass analysis (chlorides), based on the measurement of the reagent solution volume of a precisely known concentration consumed for the reaction with the substance being determined;

2. Results of analysis

2.1 Results of water analysis

In the Ayakagitma lake water (sample No.1 - 4), an excess of followings was noted that the samples of water fully comply with the state standards and does not exceed the maximum permissible concentration.

The obtained results of the chemical analysis of waters are presented in tables 3

Table 3[1] - Results of water analyses of the Ayakagitma lake

Name of parameters	Place of selection and content mg/l				Detectable limits	MPC O'zDSt 950:2011	MPC for water in fishery reservoirs for surface waters"	Compliance with established norms
	Locations							
	№1	№2	№3	№4				
1	2	3	4	5	6	7	8	9
pH	8,00	8,00	8,00	8,00	1-14	6-9	6,5-8,5	Comply
Turbidity, mg/dm^3	0.03	0.03	0.03	0.03	0,001-9999mg/l	1,5 (2,0)	N/A	Comply
Arsenic (As)	0.012	0.0026	0.01	0.01	0.0001-10 mg/l	0.05	N/A	Comply
Aluminium (Al)	0.079	0.053	0.055	0.045	0.002-10 mg/l	0.2(0.5)	0,2	Comply
Cadmium (Cd)	<0.0001	<0.0001	<0.0001	<0.0001	0.0001-1 mg/l	0.001	0,005	Comply
Copper (Cu)	0.011	0.0031	0.01	0.01	0.002 - 1 mg/l	1.0	0,001	Comply
Mercury (Hg)	$3*10^{-6}$	$2*10^{-6}$	$3*10^{-6}$	$2*10^{-6}$	*	0.0005	0,00001	Comply
Nickel (Ni)	0.013	0.0083	0.010	0.0087	0.002- 1 mg/l	0.1	0.01	Comply
Ferrum (Fe)	0.047	0.031	0.033	0.021	*	0.3	0.05	Comply
Lead (Pb)	<0.0002	<0.0002	<0.0002	<0.0002	0.0002-10 mg/l	0.03	0.01	Comply
Zinc (Zn)	0.0073	0.0055	0.0042	0.0029	0.0002-10 mg/l	3.0	0.01	Comply

2.2. Results of soils analysis

The results of laboratory analysis of the soil are presented in Table 4.
The MPC in the soil is determined for 35 substances that are considered typical for anthropogenic impact, as well as for 109 pesticides. The samples do not fully comply with sanitary standards and exceed the maximum permissible values for four components (Ni, Cr, Zn, Cu).

The 8th sample is 10 times higher in nitrate content than the others.
The results showed that the content of heavy metals in sample 5 is lower than in almost all other samples

[1] This table shows results for chemical parameters that were proposed to 5 C with in initial TP. The lab, in turn, conducted full mass spectrometry analysis for more parameters (only metals). Please refer to Annex 7-8 for more information.

Table 4[2] Results of chemical analysis of soils

Name of parameters	Sample number								Detectable limits in mg/l	MPC in mg/kg	Compliance with established norms
	№1	№2	№3	№4	№5	№6	№7	№8			
pH	7,70	7,80	7,80	7,60	7,80	7,80	7,70	7,75	1-14	N/A	N/A
Chloride (as Cl), %	0,014	0,032	0,021	0,014	0,04	0,01	0.01	0,014	N/A	N/A	N/A
Chloride (as Cl) mg/l	7	16	11	7	7	5	5	7			
Nitrate (NO_3), mg/dm^3	1	1	2	2	2	1	2	12	10^{-6}-100* mg/kg	130.0 (gross content)	Comply
Sodium (Na), mg/kg	8100	9500	9500	9592	9669	9074	11193	11199	40-110000mg/kg	N/A	N/A
Magnesium (Mg), mg/kg	2100	8300	16000	18288	13730	11446	11250	9898	40-110000mg/kg	N/A	N/A
Potassium, mg/kg	22000	19000	15000	16558	16055	18455	18579	18233	80-300000 mg/kg	N/A	N/A
Lead (Pb), mg/kg	13	14	15	13.4	13.8	14.9	13.3	13.2	0.1-4000 mg/kg	32.0	Comply
Manganese (Mn), mg/kg	68	380	520	648	478	457	423	393	20-100000 mg/kg	1500.0 (gross content)	Comply
Copper (Cu), mg/kg	19	22	25	178	134	124	98	89.2	1,0-4000 mg/kg	3.0	Does not Comply
Zinc (Zn), mg/kg	21	35	49	48.8	48.5	52.9	44.0	42.5	1,0-4000 mg/kg	23,0	Does not Comply
Chromium (Cr), mg/kg	45	54	61	61.8	54.7	67.9	65.8	64.7	1,0-4000 mg/kg	6.0	Does not Comply
Iron (Fe), mg/kg	10000	13000	19000	22645	22350	25476	22319	20159	60-3000000 mg/kg	N/A	N/A

[2] This table shows results for chemical parameters that were proposed to 5 C with in initial TP. The lab, in turn, conducted full mass spectrometry analysis for more parameters (only metals). Please refer to Annex 7-8 for more information.

Name of parameters	Sample number								Detectable limits in mg/l	MPC in mg/kg	Compliance with established norms
	№1	№2	№3	№4	№5	№6	№7	№8			
Mercury (Hg), mg/kg	0.330	0.100	0.180	0.070	0.120	0.090	0.070	0.070	*	2.1	Comply
Nickel (Ni), mg/kg	47	51	41	37.9	39.1	64.8	66.3	33.3	1,0-4000	4.0	Does not Comply
Cadmium (Cd), mg/kg	0.031	0.028	0.064	0.067	0.086	0.066	0.087	0.070	0.005-4000 mg/kg	N/A	N/A
Aluminum (Al), mg/kg	34000	50000	63000	65295	63.927	66918	64680	63510	20-200000 mg/kg	N/A	N/A
Arsenicum (As) mg/kg	47	18	20	32.1	52.4	47.6	31.8	47.4	0.1-4000 mg/kg	N/A	N/A

Annex 1. Brief profile of the “Central laboratory”

The state enterprise "Central Laboratory" of the State Committee of the Republic of Uzbekistan on Geology and Mineral Resources began its activity in 1868.

Main activities:

- Development of regulatory documents regulating the procedure for performing analytical work.
- Analysis of soils, rocks, ores, minerals, natural waters.
- Development of measurement techniques.
- Development of standard samples of the composition of rocks, ores, products of technological processing and aqueous solutions of heavy metals.
- Production of acid and alkaline electrolytes.

The main methods of analysis: spectral, assay, chemical, neutron activation, mass spectrometry, mineralogical and all types of preparation of rocks for analysis.

SE "Central Laboratory" in 2015-2020 was accredited by the agency "Uzstandart" for technical competence and independence for compliance with the requirements of the standards O'ZDST ISO/IEC 17025, O'ZDST 16.5 and O'ZDST 16.3 and registered in the State Register of the National Accreditation System of the Republic of Uzbekistan. № UZ.AMT.07.MAI.672

- for the right to conduct tests according to O'z DStISO/IEC 17025,

- for the right to conduct the certification of MVI according to O'z DSt 16.5

- for the right to conduct the certification of CO according to O'z DSt 16.3

Annex 2. Copy of lab results for collected water samples

ПСК-05-10

Государственный комитет по геологии и минеральным ресурсам Республики Узбекистан ГП «Центральная лаборатория»

111800, Ташкентская обл., Зангиатинский р-н, п. Эшонгузар, ул. Мустакиллик, 21, тел.: 933805415

Протокол № ЛМСА 349

Протокол испытания масс-спектрометрического (ICP-MS) анализа природных вод и растворов

1. Заказчик – ООО JURU ENERGY CONSULTING
2. Лабораторный номер заказа -286-4-21
3. Количество проб -4
4. Место взятия:
5. Вид анализа -масс-спектральный
6. Дата поступления проб –12.04.2021
7. Дата проведения анализа –
8. Дата выдачи протокола –14.04.2021
9. Средства измерения:

10.1 Термогигрометры типа НТС-2 №8/н – сертификат поверки №0601141

10.2 Масс-спектрометр ИСП Agilent 7500 СХ №JPS1202404- сертификат поверки №00210705

10. НД на методы испытания и средства измерений - МВИ O'z O'U 0677:2015

12. Условия окружающей среды -

11. Результаты анализа в µg/dm3

Приложение -1 стр.

Директор ГП «Центральная лаборатория» С.В.Михайлов

Начальник ЛМСА В.А. Банков

Содержание в (mkg/l)

№	Лаб №	Геол №	Li	Be	B	Na *	Mg *	Al	P	K *	Ca *	Sc	Ti	V	Cr	Mn	Fe *	Co
Диапазон измерений определ. элементов			[illegible]	[illegible]	[illegible]			[illegible]	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
1	286-1	Wq Bash-1	170	<0,10	620	>300000	460000	70,8	42,3	37000	160000	<3,0	3,00	7,00	23,0	4,80	37,3	1,30
2	269-2	Wq Bash-2	94,0	<0,10	170	310000	120000	49,2	43,3	4600	140000	2,30	<1,0	3,10	5,10	8,70	37,3	0,700
3	269-3	Wq Bash-3	87,0	<0,10	870	>300000	360000	55,8	84,3	24000	440000	<2,0	<2,0	4,10	28,0	8,30	44,0	0,980
4	269-4	Wq Bash-4	88,0	<0,10	320	>300000	300000	45,2	30,0	22000	170000	<2,0	<1,0	6,10	28,0	5,70	21,0	0,900

№	Лаб №	Геол №	Ni	Cu	Zn	Ga	As	Se	Br	Rb	Sr	Y	Zr	Nb	Mo	Ag	Cd	In
Диапазон измерений определ. элементов			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	286-1	Wq Bash-1	18,0	17,8	7,00	0,200	18,0	39,8	2400	5,80	9900	0,170	<0,20	<0,10	14,0	<0,10	<0,10	<0,10
2	269-2	Wq Bash-2	8,30	3,18	5,80	0,310	2,60	9,20	460	1,80	3400	<0,10	<0,20	<0,10	4,60	<0,10	<0,10	<0,10
3	269-3	Wq Bash-3	18,0	10,8	4,30	<0,30	15,0	26,0	1900	4,50	7100	0,110	<0,20	<0,10	10,0	<0,10	<0,10	<0,10
4	269-4	Wq Bash-4	8,70	10,8	3,40	<0,30	15,0	26,0	1700	4,30	6800	0,080	<0,20	<0,10	7,10	<0,10	<0,10	<0,10

№	Лаб №	Геол №	Sn	Sb	Te	I	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho
Диапазон измерений определ. элементов			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	286-1	Wq Bash-1	<0,30	1,30	0,440	350	<0,03	28,0	0,084	0,110	<0,05	0,067	<0,03	<0,05	<0,05	<0,05	<0,03	<0,05
2	269-2	Wq Bash-2	<0,30	0,760	<0,40	21,0	<0,02	30,0	<0,05	0,081	<0,05	<0,03	<0,03	<0,05	<0,05	<0,05	<0,03	<0,05
3	269-3	Wq Bash-3	<0,10	1,90	3,800	33,0	<0,05	29,0	0,060	0,100	<0,05	<0,03	<0,03	<0,05	<0,05	<0,05	<0,03	<0,05
4	269-4	Wq Bash-4	<0,30	0,880	0,710	90,0	<0,05	18,0	<0,05	0,084	<0,05	<0,03	<0,03	<0,05	<0,05	<0,05	<0,03	<0,05

№	Лаб №	Геол №	Er	Tm	Yb	Lu	Hf	Ta	W*	Re	Pt	Au	Hg *	Tl	Pb	Bi	Th	U
Диапазон измерений определ. элементов			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	286-1	Wq Bash-1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,130	0,220	[illegible]	[illegible]	0,001	[illegible]	[illegible]	[illegible]	[illegible]	60,0
2	269-2	Wq Bash-2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,090	[illegible]	[illegible]	0,001	[illegible]	[illegible]	[illegible]	[illegible]	34,0
3	269-3	Wq Bash-3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,110	0,160	[illegible]	[illegible]	0,001	[illegible]	[illegible]	[illegible]	[illegible]	48,0
4	269-4	Wq Bash-4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0,160	[illegible]	[illegible]	0,001	[illegible]	[illegible]	[illegible]	[illegible]	44,0

ООО JURU ENERGY CONSULTING 286-4-21

Страница 1

Annex 3. National standards and regulations for water

"Generalized list of maximum permissible concentrations (MPC) of harmful substances for water in fishery reservoirs for surface waters"

This is an internal document of Centre for specialized analytical control in the field of environmental protection, approved by State Committee for ecology and environmental protection. This regulation establishes Maximum permittable concentration of pollutants for fishery reservoirs/canals. This standard applies for reservoirs/canals with fish.

Analysis of surface water were also performed under this regulation, as near agricultural lands are irrigated with water from this canal.

Name of parameters	**MPC**
pH	6,5-8,5
Total suspended solids, mg/l	15
Ammonium, mg/l	0,5
Nitrate, mg/l	40
Nitrites, mg/l	0,08
Sodium (Na), mg / l	120
Chloride mg/l, e	300
Sulfates, mg/l	100
Sulfide, mg/l	N/A
Mineralization (salinity), mg/l	1000
COD (chemical oxygen demand), mg/l	15
BOD (biochemical oxygen demand), mg/l	3
Phosphate mg/l,	0,3
Aluminum (Al), mg/l	0,2
Barium (Ba), mg/l	2
Vanadium (V), mg/l	0,001
Potassium (K), mg/l	50
Cadmium (Cd), mg/l	0,005
Lead (Pb), mg/l	0,01
Manganese (Mn), mg/l	0,01
Copper (Cu), mg/l	0,001
Nickel (Ni), mg/l	0,01
Mercury (Hg), mg/l e	0,00001
Chromium (Cr) (+3), mg/l	N/A
Chromium (Cr) (+6), mg/l	0,001
Zinc (Zn), mg/l	0,01
Iron (Fe), mg/l	0,05

O'zDSt 950:2011
National Standard of the Republic of Uzbekistan for drinking water
Hygienic norms and quality control

This standard applies for drinking water which is supplied by centralized system to the population. At the same time, the standard quality of drinking water is achieved under certain conditions: the right choice of a source of water supply, its proper sanitary protection, effective methods of purification and disinfection of water, systematic monitoring of the quality of tap water in public drinking water supply systems.
Below is given table with the established norms for drinking water quality.

Standards of water quality indicators and methods of their control

Indicators and its components	**Measurement units**	**Normatives**	**Control methods**
1	**2**	**3**	**4**
1. Microbiological indicators			
1.1. Total microbial quantity	Quantity of microbes in 1 ml.	Not more than 100 1)	State Standard 18963
1.2. Quantity of E. coli bacteria (coli index)	Quantity of E. coli bacteria in 1000 ml.	Not more than 3 1) 2) 4)	State Standard 18963
1.3. Escherichia (indicators of fresh fecal contamination)	Quantity of Escherichia in 300 ml	Absence 3) 4)	State Standard 18963
1.4. Coliphages	Quantity of coliphages in 200 ml	Absence 4)7)	Methodological guidelines established by Ministry of health
2. Parasitological indicators			
2.1. Pathogenic intestinal, protozoa (lamblia cysts, amoebas, etc.)	Quantity – in 25 dm³	Absence 7)	Methodological guidelines established by Ministry of health
2.2. Helminth eggs	Quantity of eggs and larvae in 25 dm³.	Absence 7)	The same as above
3. Toxicological indicators (MPC components) a) Inorganic components			
3.1. Aluminum (Al)	mg/ dm³	0,2(0,5)x	State Standard 18165
3.2. Beryllium (Be)	mg/ dm³	0,0002	State Standard 18294
3.3. Borum (B)	mg/ dm³	0,5	ISO (Basic hygienic requirements) 9390
3.4. Cadmium, Cd	mg/ dm³	0,001	ISO (Basic hygienic requirements) 5961
3.5. Molybdenum (Mo)	mg/ dm³	0,25	State Standard 18308
3.6. Arsenicum (As)	mg/ dm³	0,05	State Standard 4152
3.7. Nickel (Ni)	mg/ dm³	0,1	ISO (Basic hygienic requirements) 8288
3.8. Nitrate (NO_3)	mg/ dm³	45	State Standard 18826

3.9. Hydrargyrum (Hg)	mg/ dm³	0,0005	ISO (Basic hygienic requirements) 5666/3
3.10. Plumbum (Pb)	mg/ dm³	0,03	State Standard 182293
3.11. Selenium (Se)	mg/ dm³	0,01	State Standard 19411
3.12. Strontium (Str)	mg/ dm³	7,0	State Standard 23950
3.13. Fluorum (F)	mg/ dm³	0,7	State Standard 4386
3.14. Chromium (Cr)	mg/ dm³	0,05	ISO (Basic hygienic requirements) 9174
b) Organic components			
3.16. Benzene	mg/ dm³	10,0	Methodological guidelines established by Ministry of health
3.17. Benz [a] pyrene	mg/ dm³	0,01	The same
3.18 . Polyacryl amide	mg/ dm³	2,0	State standard 19355
3.19. Pesticides 5)	mg/ dm³	According MPC	Methodological guidelines established by Ministry of health
4. Organoleptic indicators and MPC of organoleptic properties of water			
4.1. Flavor	points	2	State Standard 3351
4.2. Smell (scent)	points	2	The same
4.3. Turbidity	mg/ dm³	1,5/2,0**	The same
4.4. Colour	° C	20/25***	The same
4.5. pH-indicator	pH	6-9	Measured by pH-meter
4.6. Mineralization (dry residue)	mg/ dm³	1000/1500****	State Standard 18164
4.7. Iron (Fe)	mg/ dm³	0,3/1,0****	State Standard 4011
4.8. Total suspended solids	Mg – equivalent / dm³	7/10****	State Standard 4151
4.9. *Manganum (Mn)*	mg/ dm³	0,1	State Standard 4974
4.10. Copper (Cu)	mg/ dm³	1,0	State Standard 4388
4.11. Polyphosphates (PO_4)	mg/ dm³	3,5	State Standard 18309
4.12. Sulphates (SO_4)	mg/ dm³	400/500****	State Standard 4389
4.13. Chlorides (Cl)	mg/ dm³	250/350****	State Standard 4245

4.14. Zinc (Zn)	mg/ dm³	3,0	State Standard 18293
4.15. Surfactants	mg/ dm³	0,5	ISO (Basic hygienic requirements) 7875/1-2
4.16. Phenol	mg/ dm³	0,001/0,1*****	ISO (Basic hygienic requirements) 6439
4.17. Oil products	mg/ dm³	0,1	Methodological guidelines established by Ministry of health
4.18. Barium	mg/ dm³	0.1	State Standard 51309
4.19. Permanganic acid	mg/ dm³	5.0	Titrometric method
4.20. Cyanides	mg/ dm³	0.035	Photometry method
4.21. Formaldehyde	mg/ dm³	0.05	State Standard 22648
5. Radioactive Contamination Indicators			
5.1. Total alpha radioactivity	Bq/dm³	0,1	ISO (Basic hygienic requirements) 9696
5.2. Total beta radioactivity	Bq/dm³	0,1	ISO (Basic hygienic requirements) 9697

* when treating water with reagents containing aluminium

** with guaranteed reliability of water disinfection

*** in the treatment of high-color water and the mandatory control of trihalomethanes in the case of chlorine disinfection

**** for water pipelines supplying water without special treatment

***** in the absence of chlorinated water

Annex 4 National standards and regulations for soil.

In accordance with the SanPiN No. 0272-09 "Sanitary rules and norms for compiling hygienic justifications for soil protection schemes from pollution in Uzbekistan" indicators of sanitary status of soils for enterprises and industrial zones are as follows:

- Ammonium nitrogen
- Nitrate nitrogen
- Chlorides
- pH
- Pesticides
- Heavy metals
- Oil and oil products
- Phenols are volatile
- Sulfur compounds
- Carcinogenic substances
- Radioactive substances
- Thermophilic bacteria
- Escherichia coli bacteria
- Clostridium perfringens
- Helminth eggs and larvae
- Larvae and pupae of synanthropic flies

In accordance with SanPiN № 0191-05 “Maximum allowable concentrations (MPC) and Approximate permittable concentrations of exogenous harmful substances in soil”, the MPC of exogenous chemicals in the soils (in mg/kg) is as follows:

According to the general sanitary limiting indicator of harmfulness in mg/kg:	
1. BENZAPIRENE (gross content)	0.02
2.VANADIUM (gross content)	150.0
3. Manganese + VANADIUM (gross content)	1000.0
4. TUNGSTEN (moving forms)	10.0
5. CELTAN	1.0
6 COBALT (mobile forms)	5.0
7. COPPER (mobile forms)	**3.0**
8. Molybdenum (mobile forms)	**10.0**
9. NICKEL (mobile forms)	**4.0**
10. COAL FLOTATION WASTE (OFU) (gross content)	3000.0
11. LEAD (gross content)	**32.0**
12. SULFUR ELEMENTARY (gross content)	160.0
13. SULFURIC ACID (gross content)	160.0
14. PHOSPHATES	27.2
15. FURFUROL	3.0
16. CHROME (moving forms)	**6.0**
by air-migration limiting hazard indicator:	
17. ALFAMETHYLSTYROL	0.5
18. BENZENE	0.3
19. ISOPROTTILBENZENE	0.5
20. HYDROGEN SULFUR (gross content)	0.4
21. STYROL	0.1
22. FORMALDEHYDE	0.7
by water-migration limiting hazard indicator:	
23. LIQUID COMPLEX FERTILIZERS (gross content)	80.0
24. INTEGRATED GRANULATED FERTILIZERS (gross content)	120.0
25. Manganese: (gross content) (mobile forms)	**1500.0** **60.0**
26. NITRATES (gross content)	**130.0**
27. POTASSIUM CHLORIDE (gross content)	560.0
by trans locational limiting hazard indicator:	

28. ACIDS (ortho, -meta, -pa)	0.3
29. ARROW (gross maintenance)	2.0
30. Mercury (gross content)	**2.1**
31. LEAD + MERCURY (gross content)	**20.0+1.0**
32. ANTIMONY (gross content)	4.5
33. TOLUOL	0.3
34. FLUORINE (water soluble forms)	10.0
35. ZINC	**23.0**

Annex 5 Photos of sample collection

Collected soil samples

Collection process
Soil sampling from № 1

Soil № 2

Soil sample № 3

Soil sample № 4

Soil sample № 5

Soil sample № 6

Soil sample № 7

Soil sample № 8

Water sample collection

Figure 13. Sampling of water location No.1

Figure 13. Sampling of soil from location No.2

Figure 13. Sampling of soil from location No.3

Figure 13. Sampling of soil from location No.4

Annex 6 Original copy of the Accreditation Certificate

000592

СВИДЕТЕЛЬСТВО

О государственной регистрации юридического лица
(субъекта предпринимательства)

Настоящим подтверждается, что в Единый государственный реестр субъектов предпринимательства внесена запись о создании:

Государственное унитарное предприятие "MARKAZIY LABORATORIYA"

(Полное наименование юридического лица – субъекта предпринимательства с указанием организационно-правовой формы)

ГУП "MARKAZIY LABORATORIYA"

(Сокращенное наименование юридического лица)

23.03.2007 — За регистрационным номером: 000592-04

(Число, месяц (прописью), год)

Идентификационный номер налогоплательщика (ИНН): 205174241

Организационно-правовая форма:	Государственное унитарное предприятие
Местонахождение:	Ташкентская область, Зангиатинский район, Эшангузар, A.TEMUR MFY, MUSTAQILLIK KO`CHASI, 21-UY,
Свидетельство выдано:	Ташкентская область, Зангиатинский район, ЦЕНТР ГОСУДАРСТВЕННЫХ УСЛУГ

(Полное наименование регистрирующего органа)

Unofficial translation of the Accreditation Certificate

THE CERTIFICATE
State registration of a legal entity (business entity)

It is hereby confirmed that the Unified State Register of Business Entities contains an entry on the creation of:

State unitary enterprise "MARKAZIY LABORATORIYA"
(Full name of legal entity - business entity, indicating the organizational and legal form)

SUE "MARKAZIY LABORATORIYA"
(Abbreviated name of legal person)

23.03.2007 registration number: 000592-04

(Number, month (cursive), year)

Tax Identification Number (TIN): 205174241

Organizational-legal forms:	State unitary enterprise
Location:	Tashkent region, Zangiatinsk district, Eshanguzar, A.TEMUR MFY, MUSTAQILLIK STREET, 21-house
Issued by:	Tashkent region, Zangiata district, STATE SERVICES CENTER

(Full name of registering authority):

Annex 7. Original copy of Protocol of mass spectrometric (ICP-MS) analysis of water

ПСК-05-10

Государственный комитет по геологии и минеральным ресурсам Республики Узбекистан ГП «Центральная лаборатория»

111800, Ташкентская обл., Зангиотинский р-н, п. Эшонгузар, ул. Мустакиллик, 21, тел.: 933805415

Протокол № ЛМСА 381

Протокол испытания масс-спектрометрического (ICP-MS) анализа природных вод и растворов

1. Заказчик – ООО JURU ENERGY CONSULTING
2. Лабораторный номер заказа -286-15-21
3. Количество проб -15
4. Место взятия:
5. Вид анализа -масс-спектральный
6. Дата поступления проб –12.04.2021
7. Дата проведения анализа –
8. Дата выдачи протокола –14.04.2021
9. Средства измерения:

10.1 Термометры типа НТС-2 №б/н – сертификат поверки №0901141

10.2 Масс-спектрометр ИСП Agilent 7500 CX №JP51202494- сертификат поверки №09110705

10. НД на методы испытания и средства измерений - МВИ O'z O'U 0677:2015
12. Условия окружающей среды: -
13. Результаты анализа в µg/dm3

Приложение: -1 стр.

Директор ГП «Центральная лаборатория» С.В.Михайлов

Начальник ЛМСА Б.А. Баннов

Содержание в (mkg/l)

№	Лаб №	Геол №	Li	Be	B	Na *	Mg *	Al	P	K *	Ca *	Sc	Ti	V	Cr	Mn	Fe *	Co
Диапазон измерений опред. элементов			0,2-1000	0,1-1000	2-1000			2-1000	40-10000			2-1000	2-1000	2-1000	2-1000	0,2-1000		0,1-1000
1	286-1	Wq Bash-1	198	<0,10	520	>500000	460000	79,0	42,0	31800	410000	<0,1	2,00	7,30	22,0	8,90	47,0	1,30
2	269-2	Wq Bash-2	54,8	<0,10	140	330000	120000	65,0	45,0	6800	240000	2,10	<2,0	5,10	8,10	8,70	37,0	0,700
3	269-3	Wq Bash-3	97,8	<0,10	370	>330000	260000	53,0	34,0	24800	340000	<2,0	<2,0	6,10	20,0	6,30	33,0	0,280
4	269-4	Wq Bash-4	53,6	<0,10	520	>330000	320000	45,0	32,0	22800	370000	<2,0	<2,0	6,10	20,0	3,70	31,0	0,660

№	Лаб №	Геол №	Ni	Cu	Zn	Ga	As	Se	Br	Rb	Sr	Y	Zr	Nb	Mo	Ag	Cd	In
Диапазон измерений опред. элементов			2-1000	2-1000	2-1000	0,2-1000	0,1-10000	2-10000	25-10000	0,2-1000	2-1000	0,1-1000	0,2-1000	0,1-1000	0,2-1000	0,1-1000	0,2-1000	0,1-1000
1	286-1	Wq Bash-1	10,0	11,0	7,20	0,200	12,0	30,0	2400	8,60	9800	0,170	<0,20	<0,10	14,0	<0,10	<0,10	<0,10
2	269-2	Wq Bash-2	8,30	3,10	5,50	0,370	2,60	9,30	480	1,90	3400	<0,10	<0,20	<0,10	4,80	<0,10	<0,10	<0,10
3	269-3	Wq Bash-3	10,0	10,0	4,30	<0,20	10,0	28,0	1900	4,50	7100	0,110	<0,20	<0,10	10,0	<0,10	<0,10	<0,10
4	269-4	Wq Bash-4	9,70	10,0	2,90	<0,20	10,0	28,0	1700	4,00	8400	0,092	<0,20	<0,10	7,10	<0,10	<0,10	<0,10

№	Лаб №	Геол №	Sn	Sb	Te	I	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho
Диапазон измерений опред. элементов			0,2-1000	0,1-1000	0,5-1000	0,05-1000	0,05-1000	0,2-1000	0,05-1000	0,05-1000	0,05-1000	0,05-1000	0,05-1000	0,05-1000	0,05-1000	0,05-1000	0,05-1000	0,05-1000
1	286-1	Wq Bash-1	<0,20	1,30	0,640	29,0	<0,05	20,0	3,084	0,110	<0,05	0,097	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05
2	269-2	Wq Bash-2	<0,20	0,750	<0,50	27,0	<0,05	30,0	<0,05	0,087	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05
3	269-3	Wq Bash-3	<0,20	0,980	0,800	22,0	<0,05	20,0	3,067	0,130	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05
4	269-4	Wq Bash-4	<0,20	0,850	0,710	18,0	<0,05	18,0	<0,05	0,092	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05

№	Лаб №	Геол №	Er	Tm	Yb	Lu	Hf	Ta	W*	Re	Pt	Au	Hg *	Tl	Pb	Bi	Th	U
Диапазон измерений опред. элементов			0,05-1000	0,05-1000	0,05-1000	0,05-1000	0,05-1000	0,05-1000	0,1-1000	0,05-1000	0,05-1000	0,05-1000		0,05-1000	0,2-1000	0,05-1000	0,05-1000	0,05-1000
1	286-1	Wq Bash-1	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05	0,130	0,220	<0,05	<0,05	0,003	<0,05	<0,05	<0,05	<0,05	58,0
2	269-2	Wq Bash-2	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05	<0,10	0,080	<0,05	<0,05	0,003	<0,05	<0,05	<0,05	<0,05	54,0
3	269-3	Wq Bash-3	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05	0,110	0,180	<0,05	<0,05	0,003	<0,05	<0,05	<0,05	<0,05	48,0
4	269-4	Wq Bash-4	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05	<0,10	0,190	<0,05	<0,05	0,003	<0,05	<0,05	<0,05	<0,05	44,0

Unofficial translate of Protocol of mass spectrometric (ICP-MS) analysis of water

ПСК-05-10

The state committee of the Republic of Uzbekistan for Geology and Mineral resources SE "Central Laboratory"
111800, Tashkent region, Zangiatinsk district, Eshanguzar, Mustakillik street, 21-house tel.933805415

Protocol No. ЛМСА 361

Protocol of mass spectrometric (ICP-MS) analysis of natural waters and solutions

1. Customer - OOO JURU ENERGY CONSULTING
2. Laboratory order number – 286-15-21
3. Number of samples – 15
4. Place of sampling:
5. Type of analysis - mass spectral
6. Date of receipt of samples – 12.04.2021
7. Date of analysis -
8. Date of issue of the report - 14.04.21
9. Used equipment:

10.1 Thermohygrometers HTC-2 No. n/n - test certificate No. 0901141
10.2 Mass spectrometer ISP Agilent 7500 CX No. JP51202494 - test certificate No. 0910705
10.(ND) Normative documents for test methods and measuring instruments – MVI O'zDSt 0677:2015
11.Environmental conditions –
12.Results of the analysis in µg/dm^3

Appendix 1 page

Director of SE "Central Laboratory" **S.V. Mihaylov**
Head of LMSSA **V.A.Bannov**

№	Lab №	Sample	Li	Be	B	Na *	Mg *	Al	P	K *	Ca *	Sc	Ti	V	Cr	Mn	Fe *	Co
	Detectable limits		**0,2-1000**	**0,1-1000**	**2-1000**			**2-1000**	**80-10000**			**2-1000**	**2-1000**	**2-1000**	**2-1000**	**0,2-1000**		**0,1-1000**
1	286-1	Wq Bash-1	170	<0,10	520	310000	480000	79,0	42,0	31000	450000	<2,0	2,60	7,00	22,0	5,80	47,0	1,30
2	269-2	Wq Bash-2	34,0	<0,10	110	330000	120000	53,0	43,0	6500	240000	2,20	<2,0	2,10	5,10	8,70	31,0	0,700
3	269-3	Wq Bash-3	97,0	<0,10	370	340000	360000	55,0	34,0	24000	340000	<2,0	<2,0	6,10	20,0	6,30	33,0	0,990
4	269-4	Wq Bash-4	82,0	<0,10	320	340000	320000	45,0	32,0	22000	270000	<2,0	<2,0	6,10	20,0	3,70	21,0	0,900

№	Lab №	Sample	Ni	Cu	Zn	Ga	As	Se	Br	Rb	Sr	Y	Zr	Nb	Mo	Ag	Cd	In
	Detectable limits		**2-1000**	**2-1000**	**2-1000**	**0,2-1000**	**0,1-10000**	**5-10000**	**25-10000**	**0,1-1000**	**2-1000**	**0,1-1000**	**0,2-1000**	**0,1-1000**	**0,2-1000**	**0,1-1000**	**0,1-1000**	**0,1-1000**
1	286-1	Wq Bash-1	13,0	11,0	7,30	0,200	12,0	30,0	2400	5,80	9600	0,170	<0,20	<0,10	14,0	<0,10	<0,10	<0,10
2	269-2	Wq Bash-2	8,30	3,10	5,50	0,370	2,60	9,30	480	1,60	3400	<0,10	<0,20	<0,10	4,80	<0,10	<0,10	<0,10
3	269-3	Wq Bash-3	10,0	10,0	4,20	<0,20	10,0	26,0	1900	4,50	7100	0,110	<0,20	<0,10	10,0	<0,10	<0,10	<0,10
4	269-4	Wq Bash-4	8,70	10,0	2,90	<0,20	10,0	26,0	1700	4,00	6400	0,082	<0,20	<0,10	7,70	<0,10	<0,10	<0,10

№	Lab №	Sample	Sn	Sb	Te	I	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho
	Detectable limits		0,2-1000	0,1-1000	0,5-1000	0,05-1000	0,05-1000	0,2-1000	0,05-1000	0,05-1000	0,05-1000	0,05-1000	0,05-1000	0,05-1000	0,05-1000	0,05-1000	0,05-1000	0,05-1000
1	286-1	Wq Bash-1	<0,20	1,30	0,640	29,0	<0,05	20,0	0,084	0,110	<0,05	0,067	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05
2	269-2	Wq Bash-2	<0,20	0,750	<0,50	27,0	<0,05	30,0	<0,05	0,087	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05
3	269-3	Wq Bash-3	<0,20	0,990	0,600	22,0	<0,05	20,0	0,061	0,100	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05
4	269-4	Wq Bash-4	<0,20	0,850	0,770	18,0	<0,05	16,0	<0,05	0,055	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05

№	Lab №	Sample	Er	Tm	Yb	Lu	Hf	Ta	W*	Re	Pt	Au	Hg *	Tl	Pb	Bi	Th	U
	Detectable limits		0,05-1000	0,05-1000	0,05-1000	0,05-1000	0,05-1000	0,05-1000	0,1-10000	0,05-1000	0,05-1000	0,05-1000		0,05-1000	0,2-1000	0,05-1000	0,05-1000	0,05-1000
1	286-1	Wq Bash-1	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05	0,130	0,220	<0,05	<0,05	0,003	<0,05	<0,20	<0,05	<0,05	56,0
2	269-2	Wq Bash-2	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05	<0,10	0,098	<0,05	<0,05	0,002	<0,05	<0,20	<0,05	<0,05	34,0
3	269-3	Wq Bash-3	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05	0,110	0,180	<0,05	<0,05	0,003	<0,05	<0,20	<0,05	<0,05	48,0
4	269-4	Wq Bash-4	<0,05	<0,05	<0,05	<0,05	<0,05	<0,05	<0,10	0,180	<0,05	<0,05	0,002	<0,05	<0,20	<0,05	<0,05	44,0

Annex 8. Original copy of Protocol of mass spectrometric (ICP-MS) analysis of soil

ПСК-05-10

Государственный комитет по геологии и минеральным ресурсам Республики Узбекистан ГП «Центральная лаборатория»

111800, Ташкентская обл., Зангиотинский р-н, п. Эшонгузар, ул. Мустакиллик, 21, тел.: 933805415

Протокол № ЛМСА 381

Протокол испытания масс-спектрометрического (ICP-MS) анализа природных вод и растворов

1. Заказчик – ООО JURU ENERGY CONSULTING
2. Лабораторный номер заказа -286-15-21
3. Количество проб -15
4. Место взятия:
5. Вид анализа -масс-спектральный
6. Дата поступления проб –12.04.2021
7. Дата проведения анализа –
8. Дата выдачи протокола –14.04.2021
9. Средства измерения:

10.1 Термогигрометры типа ИТС-2 №б/н – сертификат поверки №0901141
10.2 Масс-спектрометр ИСП Agilent 7500 CX №JP51202896- сертификат поверки №0910705
10. НД на методы испытания и средства измерений - МВИ O'z O'U 0677:2015
12. Условия окружающей среды -
11. Результаты анализа в µg/dm3
Приложение -1 стр.

Директор ГП «Центральная лаборатория» С.В.Михайлов

Начальник ЛМСА В.А. Бахнов

№	Лаб №	Геол №	Ni	Cu	Zn	Ga	As	Se	Rb	Sr	Y	Zr *	Nb	Mo	Ag	Cd	In*
Диапазон измерений охвата, элементов			1,0-4000	1,0-4000	1,0-4000	0,10-4000	0,10-4000	0,10-4000	0,10-4000	0,10-4000	0,10-4000		0,005-4000	0,10-4000	0,05-10,0	0,005-4000	
8	285-8	Bash SQ 1	47,0	18,8	21,0	8,80	47,0	5,30	94,0	1400	89,0	31,8	4,20	5,30	0,150	0,021	0,021
9	285-9	Bash SQ 2	51,0	22,8	38,0	8,70	18,0	4,00	84,0	220	14,0	48,8	4,00	2,10	0,140	0,028	0,017
10	285-10	Bash SQ 3	41,0	26,8	48,0	10,0	20,0	5,00	100	290	16,0	87,0	7,00	2,20	0,130	0,064	0,033
11	285-11	Bash SQ 4	37,9	178	48,8	10,3	32,1	1,61	219	277	18,6	59,6	6,87	6,80	0,290	0,067	0,030
12	285-12	Bash SQ 5	38,1	134	48,0	10,4	32,4	1,48	239	433	17,4	59,7	7,21	4,77	0,232	0,086	0,028
13	285-13	Bash SQ 6	64,8	124	52,5	11,8	47,8	1,84	244	289	16,8	63,4	7,52	6,02	0,209	0,060	0,032
14	285-14	Bash SQ 7	66,3	98,0	44,0	10,3	31,8	1,82	243	252	16,3	72,6	7,78	5,53	0,227	0,087	0,017
15	285-15	Bash SQ 8	33,3	89,2	42,5	10,1	47,4	1,72	250	281	16,3	61,8	7,37	4,50	0,235	0,070	0,028

№	Лаб №	Геол №	Sn	Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho
Диапазон измерений охвата, элементов			0,10-10	0,10-4000	0,10-4000	0,01-4000	0,10-4000	0,10-4000	0,04-4000	0,01-4000	0,01-4000	0,01-4000	0,01-4000	0,01-4000	0,01-4000	0,01-4000	0,01-4000
8	285-8	Bash SQ 1	0,800	0,340	0,110	3,10	400	25,0	71,0	8,30	40,0	11,0	2,70	12,0	2,00	12,0	2,40
9	285-9	Bash SQ 2	1,10	0,380	0,084	3,40	400	21,0	44,0	4,10	19,0	3,70	0,820	3,40	0,470	3,10	0,610
10	285-10	Bash SQ 3	1,20	0,550	0,100	3,20	600	27,0	87,0	6,00	24,0	4,80	1,00	4,40	0,640	3,60	0,610
11	285-11	Bash SQ 4	1,30	0,980	0,157	4,98	520	24,6	144	5,78	22,5	4,31	0,977	4,03	0,574	3,13	0,600
12	285-12	Bash SQ 5	1,54	1,10	0,133	4,92	583	24,8	140	5,64	21,8	4,10	0,927	3,92	0,532	2,89	0,582
13	285-13	Bash SQ 6	1,70	1,31	0,178	5,24	693	24,1	141	5,52	19,8	3,86	0,809	3,57	0,481	2,92	0,534
14	285-14	Bash SQ 7	1,68	0,987	0,133	4,72	652	25,1	138	5,51	19,8	3,62	0,864	3,55	0,494	2,74	0,544
15	285-15	Bash SQ 8	1,36	0,974	0,092	4,34	700	26,9	120	6,00	21,7	3,73	0,914	3,62	0,481	2,77	0,543

№	Лаб №	Геол №	Er	Tm	Yb	Lu	Hf	Ta	W*	Re	Pt*	Au*	Hg*	Tl	Pb	Bi	Th	U
Диапазон измеряемой содерж. элементов			0,05-4000	0,01-4000	0,01-4000	0,01-4000	0,05-4000	0,04-4000	0,08-4000	0,01-4000	0,05-4000	0,05-4000		0,01-4000	0,1-4000	0,01-4000	0,01-4000	0,01-4000
8	285-8	Bash SQ 1	[illegible]	[illegible]	[illegible]	0,740	1,10	0,350	0,170	<0,01	<0,05	<0,05	[illegible]	0,330	13,0	0,070	6,10	4,30
9	285-9	Bash SQ 2	1,80	0,240	1,80	0,240	1,80	0,600	1,80	<0,01	<0,05	<0,05	0,100	0,330	14,0	0,140	9,30	1,80
10	285-10	Bash SQ 3	1,80	0,270	1,80	0,270	1,70	0,870	2,80	<0,01	<0,05	<0,05	0,180	0,360	16,0	0,200	10,0	2,30
11	285-11	Bash SQ 4	1,80	0,226	1,58	0,243	1,42	0,578	1,08	<0,01	<0,05	<0,05	0,010	0,404	13,4	0,198	9,25	1,77
12	285-12	Bash SQ 5	1,76	0,247	1,61	0,241	1,56	0,578	1,52	<0,01	<0,05	<0,05	0,130	0,466	13,8	0,208	8,83	1,62
13	285-13	Bash SQ 6	1,63	0,245	1,58	0,246	1,59	0,758	1,22	<0,01	<0,05	<0,05	0,080	0,470	14,9	0,229	8,41	1,98
14	285-14	Bash SQ 7	1,61	0,252	1,58	0,253	2,00	0,659	1,15	<0,01	<0,05	<0,05	0,010	0,439	13,3	0,186	9,04	1,83
15	285-15	Bash SQ 8	1,57	0,323	1,45	0,241	1,55	0,671	3,54	<0,01	<0,05	<0,05	0,010	0,415	13,7	0,187	9,10	1,71

№	Лаб №	Геол №	Li	Be	B*	Na*	Mg*	Al*	P	K*	Ca*	Sc	Ti*	V	Cr	Mn	Fe*	Co
Диапазон измеряемой содерж. элементов			0,05-4000	0,05-4000	1,0-4000	0,005-11%	0,005-10%	0,002-20%	1,0-4000	0,008-10%	0,005-20%	0,10-4000	0,0005-6%	0,10-4000	1,0-4000	0,002-15%	0,005-30%	0,05-4000
8	285-8	Bash SQ 1	12,0	1,10	20,4	9100	2100	34000	2900	22000	28000	5,20	1100	40,0	45,0	68,2	18000	2,90
9	285-9	Bash SQ 2	10,0	0,980	30,4	9600	8300	58000	440	19000	38000	5,00	1400	45,0	54,0	380	13000	5,30
10	285-10	Bash SQ 3	21,0	1,00	19,2	9500	18000	63000	460	15000	70000	6,80	1900	50,0	61,0	520	19000	8,00
11	285-11	Bash SQ 4	21,0	1,28	22,5	9882	18288	65208	725	16558	78603	9,35	2043	85,1	61,8	546	22545	7,76
12	285-12	Bash SQ 5	20,8	1,22	22,3	9889	13720	63027	723	16055	88361	8,68	2095	94,3	54,7	470	22058	7,51
13	285-13	Bash SQ 6	22,3	1,33	22,9	9074	11448	65918	689	16455	82502	8,16	1882	34,3	67,9	457	25476	8,34
14	285-14	Bash SQ 7	18,6	1,39	21,7	11183	11250	64980	704	18579	51043	7,96	2101	66,2	65,8	428	22316	6,12
15	285-15	Bash SQ 8	17,5	1,26	23,2	11188	9868	63510	680	18233	57588	7,15	1900	61,2	64,1	333	20158	6,12

Unofficial translate of Protocol of mass spectrometric (ICP-MS) analysis of soil

ПСК-05-10

The state committee of the Republic of Uzbekistan for Geology and Mineral resources SE "Central Laboratory"

111800, Tashkent region, Zangiatinsk district, Eshanguzar, Mustakillik street, 21-house tel.933805415

Protocol No. ЛМСА 361

Protocol of mass spectrometric (ICP-MS) analysis of natural waters and solutions

1. Customer - OOO JURU ENERGY CONSULTING
2. Laboratory order number – 286-15-21
3. Number of samples – 15
4. Place of sampling:
5. Type of analysis - mass spectral
6. Date of receipt of samples – 12.04.2021
7. Date of analysis -
8. Date of issue of the report - 14.04.21
9. Used equipment:

10.1 Thermohygrometers HTC-2 No. n/n - test certificate No. 0901141

10.2 Mass spectrometer ISP Agilent 7500 CX No. JP51202494 - test certificate No. 0910705

10.(ND) Normative documents for test methods and measuring instruments – MVI O'zDSt 0677:2015

11.Environmental conditions –

12.Results of the analysis in µg/dm³

Appendix 1 page

Director of SE "Central Laboratory" **S.V. Mihaylov**

Head of LMSSA **V.A.Bannov**

№	Lab №	Sample	Li	Be	B *	Na *	Mg *	Al *	P	K *	Ca *	Sc	Ti *	V	Cr	Mn	Fe *	Co
	Detectable limits		**0,05-4000**	**0,05-4000**	**1,0-4000**	**0,004-11%**	**0,004-11%**	**0,002-20%**	**1,0-4000**	**0,008-30%**	**0,005-28%**	**0,10-4000**	**0,0006-9%**	**0,10-4000**	**1,0-4000**	**0,002-10%**	**0,006-30%**	**0,10-4000**
8	285-8	Bash SQ 1	12,0	1,10	20.4	8100	2100	34000	2600	22000	26000	3,20	1100	40,0	45,0	68,0	10000	2,90
9	285-9	Bash SQ 2	13,0	0,900	20.4	9500	8300	50000	440	19000	38000	5,50	1400	43,0	54,0	380	13000	5,20
10	285-10	Bash SQ 3	21,0	1,20	19.2	9500	16000	63000	460	15000	70000	8,60	1900	55,0	61,0	520	19000	8,00
11	285-11	Bash SQ 4	21.0	1.28	22.5	9592	18288	65295	725	16558	78603	9.35	2043	85.1	61.8	648	22645	7.76
12	285-12	Bash SQ 5	20.8	1.22	22.3	9669	13730	63927	723	16055	88361	8.68	2095	94.3	54.7	478	22350	7.51
13	285-13	Bash SQ 6	22.3	1.33	22.9	9074	11446	66918	689	18455	62502	8.16	1982	34.3	67.9	457	25476	8.24
14	285-14	Bash SQ 7	18.6	1.28	21.7	11193	11250	64680	704	18579	51043	7.94	2101	66.2	65.8	423	22319	6.12
15	285-15	Bash SQ 8	17.5	1.26	23.2	11199	9898	63510	680	18233	57589	7.15	1900	61.2	64.7	393	20159	6.12

№	Lab №	Sample	Ni	Cu	Zn	Ga	As	Se	Rb	Sr	Y	Zr *	Nb	Mo	Ag	Cd	In*
	Detectable limits		**1,0-4000**	**1,0-4000**	**1,0-4000**	**0,10-4000**	**0,10-4000**	**0,50-4000**	**0,10-4000**	**0,10-4000**	**0,10-4000**		**0,005-4000**	**0,10-4000**	**0,05-10,0**	**0,005-4000**	
8	285-8	Bash SQ 1	47,0	19,0	21,0	6,80	47,0	5,30	84,0	1400	69,0	31,0	4,20	3,30	0,150	0,031	0,021
9	285-9	Bash SQ 2	51,0	22,0	35,0	8,70	18,0	4,80	84,0	220	15,0	46,0	5,80	2,10	0,140	0,028	0,017
10	285-10	Bash SQ 3	41,0	25,0	49,0	10,0	20,0	5,00	83,0	290	18,0	57,0	7,00	2,20	0,130	0,064	0,033
11	285-11	Bash SQ 4	37.9	178	48.8	10.3	32.1	1.61	219	277	18.6	59.6	6.87	6.80	0.266	0.067	0.030
12	285-12	Bash SQ 5	39.1	134	48.5	10.4	52.4	1.48	209	433	17.4	59.7	7.21	4.77	0.232	0.086	0.028
13	285-13	Bash SQ 6	64.8	124	52.9	11.5	47.6	1.64	244	269	16.6	63.4	7.52	6.02	0.209	0.066	0.033
14	285-14	Bash SQ 7	66.3	98.0	44.0	10.3	31.8	1.80	240	252	16.3	72.6	7.78	5.53	0.227	0.087	0.017
15	285-15	Bash SQ 8	33.3	89.2	42.5	10.1	47.4	1.72	250	261	16.3	61.8	7.37	4.50	0.235	0.070	0.026

№	Lab №	Sample	Sn	Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho
	Detectable limits		0,10-10	0,10-4000	0,30-4000	0,02-4000	0,10-4000	0,50-4000	0,04-4000	0,01-4000	0,01-4000	0,01-4000	0,01-4000	0,01-4000	0,01-4000	0,01-4000	0,01-4000
8	285-8	Bash SQ 1	0,800	0,340	0,110	3,10	400	25,0	71,0	9,30	42,0	11,0	2,70	12,0	2,00	13,0	2,40
9	285-9	Bash SQ 2	1,10	0,380	0,064	3,60	620	21,0	44,0	5,10	19,0	3,70	0,820	3,40	0,470	3,10	0,510
10	285-10	Bash SQ 3	1,20	0,530	0,025	5,20	630	27,0	57,0	6,50	24,0	4,90	1,00	4,40	0,610	3,80	0,610
11	285-11	Bash SQ 4	1.39	0.985	0.157	4.98	529	24.6	144	5.78	22.5	4.31	0.977	4.03	0.574	3.13	0.600
12	285-12	Bash SQ 5	1.54	1.10	0.133	4.92	983	24.8	140	5.64	21.8	4.10	0.927	3.92	0.532	2.89	0.582
13	285-13	Bash SQ 6	1.70	1.31	0.178	5.24	693	24.1	141	5.52	19.8	3.86	0.809	3.57	0.481	2.92	0.534
14	285-14	Bash SQ 7	1.68	0.987	0.133	4.72	652	23.1	136	5.31	19.8	3.62	0.864	3.55	0.494	2.74	0.544
15	285-15	Bash SQ 8	1.35	0.974	0.092	4.34	700	26.9	120	6.00	21.7	3.73	0.914	3.62	0.481	2.77	0.543

№	Lab №	Sample	Er	Tm	Yb	Lu	Hf	Ta	W*	Re	Pt*	Au *	Hg*	Tl	Pb	Bi	Th	U
	Detectable limits		0,01-4000	0,01-4000	0,01-4000	0,01-4000	0,05-4000	0,04-4000	0,08-4000	0,01-4000	0,05-4000	0,05-4000		0,01-4000	0,1-4000	0,01-4000	0,01-4000	0,01-4000
8	285-8	Bash SQ 1	6,80	0,860	5,20	0,740	1,10	0,350	0,770	<0,01	<0,05	<0,05	0.330	0,330	13,0	0,078	6,10	4,30
9	285-9	Bash SQ 2	1,60	0,240	1,60	0,240	1,60	0,500	1,00	<0,01	<0,05	<0,05	0.100	0,350	14,0	0,140	9,20	1,90
10	285-10	Bash SQ 3	1,90	0,270	1,80	0,270	1,70	0,670	2,90	<0,01	<0,05	<0,05	0.180	0,390	15,0	0,230	10,0	2,30
11	285-11	Bash SQ 4	1.80	0.228	1.58	0.245	1.43	0.579	1.06	<0,01	<0,05	<0,05	0.070	0.404	13.4	0.195	9.25	1.77
12	285-12	Bash SQ 5	1.76	0.247	1.61	0.241	1.56	0.578	1.52	<0,01	<0,05	<0,05	0.120	0.466	13.8	0.202	8.83	1.92
13	285-13	Bash SQ 6	1.63	0.245	1.56	0.246	1.59	0.708	1.22	<0,01	<0,05	<0,05	0.090	0.470	14.9	0.229	8.41	1.98
14	285-14	Bash SQ 7	1.61	0.252	1.58	0.253	2.00	0.659	1.15	<0,01	<0,05	<0,05	0.070	0.439	13.3	0.186	9.94	1.83
15	285-15	Bash SQ 8	1.57	0.223	1.46	0.241	1.55	0.871	3.24	<0,01	<0,05	<0,05	0.070	0.415	13.2	0.187	9.10	1.71

Annex 9. Original copy of Protocol of chemistry analysis No 20

Государственный комитет по геологии и минеральным ресурсам Республики Узбекистан
ГУП «Центральная лаборатория»
Ташкентская область, г. Зангиата, ул. Мустакиллик ,21
тел. 933805415, 702027142

«УТВЕРЖДАЮ»
Директор ГП « Центральная лаборатория»
Абдуллаев С.В.
«26 » апрель 2021

ПРОТОКОЛ ИСПЫТАНИЯ № 20

на исследование согласно письма № JEC 21/42 от 12/04/2021г о проведении испытаний пробы воды согласно O'z DSt 950:2011.
Заказчик : ООО « JURU ENERGY CONSULTING »
Обозначение и данные маркировки объекта испытания:
№1 по № 7 - (05/04/2021) почва – sq dzhankeldi;
№8 по №15 - (06/04/20121) почва – bash sq;
дата получения : 12-04-2021г в количестве 15 проб,
Цель, задачи испытаний – анализ почвы по заданию заказчика;
НД на объекты испытаний – ГОСТ 26423-85,ГОСТ 26425-85 .
Условия проведения испытаний : температура окружающей среды 21,0°, влажность 40%.
Средства измерений : весы AS 220/C Radwag, иономер И-160МИ, электронный гигрометр НТС-2.
Испытания проведены: 12-04-2021г – 23-04-2021г.

Результаты испытаний.
Заказ № 287 от 12-04-2021г.

№	Наименование показателей	НД на методы испытаний	Фактическое значение													
			Sq dzhankeldi							Bash sq						
			№7	№6	№5	№4	№3	№2	№1	№8	№9	№10	№11	№12	№13	№14	№15
1	Водородный показатель, pH	26429-85	7,74	7,80	7,14	7,63	7,82	7,80	7,75	7,70	7,80	7,80	7,60	7,80	7,80	7,70	7,75
2	Хлориды, %	26425-85	0,035	0,042	0,021	0,014	0,014	0,014	0,014	0,014	0,032	0,021	0,014	0,040	0,010	0,010	0,014

№	Наименование показателей	НД на методы испытаний	Фактическое значение														
			Sq dzhankeldi							Bash sq							
			№7	№6	№5	№4	№3	№2	№1	№8	№9	№10	№11	№12	№13	№14	№15
3	Нитраты, mg/dm³	Измеряется анализером	1	6	48	2	1	1	1	1	1	2	2	2	1	2	12

И.о. начальника ХАЛ Гусянова И.Е.

2

Unofficial translate of Protocol of chemistry analysis

The state committee of the Republic of Uzbekistan for Geology and Mineral resources
SE "Central Laboratory"
111800, Tashkent region, Zangiatinsk district, Eshanguzar, Mustakillik street, 21
tel.933805415, 702027142

"Approved"
Director of the
SE "Central Laboratory"
Mihaylov S.V.
"26" April 2021

Protocol of measurements No. 20

for measuring according to letter No. JEC 21/41 of 12/04/21 on testing of water samples according to the State standard 950:2011.

Customer - OOO JURU ENERGY CONSULTING
Marking and labeling data of the test object:
No.1 to No.7 – (05/04/2021) soil – sq dzhankeldi;
No.8 to No.15 – (06/04/2021) soil – bash sq

1. Date of receipt – 12.04.2021; of samples 15
2. Date of analysis -

3. Laboratory order number – 286-15-21
4. Number of samples – 15
5. Place of sampling:
6. Type of analysis - mass spectral
7. Date of issue of the report - 14.04.21
8. Used equipment:

10.1 Thermohygrometers HTC-2 No. n/n - test certificate No. 0901141
10.2 Mass spectrometer ISP Agilent 7500 CX No. JP51202494 - test certificate No. 0910705
10.(ND) Normative documents for test methods and measuring instruments – MVI O'zDSt 0677:2015
11.Environmental conditions –
12.Results of the analysis in μg/dm³

Appendix 1 page

Director of SE "Central Laboratory" **S.V. Mihaylov**
Head of LMSSA **V.A.Bannov**

No.	Parameters	ND for measurements	Actual value														
			Sq Dzhankeldi							Bash sq							
			No.7	**No.6**	**No.5**	**No. 4**	**No. 3**	**No. 2**	**No.1**	**No.8**	**No. 9**	**No.1 0**	**No.1 1**	**No.1 2**	**No. 13**	**No. 14**	**No. 15**
	pH	26429-85	7.74	7.80	7.14	7.63	7.82	7.80	7.75	7.70	7.80	7.80	7.60	7.80	7.82	7.70	7.75
	Chlorides %	26425-85	0.035	0.042	0.021	0.014	0.014	0.014	0.014	0.014	0.032	0.021	0.014	0.040	0.010	0.010	0.014
	Nitrates mg/dm^3	Measurements with ionometers	1	6	48	2	1	1	1	1	1	2	2	2	1	2	12

APPENDIX M – ACWA POWER ROUTE SURVEY & EPC PRELIMINARY TRANSPORTATION REPORT

PLANED CIVIL WORKS FOR TRANSPORTATION OF WTG EQUIPMENT FROM MANUFACTURER IN CHINA TO SITES IN UZBEKISTAN

KAZAKHSTAN & UZBEKISTAN

(PRELIMINARY REPORT)

ОБЩЕЕ / GENERAL

Таблица строительных работ предоставляет обзор запланированных дорожно-строительных работ на пути от порта (точка погрузки) к стройплощадке (точка разгрузки) и может включать: • Разрешение на использование земельных участков (государственных/частных) • укрепление дорог/причала, • проверка грузоподъемности моста и кульвертов и любые связанные с прохождением необходимые изменения, • все работы по уширению дорог и поворотов, • удаление препятствий, • удаление или поднятие линий электропередачи и связи, • удаление дорожных знаков, • изменение дорожных знаков и все другие работы, как того требует правительство, клиент или транспортная компания надобные для безопасной доставки оборудования.	The Construction activities table get overview for the planed road construction works on the way from port (point of loading) to the site (point of unloading): • Permission to use land (public/private) • strengthening of roads/embankments, • bridge and culvert load bearing capacity checks & any required modifications to it. • all widening works on roads and curves, • obstacle removal, • removal or raising of power and communication lines / poles, • removal of road signs, • modification of road layouts and all other works as required by government, the client or the transportation company for safe and secure delivery of the equipment.

Информация о маршруте / Route information: Khorgos – Yallama

Препятствия	**Obstacles**	**Количество /Quantity**
Общее количество обследованных препятствий	Total number of obstacles surveyed	497
Из них на основном маршруте	Of which on the main route	283
Мосты на основном маршруте	Bridges on the main route	97
Ограничения по высоте (арки, ЛЭП, путепровод, пешеходные переходники и тд.) на основном маршруте	Height restrictions (arches, power lines, overpass, pedestrian crossings, etc.) on the main route	96
Дорожные работы на основном маршруте	Road under construction on the main route	5
Подъемы /спуски на основном маршруте	gradients on the main route	19
Повороты	Turns	15

КАТЕГОРИЗАЦИИ СЛОЖНОСТИ ИСПОЛНЯЕМЫХ ДОРОЖНЫХ РАБОТ / STRUCTURAL MEASURES CATEGORIZATION:

Индикатор / Indication	Категория /Category	Описание	Description
1	Средняя / normal	Необходимы изменения. Например: удаление дорожных знаков	Modifications necessary. For example: remove traffic signs
2	Высокая / high	Необходимы изменения. Например, удаление дорожных барьеров, использование мобильных дорожных пластин, удаление дорожных знаков и т.д.	Modifications necessary e.g. strengthening traffic island, use of mobile track panels, remove traffic signs etc..
3	Комплексное / complex	Необходимы изменения (например, устранение дорожных ограждений, реконструкция кругового перекрестка, строительство поворотных зон, расширение дорог, вырубка деревьев, удаление светофоров, длительные периоды дорожно-строительных работ на маршруте и т.д.).	Modifications are necessary (e.g. remove traffic barriers, roundabout reconstruction with drive through lanes, construction of turning areas, widening roads, tree cutting, remove traffic lights, long period road construction sites etc.).
4	Трудно / difficult	необходимы дополнительные расчеты (например, сертификаты, изучение грузоподъемности /экспертиза моста), уточнение прав на использование частной собственности, взрывы камней и удаление электрической инфраструктуры.	Transit not clarified, additional calculations necessary (e.g. Certificates, load capacity study at bridges), rights of use for private properties, rock blasting and removal of electrical infrastructure.

ССЫЛКИ НА ДОКУМЕНТЫ/ DOCUMENT REFERENCES

- ACWA Waypoints 202205_main route KZ.kmz

ОТВЕТСТВЕННОСТЬ / RESPONSIBILITY

Работы должны выполняться профессиональной командой в соответствии с инструкциями по безопасной транспортировке груза и требованиями производителя оборудования. Вся техника, оборудование и вспомогательное оборудование должна соответствовать цели выполняемых работ.	The work will must be carried out by professional team in accordance with the instructions of the safety cargo transportation the requirements of the equipment manufacturer. All cars, equipment must correspond to the purpose of the work performed.
Ответсвеность за проведение дорожных мероприятий и подготовление маршрута для реализации перевозки лежит на: Endion	The responsibility for carrying out road activities and preparing the route for the transportation lies with:. Endion

РАБОТЫ ПО МОДЕРНИЗАЦИИ МАРШРУТА / ROAD MODIFICATION WORKS

Part 1 - Kazakhstan

(PRELIMINARY REPORT)

Для беспрепятственного проезда колоны с комплектами ВТГ по маршруту необходимо произвести работы по модернизации дорожного полотна, обустройства объездов и демонтажа знаков. Общий объем работ приведен в таблице №1.	For the passing of the cargo along the route, it is necessary to carry out the modernization works of the roadway, the arrangement of bypases and the dismantling of signs. Total scope of work is included in Table 1.

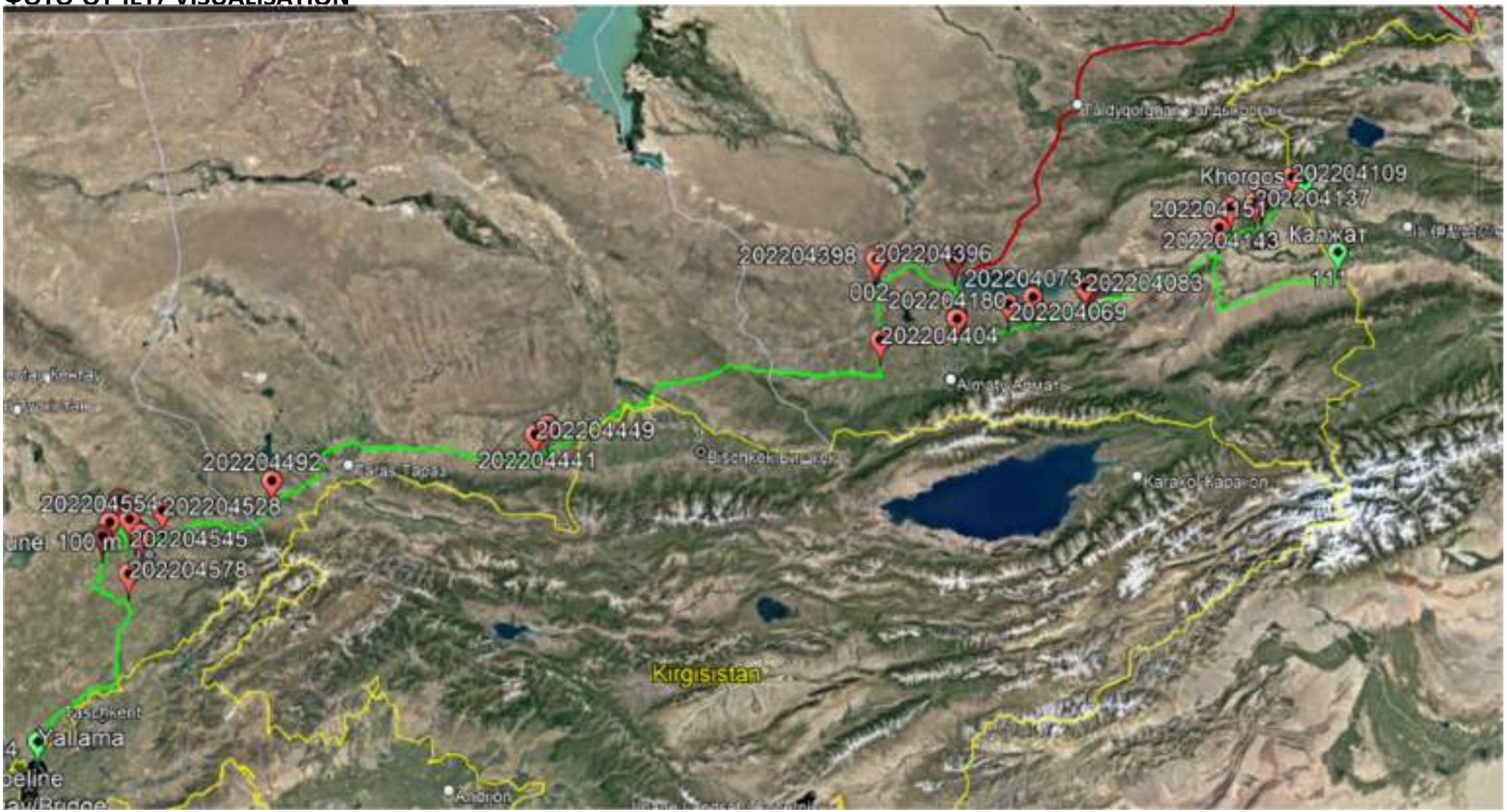
Nr	Type	Description	Coordinates L	Coordinates B
202204109	Border crossing Khorgos	H= 5.7 slim pipe, width 7m, main pipe 6m, slim pipe dismantling	80.31157399999999	44.174748
202204123	highway-over crossing	Высота путепровода 5.6m слева – 5.7m справа При общей высоте с грузом более 5.75m демонтаж дорожных ограждений, обустройство съезда, расширение поворотов на имеющейся второстепенной дороге. / Overpass height 5.6m on the left – 5.7m on the right. With a total load height more than 5.75m, the dismantling of road barriers, the arrangement of the exit, the expansion of turns on the existing secondary road.	79.982511	44.045386
202204137	highway-over crossing	Высота путепровода 5.5m слева – 5.6m справа При общей высоте с грузом более 5.55m, демонтаж дорожных ограждений на разделительной полосе до путепровода / Overpass height 5.5m on the left – 5.6m on the right. With a total load height more than 5.55m, dismantling of road barriers on the dividing strip to the overpass	79.908736	44.029714
202204143	highway-over crossing	Высота путепровода 5.5m При общей высоте с грузом более 5.45m строительство площадки для разворота / Overpass height 5.5m With a total load height more than 5.45m, the construction of a turning platform	79.674921	44.0142

111	Border crossing Kalzhat / КАЛЖАТ –	Получение разрешения и строительство площадок хранения, погрузки и подъезда на стороне КНР и на нейтральной зоне / Obtaining permission and construction of storage, loading and access sites on the prc side and in the neutral zone	, 80.624622	43.672415
202204151	Highway exit	Демонтаж фонарного столба, дорожных ограждений на въезде и разделительных ограждений на выезде из поворота при движении по встречной полосе / Dismantling of the lamppost, road barriers at the entrance and separation fences at the exit of the turn when driving in the oncoming lane	, 80.624622	43.672415
202204087	pedestrian crossing	Высота пешеходного перехода 5,75 При высоте автопоезда выше 5.65 движение по существующей грунтовой дороге. Необходимо расширение заезда/выезда, спланировать съезд / Pedestrian crossing height 5,75 When the height of the road train is above 5.65, traffic on the existing dirt road. It is necessary to expand the arrival / exit, plan the exit	78.25957099999999	43.582657
202204083	pedestrian crossing	Высота пешеходного перехода 5,5m При высоте автопоезда выше 5.45m необходимо строительство байпаса справа / Pedestrian crossing height 5,5m When the height of the road train is above 5.45m, it is necessary to build a bypass on the right	78.20041999999999	43.578068
202204073	highway-over crossing	Высота путепровода справа - 5,5m слева – 5.6m При высоте автопоезда выше 5.45m – укрепление обочин в месте разворота / The height of the overpass on the right - 5,5m on the left - 5.6m When the height of the road train is above 5.45 m - strengthening of the shoulders at the turning point	77.70740600000001	43.542526
202204069	highway-over crossing	Высота путепровода справа - 5,6m слева – 5.5m При высоте автопоезда выше 5.5m – укрепление обочин в месте разворота / The height of the overpass on the right - 5.6m on the left - 5.5m When the height of the road train is above 5.5m – strengthening of the shoulders at the turning point /	77.475853	43.510724
202204043	Checkpoint	Высота арки - 5,7m При высоте автопоезда выше 5.65m – демонтаж нижней трубы (не является несущей конструкцией), демонтаж блоков для движения по встречной полосе / Arch height - 5,7m When the height of the road train is above 5.65m - dismantling of the lower pipe (not a supporting structure), dismantling of blocks for traffic in the oncoming lane	76.99973900000001	43.447121

202204180	Turn	Демонтаж всех фонарных столбов по правую сторону / Dismantling of all lampposts on the right side	76.994201	43.443844
202204181	Archway	Высота антенны 5.7m. При высоте автопоезда выше 5,65 или демонтаж антенны или строительство байпаса справа / Antenna height 5.7m. When the height of the road train is above 5.65 or dismantling the antenna or building a bypass on the right	76.989035	43.453668
202204019		Демонтаж фонарных столбов и движение задним ходом на развязке с лопастями / Removal of lampposts and reversing at the junction with the blades	77.04087952	43.8465828,
002	Turn	Расширение проезжей части / road widening	76.342049	43.894800,
202204396	Turn	Расширение проезжей части / road widening	76.299913	43.901553
202204398	Turn	Расширение проезжей части / road widening	76.315247	43.886476
202204404	Archway	Арка 5.6m. При высоте автопоезда выше 5.55m - подъем / Arch 5.6m. When the height of the road train is above 5.55m - lifting	76.278926	43.32613
202204406	Turn	Поворот направо – подрезка деревьев справа / Turn right – trim trees on the right	76.287622	43.277396
202204441	Archway	Арка – 5.6m по вывеске. Подъем указателя / Arch – 5.6m by sign. Lift up of the sign	73.24767	42.928162
202204449	highway-over crossing	Путепровод – 5.75m справа, 5.65 слева. При высоте автопоезда свыше 5.7m демонтаж ограждений на разделительной полосе и движение по полосе встречного движения / Overpass – 5.75m on the right, 5.65m on the left. When the height of the road train is more than 5.7 m, the dismantling of fences on the dividing strip and traffic on the lane of oncoming traffic	73.137828	42.875577
202204492	pedestrian crossing	Пешеходный переход высота – справа 5.65m справа, 5.55 слева. При высоте автопоезда свыше 5.6m строительство байпаса справа или подъем конструкции/ Pedestrian crossing height – right 5.65m on the right, 5.55m on the left. When the height of the road train is over 5.6m, the construction of the bypass on the right or the lifting of the structure/	70.755465	42.637568
202204528	pedestrian crossing	Пешеходный переход высота – справа 5.65m справа, 5.59 слева. При высоте автопоезда свыше 5.6m подъем конструкции/ Pedestrian crossing height – right 5.65m right, 5.59 left. When the height of the road train is over 5.6m, the lifting of the structure	69.75695	42.457006
202204542		Демонтаж фонарного столба и дорожного указателя/ Dismantling of the lamppost and road sign	69.344042	42.529372

202204545		Демонтаж фонарного столба и ограждения на въезде. Перенос ограждения на выезде/ Dismantling of the lamppost and fence at the entrance. Relocation of the fence at the exit	69.454722	42.403867
202204554	Pipeline	Газовая труба высота – 5.5m. Подъем./ Gas pipe height – 5.5m. lifting	69.269775	42.383261
202204557	Pipeline	Газовая труба высота – 5.65m. Подъем при высоте автопоезда свыше 5.6m./ Gas pipe height – 5.65m. Lifting at a height of the road train above 5.6m	69.259404	42.381028
202204569	PTL	ВЛ 220кВ высота 7.7m – построить байпас так как высота может уменьшиться/ 220kV overhead line height 7.7m – build a bypass as the height may decrease	69.212914	42.290257
202204578	Turn	Поворот демонтаж фонарного столба и снять грунт слева от входа в поворот/ Turn dismantle the lamppost and remove the ground to the left of the entrance to the turn	69.47513499999999	42.046398
202204634	Border crossing Yallama	Пункт пропуска. Для прохождения на территории Республики Казахстан требуется строительство площадки для поворота лопастевоза на 90 град. Для этого необходимо получить соответствующие разрешения, произвести демонтаж забора, фонарного столба и флагштоков по левую сторону. / Checkpoint. To pass on the territory of the Republic of Kazakhstan, it is required to build a platform for turning the blade truck by 90 degrees. To do this, it is necessary to obtain the appropriate permits, dismantle the fence, lamppost and flagpoles on the left side.	68.728697	40.972832

ФОТО-ОТЧЕТ/ VISUALISATION



Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204109
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	44.17474784, 80.31157412
	Объем работ / Scope of works:	
	Демонтаж трубы (не является частью несущей конструкции) / H= 5.7 slim pipe, width 7m, main pipe 6m, slim pipe dismantling	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204123-130
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	44.045347, 79.982409
	Объем работ / Scope of works:	
	Высота путепровода 5.6m слева – 5.7m справа При общей высоте с грузом более 5.75m демонтаж дорожных ограждений, обустройство съезда, расширение поворотов на имеющейся второстепенной дороге. / Overpass height 5.6m on the left – 5.7m on the right. With a total load height more than 5.75m, the dismantling of road barriers, the arrangement of the exit, the expansion of turns on the existing secondary road.	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204137
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	44.0297145, 79.90873638
	Объем работ / Scope of works:	
	Высота путепровода 5.5m слева – 5.6m справа При общей высоте с грузом более 5.55m, демонтаж дорожных ограждений на разделительной полосе до путепровода / Overpass height 5.5m on the left – 5.6m on the right. With a total load height more than 5.55m, dismantling of road barriers on the dividing strip to the overpass	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204143-144
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	44.01420037, 79.67492142
	Объем работ / Scope of works:	
	Высота путепровода 5.5m При общей высоте с грузом более 5.45m строительство площадки для разворота / Overpass height 5.5m With a total load height more than 5.45m, the construction of a turning platform	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

KALZHAT / КАЛЖАТ

Ситуационный план / Situation plan:	Идентификационный номер / ID	111
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	43.672415, 80.624622
	Объем работ / Scope of works:	
	Получение разрешения и строительство площадок хранения, погрузки и подъезда на стороне КНР и на нейтральной зоне / Obtaining permission and construction of storage, loading and access sites on the prc side and in the neutral zone	

Состояние на сегодняшний день /Actual status:	Замечания/Remarks:	Расходы / Costs:
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204151
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	43.672415, 80.624622
	Объем работ / Scope of works:	
	Демонтаж фонарного столба, дорожных ограждений на въезде и разделительных ограждений на выезде из поворота при движении по встречной полосе / Dismantling of the lamppost, road barriers at the entrance and separation fences at the exit of the turn when driving in the oncoming lane	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

ОБЩИЙ МАРШРУТ

Ситуационный план / Situation plan:	Идентификационный номер / ID	202204087
	Категоризации меры / Structural measures categorization::	
	Координаты / Coordinates:	43.58265701, 78.25957149
	Объем работ / Scope of works:	
	Высота пешеходного перехода 5,75 При высоте автопоезда выше 5.65 движение по существующей грунтовой дороге. Необходимо расширение заезда/выезда, спланировать съезд / Pedestrian crossing height 5,75 When the height of the road train is above 5.65, traffic on the existing dirt road. It is necessary to expand the arrival / exit, plan the exit	

Состояние на сегодняшний день /Actual status:	Замечания/Remarks:	Расходы / Costs:
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204083
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	43.57806842, 78.20042019
	Объем работ / Scope of works:	
	Высота пешеходного перехода 5,5m При высоте автопоезда выше 5.45m необходимо строительство байпаса справа / Pedestrian crossing height 5,5m When the height of the road train is above 5.45m, it is necessary to build a bypass on the right	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204073
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	43.54252583, 77.70740625
	Объем работ / Scope of works:	
	Высота путепровода справа - 5,5m слева – 5.6m При высоте автопоезда выше 5.45m – укрепление обочин в месте разворота / The height of the overpass on the right - 5,5m on the left - 5.6m When the height of the road train is above 5.45 m - strengthening of the shoulders at the turning point	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204069
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	43.51072363, 77.47585329
	Объем работ / Scope of works:	
	Высота путепровода справа - 5,6m слева – 5.5m При высоте автопоезда выше 5.5m – укрепление обочин в месте разворота / The height of the overpass on the right - 5.6m on the left - 5.5m When the height of the road train is above 5.5m – strengthening of the shoulders at the turning point /	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204043
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	43.44712089, 76.99973911
	Объем работ / Scope of works:	
	Высота арки - 5,7m При высоте автопоезда выше 5.65m – демонтаж нижней трубы (не является несущей конструкцией), демонтаж блоков для движения по встречной полосе / Arch height - 5,7m When the height of the road train is above 5.65m - dismantling of the lower pipe (not a supporting structure), dismantling of blocks for traffic in the oncoming lane	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204180
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	43.44384373, 76.99420149
	Объем работ / Scope of works:	
	Демонтаж всех фонарных столбов по правую сторону / Dismantling of all lampposts on the right side	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204181
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	43.45366849, 76.98903491
	Объем работ / Scope of works:	
	Высота антенны 5.7m. При высоте автопоезда выше 5,65 или демонтаж антенны или строительство байпаса справа / Antenna height 5.7m. When the height of the road train is above 5.65 or dismantling the antenna or building a bypass on the right	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204019
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	43.8465828, 77.04087952
	Объем работ / Scope of works:	
	Демонтаж фонарных столбов и движение задним ходом на развязке с лопастями / Removal of lampposts and reversing at the junction with the blades	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	002
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	43.894800, 76.342049
	Объем работ / Scope of works:	
	Расширение проезжей части / road widening	
Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204396
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	43.90155344, 76.29991258
	Объем работ / Scope of works:	
	Расширение проезжей части / , road widening	
Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:

		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204398
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	43.88647554, 76.31524726
	Объем работ / Scope of works:	
	Расширение проезжей части / road widening	
Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**

		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204404
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	43.32613003, 76.27892635
	Объем работ / Scope of works:	
	Арка 5.6m. При высоте автопоезда выше 5.55m - подъем / Arch 5.6m. When the height of the road train is above 5.55m - lifting	
Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**

-

Утверждено клиентом / Approved by the client:

-

Ситуационный план / Situation plan:

Идентификационный номер / ID	202204406
Категоризации меры / Structural measures categorization::	
Координаты / Coordinates:	43.27739578, 76.28762167
Объем работ / Scope of works:	

Поворот направо – подрезка деревьев справа /
Turn right – trim trees on the right

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

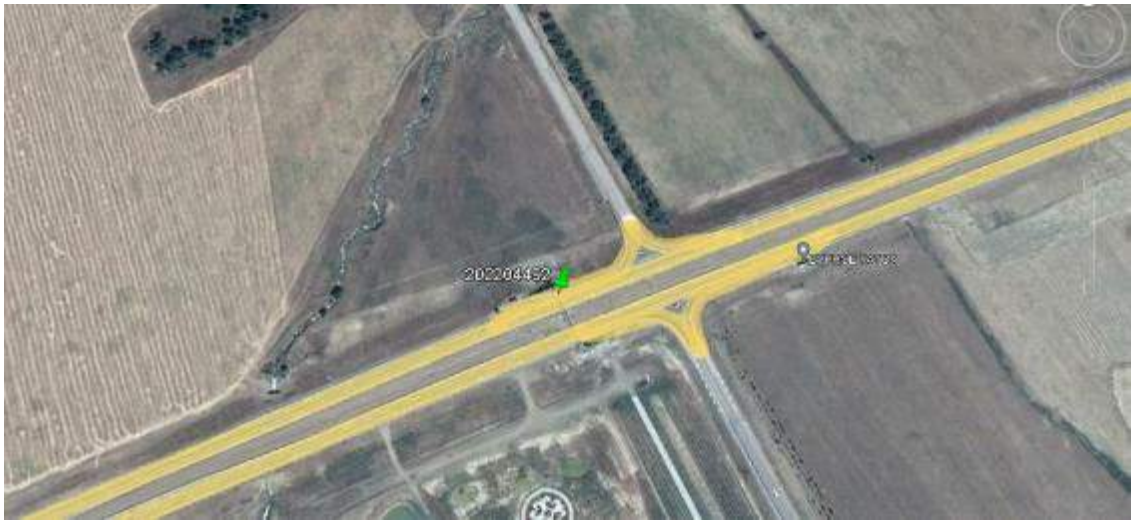
Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204441
	Категоризации меры / Structural measures categorization::	
	Координаты / Coordinates:	42.92816248, 73.24767029
	Объем работ / Scope of works:	

Арка – 5.6m по вывеске. Подъем указателя /
Arch – 5.6m by sign. Lift up of the sign

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204449-455
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	42.87557659, 73.1378279
	Объем работ / Scope of works:	
	Путепровод – 5.75m справа, 5.65 слева. При высоте автопоезда свыше 5.7m демонтаж ограждений на разделительной полосе и движение по полосе встречного движения / Overpass – 5.75m on the right, 5.65m on the left. When the height of the road train is more than 5.7 m, the dismantling of fences on the dividing strip and traffic on the lane of oncoming traffic	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204492
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	42.63756781, 70.75546546
	Объем работ / Scope of works:	
	Пешеходный переход высота – справа 5.65m справа, 5.55 слева. При высоте автопоезда свыше 5.6m строительство байпаса справа или подъем конструкции/ Pedestrian crossing height – right 5.65m on the right, 5.55m on the left. When the height of the road train is over 5.6m, the construction of the bypass on the right or the lifting of the structure/	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	Идентификационный номер / ID	202204528
	Категоризации меры / Structural measures categorization::	
	Координаты / Coordinates:	42.45700569, 69.75694999
	Объем работ / Scope of works:	
	Пешеходный переход высота – справа 5.65m справа, 5.59 слева. При высоте автопоезда свыше 5.6m подъем конструкции/ Pedestrian crossing height – right 5.65m right, 5.59 left. When the height of the road train is over 5.6m, the lifting of the structure	

Состояние на сегодняшний день /Actual status:	Замечания/Remarks:	Расходы / Costs:
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204542
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	42.5303921, 69.34499848
	Объем работ / Scope of works:	
	Демонтаж фонарного столба и дорожного указателя/ Dismantling of the lamppost and road sign	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204545
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	42.40317083, 69.45464167
	Объем работ / Scope of works:	
	Демонтаж фонарного столба и ограждения на въезде. Перенос ограждения на выезде/ Dismantling of the lamppost and fence at the entrance. Relocation of the fence at the exit	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204554
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	42.38326084, 69.26977525
	Объем работ / Scope of works:	
	Газовая труба высота – 5.5m. Подъем./ Gas pipe height – 5.5m. lifting	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204557
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	42.38102818, 69.25940448
	Объем работ / Scope of works:	
	Газовая труба высота – 5.65m. Подъем при высоте автопоезда свыше 5.6m./ Gas pipe height – 5.65m. Lifting at a height of the road train above 5.6m	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204569
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	42.29025741, 69.21291416
	Объем работ / Scope of works:	
	ВЛ 220кВ высота 7.7m – построить байпас так как высота может уменьшиться/ 220kV overhead line height 7.7m – build a bypass as the height may decrease	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204578
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	42.04639768, 69.47513521
	Объем работ / Scope of works:	
	Поворот демонтаж фонарного столба и снять грунт слева от входа в поворот/ Turn dismantle the lamppost and remove the ground to the left of the entrance to the turn	
Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204634
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	40.97283222, 68.7286969
	Объем работ / Scope of works:	
	Пункт пропуска. Для прохождения на территории Республики Казахстан требуется строительство площадки для поворота лопастевоза на 90 град. Для этого необходимо получить соответствующие разрешения, произвести демонтаж забора, фонарного столба и флагштоков по левую сторону. / Checkpoint. To pass on the territory of the Republic of Kazakhstan, it is required to build a platform for turning the blade truck by 90 degrees. To do this, it is necessary to obtain the appropriate permits, dismantle the fence, lamppost and flagpoles on the left side.	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

РАБОТЫ ПРИ КАЖДОМ РЕЙСЕ КОЛОННЫ / WORKS FOR EACH TOUR

Так же необходимо осуществлять работы при каждом рейсе колонны, такие как отключение проводов ЛЭП, демонтаж\монтаж знаков и тд. Расходы сведены в таблицу №2	It is also necessary to carry out work at each toure of the convoi, such as disconnecting power lines, dismantling / installing signs, etc. The costs are summarized in table number 2

Nr	Type	Description RU	CW	CW Remark
202204014	highway-over crossing	H= 5.5м везде,	x	from asphalt to wall 14m, bypass on the right side possible, now here 6.1
202204024	Road condition	Road under construction	x	new check bevor transportation
202204026	Road condition	Road under construction	x	new check bevor transportation
202204027	Road condition	Road under construction	x	new check bevor transportation
202204084	Archway	right 5.55, left 5.88, center 5.76.	x	on the oncoming traffic lane 6.0
202204088	highway-over crossing	H= left 5.6 right 5.9, center 5.8, oncoming lane 6 м	x	movement on oncoming lane
202204089	highway-over crossing	H= right 5.75, left 5.6. oncoming lane 5.6 right и 6 left и 5.9 в center	x	movement on oncoming lane
202204092	Route	A place to turn around	x	dismantling of the road signs
202204150	highway-over crossing	H= 5.9 right, left 5.8,	x	movement on the right side
202204384	PTL	PTL 35, H= 5.9	x	lift up and switch out
202204390	Road condition	high spots on the road	x	leveling
202204391	gradient	gradient down and up, for blades leveling necessary	x	leveling
202204392	Road condition	high spots on the road	x	leveling
202204393	Road condition	Road under construction	x	new check bevor transportation
202204394	Road condition	hill leveling	x	hill leveling
202204395	Turn	turn	x	road widening inside and outside
202204400	PTL	PTL 10kv, H=5.8m.	x	lift up and switch out
202204415	Road condition	Road under construction	x	new check bevor transportation
202204420	highway-over crossing	H= right 5.98, left 5.8,	x	movement on the right side
202204432	highway-over crossing	H= right 5.93, left 5.83	x	movement on the right side
202204454	Archway	H= 7.1, metal in the center 5.8	x	movement on the left side
202204458	pedestrian crossing	H= 5.87 right 5.74 left,	x	movement on the right side
202204459	Archway	H= right 6м, left 5.9	x	movement on the right side
202204462	Archway	H= 5.9 right, 5.8 left	x	movement on the right side

202204467	Archway	H= 6.0 right, 5.8 left,	x	movement on the right side

РАБОТЫ ПО МОДЕРНИЗАЦИИ МАРШРУТА / ROAD MODIFICATION WORKS

Part 2 - Uzbekistan

(PRELIMINARY REPORT)

Для беспрепятственного проезда колоны с комплектами ВТГ по маршруту необходимо произвести работы по модернизации дорожного полотна, обустройства объездов и демонтажа знаков. Общий объем работ приведен в таблице №3.	For the passing of the cargo along the route, it is necessary to carry out the modernization works of the roadway, the arrangement of bypases and the dismantling of signs. Total scope of work is included in Table 3.

Nr	Type	Description	Coordinates L	Coordinates B
202204635		Проверка размеров арки для проезда!!! / Checking the dimensions of the driveway arch, permit from customs autorities needed	68.727868	40.966898
202204638	Turn	На время проезда засыпать ливневки ПГС или проложить металлические листы. / During the project time, fillin the rain strom drains or laying with metal sheets.	68.73178	40.956591
202204639	Turn	На время проезда засыпать ливневку ПГС или проложить металлические листы, убрать блоки, демонтировать дорожный знак, подрезать деревья / During the project time, fillin the rain strom drains or laying with metal sheets, remove blocks, dismantle road sign, cutting trees	68.73304899999999	40.950113
202204641	Turn	Требуется расширение дороги справа, убрать блоки, перенос ЛЭП, демонтаж дорожного знака. На выезде М-39 убрать островок с груном, демонтаж маленького бордюра. / road widening on the right, removing blocks, moving power lines, dismantling the road sign. At the M-39 exit, remove the island with soil, dismantle the curb.	68.741314	40.946989

202204644	Bridge	Демонтаж забора на заправке (только для лопастей). Демонтаж блоков и знака, подсыпка ПГС (по ситуации) / Dismantling of the fence at the gas station (only for blades). Dismantling of blocks and sign, filling of soil (according to the situation)	68.69909800000001	40.907972
202204646	Bridge	Вскрытие арматуры на последнем пролете 9 м, трещины на опоре Обследование и ремонт. / Opening of fittings on the last span of 9 m, cracks on the support Inspection and repair.	68.675989	40.893156
202204663		Объезд по встречной полосе. Демонтаж бордюра. / Detour on the oncoming lane. Dismantling of the curb.	68.483895	40.138259
202204675		Заезд на на трассу М-39. Демонтаж дорожных знаков и расширение проезжей части на развороте / Exit to the M-39. Dismantling of road signs and widening of the roadway at the turn	67.93197600000001	40.095364
202204702	highway-over crossing	Обьезд по встречной полосе, необходим демонтаж блоков до и после. Для каждого проезда необходимо подготовка байпаса, раскапывать/закапывать дорогу ведущую в населенный пункт / Detour on the oncoming lane, it is necessary to dismantle the blocks before and after movement. For each passage, it is necessary to prepare a bypass, dig / dig in the road leading to the village	67.90760400000001	40.075135
202204707	Archway	Движение по существующему байпасу (удлинить/расширить) или подъем балки / Driving on an existing bypass (extend/widen) or lifting a beam	67.454885	39.844771
202204708		Справа 5.7 и 6.0 Поднять / Right 5.7 and 6.0 Lift up	67.091604	39.71094
202204718		Для заезда на пункт разворота. Расширение разрыва с переносом блоков и знаков с двух сторон, расширение существующей отсыпки / To arrive at the U-turn point. Expansion of the gap with the transfer of blocks and signs on both sides, expansion of the existing area.	66.88706999999999	39.758521
202204768		Арка, высота 5.6 Поднять /	64.900049	40.066999

		Archway H=5.6 Lift up		
202204778		Выезд на встречную полосу. Существующий разрыв длина 35м Расширить расстояние между ограждениями на выезде / Exit to the oncoming lane. Existing gap 35 m. Extend the distance between fences at the exit	64.765947	40.061614
202204782		Обследование мостового сооружения / Bridge expertise	64.47929499999999	39.91541
202204790 - 202204801	Bridge	90 км строительство бетонки. Практически все мосты в ремонте (7-9 шт) с U-образными объездами. Проверка перед проездом, возможны работы по отсыпке и расчистки объездов/ 90 km road under construction. Almost all bridges are under reconstruction (7-9 pcs) with U-shaped detours. Status check before project start, work like soil fill and clearing of detour ways are possible	64.321433	39.877409
202204807		Демонтаж дорожных знаков на повороте, укрепление и выравнивание существующей отсыпки на углу 20 м / Dismantling of road signs at the turn, strengthening and leveling of the existing road widening for the turn area 20m	63.089775	40.403376
202204835	Road condition	24 км дороги плохого качества (микс асфальта и щебеночной дороги с гребенчатым профилем), необходим ямочный ремонт и планирование неровностей. / 24 km of poor quality road (mix of asphalt and gravel road with comb profile), need pothole repair and leveling	63.090087	40.404094
202205_0001	Turn	Необходимо расширить и укрепить обочину на углах справа и слева (довольно много), демонтаж фонарного столба, всех столбиков, знаков и указателей. / It is necessary to expand and strengthen the shoulder at the turns on the right and left (large area), dismantling the light pillars, all posts, road signs.	63.332453	40.844249,
202204840	exit to site	Dzhangeldy Локальный ремонт дороги для съезда к площадкам ветропарка вправо/влево / Local road repair for the right/left exit to the wind farm sites	63.378647	40.815081
202205_0002	turn	Демонтаж, 3-х фонарных столбов (справа/слева), бетонных ограждений слева и дорожных знаков справа. / Dismantling of 3 lampposts (right/left), concrete fences on the left and road signs on the right side	60.769352	41.674665,

202204830	Turn	Демонтаж столбиков, дорожного знака, бетонных блоков. Расширение проезжей части на углу / Dismantling of pilars, road sign, concrete blocks. Widening the roadway at the turn	60.317342	42.181468
202205_0003	road condition	Строительство дороги 21 км/ Road construction 21 km	60.43745	42.18893,
202204740		Демонтаж знака и укрепление островка для проезда / Dismantling of the sign and strengthening of the islet for passage	65.352827	40.147711
202204756		Расширение проезжей части по 40м с каждой стороны, демонтаж столбиков, дорожных знаков, блоков. / Expansion of the roadway by 40 m on each side, dismantling of pillars, road signs, blocks.	65.020145	40.190735
202205_0004		Расширение проезжей части / Road widening	64.74415	40.53281,
202204854	Turn	Демонтаж столбиков и бетонных блоков слева. Небольшая отсыпка угла / Dismantling of pillars and concrete blocks on the left. filling turn area	64.60527399999999	41.061038
202204851	PTL	Вл 220 7.6м, отключение и поднятие / 220 7.6m, switch of and lifting	64.56343	41.058364
202204850	Turn	Отсыпать угол. Демонтаж знаков / Turn widening and dismantling of the road signs	64.38145799999999	41.016566

ФОТО-ОТЧЕТ/ VISUALISATION

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202204635
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	40.966938, 68.727834
	Объем работ / Scope of works:	
	Проверка размеров арки для проезда!!! / Checking the dimensions of the driveway arch, permit from customs autorities needed	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	Идентификационный номер / ID	202204638
	Категоризации меры / Structural measures categorization:	
	Координаты / Coordinates:	40.95659058, 68.73178025
	Объем работ / Scope of works:	
	На время проезда засыпать ливневки ПГС или проложить металлические листы. / During the project time, fillin the rain strom drains or laying with metal sheets.	

Состояние на сегодняшний день /Actual status:	Замечания/Remarks:	Расходы / Costs:
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	**202204639**
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	40.950055, 68.733089
	Объем работ / Scope of works:	
	На время проезда засыпать ливневку ПГС или проложить металлические листы, убрать блоки, демонтировать дорожный знак, подрезать деревья / During the project time, fillin the rain strom drains or laying with metal sheets, remove blocks, dismantle road sign, cutting trees	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	**202204641**
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	40.94698921, 68.74131435
	Объем работ / Scope of works:	
	Требуется расширение дороги справа, убрать блоки, перенос ЛЭП, демонтаж дорожного знака. На выезде М-39 убрать островок с груном, демонтаж маленького бордюра. / road widening on the right, removing blocks, moving power lines, dismantling the road sign. At the M-39 exit, remove the island with soil, dismantle the curb.	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	**202204644**
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	40.90797246, 68.69909847
	Объем работ / Scope of works:	
	Демонтаж забора на заправке (только для лопастей). Демонтаж блоков и знака, подсыпка ПГС (по ситуации) / Dismantling of the fence at the gas station (only for blades). Dismantling of blocks and sign, filling of soil (according to the situation)	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	Идентификационный номер / ID	202204646
	Категоризации меры / Structural measures categorization::	
	Координаты / Coordinates:	40.893277, 68.676327
	Объем работ / Scope of works:	
	Вскрытие арматуры на последнем пролете 9 м, трещины на опоре Обследование и ремонт. / Opening of fittings on the last span of 9 m, cracks on the support Inspection and repair.	

Состояние на сегодняшний день /Actual status:	Замечания/Remarks:	Расходы / Costs:
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	**202204663**
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	40.138267, 68.484304
	Объем работ / Scope of works:	
	Объезд по встречной полосе. Демонтаж бордюра. / Detour on the oncoming lane. Dismantling of the curb.	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	**202204675**
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	40.09536421, 67.93197632
	Объем работ / Scope of works:	
	Заезд на на трассу М-39. Демонтаж дорожных знаков и расширение проезжей части на развороте / Exit to the M-39. Dismantling of road signs and widening of the roadway at the turn	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	Идентификационный номер / ID	202204702
	Категоризации меры / Structural measures categorization::	
	Координаты / Coordinates:	40.074996, 67.907703
	Объем работ / Scope of works:	
	Обьезд по встречной полосе, необходим демонтаж блоков до и после. Для каждого проезда необходимо подготовка байпаса, раскапывать/закапывать дорогу ведущую в населенный пункт / Detour on the oncoming lane, it is necessary to dismantle the blocks before and after movement. For each passage, it is necessary to prepare a bypass, dig / dig in the road leading to the village	

Состояние на сегодняшний день /Actual status:	Замечания/Remarks:	Расходы / Costs:
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	**202204707**
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	39.84477094, 67.45488537
	Объем работ / Scope of works:	
	Движение по существующему байпасу (удлинить/расширить) или подъем балки / Driving on an existing bypass (extend/widen) or lifting a beam	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	**202204708**
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	39.71073, 67.091678
	Объем работ / Scope of works:	
	Справа 5.7 и 6.0 Поднять / Right 5.7 and 6.0 Lift up	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	Идентификационный номер / ID	202204718
	Категоризации меры / Structural measures categorization::	
	Координаты / Coordinates:	39.7585208, 66.88706955
	Объем работ / Scope of works:	
	Для заезда на пункт разворота. Расширение разрыва с переносом блоков и знаков с двух сторон, расширение существующей отсыпки / To arrive at the U-turn point. Expansion of the gap with the transfer of blocks and signs on both sides, expansion of the existing area.	

Состояние на сегодняшний день /Actual status:	Замечания/Remarks:	Расходы / Costs:
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	**202204768**
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	40.066931, 64.900172
	Объем работ / Scope of works:	
	Арка, высота 5.6 Поднять / Archway H=5.6 Lift up	
Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	**202204778**
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	40.06161448, 64.76594703
	Объем работ / Scope of works:	
	Выезд на встречную полосу. Существующий разрыв длина 35м Расширить расстояние между ограждениями на выезде / Exit to the oncoming lane. Existing gap 35 m. Extend the distance between fences at the exit	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	**202204782**
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	39.91558, 64.47937
	Объем работ / Scope of works:	
	Обследование мостового сооружения / Bridge expertise	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	**202204790 202204801**
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	39.877404, 64.321387 40.03861247, 64.18327893
	Объем работ / Scope of works:	
	90 км строительство бетонки. Практически все мосты в ремонте (7-9 шт) с U-образными объездами. Проверка перед проездом, возможны работы по отсыпке и расчистки объездов/ 90 km road under construction. Almost all bridges are under reconstruction (7-9 pcs) with U-shaped detours. Status check before project start, work like soil fill and clearing of detour ways are possible	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	Идентификационный номер / ID	202204807
	Категоризации меры / Structural measures categorization::	
	Координаты / Coordinates:	40.402806, 63.089521
	Объем работ / Scope of works:	
	Демонтаж дорожных знаков на повороте, укрепление и выравнивание существующей отсыпки на углу / Dismantling of road signs at the turn, strengthening and leveling of the existing road widening for the turn area	

Состояние на сегодняшний день /Actual status:	Замечания/Remarks:	Расходы / Costs:
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	**202204835**
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	40.40409431, 63.09008736
	Объем работ / Scope of works:	
	24 км дороги плохого качества (микс асфальта и щебеночной дороги с гребенчатым профилем), необходим ямочный ремонт и планирование неровностей. / 24 km of poor quality road (mix of asphalt and gravel road with comb profile), need pothole repair and leveling	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	Идентификационный номер / ID	202205_0001
	Категоризации меры / Structural measures categorization::	
	Координаты / Coordinates:	40.844249, 63.332453
	Объем работ / Scope of works:	
	Необходимо расширить и укрепить обочину на углах справа и слева (довольно много), демонтаж фонарного столба, всех столбиков, знаков и указателей. / It is necessary to expand and strengthen the shoulder at the turns on the right and left (large area), dismantling the light pillars, all posts, road signs.	

Состояние на сегодняшний день /Actual status:	Замечания/Remarks:	Расходы / Costs:
		-
		Утверждено клиентом / Approved by the client:

		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	**202204840**
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	40.820563, 63.369925
	Объем работ / Scope of works:	
	Dzhangeldy Локальный ремонт дороги для съезда к площадкам ветропарка вправо/влево / Local road repair for the right/left exit to the wind farm sites	
Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**

-

Утверждено клиентом / Approved by the client:

-

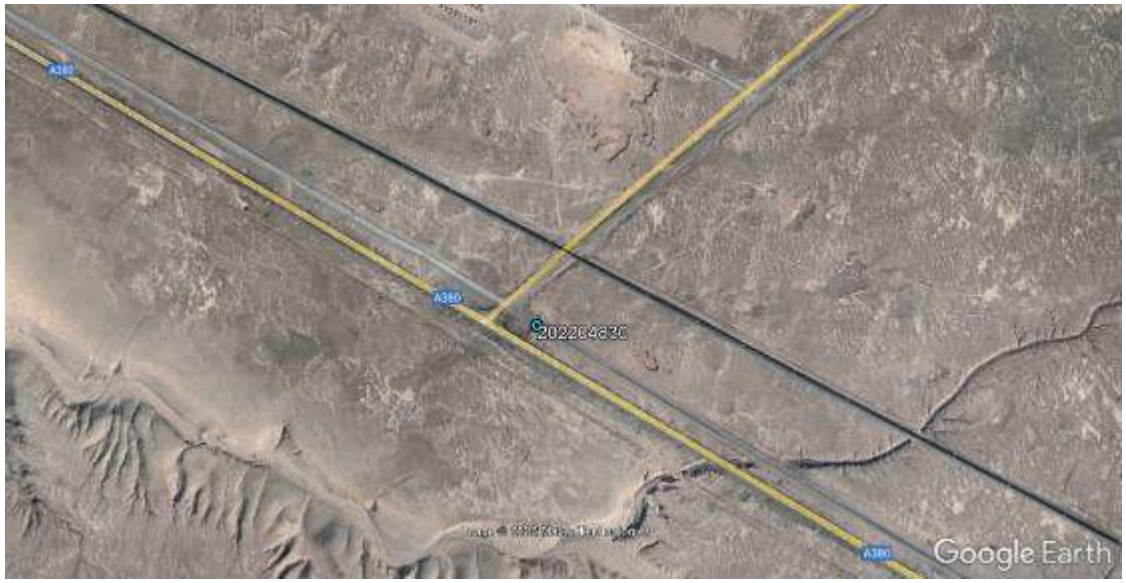
Ситуационный план / Situation plan:	**Идентификационный номер / ID**	**202205_0002**
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	41.674665, 60.769352
	Объем работ / Scope of works:	
	Демонтаж, 3-х фонарных столбов (справа/слева), бетонных ограждений слева и дорожных знаков справа. / Dismantling of 3 lampposts (right/left), concrete fences on the left and road signs on the right side	
Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**

-

Утверждено клиентом / Approved by the client:

-

Ситуационный план / Situation plan:



Идентификационный номер / ID	**202204830**
Категоризации меры / Structural measures categorization::	
Координаты / Coordinates:	42.18146815, 60.31734159

Объем работ / Scope of works:

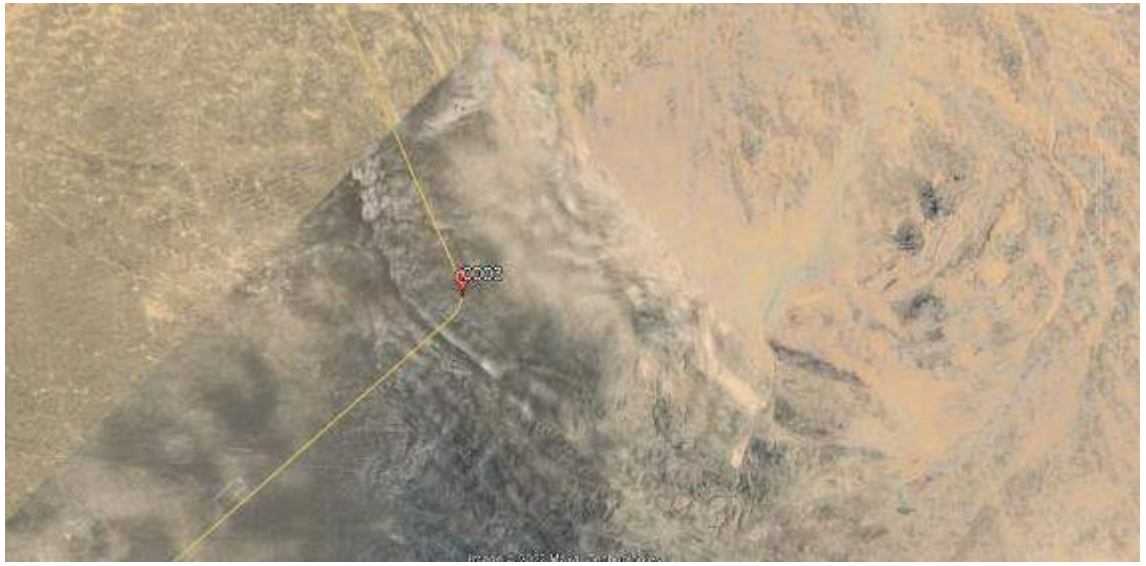
Демонтаж столбиков, дорожного знака, бетонных блоков.
Расширение проезжей части на углу
/
Dismantling of pilars, road sign, concrete blocks. Widening the roadway at the turn

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**

-

Утверждено клиентом / Approved by the client:

-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	202205_0003
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	42.18893, 60.43745
	Объем работ / Scope of works:	
	Строительство дороги 21 км/ Road construction 21 km	
Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**

-

Утверждено клиентом / Approved by the client:

-

Ситуационный план / Situation plan:

Идентификационный номер / ID	**202204740**
Категоризации меры / Structural measures categorization::	
Координаты / Coordinates:	40.14756, 65.35363

Объем работ / Scope of works:

Демонтаж знака и укрепление островка для проезда
/
Dismantling of the sign and strengthening of the islet for passage

Состояние на сегодняшний день /Actual status:	Замечания/Remarks:	Расходы / Costs:
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	Идентификационный номер / ID	202204856
	Категоризации меры / Structural measures categorization::	
	Координаты / Coordinates:	40.69683, 64.88518
	Объем работ / Scope of works:	

Расширение проезжей части по 40м с каждой стороны, демонтаж столбиков, дорожных знаков, блоков.
/
Expansion of the roadway by 40 m on each side, dismantling of pillars, road signs, blocks.

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	**202205_0004**

Категоризации меры / Structural measures categorization::	
Координаты / Coordinates:	40.53281, 64.74415
Объем работ / Scope of works:	
Расширение проезжей части / Road widening	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	**202204854**
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	41.06104, 64.60421
	Объем работ / Scope of works:	
	Демонтаж столбиков и бетонных блоков слева. Небольшая отсыпка угла / Dismantling of pillars and concrete blocks on the left. filling turn area	
Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	**202204851**
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	41.05836408, 64.5634303
	Объем работ / Scope of works:	
	Вл 220 7.6м, отключение и поднятие / 220 7.6m, switch of and lifting	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

Ситуационный план / Situation plan:	**Идентификационный номер / ID**	**202204850**
	**Категоризации меры / Structural measures categorization::**	
	Координаты / Coordinates:	41.01656571, 64.38145845
	Объем работ / Scope of works:	
	Отсыпать угол. Демонтаж знаков / Turn widening and dismantling of the road signs	

Состояние на сегодняшний день /Actual status:	**Замечания/Remarks:**	**Расходы / Costs:**
		-
		Утверждено клиентом / Approved by the client:
		-

APPENDIX N – CONSULTATION LETTER TO & FROM MINISTRY OF TRANSPORTATION

ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ

JURU ENERGY CONSULTING

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

JEC-OUT-21-122
04.05.2021

To Ministry of transportation
of the Republic of Uzbekistan

Under Presidential Decree of the Republic of Uzbekistan No.5003 dated 23.02.2021 "On measures to implement the investment of the Project on construction of a 500MW wind power plant in Gijduvon district in Bukhara region", FE 'ACWA Power Bash Wind' LLC (Tashkent)' has entered into a 25-year Power Purchase Agreement with JSC National Electric Networks of Uzbekistan. This agreement was entered on force 24th January 2021 for the development, financing, construction and operation of a 500MW Wind Farm in Gijduvon district of Bukhara region (See Annex 1).

The project also includes the development of an Overhead Transmission Line (OHTL) approximately 250km in length with a rating of 500kV single circuit. This OHTL will be shared between ACWA Power's Bash 500MW Wind Farm and the ACWA Power Dzhankeldy 500MW Wind Farm which is approximately 94km north west of Bash Wind Farm site. The alignment of the OHTL is being finalised by JSC National Electric Networks of Uzbekistan and will connect to an existing substation in Qurako'l from the Bash Wind Farm site (see Annex 2).

As a part of the Environmental & Social Impact Assessment (ESIA), Juru Energy is consulting with Ministry of transportation to request any data or comments that will be relevant to the preparation of the Project ESIA, including any requirements relating to the transportation of the following:

- Transportation of project equipment i.e., wind turbines components such as blades, transformers etc.
- Transportation of hazardous material and waste; and
- Transportation of workers who are expected to be approximately 700 to 1000 during the project construction phase.

We welcome your feedback and comments on the above to be addressed to Gulchekhra Nematullayeva (email: g.nematullayeva@juruenergy.com, tel +998 97 4459504).

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely,

Director **J.Yakubov**

For the further information please contact:
Gulchekhra Nematullayeva
Mob.: +998 97 4459504

Annex 1 to the letter JEC-OUT-21-122
On 04.05.2021

Project is located in Gijduvon district of Bukhara region

Project Coordinates (based on preliminary co-ordinates)

NORTHING	EASTING
ACWA Power 500MW Project Site	
4488709.16	637987.39
4489065.00	645911.20
4492662.15	646074.46
4493476.69	647325.10
4495585.81	646194.93
4498671.77	646323.63
4498528.88	646690.97
4499538.02	648248.52
4500867.54	648351.79
4503425.70	650137.28
4507450.24	649969.59
4507264.73	632532.51
4506189.41	631394.22
4503502.14	631176.63
4503073.76	635108.38
4499198.71	637482.55

Annex 2 To the letter JEC-OUT-21-122
On 04.05.2021
Preferred OHTL allotment

O'zbekiston Respublikasi
Transport vazirligi huzuridagi
Avtomobil yo'llari qo'mitasi

«YO'L LOYIHA EXPERTIZA»
UNITAR KORXONASI

Комитет по автомобильным дорогам
при Министерстве транспорта
Республики Узбекистан

УНИТАРНОЕ ПРЕДПРИЯТИЕ
«ЙУЛ ЛОЙИХА ЭКСПЕРТИЗА»

100052 Toshkent sh., Mirzo Ulug'bek tumani, Katta Darxon - 2 tor ko'cha, 5 uy. Tel: 286-19-01, 286-19-02, 286-19-03, 286-19-10. Faks: 286-19-10
«DAVR BANK» XATB, Mirzo Ulug'bek tumani filiali, X/R 2021 0000 9024 6196 4001, STIR 202 330 936, XXTUT 71120, MFO 01072, www.ekspertiza.uz.

№467/05
«27» мая 2021 г.

Автомобиль йўллари
қўмитасига

06.05.2021 йилдаги №02/49-2863 сонли топшириқ бўйича

"JURU ENERGY CONSULTING" МЧЖ томонидан Ўзбекистон Республикаси Транспорт Вазирлигига 2021 йил 04 майдаги №JEC-OUT-21-123-сонли мурожаати тегишлилиги юзасидан ўрганиб чиқиб, қуйидагиларни маълум қиламиз:

Ўзбекистон Республикаси Вазирлар Маҳкамасининг 2011 йил 26 декабрдаги 342-сонли қарори билан тасдиқланган "Катта ҳажмли ва оғир вазнли юкларни автомобиль транспортида ташишда ҳаракат хавфсизлигини таъминлаш" Қоидаларига мувофиқ катта ҳажмли ва оғир вазнли юкларни автомобиль транспортида ташишда махсус рухсатнома талаб этилишини маълум қиламиз.

Маълумот учун: махсус рухсатнома талаб этилган ҳолларда http://oktv.ekspertiza.uz ахборот тизими орқали мурожаат юбориш мумкин.

Директор **Ф. Салаев**

Committee on Highways under the Ministry of Transport of the Republic of Uzbekistan

UNITARY ENTERPRISE "YO'L LOYIHA EKSPERTIZA»

No. 467/05
27.05.2021

To the Committee on highways

According to the task No.02/49-2863

We would like to inform you based on the letter No. JEC-OUT-21-123 sent by JURU Energy on 04.05.2021 to the Ministry of Transport of the Republic of Uzbekistan on followings:
In accordance with the regulations "Ensuring traffic safety during the transportation of bulky and heavy cargo", approved by the Cabinet of Ministers of the Republic of Uzbekistan No.342 dated December 26, 2011, we declare that a special permit is required for the transportation of bulky and heavy cargo.
FYI: in cases where a special permit is required, you can send an application through the information system http://okn.elcspertiza.uz

Director signature F.Salayev

O'zbekiston Respublikasi
Transport vazirligi huzuridagi
Avtomobil yo'llari qo'mitasi

«YO'L LOYIHA EXPERTIZA»
UNITAR KORXONASI

Комитет по автомобильным дорогам
при Министерстве транспорта
Республики Узбекистан

УНИТАРНОЕ ПРЕДПРИЯТИЕ
«ЙУЛ ЛОЙИХА ЭКСПЕРТИЗА»

100052 Toshkent sh., Mirzo Ulug'bek tumani, Katta Darxon - 2 tor ko'cha, 5 uy. Tel: 286-19-01, 286-19-02, 286-19-03, 286-19-10. Faks: 286-19-10
«DAVR BANK» XATB, Mirzo Ulug'bek tumani filiali, X/R 2021 0000 9024 6196 4001, STIR 202 330 936, XXTUT 71120, MFO 01072, www.ekspertiza.uz.

№467/05
«27» мая 2021 г.

Автомобиль йўллари
қўмитасига

06.05.2021 йилдаги №02/49-2863 сонли топшириқ бўйича

"JURU ENERGY CONSULTING" МЧЖ томонидан Ўзбекистон Республикаси Транспорт Вазирлигига 2021 йил 04 майдаги №JEC-OUT-21-123-сонли мурожаати тегишлилиги юзасидан ўрганиб чиқиб, қуйидагиларни маълум қиламиз:

Ўзбекистон Республикаси Вазирлар Маҳкамасининг 2011 йил 26 декабрдаги 342-сонли қарори билан тасдиқланган "Катта ҳажмли ва оғир вазнли юкларни автомобиль транспортида ташишда ҳаракат хавфсизлигини таъминлаш" Қоидаларига мувофиқ катта ҳажмли ва оғир вазнли юкларни автомобиль транспортида ташишда махсус рухсатнома талаб этилишини маълум қиламиз.

Маълумот учун: махсус рухсатнома талаб этилган ҳолларда http://oktv.ekspertiza.uz ахборот тизими орқали мурожаат юбориш мумкин.

Директор **Ф. Салаев**

Committee on Highways under the Ministry of Transport of the Republic of Uzbekistan

UNITARY ENTERPRISE "YO'L LOYIHA EKSPERTIZA»

No. 467/05
27.05.2021

To the Committee on highways

According to the task No.02/49-2863

We would like to inform you based on the letter No. JEC-OUT-21-123 sent by JURU Energy on 04.05.2021 to the Ministry of Transport of the Republic of Uzbekistan on followings:
In accordance with the regulations "Ensuring traffic safety during the transportation of bulky and heavy cargo", approved by the Cabinet of Ministers of the Republic of Uzbekistan No.342 dated December 26, 2011, we declare that a special permit is required for the transportation of bulky and heavy cargo.
FYI: in cases where a special permit is required, you can send an application through the information system http://okn.elcspertiza.uz

Director signature F.Salayev

APPENDIX O - CONSULTATION LETTER TO & FROM ASIA TRANS GAS

ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ
JURU ENERGY CONSULTING

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

JEC-OUT-21-54
05.04.2021

To JV ASIA TRANS GAZ LLC

Under Presidential Decree of the Republic of Uzbekistan No.5003 dated 23.02.2021 "On measures to implement the investment of the Project on construction of a 500MW wind power plant in Gijduvon district in Bukhara region", FE 'ACWA Power Bash Wind' LLC (Tashkent)' has entered into a 25-year Power Purchase Agreement with JSC National Electric Networks of Uzbekistan. This agreement was entered into on 24th January 2021 for the development, financing, construction and operation of a 500MW Wind Farm in Gijduvon district of Bukhara region (See Annex 1).

The project also includes the development of an Overhead Transmission Line (OHTL) with a rating of 500kV single circuit. This OHTL will be shared between ACWA Power's Bash 500MW Wind Farm and the ACWA Power Dzhankeldy 500MW Wind Farm. The alignment of the OHTL is being finalised by JSC National Electric Networks of Uzbekistan and will connect to an existing substation in Qurako'l.

As a part of the ESIA, Juru Energy is consulting with JV ASIA TRANS GAZ LLC to request any data or comments that will be relevant to the preparation of the Project ESIA. We would also like to request for your assistance in obtaining further information regarding the gas facility and pipeline running through the southern part of the proposed project site as detailed in Annex 2 below.

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely,

Director **J.Yakubov**

For the further information please contact:
Gulchekhra Nematullaeva

Phone: +99871 202 04 40
Mob.: +99897 445 95 04

Annex 1
To the letter JEC-OUT-21-54
05.04.2021

The project is located in Gijduvon district of Bukhara region

Project Coordinates (based on preliminary co-ordinates)

NORTHING	EASTING
ACWA Power 500MW Project Site	
4488709.16	637987.39
4489065.00	645911.20
4492662.15	646074.46
4493476.69	647325.10
4495585.81	646194.93
4498671.77	646323.63
4498528.88	646690.97
4499538.02	648248.52
4500867.54	648351.79
4503425.70	650137.28
4507450.24	649969.59
4507264.73	632532.51
4506189.41	631394.22
4503502.14	631176.63
4503073.76	635108.38
4499198.71	637482.55

Annex 2
To the letter JEC-OUT-21-54
05.04.2021
Questionnaire

No.	Clarification	Response
1.	When was the gas pipeline constructed on the project site?	
2	Apart from the gas pipeline, please provide us with information on whether there are any other gas facilities on site (buried or above ground). Please include the following: - Nature of these facilities - Coordinates *This information will help the project to manage any construction risks to the gas pipeline and facilities.*	
	Please clarify whether there are any locations along the pipeline (within the project site) that have access restrictions i.e., for vehicles, machinery or project personnel	
	If yes, please provide the coordinates of these areas.	
3.	What buffer zone should be maintained between the gas pipeline/facilities during the construction of the Wind Farm?	
	Please provide us with the coordinates for the protection zone established for the gas pipeline (if applicable)	
4.	Do you have any planned construction or maintenance work scheduled along the pipeline found within the project site? - If yes please provide us with a tentative schedule including how often maintenance carried out?	
5.	What is the rate of machinery movement between the gas pipeline and storage facilities south of the project site? - Is the movement regular or only during maintenance? - Please provide an estimate on the number of machinery/vehicles and frequency	
6.	Do you have specific established routes/roads to access the pipeline found within the project site?	
	If yes, please provide us with the specific location of these routes?	
7	Apart from the routing of the pipeline, please clarify any other ways that you use the project site?	
8.	How many people work at the main gas pipeline facility near the project site?	
	Are any of these workers from the local communities i.e., Agitma village, Kokcha etc	
	If yes, would you please clarify how many and whether they have permanent or temporary positions?	
	How many households are located in the accommodation facilities provided to the workers?	
9.	Please provide any additional comments/information (if any)	

ASIA TRANS GAS

СП ООО «Asia Trans Gas»
Республика Узбекистан, 100015,
г. Ташкент, ул. Оybек, 12
Тел: (998 71) 203 11-77 Факс: (998 78) 150-78-10.

JV «Asia Trans Gas» LLC
12 Oybek str., Tashkent,
100015, Republic of Uzbekistan
Tel: (998 71) 203-11-77 Fax: (998 78) 150-78-10

LETTER / ПИСЬМО

Contract / Контракт №: **№:ATG-OTHER-EN-LO-21-62**

To:	**Juru Energy Consulting**	**Кому:**	**Juru Energy Consulting**
Date:	**April 20, 2021**	**Дата:**	**20.04.2021**
Page:	**2 + att**	**Стр.:**	**2 + приложение**

□Urgent /Срочно □ Reply required / Для ответа □ For Action / К исполнению □ For Info / Для информации □ Others / Прочее

Subject: Reply for the wind power generate electricity project

Dear Sirs,

Considering your letter №JEC-OUT-21-54 dated April 05, 2021, JV 'Asia Trans Gas' LLC would like to inform you that the suggestion and technical information as follows:

a. According to the preliminary coordinator provided by you, about 24 kilometer trunk gas pipeline, 3 block valve stations and 8 kilometer communication cable are in the scope of planning region. So, to avoid the mutual influence by the wide range crossing, it is suggested to plan the accurate location on the north side of the existing trunk pipeline belonged to ATG for the wind power generate electricity project.

b. Considering the damage to the facilities of wind power generate electricity caused by the accident of natural gas trunk line bursting and the planning for the future trunk line route paralleled with the existing pipeline, according to the code КМК 2.05.06-97 the minimum distance between the facilities of wind power generate electricity and the pipeline is 300m. Also, there is a planned parallel pipeline project along the existing three pipelines. So, the suggest minimum distance between the facilities of wind power generate electricity to the edge of trunk line is not less than 450m.

Тема: Ответ проекту по выработке ветровой электроэнергии

Уважаемые господа.

Касательно Вашего письма №JEC-OUT-21-54 от 5 апреля 2021 года, СП ООО «Asia Trans Gas» сообщает Вам следующее предложение и технические данные:

а Согласно предоставленной Вами информации по координатам в зоне планирования находится около 24 км магистрального газопровода, 3 крановых узла и 8км кабеля связи. Таким образом для проекта по выработке ветровой электроэнергии чтобы избежать взаимного влияния при пересечении большого диапазона, предлагается спланировать точное местоположение на северной стороне существующего магистрального газопровода принадлежащего ATG.

б. Принимая во внимание ущерб объектам проекта по выработке ветровой электроэнергии в результате аварии с разрывом магистрального газопровода, и планирование будущей трассы магистрального газопровода параллельно существующему газопроводу, согласно КМК 2.05.06-97 минимальное расстояние между объектами проекта по выработке ветровой электроэнергии и трубопроводом составляет 300м. А также там запланирован проект параллельного газопровода вдоль существующих трех ниток. Предлагаемое минимальное расстояние между объектами проекта по выработке ветровой электроэнергии и краем магистрального газопровода должно

	быть не менее 450м
c. If there are crossings on the road or cables and etc., please send the official letter to ATG for the technical requirements in the future	c. В будущем при наличии пересечений с дорогами или кабелями и т. д., просьба направлять официальное письмо в ATG для получения технических условий
d. The information on the pipeline: the design pressure of pipeline – 9.8MPa; the diameter for line AB-1067mm & line C-1219mm.	d. Данные о газопроводе: расчетное давление трубопровода - 9,8 МПа диаметр нитки АВ - 1067 мм и нитки С -1219 мм.
Attachment: information table	*Приложение: таблица данных*
Respectfully yours,	С уважением,

Mr. Liu Zhiguang / г-н Лю Чжигуан
General Director of JV "Asia Trans Gas" LLC / Генеральный директор СП ООО "Asia Trans Gas"

Prepared by Engineering Department / Подготовлено Департаментом инжиниринга

Response to annex 2 to the letter JEC-OUT-21-54 dated 05.04.2021

№	Clarification	Response
1.	When was the gas pipeline constructed on the project site?	Lines A and B, as well as fibre optic lines in 2009 and 2010. Line C in 2014.
2.	Apart from the gas pipeline, please provide us with information on whether there are any other gas facilities on site (buried or above ground). Please include the following: - Nature of these facilities - Coordinates *This information will help the project to manage any construction risks to the gas pipeline and facilities.*	Near the work area there are block valve stations №10.1, №10.2 on the lines A amd B, as well as block valve station №15 on the line C.
	Please clarify whether there are any locations along the pipeline (within the project site) that have access restrictions i.e., for vehicles, machinery or project personnel	It is strictly forbidden to cross the gas pipeline with any equipment on unequipped crossings. The crossing must be carried out only on equipped crossings. The location of equipment, residential buildings and/or other objects must be in accordance with KMK 2.05.06-97.
	If yes, please provide the coordinates of these areas.	- (see above)
3.	What buffer zone should be maintained between the gas pipeline/facilities during the construction of the Wind Farm?	See KMK 2.05.06-97
	Please provide us with the coordinates for the protection zone established for the gas pipeline (if applicable)	
4.	Do you have any planned construction or maintenance work scheduled along the pipeline found within the project site? - If yes please provide us with a tentative schedule including how often maintenance carried out?	It is planned to build 4 lines parallel to the ABC lines, from the side of line C.
5.	What is the rate of machinery movement between the gas pipeline and storage facilities south of the project site? - Is the movement regular or only during maintenance? - Please provide an estimate on the number of machinery/vehicles and frequency	Twice a day, the patrolling organization of the Uzbekistan-China main gas pipeline (UChMP) conducts a detour of the linear part and its facilities.
6.	Do you have specific established routes/roads to access the pipeline found within the project site?	A patrol road runs parallel to the UChMP.
	If yes, please provide us with the specific location of these routes?	
7.	Apart from the routing of the pipeline, please clarify any other ways that you use the project site?	See quest. 6
8.	How many people work at the main gas pipeline facility near the project site?	Patrolmen – 3 people patrol daily.
	Are any of these workers from the local communities i.e., Agitma village, Kokcha etc	None
	If yes, would you please clarify how many and whether they have permanent or temporary positions?	-
	How many households are located in the accommodation facilities provided to the workers?	-
9.	Please provide any additional comments/information (if any)	The three-line main gas pipeline "Uzbekistan-China" (UChMP) consists of three lines: A, B and C of the first category, with diameters of Dn 1067mm (A and B) and Dn 1219mm (line C), working pressure of 9.81 MPa. The average depth of the gas pipeline (up to the upper wall of the pipe) is 1 meter, and the fiber-optic line is 1 meter. The average distance between lines A and B is 16 meters, on the left side of the gas line at a

		distance of 25 meters from line B runs line C. The fiber optic line is located at a distance of 8 meters to the left of line A along the gas line. The direction of gas from west to east.

ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ
JURU ENERGY CONSULTING

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN. 303454532. BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

JEC-OUT-21-103
21.04.2021

To JV ASIA TRANS GAZ LLC

Dear Sir/Madam,

First of all, we would like to thank you for arranged call on April 19, 2021.
Following up to our previous letter we sent on April 5. 2021 (reference number JEC-OUT-21-54) and based on the discussion over Zoom call we would like to request for the further information regarding the followings:

- Could you please provide us with the coordinates of buffer zone (450 meters) that should be kept as a distance from gas pipeline
- Please provide a coordinates of fibre optic cable location.
- Could you please share a list as well as all buried structures near and at the Project site?

As agreed during our call, we 5 capitals Environmental and Management Consultancy (Lead E&S consultant for the Project) will deliver your request regarding:

- Possibility to move Project site to the north to avoid connections with gas pipeline;
- Technical characteristics of wind turbines.

We will send the request for information to ACWA Power as soon as we receive an information regarding the issues we mentioned above

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely.

Director **J.Yakubov**

JURU ENERGY CONSULTING

For the further information please contact:
Gulchekhra Nematullaeva

Phone: +99871 202 04 40
Mob.: +99897 445 95 04

ASIA TRANS GAS

СП ООО «Asia Trans Gas»
Республика Узбекистан, 100015,
г. Ташкент, ул. ОйБек, 12.
Тел.: (998 71) 203-11-77 Факс: (998 78) 150-76-10.

JV «Asia Trans Gas» LLC
12 Oybek str., Tashkent,
100015 Republic of Uzbekistan
Tel.: (998 71) 203-11-77 Fax: (998 78) 150-76-10.

LETTER / ПИСЬМО

Contract / Контракт №:		№: ATG-OTHER-EN-LO-21-66	
To:	Consultancy company JURU ENERGY CONSULTING Mr. Yakubov J. – Director	Кому:	Консультативная компания JURU ENERGY CONSULTING Г-н Якубов Ж. - Директор
Date:	April 28, 2021	Дата:	28.04.2021
Page:	1	Стр.:	1

□Urgent /Срочно □Reply required/Для ответа □For Action/К исполнению □For Info/Для информации □Others/Прочее

Subject: Reply to your letter №JEC-OUT -21-103 от 21.04.21

Dear Sir,

Having reviewed your letter №JEC-OUT-21-103 dd 21.04.2021 JV "Asia Trans Gas" LLC informs on the following

1. Minimal distance from axis of the nearest gas pipeline to your designed structures will be determined by the design institute at designing, following the requirements of KMK 2.05.06-97 tab 4 and 5. The design pressure of JV gas pipelines is 9.8MPa, the area near the gas pipelines is a hazardous production area, in order to preserve wind turbines and other technological structures on the territory in force-major situations with gas pipeline, we recommend you to assign the borders of the territory for the construction of wind generators at least 1 km from the axis of the nearest gas pipeline when designing. At the same time please include the representatives of our company in the committee on site selection for construction of wind turbines. We are ready to provide you with a list of representatives by name upon your request. Please send to us the copies of ordinances of khokimiyats for establishing a committee on site selection. Topographic materials for the final site selection must be submitted to JV "Asia Trans Gas" LLC for approval

2. The coordinates of the gas pipelines and structures are secret, so I ask you to request them through the confidential channels from "Uzbekneftegaz" JSC.

Please inform your construction's customer and design institute on this reply to your letter.

Best regards,

Тема: Ответ на ваше письмо за №JEC-OUT -21-103 от 21.04.21

Уважаемый господин Якубов.

СП ООО "Asia Trans Gas" рассмотрев ваше письмо за №JEC-OUT-21-103 от 21.04.2021г. сообщает следующее:

1. Минимальное расстояние от оси ближайшего к вашим сооружениям газопровода до проектируемых вами сооружений определяется проектным институтом при проектировании, руководствуясь требованиями КМК 2.05.06-97 таб.4 и 5. Проектное давление газопроводов СП составляет 9.8МПа, зона рядом газопроводов является опасной производственной территорией. В целях сохранения ветровых установок и других технологических сооружений на территории при фарс-мажорных обстоятельствах на газопроводе, мы рекомендуем вам границы территории под строительство ветровых генераторов при проектировании отнести не менее на 1 км от оси ближайшего газопровода. Одновременно просим Вас включить представителей нашей компании в комиссию по выбору площадок под строительство ветровых установок. Список представителей по-мимо мы готовы передать вам по вашему запросу. Копии распоряжений хокимиятов на создание комиссии по выбору прошу отправить в наш адрес. Топографические материалы по окончательному выбору площадки необходимо представить на согласование в СП ООО «Asia Trans Gas».

2. Координаты газопроводов и сооружений секретные, поэтому прошу Вас запросить их по линии секретной части АК Узбекнефтегаз.

С ответом на ваше письмо прошу Вас ознакомить заказчика по строительству и проектный институт.

С уважением,

Liu Zhiguang / Лю Чжигуан _____
General Director of JV Asia Trans Gas LLC / Генеральный Директор СП ООО Asia Trans Gas

Prepared by Engineering Department / Подготовлено Департаментом инжиниринга

Thank you for your response No. 05-09/1-836/5-3-2060 regarding the required buffer zone between the project and ACWA Power Bash 500MW Wind Farm and existing gas pipeline operated by JV Asia Trans Gas LLC.

As part of the ongoing Environmental & Social Impact Assessment (ESIA) studies, we would like to request for additional information on the following key issues which will facilitate in the siting of project facilities and adherence to the required safety buffer zones.

- Please provide us with coordinates of 24 km trunk gas pipeline, 3 block valve stations and 8 km communication cable.
- A list of buried or above ground facilities and their coordinates including fibre optic cables within the Project boundary.
- Coordinates of block valve stations №10.1, №10.2 on lines A and B, as well as block valve station №15 on line C.
- It is understood that “There are plans to build 4 lines parallel to the ABC lines next to line C”, could you please provide us with the coordinates or information on the general area where the expansion will be undertaken?

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely,

ASIA TRANS GAS

СП ООО «Asia Trans Gas»
Республика Узбекистан, 100015,
г. Ташкент, ул. Ойбек, 12.
Тел.: (998 71) 203-11-77 Факс: (998 78) 150-76-10.

JV «Asia Trans Gas» LLC
12 Oybek str., Tashkent,
100015, Republic of Uzbekistan
Tel.: (998 71) 203-11-77 Fax: (998 78) 150-76-10.

LETTER / ПИСЬМО

Contract / Контракт №: №: ATG-OTHER-EN-LO-21-88

To:	Consulting company JURU ENERGY CONSULTING Mr. Yakubov J. – Director	Кому:	Консалтинговая компания JURU ENERGY CONSULTING Г-н Якубов Ж. – Директор
Copy:	ACWA Power Bash Wind LLC	Копия:	ООО «ACWA Power Bash Wind»
Date:	June 30, 2021	Дата:	30.06.2021
Page:	1	Стр.:	1

□Urgent /Срочно □Reply required/Для ответа □For Action/К исполнению □ For Info/Для информации □Others/Прочее

Subject: Provision of location coordinates of the main gas pipelines and facilities of JV "Asia Trans Gas" LLC

Dear Sir,

JV Asia Trans Gas LLC (ATG) has received permission to provide the coordinates of the location of the main gas pipelines and other ATG facilities and informs you as follows:

1. First of all, we again ask you to include representatives of our company in the commission for selecting a site for the construction of wind turbines. We are ready to provide the list of representatives by name upon your request. Please send the copies of Khokimiyats' orders for establishing a commission for the selection of the site to our address. Topographic materials for the final site selection must be submitted for approval to ATG.

2. In order to provide the exact coordinates of the location of the main gas pipelines and other facilities, we ask you to invite representatives of ATG to participate in the survey on the land plot for wind farms construction. After the survey and determination of the exact crossing area with the main gas pipeline of ATG and upon signing the Survey Act, ATG will provide the coordinates for the crossing area or outside the protected gas pipelines of selected site for the design of wind turbines according to the Act.

Please familiarize the construction customer with the answer to your letter

Respectfully,

Тема: Предоставление координат расположения магистральных газопроводов и других объектов СП ООО "Asia Trans Gas"

Уважаемый господин Якубов,

СП ООО "Asia Trans Gas" (далее-СП) получило разрешения на предоставления координат расположения магистральных газопроводов и других объектов СП, и подготовило для представления вам следующее:

1. В первую очередь (повторно) просим Вас включить представителей нашей компании в комиссию по выбору площадки под строительство ветровых установок. Список представителей поименно мы готовы передать вам по вашему запросу. Копии распоряжений хокимиятов на создание комиссии по выбору участка, прошу отправить в наш адрес. Топографические материалы по окончательному выбору площадки необходимо представить на согласование в СП.

2. В целях представления точных координат расположения магистральных газопроводов и других объектов просим Вас пригласить представителей СП участвовать в обследовании на земельном участке, на котором будут построены ветроэлектростанции. После обследования и определения точного района перехода магистрального газопровода СП, и подписания Акта обследования в СП предоставит координаты на участки пересечения или за пределами охраной газопроводов выбранной площадки для проектирования ветровых установок по Акту.

С ответом на ваше письмо прошу Вас ознакомить заказчика по строительству.

С уважением,

Liu Zhiguang / Лю Чжигуан
General Director of JV Asia Trans Gas LLC / Генеральный Директор СП ООО Asia Trans Gas

Prepared by Engineering Department / Подготовлено Департаментом инжиниринга

ЎЗБЕКИСТОН РЕСПУБЛИКАСИ
ЭНЕРГЕТИКА ВАЗИРЛИГИ

МИНИСТЕРСТВО ЭНЕРГЕТИКИ
РЕСПУБЛИКИ УЗБЕКИСТАН
MINISTRY OF ENERGY
OF THE REPUBLIC OF UZBEKISTAN

«14» 09 2020 г. № 03-07-4736

“Ўзтрансгаз” АЖга

Ўзбекистон Республикаси Президентининг 2019 йил 22 августдаги ПҚ-4422-сон Қарорининг 4-банди ижросини таъминлаш мақсадида, Қорақалпоғистон Республикаси Беруний ва Қораўзак туманларида Энергетика вазирлиги томонидан Европа тикланиш ва тараққиёт банки (ЕТТБ) билан ҳамкорликда давлат-хусусий шериклиги асосида қуввати 100 МВт шамол электр станциясини (ШЭС) қуриш инвестиция лойиҳаси учун салоҳиятли инвесторларни танлаш бўйича жорий йилнинг 14 апрел куни танлов эълон қилинди. Бундан ташқари, ҳозирда хорижий инвесторлар ҳамкорлигида Навоий ва Бухоро вилоятларида умумий қуввати 1500 МВт бўлган ШЭСларни қўриш бўйича ишлар олиб борилмоқда.

Инвестиция лойиҳалари доирасида, Энергетика вазирлиги, хорижий компаниялар ва ЕТТБ техник мутахассислари томонидан ШЭСлар қуриш учун мақбул ер майдонлари аниқланди (Илова қилинмоқда).

Инвесторлар билан узоқ муддатли (25 йил) шартномалар имзоланиши кутилаётганлигини инобатга олиб, танланган ер майдонларида юқори босимли газ узатиш қувурлари мавжуд бўлган, шунингдек янги тармоқлар қурилиши режалаштирилган бўлса, улар бўйича қисқа муддатларда маълумот (режа схемаси) тақдим этилишини сўраймиз.

Илова: ___ варақда.

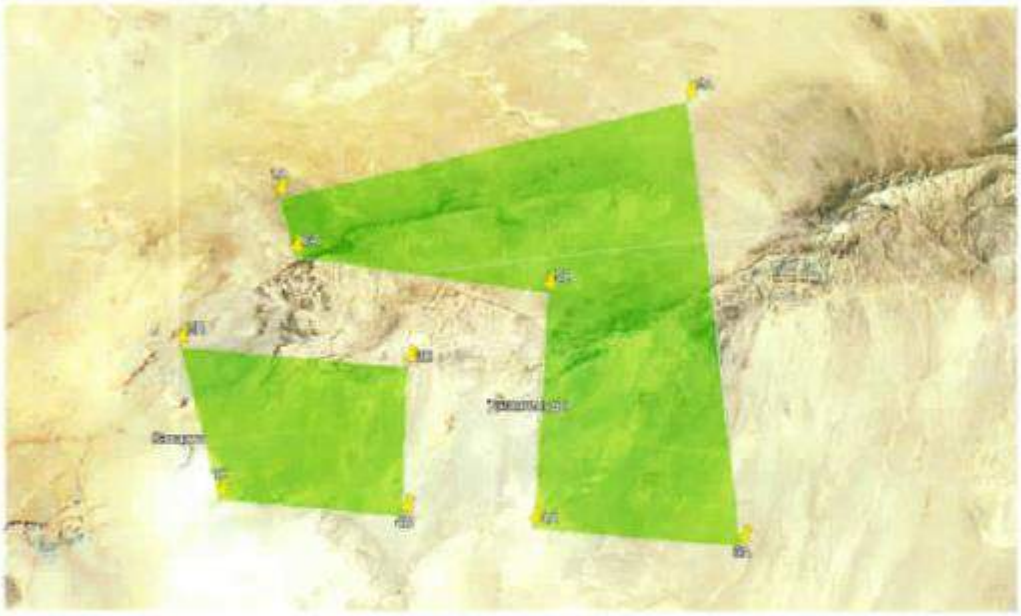
Вазир ўринбосари **Ш.Ходжаев**

Энергетика вазирлигининг
2020-йил "___" _____даги
_____-сонли хатига 3-илова

Навоий вилояти Конимех туманининг жанубий кисми ва Бухоро вилояти Пешкў туманиниг шимоли-шарший кисмида жойлашган ер майдони

T/p	Шимолий кенглик	Шаркий узунлик
1A	40°57'48.27"C	63°16'50.46"B
2A	40°55'16.96"C	63°29'55.02"B
3A	40°45'12.02"C	63°24'45.48"B
4A	40°47'56.21"C	63°19'08.84"B
5A	40°52'46.28"C	63°23'02.16"B
6A	40°56'22.65"C	63°16'25.00"B

1B	40°52'4.71"C	63°10'39.42"B
2B	40°55'58.83"C	63°11'54.94"B
3B	40°52'41.79"C	63°18'19.71"B
4B	40°49'37.77"C	63°15'40.62"B



Энергетика вазирлигининг
2020-йил "___" _____ даги
_____-сонли хатига 4-илова

Бухоро вилоятининг Ғиждувон туманида, Аякатилма сув хавзаси шимоли-шаркий қисмида жойлашган ер майдони

Т/р	Шимолий кенглик	Шарқий узунлик
1	40°42'20.07"С	64°34'7.35"В
2	40°42'15.46"С	64°46'30.88"В
3	40°40'5.05"С	64°46'34.67"В
4	40°38'14.16"С	64°44'40.83"В
5	40°38'0.30"С	64°45'10.81"В
6	40°35'53.17"С	64°43'39.94"В
7	40°34'44.21"С	64°44'26.31"В
8	40°32'22.00"С	64°43'22.65"В
9	40°32'15.54"С	64°37'45.72"В
10	40°37'55.93"С	64°37'32.44"В
11	40°40'2.94"С	64°35'54.42"В
12	40°40'19.12"С	64°33'7.32"В
13	40°41'46.04"С	64°33'18.55"В

Unofficial translation

14.09.2020 No. 03-07-4736

To JSC "Uztransgaz"

In order to implement 4th part of the Presidential decree No.4422 dated 22.08.2019, On April 14, 2020, the Ministry of Energy jointly with the EBRD announced a tender to select investors for the construction of a 100 MW wind power plant in the Beruniy and Karauzak districts of the Republic of Karakalpakstan on the basis of a public-private partnership. In addition, currently, together with foreign investors, work is underway on the construction of wind power plants with a total capacity of 1,500 MW in the Navoi and Bukhara regions.

Within the framework of investment projects, the Ministry of Energy, foreign companies and technical specialists of the EBRD have determined the optimal land areas for Wind power plants. (See attached annex).

Taking into account that long-term contracts with investors are expected to be signed, we ask you to provide information (plan-scheme) as shortly as possible on selected land plots where there are high-pressure gas pipelines, as well as new pipelines are planned.

Deputy Minister signature Sh. Khodjayev

Annex 3

Project layout located in Konimekh district if Navoi region and Peshku district of

T/p	Шимолий кенглик	Шаркий узунлик
1A	40°57'48.27"C	63°16'50.46"B
2A	40°55'16.96"C	63°29'55.02"B
3A	40°45'12.02"C	63°24'45.48"B
4A	40°47'56.21"C	63°19'08.84"B
5A	40°52'46.28"C	63°23'02.16"B
6A	40°56'22.65"C	63°16'25.00"B

1B	40°52'4.71"C	63°10'39.42"B
2B	40°55'58.83"C	63°11'54.94"B
3B	40°52'41.79"C	63°18'19.71"B
4B	40°49'37.77"C	63°15'40.62"B

Anne 4

Project layout located in Gijduvon ditrict of Bukhara region, near Ayakagitma lake

T/p	Шимолий кенглик	Шаркий узунлик
1	40°42'20.07"C	64°34'7.35"B
2	40°42'15.46"C	64°46'30.88"B
3	40°40'5.05"C	64°46'34.67"B
4	40°38'14.16"C	64°44'40.83"B
5	40°38'0.30"C	64°45'10.81"B
6	40°35'53.17"C	64°43'39.94"B
7	40°34'44.21"C	64°44'26.31"B
8	40°32'22.00"C	64°43'22.65"B
9	40°32'15.54"C	64°37'45.72"B
10	40°37'55.93"C	64°37'32.44"B
11	40°40'2.94"C	64°35'54.42"B
12	40°40'19.12"C	64°33'7.32"B
13	40°41'46.04"C	64°33'18.55"B

UZTRANSGAZ
10031, Toshkent sh. Yakkasaroy t.
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info@utg.uz
uztransgaz@exat.uz

№ 05-09/1-836/5-3-2060
2020 y. «21» 09

Ўзбекистон Республикаси
Энергетика вазирлигига

Энергетика Вазирлигининг 2020 йил 14 сентябрдаги 03-07-4736 – сонли хатини ўрганиб чиқиб, "Ўзтрансгаз" АЖ қуйидагиларни маълум қилади.

Инвестиция лойиҳалари доирасида, Энергетика вазирлиги, хорижий компаниялар ва ЕТТБ техник мутахассислари томонидан "Шамол электр станциялар" қуриш учун танланган ер майдонлари тақдим этиган координаталар асосида ўрганилди.

Ўрганиш натижасида тақдим этилган координаталардан фақат Бухоро вилояти, Ғиждувон тумани, Аяқатилма сув ҳавзаси шимолий-шарқий қисмида ажратилган 6, 7, 8 ва 9 координатадаги ер майдонидан диаметри 1220 мм бўлган юқори босимли "Газли-Чимкент" магистрал газ қувурининг 107-118 км участкаси ўтганлиги аниқланди.

"Қурилиш меъёрлари ва қоидалари" (ҚМҚ 2.05.06-97) меъёрий ҳужжатига кўра диаметри 1220 мм бўлган магистрал газ қувурнинг муҳофаза зонаси қувур ўқидан ҳар икки томонга 350 метр деб белгиланган.

Бошқарув раиси ўринбосари **А. Алимов**

Баж:МГКФД
тел:99-808-77-86

Unofficial translation

No. 05-09/1-836/5-3-2060
21.092021

To the Ministry of Energy of the Republic of Uzbekistan

After studying the letter of the Ministry of Energy dated September 14, 2020, No. 03-07-4736, JSC "Uztransgaz" informs the following:

Within the framework of investment projects, the land plots allocated for WF construction on the basis of the coordinates provided by technical specialists of the Ministry of Energy, foreign companies and EBRD have been studied.

According to the coordinates presented as a result of the study, it was determined that the high-pressure gas pipeline "Gazli-Chimkent" sections 107-118 km with a diameter of 1220 mm passed through the 6, 7, 8 and 9 coordinates near Agitma Lake, Gijduvan district of the Bukhara region.

According to the “Construction norms and regulations” (KMK 2.05.06-97) buffer zone for gas pipelines with a diameter of 1220 mm established as 350 metres from each side.

deputy Manager **signature** **A.Alimov**

APPENDIX P - CONSULTATION LETTER TO & FROM RAILWAY AUTHORITY OF UZBEKISTAN AND MINISTRY OF ENERGY

ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ
JURU ENERGY CONSULTING

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

JEC-OUT-21-55
05.04.2021

"O'zbekiston temir yo'llari" AJga

O'zbekiston Respublikasi Prezidentining 23.02.2021-yildagi "Buxoro viloyati G'ijduvon tumanida 500MVt shamol elektr stansiyasi qurish loyihasini amalga oshirish chora-tadbirlari to'g'risida" 5003-sonli qarori bilan 'ACWA Power Bash Wind' MCHJ (Toshkent) XKsi O'zbekiston milliy elektr tarmoqlari AJ bilan 25 yillik elektr sotib olish shartnomasini tuzdi. Ushbu shartnoma Buxoro viloyati G'ijduvon tumanidagi 500MVt shamol elektr stansiyasini rivojlantirish, moliyalashtirish, qurish va ekspluatatsiya qilish maqsadida 2021-yilning 24- yanvarida kuchga kirdi.

Shuningdek, loyiha 500 kVt bir yo'nalishli havo elektr uzatish liniyasini ishlab chiqishni ham o'z ichiga oladi. Ushbu elektr uzatish liniyasi Bash 500MVt ACWA Power shamol elektr stantsiyasi va ACWA Power Djankeldy 500MVt shamol elektr stantsiyasi o'rtasida bo'lnadi. Hozirgi paytda elektr uzatish liniyasi yo'nalishi "O'zbekiston Milliy elektr tarmoqlari" AJ tomonidan ishlab chiqilmoqda va bu liniyalar Qorako'ldagi mavjud podstansiyaga ulanishi kutilmoqda.

Ekologik va ijtimoiy ta'sirni baholash loyihasini amalga oshirish maqsadida Juru Energy O'zbekiston temir yo'llari AJdan tegishli bo'lgan ma'lumotlarni, shuningdek, rejalashtirilayotgan loyiha maydonini janubi-sharqdan shimoli-g'arbiy yo'nalish bo'yicha kesib o'tuvchi temir yo'l liniyasi haqida 2-ilovada keltirilgan masalalar bo'yicha batafsil ma'lumot olish uchun yordam so'raydi

Direktor **J.Yakubov**

Ijrochi:
Gulchekhra Nematullaeva

Murojaat uchun: +99871 202 04 40
+99897 445 95 04

JEC-OUT-21-55
05.04.2021 xatiga
1-ilova

Loyiha Buxoro viloyatining G'ijduvon tumanida joylashgan

Loyiha koordinatalari

Shimoliy kenglik	Sharqiy uzunlik
ACWA Power 500MW loyiha maydoni	
4488709.16	637987 39
4489065.00	645911.20
4492652.15	646074 46
4493476.69	647325 10
4495585 81	646194 93
4498671.77	646323.63
4498528.88	646690 97
4499538.02	648248 52
4500867.54	648351 79
4503425.70	650137 28
4507450.24	649969 59
4507264.73	632532 51
4506189 41	631394 22
4503502.14	631176 63
4503073 76	635108 38
4499198.71	637482 55

JEC-OUT-21-55
05.04.2021 xatiga
2-ilova
So'rovnoma

No.	Savol	Javob
1.	Loyiha maydonini kesib o'tuvchi temir yo'lga O'zbekiston temir yo'llari AJning qaysi filiali egalik qiladi va boshqaradi?	
	Iltimos, filialning aloqa ma'lumotlarini taqdim eting	
2.	Loyiha maydonida temir yo'ldan tashqari sizga tegishli bo'lgan biorta inshoot mavjudmi?	
	Agar mavjud bo'lsa, ushbu obyektlarning tabiati va ularning koordinatalari haqida ma'lumot bering.	
3.	Loyiha maydonida temir yo'l bekati joylashganmi?	
	Agar joylashgan bo'lsa, bu yerda poyezdlar toxtaydimi? Agar toxtasa, qanday vaqt oralig'ida to'xtaydi?	
4	Agar loyiha maydonida temir yo'l bekati bo'lsa, u yerda ishchilar bormi?	
	Temir yo'l bekatida qancha ishchi bor?	
	Ishchilarning birortasi yaqin mahallalardan ishga olinganmi? Agar yaqin mahallalardan olingan bo'lsa, necha nafar ?	
5.	Temir yo'l qaysi shahar/tuman/viloyatlarni bog'laydi?	
6.	Ushbu temir yo'l bekatining ish jadvali qanday?	
7.	Dispetcherlar qayday muddatlarda almashib turishadi? Ular doim navbatchilikda bo'lishadimi?	
8	U yerda qanday turdagi poyezdlar o'tadi? (yo'lovchi yoki yuk poyezdlari)	
	Agar yo'lovchi poyezd bo'lsa iltimos, jadvalini taqdim eting.	
	Agar yuk tashuvchi poyezd bo'lsa,iltimos, jadvalini taqdim eting.	
	Poyezdlarning harakatlanish yo'nalishi o'zgarmasmi?	
	Yuk poezdlarini qanday yuklarni tashishadi va ular orasida katta hajmga ega bo'lgan yuklar bormi?	
	Ularda kimyoviy/portlovchi/yonuvchan yuklar tashiladimi?	
9.	Dispetcherlarning aloqa ma'lumotlarini taqdim eta olasizmi?	
10	Temir yo'l liniyasi sanitariya-muhofaza zonasiga egami? - Agar ega bo'lsa, iltimos, sanitariya-muhofaza zonasi koordinatalarini taqdim eting - Iltimos, bu sanitariya-muhofaza zonasining kengligini temir yo'llarning ikki tarafiga nisbatan metr yoki kilometrlarda taqdim eting.	

11	Iltimos, temir yo'l liniyalarining xizmat ko'rsatish yo'lagi haqida (ikki taraflama bo'lgan kengligi va h.k.) ma'lumot bering.	
12	O'zbekiston temir yo'llari loyiha maydonidan temir yo'l liniyasini ishlatish va xizmat ko'rsatish bilan bog'liq bo'lmagan boshqa maqsadlarda foydalanadimi?	
	Agar foydalansa, bu haqda qo'shimcha ma'lumot bering.	
13	Iltimos, har qanday qo'shimcha izoh/ma'lumotni taqdim eting (agar mavjud bo'lsa)	

ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ
JURU ENERGY CONSULTING

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

JEC-OUT-21-40
29.03.2021

To JSC O'zbekiston temir yo'llari

Under Presidential Decree of the Republic of Uzbekistan No.5003 dated 23.02.2021 "On measures to implement the investment of the Project on construction of a 500MW wind power plant in Gijduvon district in Bukhara region", FE 'ACWA Power Bash Wind' LLC (Tashkent)' has entered into a 25-year Power Purchase Agreement with JSC National Electric Networks of Uzbekistan. This agreement was entered into on 24th January 2021 for the development, financing, construction and operation of a 500MW Wind Farm in Gijduvon district of Bukhara region (See Annex 1).

The project also includes the development of an Overhead Transmission Line (OHTL) with a rating of 500kV single circuit. This OHTL will be shared between ACWA Power's Bash 500MW Wind Farm and the ACWA Power Dzhankeldy 500MW Wind Farm. The alignment of the OHTL is being finalised by JSC National Electric Networks of Uzbekistan and will connect to an existing substation in Qurako'l.

As a part of the ESIA, Juru Energy is consulting with JSC O'zbekiston temir yo'llari to request for any data or comments that will be relevant to the preparation of the Project ESIA. In addition, we would like to request for your assistance in obtaining further information regarding the railway line that splits the proposed project site in a south-east to north-west direction as detailed in Annex 2 below.

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely,

Director

For the further information please contact:
Gulchekhra Nematullaeva

Phone: +99871 202 04 40
Mob.: +99897 445 95 04

Annex 1
To the letter JEC-OUT-21-40
29.03.2021

The project is located in Gijduvon district of Bukhara region

Project Coordinates (based on preliminary co-ordinates)

NORTHING	EASTING
ACWA Power 500MW Project Site	
4488709.16	637987.39
4489065.00	645911.20
4492662.15	646074.46
4493476.69	647325.10
4495585.81	646194.93
4498671.77	646323.63
4498528.88	646690.97
4499538.02	648248.52
4500867.54	648351.79
4503425.70	650137.28
4507450.24	649969.59
4507264.73	632532.51
4506189.41	631394.22
4503502.14	631176.63
4503073.76	635108.38
4499198.71	637482.55

Annex 2
To the letter
Questionnaire

No.	Clarification	Response
1.	Which branch of O'zbekiston temir yo'llari owns and operate the railway line crossing the project site?	
	If different from your office, please provide us with their contact details for further consultations?	
2.	Apart from the railway line, are there any other facilities located on the project site?	
	If yes, please provide information on the nature of these facilities and their coordinates.	
3.	Is there a train station located on the project site?	
	If yes, do trains stop here and if so, how often?	
4.	If there is a train station at the project site, please clarify whether you have any workers located at the station.	
	How many workers are located at the railway station?	
	Are any of these workers from local communities? If so, how many?	
5.	What cities/districts/regions does this railway line connect?	
6.	What is the operation schedule of this railway station?	
7.	How often do dispatchers change and are they always on duty?	
8.	What kind of trains pass there (civil, freight)?	
	If civil trains, please specify its schedule	
	If freight, please specify its schedule	
	Could you clarify if the direction of trains is specific?	
	What kind of cargo do freight trains carry and does it include any wide loads?	
	Do they transport chemical/explosive / flammable materials?	
9.	Could you provide the dispatchers' contact details?	
10	Does the railway line have a buffer zone or protected zone? - If so, please provide the coordinates of the buffer zone - Please provide the width of this protection/buffer zone on each side of the railway line in meters or km	
11	Please provide us with details on the maintenance corridor for the railway line i.e., what is the width on each site etc.	
12	Does O'zbekiston temir yo'llari use the site for any other purposes apart from those related to the operation and maintenance of the railway line?	
	If yes, please provide us with additional information on what these uses are.	
13	Please provide any additional comments/information (if any)	

«O'ZBEKISTON TEMIR YO'LLARI»
AKSIYADORLIK JAMIYATI

100060, Toshkent sh., T.Shevchenko ko'chasi, 7-uy, tel.: 238-60-28, fax: 233-69-24
info@uzrailway.uz, uzrailway@exat.uz

№ 1080
2021 йил «03» 05

"JURU ENERGY CONSULTING" МЧЖ
директори Ж.У. Якубовга

2021 йил 05 апрелдаги
JEC-OUT-21-55 сонли хатингизга

"Ўзбекистон темир йўллари" АЖ Бухоро вилояти Ғиждувон туманида 500MVt шамол электр станциясини қуриш лойиҳаси доирасида тегишли маълумотларни сўраб ёзган мурожаатингиз ўрганиб чиқилди.

Режалаштирилаётган лойиҳани амалга ошириш мақсадида темир йўл билан боғлиқ масалалар бўйича иловага мувофиқ маълумотларни тақдим этади.

Илова: 1 варақда.

Бош менежер-
бош муҳандис ўринбосари **А.Н. Абдурахмонов**

Ижрочи: Хурсанов З.Р.
Тел: (71) 237-96-75

"Ўзбекистон темир йўллари" АЖнинг
"03" 05 2021 йилдаги
№ 1080 сонли хатига илова

1.	Лойиҳа майдонини кесиб ўтувчи темир йўлга Ўзбекистон темр йўллари АЖнинг қайси филиали егалик қилади ва бошқаради?	"Бухоро минтақавий темир йўл узели" Унитар Корхонаси
	Илтимос, филиалининг алоқа маълумотларини тақдим этинг.	+998 71 237-91-21
8.	У ердан қандай турдаги поездлар ўтади? (йўловчи ёки юк поездлари)	юк ва йўловчи поездлари ўтади
	агар йўловчи поездлар бўлса, илтимос жадвалини тақдим этинг	бир ҳафтада 2 маротаба (душанба, жума кунлари) ҳаракатланади
	агар юк ташувчи поезд бўлса, илтимос, жадвалини тақдим этинг.	жадвал асосида ҳаракатланмайди
	поездларнинг ҳаракатланиш йўналиши ўзгарадими?	ўзгаради
	юк поездларида қандай юкларни ташилади ва улар орасида катта ҳажмга эга бўлган юклар борми?	Ҳар-хил турдаги юклар ташилади, улар орасида катта ҳажмга эга бўлган юклар ҳам мавжуд
	Уларда кимёвий/портловчи/ёнувчан юклар ташиладими?	ташилади

Unofficial translation
No. 1080
03.05.2018

To the director of "Juru Energy Consulting" LLC J.Yakubov

Response to the letter JEC-OUT-21-55 dated 05.04.2021

In a framework of the Project for the construction of a 500 MW wind farm in the Gijuvon district of the Bukhara region, your application to the JSC "O'zbekiston temir yo'llari" was studied.

In order to carry out the planned project, we provide information in accordance with the application on issues related to the railway.

General Manager-
Chief Engineer **signature** **A.N.**
Abdurakhmanov

For further information please contact:
Khursaniv Z.R
Tel: 71 237 9675

Annex to the letter of JSC "O'zbekiston temir yo'llari"
No. 1080 dated 3.05.2021

No.	Clarification	Response
1.	Which branch of O'zbekiston temir yo'llari owns and operate the railway line crossing the project site?	"Bukhara regional railway unit" Unitary Enterprise
	If different from your office, please provide us with their contact details for further consultations?	+99871 237 91 21
8.	What kind of trains pass there (civil, freight)?	Civil and freight trains pass
	If civil trains, please specify its schedule	Twice a week (on Monday and Friday)
	If freight, please specify its schedule	There's no specific schedule
	Could you clarify if the direction of trains is specific?	The direction of trains are not specific
	What kind of cargo do freight trains carry and does it include any wide loads?	Various type of cargo carried by freight trains and this includes wide loads as well
	Do they transport chemical/explosive / flammable materials?	Yes, they do

«O'ZBEKISTON TEMIR YO'LLARI»
AKSIYADORLIK JAMIYATI

100060, Toshkent sh., T.Shevchenko ko'chasi, 7-uy, tel.: 238-60-28, fax: 233-69-24
info@uzrailway.uz, uzrailway@exat.uz

№ 1080
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"JURU ENERGY CONSULTING" МЧЖ
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2021 йил 05 апрелдаги
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Илова: 1 варақда.

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	агар юк ташувчи поезд бўлса, илтимос, жадвалини тақдим этинг.	жадвал асосида ҳаракатланмайди
	поездларнинг ҳаракатланиш йўналиши ўзгарадими?	ўзгаради
	юк поездларида қандай юкларни ташилади ва улар орасида катта ҳажмга эга бўлган юклар борми?	Ҳар-хил турдаги юклар ташилади, улар орасида катта ҳажмга эга бўлган юклар ҳам мавжуд
	Уларда кимёвий/портловчи/ёнувчан юклар ташиладими?	ташилади

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03.05.2018

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Annex to the letter of JSC "O'zbekiston temir yo'llari"
No. 1080 dated 3.05.2021

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«O'ZBEKISTON TEMIR YO'LLARI»
AKSIYADORLIK JAMIYATI

100060, Toshkent sh., T.Shevchenko ko'chasi, 7-uy, tel.: 238-80-28, fax: 233-69-24
info@uzrailway.uz, uzrailway@exat.uz

2021-yil «11» 06
№ 1420

Ўзбекистон Республикаси
Энергетика вазирлиги

Сизнинг, Ғиждувон туманида шамол электр станциясини қуриш тўғрисидаги 2021 йил 20 майдаги 03-07-3011-сонли хатингиз "Ўзбекистон темир йўллари" акциядорлик жамияти томонидан кўриб чиқилди ва қуйидагиларни маълум қиламиз.

Хатингизда кўрсатиб ўтилган жой "Навоий-Учқудук" темир йўл йўналишининг "Конимех-139-Разезд" темир йўл бекатлари оралиғига тўғри келади.

Ушбу жойнинг темир йўл муҳофаза минтақаси ҳудуди кенглиги ҚМҚ-нинг 2.10.10-97 "Темир йўллар учун ер ажратиш меъёрлари"га асосан, асосий темир йўл ўки изидан чап ва ўнг томондан **12 (ўн икки) метр** масофани ва темир йўл бекатларида **50 (эллик) метр** масофани ташкил этади.

Темир йўл муҳофаза минтақаси поездлар ҳаракати ҳавфсизлигини таъминлаш ҳамда темир йўл кўтармаларини сақланиши, темир йўл транспорти бинолари ва иншоотлари мустаҳкамлигини, поездлар ҳаракати жараёнини узлуксиз таъминлаш мақсадида ўрнатилади.

Амалдаги шаҳарсозлик ва қурилиш меъёрлари ва қоидаларига асосан, темир йўл муҳофаза минтақаси ҳудудида, юридик ва жисмоний шахслар, масъулияти чекланган жамиятлар, хусусий ва бошқа корхоналар томонидан ҳар қандай қурилишлар ман этилади.

Темир йўл ости ва устки қисмидан коммуникацияларни ўтказилиши, бошқарма раҳбарияти томонидан берилган техник шартлар бўйича тузилган лойиҳалар ва маҳаллий корхоналарнинг келишуви асосида ўтказилади.

Шунингдек, оғир юкли автотранспорт воситаларининг темир йўл кесишмаларидан ўтиш жараёнида ГОСТ 9238-83 темир йўл қурилмаларига яқинлашиш габаритлари норматив ҳужжатига риоя килган ҳолда баландлиги 4,50 метрдан ошмаслиги керак.

Ҳамда оғир юкли автотранспорт воситаларининг темир йўл кесишмаларидан ўтиш жараёни келишиш учун, "Ўзбекистон темир йўллари" АЖ раҳбариятининг рухсатномасини олиш учун беш иш куни олдин мурожаат этилиши лозим.

Мурожаатда маршрут йўналиши ва габаритлар бўйича умумий параметрлар кўрсатилиши лозим. -

Шуни такидлаб ўтишимиз лозимки, шамол электр станциясининг ускуналари темир йўлдан шундай масофада жойлашган бўлиши лозимки, фавқулотда вазият (қулаш, вайронагарчилик ва х.к.) бўлган тақдирда уларнинг таркибий қисимлари темир йўл муҳофаза минтақасига тушмаслиги лозим.

Шу билан бир қаторда, Ўзбекистон Республикаси Вазирлар Маҳкамасининг 2008 йил 28 июндаги 05/83-38 сонли баёнига биноан, муҳофаза минтақаси ҳудудида

ва унга чегарадош ҳудудларда **Хар қандай қурилиш объектларини** лойиҳалаш жараёни "Ўзбекистон темир йўллари" АЖ билан келишиши лозим.

Бош менежер-
бош муҳандис ўринбосари **Н.А. Абдурахмонов**

Баж. Турсунов Р.Т.
Тел. (71) 237-93-06

Joint Stock Company "Uzbekistan Railways"

No 1420

11.06.2021

To Ministry of Energy of the Republic of Uzbekistan

In response to your letter 03-07-3011 dated on 20.05.2021 regarding construction of wind power plant in Gijduvan district we hereby to inform you on followings.

"Konimekh-139" railway station that belong to "Navoi-Uchkuduk" railway direction crosses territory allocated for the for construction of wind power plant.

Based on KMK 2.10.10-97 "Norms and regulations for allocation of land for railways", 12 (twelve) meters of buffer zone should be kept along the railways itself, and 50 (fifty) meters of buffer zone should be kept for railway station.

Buffer zone is established to ensure the safety of trains, stations, as well as continuous schedule of trains movements.

Based on existing legislation for urban planning and constructional regulations, physical and legal entities, limited liability companies are not allowed to construct any facilities in the buffer zone of railways.

Any means of communication that might be established under or above railways should be agreed with management considering the all technical requirements.

All transportation issues should follow requirements indicated in GOST 9298-83 (State standards) and the height of transported cargo should not exceed 4.50 meters.

In addition, while transporting heavy equipment that might cross railways it is necessary to get written permission from management of "Uzbekistan railways". Application for getting permission should contain detailed information on transportation route and type of equipment that is being transported 5 days in advance.

It is important to highlight that facilities of wind power plant should be placed on a safe distance from railways in order to avoid any damages in case emergency (falling of wind turbines etc).

Furthermore, in accordance with Resolution of Cabinet of Ministries 05/83-38 dated on 28.06.2008 **any type of constructions near (or at the buffer zone) should be agreed at the planning stage** with Uzbekistan Railways

Senior manager/deputy head engineer **N.A.Abdurakhmonov**

APPENDIX Q – PROOF OF CONSULTATION WITH CIVIL AVIATION AGENCY, BUKHARA REGIONAL MUNICIPALITY AND MINISTRY OF ICT

O‘ZBEKISTON RESPUBLIKASI
TRANSPORT VAZIRLIGI HUZURIDAGI
FUQARO AVIATSIYASI AGENTLIGI

“O‘ZAVIATSIYA” AGENTLIGI

CIVIL AVIATION AGENCY
UNDER THE MINISTRY OF TRANSPORT
OF THE REPUBLIC OF UZBEKISTAN

CAA OF UZBEKISTAN

O‘zbekiston Respublikasi, 100015, Toshkent shahri, Nukus ko‘chasi, 73“b”- uy / 73 “b” Nukus street, Tashkent, 100015, Republic of Uzbekistan
Tel.: (+998 78) 120-00-60, Fax: (+998 71) 254-14-82, www.uzcaa.uz, E-mail: caa@uzcaa.uz, E-xat: uzcaa@exat.uz

2020 y. « ___ » _____ №01-39/11-1270 « 19 » 07 2021г.

Генеральному директору
ИП ООО «ACWA POWER BASH WIND»
и ИП ООО «ACWA POWER DZHANKELDY WIND»
Онаркулову Ш.К.

На исх. № 36 и 37
от 13.07.2021г.

Агентство «Узавиация» рассмотрело материалы, представленные Вами на выдачу разрешения по размещению объектов в районах аэродромов гражданской и экспериментальной авиации, которые могут угрожать безопасности полетов воздушных судов.

По итогам рассмотрения представленной информации о предварительное месте установке ветряных электростанций сообщаем следующее:

- предварительное места установки объектов находится в пределах поверхности круга учета препятствий и не превышает ограничивающие поверхности;

- объекты может быть рассмотрен в установленном порядке при поступлении заявления в соответствие с приложением №3, постановлением Кабинета Министров от 11.08.2014 года №226.

Также информируем что, указанные объекты высотой более чем 50 метров согласно постановлению выдача разрешения дополнительно согласовывается с Министерством обороны Республики Узбекистан.

Исходя из вышеизложенного, указанные объекты в вашем письме подлежат согласованию в Агентстве «Узавиация» и будет в установленном порядке рассмотрены после получение все необходимые документы.

И.о. директор **Ульжаев Т.Э.**

Unofficial translation

CAA of Uzbekistan
No. 01-39/11-1270 dated 19.07.2021
To the director of FE “ACWA POWER BASH WIND” LLC and FE “ACWA POWER DZHANKELDY WIND” LLC Sh. Onarkulov

The agency "Uzaviation" has reviewed the materials submitted by you for the issuance of a permit for the placement of objects in the areas of civil and experimental aviation airfields that may threaten the safety of aircraft flights.

Based on the results of the review of the information provided on the preliminary location of the installation of wind power plants, we inform you of the following:

- the preliminary location of the installation of objects is located within the surface of the obstacle accounting circle and does not exceed the limiting surfaces;
- objects can be reviewed in accordance with the established procedure upon acceptance of an application in accordance with Annex No.3, Resolution of the Cabinet of Ministers No. 226 dated 11.08.2014.

We also inform you that these objects with a height of more than 50 meters, according to the resolution, the issuance of a permit is additionally coordinated with the Ministry of Defense of the Republic of Uzbekistan.

Based on the above, the specified objects in your letter are subject to approval by the Agency "Uzaviation" and will be considered in accordance with the established procedure after receiving all the necessary documents.

Acting director signature Uljayev T.E.

O'ZBEKISTON RESPUBLIKASI
AXBOROT TEXNOLOGIYALARI
VA KOMMUNIKATSIYALARINI
RIVOJLANTIRISH
VAZIRLIGI

100047, Toshkent shahri, Amir Temur shoh ko'chasi, 4-uy
Tel.: (+998) 71-238-41-07, 71-233-65-03, Faks: (+998) 71-239-87-82
E-mail: info@mitc.uz, mitc@exat.uz

МИНИСТЕРСТВО ПО
РАЗВИТИЮ
ИНФОРМАЦИОННЫХ
ТЕХНОЛОГИЙ
И КОММУНИКАЦИЙ
РЕСПУБЛИКИ УЗБЕКИСТАН

100047, город Ташкент, улица Амира Темура 4,
Тел.: (+998) 71-238-41-07, 71-233-65-03, Факс: (+998) 71-239-87-82
E-mail: info@mitc.uz, mitc@exat.uz

2021 y. "11" avgust № 17-8/5679

"ACWA POWER DZHANKELDY WIND" ва "ACWA POWER BASH WIND" МЧЖ шаклидаги хорижий корхоналари

Сизнинг 2021 йил 28 июлдаги
40 ва 41- сон хатларингизга жавоб

"ACWA POWER DZHANKELDY WIND" МЧЖ ва "ACWA POWER BASH WIND" МЧЖ шаклидаги хорижий корхоналари томонидан Бухоро вилоятининг Пешкў ва Ғиждувон туманларида қурилиши режалаштирилган шамол электростанциялари учун ажратилган ер майдонларида телекоммуникация тармоқлари ва алоқа иншоотлари мавжуд эмаслигини маълум қиламиз.

Вазир ўринбосари **Ж.Махсудов**

Unofficial translation

Ministry for Information & Communications Technology Development
No. 17-8/5679 dated 11.08.2021
To FE "ACWA POWER DZHANKELDY WIND" LLC and FE "ACWA POWER BASH WIND" LLC
Response to the letters No. 40 and 41 dated 28.07.2021

We would like to inform you that on the Project sites allocated for the construction of Wind Farms by FE "ACWA POWER BASH WIND" LLC and FE "ACWA POWER DZHANKELDY WIND" LLC in Gijduvon and Peshku districts there are not any telecommunications networks and communication facilities.

Deputy minister J.Makhsudov

APPENDIX R - CONSULTATION LETTERS MINUTES OF MEETINGS AND POWER POINT PRESENTATION WITH INSTITUTE OF ARCHAEOLOGY

ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ

JURU ENERGY CONSULTING

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

JEC-OUT-21-39
29.03.2021

Institute of Archaeology under the Academy of Sciences of the Republic of Uzbekistan

Under Presidential Decree of the Republic of Uzbekistan No.5003 dated 23.02.2021 "On measures to implement the investment of the Project on construction of a 500MW wind power plant in Gijduvon district in Bukhara region", FE 'ACWA Power Bash Wind' LLC (Tashkent) has entered into a 25-year Power Purchase Agreement with JSC National Electric Networks of Uzbekistan. This agreement was entered into on 24th January 2021 for the development, financing, construction and operation of a 500MW Wind Farm in Gijduvon district of Bukhara region (See Annex 1).

The project also includes the development of an Overhead Transmission Line (OHTL) with a rating of 500kV single circuit. This OHTL will be shared between ACWA Power's Bash 500MW Wind Farm and the ACWA Power Dzhankeldy 500MW Wind Farm. The alignment of the OHTL is being finalised by JSC National Electric Networks of Uzbekistan and will connect to an existing substation in Qurako'l.

As a part of the ESIA, Juru Energy is consulting with the Institute of Archaeology to request for any data or comments that will be relevant to the preparation of the Project ESIA. This includes locations of archaeological and cultural sites/objects near the project site (and within 5km radius of the site).

We would also like to request your clarifications on the following:

1. Are there any ongoing archaeological/cultural surveys being conducted on or near the project site?

2. If yes, would you please share the survey locations, timelines and any relevant information about the archaeological/cultural surveys?

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely,

Director

For the further information please contact:
Gulchekhra Nematullaeva

Phone: +99871 202 04 40
Mob.: +99897 445 95 04

Annex 1
To the letter JEC-OUT-21-39
29.03.2021

Project is located in G'ijduvon district of Bukhara region

Project Coordinates (based on preliminary co-ordinates)

NORTHING	EASTING
ACWA Power 500MW Project Site	
4488709.16	637987.39
4489065.00	645911.20
4492662.15	646074.46
4493476.69	647325.10
4495585.81	646194.93
4498671.77	646323.63
4498528.88	646690.97
4499538.02	648248.52
4500867.54	648351.79
4503425.70	650137.28
4507450.24	649969.59
4507264.73	632532.51
4506189.41	631394.22
4503502.14	631176.63
4503073.76	635108.38
4499198.71	637482.55

O'zbekiston Respublikasi
Fanlar akademiyasi
MILLIY ARXEOLOGIYA MARKAZI

NATIONAL CENTER OF ARCHAEOLOGY
Academy of Sciences
Republic of Uzbekistan

100170, O'zbekiston Respublikasi, Toshkent sh., Mirzo Ulug'bek ko'chasi, 81.Tel.: (+998) 712629531; (+998) 712626462;
140151, O'zbekiston Respublikasi, Samarqand sh., Vohid Abdullayev ko'chasi,3. Tel.:(+998)662321513; uzarchae@academy.uz

№ 97 06 / 04 / 2021 yil

JURU ENERGY CONSULTING
МЧЖ директори Ж. Якубовга

ЎзР ФА Миллий археология маркази Сизнинг 2021 йил 29 мартдаги №21-39 сонли хатингизга жавобан қўйидагиларни маълум қилади.

Белгиланган ҳудуд атрофида шу кунга қадар Ўзбекистон Республикаси Фанлар академияси Миллий археология маркази ва Франция илмий тадқиқотлар миллий маркази (CNRS, UMR 7041. Ўрта Осиё бўлими)нинг қадимги тош даврини ўрганувчи Ўзбекистон-Француз қўшма экспедицияси "Ўзбекистоннинг шимолий-ғарбий, марказий ва жанубий ҳудудлари тош асри археологияси" лойиҳаси асосида тадқиқотлар олиб бормоқда. Тадқиқотлар давомида ҳудудда Оёқағитма неолит даври макони ҳамда тош ва кейинги даврларга оид моддий маданият намуналари топилмалари аниқланган.

Шу боис кўрсатилган ҳудудда қадимги тош асрига оид манзилгоҳлар, тошга ишлов бериш устахоналари ва топилмажойлар ёки қадимги кўчманчи чорвадорларнинг мозорқўрғонлари мавжудлиги эҳтимолидан келиб чиққан ҳолда қурилиш режалаштирилаётган ҳудудларда дастлаб археологик қидирув ва назорат ишлари ўтказилиши мақсадга мувофиқдир.

Директор **Ф.А.Мақсудов**

Unofficial translation

National center of Archaeology
Academy of Sciences Republic of Uzbekistan

No.97 06/04/2021 **To the director of JURU ENERGY CONSULTING LLC**
J.Yakubov

The centre of national archaeology of the Republic of Uzbekistan informs you in response to your letter dated March 29, 2021 №21-35.

The indicated area is being studied and the research is being conducting on the basis of the project" Archeology of the Stone Age in the North-West, Central and southern regions of Uzbekistan" by Uzbek-French joint expedition of the National Archaeological Centre of the Academy of Sciences of the Republic of Uzbekistan and the National Centre for Scientific Research of France (CNRS, UMR 7041. Central Asia department). The study identified the Neolithic site of Ayakagitma, as well as samples of material culture from the Stone and later periods.

Taking into account the presence of ancient Stone Age settlements, stone-working workshops and cemeteries of ancient nomads and herders, it is advisable to conduct preliminary archaeological search and control work on the planned project site.

Director **signature** **F.A.Maksudov**

The point of the Neolithic site was provided later via telegram

These pictures was in a scientific book that was provided by the Institute of Archaeology

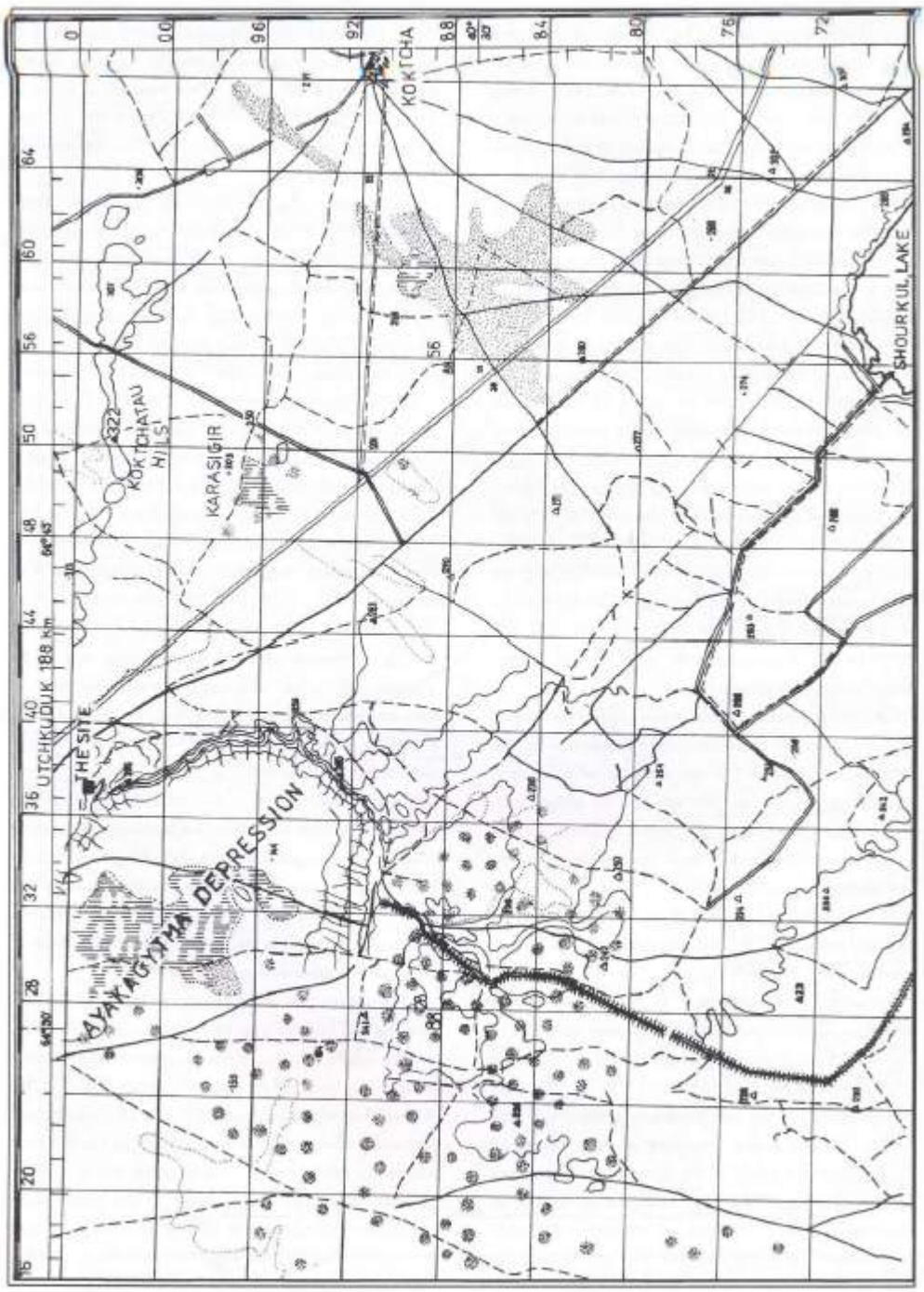
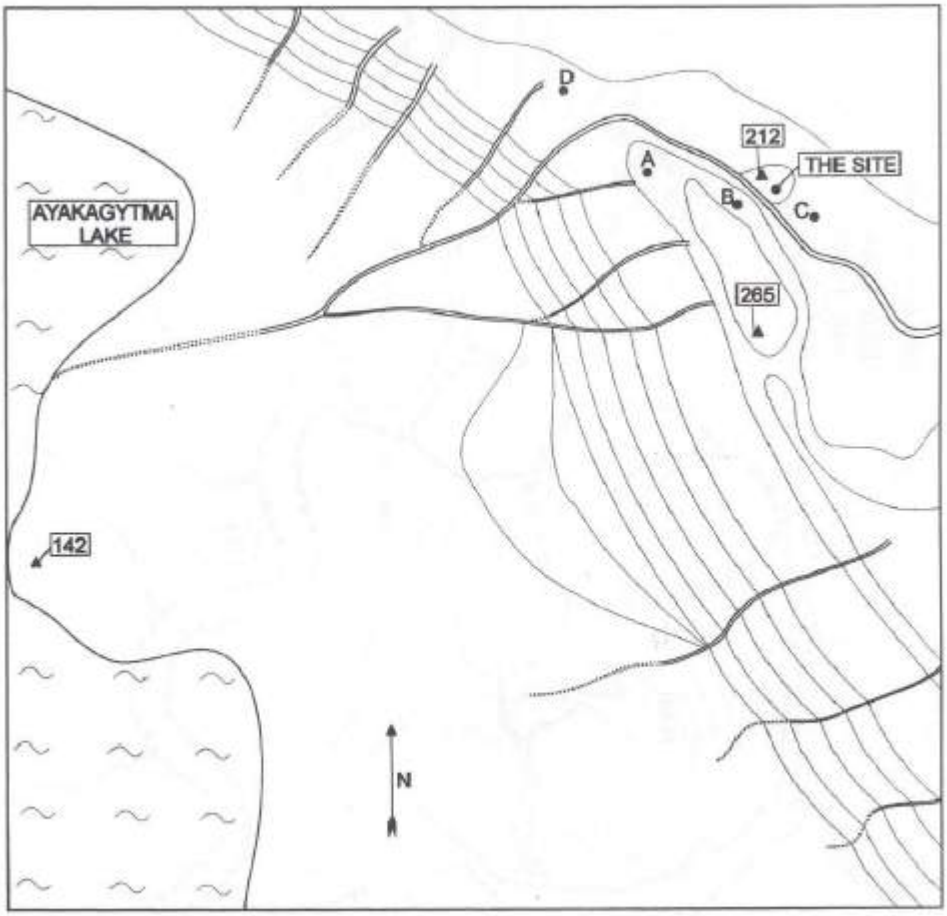


Fig. 4. Location of Ayakagytma "The Site" near the north-eastern edge of Ayakagytma Depression. Scale ca 1 : 100000. Drawn by M. Różycka.

DISCOVERY, LOCATION, AND COURSE OF FIELD WORK IN AYAKAGYTMA, 'THE SITE'



MINUTES OF MEETING

Zoom Meeting with representatives of Institute of Archaeology under the Academy of Science of the Republic of Uzbekistan

In the framework of stakeholder engagement and conducting consultations for Bash 500 MW WF and Dzahnkeldy 500 MW WF, Juru Energy issued a request to Institute of Archaeology dated on 12.04.2021 (ref.num – JEC-OUT-21-93) to determine the followings:

- Exact coordinates of archaeological findings on Project sites (both for Dzhankeldy and Bash wind farms);
- Background information about conducted research at the Project sites (both for Bash and Dzhankeldy);
- Preliminary timeline and budget for conducting survey on the Project sites.

The meeting agenda included discussion of the above mentioned issues during a Zoom meeting held on April 19, 2021 at 15.30pm (Tashkent time).

A summary of the meeting is provided below.

Stakeholder group:	**Interest based**
Institute of Archaeology	Mr Muminkhon Saidov – Deputy Director of Samarkand brach of Institute of Archaeology Bakhtiyor Sayfullayev – Senior Researcher
5 Capitals Environmental and Management Consultancy	Ms.Eva Kimonye – Senior Environmental Consultant
Juru Energy	Ms Umida Rozumbetova – Acting Head of E&S practice group
Meeting language:	Uzbek
Date:	19.04.2021
Start time:	15:30
End time:	16:30
Method of engagement:	Formal letter to the Institute of Archaeology under Academy of Science on 12.04.2021 (JEC-OUT-21-93)
Venue:	Zoom call
Used materials and visual aids	Power point presentation from Institute of Archaeology

Agenda for meeting

1. Background information regarding previous conducted research at the Project sites in Bash and Dzhankeldy;
2. Coordinates/location of places where research has been conducted
3. Discussion of possibilities to arrange an archaeological survey at Bash and Dzhankeldy Project sites.
4. Q&A

The meeting was opened by Umida (Juru Energy) who introduced everyone in attendance. Umida continued the meeting by stating the agenda of the meeting and inviting the Institute of Archaeology to provide an overview of the research conducted within the project areas.

Bakhtoyor Sayfullayev stated that he had prepared a power point presentation which was shared on the screen over Zoom.

Starting the presentation Mr. Sayfullayev highlighted that Kyzilkum desert is of significant importance for archaeological research. He stated that the Institute of Archaeology has conducted joint research with foreign experts since 1996. The research efforts have led to the discovery of around 1600 of archaeological monuments belonging to Neolithic period .

The last research was conducted in 2015 along the northern shore of Ayakagitma lake as well as near the cliffs along the lake. This expedition was conducted as a collaboration between Uzbek & French researchers.

Figure 1: Locations of researched places at Bash Project site (red spots)

Figure 2: Findings

The Project site of Dzhankeldy WF has been less researched compared to the Bash. The last conducted expedition at Dzhankeldy was in 1980 by the archaeologist A. Vinogradov. Since the surveys were not continued and existing data was not updated, Mr. Sayfullayev stated that it was

difficult to determine the coordinates of surveyed places or location of any potential archaeological finds.

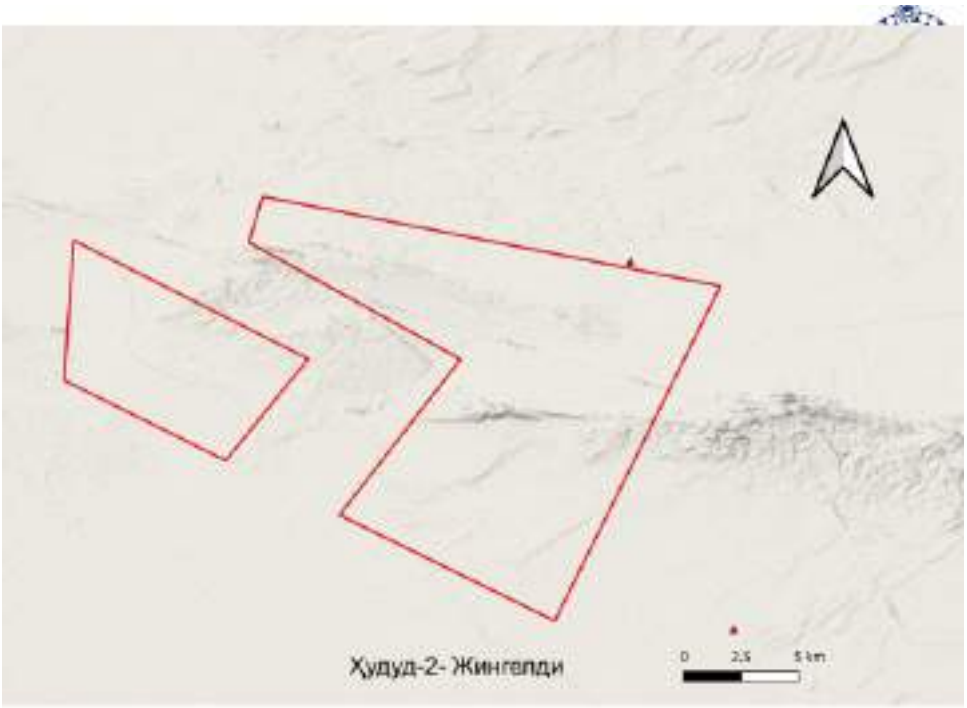


Figure 3: preliminary location of the last conducted research (red point on the eastern plot)

The main findings of these research is attached as ppt file both in Uzbek and in English languages.

Based on the request for clarification form 5 Capitals on who would be responsible for covering the costs of the required preliminary archaeological surveys, the Institute representatives prepared preliminary budget timeline and budget. According to the Institute, overall it will take 2 months to conduct research and prepare report, i.e., 1 month for field works and 1 work for lab works and report preparation. This will be a total of 4 months for both Bash and Dzhankeldy. It is not clear at this point which entity would be responsible for funding for the preliminary archaeological surveys.

Regarding the budget, the Institute estimated that it would be 75 mln UZS for each Project site. Costs breakdown are as provided below:

- Travel expenses-20 mln UZS;
- Necessary equipment -25 mln UZS;
- Transportation costs *- 42 mln UZS (2 means of transport for 1 month, approx. 70+70 USD per day);
- Discount for the institute-20 mln UZS.

* The customer can alternately solve the transportation issue and discount this cost.

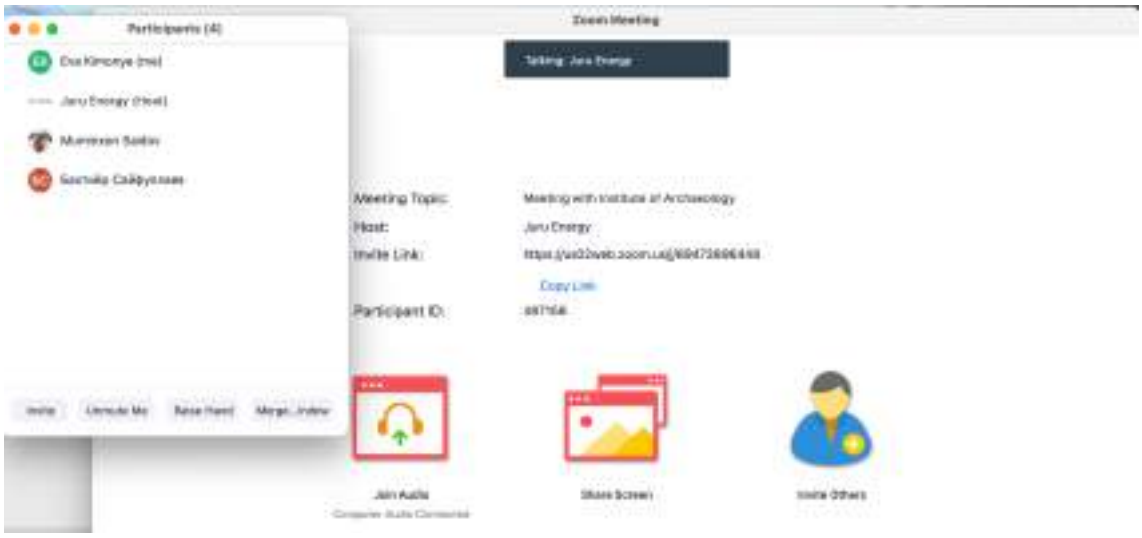
Q&A session followed after main discussion.

Question	Response
Umida rozumbetova: Can please share the information regarding foreign researchers that participated in previous conducted surveys?	**Bakhtiyor Sayfullayev:** Yes, we will need some time to compile this information.
Umida Rozumbetova: We would appreciate if you can give us locations (coordinates) of places at project sites and surrounding area.	**Bakhtiyor Sayfullayev:** Yes, we will search in our archives. However, we would like to stress that the existing information for Dzhankeldy site might not be accurate, as the last expedition was conducted in 1980.
Umida Rozumbetova:	**Bakhtiyor Sayfullayev:**

Are there specific timeline (seasons) when archaeological surveys should be conducted?	The common recognized period is starting from March and ending in October.

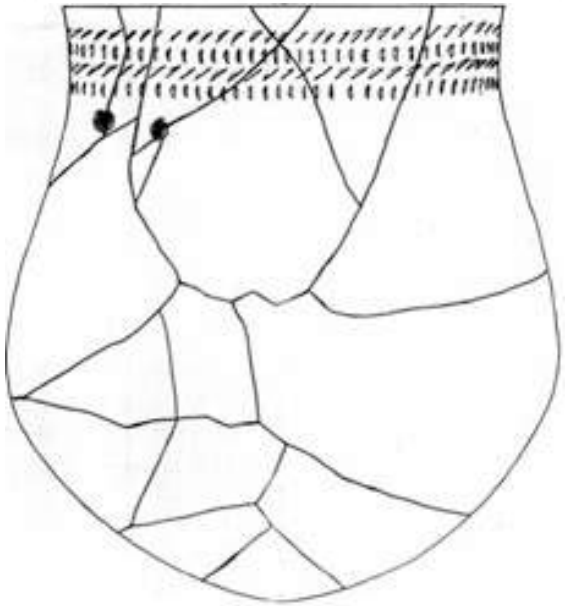
Power Point Presentation from Institute of Archaeology

Virtual Attendance List



INSTITUTE OF ARCHAEOLOGY
OF UZBEKISTAN ACADEMY OF SCIENCES

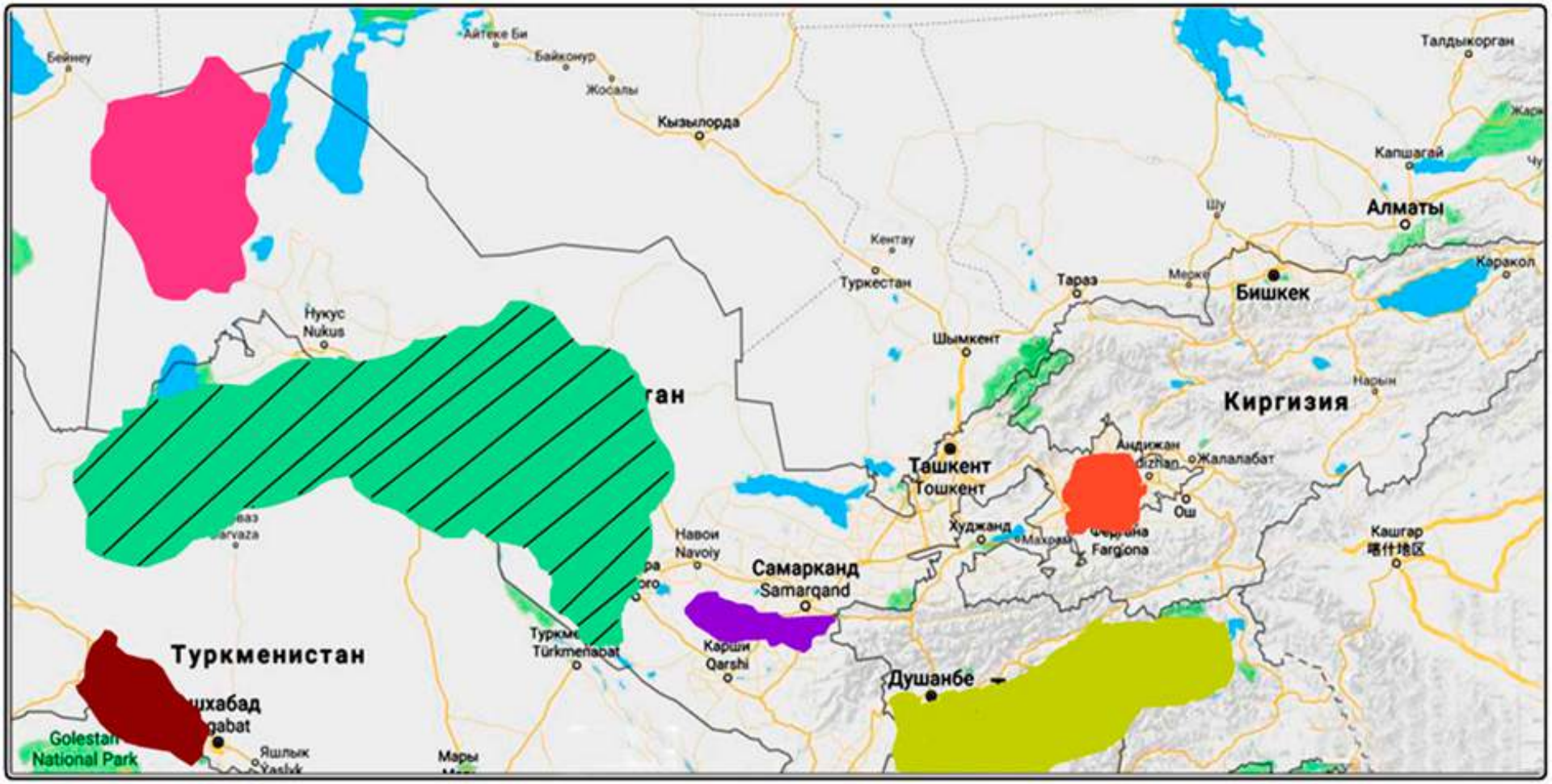
OUTLINED PLAN FOR ARCHAEOLOGICAL RESEARCH IN THE AGYTMA DEPRESSION AND THE DZHANKELDY OASIS



Compiled by: Kh. B. Khoshimov, B.Kh. Sayfullayev

Kyzylkum desert (300 sq.km) is one of the regions of Central Asia rich in colorful archaeological monuments. The most common of the monuments are the finds of the Neolithic period (in total, about 1,600 finds of this period were found). They are united in a single Kaltaminor culture and the study of this culture was conducted in the 40s of the last century by the KhAE (Khorezm Archaeological Expedition) led by S.P. Tolstov. Since the 60-ies and until the 80-ies of the last century, the territory studies were conducted by A.V. Vinogradov.

CULTURES OF THE NEOLITHIC PERIOD OF CENTRAL ASIA



Kaltaminor culture

Ustyurt culture

Central Fergana culture

Dzhaytun culture

Sagazan culture

Khisor culture

Google

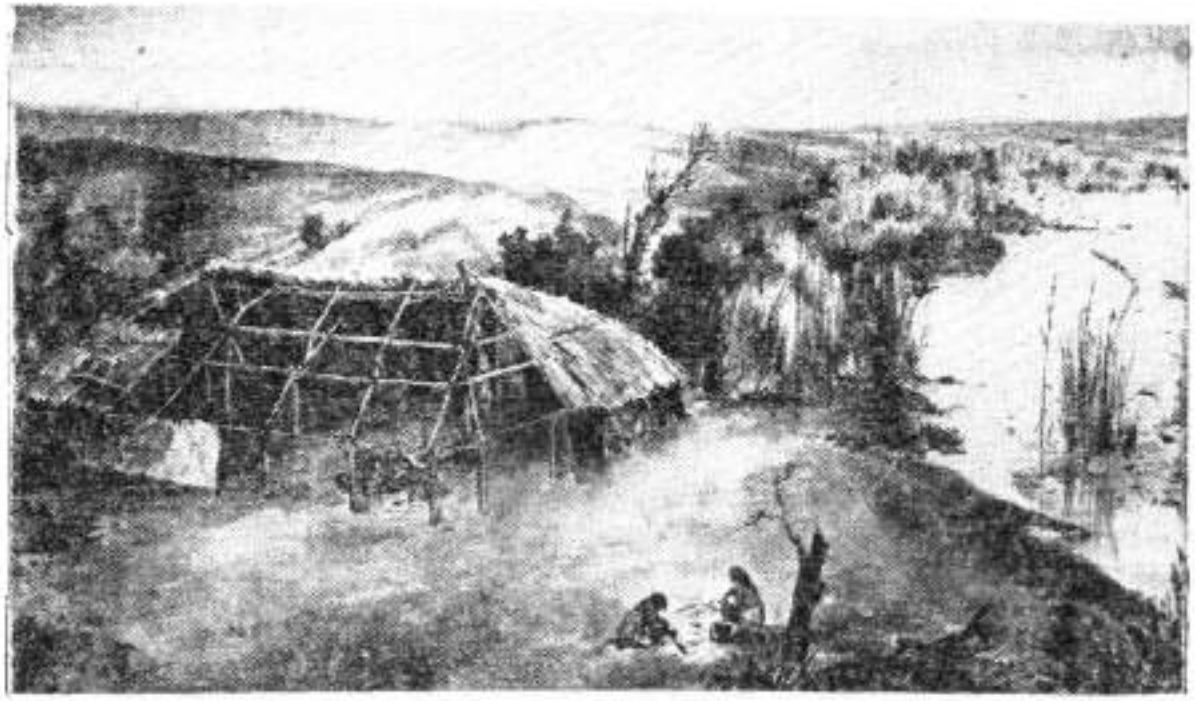
As a result of studies conducted in the Kyzylkum territory, the teeth of sharks that lived in the water 30 million years ago also indicate that this territory was once under water.

At the beginning of the Pleistocene and Holocene, the territory of Kyzylkum was a place similar to a Valley. The Neolithic period of Kyzylkum is called "The Country of a Thousand Lakes". There were hundreds of lakes, the Amu Darya and Syr Darya, the ancient Zarafshan rivers flowing into the lower reaches of the Amu Darya. With the warming of the climate, these rivers began to dry up, blocking their ridges with sand dunes and turning into lakes. At that time, Poplars were growing in Central Kyzylkum and the wind was blowing from the opposite direction, relative to the current one. There were plenty of fish in the fertile rivers and lakes. Primitive communities settled around these water sources.

Currently, 3 different types of Stone Age monuments have been identified in the Kyzylkum region:

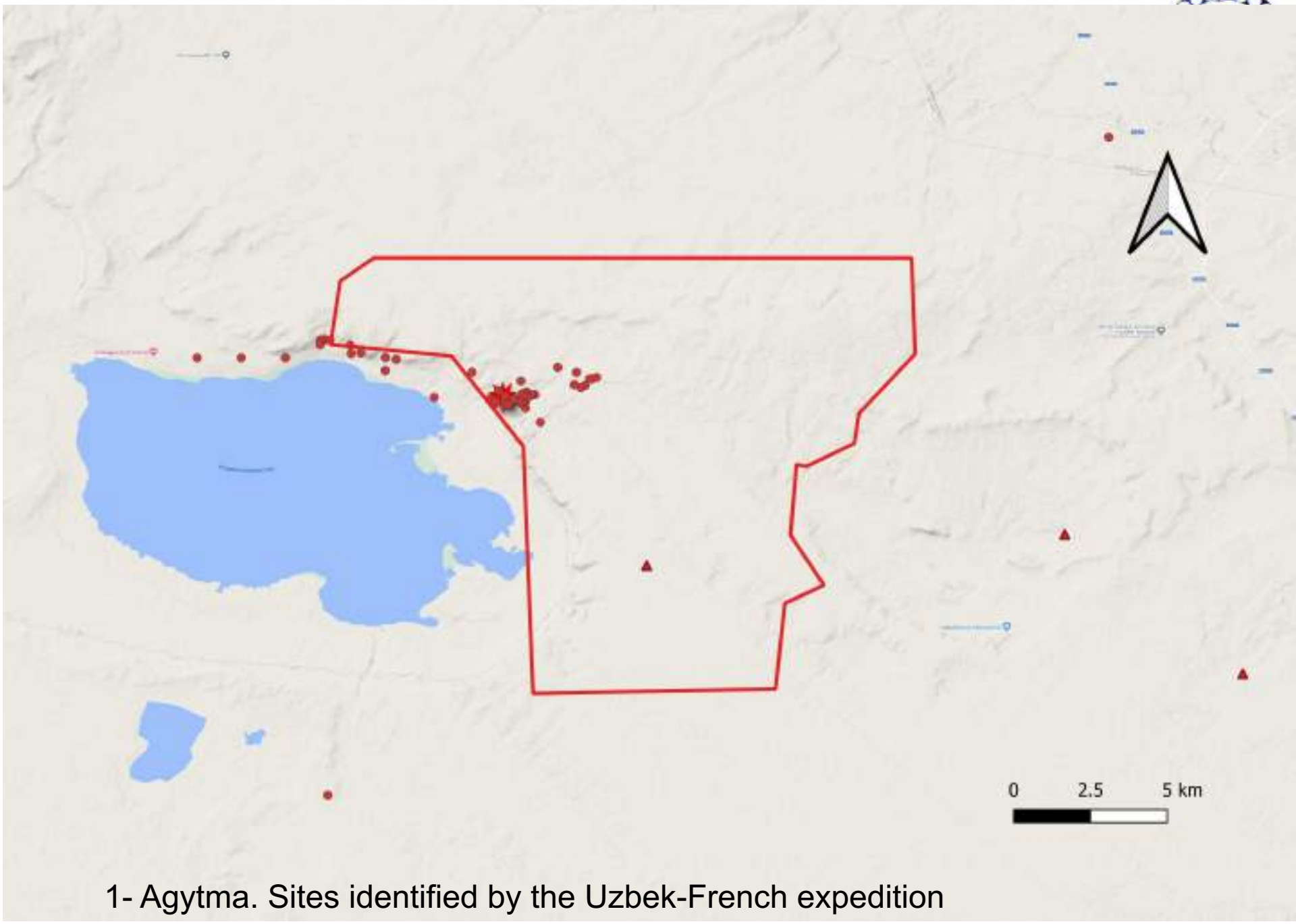
1. Cultural layers of untouched spaces (basic sites);
2. Destroyed cultural layers that have damaged as a result of natural impacts or (scattered sites);
3. Workshops for processing stones or semi-precious stones.

Usually the settlements were built between two mountain ranges, which now turned into dunes, and this protected the them from the wind. Monuments of the Kaltaminor culture were found in the remains of the oldest dwelling in Central Asia. These are the monuments of Jonbos-4, Kavat-7 and Dorbozakir-2.



JONBOS-4 RECONSTRUCTION OF THE SETTLEMENT REMAINS)

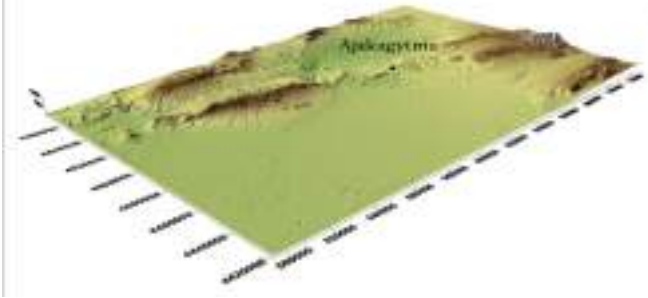
<u>The area marked in Agytma :</u>
<u>length17 – width 18 км.</u>

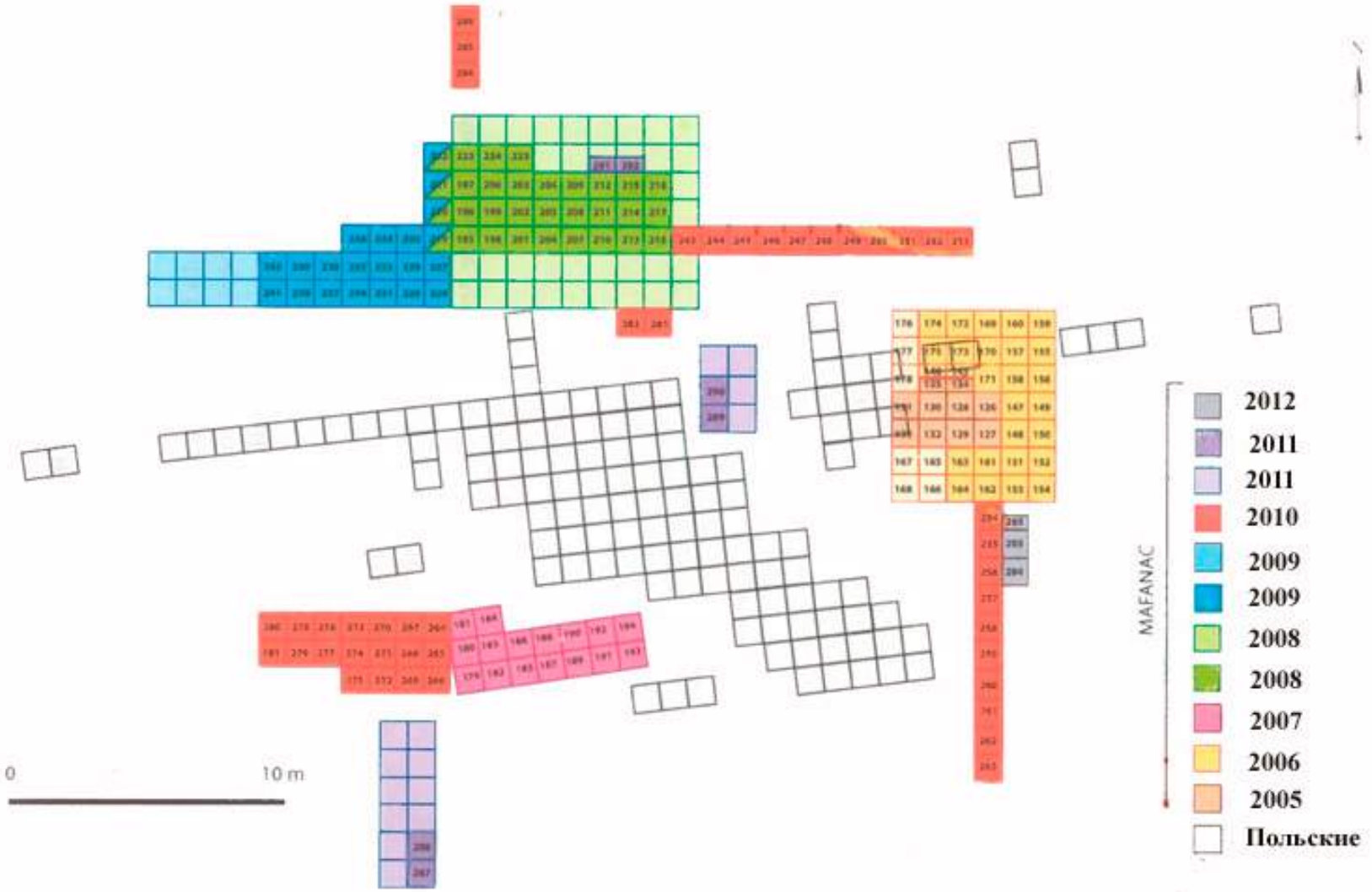


1- Agytma. Sites identified by the Uzbek-French expedition


site d'Ajakagytma

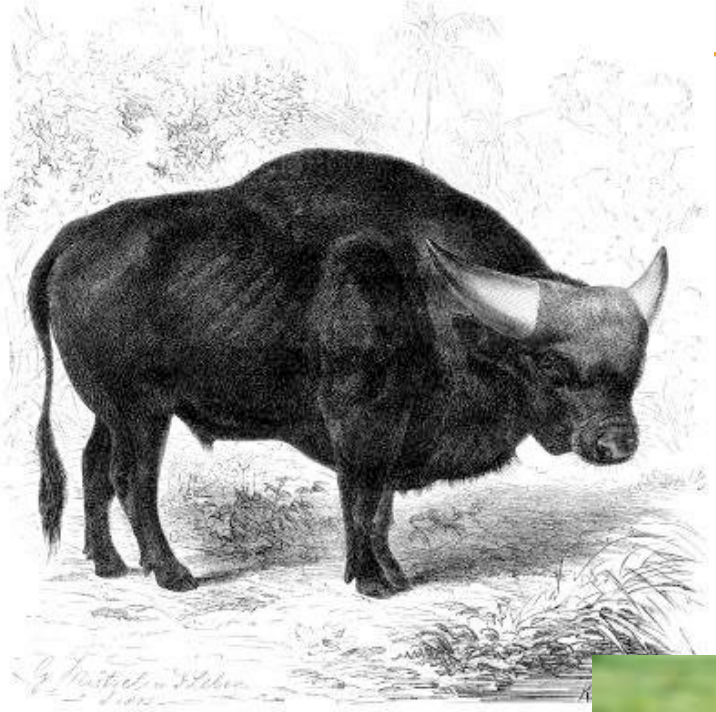

CANYON PRINCIPAL : DU LAC D'AJAKAGYTMA AU SITE ARCHÉOLOGIQUE
Gorge
Site de fouille
Hauts reliefs
Légende
Courbe de niveau
2 mètres
5 mètres
10 mètres
Lac d'Ajakagytma
Echelle 1:10000


Ajakagytma



HISTORY OF EXCAVATIONS AT AGYTMA 1995-2012

FAUNAL REMAINS FOUND IN AGYTMA



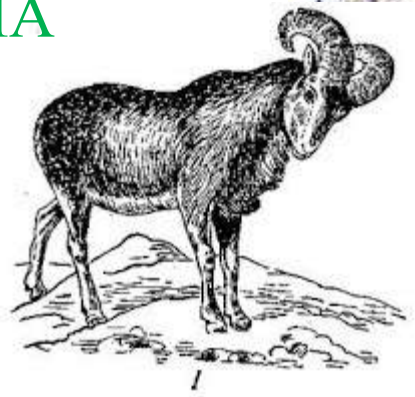
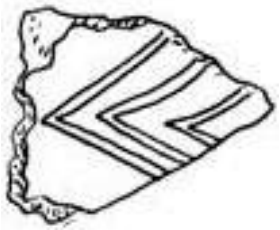


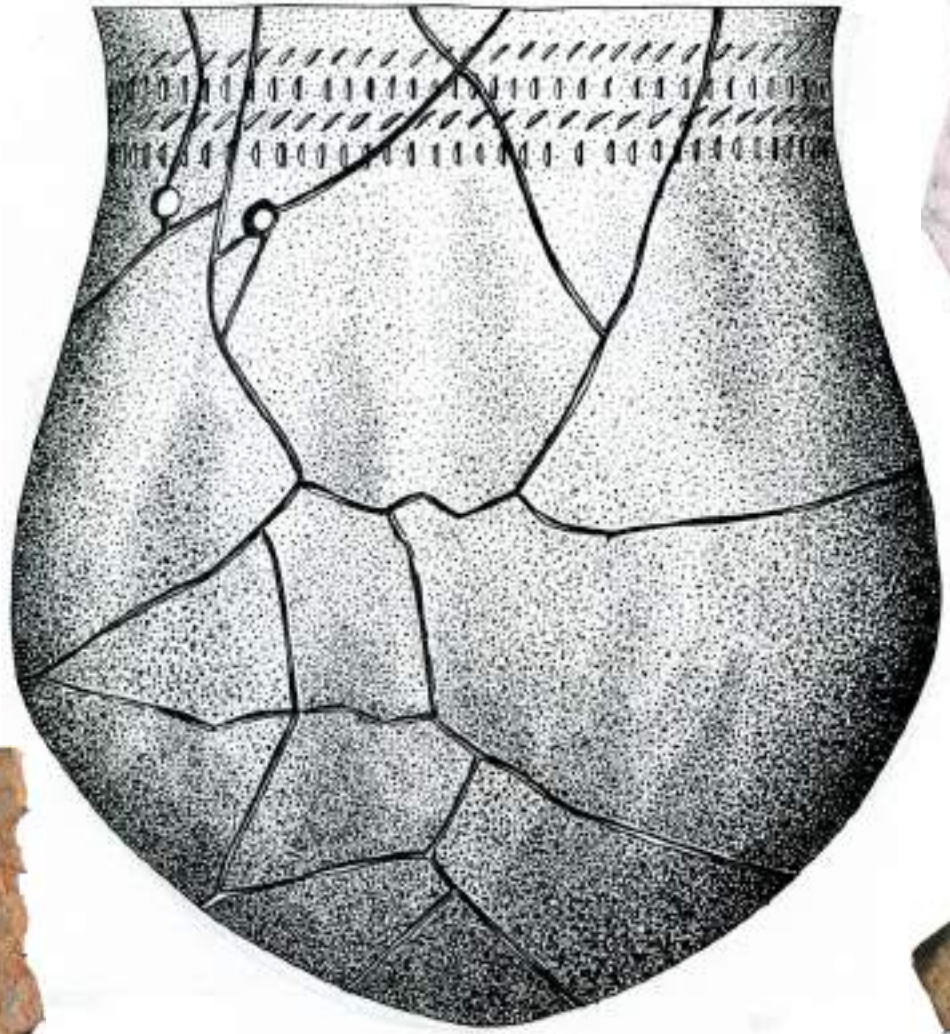
Рис. 10. Дикие предки овец:
I — муфлон; II — архар

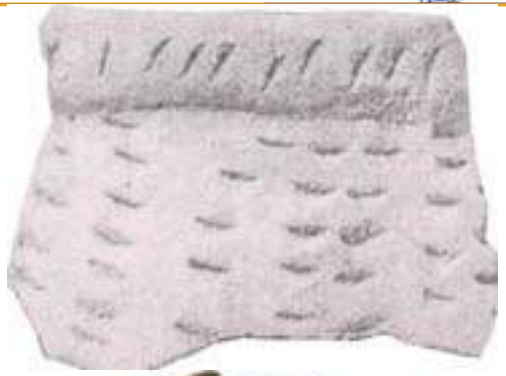
THE FIRST STAGE OF THE KALTAMINAR CULTURE FINDS AT AGYTMA

Credits: F. Brunet

CERAMIC PRODUCTS OF AGYTMA







List of specialists who conducted research at the Agytma in 1996-2005-2015 (Uzbekistan-Poland-France expeditions)

1	Mukhiddin Khujanazarov	Uzbekistan
2	Sayfullaev Bakhtiyor	Uzbekistan
3	Hoshimov Hikmatulla	Uzbekistan
4	Xalmatov Normuxammad	Uzbekistan
5	Christina Tondrich	Uzbekistan
6	Rakhimov Komiljon	Uzbekistan
7	Shumchak Karl	Poland
8	Malagajotta Kot	Poland
9	Anna Dluzewski	Poland
10	Elisabetta Michelska	Poland
11	Frédérique BRUNET	France
12	Gourgen Davtyan	France
13	Jon Denis Berger	France
14	Solen Davies	France

Working plan regarding Agytma site:

Working time is 2 months, from this :
1 month for field works
1 month for data processing, preparation of a scientific report
Primary sum of the study

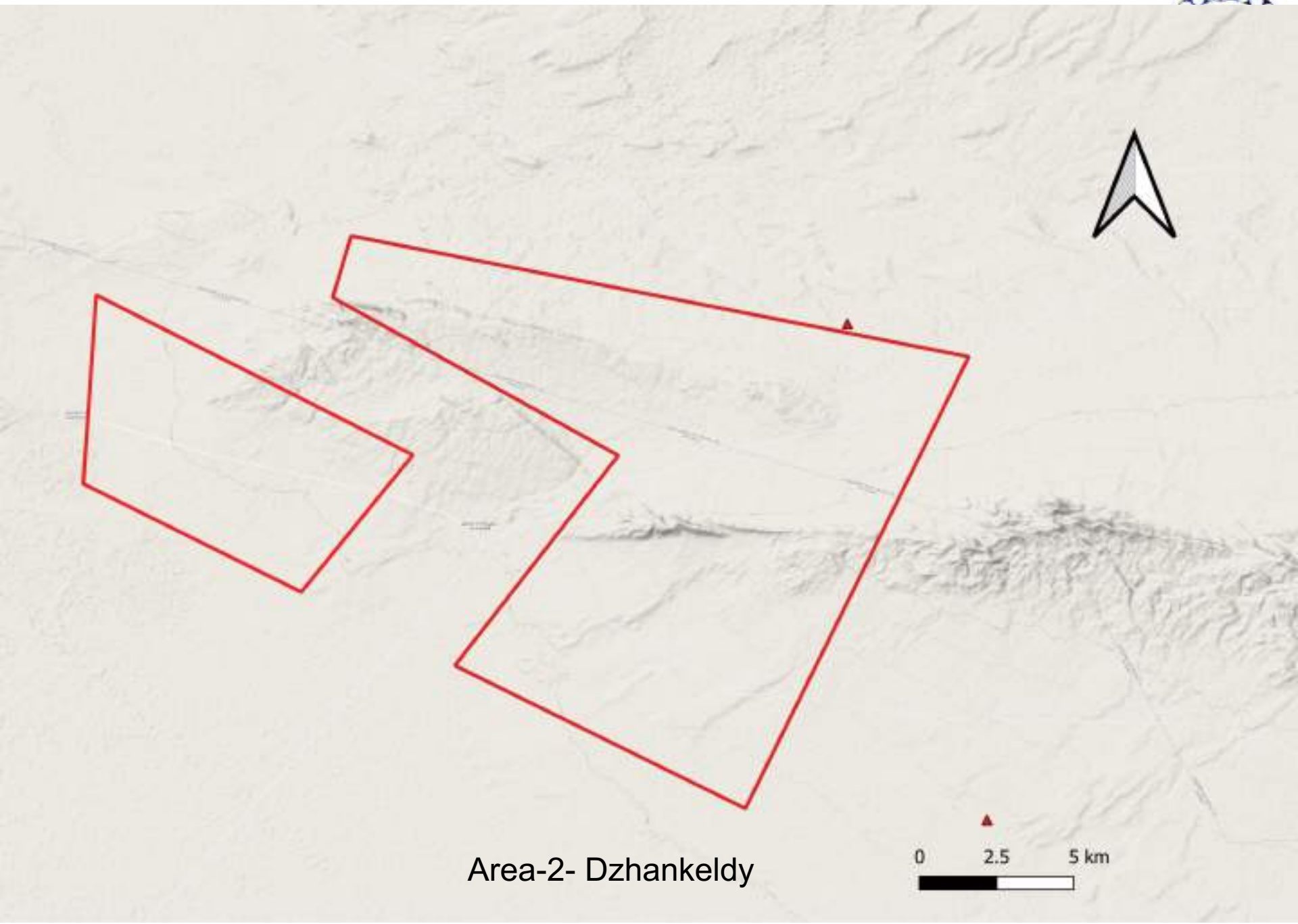
Payment-75 mln UZS (25 % together with a olump-sum social payment)
Travel expenses-20 mln UZS.
Necessary equipment -25 mln UZS.
Transportation costs *- 42 mln UZS (2 means of transport for 1 month, approx. 70+70 USD per day)
Discount for the institute-20 mln UZS.

*** The customer can alternately solve the transportation issue and discount this cost.**

<u>The area marked at Dzhankeldy:</u>

<u>length 30 км – width 27 км.</u>

In the 80-ies of the last century from the territory of the Dzhankeldy Oasis - Tasqazgan monument was identified by A.V. Vinogradov.



Area-2- Dzhankeldy

Working plan regarding Dzhankeldy site

Working time is 2 months, from this :
1 month for field works
1 month for data processing, preparation of a scientific report

Primary sum of the study

Payment-75 mln UZS (25 % together with a olump-sum social payment)
Travel expenses-20 mln UZS.
Necessary equipment -25 mln UZS.
Transportation costs *- 42 mln UZS (2 means of transport for 1 month, approx. 70+70 USD per day)
Discount for the institute-20 mln UZS.

***The customer can alternately solve the transportation issue and discount this cost.**

Employees who plan to participate in the project

		Position
	Hoshimov Hikmatulla	Project manager
	Sayfullaev Bakhtiyor	Scientific consultant
	Kholmatov Azbiddin	Senior research fellow
	Alisher Razhabov	Junior research fellow
	Elmuratov Bahodir	Junior research fellow
	Imomov Aziz	Intern
	Berdikulov Mirolim	Intern

MINUTES OF MEETING

Second Zoom Meeting with representatives of Institute of Archaeology under the Academy of Science of the Republic of Uzbekistan

ACWA Power requested to arrange the second-round meeting with Institute of Archaeology to clarify key issues regarding archaeological findings and proposed research timeline at Bash 500 MW WF and Dzahnkeldy 500 MW WF project sites.

The meeting agenda included Q&A discussion. Thus, on April 27, 2021 at 18.30pm (Tashkent time) a Zoom call was arranged.

A summary of the meeting is provided below.

Stakeholder group:	**Interest based**
Institute of Archaeology	Mr Muminkhon Saidov – deputy director of Samarkand brach of Institute of Archaeology Bakhtiyor Sayfullayev – Senior researcher
ACWA Power	Mr.Sherzod Onarkulov – Senior Manager
Juru Energy	Ms Umida Rozumbetova – acting head of E&S practice group
Meeting language:	Uzbek
Date:	27.04.2021
Start time:	18:30
End time:	19:00
Method of engagement:	Call to Institute of Archaeology
Venue:	Zoom call
Used materials and visual aids	N/A

Agenda for meeting

1. Q&A regarding the proposed archaeological research timeline

Starting the meeting Sherzod Onarkulov greeted participants and explained the aim of arranging a call. He stated that ACWA Power looked through presentation prepared by Institute and has no comments so far. However, it is necessary to clarify some issues/questions regarding the methodology and timeline of conducting additional research.

Q&A session started after the speech of Sherzod Onarkulov

Question	Answer
Sherzod Onarkulov: It was written in presentation that conducting research at Project site would take 2 months. How this research is going to be conducted? By using special technique?	**Muminkhon Saidov:** The first stage of every archaeological research is observation field work. At this stage we observe and indicate potential places on map by using GPS tools. This is mostly long drives at the project site.
Sherzod Onarkulov: Do you have exact coordinates of previously researched places at Bash and Dzhankeldy Project sites?	**Muminkhon Saidov:** Yes, we have. We have indicated these places with red spots in presentation. These indicated places have been studied. However, we need to observe surrounding areas of previously researched places. It is difficult to make any conclusions or assumptions that remaining project site might not have any archaeological importance
Sherzod Onarkulov: When you indicated time as 2 months did you mean that you are going to spend 2 months for each site, i.e., 2 months for Bash and 2	**Muminkhon Saidov:** We can start field works at first project site and then move to the second project site. If you remember we will need one month for

months for Dzhankeldy? Is it possible to start research at both project site in parallel?	laboratory works. Thus, first 2months we can devote to the field works and the remaining 2 months for lab analysis. **Bakhtiyor Sayfullayev:** At the end of field works we can prepare a map, showing observed places
Sherzod Onarkulov: According to existing legislations, are there specific requirements for keeping distance or buffer zone from archaeologically important areas/monuments etc?	**Muminkhon Saidov:** Yes, local legislation assumes keeping buffer zone from archaeological finding. Depending on size, type of archaeological finding the Inspection on protection of archaeological findings issues a conclusion by establishing the length of buffer zone.
Sherzod Onarkulov: As I understood, for each archaeological finding should be established individual buffer zone, right?	**Muminkhon Saidov:** Yes, that is right.
Sherzod Onarkulov: Let us come back to timeline. As we discussed earlier, it is possible to spend 2 months for field works and at the end of each month we will be able to get preliminary results as well as map. So, I want to clarify if it is possible to get final results within one month once field works are completed?	**Bakhtiyor Sayfullayev:** To prepare final scientific conclusion we need one month for each site. However, it also depends on the findings from Project sites. Based on our findings we can tell you how much time we need for analysis.
Sherzod Onarkulov: I would like to clarify the issue with payment as well. In the presentation you indicated that it is 75 million of UZS per project site, which means that for 2 project site it is going to be 150 million UZS?	**Bakhtiyor Sayfullayev:** 75 million UZS is for experts' remuneration. And for two project sites it is going to be 150 mln. UZS. However, we also indicated other expenses too. For field works we will need to cover transportation costs, supply expedition with necessary equipment.
Sherzod Onarkulov: All right, then per site total cost is 162 mln UZS?	**Bakhtiyor Sayfullayev:** That's right. Alternatively, your company can supply expedition with inland transport (by providing car and driver) thus deducting a cost.
Sherzod Onarkulov: From your previous experience, what organization is responsible for ordering or sponsoring archaeological surveys?	**Muminkhon Saidov:** To be honest, for us it does not matter at all. In our case we always have a Client. And Client can be state body or private sector.
Sherzod Onarkulov: Since ACWA Power was not informed by government about archaeological issues, do we obliged to conduct additional research and get a conclusion?	**Muminkhon Saidov:** Based on general legal requirements, before construction of any large-scale facility it is necessary to conduct preliminary archaeological research. After discovering any archaeological finding they automatically goes under state protection. And according to the Constitution of Republic of Uzbekistan, each citizen should protect discovered findings. Your company now knows that there were found places of archaeological importance. Even if you skip additional research and get conclusion from Institute of Archaeology at this stage, you will be required to do it later too, maybe for increased costs as well.
Sherzod Onarkulov: If all archaeological findings are under protection of state, should government allocate funds for the further researches?	**Muminkhon Saidov:** Government allocates funds, but it is not enough to cover all archaeological researches. Since you are going to construct wind farm on the territory of Uzbekistan, especially at site where already were found some objects of

	Neolithic period, you should get a conclusion from us.
Umida Rozumbetova: Bakhtiyor, can we go back to the presentation, i.e., slide 7. Here at bash Project site, you told that main archaeological findings were discovered around the shore of Ayakagitma lake, whereas at Bash project site you conducted only research without findings. Could you please confirm this information one more time?	**Bakhtiyor Sayfullayev:** Many objects were found around lake of course, but we also found some objects at the project site as well.
Umida Rozumbetova: So, red spots at the project site means that these are places with archaeological findings?	**Bakhtiyor Sayfullayev:** Yes, that's right.
Umida Rozumbetova: Could you confirm that there are no more artefacts or objects of archaeological importance at places where you conducted research and these places are free for use?	**Bakhtiyor Sayfullayev:** At the moment I am not able to confirm, as at some places we found one or two objects. There were places where we found many obkjects and we had to No, it is not possible to take all the artefacts or findings at once. After the research we collect some objects. It is not possible to take away all findings, we have to bury back such places.
Sherzod Onarkulov: As results, it means that we have to establish buffer zone from each red spot you have indicated in map?	**Bakhtiyor Sayfullayev:** Yes, this is right

Sherzod Onarkulov explained to meeting participants that ACWA Power has concern about Project timeline. Since Ministry of Energy or Ministry of Foreign trade and investments did not informed ACWA Power about archaeological importance as well as about archaeological findings, Project timeline does not involve conducting long archaeological research. In case of inclusion additional research to project timeline, ACWA Power can be late for general agreed timeline with Government of Uzbekistan.

At the end of the meeting it was agreed on followings:

- Institute of Archaeology will send letter to Juru Energy by justifying need of additional research at the project sites. Moreover, Institute will give detailed information on timing and cost breakdown;
- Juru Energy will keep in touch with Institute and ensure the delivery of required letters;
- ACWA power will negotiate with relevant Ministries.

Annex 1 List of participants

MINUTES OF MEETING

Meeting with representatives of Institute of Archaeology under the Academy of Science of the Republic of Uzbekistan

Based on previous consultations with Institute of Archaeology in a framework of ESIA for bash 500 MW WF and Dzhankeldy 500 MW WF regarding the archaeological findings and getting relevant conclusion from the Institute ACWA Power requested face to face meeting with the representative of Institute of Archaeology. The aim of meeting was to accelerate the process of signing the agreement with Institute and start archaeological surveys at Bash and Dzhankeldy projects.

FYI: The main office of the Institute of Archaeology is based in Samarkand city. All previous consultations were conducted with Muminkhon Saidov – deputy director of the Institute. All previous research at Bash Project site as well as main other survey and field works all around the Uzbekistan are carried out by the Institute of Archaeology. National Centre of Archaeology (main authorized organization for archaeological issues) is located in Uzbekistan. As ACWA Power preferred to meet in person, the meeting has been arranged in Tashkent, i.e., at the national Centre.

Thus, the meeting was arranged on April 30, 2021 at 11.00 am at the building of National Centre of Archaeology.

The meeting agenda included terms and conditions of preparing agreement for conducting field surveys at bash and Dzhankeldy project sites as well as discussion of possibilities to shorten proposed 4 months timeline up to 3 months.

A summary of the meeting is provided below.

Stakeholder group:	**Interest based**
National centre of Archaeology	Mr Farkhod Maksudov – director of National centre of Archaeology Two members of national Centre
ACWA Power	Mr.Sherzod Onarkulov – Senior Manager Mr. Akbar - business manager
Juru Energy	Ms Umida Rozumbetova – acting head of E&S practice group Mrs Gulchekhra Nematullayeva – social consultant
Meeting language:	Uzbek
Date:	30.04.2021
Start time:	11:00
End time:	11:40
Method of engagement:	Through call to Institute of Archaeology
Venue:	National centre of Archaeology
Used materials and visual aids	N/A

Agenda for meeting

1. Signing agreement between Institute of Archaeology and ACWA Power;
2. Timeline for conducting additional research at Bash and Dzhankeldy Project sites.

Starting the meeting Farkhod Maksudov briefly described the development history of archaeology in Uzbekistan. He stated that main centre that coordinates archaeological activities in Uzbekistan is located in Tashkent, meantime the Institute of Archaeology that carries out surveys/field works is located in Samarkand city. Furthermore, Farkhod explained that due to the increase of works National centre plans to establish branches in Bukhara and Khorezm regions as well.

In turn, Sherzod Onarkulov greeted participants and expressed his gratitude for arranging a meeting in short time. He briefly introduced representatives of National centre with activity of ACWA Power as well as with its projects in Uzbekistan. Furthermore, Sherzod Onarkulov highlighted that Ministry of Energy of the Republic of Uzbekistan has chosen sites for Bash and

Dzhankeldy based on wind intensity. The issue of large archaeological finding came up while conducting consultations with relevant stakeholders which is an integral part of ESIA. Thus, ACWA Power was previously not unaware of archaeological sites at Bash and Dzhankeldy projects sites.

Considering this fact, Sherzod Onarkulov asked Farkhod Maksudov to assist in getting relevant conclusion from National Centre of Archaeology by conducting required surveys.

Q&A session started after the speech of Sherzod Onarkulov

Question	Answer
Sherzod Onarkulov: We have received from institute of Archaeology proposed timeline and budget for conducting survey at project sites. Is it possible to prepare an agreement and sign it between ACWA Power and national centre as soon as possible?	**Farkhod Maksudov:** We will be able to prepare an agreement by next Monday (May 3rd) and send it to you. As soon as you sign and transfer money, I can deploy the teams for field surveys.
Sherzod Onarkulov: From collected information we aware that there are still some archaeological sites at Bash. What are the requirements for buffer/safety zone according to local legislation? And do these requirements comply with international requirements?	**Farkhod Maksudov:** Based on local legislation the requirements are as follows: - 50 meters from large sites such as ancient settlements, cities and etc; - 25 meters from small sites such as buildings, artefacts As for the international requirements, I would say that local legislation was amended based on international standards. Therefore, abovementioned buffer zone can match to international standards as well.
Sherzod Onarkulov: At the moment, timing is extremely important for us. Thus, is it possible to start archaeological surveys at Bash and Dzhankeldy in parallel?	**Farkhod Maksudov:** To be honest, nowadays we have pretty much work to do, i.e., we are surveying proposed direction for extension of railway. However, we will be able to deploy full team to one project site and half team for another site. It will be hard, but we will do our best.
Farkhod Maksudov: If your company can provide cars for transportation of teams, I can deduct inland transportation costs from budget.	**Sherzod Onarkulov:** No, at the moment, we are not able to provide cars. So please go ahead with including inland transportation costs to the agreement.
Umida Rozumbetova: During our last talk, Muminkhon Saidov said that team can provide overall summary and map with findings as soon as survey will be completed. Could you please confirm that?	**Farkhod Maksudov:** Yes, I confirm.
Umida Rozumbetova: Can you prepare the final report as well as conclusion in English language?	**Farkhod Maksudov:** We can prepare in the most preferable language for you. If you would like to have it in English, we will do that.
Umida Rozumbetova: Before you deploy teams to survey, is it possible to get a list of team members and contact details of head of team? We will need to stay in touch with them in order to be informed about the progress and receive photos from them.	**Farkhod Maksudov:** Of course, I will introduce you to the team leaders and make sure that you will exchange a contact detail with them.
Umida Rozumbetova: Could you also assist us with getting coordinates and get an access to information regarding the finding at Bash project site?	**Farkhod Maksudov:** All right, we will renew our negotiation on previous finding early next week.
Sherzod Onarkulov: It is extremely important for us to get requirements on buffer zone as we need to	**Farkhod Maksudov:** It is understandable. Let us start working on it from Monday.

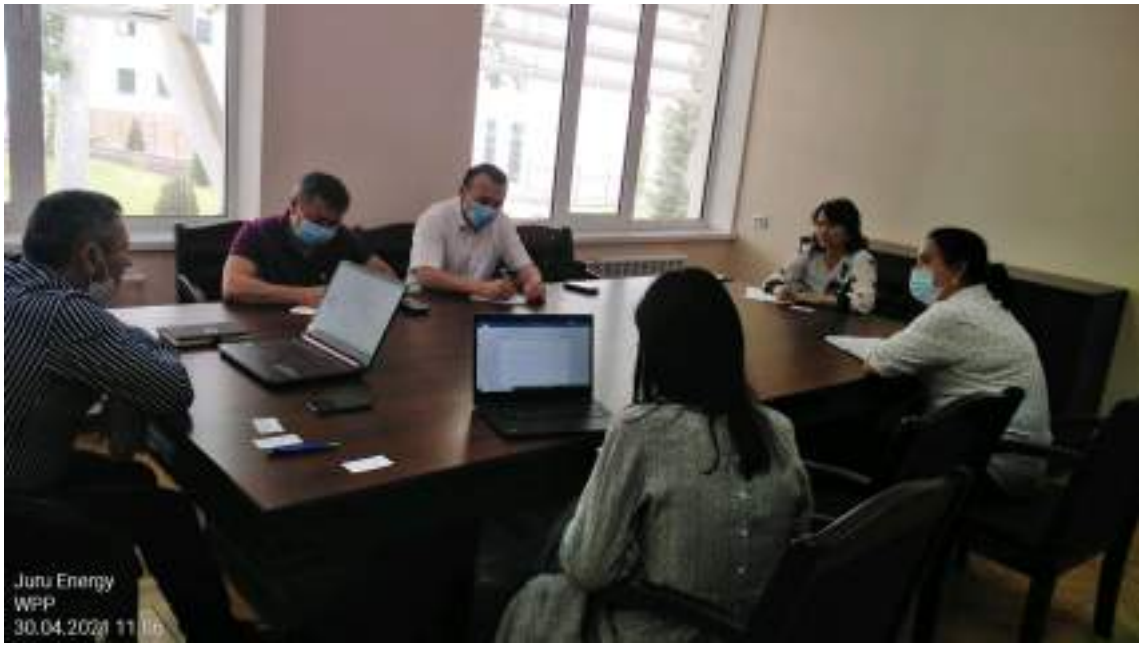
finalize the wind turbines layout. Furthermore, we need to be aware if lenders have any specific requirements for buffer zone.	

At the end of the meeting it was agreed on followings:

- Farkhod Maksudov will keep in touch with ACWA Power regarding the signing agreement and receiving payment;
- All other works related to monitoring of field surveys should be carried out by Juru Energy;
- Juru Energy will be responsible for timely informing 5 Capitals on progress;

In addition, ACWA Power asked to check for lenders requirements regarding the buffers zone for archaeological findings. It was agreed that Juru Energy will refer to 5 Capitals to find out this.

Annex 1. Photo from meeting



MINUTES OF MEETING

As per request of ACWA Power and completion of archaeological surveys at Bash project site, Zoom meeting with director of National Centre of Archaeology was arranged on July 9 at 3 pm of Tashkent time.

A summary of the meeting is provided below.

Stakeholder group:	**Interest based**
National centre of Archaeology	Mr Farkhod Maksudov – director of National centre of Archaeology
ACWA Power	Mr.Sherzod Onarkulov – Senior Manager Mr. Akbar Mavlonov - business manager
Juru Energy	Ms Umida Rozumbetova – head of E&S practice group Mrs Gulchekhra Nematullayeva – social consultant
Meeting language:	Uzbek
Date:	09.07.2021
Start time:	15:00
End time:	16:00
Method of engagement:	Via Zoom call invitation
Venue:	
Used materials and visual aids	N/A

Agenda for meeting

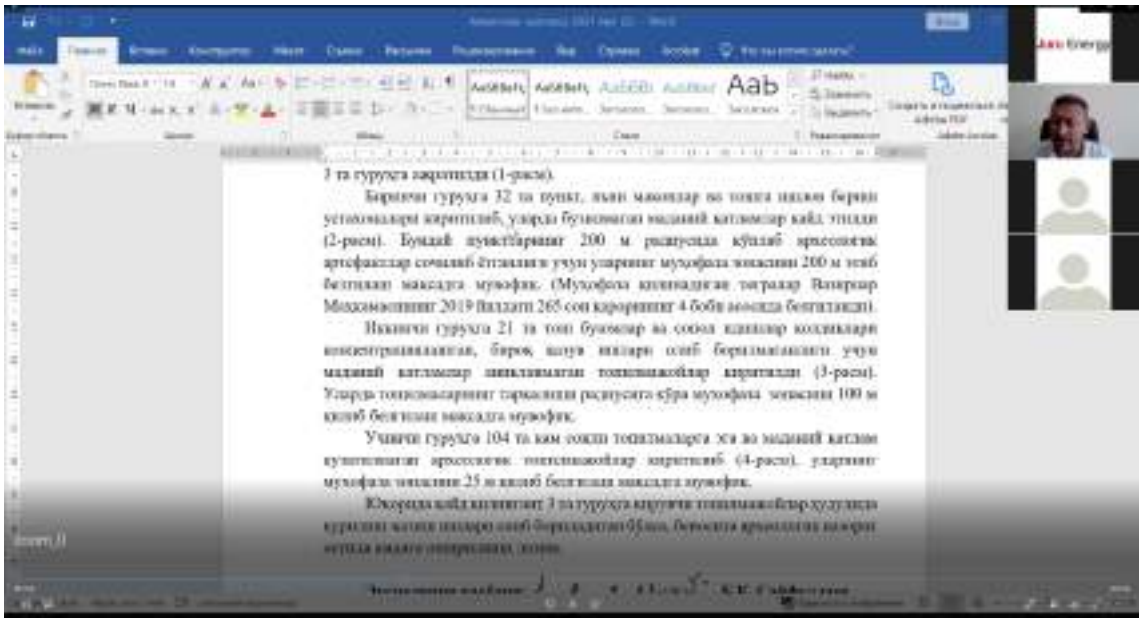
Discussion of summary as per completion of survey at Bash Project site

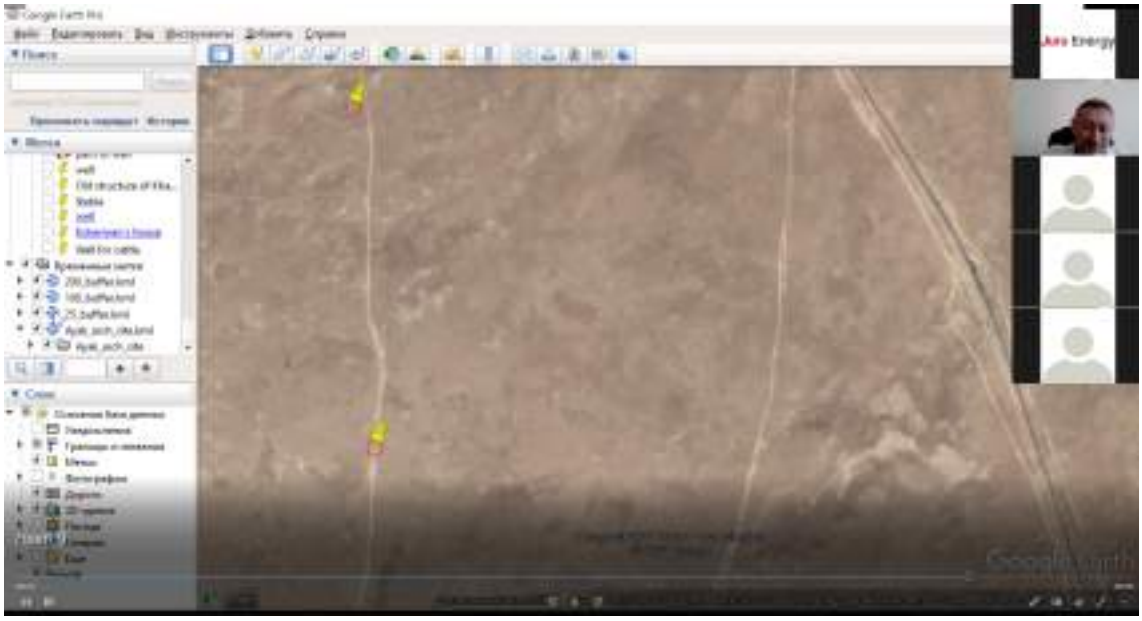
Question	Answer
Sherzod Onarkulov: We received the summary of main findings at the Bast Project site from institute of Archaeology and we would like to clarify some issues related to this summary	**Farkhod Maksudov:** Yes sure
Akbar Mavlonov: From the summary we noticed that there are three suggestions for the buffer zone, depending on the type of finding, i.e., 25 meters, 50 meters and 200 meters. Could you please provide clarification why the buffer zone is different and how it is going to affect the Project?	**Farkhod Maksudov:** First of all, I would like to note that our Institute suggests the size of preliminary buffer zone that might be applicable to findings. You should refer to the Agency of Conservation of Cultural heritage. This Agency might find our suggestions for buffer zone as not applicable and set up another one. However, we are obliged to send them a copy of report that we are going to provide to ACWA Power. This Centre has a register of archaeological findings and our survey results will be included to it too. Buffer zone should be established based on the importance of the finding
Akbar Mavlonov: From the summary and provided photos we see that these findings are the parts of dishes, small scale smithers	**Farkhod Maksudov:** All our findings so far as well as suggested buffer zones are preliminary only. We need to wait until expedition team completes the survey at the second project site and makes final conclusions. At the moment we only determined places which can be identified as a source of archaeological excavations. We are not sure if there are more artefacts or even human settlement present.

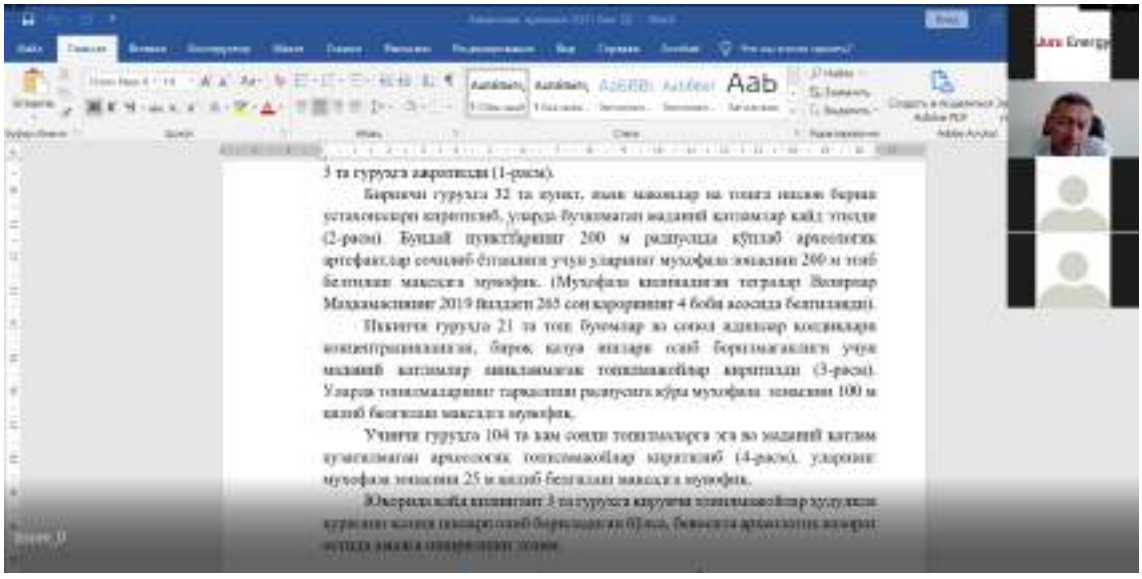
	The aim of our agreement was to determine if there are archaeological findings at the surface level. If we find number of findings that might be a part of one settlement or village, we will confirm it with you before sharing any report with third parties. More often than not, this Agency accepts our suggestions. When it comes to the affect to the construction, for findings under I Category you will need to conduct any types of works under archaeologist supervision, as places with such findings may have another artefacts as well. For the rest (II and III Category) archaeological supervision is not required.
Akbar Mavlonov: As you mentioned you are going to consult with us before passing report to the relevant organizations	**Farkhod Maksudov:** Yes, we will do it, as a Client and as funder of these surveys, you have a privilege to get all information first. The same applies to the publishing information in mass media. Nevertheless, we are obliged by our in-country regulations to share at least with technical details of conducted survey with Agency and notify them about findings.
Akbar Mavlonov: Clear. Does it mean that you also consult with us regarding buffer zone, right?	**Farkhod Maksudov:** No, unfortunately we are not able to do it. Indeed, the Agency should propose the size of buffer zone. Alternatively, they can agree with our suggestions regarding the size of buffer zone. But, if the Agency is not in agreement with proposed buffer zone, they can establish other buffer zones.
Sherzod Onarkulov: So far as we informed, you are working in accordance with Resolution of the Cabinet of Ministries No265. Does the Agency also work in accordance with the same regulation?	**Farkhod Maksudov:** Please note that our organisation has a status of public organisation. We do not always work as per regulations like state organisations. We work based on the scientific approach and methods.
Sherzod Onarkulov: Clear, now my question is should ACWA Power refer to the Agency with results and findings of the survey or you can do it?	**Farkhod Maksudov:** We are obliged to give to Agency only technical characteristics as well as list of findings. You can also present the full report with all detailed description if you wish
Sherzod Onarkulov: As I understand, the main conclusion stating that constructional works can be carried out at the places free from archaeological findings, right?	**Farkhod Maksudov:** Yes, Agency is empowered to issue such conclusions. However, to do so, they need to get results of archaeological survey.
Sherzod Onarkulov: In summary provided by your team, there are 3 Categories of findings and suggested buffer zones for them. Also in your report it is stated that any constructional works at these places should be conducted in coordination with the representative of National Centre. When you say ”at these places” you mean in buffer zone?	**Farkhod Maksudov:** Archaeological supervision will be necessary during the constructional works. Because if during any drilling or other type of works new findings will be determined, archaeologists must carefully examine it and then proceed with required procedures, i.e., approve continuation of constructional works or stop it, if finding has high importance.
Sherzod Onarkulov:	**Farkhod Maksudov:**

When we can expect the final reports from National centre?	Short summary for both Projects surveys will be given to you by the end of July (as soon as survey at Dzhankeldy will be completed). Full analytical report is not necessary for you, of course we are going to share with you all type of document we issue. However, for constructional works, our summary will be enough to proceed with agency.
Akbar Mavlonov: I would like to ask if the buffer zone should be fenced?	**Farkhod Maksudov:** At this moment, the places located at irrigation areas to prevent any agricultural interruption. But, considering that Project site is located in non-irrigated lands, no fencing is required. We only need to indicate finding place and buffer zone in the map.
Akbar Mavlonov: Can any of these findings be considered as finding of international importance and might be included to the UNESCO list?	**Farkhod Maksudov:** No, none of these findings can be considered as international importance findings.
Akbar Mavlonov: Who should refer with request to the Agency – ACWA power or Juru Energy and request to issue permission?	**Sherzod Onarkulov:** I believe, ACWA Power should do it, since the report from national Centre will be addressed to ACWA Power, and indeed permission should be given to us for any constructional activities.
Gulchekhra Nematullayeva Farkhod, could you please share with us the description of methodology, according which the survey was conducted. Since it will be necessary for us show it in the reports as well.	**Farkhod Maksudov:** Noted, I will ask survey team to include the methodology in the report as well.
Sherzod Onarkulov: If we look at the map, one of your findings were determined at the road in Project site. In future this road might be used for transportation. Furthermore, this road is being used today as well by other cars as well. What actions can be taken regarding this issue? Another place with finding was identified near railways as well.	**Farkhod Maksudov:** This finding place can be considered as modified place. If the finding is considered as I Category then it will be necessary to reroute the road and avoid crosses with this place. If this is III Category no rerouting is required. Please note, that we need to protect finding with high importance.
Sherzod Onarkulov: Is it possible to collect finding at determined location and give it local relevant organizations or museums, thus to reduce the number of places with findings?	**Farkhod Maksudov:** No unfortunately it is not possible. Since we conducted only field survey and surface excavations, it is possible that in all identified places we may find more artefacts.

Annex 1. Photo from meeting







ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ
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O'zbekiston Respublikasi Fanlar Akademiyasi
huzuridagi Arxeologiya institutiga

Sizga 2021-yil 6-aprelda Bash shamol elektr stansiyasi maydonidagi arxeologik yodgorliklar to'g'risidagi 97-sonli javob xatingiz uchun minnatdorchilik bildiramiz. Sizning javobingizga asoslanib, quyidagi masalalar bo'yicha qo'shimcha ma'lumot berishingizni so'raymiz:

1. Og'itmadagi neolit davriga oid manzilgohning aniq koordinatalarini va uning atrofidagi muhofaza qilish zonasining o'lchamlarini taqdim eta olasizmi? Eslatib o'tamiz, Institut tomonidan avvalroq yagona koordinata taqdim etilgan.
2. O'zbek-fransuz ekspeditsiyasi tomonidan hozirda loyiha maydonida va uning 5km radius atrofida davom etayotgan tadqiqot ishlari mavjud yoki mavjud emasligini tasdiqlab bera olasizmi?
3. Iltimos, bizga dastlabki arxeologik tadqiqotlarida ishtirok etadigan mutaxassislar haqida ma'lumot bering:
   a. Dastlabki arxeologik tadqiqotlar o'tkazish talablari va vaqt jadvalini aniqlashtirish uchun ular bilan zoom orqali video aloqa tashkillashtirishni iloji bormi?
   b. Agar video aloqani tashkillashtirishni iloji bo'lsa, jamoangiz uchun qulay bo'lgan kun va vaqtni ayting. Video aloqada sizning jamoangiz, ACWA Powerning loyiha vakillari, 5 Capitals va Juru Energy ishtirok etadi
4. Agar shu kunlarda video aloqani tashkillashtirishni iloji bo'lmasa, iltimos bizga quyidagilar haqida ma'lumot taqdim etishingizni so'raymiz.
   a. Hududdagi dastlabki arxeologik tadqiqotlar o'tkazish uchun protokollar va talablar haqida ma'lumot bering
   b. Ularning aloqa ma'lumotlarini shu jumladan, tadqiqot o'tkazishga jalb qilinadigan mutaxassislar sonini taqdim eting.
   c. Iltimos, dastlabki tadqiqot o'tkazish uchun vaqt jadvalini taqdim eting.

Direktor J.Yakubov

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Gulchekhra Nematullaeva

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JURU ENERGY CONSULTING

ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ

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JEC-OUT-21-93
12.04.2021

Institute of Archaeology under the Academy of Sciences of the Republic of Uzbekistan

We would like to thank you for your response on 6th April 2021 No.97 regarding the presence of archaeological sites within the proposed Bash Wind Farm project boundaries. Based on your response, we would like to request for further information on the following:

1. Would you please provide us with the coordinates of the Neolithic site in Ayakigtma including the details and the measurements of the required buffer zone around the site? We note that the Institute has already provided us with a single coordinate for this site.
2. Would you please confirm whether the Uzbek-French expedition has any active research work currently ongoing on site or the within 5km radius?
3. Please provide us with information of the experts who would be involved in the preliminary archaeological survey:
    a. Would it be possible to arrange a call with them to understand the requirements for conducting a preliminary archaeological survey and the timeline?
    b. If yes, would you please propose the most suitable date and time for a call with your team? The call would be between your team, project representatives from ACWA Power, 5 Capitals and Juru Energy.
4. Where a call with your team is not possible at this moment, please provide us with information and details on the following:
    a. Protocols and requirements for conducting the preliminary archaeological survey on site?
    b. Number of experts who will be involved in conducting the surveys including their contact details.
    c. Timeline for conducting the preliminary survey.

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely,

Director

For the further information please contact:
Gulchekhra Nematullaeva

Phone: +99871 202 04 40
Mob.: +99897 445 95 04

APPENDIX S - CONSULTATION LETTER TO & FROM HEAD OF POLISH RESEARCH TEAM

E-mail sent by Karol:

Dear Gulchekhra Nematullaeva, sorry for the delay in answering your letter. I thought that maybe it would be better if I presented my remarks in the written version

instead of the oral one during the zoom meeting. I refer to all the points/quests listed by your friend.
I hope that is going to satisfy you - if not, just contact me. I am also sure that people from an Institute for Archaeological Research in Samarkand are going to be much help.
With all the best, Karol Szymczak.

Prof. Dr. Karol Szymczak

University of Warsaw, Pl

Faculty of Archaeology

Head of the Department of Stone Age Archaeology

THE BASH WIND FARM PROJECT – REMARKS ON ARCHAEOLOGY

1. Intro.

Bash Wind Farm is planned to be situated in the vicinity of Ayakagytma Depression in Central Kyzyl-kums. This territory, especially the S and E surroundings of the Depression yielded dozens of archaeological finding points, covering the time span from the Stone Age /Middle Palaeolithic/, through the Neolithic, up to historical times /Medieval Ages/. The survey here was conducted in the seventies, and then in 1995 – 2012 seasons. Most of the documented sites are only surface, windblown finds, without any cultural layer preserved. One of the very few exceptions is Ayakagytma 'The Site', excavated in 1995 – 2012, but still having a good potential.

2. Establishing the distance of archaeological work area and buffer zone.

Ayakagytma 'The Site' /40°39'05''N; 64°37'06''E/ is located on the not too vast plateau /some 100 X 70 m/ clearly cut from each side by conspicuous, steep gorges. We would suggest to protect the whole area of the plateau having the surrounding gorges as a buffer zone.
It would be good to take into account also the suggestions of our Uzbek colleagues who performed lately an extensive archaeological survey along the Ayakagytma Depression's edges and also discovered, or rediscovered some interesting locations /eg. the flint workshops in Kyzylnura region/.

3. Establishing nature of these sites.

Ayakagyma 'The Site' is an archaeological location of crucial importance for all Central Asia, as it provided the priceless data for the first domestication of cattle, horse, camel, sheep/goat, pig and dog /*ca* 8200 – 5500 years BP/. It also allows to study in detail the economy, technology, and everyday life of the Neolithic peoples in this part of the world. 'The Site' has quite well preserved cultural layer /as for the Kyzyl-kums' conditions/, reaching down to 1.5 m, so we find the archaeological artifacts in their primary position and context. At present on the surface of the location there are no visible traces of any constructions, just flint, stone and pottery artifacts scattered around are present. Any earthworks would completely disturb this unique preserved context, and made further excavation impossible.

The same remarks go to the areas appointed by the Uzbek archaeologists.

4. Determining whether there are any plans to continue excavations in future.

Yes, in 2021 the Polish-Uzbek team revisited Ayakagytma 'The Site' and its nearest surroundings, and decided to continue the field research for at least 2 – 3 coming seasons. Our research is mainly directed to the detailed reconstruction of the paleoenvironment in the Late Pleistocene/Early Holocene – some 12 thousand – 4 thousand years ago.

It is also quite possible that our Uzbek colleagues also would like to excavate or sound other localities.

5. Comments about the Bash Wind Farm.

While planning the Bash Wind Farm, I would heartily advice to bear in mind two more aspects, beside the archaeological one.

a. Ayakagytma Depression and its surroundings have a splendid, phenomenal tourist potential. It is a pearl, a treasure of Uzbekistan. It has everything to attract people from many countries to visit it and choose as the vacationing place: the exotic desert, the windy lake perfect for sailing and fishing, marvelous, picturesque and colourfull landscapes with deep gorges and red, white, silver mountains, exotic animals, in that number birds of prey, waterfowl, groundhogs and dragon lizards, and plants. It also has local people with their yurts, camels and horses. This potential absolutely should not be spoiled, but perhaps made use of in the nearest future. Thus, the Bash Wind Farm, which itself is quite a reasonable investment, should be planned in the way to became a well-adjusted part of that landscape.
b. Wind farm could be dangerous for wild life, especially for birds. It would be very useful to apply the proper safety devices in order to protect them.

Warsaw, 4th of July, 2021

APPENDIX T – TRANSLATED SUMMARY OF DETAILED ARCHAEOLOGICAL SURVEY REPORT (MARCH, 2022)

REPORT

Brief summary of archeological excavations carried out in the Ayakagitma basin of Gijduvan district of Bukhara region

In recent years, great attention has been paid to the scientific study of archeological monuments, protection, preservation, promotion and rational use.

These archeological monuments, which are an integral part of the objects of cultural heritage, are the main source in the study of socio-economic and material culture of ancient and medieval times. In this regard, "Carrying out archeological excavations on the monuments of the Stone Age and Bronze Age in the Kyzylkum" is one of the urgent tasks on the agenda.
It should be noted that the construction sites are located on the South-Eastern border of the present-day Kyzylkum desert. 5-6 thousand years ago, The Kyzylkum Desert was a valley, the land of "Ming Kollar" inhabited by the ancestors of mankind.

In accordance to the contract No-08 dated May 4, 2021, between the National Archaeological Center of the Academy of Sciences of the Republic of Uzbekistan (NACAS) and "Acwa Power Bash Wind" LLC, an expedition was launched with employees of the (NACAS). Thus, archeological survey and excavations were carried out in 21,000 hectares.

The archeological expedition mentioned in the project conducted research from May 25 to June 25, 2021 and obtained the first scientific results. As a result, at the southernmost boundary of the designated area, a new Neolithic site of the Neolithic period, Ayakagitma-2, was found on the northern edge of the Ayakagitma basin. Area of the site (height 222 m above sea level, coordinates: 70x50 m, separated by cliffs on three sides. The eastern side of the site was connected to a high hill, and the cliff on the southern side washed away much of it. A 40 cm thick cultural layer has been preserved in the upper part of the Neolithic site of Ayakagitma-2. Control and excavation works were carried out at the monument. Fossils, remains of microfauna, lime and bonfire were found from this layer. A solid sloping layer of 20-30 cm was detected at the bottom of the culture layer. However, no cultural remains were found in this layer, and it was therefore concluded that this layer was part of the base of the monument. A thick layer of mud was found at the bottom of this layer, which indicates that this side was washed away by water at that time. Among the finds excavated from the monument were found 370 stone objects, a small number of animal bones and ocher remains.

A number of new Paleolithic stone workshops (7 points) of the Middle Paleolithic period were found on the northern shores of the large Bashogitma basin (area 10x3 km) near the Karasigir basin. Thus, in the territory defined in contract No. 8, 1 room of the new Neolithic period, 7 stone-working workshops of the Middle Paleolithic and 149 finds of the Stone and classical period were identified.

As a result of inspections, 161 archeological objects were identified in the area and their concentration was divided into 3 groups.

If construction and excavation work is carried out on the territory of the findings belonging to the above-mentioned 3 groups, it should be implemented under direct archaeological supervision.

The first group included 32 points, such as, sites with intact cultural layers and stone processing workshops, in which intact cultural layers were recorded. Since many archeological artifacts are scattered within a radius of 200 m of such points, it is advisable to set their protection zone at 200 m.

The second group included artifacts with a high concentration of 21 stone-ceramic remains (more than 30), but the cultural layers of which were damaged or mixed due to natural influences. In accordance with the prevalence of finds in them, it is desirable to establish a protection zone of 100 m.

The third group includes 104 low-numbered finds and archaeological finds, the cultural layer of which is not observed, it is desirable to designate their protection zone at 25 m.

In the event that construction and excavation works are carried out on the territory of the finds belonging to the 3 groups mentioned above, they should be carried out directly under archaeological supervision.

Table 1. Database of archaeological objects

№	X	Y	Z	stone	ceramic	bone	buffer zone
1	635043	4503202	242	4	0		25
2	639297.52	4498548.94	318	1	0		25
3	631659	4504977	272	6	0		100
4	631930	4504992	276	3	0		100
5	636874	4503002	241	36	0		100
6	633665.14	4504163.86	332	0	14		25
7	634722	4504034	291	1	1		25
8	630973	4503506	235	0	6		200
9	633606	4504286	264	2	0		25
10	630945	4503423	191	0	12		100
11	631196.14	4504584.37	276	0	3		25
12	631077.62	4505072.73	309	0	2		25
13	631159.98	4505355.49	307	0	10		25
14	630997	4503810	208	0	3		200
15	631014	4503860	209	0	2		200
16	630933	4503600	233	0	1		200
17	633860	4501596	162	0	1		25
18	630947	4503683	222	351	4		200
19	631074	4506282	264	0	3		25
20	631122	4504412	217	0	1		25
21	633886	4504291	276	0	3		25
22	631013	4504771	239	0	3		25
23	630947	4503683	222	1	0		200

24	630951	4503659	223	1	0		200
25	631716	4504900.80	227	1	0		100
26	633568.04	4504156.56	218	0	10		100
27	633663.08	4502633.25	251	1	2		25
28	631782.03	4504835.34	270	0	0	0	25
30	631317.18	4505069.56	243	0	3		100
31	631018.34	4504599.74	239	1	3		25
32	634255.40	4504794.52	252	0	10		25
33	629638.61	4503896.31	288	3	10		25
34	630449.37	4726999.84	239	1	5		25
35	636783.06	4502956.54	245	27	1		200
36	67019	4502742	240	6	1		25
37	636049.35	4503774.07	248	23	3		25
38	636783.06	4502956.54	261	6	1		100
39	636603	4503352	260	52	2		200
40	636299.33	4502975.41	327	0	5		100
41	636298.46	4503099.40	323	47	22		200
42	637056	4502760	244	4	0		25
43	639380	4504787	313	6	0		25
44	643137.05	4490375.76	253	7	0		25
45	643702.08	4490212.65	303	0	3		25
46	642346.57	4491258.28	304	0	4		25
47	635464.56	4504005.84	309	5	0		25
48	639477	4489529	254	1	0		25
49	639783.65	4491683.61	252	1	1		25
50	642965	4490704	268	0	10		25
51	639132.38	4489369.06	303	0	3		25
52	637311.05	4504432.11	244	0	0		25
53	646296	4490775	248	0	1		25
54	642095.68	4505638.19	318	0	20		25
55	640325	4505011	310	0	3		25
56	637317	4504854	254	8	37		200
57	646764	4491454	271	0	10		25
58	638493	4502092	242	0	0	1	25
59	639469.51	4497454.05	229	0	0	30	25
60	636729.29	4499749.99	251	0	26	1	25
61	635054.29	4504405.54	334	0	1	0	25
62	637608	4501551	222	7	0		200
63	637053.46	4501667.82	239	16	0	0	200
64	637939.25	4495931.95	253	0	6		25
65	637621	4501452	230	12	0		25
66	637392	4501964	225	1	0		25
67	637593	4501370	227	2	0		25
68	637430	4501898	236	3	0		25
69	638176	4501551	253	2	0		25
70	638048.16	4502071.19	233	4	0		25
71	637281.46	4501762.72	215	3	0		25
72	638740	4501857	267	1	0		25
73	637626.16	4503699.47	251	0	3		25
74	638079.57	4501670.15	316	0	1		25
75	634950	4503830	259	0	3		25
76	640246.91	4500729.80	232	3	1		25
77	634812.88	4504663.96	331	0	2		25
78	640246.91	4500729.80	241	0	3		25
79	637573.62	4501285.06	211	4	0		25

80	645935	4500415	288	10	12		200
81	647402	4501675	314	3	6		25
82	646032	4500845	288	19	0		200
83	645658	4501130	292	30	0		200
84	645994	4500533	282	19	2		200
85	646230	4501254	258	20	0		200
86	645743	4501387	304	25	0		200
87	645851	4500579	310	12	10		200
88	645101	4497769	241	11	1		200
89	637372	4505596	283	2	3		25
90	645863	4500738	289	8	0		100
91	645888	4498102	327	16	0	1	100
92	648127	4498661	244	19	0		25
93	646316.56	4490798.37	301	3	0		25
94	648127	4498661	329	45	0	0	100
95	646170	4500909	294	9	1		200
96	646787	4498543	250	38	0		100
97	647264	4498496	221	42	98		200
98	647577.58	4498260.07	267	11	0		25
99	646215	4499821	268	54	0		200
100	646146	4499860	331	12	0		200
101	646598	4498493	225	2	0		25
102	647419	4498499	343	7	0	0	25
103	647423	4498443	202	13	0		100
104	646885	4498522	254	31	8		200
105	646740.55	4498582.23	250	0	5		25
106	646057	4499383	262	21	0	0	200
107	645755.95	4498738.71	359	19	0		200
108	646717.88	4498230.11	342	18	0		100
109	645622.67	4498127.16	330	18	0		100
110	646228	4499686	332	51	1		200
111	645915	4498483	244	9	0		100
112	646130	4499657	252	29	1		200
113	64112	4499719	279	21	0		200
114	636754.68	4501346.92	208	100000	300		200
116	639554.44	4502170.89	244	7	0		25
117	639418.75	4501890.72	247	11	0		25
118	639788.12	4502237	239	0	4		25
119	639279.58	4501795.57	246	3	0		25
120	638511.99	4502644.93	252	0	2		25
121	639126	4502440.49	243	6	0		25
122	639065	4501914.95	247	8	0		25
123	637460	4501207.24	248	15	0		25
124	637495	4501188.82	237	7	0		25
125	637303	4501165	218	0	3		25
126	637566	4501520.27	224	13	0		25
127	635734	4502387	245	10	0		25
128	637658	4501432	228	12	0		25
129	637794	4501465	225	14	0		25
130	637134	4501273	223	8	0		25
131	636601	4501619.29	233	18	0		25
132	637992	4500288.55	262	4	0		25
133	637524	4501569.53	223	7	0		25
134	636847	4501258	211	27	0		100
135	637329	4502033.77	257	3	1		25

136	636808	4501023	237	22	0		25
137	637502	4500880.15	247	11	1		25
138	636895	4501330.44	212	37	0		100
139	636825	4501265	210	7	0		25
140	637253	4501232	215	1	3		25
141	637391	4501061	217	9	0		25
143	637489	4501517	211	0	2		25
144	637565	4501378	225	5	0		25
145	637398	4501260	216	12	0		25
146	636845	4501393	216	17	0		100
147	636824	4501388	211	31	0		100
148	636528	4501144.79	205	16	0		25
149	637511	4501244.62	212	8	0		25
150	636946	4501049	202	7	0		25
151	637325.33	4501177.10	215	6	0		25
152	637352	4501162.10	213	4	0		25
153	637509	4501316	227	7	1		25
155	637435	4501448.87	229	4	0		25
156	637673	4501470.28	231	7	0		25
157	637565	4501378	221	7	0		25
158	637408	4501444	227	16	0		25
159	637387	4501501	223	14	0		25
160	637089	4501250	224	5	0		25
161	637400	4501447	226	3	1		25

APPENDIX U -SHADOW FLICKER ASSESSMENT REPORT

Bash Wind Farm, Uzbekistan

Shadow Flicker Assessment

December 2021

Bash Wind Farm, Uzbekistan

Shadow Flicker Assessment

Revision	Date	Notes	Author	Checked	Approved
Ver. 7a	07-12-21	Env - Shadow Flicker	Sunil Patel 	Nick Davey 	Nick Davey 

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1 INTRODUCTION

1.1 Entran Ltd have been commissioned to provide a 'Shadow Flicker' assessment for the project known as the 'Bash Wind Farm', Uzbekistan. The project site is in the Gijduvon district of the Bukhara region of Uzbekistan. This report presents the results of the shadow flicker model constructed to identify potential effects at nearby receptors.

1.2 This 'Shadow Flicker' assessment has been undertaken in accordance with the World Bank Group/International Finance Corporation's environmental guidelines on Wind Energy.

1.3 The 500MW wind farm will comprise 79 Envision EN171 (6.5MW) turbines and ancillary equipment. The general site location is presented in Figure 1 and the receptors are presented in Table 1.1.

1.4 Wind turbines can cause 'Shadow Flicker' when the sun passes behind a moving blade and casts a shadow on the window of nearby premises. Shadow flicker for the purposes of assessment is described as:

> *the flickering effect caused when rotating wind turbine blades periodically cast a shadow over neighbouring properties as they turn, through constrained openings such as windows. The magnitude of the shadow flicker effect varies both spatially and temporally and depends on a number of environmental conditions coinciding at any particular point in time, including, the position and height of the sun, wind speed and direction, cloudiness, and proximity of the turbine to a sensitive receptor.*

1.5 Shadow flicker will depend on the following variables:

- The turbine hub height and rotor diameter;
- The distance from the turbines;
- The direction of the residence relative to the turbines;
- The time of year and wind direction;
- The proportion of daylight hours in which the turbines operate; and
- The frequency of bright sunshine and cloudless skies (particularly at low elevations above the horizon).

1.6 This report considers the shadow flicker of all turbines at a specific receptor(s) at any given time and therefore considers the potential increase of the shadow flicker intensity or frequency.

Figure 1 Bash Wind Farm Project, Turbine & Receptor Locations

1.7 The assessment of receptors potentially susceptible to shadow flicker (e.g. human settlements) within a distance of ten rotor diameters from proposed turbine locations is internationally considered to be an acceptable distance limit for the shadow flicker studies. However, for a robust approach, all human settlements within a 2,500m radius of any given turbine location have been included for analysis.

Table 1.1 Identification of Sensitive Sites

Receptor	Location WGS84 (Zone41N) UTM	Nearest WTG	Distance to Nearest WTG, m	Ground height at receptor, m	Description
R5	641016.8,4502567.7	BAS32	265	295	Residential use by herders (within the project site)
R6	639992.1,4503251.3	BAS32	1047	267	Residential use by herders (within the project site)
R7	645640.4,4497535.9	BAS76	3038	240	Residential use by herders (within the project site)
R18	639117.4,4491013.7	BAS63	382	255	Residential use by herders (within the project site)
R21	640320.8,4496324.5	BAS56	730	261	Residential use by herders (within the project site)
R23	641626.9,4508563.8	BAS19	3696	256	Residential use by herders
R24	633986.1,4502241.9	BAS40	1804	185	Residential use by herders

2 SHADOW FLICKER ASSESSMENT CRITERIA

World Bank Group/International Finance Cooperation Guidelines

2.1 The Environmental, Health and Safety' Guidelines for Wind Energy (2015) sets the following screening criteria for wind farms:

> *If it is not possible to locate the wind energy facility/turbines such that neighbouring receptors experience no shadow flicker effects, it is recommended that the predicted duration of shadow flicker effects experienced at a sensitive receptor not exceed 30 hours per year and 30 minutes per day on the worst affected day, based on a worst-case scenario.*
>
> *In order to assess compliance with the recommended limits, shadow flicker should be modelled and predicted based on an astronomical worst-case scenario, which is defined as follows:*
>
> - *There is continual sunshine and permanently cloudless skies from sunrise to sunset.*
> - *There is sufficient wind for continually rotating turbine blades.*
> - *Rotor is perpendicular to the incident direction of the sunlight.*
> - *Sun angles less than 3 degrees above the horizon level are disregarded (due to likelihood for vegetation and building screening).*
> - *Distances between the rotor plane and the tower axis are negligible.*
> - *Light refraction in the atmosphere is not considered.*

2.2 In addition to the above recommended scenario, an assessment has also been made to consider actual site conditions based upon long-term sunshine statistics at the nearest metrological station (Tashkant) which also considers cloud/wind data.

3 SHADOW FLICKER MODELLING

3.1 Turbine shadow flicker was modelled using 'WindPRO' (v3.5), an industry-leading software package for the design and planning of wind energy projects. The model software considers the sun's path with respect to every turbine location during every minute over a complete year. Any shadow flicker caused by each turbine is then aggregated for each receptor for the entire year.

3.2 The input parameters for the model include:

- the turbine locations and dimensions;
- the receptors location;
- the size of windows on each receptor and the direction that the windows face; and
- the topography model obtained from the (Space) 'Shuttle Radar Topography Mission', (SRTM), at 30m resolution.

3.3 The turbine locations are presented in Appendix A.

3.4 The relevant turbine data is presented in Table 3.1.

Table 3.1 Turbine Details

Turbine Model	Rotor Diameter, m	Hub Height, m	Rotor tip height, m	Rotor Swept Area, m^2	Rotor Speed Range, rpm
EN171 (6.5MW)	171	100	-	22964	7.1 – 9.94

3.5 The following scenarios are considered:

- As per IFC's worst-case; and
- A realistic scenario based upon site data (e.g., long term average sunshine hours rather than the worst-case IFC scenario of constant sunshine).

3.6 For the IFC worst-case scenario, the following is considered:

- there is a clear sky 365 days per year;
- the turbine blades were assumed to be rotating for 365 days per year;
- The effect of shadow flicker was not calculated where the sun lies less than 3 degrees above the horizon;
- the receptor is occupied at all times;
- no screening (from either trees or man-made obstacles) is taken into account; and
- all receptors have a 2 m x 2 m window facing directly towards the turbine. The WindPro utilises the concept of 'Green House' mode which allows for shadow flicker effects to be evaluated for each receptor in every direction for the nearest group of WTGs.

3.7 These assumptions result in a robust but conservative estimation, due to:

- unlikely to have clear skies all year around;
- screening (structures, trees or any other obstacle that may obstruct sight lines between the turbines and the receptor) can mask shadows from the turbines;
- all the turbines may not be operational all year (calm conditions/maintenance etc);
- turbine blades will not face the shadow receptor all year (as blades will face the direction of wind to be fully efficient);
- receptors may not be occupied during a shadow flicker event; and
- the intensity of any shadow flicker event will be diminished by the intervening distance.

3.8 For a more realistic consideration, long term weather conditions were obtained from Tashkant meteorological dataset (approximately 385 km distant) and the sunshine probability used for the model is set out in Table 3.2. Other meteorological sites in the immediate vicinity do not have a complete set of the required data.

Table 3.2 Sunshine Hours for Realistic Scenario

Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
3.43 Hrs	4.40 Hrs	5.12 Hrs	7.24 Hrs	9.40 Hrs	11.89 Hrs	12.23 Hrs	11.73 Hrs	10.01 Hrs	7.16 Hrs	4.87 Hrs	3.07 Hrs

3.9 However, as the geographical extent of the study is large, screening (trees or man-made obstacles) has not been considered for the realistic scenario.

4 SHADOW FLICKER RESULTS

4.1 The following shadow flicker effects will result for the receptors under consideration (a graphical representation of the results is presented in Figures 2 to 3):

Table 4.1 Shadow Flicker Occurrence at Each Receptor

Receptor	Location	IFC Worst-case Shadow hours per year	Realistic Shadow hours per year	IFC Max Shadow hours per day
		(h/year)	(h/year)	(h/day)
R5	641016.8,4502567.7	**172:26**	**114:45**	**01:35**
R6	639992.1,4503251.3	**34:58**	**16:53**	**00:42**
R7	645640.4,4497535.9	00:00	00:00	00:00
R18	639117.4,4491013.7	**141:44**	**65:16**	**01:40**
R21	640320.8,4496324.5	**121:36**	**74:52**	**00:56**
R23	641626.9,4508563.8	00:00	00:00	00:00
R24	633986.1,4502241.9	00:00	00:00	00:00

4.2 As can be seen from Table 4.1, receptors R5, R6, R18 and R21 exceed the IFC criteria (30 hours per year or less than 30 mins per day) for the WBG/IFC worst-case scenario (all these receptors are within the project site). The realistic scenario also shows an exceedance of the IFC criterion for receptors R5, R6, R18 and R21.

Mitigation Measures

4.3 It is understood that receptors R5, R6, R18 and R21 are in a Health Protection Zone and due to the adverse Social Impact, these receptors will be relocated 500m or further away and therefore, be within the IFC/Uzbekistan Guidelines. Further mitigation measures are not necessary.

5 CONCLUSIONS

5.1 A shadow flicker assessment has been undertaken for the proposed Bash Wind Farm project in accordance with the World Bank Group/International Finance Corporation's guidelines for Wind Energy. The Shadow flicker effects have been considered by using by the software suite 'WindPRO' (v3.5). The project will consist of 79 Envision EN171 turbines (6.5MW).

5.2 The assessment concludes that there are four receptors (R5, R6, R18 and R21) that do not comply with the WBG/IFC guidelines (30 hours per year or less than 30 mins per day) for the IFC worst-case scenario. These receptors are in a Health Protection Zone or/and deemed to have an adverse Social Impact and therefore these receptors will be relocated by more than 500m so as to be within the IFC guidelines.

Figure 2 WBG/IFC Worst Case Maximum Minutes per Shadow Day

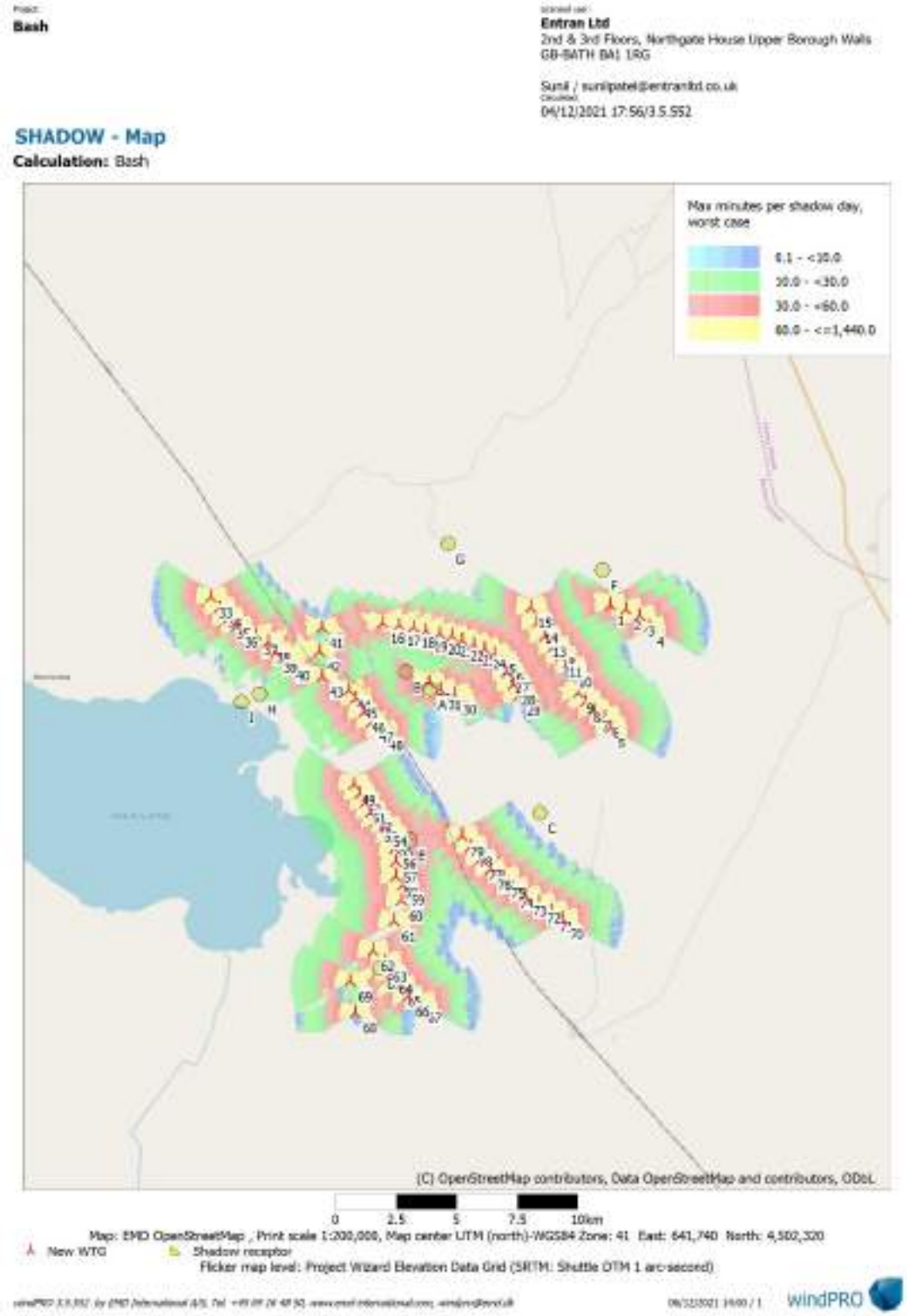
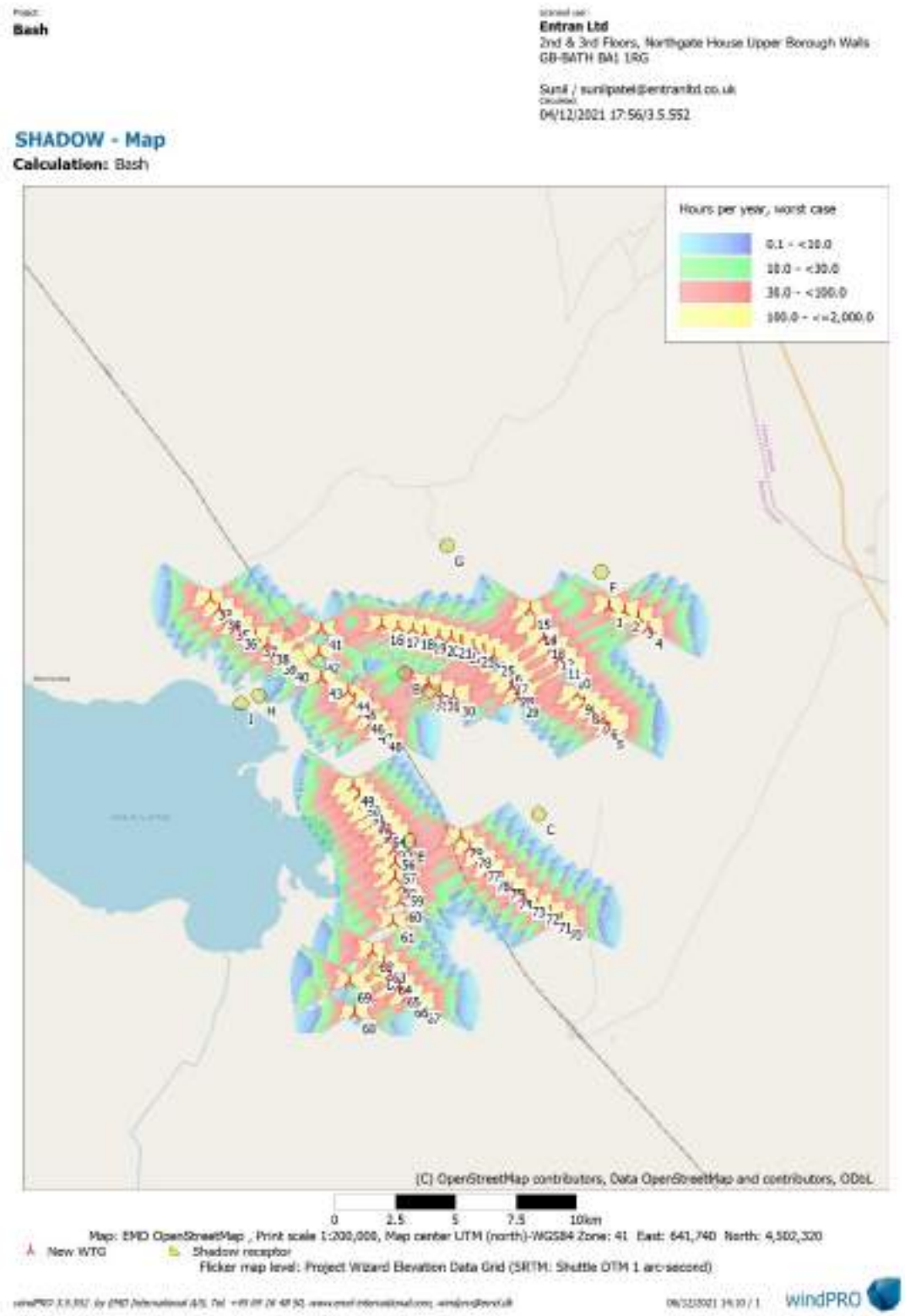


Figure 3 WBG/IFC Worst Case Shadow Hours Per Year



APPENDIX A – WIND FARM LAYOUT

Turbine Layout

Turbine Id	UTM X-co-ord	UTM Y- co-ord	Absolute Height, m
BAS1	648373	4506185	298
BAS2	649045	4506020	304
BAS3	649597	4505755	311
BAS4	650015	4505307	306
BAS5	648500	4501127	318
BAS6	648244	4501558	315
BAS7	647793	4501840	316
BAS8	647452	4502178	318
BAS9	647142	4502536	313
BAS10	646808	4503590	325
BAS11	646403	4503988	333
BAS12	646069	4504406	336
BAS13	645698	4504834	330
BAS14	645368	4505369	324
BAS15	645106	4505987	305
BAS16	638995	4505245	299
BAS17	639665	4505171	307
BAS18	640283	4505084	315
BAS19	640795	4504970	314
BAS20	641343	4504845	318
BAS21	641886	4504779	324
BAS22	642325	4504612	338
BAS23	642773	4504448	347
BAS24	643226	4504282	341
BAS25	643626	4504073	339
BAS26	643968	4503730	335
BAS27	644203	4503278	327
BAS28	644429	4502820	319
BAS29	644688	4502362	313
BAS30	642034	4502391	301
BAS31	641422	4502557	301
BAS32	640946	4502822	306
BAS33	631909	4506191	270
BAS34	632255	4505763	273
BAS35	632598	4505334	277
BAS36	632967	4504976	281
BAS37	633786	4504691	270

BAS38	634270	4504385	271
BAS39	634615	4503943	272
BAS40	635118	4503644	271
BAS41	636510	4504989	297
BAS42	636416	4504050	284
BAS43	636529	4502987	264
BAS44	637653	4502459	266
BAS45	637967	4502130	265
BAS46	638274	4501543	269
BAS47	638630	4501177	262
BAS48	639042	4500835	261
BAS49	637933	4498563	265
BAS50	638172	4498197	265
BAS51	638418	4497824	263
BAS52	638656	4497458	263
BAS53	638891	4497090	264
BAS54	639268	4496882	264
BAS55	639530	4496487	264
BAS56	639677	4495981	263
BAS57	639726	4495417	262
BAS58	639738	4494819	258
BAS59	640050	4494488	259
BAS60	639989	4493841	259
BAS61	639696	4492978	257
BAS62	638847	4491758	259
BAS63	639379	4491292	260
BAS64	639626	4490771	263
BAS65	639993	4490329	265
BAS66	640331	4489887	268
BAS67	640839	4489660	266
BAS68	638159	4489177	263
BAS70	637950	4490476	264
BAS71	646678	4493206	259
BAS72	646210	4493511	260
BAS73	645705	4493870	255
BAS74	645118	4494123	261
BAS75	644589	4494447	260
BAS76	644186	4494874	261
BAS77	643628	4495173	260
BAS78	643244	4495601	262
BAS79	642835	4496125	260
BAS80	642460	4496544	261

APPENDIX V – SUPPLY CHAIN LABOUR & WORKING CONDITION ASSESSMENT REPORT

APPENDIX W - SOIL & WATER ANALYSIS LABORATORY RESULTS – OHTL

Assessment of soil and water quality along Bash-Karakul OHTL

UZBEKISTAN BASH-KARAKUL OHTL PROJECT:

LOCAL SUPPORT IN THE DEVELOPMENT, SUBMISSION AND APPROVAL OF ESIA

CLIENT: 5CAPITALS

DATE: MAY 2021

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September – 2021

Contents

Abbreviations/Acronyms

ICP-MS – Inductively coupled plasma mass spectrometry

ISE's - Ion-selective electrodes

JE – Juru Energy

MS – Mass spectrometry

SE - State Enterprise

WF – Wind Farm

OHTL – Overhead transmission line

INTRODUCTION

Proposed Bash – Karakul OHTL route goes through Kyzyl-Kum desert, where sandy ancient alluvial plains subjected to aeolian transformation. The most common aeolian landforms of Kyzyl-Kum are dunes and dune chains, hills, ridgy and trough sands, and sandy plains.(R.D. Mel'nikova, 1973) The landscape of the project area is steppe, rather homogeneous and arid. The OHTL area passes through unmodified areas, agricultural land and local social infrastructure.

During the walkover along proposed OHTL route and visual examination it was determined that the soils are represented by "sandy soil", "fine sandy soil", "medium sandy soil" and "clay soil". There were no significant differences throughout the whole route, expect the areas with agricultural activities. The dominant species in the vegetation cover are mostly the same, more complex in relief Kyzylkum, Haloxylon persicum Regel, Artemisia diffusa, Ferula_foetida_ds, Kochia prostrata (L.) Schrad. harmala L, Diarthron vesiculosum (Fisch. et Mey.) CA Mey. and Iris songarica Schrenk. such species occur frequently.
The environmental assessment of soil quality aims to provide information on the qualitative and quantitative content of contaminants in the soil in the territory of the planned OHTL from Bash to Karakul.

1. Methodology

1.1 Soil contamination survey

Soil contamination survey was based on walkover along the proposed alignment. Visual observation approach was applied to determine current state of soil.

Walkover survey was conducted on August 21-22, 2021 by local soil expert Inomjon Bakhromov.

1.2 Collection of soil and water samples

9 samples of soil and 6 samples of water were collected on August 21- 22, 2021 along OHTL route at agreed locations with 5 Capitals. (Fig.1)
In order to assess and study the state of soil contamination, samples from the selected sites were subjected to chemical and mass spectral analysis in certified laboratory.

Sampling was carried out in accordance with the established State standard 17.4.4.02-2017 "Nature protection. Soils. Methods for sampling and preparation of soil for chemical, bacteriological, helminthological analysis".

Figure 1: Location of water sampling points.

The samples of surface waters were taken as per State standard 31861-2012 “Water. General requirements for sampling”.

Table 1 Coordinates of collected water samples

No.	Sample	Coordinates
Water from irrigation channels		
1.	SW1	39°43'31.32"N 63°51'3.49"E
2.	SW2	40° 7'3.07"N 63°58'51.25"E
3.	SW3	40°31'35.25"N 64°33'21.97"E
4.	SW4	39°33'31.73"N 63°52'1.50"E
5	SW5	39°33'24.16"N 63°52'3.30"E
6	SW6	39°32'53.68"N 63°51'58.29"E

Figure 2: Location of soil sampling points

Table 2. Coordinates of collected soil samples

No.	Sample number	Coordinates
Soil samples		
1.	Soil No.1(SQ7)	40°29'31.49"N 64°40'44.80"E
2.	Soil No.2 (SQ1)	40°24'9.76"N 64°29'2.39"E
3.	Soil No.3 (SQ2)	40° 8'40.09"N 64° 1'36.42"E
4.	Soil No.4 (SQ3)	39°53'43.22"N 63°54'37.28"E
5.	Soil No.5 (SQ8)	39°37'11.31"N 63°52'19.74"E
6.	Soil No.6 (SQ4)	39°37'2.45"N 63°52'20.36"E
7.	Soil No.7 (SQ9)	39°34'7.35"N 63°52'9.10"E
8	Soil No.8 (SQ5)	39°33'8.94"N 63°52'1.27"E
9	Soil No 9 (SQ6)	39°32'13.77"N 63°51'48.00"E

Sampling was carried out in accordance with the established State standard 17.4.4.02-2017 “Nature protection. Soils. Methods for sampling and preparation of soil for chemical, bacteriological, helminthological analysis”

2. Observation results

Site observations resulted that soil along 162 km of proposed OHTL is mainly consists of sandy desert soil. However, some points cover a different type of soil. There may be potential threats to the soil from agricultural use and infrastructure. Vegetation is represented mainly by desert flora, except the point where the agricultural used.

In general, along the proposed OHTL route, soil structure and appearance do not change significantly. Main conclusions of visual inspection are as follows:

Parameters	Observation results
Current use	Several types of soil cover could be observed – Sandy fine soils – Stony/sandy soil

	– Stony clay soil. – Clay soil It was observed that land along proposed route is used for grazing activities and tracks of domestic animals' waste were observed.
Topography/visual conditions	Surrounding areas at the beginning of OHTL from the Project site till the agricultural fields are open with low concentration of social infrastructure. The nearest infrastructure is railway roads and highways. Areas, where OHTL crosses agricultural fields was characterised mainly with cultivating crops and some small structures (buildings of farmers). Meantime area close to karakul substation has several infrastructure, mainly small brick companies.
Surface appearance	No surface disturbance, discoloration has been observed
Chemical pollution	Not observed
Polluted areas	Not observed

2.1. Collection of soil samples

Point 1 (SQ7) observation and sample collection point

The SQ7 location surface consists of sandy fine-textured soils. It contains a large amount of gypsum. Anthropogenic impacts have been observed as a result of seasonal livestock grazing (livestock waste was observed). The plants are very sparse, mainly Artemisia diffusa, Kochia prostrata (L.) Schrad., Alhagi pseudalhagi (Bieb) Devs, Carex pachystylis, Poa bulbosa.

Figure 3: Sampling point 1 and surrounding areas

Point 2 (SQ 1) observation and sample collection point

Composition of soil at SQ1 mainly consists of stony sandy soil. A large amount of gypsum was observed. The layer of topsoil contains a small humus. The location of point located near the irrigation ditch.
Also, anthropogenic impacts have been observed as a result of seasonal livestock grazing (livestock waste was observed). The plants are very sparse, mainly Artemisia diffusa, Kochia prostrata (L.) Schrad., Alhagi pseudalhagi (Bieb) Devs, Carex pachystylis, Poa bulbosa, Peganum harmala L.

Figure 4: Sampling point 2 and surrounding areas

Point 3 (SQ 2) observation and sample collection point

Observation point SQ2 is also represented by sandy soil. There was a gypsum in the subsoil. The soil type and structure within a radius of 5 km around this point is unchanged
The amount of humus is very low as well as moisture retention property. Around the low hills, the loose barchan sands reached a thickness of about 1 m. There are no man-made impacts and sources of pollution in the environment. Livestock waste was observed. The plants are very sparse, mainly Haloxylon persicum Regel, Artemisia diffusa, Kochia prostrata (L.) Schrad., Alhagi pseudalhagi (Bieb) Devs, Carex pachystylis, Poa bulbosa.

Figure 5: Sampling point 3 and surrounding areas

Point 4 (SQ 3) observation and sample collection point

The point of SQ3 the same as previous location consists of sandy soil, however it was a large amount of gypsum was observed. The moisture retention property is low as well as the presence of humus. Livestock waste was observed. The plants are very rare, mainly Haloxylon persicum Regel, Artemisia diffusa, Kochia prostrata (L.) Schrad., Alhagi pseudalhagi (Bieb) Devs, Carex pachystylis, Poa bulbosa, etc.

Figure 6: **Sampling point 4 and surrounding areas**

Point 5 (SQ 4) observation and sample collection point

Composition of soil at SQ4 mainly consists of sandy soil. Overall surface and structure at collection point and within a radius of 5 km remains unchanged. The topsoil is covered with loose sands and is frequently renewed. The thickness of the loose sands exceeds 1 m in the area of the hills. The plant composition is mainly Haloxylon persicum Regel, Artemisia diffusa, Kochia prostrata (L.) Schrad., Alhagi pseudalhagi (Bieb) Devs

Figure 7: **Sampling point 5 and surrounding areas**

Point 6 (SQ 9) observation and sample collection point

The same as the previous site, SQ9, covers sandy soils. Within a radius of 3 km around the point the general appearance and structure of the soil remains unchanged. This point is located close to the railway, which is not particularly affecting the condition of the soil. Anthropogenic impacts have been observed as a result of seasonal livestock grazing (livestock waste was observed).The plants are sparsely distributed, mainly Haloxylon persicum Regel, Artemisia diffusa, Kochia prostrata (L.) Schrad., Alhagi pseudalhagi (Bieb) Devs, Carex pachystylis, Poa bulbosa.

Figure 8: **Sampling point 6 and surrounding areas**

Point 7 (SQ8) observation and sample collection point

No significant differences were observed at point SQ8, almost the same as at SQ9 and SQ4

Figure 9: **Sampling point 7 and surrounding areas**

Point 8 (SQ 5) observation and sample collection point

Point SQ5 is significantly different from the other points. It represents land used for agriculture.Soil cover is moderately fertile gray soil and humus content, moisture retention is moderate. Vegetation is almost entirely occupied by agricultural crops.


Figure 10: **Sampling point 8 and surrounding areas**

Point 9 (SQ 6) observation and sample collection point

The area covers of stony clay soil. Water absorption is weak and hard. Loose sands did not observe in the topsoil. The general appearance and structure of the soil changes every 1 km around the site. Potentially affected by environmental and soil conditions, there may be private industrial sectors in the vicinity of this point. The area is also close to human settlements and various anthropogenic impacts were observed here. Plants are very rare, mainly species Haloxylon persicum Regel, Artemisia diffusa, Ferula_foetida_ds, Kochia prostrata (L.) Schrad., Alhagi pseudalhagi (Bieb) Devs, Carex pachystylis, Poa bulbosa, Peganum harmala L., Girgensohnia opp Diarthron vesiculosum (Fisch. Et Mey.) CA Mey.




Figure 11: **Sampling point 9 and surrounding areas**

2.3. Collection of water samples.

Six water samples were collected in a volume of 1 litre on along OHTL route at agreed locations (Figures .

Figure 12: Water sampling from SW1.

Figure 13: Water sampling from SW3. The canal water drains into Lake Ayakagitma.


Figure 14: Water sampling from SW4.




Figure 15: Water sampling from SW5.


Figure 16: Water sampling from SW6.

3. Laboratory analysis of collected samples and results

3.1. Description of methods for measuring quality indicators of soil and water.

The samples were sent to a “Central laboratory” for analysis of the following parameters:

Table 3. Parameters for qualitative and quantitative analyses

Parameters for soils:	Parameters for water:
● Chlorides (Cl^-) ● Nitrates (NO_3) ● Metals: - Sodium (Na) - Potassium (K) - Arsenic (As) - Cadmium (Cd) - Chromium (Cr) - Copper (Cu) - Mercury (Hg) - Nickel (Ni) - Ferrum (Fe) - Lead (Pb) - Zinc (Zn)	● pH. ● turbidity ● Metals: - Arsenic (As) - Aluminium (Al) - Cadmium (Cd) - Chromium (Cr) - Copper (Cu) - Mercury (Hg) - Nickel (Ni) - Ferrum (Fe) - Lead (Pb) - Zinc (Zn)

Basic physical and chemical methods were used to analyze pollutants:

- Photometric – based on chemical conversion of harmful substances (nitrates, aluminum, chromium (+6),) in color-intensive compounds when interacting with corresponding reagents, with subsequent measurements of the density of the colored compounds at a certain wavelength and allowing to make quick measurements with a sufficiently high accuracy;

- Inductively coupled plasma mass spectrometry (ICP-MS) – an analytical method that is used to detect metals and several non-metals in liquid samples at very low concentrations. MS analysis is the most sensitive of all modern multi-element analysis methods. The basic principle of mass spectrometry (MS) is to generate ions from inorganic or organic compounds, to distribute these ions by mass-to-charge ratio and to detect their qualitative and quantitative characteristics.

- Potentiometry –one of the electroanalytical methods. Potentiometry based on measures the difference in electrode potentials. One electrode is called the reference electrode and has a constant potential, while the other one is an indicator electrode whose potential changes with the composition of the sample. Therefore, the difference of potential between the two electrodes gives an assessment of the composition of the sample. Ion-selective electrodes (ISE’s) possess a high degree of selectivity. In the laboratory, the electrode used is specific for chloride ion.

- titrimetric – a method of quantitative/mass analysis (chlorides), based on the measurement of the reagent solution volume of a precisely known concentration consumed for the reaction with the substance being determined;

3.2. Results of laboratory analysis

In the Irrigation ditch water (sample No.1 - 6), an excess of followings was noted that the samples of water fully comply with the state standards and does not exceed the maximum permissible concentration.
pH in all samples is alkaline, which is considered normal for irrigation water.
The amount of metals in the samples varies and they are only present in small quantities

The obtained results of the chemical analysis of waters are presented in table 4

Table 4[1] - Results of water analyses of the Irrigation ditch

Name of parameters	Place of selection and content mg/l						Detectable limits	MPC O'zDSt 950:2011	MPC for water in fishery reservoirs for surface waters"	Compliance with established norms
	Locations									
	№1	№2	№3	№4	№5	№6				
1	2	3	4	5	6	7	6	7	8	9
pH	8,00	8,00	8,00	8,00	8,00	8,00	1-14	6-9	6,5-8,5	Comply
Turbidity, mg/dm^3	0.03	0.03	0.03	0.03	0.03	0.03	0,001-9999mg/l	1,5 (2,0)	N/A	Comply
Arsenic (As) mg/dm^3	0.01	0,011	0,014	0,0079	0,018	0,0098	0.0001-10 mg/l	0.05	N/A	Comply
Aluminium (Al) mg/dm^3	0,039	0,0057	0,015	0,059	0,0081	0,016	0.002- 10 mg/l	0.2(0.5)	0,2	Comply
Cadmium (Cd) mg/dm^3	<0.0001	0,00012	0,000094	<0.0001	<0.0001	0,00028	0.0001- 1 mg/l	0.001	0,005	Comply
Copper (Cu) mg/dm^3	0,0026	0,0027	0,0031	0,0018	0,0042	0,0026	0.002 - 1 mg/l	1.0	0,001	Comply
Mercury (Hg) mg/dm^3	1,4*10^{-5}	<0.00001	2,9*10^{-5}	<0.00001	<0.00001	<0.00001	*	0.0005	0,00001	Comply
Nickel (Ni) mg/dm^3	0.0074	0,0075	0.01	0,0019	0,0066	0,0063	0.002- 1 mg/l	0.1	0.01	Comply
Ferrum (Fe) mg/dm^3	0.0048	0.0053	0.0059	0.0049	0.0054	0.0055	*	0.3	0.05	Comply
Lead (Pb) mg/dm^3	0,00028	0,00019	0,000082	0,000073	0,000078	0,000091	0.0002-10 mg/l	0.03	0.01	Comply
Zinc (Zn) mg/dm^3	0,0085	0,0055	0,0071	0,0021	0,0033	0,0032	0.0002-10 mg/l	3.0	0.01	Comply

The results of laboratory analysis of the soil are presented in Table 5.

Despite the differences in soil type and land use, the results of the analyses do not indicate significant differences.The pH results showed that the pH of the samples was greater than 8.0. This lowers the presence of nutrients such as P, Cu, Zn, N. SQ 4 has a higher nitrate content than the other sites.

Table 5[2] Results of chemical analysis of soils

Name of parameters	Sample number									Detectable limits in mg/l	MPC in mg/kg	Compliance with established norms
	SQ1	SQ2	SQ3	SQ4	SQ5	SQ6	SQ7	SQ8	SQ9			
pH	8.10	8.28	8.00	8.10	8.20	8.20	8.30	8,20	8.30	1-14	N/A	N/A
Chloride (as Cl), %	67.00	11.0	3.00	3.00	14.00	11.00	11.00	3.00	9.00	N/A	N/A	N/A
Nitrate (NO_3), mg/dm^3	49	6.00	9.00	101.00	21.00	38.00	15.00	9.33	10.00	10^{-6}-100* mg/kg	130.0 (gross content)	Comply

[1] This table shows results for chemical parameters that were proposed to 5 C with in initial TP. The lab, in turn, conducted full mass spectrometry analysis for more parameters (only metals). Please refer to Annex 7-8 for more information.

[2] This table shows results for chemical parameters that were proposed to 5 C with in initial TP. The lab, in turn, conducted full mass spectrometry analysis for more parameters (only metals). Please refer to Annex 7-8 for more information.

Sodium (Na), mg/kg	8100	9000	7600	9600	10000	8900	12000	10000	10000	40-110000mg/kg	N/A	N/A
Magnesium (Mg), mg/kg	12000	8100	11000	7100	14000	10000	6300	7400	8200	40-110000mg/kg	N/A	N/A
Potassium, mg/kg	13000	13000	16000	13000	17000	17000	20000	15000	14000	80-300000 mg/kg	N/A	N/A
Lead (Pb), mg/kg	13	10	16	14	15	14	13	10	9.80	0.1-4000 mg/kg	32.0	Comply
Manganese (Mn), mg/kg	12000	8100	11000	7100	14000	10000	6300	7400	8200	20-100000 mg/kg	1500.0 (gross content)	Comply
Copper (Cu), mg/kg	31.0	35.0	37.0	190	52.0	46.0	38.0	37.0	28.0	1,0-4000 mg/kg	3.0	Does not Comply
Zinc (Zn), mg/kg	42.0	37.0	64.0	110	60.0	49.0	40.0	40.0	36.0	1,0-4000 mg/kg	23,0	Does not Comply
Chromium (Cr), mg/kg	48.0	44.0	53.0	44.0	52.0	52.0	51.0	53.0	48.0	1,0-4000 mg/kg	6.0	Does not Comply
Iron (Fe), mg/kg	19000	13000	24000	13000	24000	22000	16000	14000	13000	60-3000000 mg/kg	N/A	N/A
Mercury (Hg), mg/kg	0.024	0.032	0.024	0.032	0.097	0.056	0.014	0.022	0.073	*	2.1	Comply
Nickel (Ni), mg/kg	46.0	24.0	33.0	31.0	30.0	35.0	28.0	48.0	26.0	1,0-4000	4.0	Does not Comply
Cadmium (Cd), mg/kg	0.082	0.091	0.099	0.033	0.077	0.100	0.062	0.031	0.031	0.005-4000 mg/kg	N/A	N/A
Aluminum (Al), mg/kg	41000	390000	490000	40000	65000	57000	52000	44000	47000	20-200000 mg/kg	N/A	N/A
Arsenicum (As) mg/kg	21.0	17.0	24.0	17.0	20.0	25.0	18.0	18.0	19.0	0.1-4000 mg/kg	N/A	N/A

Annexes

Annex 1. Brief profile of the “Central laboratory”

The state enterprise "Central Laboratory" of the State Committee of the Republic of Uzbekistan on Geology and Mineral Resources began its activity in 1868.

Main activities:

- Development of regulatory documents regulating the procedure for performing analytical work.
- Analysis of soils, rocks, ores, minerals, natural waters.
- Development of measurement techniques.
- Development of standard samples of the composition of rocks, ores, products of technological processing and aqueous solutions of heavy metals.
- Production of acid and alkaline electrolytes.

The main methods of analysis: spectral, assay, chemical, neutron activation, mass spectrometry, mineralogical and all types of preparation of rocks for analysis.

SE "Central Laboratory" in 2015-2020 was accredited by the agency "Uzstandart" for technical competence and independence for compliance with the requirements of the standards O'ZDST ISO/IEC 17025, O'ZDST 16.5 and O'ZDST 16.3 and registered in the State Register of the National Accreditation System of the Republic of Uzbekistan. № UZ.AMT.07.MAI.672

- for the right to conduct tests according to O'z DStISO/IEC 17025,

- for the right to conduct the certification of MVI according to O'z DSt 16.5

- for the right to conduct the certification of CO according to O'z DSt 16.

Annex 2. National standards and regulations for water

"Generalized list of maximum permissible concentrations (MPC) of harmful substances for water in fishery reservoirs for surface waters"

This is an internal document of Centre for specialized analytical control in the field of environmental protection, approved by State Committee for ecology and environmental protection. This regulation establishes Maximum permittable concentration of pollutants for fishery reservoirs/canals. This standard applies for reservoirs/canals with fish.

Analysis of surface water were also performed under this regulation, as near agricultural lands are irrigated with water from this canal.

Name of parameters	**MPC**
pH	6,5-8,5
Total suspended solids, mg/l	15
Ammonium, mg/l	0,5
Nitrate, mg/l	40
Nitrites, mg/l	0,08
Sodium (Na), mg / l	120
Chloride mg/l, e	300
Sulfates, mg/l	100
Sulfide, mg/l	N/A
Mineralization (salinity), mg/l	1000
COD (chemical oxygen demand), mg/l	15
BOD (biochemical oxygen demand), mg/l	3
Phosphate mg/l,	0,3
Aluminum (Al), mg/l	0,2
Barium (Ba), mg/l	2
Vanadium (V), mg/l	0,001
Potassium (K), mg/l	50
Cadmium (Cd), mg/l	0,005
Lead (Pb), mg/l	0,01
Manganese (Mn), mg/l	0,01
Copper (Cu), mg/l	0,001
Nickel (Ni), mg/l	0,01
Mercury (Hg), mg/l e	0,00001
Chromium (Cr) (+3), mg/l	N/A
Chromium (Cr) (+6), mg/l	0,001
Zinc (Zn), mg/l	0,01
Iron (Fe), mg/l	0,05

O'zDSt 950:2011
National Standard of the Republic of Uzbekistan for drinking water
Hygienic norms and quality control

This standard applies for drinking water which is supplied by centralized system to the population. At the same time, the standard quality of drinking water is achieved under certain conditions: the right choice of a source of water supply, its proper sanitary protection, effective methods of purification and disinfection of water, systematic monitoring of the quality of tap water in public drinking water supply systems.
Below is given table with the established norms for drinking water quality.

Standards of water quality indicators and methods of their control

Indicators and its components	**Measurement units**	**Normatives**	**Control methods**
1	**2**	**3**	**4**
1. Microbiological indicators			
1.1. Total microbial quantity	Quantity of microbes in 1 ml.	Not more than 100 1)	State Standard 18963
1.2. Quantity of E. coli bacteria (coli index)	Quantity of E. coli bacteria in 1000 ml.	Not more than 3 1) 2) 4)	State Standard 18963
1.3. Escherichia (indicators of fresh fecal contamination)	Quantity of Escherichia in 300 ml	Absence 3) 4)	State Standard 18963
1.4. Coliphages	Quantity of coliphages in 200 ml	Absence 4)7)	Methodological guidelines established by Ministry of health
2. Parasitological indicators			
2.1. Pathogenic intestinal, protozoa (lamblia cysts, amoebas, etc.)	Quantity – in 25 dm^3	Absence 7)	Methodological guidelines established by Ministry of health
2.2. Helminth eggs	Quantity of eggs and larvae in 25 dm^3.	Absence 7)	The same as above
3. Toxicological indicators (MPC components) a) Inorganic components			
3.1. Aluminum (Al)	mg/ dm^3	0,2(0,5)x	State Standard 18165
3.2. Beryllium (Be)	mg/ dm^3	0,0002	State Standard 18294
3.3. Borum (B)	mg/ dm^3	0,5	ISO (Basic hygienic requirements) 9390
3.4. Cadmium, Cd	mg/ dm^3	0,001	ISO (Basic hygienic requirements) 5961
3.5. Molybdenum (Mo)	mg/ dm^3	0,25	State Standard 18308
3.6. Arsenicum (As)	mg/ dm^3	0,05	State Standard 4152
3.7. Nickel (Ni)	mg/ dm^3	0,1	ISO (Basic hygienic requirements) 8288
3.8. Nitrate (NO_3)	mg/ dm^3	45	State Standard 18826

3.9. Hydrargyrum (Hg)	mg/ dm³	0,0005	ISO (Basic hygienic requirements) 5666/3
3.10. Plumbum (Pb)	mg/ dm³	0,03	State Standard 182293
3.11. Selenium (Se)	mg/ dm³	0,01	State Standard 19411
3.12. Strontium (Str)	mg/ dm³	7,0	State Standard 23950
3.13. Fluorum (F)	mg/ dm³	0,7	State Standard 4386
3.14. Chromium (Cr)	mg/ dm³	0,05	ISO (Basic hygienic requirements) 9174
b) Organic components			
3.16. Benzene	mg/ dm³	10,0	Methodological guidelines established by Ministry of health
3.17. Benz [a] pyrene	mg/ dm³	0,01	The same
3.18 . Polyacryl amide	mg/ dm³	2,0	State standard 19355
3.19. Pesticides 5)	mg/ dm³	According MPC	Methodological guidelines established by Ministry of health
4. Organoleptic indicators and MPC of organoleptic properties of water			
4.1. Flavor	points	2	State Standard 3351
4.2. Smell (scent)	points	2	The same
4.3. Turbidity	mg/ dm³	1,5/2,0**	The same
4.4. Colour	° C	20/25***	The same
4.5. pH-indicator	pH	6-9	Measured by pH-meter
4.6. Mineralization (dry residue)	mg/ dm³	1000/1500****	State Standard 18164
4.7. Iron (Fe)	mg/ dm³	0,3/1,0****	State Standard 4011
4.8. Total suspended solids	Mg – equivalent / dm³	7/10****	State Standard 4151
4.9. *Manganum (Mn)*	mg/ dm³	0,1	State Standard 4974
4.10. Copper (Cu)	mg/ dm³	1,0	State Standard 4388
4.11. Polyphosphates (PO_4)	mg/ dm³	3,5	State Standard 18309
4.12. Sulphates (SO_4)	mg/ dm³	400/500****	State Standard 4389
4.13. Chlorides (Cl)	mg/ dm³	250/350****	State Standard 4245

4.14. Zinc (Zn)	mg/ dm³	3,0	State Standard 18293
4.15. Surfactants	mg/ dm³	0,5	ISO (Basic hygienic requirements) 7875/1-2
4.16. Phenol	mg/ dm³	0,001/0,1*****	ISO (Basic hygienic requirements) 6439
4.17. Oil products	mg/ dm³	0,1	Methodological guidelines established by Ministry of health
4.18. Barium	mg/ dm³	0.1	State Standard 51309
4.19. Permanganic acid	mg/ dm³	5.0	Titrometric method
4.20. Cyanides	mg/ dm³	0.035	Photometry method
4.21. Formaldehyde	mg/ dm³	0.05	State Standard 22648
5. Radioactive Contamination Indicators			
5.1. Total alpha radioactivity	Bq/dm³	0,1	ISO (Basic hygienic requirements) 9696
5.2. Total beta radioactivity	Bq/dm³	0,1	ISO (Basic hygienic requirements) 9697

* when treating water with reagents containing aluminium

** with guaranteed reliability of water disinfection

*** in the treatment of high-color water and the mandatory control of trihalomethanes in the case of chlorine disinfection

**** for water pipelines supplying water without special treatment

***** in the absence of chlorinated water

Annex 3 National standards and regulations for soil

In accordance with the SanPiN No. 0272-09 "Sanitary rules and norms for compiling hygienic justifications for soil protection schemes from pollution in Uzbekistan" indicators of sanitary status of soils for enterprises and industrial zones are as follows:

- Ammonium nitrogen
- Nitrate nitrogen
- Chlorides
- pH
- Pesticides
- Heavy metals
- Oil and oil products
- Phenols are volatile
- Sulfur compounds
- Carcinogenic substances
- Radioactive substances
- Thermophilic bacteria
- Escherichia coli bacteria
- Clostridium perfringens
- Helminth eggs and larvae
- Larvae and pupae of synanthropic flies

In accordance with SanPiN № 0191-05 “Maximum allowable concentrations (MPC) and Approximate permittable concentrations of exogenous harmful substances in soil”, the MPC of exogenous chemicals in the soils (in mg/kg) is as follows:

According to the general sanitary limiting indicator of harmfulness in mg/kg:	
1. BENZAPIRENE (gross content)	0.02
2.VANADIUM (gross content)	150.0
3. Manganese + VANADIUM (gross content)	1000.0
4. TUNGSTEN (moving forms)	10.0
5. CELTAN	1.0
6 COBALT (mobile forms)	5.0
7. COPPER (mobile forms)	**3.0**
8. Molybdenum (mobile forms)	**10.0**
9. NICKEL (mobile forms)	**4.0**
10. COAL FLOTATION WASTE (OFU) (gross content)	3000.0
11. LEAD (gross content)	**32.0**
12. SULFUR ELEMENTARY (gross content)	160.0
13. SULFURIC ACID (gross content)	160.0
14. PHOSPHATES	27.2
15. FURFUROL	3.0
16. CHROME (moving forms)	**6.0**
by air-migration limiting hazard indicator:	
17. ALFAMETHYLSTYROL	0.5
18. BENZENE	0.3
19. ISOPROTTILBENZENE	0.5
20. HYDROGEN SULFUR (gross content)	0.4
21. STYROL	0.1
22. FORMALDEHYDE	0.7
by water-migration limiting hazard indicator:	
23. LIQUID COMPLEX FERTILIZERS (gross content)	80.0
24. INTEGRATED GRANULATED FERTILIZERS (gross content)	120.0
25. Manganese: (gross content) (mobile forms)	**1500.0** **60.0**
26. NITRATES (gross content)	**130.0**
27. POTASSIUM CHLORIDE (gross content)	560.0

by trans locational limiting hazard indicator:	
28. ACIDS (ortho, -meta, -pa)	0.3
29. ARROW (gross maintenance)	2.0
30. Mercury (gross content)	**2.1**
31. LEAD + MERCURY (gross content)	**20.0+1.0**
32. ANTIMONY (gross content)	4.5
33. TOLUOL	0.3
34. FLUORINE (water soluble forms)	10.0
35. ZINC	**23.0**

Annex 4 Original copy of the Accreditation Certificate

000592

СВИДЕТЕЛЬСТВО

О государственной регистрации юридического лица
(субъекта предпринимательства)

Настоящим подтверждается, что в Единый государственный реестр субъектов предпринимательства внесена запись о создании:

Государственное унитарное предприятие "MARKAZIY LABORATORIYA"

(Полное наименование юридического лица – субъекта предпринимательства с указанием организационно-правовой формы)

ГУП "MARKAZIY LABORATORIYA"

(Сокращенное наименование юридического лица)

23.03.2007 — За регистрационным номером: 000592-04

(Число, месяц (прописью), год)

Идентификационный номер налогоплательщика (ИНН): 205174241

Организационно-правовая форма:	Государственное унитарное предприятие
Местонахождение:	Ташкентская область, Зангиатинский район, Эшангузар, A.TEMUR MFY, MUSTAQILLIK KO`CHASI, 21-UY,
Свидетельство выдано:	Ташкентская область, Зангиатинский район, ЦЕНТР ГОСУДАРСТВЕННЫХ УСЛУГ

(Полное наименование регистрирующего органа)

Unofficial translation of the Accreditation Certificate

THE CERTIFICATE
State registration of a legal entity (business entity)

It is hereby confirmed that the Unified State Register of Business Entities contains an entry on the creation of:

State unitary enterprise "MARKAZIY LABORATORIYA"
(Full name of legal entity - business entity, indicating the organizational and legal form)

SUE "MARKAZIY LABORATORIYA"
(Abbreviated name of legal person)

23.03.2007	registration number:	000592-04
(Number, month (cursive), year)		

Tax Identification Number (TIN):	205174241

Organizational-legal forms:	State unitary enterprise
Location:	Tashkent region, Zangiatinsk district, Eshanguzar, A.TEMUR MFY, MUSTAQILLIK STREET, 21-house
Issued by:	Tashkent region, Zangiata district, STATE SERVICES CENTER
(Full name of registering authority):	

Annex 5. Original copy of Protocol of chemistry analysis of water

АО «Узбекгеологоразведка» Центральная лаборатория
Ташкентская область, г. [illegible], ул. Мустакиллик ,21
тел. 933805415, 702027142

«УТВЕРЖДАЮ»
Директор ГП «Центральная лаборатория»
[illegible] С.В.
«[illegible]» [illegible] 2021 г

ПРОТОКОЛ ИСПЫТАНИЯ № [illegible]

на исследование согласно письма № JEC – OUT-21-218 от 18/08/2021 г о проведении исследований пробы воды согласно O'z DSt 950:2011.
Заказчик: ООО « JURU ENERGY CONSULTING »
Обозначение и данные маркировки объекта испытания:
№1 по №6 – воды;
дата получения : 24-08-2021г в количестве 6 проб,
Цель задачи испытаний – анализ воды по заданию заказчика;
НД на объекты испытаний – O'z DSt 950:2011 ;
Условия проведения испытаний : температура окружающей среды 20,0°, влажность 40%
Средства измерений : иономер И-160МИ,КФК-3, электронный гигрометр ИТС-2.
Испытания проведены: 24-08-2021г – 08-09-2021г.

Результаты испытаний.
Заказ № 770 от 24-08-2021г.

№	Наименование показателей	Норма по O'z DSt 950:2011		НД на методы испытаний	Фактическое значение					
					sw1	sw2	sw3	sw4	sw5	sw6
		Размерность			№1	№2	№3	№4	№5	№6
1	Мутность	мг/дм³	1,5 (2,0)	3351-74	0,13	0,03	0,03	0,03	0,00	0,00
2	Водородный показатель	pH	6,0-9,0	Измеряется pH- метром	8,00	8,00	8,00	8,00	8,00	8,00

И.о. начальника ХАЛ Гусенова И.Е.

Unofficial translate of Protocol of chemistry analysis of water

Uzbekgeologorazvedka JSC "Central Laboratory"
111800, Tashkent region, Zangiatinsk district, Eshanguzar, Mustakillik street, 21
tel.933805415, 702027142

"Approved"
Director of the
SE "Central Laboratory"
Mihaylov S.V.
"8" September 2021

Protocol of measurements No. 66

for measuring according to letter No. JEC-OUT-21-218 of 18/09/21 on testing of water samples according to the State standard 950:2011.
Customer - OOO JURU ENERGY CONSULTING
Marking and labeling data of the test object:
No.1 to No.6 – Water
Date of receipt – 24.08.2021; of samples 6
Purpose, objectives of the tests - analysis of water according to the customer's assignment;
(ND) Normative documents for test methods and measuring instruments –O'zDSt 950:2011
Environmental conditions: temperature 20,0^{0}C, humidity 40%
Used equipment: Ionomer И-160МИ, КФК-3б, Thermohygrometers HTC-2
The tests were carried out: 24-08-2021 - 08-09-2021

Results of the analysis
Order No. 770 of-24-08-2021

No.	Parameters	Normative		ND for measurements	Actual value					
					sw1	sw2	sw3	sw4	sw5	sw6
		Units			No.1	No.2	No.3	No.4	No.5	No.6
1	Turbidity	mg/dm^3	1.5(2.0)	3351-74	0.03	0.03	0.03	0.03	0.03	0.03
2	pH	pH	6.0-9.0	measured with a pH meter	8.00	8.00	8.00	8.00	8.00	8.00

Head of CAL (Chemical and Analytical Laboratory)7 Gusanova I.E

Annex 6. Original copy of Protocol of chemistry analysis of soil

АО «Узбекгеофизразведка» Центральная лаборатория
Ташкентская область, г. [illegible] ул. [illegible] ,21
тел. 933005413, 762027142

«УТВЕРЖДАЮ»
Начальник « Центральной лаборатории»
Михайлов С.В.
[illegible] сентября 2021 г

ПРОТОКОЛ ИСПЫТАНИЯ № 65

по исследованию согласно письма № JEC-OUT-21-218 от 18/08/2021г о проведении испытаний пробы воды согласно O'z DSt 950:2011.
Заказчик : ООО « JURU ENERGY CONSULTING »
Обозначение и данные маркировки объекта испытания:
№1 по № 3 – почва - sg 2(ДВ), sg 3(ДВ), sg 4(ДВ); с№7 по №16 - почва – sg 7, sg 1, sg 2, sg 3, sg 4, sg 5 sg 6, sg 7, sg 8, sg 9;
№4 по №6 - почва – g6, g7, g8;
дата получения : 24-08-2021г в количестве 16 проб,
Цель, задачи испытаний – анализ почвы по заданию заказчика;
НД на объекты испытаний – ГОСТ 26423-85,ГОСТ 26425-85 .
Условия проведения испытаний : температура окружающей среды 20,0°, влажность 40%.
Средства измерений : весы AS 220/C Radwag, иономер И-160МИ, электронный гигрометр ИТС-2.
Испытания проведены: 24-08-2021г – 08-09-2021г.

Результаты испытаний.
Заказ № 769 от 24-08-2021г.

№	Наименование показателей	НД на методы испытаний	Фактическое значение															
			sg 2(ДВ)	sg 3(ДВ)	sg 4(ДВ)	g 6	g 7	g 8	sg 7	sg 1	sg 2	sg 3	sg 4	sg 5	sg 6	sg 7	sg 8	sg 9
			№1	№2	№3	№4	№5	№6	№7	№8	№9	№10	№11	№12	№13	№14	№15	№16
1	Водородный показатель, pH	26429-85	8,00	8,10	8,25	8,30	8,30	8,26	8,35	8,10	8,28	8,00	8,10	8,20	8,20	8,30	8,20	8,30
2	Хлориды, %	26425-85	7,00	6,00	11,00	11,00	11,00	7,0	525,00	67,00	11,0	3,00	3,00	14,00	13,00	21,00	3,00	9,00

№	Наименование показателей	НД на методы испытаний	Фактическое значение															
			sg 2(ДВ)	sg 3(ДВ)	sg 4(ДВ)	g 6	g 7	g 8	sg 7	sg 1	sg 2	sg 3	sg 4	sg 5	sg 6	sg 7	sg 8	sg 9
			№1	№2	№3	№4	№5	№6	№7	№8	№9	№10	№11	№12	№13	№14	№15	№16
3	Нитраты, mg/dm³	Измеряется иономером	10,00	17,00	11,00	15,00	9,40	8,00	294,00	49,00	6,00	9,80	101,00	21,00	38,00	15,00	9,33	10,00

И.о начальника ХАЛ Гусакова Н.Е.

Unofficial translate of Protocol of chemistry analysis of soil

Uzbekgeologorazvedka JSC "Central Laboratory"

111800, Tashkent region, Zangiatinsk district, Eshanguzar, Mustakillik street, 21

tel.933805415, 702027142

“Approved”

Director of the

SE "Central Laboratory"

Mihaylov S.V.

“8” September 2021

Protocol of measurements No. 65

for measuring according to letter No. JEC-OUT-21-218 of 18/09/21 on testing of soil samples according to the State standard 950:2011.

Customer - OOO JURU ENERGY CONSULTING

Marking and labeling data of the test object:

No.1 to No.3 –Soil

No.1 to No.6 –Soil

Date of receipt – 24.08.2021; of samples 16

Purpose, objectives of the tests - analysis of water according to the customer's assignment;

(ND) Normative documents for test methods and measuring instruments –GOST 26423-85; GOST 26425-85

Environmental conditions: temperature 20,0^{0}C, humidity 40%

Used equipment: Lab scale AS 220/C Radwag, Ionomer И-160МИ, КФК-3б, Thermohygrometers НТС-2

The tests were carried out: 24-08-2021 - 08-09-2021

Results of the analysis
Order No. 769 of-24-08-2021

Head of CAL (Chemical and Analytical Laboratory) **Gusanova I.E**

APPENDIX X - CONSULTATION LETTER TO & FROM AGENCY OF SANITARY & EPIDEMIOLOGICAL WELLBEING

ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ

JURU ENERGY CONSULTING

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

JEC-OUT-21-50
03.04.2021

To the Agency for Sanitary and Epidemiological Welfare under the Ministry of Health

Under Presidential Decree of the Republic of Uzbekistan No.5003 dated on 23.02.2021 "On measures for realisation of Bash 500 MW WF in Gijduvan district", FE'ACWA Power Bash Wind' LLC (Tashkent)' has entered into a 25-year Power Purchase Agreement with JSC National Electric Networks of Uzbekistan. This agreement was entered into on 24th January 2021 for the development, financing, construction and operation of a 500MW Wind Farm in Gijduvon district of Bukhara region (See Annex 1).

The project also includes the development of an Overhead Transmission Line (OHTL) with a rating of 500kV single circuit. This OHTL will be shared between ACWA Power's Bash 500MW Wind Farm and the ACWA Power Dzhankeldy 500MW Wind Farm. The alignment of the OHTL is being finalised by JSC National Electric Networks of Uzbekistan and will connect to an existing substation in Qurako'l.

As part of the Environmental and Social Impact Assessment (ESIA), ACWA Power's corporate Environmental & Social Consultants '5 Capitals Environmental & Management Consulting' (Dubai, UAE), have appointed JURU Energy (Tashkent, Uzbekistan) to conduct certain environmental & social baseline surveys, data collection, public consultations and submission of the national EIA to the State Committee on Ecology and Environmental Protection.

Based on the previous conducted site visits (bird and bat surveys) undertaken at the Project site & surrounding areas in 2020, the nearest residential buildings to the Bash 500 MW WF are residential apartments housing workers at the oil refinery located approximately 1.6km to the south-east boundary of the study site (Annex 2).

This renewable energy project does not include the use of technology that will result in emissions into the atmosphere. As there are no specific emission sources from the Project, there is no specific value or use in measuring the distance for the Health Protection Zone to the nearest settlements as per SanPiN No. 0350-17 "Sanitary Norms and Rules for Atmospheric Air Protection in Populated Areas of the Republic of Uzbekistan".

Given the above, we kindly ask you to consider if establishing the Health Protection Zone for the Project is still necessary, as the current legislation does not provide requirements for wind power plants.

Thank you very much for your assistance.

Yours Sincerely,

Director **Yakubov Jakhongir**

For the further information please contact:
Inobat Allobergenova

Phone: +99871 202 04 40
Mob.: +99890 131 70 17

Annex 1

PROJECT LOCATION

Project coordinates (based on preliminary coordinates)

NORTH LATITUDE	EASTERN LONGITUDE
4488709.16	637987.39
4489065.00	645911.20
4492662.15	646074.46
4493476.69	647325.10
4495585.81	646194.93
4498671.77	646323.63
4498528.88	646690.97
4499538.02	648248.52
4500867.54	648351.79
4503425.70	650137.28
4507450.24	649969.59
4507264.73	632532.51
4506189.41	631394.22
4503502.14	631176.63
4503073.76	635108.38
4499198.71	637482.55

Annex 2


расстояние 1,6 км
Многоэтажный дом
Заправочная станция
Google Earth

O`ZBEKISTON RESPUBLIKASI
SANITARIYA-EPIDEMIOLOGIK
OSOYISHTALIK VA JAMOAT
SALOMATLIGI XIZMATI

100097 Toshkent, Bunyodkor ko`chasi, 46-uy.
Telefon: 71 276-59-28. Fax:71 276-59-28
e-mail: sanepidxizmat@minzdrav.uz

SANITARY AND EPIDEMIOLOGICAL
WELFARE AND PUBLIC HEALTH
SERVICE OF THE REPUBLIC
OF UZBEKISTAN

46 Bunyodkor str. Tashkent 100097
Phone: 71 276-59-28. Fax: 71 276-59-28
e-mail: sanepidxizmat@minzdrav.uz

12.04.21 № 20-8/3966

_____№_____ga

Директору
ООО «JURU ENERGY CONSULTING»
Якубову Ж.

Службой санитарно-эпидемиологического благополучия и общественного здоровья в соответствии Вашим письмом от 3 апреля 2021 года за № JEC-OUT-21-51 по вопросу установления санитарно защитной зоны для реализации инвестиционного проекта "Строительство ветряной электростанции мощностью 500 МВт в Гиждуванском районе Бухарской области" был изучен ряд действующих нормативных документов и проведен литературный обзор имеющихся научных исследований, касающихся данного вопроса.

В результате установлено, что согласно действующих нормативных документов в республике, а именно санитарных норм, правил и гигиенических нормативов: СанПиН № 0236-07 «По обеспечению безопасности для населения, проживающего вблизи линии электропередач высокого напряжения» и СанПиН № 0350-17 «Санитарные нормы и правила по охране атмосферного воздуха в населённых мест республики Узбекистан» для воздушной линии электропередач (ЛЭП) с напряжением 500 кВ в одном контуре размер санитарно-защитной зоны должен быть не менее 30 метров по обе стороны от проекции на землю крайних фазных проводов в направлении, перпендикулярном к ВЛ и при производстве электрической энергии мощностью 600 мВт и выше (в Вашем случае 500 мВт) размер санитарно-защитной зоны составляет “не менее 500 метров”.

По результатам научных исследований размещения ветровых электростанций (ВЭС), ряд ученых Украины, России, Беларуси было показано, что в процессе строительства ВЭС может иметь место загрязнения окружающей среды (атмосферного воздуха, почвы, грунтовых вод) вследствие работы строительной техники и автотранспорта, земляных, сварочных и других работ при их строительстве. При эксплуатации ВЭС могут создаваться повышенные уровни акустического и электромагнитного загрязнения на прилегающей территории и аварийные ситуации с разрушением ВЭС при неблагоприятных погодных условиях. На основании расчетов, представленных в проектах, и анализа данных о влиянии зарубежных ВЭС на окружающую среду установлено, что лимитирующим фактором влияния ВЭС является акустическое загрязнение в звуковом диапазоне частот, которое распространяется за пределы территории ветрополей.

В результате для современных ВЭС обоснована санитарно-защитная зона размером 700 м от крайних ВЭУ по критерию шума и рекомендовано соблюдение расстояния в 200 м от ВЭУ для ограничения какой-либо деятельности и пребывания людей в периоды возможных аварийных ситуаций при неблагоприятных погодных условиях.

Таким образом, на основани вышеизложенного, можно сделать вывод, что ветровые электростанций (ВЭС) должны быть отнесены к I классу с санитарно-защитной зоной в размере не менее 1000 метров.

Заместитель начальника **Атабеков Н.С.**

Исп. Миршина О.П.
Туйчиев Ж.Т.
Т-н:276-75-92

APPENDIX Y - CONSULTATION LETTER TO & FROM MINISTRY OF EMPLOYMENT

ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ

JURU ENERGY CONSULTING

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

JEC-OUT-21-124
04.05.2021

To Ministry of Employment and
Labour Relations of the Republic of Uzbekistan

Under Presidential Decree of the Republic of Uzbekistan No.5003 dated 23.02.2021 "On measures to implement the investment of the Project on construction of a 500MW wind power plant in Gijduvon district in Bukhara region", FE 'ACWA Power Bash Wind' LLC (Tashkent)' has entered into a 25-year Power Purchase Agreement with JSC National Electric Networks of Uzbekistan. This agreement was entered on force 24th January 2021 for the development, financing, construction and operation of a 500MW Wind Farm in Gijduvon district of Bukhara region (See Annex 1).

The project also includes the development of an Overhead Transmission Line (OHTL) approximately 250km in length with a rating of 500kV single circuit. This OHTL will be shared between ACWA Power's Bash 500MW Wind Farm and the ACWA Power Dzhankeldy 500MW Wind Farm which is approximately 94km north west of Bash Wind Farm site. The alignment of the OHTL is being finalised by JSC National Electric Networks of Uzbekistan and will connect to an existing substation in Qurako'l from the Bash Wind Farm site (see Annex 2).

As a part of the Environmental & Social Impact Assessment (ESIA), Juru Energy is consulting with Ministry of employment and labour relations to establish whether you have any specific employment and labour requirements for the project. The project is expected to employ approximately 700 to 1000 workers during the construction phase and a much smaller workforce during the operational phase even though the number has not been determined at this point.

It is noted that the project will adhere to the relevant Uzbekistan labour regulations and standards.

We welcome your feedback and comments on the above to be addressed to Gulchekhra Nematullaeva (email: g.nematullayeva@juruenergy.com, tel: +998 97 4459504).

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely,

Director **J.Yakubov**

For the further information please contact:
Gulchekhra Nematullayeva
Mob.: +998 97 4459504

Annex 1 to the letter JEC-OUT-21-124
On 04.05.2021

Project is located in Gijduvon district of Bukhara region

Project Coordinates (based on preliminary co-ordinates)

NORTHING	EASTING
ACWA Power 500MW Project Site	
4488709.16	637987.39
4489065.00	645911.20
4492662.15	646074.46
4493476.69	647325.10
4495585.81	646194.93
4498671.77	646323.63
4498528.88	646690.97
4499538.02	648248.52
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4507450.24	649969.59
4507264.73	632532.51
4506189.41	631394.22
4503502.14	631176.63
4503073.76	635108.38
4499198.71	637482.55

Annex 2 To the letter JEC-OUT-21-124
On 04.05.2021
Preferred OHTL allotment

O'ZBEKISTON RESPUBLIKASI
BANDLIK VA MEHNAT
MUNOSABATLARI VAZIRLIGI

DAVLAT MEHNAT INSPEKSIYASI

100031, Toshkent shahar, Mirobod ko'chasi, 15-uy.
Telefon: (+998 71) 239-41-21, (+998 71) 239-12-72

www.mehnat.uz e-mail: info@mehnat.uz, qabul@mehnat.uz

"18" 05 2021 yil №0100-00/17-5928

Директору
ООО "JURU ENERGY CONSULTING"
Г-ну Ж. Якубову

На Ваши исх. №№JEC-OUT-21-124 и JEC-OUT-21-125 от 04.05.2021г.

Министерство занятости и трудовых отношений Республики Узбекистан рассмотрев Ваше обращение, сообщает что для ведения строительно-монтажных работ на территории Республики Узбекистан необходимо соблюдать необходимые требования в области охраны труда и техники безопасности следующих нормативных документов:

- Закон "Об охране труда" (в новой редакции) №410-ЗРУ от 22.09.2016г.;
- Постановление КМ РУз "О дальнейшем совершенствовании мер по охране труда работников" № 263 от 15.09.2014г.;
- Постановление КМ РУз "О дальнейшем развитии рынка услуг в области охраны труда" № 246 от 27.04.2017г.;
- Постановление КМ РУз "О мерах по совершенствованию деятельности Министерства занятости и трудовых отношений Республики Узбекистан" № 1066 от 31.12.2018г.;
- Типовое положение Министра труда РУз "Об организации работ по охране труда" №273 от 29.06.1996г.;
- Типовое положение Министра труда РУз "Об организации обучения и проверки знаний по охране труда" №272 от 14.08.1996г.;
- Положение Министра труда РУз "О разработке инструкций по охране труда" №870 от 07.01.2000г.;
- Приказ Министра труда и социальной защиты населения РУз "Об утверждении типовых норм бесплатной выдачи специальной одежды, специальной обуви и других средств индивидуальной защиты для работников строительных, строительно-монтажных и ремонтно-строительных предприятий" №2224 от 10.05.2011г.;
- Строительные нормы и правила (СНиП) 3.01.02-00 "Техника безопасности в строительстве", 2000г., разработаны Госархитектстроем РУз.

Существует множество других рекомендуемых нормативных документов, которые также послужат к улучшению условий в области охраны труда и техники безопасности, а также достойного отдыха работников на строительном объекте.

С уважением,

Заместитель начальника
Государственной инспекции труда **А. Шарапов**

Исп: А.Гулямов
Тел: (71) 239-41-21 (306)

Ministry of Employment and
Labour Relations of the Republic of Uzbekistan
18.05.2021 No. 01/00-00/17-5928

Response to your letters No. JEC-OUT-21-124 u JEC-OUT-21-125 dated 04.05.2021

The Ministry of Employment and Labour Relations of the Republic of Uzbekistan, having considered your application, informs that in order to conduct construction and installation work on the territory of the Republic of Uzbekistan, it is necessary to comply with the necessary requirements in the field of labour protection and safety of the following normative documents:

- The Law "On labour protection" (new edition) M410-ZRU dated 22.09.2016;
- Resolution of the Cabinet of Ministers of the Republic of Uzbekistan" On further improvement of measures for labour protection of employees " No. 263 dated 15.09.2014;
- Resolution of the Cabinet of Ministers of the Republic of Uzbekistan "On further development of the market of services in the field of labour protection" No. 246 dated 27.04.2017;
- Resolution of the Cabinet of Ministers of the Republic of Uzbekistan "On measures to improve the activities of the Ministry of Employment and Labour Relations of the Republic of Uzbekistan " No. 1066 dated 31.12.2018;
- Standard Regulation of the Ministry of Labour of the Republic of Uzbekistan "On the organization of work on labour protection" No.273 dated 29.06.1996;
- Standard Regulation of the Ministry of Labour of the Republic of Uzbekistan "On the organization of training and testing of knowledge on labour Protection" No.272 dated 14.08.1996;
- Regulation of the Ministry of Labour of the Republic of Uzbekistan "On the development of Instructions on labour Protection " No.870 dated 07.01.2000;
- Order of the Minister of Labour and Social Protection of the population of the Republic of Uzbekistan "On approval of standard norms for the free issuance of special clothing, special shoes and other personal protective equipment for employees of construction, construction and installation and repair and construction enterprises" No. 2224 dated 10.05.2011;
- Building standards and regulations (SNiP) 3.01.02-00 "Safety in construction" dated 2000, developed by Gosarchitekstroy (State committee on architecture and construction) of the Republic of Uzbekistan.

There are many other recommended regulatory documents that will also serve to improve the conditions in the field of labour protection and safety, as well as decent rest for employees at the construction site.

Yours sincerely,

deputy Head of the State Labour Inspectorate signature A.Sharapov

For further information please contact:
A. Gulyamov
(71) 239-41-21 (306)