

**KAZAKHSTAN**  
**GRCF2 W2 E2 – EAST KZ MUNICIPAL STREET**  
**LIGHTING MODERNISATION - PHASE 2**  
**PROJECT PREPARATION**  
**Project ID: 53777**

**ESDD NTS**  
**(NON-TECHNICAL SUMMARY)**

*Submitted by:*



*Prepared for:*



November 2022

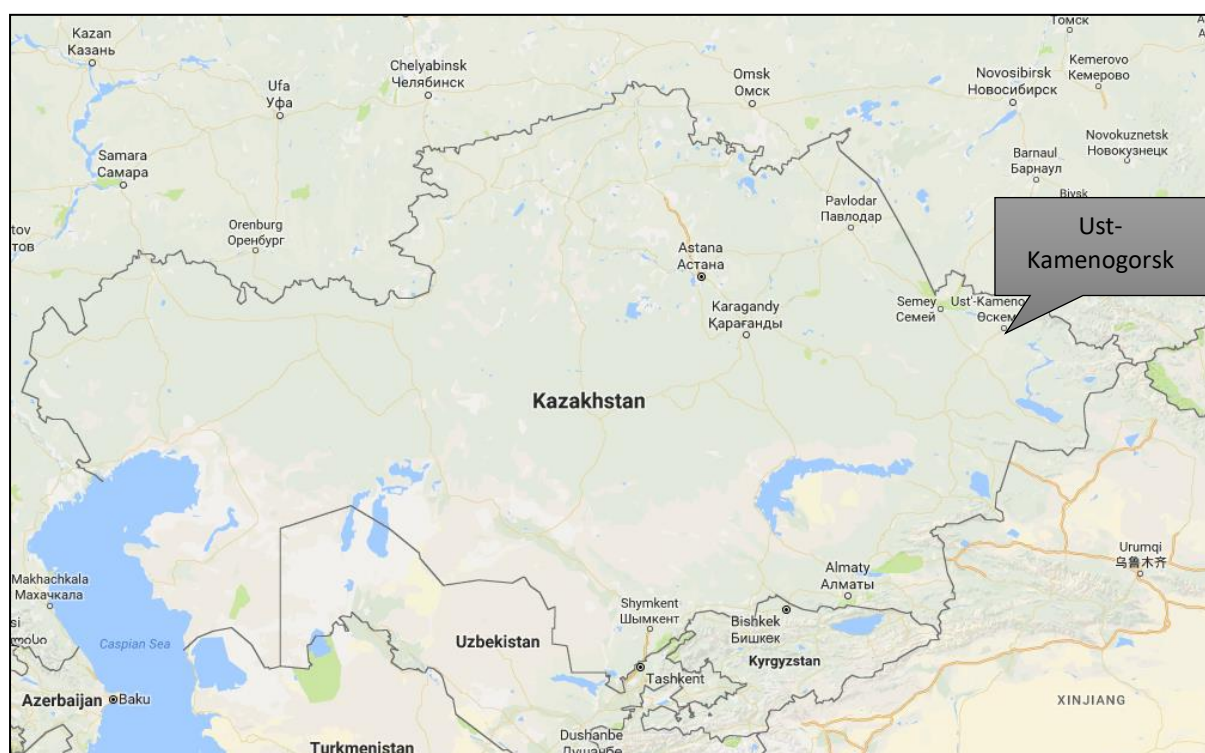
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## 1. Project description

The European Bank for Reconstruction and Development (the “EBRD” or the “Bank”) is considering a senior loan of up to Kazakh Tenge (KZT) 4.08 billion (the “Loan”) to Joint-Stock Company Regional Public-Private Partnerships Center of the Eastern Kazakhstan (the “Company” or the “Borrower”), which is wholly owned by the Akimat of the Eastern Kazakhstan Region (the “Region Akimat”) to construct modern urban street lighting (SL) system (“SLS”) comprising around 5,960 lighting points in the City of Ust-Kamenogorsk (“Ust-Kamenogorsk”), in the Republic of Kazakhstan (see **Figure 1**).

**Figure 1: Ust-Kamenogorsk on the map of Kazakhstan**



The Akimat of Eastern Kazakhstan Oblast (the “Oblast Akimat”) has approached the EBRD with request to assess the possibility of financing an SL construction project in the City. Growth of the City’s administrative borders has forced the City to explore long-term, sustainable options to introduce efficient lighting systems in the project location. Given the lack of investment in the sector in the past decade, and a lack of transparency in the contractual arrangements between the City Akimat and the existing operators, the Bank has been asked to assist with the project implementation and with ensuring the new systems are built according to the best available technology in a sustainable way, that it’s energy efficient, that its maintenance operations will be efficient (with remote monitoring enabled for all lighting points) and that the contract relations with the contractor are balanced and cost-effective.

Small-scale private companies to date have not been able to provide proper services, while public procurement of such construction, supply, and maintenance services features a focus on lowest-lost bids and is mandatorily separating the functions of supply and maintenance, while qualification of design contractors cannot take into account past experience of design in jurisdictions of best-practice

street lighting standard such as EN13201-5 (2015). In addition to that, contractual arrangements between the City and private operators are of poor quality, operations lack transparency, and the City is not able to control operations in terms of costs management, while private operators are not incentivized to invest into operations and improving the physical infrastructure.

The components of Project are expected to include, inter alia:

1. Preparation of a Detailed Conceptual Design for the Construction of the SLS
2. Procurement and installation of SL columns and cabling/wiring for the new SLS
3. Procurement of highly energy efficient luminaires to install on the columns,
4. Installation of control panels for connection of the system to transformation sub-stations, and
5. Integration of the SLS into the existing (built under Phase I) centralized control center in the City.

In parallel with the hardware investments, the Project will contribute to the development and institutional strengthening of the Company in respect of procurement and corporatization and to a sustainable solution for the street lighting service in the City to prevent environmental hazards arising from a potential baseline use of traditional mercury-technology-based luminaire systems in case of a non-EBRD-financed project as the case might be.

The Company itself will not be directly responsible for development works associated with the Project, such as erection of new poles, disposal of lamps, etc. Rather the Company will out-source these activities to as yet to be identified street lighting construction sub-contractors. Accordingly, this assessment is based more on identification of potential impacts and mitigation measures, rather than corrective actions.

The Project is expected to aim at better service quality and improved environmental standards due to significantly reduced energy consumption, and avoided CO<sub>2</sub> emissions of SL in the City as well as to improved traffic safety for both drivers and pedestrians alike.

## 2. Potential aspects and impacts

A range of environmental, social and health and safety aspects and impacts have been identified that may occur during Project implementation. The following section provides a summary of the impacts identified.

### 2.1 Potential Environmental aspects and Impacts

**Air Emissions & Greenhouse Gases** – Air pollution from the Project will result primarily from emissions to air generated during the production of energy used to power the new LED lamps. In Kazakhstan, energy is generated from the following sources – about 70% coal, 8% oil, 10% natural gas and 12% hydropower with renewables generation no more than 1% of electric power. The main air emissions from thermal generation plants are NO<sub>x</sub>, SO<sub>x</sub>, CO and CO<sub>2</sub>.

#### Avoided CO<sub>2</sub> Emissions Reductions

Estimated energy savings from avoided excessive consumption of energy from the baseline technology scenario (high-pressure sodium lamps) stand at 2,871 MWh (see Table I below).

**Table I: Estimated Avoided CO<sub>2</sub> Emissions**

Parameter	Estimated Energy Savings
CO <sub>2</sub> (tons/per annum)*	1,527

\* EBRD Emission Factor for Kazakhstan is [ ] tons of CO<sub>2</sub> per 1 MWh

Reduction in energy requirements would also lead to a significant reduction in the levels of NO<sub>x</sub>, SO<sub>x</sub> and CO associated with the Project in City through generation of electricity at thermal power plants.

In addition to the primary source of emissions relatively small amounts of vehicular emissions will be generated by the vehicle fleet of the operating company (during routine activities, such as lamp changing). These levels of emissions are not considered significant compared with those associated with electricity generation.

**Water and Soil Contamination** – No impacts to water or soils are anticipated.

**Resource Use** – The Project is anticipated to result in significant reductions in energy use as indicated above. No other impacts to resources, such as water, are anticipated.

**Biodiversity** – No impacts to biodiversity are anticipated as the Project involves street lighting in urban areas.

**General Construction Impacts** – Due to the scale of works potential construction of poles, construction related impacts are expected to be short term and minor. Impacts may include for example generation of dust whilst boring for the poles, elevated noise level from construction equipment. None of these impacts is anticipated to result in significant negative impacts.

### 2.2 Potential Health and Safety aspects and impacts

**Traffic Safety** – Increased Road Transport Safety will be achieved through much-improved visibility conditions at night in the City. This will result into decreased number of car accidents and consequently in lower number of related deaths, injuries, and property damages.

Using the data from the Kazakh Agency of Statistics<sup>1</sup> on car accidents in the region Ust-Kamenogorsk (and interpolating the share of traffic-related incidents accidents in settlements in Eastern Kazakhstan region to Ust-Kamenogorsk's share of the population in the region of Eastern Kazakhstan), the Consultant has concluded that **up to 4 lives can be saved every year** in the project location alone thanks to the introduction of street lighting. Additional health benefits will also result from decreased number of injuries and resulting disabilities (putting a monetized number on those benefits is outside the scope of this Feasibility Study).

Table II below depicts the baseline situation in the City.

**Table II: Baseline Data on Traffic-related Incidents and Project Scenario**

Data type	Value for Ust-Kamenogorsk
Number of fatalities in traffic-related in the region	146
Share of incidents at night <sup>2</sup>	60%
Fatalities at night (estimate)	87
Share of Ust-Kamenogorsk population in VKO population	26.15%
Share of population covered by the Project	16.62%
Lives saved in road accidents p.a.	4

Available studies indicate, that proper street-lighting may reduce fatal accidents and injuries by 60%. Following this, it is possible to expect, that implementation of the Project will have following transport safety improvements (refer to Table III below):

**Table III: Project' Annual Safety Benefits**

Social and Economic Benefits Type	Estimate
Lives saved	4

A Value of Statistical Life (VoSL) Calculation was made for Kazakhstan taking into account its GDP per capita on the basis of the following studies:

Craig Milligan et al<sup>3</sup>: 1,226,940 EUR

<sup>1</sup>

[http://www.stat.gov.kz/faces/wcnav\\_externalId/homeNumbersTransport?\\_afzLoop=247061511366260#%40%3F\\_afzLoop%3D247061511366260%26\\_adf.ctrl-state%3Dk1crxk2p\\_82](http://www.stat.gov.kz/faces/wcnav_externalId/homeNumbersTransport?_afzLoop=247061511366260#%40%3F_afzLoop%3D247061511366260%26_adf.ctrl-state%3Dk1crxk2p_82)

<sup>2</sup> Ghazwan. Al-Haji: The Impact of New Street Lighting Technologies on Traffic Safety, Journal of Traffic and Logistics Engineering Vol. 2, No. 3, September 2014, <http://www.jtle.net/uploadfile/2014/0604/20140604035012103.pdf>

<sup>3</sup> Value of a statistical life in road safety: A benefit-transfer function with risk-analysis guidance based on developing country data (abstract), Original Research Article, Accident Analysis & Prevention, Volume 71,

Ted R. Miller<sup>4</sup>: 1,244,388 EUR

An average value of 1,235,664 EUR (KZT 516.6) was used in making the calculations in Table IV below.

**Table IV: Value of Statistical Life (VoSL) Saved by the Project Per Year**

Project Location
EUR 4,942,656
KZT 2.55 billion

As the value of an injury avoided was difficult to determine reliably, the Consultant did not include it in the analysis.

**Waste Management and Hazardous Materials** – No waste will be disposed as this is a greenfield project. However, interviews with the current SL O&M contractors in the region indicate that in case of installation of sodium or mercury-vapor lamps (which is the baseline scenario), contractors usually do not use the services of licensed de-mercurization companies and discard the lamps to municipal solid waste containers.

Therefore, it may be assumed for the purposes of this assessment that the Project-related avoided mercury emissions reductions from the improperly discarded wasted lamps are fully applicable. Even if the lamps are properly de-mercurized and then and stored in specially marked burial sites, continuation of procurement of MV and HPS lamps leads to emissions at the manufacturing stage of lamps' production. These losses at most CIS plants amount to 30% of the lamp mercury content.

Therefore, it was decided to include mercury emissions reduction as a Project benefit in the City as per the calculations in Table V below.

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October 2014, Pages 236-247, Craig Milligan, , Andreas Kopp, , Said Dahdah, , Jeannette Montufar,  
<http://www.sciencedirect.com/science/article/pii/S0001457514001687>

<sup>4</sup> Variations between Countries in Values of Statistical Life, Ted R. Miller, Journal of Transport Economics and Policy, Vol. 34, No. 2 (May, 2000), pp. 169-188,  
[https://www.jstor.org/stable/20053838?item\\_view=read\\_online&refreqid=excelsior%3Abbca17049c3b440af09ce4770b8a0541](https://www.jstor.org/stable/20053838?item_view=read_online&refreqid=excelsior%3Abbca17049c3b440af09ce4770b8a0541)

**Table V: Baseline Mercury Emissions and Project-related Reductions**

Baseline lamp type	HPS
Min. mercury content (per lamp)	30 mg
No. of lamps	5,982
Annual replacements	30% (1,795)
Mercury content in lamps ending up in MSW landfills (p.a.)	0
Mercury manufacturing losses for the volume of replacements in the SL system p.a.	30% (13.5 mg)
Avoided annual emissions (manufacturing emissions only)	30% (13.5 mg)
Avoided emissions within 10 years	485 g

As is evident from the calculations in Table V, the Project will help avoid almost 0.5 kg of mercury emissions for the expected 10-year term of the loan.

Mercury is an indestructible chemical element that is highly toxic to humans, animals and ecosystems. It is liquid at ambient temperature and starts evaporation at the temperatures above +18°C. Exposure to large amounts of mercury can be fatal, but relatively low doses can also have serious health effects, affecting the nervous, cardiovascular, immune and reproductive systems in particular. In the presence of bacteria, mercury can convert to methylmercury, a more complex and harmful mercury compound, which passes both the placental barrier and the blood-brain barrier and can therefore inhibit children's mental development before and after birth. Exposure of women of child-bearing age and of children is therefore of greatest concern.

It is important to note that the switch to LEDs from mercury-content lamps will lead to a complete and sustainable cessation of the release of mercury into the air. In addition, the waste lamps contain other poisonous substances such as phosphorus as well as aluminum and glass – highly energy-intensive materials to produce.

**Light Pollution** - Light pollution, also known as photo pollution or luminous pollution, is excessive, misdirected, or obtrusive artificial light. Light pollution competes with starlight in the night sky for urban residents (interfering with astronomical observatories among other things) and, like any other form of pollution, disrupts ecosystems and has adverse health effects on humans. The following types of light pollution should be considered for this Project:

Glare – Glare, from too much bright light, can dazzle, mask hazards and can cause temporary vision loss increasing the risks of trips, falls or safety threats. Dark adaptation, the eye's ability to adjust to reduced lighting levels, is important for safety in the community. The time it takes for the eye to adapt from the lit areas and the unlit areas increases with the brightness and colour of lighting. Research indicates that the design of LED lights can have an impact on the amount of glare it produces, therefore, appropriate shielding and diffusing and directionality of the lighting shall be used to reduce risks associated with glare.

Light clutter – refers to excessive groupings of lights. Groupings of lights may generate confusion, distract from obstacles (including those that they may be intended to illuminate), and cause accidents. Clutter is particularly noticeable on roads where the street lights are badly designed, or where brightly lit advertising surrounds the roadways.

Skyglow – refers to the glow effect that can be seen over populated areas. It is the combination of all light reflected from what it has illuminated escaping up into the sky and from all of the badly directed light in that area that also escapes into the sky being scattered (redirected) by the atmosphere back toward the ground.

Exposure to Blue Rich Light - LEDs are available in a variety of color temperatures, typically ranging from “warm” yellow-rich lights, to “cooler” blue-white lights. LEDs in the blue-white range are generally 10 to 15 percent more energy efficient than warmer LEDs, leading many City to opt for the blue-rich bulbs. (The yellow-rich LEDs still provide significant energy savings compared to other common streetlight bulbs). Exposure to blue-rich light at night can lead to decreased melatonin secretion in humans. Melatonin is a hormone secreted at night by the pineal gland that helps balance the reproductive, thyroid, and adrenal hormones and regulates the body’s circadian rhythm of sleeping and waking. Lower Melatonin levels have been tenuously linked to increased risk of cancer.

Exposure to blue-rich light also disrupts natural sleeping and can also adversely affect wildlife by, for example, disturbing migratory patterns of birds and some aquatic animals which nest on shore.<sup>5</sup>

The American Medical Association (AMA) has recently published an official policy statement on LED street lighting<sup>6</sup>. The Association recommends and encourages:

- Proper conversion to community based Light Emitting Diode (LED) lighting, which reduces energy consumption and decreases the use of fossil fuels.
- Minimizing and controlling blue-rich environmental lighting by using the lowest emission of blue light possible to reduce glare.
- The use of low blue-content LED lights for street lighting installations. All LED lighting should be properly shielded to minimize glare and detrimental human and environmental effects, and consideration should be given to utilize the ability of LED lighting to be dimmed for off-peak time periods (in case it is economically feasible).

**Crime** – Effective street lighting can help to reduce crime. Studies undertaken by the UK’s Home Office revealed results showing that improved lighting led to crime reduction. A meta-analysis of five studies showed that improved lighting reduced crime by 30%. Furthermore, in two studies, the financial savings from reduced crimes greatly exceeded the financial costs of the improved lighting.<sup>7</sup>

**Traffic Safety during Construction Period** - Poorly trained or inexperienced industrial vehicle drivers have increased risk of accident with other vehicles, pedestrians, and equipment. Industrial vehicles and delivery vehicles, as well as private vehicles on-site, also represent potential collision scenarios. In addition, refurbishment of street lights and replacement of lamps involves work on the roadside.

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<sup>5</sup> A framework to assess evolutionary responses to anthropogenic light and sound. Trends in Ecology and Evolution. Volume 30, Issue 9, September 2015, Pages 550–560

<sup>6</sup> <https://www.ama-assn.org/ama-adopts-guidance-reduce-harm-high-intensity-street-lights>

<sup>7</sup> [http://www.crim.cam.ac.uk/people/academic\\_research/david\\_farrington/hors251.pdf](http://www.crim.cam.ac.uk/people/academic_research/david_farrington/hors251.pdf)

Adequate measures and procedures need to be provided to ensure that none of the works result in vehicle accidents from poor parking of sub-contractors vehicles, lack of safety signs, etc.

**Personal Protective Equipment (PPE)** – Workers (Sub-contractors) will be exposed to a number of hazards which will require various PPE, including exposure to hazardous substances during the disposal of waste lamps. PPE is considered to be a last resort that is above and beyond the other facility controls and provides the worker with an extra level of personal protection.

**Physical Hazards** – In the context of the Project, physical hazards include:

Electrical Hazards - Exposed or faulty electrical devices, such as circuit breakers, panels, cables, cords and hand tools, can pose a serious risk to workers. Overhead wires can be struck by metal devices, such as poles or ladders, and by vehicles with metal booms. Vehicles or grounded metal objects brought into close proximity with overhead wires can result in arcing between the wires and the object, without actual contact.

Working at Heights - Fall prevention and protection measures should be implemented whenever a worker is exposed to the hazard of falling more than two meters.

**Chemical Hazards** – The main chemical hazards of the Project relate to the handling and disposal of mercury containing lamps which is discussed above under waste management and PPE.

**Noise** – Some short term elevated noise levels may occur during refurbishment works, erection of poles and maintenance works, but these are not anticipated to be significant and would not require any mitigation measures, other than notifying members of the public of potentially noisy works in advance.

### 3. Management Plan

In order to manage and mitigate the environmental aspects and impacts identified above an Environmental and Social Action Plan (ESAP) has been prepared for the Project. The following table summarizes the mitigation and management actions and the targets and evaluation criteria for measuring successful implementation of these measures during the lifecycle of the Project.

**Table 2. Management Plan**

Item	Action	Target and Evaluation Criteria For Successful Implementation
<b>Environmental Management System</b>		
Environmental and Social Management System	<ul style="list-style-type: none"> <li>Company and Sub-contractors shall develop a basic ESMS (to include an energy management system).</li> </ul>	<ul style="list-style-type: none"> <li>Company to have ESMS in place and approved by the Company prior to the start of the Project.</li> <li>Annual review of Sub-contractors ESMS by the Company's EHS Manager.</li> </ul>
Environmental and Social Policy	<ul style="list-style-type: none"> <li>Company and Sub-contractors shall develop an environmental policy as part of the ESMS.</li> </ul>	<ul style="list-style-type: none"> <li>Development of the environmental and social policy and communication of policy across the company to all Company and Sub-contractor staff.</li> </ul>
Environmental and Social Management Plan	<ul style="list-style-type: none"> <li>None, other than ensuring Company and Sub-contractors implementation of this ESAP</li> </ul>	<ul style="list-style-type: none"> <li>Annual monitoring and reporting to EBRD by the Company on the compliance status of the ESAP.</li> </ul>
Organisational Capacity and Commitment	<ul style="list-style-type: none"> <li>Company to hire an environmental, health and safety (EHS) manager to monitor Sub-contractors performance, report to EBRD and maintain ESMS.</li> <li>Sub-contractors to hire EHS Managers to implement the ESAP and ESMS (potentially a part time position)</li> </ul>	<ul style="list-style-type: none"> <li>Company and Sub-contractors hired EHS Manager</li> </ul>

Item	Action	Target and Evaluation Criteria For Successful Implementation
Project Monitoring and Reporting	<ul style="list-style-type: none"> <li>Undertake project monitoring and reporting processes from sub-contractor activities.</li> </ul>	<ul style="list-style-type: none"> <li>Report at a minimum annually on all Project activities with respect to environmental and social compliance. Site visits to monitor construction sites should be carried out for all major construction works to ensure no impacts are occurring from the activities.</li> </ul>
<b>• Labor and Working Conditions</b>		
Human Resource Policies and Working Relationships	<ul style="list-style-type: none"> <li>As part of bidding procedures, include clauses in Sub-contractors contracts to ensure that all sub-contractors have suitable human resource policies and general HR procedures in line with the Labour Code.</li> </ul>	<ul style="list-style-type: none"> <li>Annual audit of sub-contractors HR policies / activities by the Company.</li> </ul>
Non-Discrimination and Equal Opportunity	<ul style="list-style-type: none"> <li>As part of bidding procedures, include clauses in Sub-contractors contracts to ensure that all sub-contractors staff are not discriminated against based on race, gender or disability.</li> </ul>	<ul style="list-style-type: none"> <li>Annual audit of sub-contractors HR policies / activities by the Company.</li> </ul>
Workers Organizations	<ul style="list-style-type: none"> <li>As part of bidding procedures, include clauses in Sub-contractors contracts to ensure that all sub-contractors staff are not discouraged from joining workers organizations.</li> </ul>	<ul style="list-style-type: none"> <li>Annual audit of sub-contractors HR policies / activities by the Company.</li> </ul>
Wages	<ul style="list-style-type: none"> <li>As part of bidding procedures, include clauses in Sub-contractors contracts to ensure that all sub-contractors staff wages be at least comparable to those offered by equivalent employers.</li> </ul>	<ul style="list-style-type: none"> <li>Annual audit of sub-contractors HR policies / activities by the Company.</li> </ul>
Grievance Mechanism	<ul style="list-style-type: none"> <li>As part of bidding procedures, include clauses in Sub-contractors contracts to ensure that all sub-contractors have an effective grievance mechanism for workers.</li> </ul>	<ul style="list-style-type: none"> <li>Annual audit of sub-contractors Grievance Mechanism and complaints by the Company.</li> </ul>
<b>Resource Efficiency and Pollution Prevention and Control</b>		
Resource Efficiency	<ul style="list-style-type: none"> <li>The Project will result in significant energy savings, thereby reducing resource requirements. However, it is also recommended to adopt a program to dim lights during off-peak hours.</li> </ul>	<ul style="list-style-type: none"> <li>Annual energy audit including review of energy savings by the Company resulting from light dimming</li> </ul>

Item	Action	Target and Evaluation Criteria For Successful Implementation
Wastes	<ul style="list-style-type: none"> <li>None</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
Safe Use and Management of Hazardous Substances and Materials	<ul style="list-style-type: none"> <li>None</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
<b>Health and Safety</b>		
Occupational Health and Safety	<ul style="list-style-type: none"> <li>Sub-contractors to prepare OHS Plans outlining national OHS requirements, relevant IFC EHS Guidelines and procedures for working with electrical hazards and working at heights, etc.</li> <li>Sub-contractors to provide regular OHS training to staff.</li> <li>Sub-contractors to keep records of any accidents occurring during Project works.</li> <li>Ensure that adequate PPE is provided to workers as required by national law and Table 14 of the ESDD Report.</li> </ul>	<ul style="list-style-type: none"> <li>Sub-contractors OHS Plan developed prior to the start of contract.</li> <li>Zero accidents to Sub-contractors workers during any contractual calendar year as a result of Project works.</li> <li>Company inspections of Sub-contractors work sites on a monthly basis to assess the application of PPE and compliance with national OHS standards and IFC guidelines.</li> </ul>
Traffic and Road Safety	<ul style="list-style-type: none"> <li>All Sub-contractors must have standard operating procedures for traffic and road safety.</li> <li>Sub-contractor workers shall receive routine training on the SOP.</li> <li>Routine inspection of sub-contractors works sites by the Company.</li> </ul>	<ul style="list-style-type: none"> <li>Sub-contractors to develop SOPs for road safety.</li> <li>Zero accidents to Sub-contractors workers during any contractual calendar year as a result of Project works.</li> </ul>
Community Health and Safety	<ul style="list-style-type: none"> <li>Consider the use of LED lights with a rating no higher than 4,000K.</li> <li>During the design phase of the Project ensure streetlights are designed to limit the impact of light clutter and skyglow.</li> <li>Minimizing and controlling blue-rich environmental lighting by using the lowest emission of blue light possible to reduce glare.</li> <li>Use effective shielding of LED lights.</li> </ul>	<ul style="list-style-type: none"> <li>Complaints from the community during the construction and operational phases of the Project are received and effectively resolved.</li> </ul>

Item	Action	Target and Evaluation Criteria For Successful Implementation
<b>Information Disclosure and Stakeholder Engagement</b>		
Stakeholder Engagement Plan	<ul style="list-style-type: none"> <li>Development of Stakeholder Engagement Plan (SEP)</li> </ul>	<ul style="list-style-type: none"> <li>SEP developed as part of this Project assessment. Implementation of SEP by relevant departments within the Company.</li> </ul>
Operational Grievance Mechanism	<ul style="list-style-type: none"> <li>Development of standard Operational Grievance Mechanism</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholder Engagement Plan containing clearly defined Grievance Mechanism for Stakeholders developed and implemented.</li> </ul>

## 4. Stakeholder engagement and Grievance mechanisms

### 4.1 Stakeholder identification and communication

**Table 3** indicates the Stakeholders identified and the proposed communication method for each group.

**Table 3: Project Stakeholders**

Stakeholders	Information to be disclosed	Communication Method	Timing
Company Employees	1. NTS / ESAP / ESMS 2. E&S and HR Policies 3. Grievance Mechanism	1&2. Availability from Company HR Department. 3. Included in employees Contracts.	1&2. On-going. 3. Contract initiation.
Sub-contractors (including EcoKom)	1. NTS / ESAP 2. Grievance Mechanism 3. OHS Plan 4. Traffic Management SOP	1. Availability from Company HR Department. 2. Included in employees Contracts. 3&4. Availability from Senior Management / Information boards / Toolbox training.	1. On-going. 2. Contract initiation. 3&4. On-going.
Residential communities and Local businesses	1. Schedule of maintenance / rehabilitation work 2. Grievance Mechanism 3. NTS / ESAP	1. Leaflets and local media (local newspapers / radio). 2. Signboards provided at worksites indicating Grievance procedure. 3. Availability from Company HR Department.	1. At least one day prior to the start of works. 2. During maintenance / refurbishment works. 3. On-going
Road users	1. Schedule of maintenance / rehabilitation work 2. Grievance Mechanism	1. Local media (local newspapers / radio). 2. Local municipality and traffic police. 3. Availability from Company HR Department.	1. Throughout maintenance / refurbishment works. 2. On-going

## *4.2 Public Grievances*

The Company will consider, through its Health and Safety Manager along with its Community Liaison, all comments and complaints associated with the Project, both resulting from the Company and Sub-contractors activities. Any person or organization may send comments and/or complaints in person, by phone or via post or email.

All comments and complaints will be responded to either verbally or in writing, in accordance with the preferred method of communication specified by the complainant, if contact details of the complainant are provided.

All grievances will be registered and acknowledged by the HR Department within 5 working days and responded to within 20 working days of receiving the grievance. Individuals who submit their comments or grievances have the right to request that their name be kept confidential.

The Company will monitor the way in which grievances are being handled by the Sub-Contractor(s) and ensure they are properly addressed within deadlines specified above.

The Company's HR Department will keep a grievance log of all grievances (including those received and addressed by the Sub-contractor(s), based on which grievance management reports will be produced and included in annual environmental and social reports which will be submitted to interested stakeholders including the EBRD.

In cases when the complainant is not satisfied with the way his / her grievance has been responded to or handled and re-submits it, the Company will invite representatives of the relevant local community to participate in the process so that a mutually agreed solution is identified and implemented. At all times, complainants are also able to seek legal remedies in accordance with the laws and regulations of the Republic of Kazakhstan.

## *5.2 Company (and Sub-contractor) Grievances*

A separate, internal grievance mechanism for employees of the Company and Sub-contractors will be applied. The mechanism will involve a post box in the Company headquarters building where Company staff and sub-contractors staff can post grievances in writing. All grievances will be registered and acknowledged by the HR department within 5 working days and responded to within 20 working days of receiving the grievance.

## *5.3 Company's contact details for public comments and feedback on NTS.*

<b>Name</b>	<b>Position</b>	<b>Contacts</b>
Yuri Khalitov	IFI Projects Director	ppp.invest@mail.ru