

Cover Page for CTF Program Approval Request			
1. Country/Region	Kazakhstan	2. CIF Project ID#	(CIF AU will assign ID.)
3. Project/Program Title	Yermentau Large Wind Power Plant		
4. Terms and Amount Requested in million USD equivalent	Public sector – n/a		
	Private sector 1. <u>Loan (for investments)</u> : EUR18 million = USD 24.3 million ¹ 2. <u>Grant (advisory services and knowledge management)</u> –USD 100,000. (Annexes A, C, D) 3. <u>Fee</u> : Implementation and supervision budget – USD 474,000 (Annex B). Total request USD24.874 million, of which: USD 24.3 million for investment and USD 0.574 million for grants and fees		
5. Implementing MDB(s)	European Bank for Reconstruction and Development (EBRD)		
6. National Implementing Agency	n/a		
7. MDB Focal Point	Andreas Biermann, CTF Coordinator (biermana@ebrd.com)		
8. Brief Description of Project/Program (including objectives and expected outcomes)			
<p>Fit with Kazakhstan Country Investment Plan: This Program proposal is consistent with Kazakhstan’s Country Investment Plan (CIP), which was endorsed by the CTF Trust Fund Committee (TFC) on March 16, 2010, as well as with the proposed updated CIP which was endorsed in May 2013. Kazakhstan’s updated CIP confirms what has been stated in the original 2010 Plan, namely that direct financing for renewable energy is a high priority for the country, in order to increase reduce GHG emissions, and commence the change to a green growth model of the economy.</p> <p>Project Summary</p> <p>The proposed CTF facility will provide sub-sovereign loans to Samruk Green Energy or an SPV established by Samruk Green Energy of up to EUR18 million (or USD equivalent) from CTF, and of up to EUR54 million from EBRD, for the construction of Kazakhstan’s first large wind farm at Yereymentau. Technical assistance for project preparation will help the borrower prepare the project. The sponsor is expected to invest EUR 18 million equivalent in Kazakh Tenge, USD, or EUR, as equity contribution.</p> <p>The funding request for this Program is as follows:</p> <ol style="list-style-type: none"> i. The USD equivalent of EUR 18 million of loan volume (in EUR or USD depending on the negotiation with the client). ii. USD 0.1 million of grants for project preparation and knowledge management. iii. USD 0.474 million of fees for EBRD’s supervision and implementation services. <p>For a more detailed description of the program, objectives and expected outcomes please refer to attached Program proposal document.</p>			

¹ A conversion rate of USD1.35/EUR1 is being used throughout this document.

9. Consistency with CTF Investment Criteria

For Private Sector Projects/Programs:

- (1) *Potential GHG Emissions Savings*
At least 150,000 tCO₂/year for the project lifetime of 20 years, reaching a total of 3,000,000 tCO₂.
- (2) *Cost-effectiveness*
Minimum USD8.1/tCO₂ for CTF and USD40.5/tCO₂ for the total project cost.
The marginal abatement cost is below USD100/tCO₂.
- (3) *Demonstration Potential at Scale*
Kazakhstan has set itself a target of 1 GW of new renewable energy installed by 2020, about 5.7% of its installed capacity. Given the excellent wind resource in the country, it is expected that large-scale wind will play a major role in this development, and in order for this to happen, the development of the supporting infrastructure to the industry will have to start now.
- (4) *Development Impact*
The project will be instrumental in establishing a wind power industry in Kazakhstan, from development to installation and maintenance services. This will lead to job creation and support green growth in a coal dominated economy.
- (5) *Implementation Potential*
Medium- High. The regulatory environment is being developed and is close to conclusion. The government has a target in place that supports the project. The sponsor is a subsidiary of a major public entity, the sovereign wealth fund of Kazakhstan.
- (6) *Additional Costs and Risk Premium*
High, since this will be a first of its kind project in Kazakhstan. Despite a relatively generous feed-in tariff, it is likely that substantial concessionality on the CTF loan will be required.
- (7) *Financial Sustainability*
High, since the first set of projects will reduce the cost and risk premium, and should rapidly lead to a situation in which the feed-in tariff alone should be able to carry the industry to sustainability.
- (8) *Effective Utilization of Concessional Finance*
High. The CTF funding will be instrumental in getting this project implemented.
- (9) *Mitigation of Market Distortions*
High. This is appropriate use of concessional finance for a first mover in a newly established market.
- (10) *Risks*
Technical risk: high – there is no established construction and maintenance industry for large-scale wind turbines in Kazakhstan, and existing wind speed measurements undertaken by independent consultant were taken at too low a mast height.
Financial risk: high – despite the fact that the project will benefit from a 15 –year feed-in tariff, and a corporate guarantee from Samruk Green Energy's parent, Samruk Energo, the energy subsidiary of Samruk Kazyna, the sovereign wealth fund of Kazakhstan.

10. Stakeholder Engagement

Stakeholder engagement will take place at the sub-project development stage as appropriate following the rules and procedures of the EBRD.

11. Gender Considerations		
<p><i>Gender considerations will be assessed during the development of the project following the signing of the mandate letter. An initial gender assessment by the gender team at EBRD will be circulated if requested.</i></p>		
12. Indicators and Targets (consistent with results framework)		
Core Indicators	Targets (by Dec 2015 – 2 years)	
(a) GHG emissions avoided	150,000 MtCO ₂ e per annum	
(b) Renewable Energy Produced	155 GWh per annum	
(c) Renewable Capacity Installed	50 MWe installed	
Development Indicator(s): <i>Direct and indirect jobs created through the program</i>	100 short-term jobs, 50 long-term jobs	
13. Co-financing		
	Please specify as appropriate	Amount EUR million
• EBRD	Loans	Up to EUR 54 million
• Project Sponsor	Equity	Up to EUR 18 million
Total Co-Finance		Up to EUR 72 million
Total Project Volume	CTF 20%	Up to EUR 90 million
14. Expected Date of MDB Approval		
<p>The project is expected to be Board approved in September 2014, depending on the safeguards disclosure period needed prior to Board discussion.</p>		
<p>15. Document Structure</p> <p>Main Sections:</p> <p>1: OVERVIEW</p> <p>2: PROJECT SPECIFICS</p> <p>3: RESULTS MEASUREMENT, ADDITIONALITY, MARKET TRANSFORMATION POTENTIAL, AND RISK</p> <p>4: GENDER IMPACT AND SAFEGUARDS</p> <p>5: SECTOR OVERVIEW</p> <p>Annexes:</p> <p>A – Technical Assistance Budget</p> <p>B – Administrative Budget</p> <p>C – Outline Policy Dialogue Advisory Services</p> <p>D – Knowledge Management and Evaluation Activities</p> <p>E – Abbreviations and Currency Conversions</p>		

CTF Kazakhstan
PRIVATE SECTOR PROPOSAL

<i>Name of Project or Program</i>	Yermentau Wind Farm	
<i>CTF amount requested</i>	Investment	EUR 18.000 ² million
	Advisory services component	USD 0.000 million
	Implementation and supervision budget	USD 0.474 million
	Knowledge Management	USD 0.100 million
	Investment Total	EUR 18.000 million
	Advisory, KM, Implementation Total	USD 0.574 million
	Total	EUR 18 million and USD 0.574 million or USD 24.874 million equivalent
<i>Country targeted</i>	Kazakhstan	
<i>Sector targeted</i>	Renewable Energy ³	
<i>Indicate if proposal is a Project or Program</i>	<p>The request consists of four different elements:</p> <ol style="list-style-type: none"> 1) Investment up to EUR 18 million (equivalent to USD 24.3 million) CTF Finance of a project in line with the application below. 2) Implementation and supervision budget and KM component up to USD 0.573 million CTF Finance of EBRD's administration, oversight, and KM activities relating to this project (see Annexes B and D) 	
<i>Transfer of Funds by the Trustee to the Implementing Entity</i>	<ol style="list-style-type: none"> 1) Express authorization of the CTF Trust Fund Committee is requested to allow for the full up-front transfer of CTF resources required for the Investment Component to EBRD prior to the first commitment by EBRD pursuant to a signed loan agreement with a participating borrower (the "Investment Component"). 2) The currency of transfer of the investment component will be either EUR or USD, depending on the arrangements between the EBRD and the client. 	
PROGRAM FIT WITH CTF OBJECTIVES AND KAZAKH INVESTMENT PLAN		
<p>1. Overview</p> <p>The CTF promotes scaled-up financing for demonstration, deployment and transfer of low-carbon technologies with significant potential for long-term greenhouse gas emissions savings. This framework would fall under the sector/program of renewable energy development as outlined in the CTF Investment Plan for Kazakhstan.</p> <p>Kazakhstan is well endowed with renewable energy resources, but only a small fraction of this potential is utilized. Kazakhstan's emissions levels, (it is the largest emitter of greenhouse gases (GHG) in Central Asia), are a combined result of high energy intensity, relatively high economic output, and a coal-dominated energy sector (to produce electricity and heating). The most daunting challenge for renewable energy projects is thus to compete with the abundance of easily, domestically available cheap but carbon-intensive fuels such as coal and oil.</p> <p>Renewable energy has a great potential for economic operation and its contribution to climate change mitigation in Kazakhstan, and will in future be supported by the introduction of feed-in-tariff legislation, which EBRD is supporting. There is nevertheless already strong interest in renewable energy for electricity generation at the national level. Among the proposed instruments for renewable energy financing is thus a</p>		

² A conversion rate of USD1.35/EUR 1 is being used throughout this document.

³ This programme will be the fourth of a series of facilities and projects which will access the Kazakh Investment Plan allocation for renewable energy. The total volume for renewables for EBRD is US\$89m of investment support and US\$6m of technical assistance. Following the approval of this facility, US\$11m of investment support will remain for future allocation.

window for direct lending to private developers of renewable energy projects, which this proposed framework will cover.

The proposed project will help Kazakhstan to address its energy and climate change challenges by making a major contribution in three critical areas:

- (i) supporting a clean energy transition by focusing on meeting energy needs in an environmentally sustainable manner and thereby reducing greenhouse gas emissions;
- (ii) supporting the development of project finance approaches for renewable energy projects; and
- (iii) supporting the development of a capable wind energy development, construction, and service industry in the country.

PROGRAM FIT WITH CTF INVESTMENT CRITERIA

2. PROJECT SPECIFICS

Overview

The proposed project is fully in line with the objectives of the Clean Technology Fund. It will deliver substantial CO2 emissions reductions at comparatively low investment cost, developmental co-benefits, and support the market transformation of power generation in Kazakhstan towards a low-carbon power supply structure, in line with policy objectives of the Kazakh government.

The project scope will go far beyond the current practice in the Kazakh renewable energy sector where the renewable energy market is still in its infancy, and the intent is to move to the current best available practice in OECD countries, based on the newly created feed-in-tariff support system. The developing government agenda in this field aims to introduce best-practice approaches, but there is a need for demonstration and initial market transformation in order to ensure technology and capacity of administrations and the energy industry are raised to be able to implement modern regulations. The proposed project will pursue this, and it is based on the already successful engagement of EBRD/CTF in the successful development of a general framework for renewable electricity and feed in tariffs.

The main objectives of the project are:

- (i) To create a track record of financing wind energy projects, through providing financing and technical assistance to companies with bankable projects, which will demonstrate the financial sustainability of renewable electricity generation in Kazakhstan;
- (ii) To support the creation of a self-sustaining industry supporting the development of wind power generation in Kazakhstan.

The project consists of the establishment of the Facility to provide debt and equity financing for renewable energy in Kazakhstan together with associated technical assistance component of up to USD 7.5 million from the Clean Technology Fund (the CTF), bilateral donors and the EBRD Special Shareholders Fund (The SSF).

Financial Information

Investment Component

The project consists of the construction of a 50 MW wind power plant in Yereymentau in northern Kazakhstan, to be carried out in 2014-2016. The total funding requirement is estimated at EUR 90 million or the USD/KZT equivalent of this sum. The project will be supported by a technical assistance component to support project preparation.

Financing Structure

The project is structured to be financed by the sponsor, EBRD, and CTF. If possible commercial co-finance will be raised in order to reduce the volume of EBRD finance, but it is not likely that this will be possible, given the nature of the project as a first of its kind in a sector with no track record.

Table 1: Origin and Uses of Funding

Sources	Million EUR	Uses	Million EUR
EBRD	54.0	Project Financing	90.0
Co-Financing	18.0	Project Associated TA	0.1
CTF	18.0	Non-Project TA	0
Associated TA	0.1		
<i>Of which CTF</i>	<i>0.1</i>		
<i>Of which other sources</i>	<i>0.0</i>		
TOTAL	90.0	TOTAL	90.0

Financing Terms

The project will require concessionality both in terms of price and tenor in order to be viable. No long-term finance is available in the Kazakh market, and the project would face unacceptable re-financing risk if it could not benefit from the long tenors being offered by the EBRD/CTF finance. Furthermore, while a FIT is in place, the project is a first of its kind, and as such shoulders additional costs and risks over and above what a developer is expected to face in future years. This may have to be mitigated by the blending of concessionally priced CTF funds with market-priced EBRD funds. CTF funds will not be subordinated to EBRD, and will benefit from the same security.

Table 2: Summary CTF Terms for Yereymentau WPP

Instrument:	Senior Loan Financing – not subordinated to EBRD Finance
Amount:	Up to EUR 18,000,000 equivalent
Tenor:	Up to 20 years; with up to 10 years grace period followed by semi-annual repayments
Pricing:	Minimum interest rate of 125 basis points fixed
Expected Commitment Date:	March 2014 to end of calendar year 2014
Expected Disbursement Date:	June 2014 to end of calendar year 2015
Security	<ul style="list-style-type: none"> Full corporate guarantee from the Sponsor covering loans from EBRD and CTF in case of a corporate loan. This maybe released at a later stage in agreement with the lender. Possible pledge over the assets and assignment of PPA in case of a project finance structure.

Technical Assistance Component (see also Annexes A, C, D)

1) Non-transaction related (USD 1 million)

Non-transaction related technical assistance will be offered to the line ministries, the regulator, and the grid operator, to ensure the smooth implementation of the new renewable energy legislation. The design of this element of the package is based on EBRD's experience in Ukraine, where similar support funded by the GEF was instrumental in helping the development of the renewable energy sector after the passage of primary and secondary legislation.

2) Transaction-related (USD 1 million)

Transaction-related TC is foreseen to help the project sponsor gain further comfort about the site layout and the likelihood that the project will reach the expected energy yields.

Furthermore, the application requests TA funds above those required for the proposed project in order to enable EBRD to quickly access TA for potential future projects that may require support in establishing detailed project feasibility and due diligence. The TA fund would be open to any potential investor with a project qualifying for the CTF. The TA fund of USD0.5 million will be available to support this and other projects on:

- i. TA to support and advise potential investors on:

- a. assessing if original wind assessment studies are adequate for project preparation or if additional field campaigns will be needed, and
- b. reviewing the preferable combination of turbines and site layout.
- ii. If necessary, carry out expanded wind assessment financed by CTF.
- iii. Carrying out required due diligence going beyond legal requirements in Kazakhstan.

3. Results Measurement, Additionality, Market Transformation Potential, Risk

Results Measurement

In tracking and reporting on these indicators, the project will comply with the revised CTF Results Measurement Framework (Revision of 6 Dec 2012).

Potential GHG Emission Savings

The most important GHG emissions benefit will be achieved by reducing the amount of CO₂ emissions from grid through replacing the dirty electricity produced from coal with clean renewable energy fed into the grid. Kazakhstan's current emissions from electricity generation are very high at 1.069 ton CO₂/MWh⁴. It is estimated that the proposed program with the CTF investment of EUR 18 million would most likely lead to GHG reductions of 150,000 tonnes of CO₂ per annum, or 3 mtCO₂e over a lifetime of 20 years, compared to the business as usual scenario. This will also help the country in its much needed efforts to reduce emissions and the environmental impact of energy production.

Cost Effectiveness

Kazakhstan's CTF investment plant estimated the average unit abatement costs for wind, solar power and other renewable installations to be below \$US50/tCO₂e. The CTF cost per ton of CO₂e avoided over the life of the project are USD8.1/tCO₂ (EUR6) or 0.124tCO₂e/1USD invested from CTF resources, while total investment cost is USD/tCO₂ 40.5 (EUR30), with 0.025tCO₂e/1USD invested in total.

Table 3: Key Indicators – Project Based

Indicator	Volume	Baseline	Timing
<i>Environmental</i>			
Lifetime emission savings	3 mtCO ₂ e	0	2030
Annual emission savings	150,000 tCO ₂ e	0	2016
Annual emission savings of:			
SO ₂	635 tons	0	2016
Dust	586 tons	0	2016
NO _x	342 tons	0	2016
<i>Financial</i>			
CTF financial leverage for the project	1:3 (CTF:EBRD) 1:4 (CTF:(EBRD + project sponsors))		2016
Cost effectiveness	EUR 30/tCO ₂	0	2030
CTF cost effectiveness	EUR 6/tCO ₂ e	0	2030
Investment volume	EUR 90 million	0	2016
<i>Development</i>			
First project-financed renewable energy deal will lead to replication	4 additional project-financed renewable energy deals	0	2018
Employment effect	150 jobs created (construction period: 100; permanent jobs: 50)	0	2018
Business creation	at least 2 businesses created	0	2016

⁴ Operating margin in 2020 – see:

http://www.ebrdpeter.info/260574_Final%20Baseline%20Study%20Kazakhstan.pdf

Additionality

Additionality of the proposed CTF investment alongside EBRD is high, since it is the only way in which finance for the project can be ensured, in the absence of long-term commercial financing in this sector without a track record in Kazakhstan.

Table 4: Additionality of the Project

Additionality Dimension	Verification and/or counter factual results	Timing
Term	- Medium/Long term financing on a limited recourse basis for renewable energy projects is not readily available in Kazakhstan.	<i>During the implementation of the Project (2014-2016)</i>
EBRD attributes	- Dialogue with Kazakhstan authorities on main impediments to realization of RE projects; - TC offered to client to facilitate efficient project implementation;	<i>During the implementation of the Project (2014-2016)</i>
Conditionality	- Through specific key covenants in the agreements, the Bank will encourage the client to apply high standards of corporate governance and business conduct in line with the Bank's policies and practices, e.g. transparency of ownership, procurement, adequate management capacity, sound reputation and integrity. - Covenants on compliance with environmental standards will be also imposed.	<i>During the implementation of the Project (2014-2016)</i>
Commercial Mobilization	If possible, commercial financing will be mobilised.	<i>During the implementation of the Project (2014-2016)</i>

Market Transformation Impact

Demonstration Potential at Scale

Kazakhstan possesses significant renewable energy resources, such as hydro, solar and wind energy, and has set itself a renewables target of 1 GW of renewable energy installed by 2020. This project will directly account for 5% of this target. The country's remaining hydro potential is estimated at 21 TWh per year and wind potential as 18 TWh per year, compared to annual electricity generation of 77 TWh in 2011. Kazakhstan's current power generation mix is comprised of 78% from coal, 12% from large hydro-electric facilities and the remaining 10% from oil and gas. Currently, power generation from new renewable energy sources is at zero, while old hydro plant contributed 8 TWh in 2011. This indicates that both the technical potential and the political will for a significant scale-up in renewable energy production are there, and need to be followed through by investments.

With the passage of the new renewable energy law in 2013, the government has now taken concrete steps to putting in place a long-term policy commitment to support the development of a renewable energy sector in Kazakhstan. The new policy is transparent, treats all classes of investors equally, and is based on established best practice in the OECD. It has been developed with substantial support from the EBRD and the CTF. A firm target has also been set which will give investors security and a base in which to anchor their projects.

Development Impact

The proposed project will have a significant demonstration effect by introducing a landmark new renewable energy project into the supply of the energy intensive and fossil-fuel based economy of Kazakhstan, and in by particular demonstrating the bankability of new renewable energy generation under the revised renewable energy law.

Concrete development impacts from this framework relate primarily to the development of markets and businesses in renewable energy.

Table 5: Development Impact

Rationale 1		
Demonstration of new replicable behaviour and activities	<p>This pilot Project have a significant demonstration effect to potential developers and private sponsors road-testing the legislation and proving that wind projects can be successfully implemented in the currently untested Kazakh renewable energy market. The project will allow the Company and other key stakeholders such as the grid operator, the regulatory, and the relevant ministries to develop relevant knowledge internally and then utilise it for replication. The Project will result in a significant CO2 emissions reduction of the country because it will displace electricity from coal-fired plant. The emissions reductions will support the Government's efforts to diversify the economy and launch it onto a green growth path.</p> <p>Participation in the Project will build on the Bank's efforts to promote clean energy and particularly the Strategic environmental review of renewables development currently conducted by the Bank in Kazakhstan.</p>	
Benchmarks	<ul style="list-style-type: none"> • Successful commissioning of the Project; • Annual electricity output of the Project at expected level; • Two wind power projects implemented by private investors; 	2016 2016 2018
Rationale 2		
Setting standards for corporate governance and business conduct	<p>The Project will benefit from the Bank's participation and will set standards for business conduct for the wind power projects in Kazakhstan through dissemination of international best-practices and expertise related to wind project development, environmental impact assessment and wind measurements.</p> <p>As part of the transaction an Environmental and Social Action Plan (ESAP) will be developed to ensure respective issues are properly addressed throughout project operation. Stakeholder Engagement Programme (SEP) will be developed to guide communications with stakeholders including disclosure of additional information concerning environmental matters.</p> <p>The Project will be procured in accordance with the Bank's public procurement guidelines (PP&R) and will set a cost benchmark which could be used as a reference point by other developers but also by the regulator.</p>	
Benchmarks	<ul style="list-style-type: none"> • Development/implementation of the ESAP; • Development/implementation of the SEP; • Procurement according to the Bank's PP&R. 	2014 2014 2015
Due diligence steps	Environmental and corporate due diligence.	
Covenants/TA?	Depending on outcome of ESAP/SER	
Rationale 3		
Transfer of Skills	<p>The project is expected to build and transfer expertise related to renewable energy and energy efficiency project development to a range of Kazakh companies. In particular this will bring much needed expertise in project management as well as promotion of renewable technologies and assistance to KEGOC (the Kazakh grid operator) which is managing power from renewable sources connected to the grid.</p>	
Benchmarks	<ul style="list-style-type: none"> • Establishment of wind power sales/service office by at least one major turbine manufacturer in Kazakhstan; • Development of connection guidelines at KEGOC; 	2016 2016
Covenants/TA?	N	

Implementation Risks

Additional Cost and Risk Premium

Currently, financing for longer tenors such as those required by the project is not available/not affordable from commercial banks, while at the same time the project is perceived as high risk by the commercial lenders, being a first of a kind. The ability of the EBRD and CTF to provide these tenors and finance are therefore of critical importance for enabling the investment. Additionally TA support will be needed to enable the project to go ahead. The EBRD's detailed industry knowledge from its other countries of operation will help with its ability to evaluate and assess the risks related to the sector and also transfer this knowledge into the market for future projects. CTF concessionality will be utilized in the form of concessions on price and tenor.

Specific risks relate to project and market risks, and are not considered high in the context of this being a first of a kind project in a newly created market.

Table 6: Implementation Potential/Risks

Risk	Risk Level	Mitigation
<i>Project Risk</i>		
Regulatory/Legislative	Medium	i) The project already benefits from a FiT under the current legislation, and the sponsor has the right to switch to the new FiT if this is more appropriate ii) Continued policy dialogue building on the existing relationship between the government and the EBRD
Financing	High	CTF resources mitigate the financing risk and enable longer tenor
The project will not produce the expected volume of electricity	Low	Technical assistance and pre-project assessment will ensure that the site is appropriate and expected energy yields will be realized.
<i>Market Distortion Risk</i>		
Use of CTF creates its own risk, and could lead to delaying the full transition to commercial viability and competitiveness of the renewable energy market.		
Creating subsidy dependence	Low	Mitigation through a focus on sound management, service and environmental practices.
Distortion to the renewable energy market	Low	Continue supporting the wider renewables agenda in Kazakhstan focusing on the development of sound policy and regulation, will also mitigate these risks.
Substituting concessional finance for equity	Low	Linking CTF finance to close the equity gap, with appropriate financial pricing levels

4. Gender Impact and Safeguards

Gender Impact

In line with the requirements of the CTF, members of the EBRD's Gender Team, shall design the gender impact assessment (with all pertinent gender analysis to be included) and ensure that its findings and implications are incorporated into the proposal and the underlying internal project document, and the results of the analysis will then be fully reflected in the project design.

Environmental/Social Safeguards

The project may be categorised "A" per EBRD Environmental and Social Policy, entailing a full Environmental and Social Impact Assessment (ESIA), and a public disclosure period of 120 days as a minimum. The Bank will review due diligence and any other relevant studies and project preparation process undertaken by the Client and identify the detailed scope of the due diligence to be carried out. The ESIA will be prepared as part of the feasibility study, in line with EBRD safeguards policy. If appropriate and subject to funding, EBRD will consider in-depth studies of specific aspects of the projects (e.g. gender, biodiversity) going beyond applicable EBRD safeguards policies.

5. Sector Overview

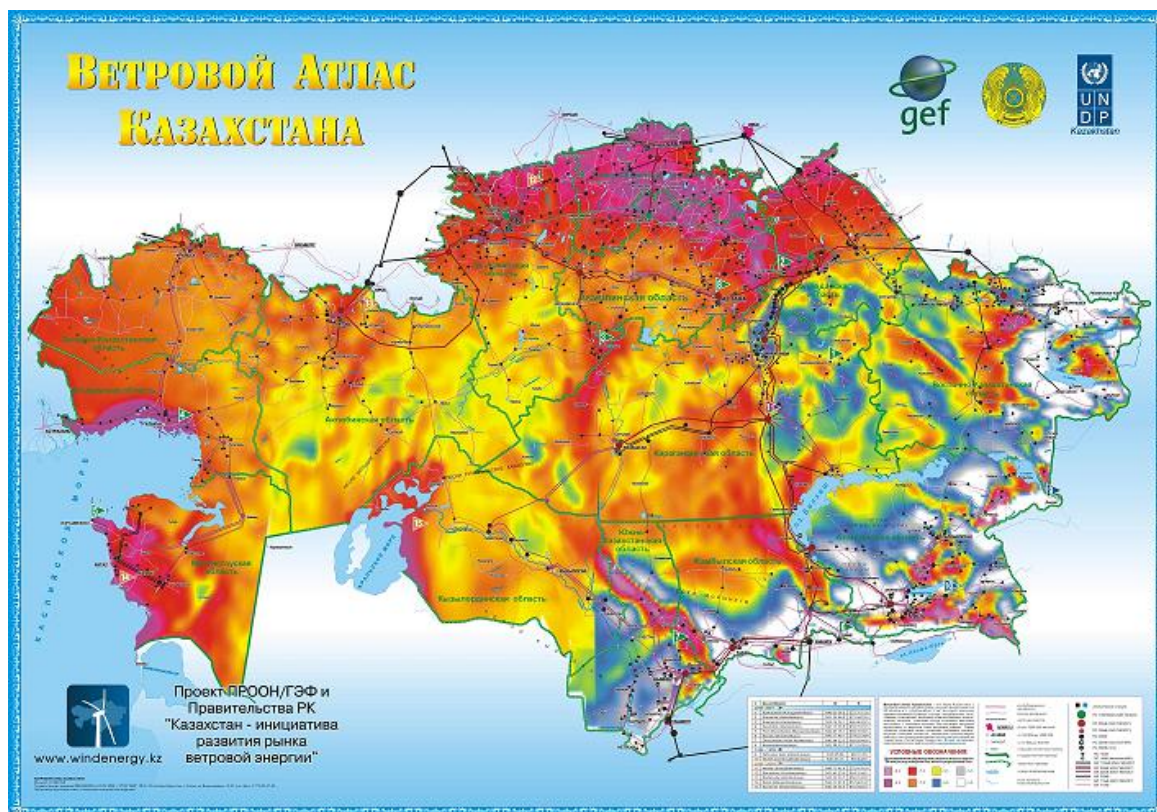
Wind Energy Potential

Kazakhstan possesses significant renewable energy resources, such as hydro, solar and wind energy. The country's hydro potential is estimated as 27 TWh per year and wind potential at 18 TWh per year as compared to the total annual electricity consumption of 84 TWh currently dominated by coal fired power plants (70%). According to the Ministry of Environmental Protection (MINT) the indicative target for annual renewable energy power generation by 2017 is 1.5 TWh per year, while the share of electricity generated from wind power plants is envisioned at 0.9 TWh per year.

The Kazakhstan — Wind Power Market Development Initiative project began in December 2004 and was finalized in June 2011. It has been financed by the Global Environment Facility and implemented by the United Nations Development Programme (UNDP) and the Government of Kazakhstan. A resource assessment carried out has estimated the potential wind resource in Kazakhstan to be in the region of 929 billion kWh per annum or 354 GW of installed capacity. This represents over 18 times the total currently installed generation capacity in Kazakhstan.

One of the important outcomes of the performed study by the UNDP was the development and publication of the Kazakhstan Wind Atlas.

Graph 1: Wind Energy Atlas - Kazakhstan



Source: UNDP www.windenergy.kz

On the basis of the study a list of prospective sites was prepared for the construction of large wind farms in Kazakhstan. The sites for the construction of wind farms were selected on the basis of long-term data from meteorological stations on average wind speed, computer analysis of Kazakhstan territory taking into account the following factors:

- availability of electricity grid and sub-stations for transmission of wind power;
- suitability of the topography and the altitude of the site;
- presence of electricity consumers;
- practicality of wind farm construction;
- presence of preliminary developmental works of wind farm construction;

The list includes 20 sites around the territory of Kazakhstan and available on the website of the Kazakhstan Electricity Association (www.windenergy.kz).

The table below summarizes the 10 most promising sites identified for wind project development in Kazakhstan:

Table 7: Priority WPP Sites, Kazakhstan

No.	Measurement site	Avg. wind speed (m/s at 50m height)	Power generation (MWh/year)
1	Djungar Gate (Almaty Oblast)	9.7	3,800
2	Ft. Shevchenko (Mangystau Oblast)	7.83	3,634
3	Shelik Corridor (Almaty Oblast)	7.8	n.a.
4	Yermentau City (Akmola Oblast)	7.79	3,610
5	Karabatan village (AtyrauOblast)	7.15	3,480
6	Zhuzhymdik village (S. Kazakhstan Oblast)	7.06	3,070
7	Arkalik city (Kostanai Oblast)	6.93	2,800
8	Astana city (Akmola Oblast)	6.48	2,800
9	Karakalinks city (Karaganda Oblast)	6.29	1,790
10	Korday village (Zhambyl)	5.72	n.a.

Source: www.windenergy.kz

Renewable Energy Support Legislation in Kazakhstan

Although Kazakhstan is rich in renewable energy resources, apart from a small share of hydropower, other renewable energy resources remained largely untapped. This is mainly due to, up until recently, absence of the appropriate regulatory framework supporting the development of renewable energy in the country.

In 2009, the Government passed the Renewable Energy Law which established project based support mechanisms and priority dispatch for renewables. This system did not result in significant investments into the sector because of a number of unsolved issues especially concerning tariff support mechanism.

The project based tariff support mechanism brings high level of uncertainty to investors vis-à-vis their project development costs and makes the system dependent on the individual relation of the investor with the authorized body to approve project tariff. It also adds a heavy burden to the authorized body to go through the project appraisal process in order to check each project feasibility study – which it does not have the capacity to do. All these aspects made the transaction costs very high and MINT has decided to change the support mechanism.

Consequently the Bank has worked with the MINT and the Ministry of Environmental Protection (“MEP”) to optimise the design developing various aspects of the legislation, beginning with the model for determining the feed-in-tariff. As a result “Renewable Energy Law” was introduced in June 2013 determining the

purposes, forms and areas of the use of renewable energy sources as well as the shift to a fixed Feed-in-Tariff, which will enable renewables to compete with energy from fossil fuel-powered generators. The calculation methodology for the determination of the Feed-in-Tariff is currently under revision and the Bank continues to assist the Ministry of Environmental Protection in order to define the methodology, which should provide a solid economic basis for RES project development. The set of 14 bylaws outlining tariff levels, indexation formula and RES connection to the grid is expected to be adopted by January 2014.

Over a period of two months, Projects developed under the 2009 Law (2009 mechanism) will have a chance to switch to the regulatory framework that is being developed under the 2013 Law (2013) should it prove to be more favourable. A comparative table summarizes main differences of 2009 and 2013 legal regimes.

Table 8: Comparison of the 2009 and 2013 RES Legislation

	2009 RES mechanism	2013 RES mechanism
Priority of dispatch	No, electricity produced by RES can only be purchased to cover for grid losses	Yes
Grid Connection	According to the Grid Code	Grid Code + rules for RES connection, expected to be developed by September, 2014.
Tariff	Individual tariff, approved by the regulator based on the Feasibility Study for the payback period of the project	Guaranteed indexed FIT for 15 years (actual levels and indexation formula to be adopted by January 15, 2014), anticipated tariff is EUR 8-9 cents/kWh, indexed annually.
Power Purchase agreement	Bilateral Purchase and Sales Agreement with the nearest distribution company	All electricity from RES will be purchased by the newly created Cost Settlement Agency, subsidiary of KEGOC System Operator. Creditworthiness is tbc. Standard PPA & PSA expected to be approved by September 2014.
Local Content Requirements	No	No
Tax and other incentives	No	No
Policy making arm	Ministry of Industry and New Technologies	Ministry of Environmental Protection

Green Economy Legislation

On May 30th. 2013 Kazakhstan adopted the Transition to the Green Economy concept a strategic initiative of the Kazakh Government calling for diversification of the country's economy (McKinsey completed the development of the strategy and EBRD was part of the consultation working group chaired by the Minister Kapparov), carbon quotas, development of renewables support framework and hosting of the international Expo 2017: "Energy of the Future").

The concept will be implemented in three stages.

The first stage (in 2013-2020) will focus on optimization of resource management, improvement of environment protection and construction of “green” infrastructure.

During the second stage (in 2020-2030) the economy will be transformed with a focus on careful use of water, electricity generation using renewable sources and construction of facilities using advanced energy efficiency technology.

The third stage (in 2030-2050) will witness the so-called “third industrial revolution” when all natural resources will be managed in a most efficient and environmentally-friendly way.

Overview of the Power Sector in Kazakhstan

1. Electricity market

Electricity market of Kazakhstan is represented by four main segments: (i) generation (operating within capped tariffs set by MINT), (ii) transmission/dispatching (regulated by AREM), (iii) distribution through regional networks (regulated), and (iv) supply (regulated). The Competition Protection Agency controls the prices of participants of each segment if their market share in the region of operations exceeds 15%. These prices should be approved by AREM. The participants of all four segments can sell and buy electricity in the Regulated and Competitive market as well as through bilateral contracts. There are also Electricity Capacity Reserves Pool and Balancing market introduced in Kazakhstan.

In September 2008 the Ministry of Energy and Natural Resources (now MINT) developed the base rate price cap model for 13 categories of generators (by fuel type and cost structure) which sets the price caps until 2015 with a 10% annual growth on average. In addition, generators can apply to AREM for an increased cap to meet their specific investment projects. This price model was approved by the Parliament in November 2008 and specific levels have been developed in consultations with generators, applicable from July 1, 2009. This structure should allow some free market segment, i.e. the generators can compete within the approved price caps although de facto majority of electricity is sold at capped tariff.

Under the current regime, electricity distribution tariffs are set by the Regulator AREM on a cost-plus basis. This tariff accounts for so-called “normative” network losses determined as per technical characteristics of the network but does not include investment provisions. For the investment component AREM approves a three-year mid-term tariff against investment program to perform of each distribution company aimed at urgent modernisation and upgrade of the networks. This tariff will fully recover investment costs through amortisation and capped profit margin components.

On July 4, 2012 the President signed amendments to the Electricity and other laws to introduce a capacity market mechanism starting in 2016 to support new investments in generating assets. New generation capacity continues to be planned on a centralised basis.

1.1. Regulated market – Bilateral Agreements Market

The regulated segment is known as the Regulated Bilateral Agreements Market. The tariffs for electricity generators include only electricity payment. The capacity payment system is non-existing in Kazakhstan today.

Supply companies purchase electricity from generators under one-year bilateral contracts at unregulated generation price. Supply companies add the distribution fee charged by distribution companies, widely known as Regional Electricity Companies (REC) plus their own supply margin. Supply companies have to notify AREM of significant price increases 30 days in advance. The generators are required to cover their prescribed contract volumes through own generation and/or through purchase of electricity in the spot market at prevailing market prices.

The supply companies used to apply to AREM for tariff increase until recently going through a cumbersome and inefficient tariff review and approval process. MINT has introduced the capped tariff concept in October 2008, which was ratified in December 2008 and actual levels of tariffs are being agreed with 13 categories of generators and approved in mid-2009. This concept implies no AREM involvement in generation price

regulation and a free price setting within the caps.

Each REC owns and operates electricity networks in a certain region (oblast) of Kazakhstan out of 14 regions and is primarily responsible for electricity supply to the town and the region. The residential customers purchase electricity from energy supply companies (ESC) at regulated end-user tariff. Supply companies apply to AREM for end-user tariff set as a sum of generation, distribution and supply. Prior to 2010 supply companies were allowed to have end-user tariff review once a year. The deficiency of the tariff regulation resulted in delays with end-user tariff adjustment vis-à-vis increases in generation and distribution costs. In March 2010, the Government and the Regulator (AREM) introduced an amendment to the Law on Natural Monopolies providing for immediate adjustment of the end-user tariff to generation and distribution tariff changes by notifying AREM 30 days in-advance instead of a lengthy formal review process.

1.2. Competitive market

1.2.1. Spot Market

In early 1990s following the electricity sector reform, Kazakhstan introduced a proper spot market for those suppliers and purchasers who lack bilateral agreements or wish to buy or sell excess volumes of electricity. The Kazakhstan Market Operator for Electric Energy and Capacity (KOREM), owned by Samruk-Kazyna National Wealth Fund, is responsible for Trade Organisation and Trade System Administration of (i) day-ahead and (ii) forward (1-week, 1-month, 1-quarter, 1-year) market.

On the spot market, suppliers submit price offers for any volume of production in excess of their obligations under existing regulated bilateral agreements, and purchasers submit price bids for their forecasted consumption for each hour of the next trading day. The Trade System Administrator matches these bids and offers using the minimal price criterion, thus determining free sector electricity trade volumes and equilibrium prices for each hour of the day. The spot market participants can be generators, distribution companies, supply companies, traders and KEGOC.

There is no obligation imposed on generators to sell or buy the defined volume/share of electricity on the spot market. The generators have the right to sell through KOREM up to 30% of the electricity sold in the wholesale market.

Since introduction of generation price caps in mid-2009 volume of transactions on forward market reduced to almost zero.

1.2.2. Bilateral contracts with industrial customers at “market” price

Generators can sell electricity to industrial customers at wholesale price, which are usually in line with average prices in KOREM. Industrial customers can enter into mid-term power purchase contract at agreed “free” generation price with (i) the generator if the customer is linked directly to electricity bars of the power plant and/or (ii) the distribution company, which electricity lines are linked to the industrial customers’ electricity lines.

1.3. Electricity Capacity Reserves Pool (ECRP)

This is a non-commercial organisation founded voluntarily by generators to secure uninterrupted supply of electricity in case of emergent knockout of power generating facilities and/or interstate, interregional and regional electricity lines.

Each generator submits every day to ECRP the information on availability of excess capacity indicating the volume of this capacity and the offer price. If there is no excess capacity at ECRP, generators purchase electricity from large sources (Ekibastuz GRES-1 owned 50/50 by Kazakhmys Samruk-Energy and GRES-2 owned 50/50 by Samruk-Energy and InterRAO UES) under the agreement stipulating the capacity replacement obligations by the large sources.

1.4. Balancing Market

The balancing market is considered a specific segment of the competitive market. It was introduced in

Kazakhstan in 2007 and is still on trial mode. The balancing market is required for eliminating imbalances between demand and supply which are bound to occur due to the practical difficulties in predicting power consumption volumes with absolute precision for a specific time period to ensure the regulation of hourly electricity imbalances in the National Electricity System of Kazakhstan. The System Operator (KEGOC) and the Finance Centre attempt to balance supply and demand in real time based on the last price offers from generators and bids from consumers.

1.5. Electricity tariff regulation

The end-user tariff is approved by AREM. ESCs can apply to AREM for the regulated end-user tariff increase to reflect generation and/or transmission/distribution cost increases. The end-user tariff comprises of the following components:

- (i) generation tariff
- (ii) transmission/dispatching tariff charged by KEGOC
- (iii) distribution tariff
- (iv) supply margin

The components (ii) and (iii) are calculated on the basis of the existing “cost plus allowed profit margin” tariff methodology introduced by AREM in early 1990s.

1.5.1. The existing regulated tariff methodology

The regulated tariffs are validated by the Regulator (AREM) and designed to cover all operating costs and partially planned capital expenditures (major overhaul) from the allowed profit.

The operating costs include the following:

- cost of fuel and materials that differ by plant due to differences in operating efficiencies, fuel type and cost structure
- O&M costs
- technical losses in line with the allowed level that is approved by AREM
- major overhaul costs not leading to the fixed assets value growth
- wages of technical and administrative staff set on the basis of existing tariffs indexed to the forecasted CPI
- amortisation costs
- environmental charges
- obligatory insurance costs, taxes and recurring expenses
- business trip, telecommunication, publication, transport vehicle, consulting and marketing services cost within the norms approved by AREM

The level of allowed profit is defined as **Regulated Asset Base x WACC**.

The regulated tariff is calculated as follows:

$$\text{Regulated tariff} = \frac{\text{Operating costs} + \text{allowed profit}}{\text{electricity volume}}$$

Distribution companies due to outdated networks incur high network losses. These losses are two-tier and include (i) technical losses and (ii) commercial losses. The technical losses are passed through the distribution tariff and equal to the average level in a particular region. The losses above the technical losses are referred to as commercial losses that cannot be passed through the tariff and mainly occur as a result of fraud, illegal connection to the electricity distribution lines and wrong metering.

Annex A

Yermentau WPP Project Indicative Budget for Technical Assistance Programme

Activity Overview	Total 2014-2016	CTF Contribution ⁵	EBRD/Sponsor/Donor Contribution	Co- Financing Ratio
	USD			%
Policy dialogue	500,000	500,000	0	0
Project Preparation	2,000,000	1,000,000	1,000,000	50.0
CTF/CIF Knowledge Management and Evaluation	100,000	100,000	0	0
Total	2,600,000	1,600,000	1,000,000	38.5

⁵ USD1.5 million from the approved KazREFF Programme (PCTFKZ021A)

Annex B

Yermentau Administrative Budget

SUMMARY TABLE			
Activity	USD (Exchange Rate: EUR/USD 0.75)		
	CTF 33% Year 0-15	CTF 100% Year 16-20	Sub-Total
1. Project Implementation (pre-signing)			
(Due diligence; legal review; contractual and site visits)	89,000	0	89,000
(Staff costs - fund management; project programme management)	89,000	0	89,000
Sub-Total	178,000	0	178,000
2. Project Supervision (post signing)			
(Contractual and site visits)	114,000	34,000	148,000
(Funds and Financial Controls; monitoring & reporting; site visits; restructuring; evaluation)	114,000	34,000	148,000
Sub-Total	228,000	0	296,000
Total Project Fee	406,000	68,000	474,000

Annex C

Outline Policy Dialogue Advisory Services

Objectives

The objectives of the Assignment are as follows:

- Alignment of the Kazakh legislation in the area of E-RES with the provisions of the EU and the Energy Community Treaty;
- Bringing into full consistency with each other all legislation relating to E-RES in Kazakhstan;
- Based on monitoring of E-RES development (overall and by technology type), analysis and forecasts of sustainability of the E-RES support framework, provide amendments or additional legislation for a planned and sustainable increase of E-RES production in Kazakhstan.

Scope of Work

The Scope of Work of the Assignment will cover the following main areas:

1. the further development of secondary legislation, as required (i.e. Rules, Regulations, Methodologies and Procedures);
2. the provision or development of tools and methods required to accompany and monitor the sustainable implementation of E-RES (registers, databases, network analysis tools, impact calculation models);
3. the establishment of implementation capabilities in the various entities that have to be engaged for a successful and accelerated development of E-RES in Kazakhstan.

Detailed tasks are set out below.

Full implementation of the existing FiT Law and Methodology

Assessing implementation experience for renewable energy tariffs (FiTs) in Kazakhstan (application process, decision-making, approval etc.) with the aim to identify gaps or needs for improvement. In particular, assist in developing a concept for the implementation and refinement of FiTs for biomass and biogas installations, based on EU experience with auditing the biomass/gas contents of fuel used in biomass/gas installations and depending on costs, accessibility and environmental impacts. Assess and advise on the rationale for applying different tariff coefficients for wind energy depending on plant capacity. If necessary, provide wording for clarification to be added to primary and secondary legislation.

Long-term Implementation of FiTs in Kazakhstan

This is about creating a sustainable framework for the long-run implementation and management of FiTs in Kazakhstan.

3.2.1 Monitoring and Reporting

Assistance to the regulator/ministry in monitoring the implementation of the FiT and the impact on the electricity market and the customers. The Consultant will provide a suitable calculation and reporting tool, and a template for publishing statistics for FiT implementation (support volumes, types of generation, impact on electricity prices). The Consultant will advise on the creation of the Registry for E-RES envisaged by the FiT Law and the implementation of a Guarantees of Origin system as required by the EU Renewables Directive.

3.2.2 Forecasting and impact assessment

The Consultant will assist the regulator/ministry in forecasting the likely development of E-RES based on an analysis of cost conditions for the different E-RES technologies and an estimate of FiT levels for different time horizons. Assist in calculating the expected impact of FiTs on electricity prices and the economy (using a macro-modelling or other suitable tool). Provide an assessment of the sustainability of existing FiT levels.

Provide methodology and analysis to determine the optimal (economically and technical feasible) share of E-RES in the balance of electricity supply in Kazakhstan.

Provide assistance with developing a methodology for calculating applicable indicative national targets for E-RES in Kazakhstan (if required for Energy Community Treaty accession).

3.2.3 Assessment and possible adaptations of FiT Concept

Assess the FiT concept currently used in Kazakhstan, in particular the link of the FiT level to the retail electricity prices, and the cost basis for the coefficients determined for the different technologies and sizes of E-RES. Provide comparison of FiT levels with support tariffs provided in the EU. Develop proposals for amendments of the FiT concept currently employed in Kazakhstan, providing alternative calculation methods and tariff levels (including alternative tariff coefficients as well as absolute tariff levels). This may include an analysis of investment, fuel, maintenance and operation costs of E-RES in Kazakhstan and construction of supply cost curve for E-RES facilities of the various types (i.e. wind on-shore, off-shore, hydro, geothermal, biomass, separate also for large, medium and small facilities).

Develop transitional provisions designed to safeguard the support levels for E-RES generators already in operation.

Connection of E-RES to the network

This is about making connection to the network a transparent, non-discriminatory, reliable and swift process, and at a fair price.

Connection Rules, Procedures, Guidelines and Template Contracts

Assist with developing a coherent set of documents governing the process of connection of E-RES producers to the network starting from the application until the final energising of the connection (i.e. a coherent set of documents prescribing steps to be taken, timeframes and responsibilities). This will include, but need not be limited to:

- The chapters on connection from the Grid Code and the Distribution Code (if put into force), responsibility for approval;
- General Connection Rules or Guidelines (if still required in addition to the technical codes), responsibility for approval;
- Special Connection Procedures for certain types of producers (if required), responsibility for approval;
- Rules for issuing Technical Specifications, responsibility for;
- Company Codes of Practice for handling connection applications;
- Rules for transfer of connection assets from developer to network company, responsibility for approval;
- Template Connection Agreement - responsibility for approval

The aim will be to fully streamline the process, eliminate contradictions between the documents and make them into a framework for constructive inter-actions between the E-RES developer and the network companies.

3.3.1 Mechanism for compensation of connection costs

Kazakhstan legislation has determined that E-RES generators should be connected to the network free of charge. While this is unusual in the European context, the free connection provides an additional support instrument to E-RES developers and may on these grounds be welcomed.

However, the network companies still have to fund the connection costs, and unless a mechanism for compensation can be found they will continue to resist E-RES connections.

This sub-task will provide assistance to NERC and the network companies by providing a viable mechanism for recovering the costs of connection for E-RES within the framework of network tariff regulation in Kazakhstan. Given the state of network tariff regulation reform (i.e. the concepts and transition plans have been accepted, but the implementation of the new network tariff regulation has not started yet), two scenarios will be considered:

- a) One scenario relates to the current situation, with the existing network pricing methodologies and investment program approval process. The Consultant should assist in devising a mechanism to improve the current process of approval of investment programs and subsequent inclusion of E-RES connection costs into the regulated tariffs of network companies, in order to make it faster and more predictable. This will involve all the entities involved in the process of investment program approval.
- b) The second scenario relates to the implementation of the incentive regulation methodology in Kazakhstan, via a step by step transition process. This new methodology uses the building block approach, and the Consultant should focus on the capital costs and investment building block with the aim to provide appropriate incentives for network companies to connect E-RES producers to the network.

E-RES operation in the competitive Electricity Market

This is about providing the mechanism for the participation of E-RES in the competitive power market

3.4.1 Sales of energy

The Consultant will assist in devising a mechanism for selling renewable energy in the wholesale market, in particular for providing the compensation to E-RES producers or buyers at the FiT. Analysis of options for purchase and sale arrangements, including the use of Certificates of Origin for implementation of the FiT Support scheme. Analysis of implications for the procedures of issuing, verifying and auditing Certificates of Origin.

3.4.2 Imbalance costs and ancillary services

The Consultant will assist in: the determination of imbalance costs and ancillary services; development of a system for the regulation of active power and frequency in the UES of Kazakhstan taking into account future construction of alternative energy facilities; and analysis of the impact of renewable energy on the static and dynamic stability of the UES of Kazakhstan (once the alternative energy sector has achieved certain levels of development).

The Consultant will assist in implementing a suitable mechanism for managing imbalance costs to E-RES generators in the BCBM, comparing available options (such as exemption from imbalance charges, joining a residual balancing group, or special renewable balance groups with different imbalance conditions). Comparison of options should be done using market simulation tool.

The Consultant will provide assistance in implementing a suitable arrangement for participation of E-RES in the Ancillary Services market.

Review of existing mechanism for tendering hydro concessions

This task deals with the mechanism for tendering and awarding concessions for hydro facilities in Kazakhstan. Under this task, the Consultant will:

- review the current hydro concession and permitting framework at local and national level, given the country's strengths and weaknesses;
- carry out appropriate hydro sector analysis to identify issues and barriers in the sustainable development of small hydro energy;
- prepare a policy matrix to address these issues in small- to medium-sized hydropower development and in compliance with EBRD's and other IFI's policy requirements;
- evaluate constraints on private sector participation as well as public sector development and recommend changes in the concession and permitting process, taking into account EBRD's and IFI's requirements;
- review international experience in countries with similar endowments to Kazakhstan, and draw lessons applicable to the country with regard to the concession regulation and permitting process required for small- to medium-scale hydropower development;
- provide a brief description of the hydro concession regulation and permitting process models adopted in other countries together with an analysis of how each of those models has performed to date in terms of achieving the desired level of installed hydropower capacity and the cost of energy supplied from such capacity;

- comment on potential risks where hydropower development targets would not be met due to small hydro sector regulation (e.g. planning issues, environment permits, off take agreements, permitting and concession transparency, readiness and capacity of Ukrainian institutions to adopt the required modifications, etc.); and

Accreditation, Certification, Verification and Audit

3.6.1 Accreditation of E-RES facilities

This will include

- Defining criteria for accreditation based on technical characteristics of the different technologies and measurement criteria to ensure correct volume reporting;
- Defining different accreditation regimes depending on technology type, size of facilities and the use (or not) of agents acting on behalf of E-RES (especially for very small producers);
- Establishing the mechanism for receiving applications for accreditation so they could be processed;
- Establishing procedures for processing accreditation applications (desk-top analysis, physical inspection of 100% of facilities, or physical inspection based on a sampling process);
- Designing a suitable regime for periodic auditing of accredited facilities;
- Defining the specifications and implementing the registry for E-RES facilities (.

3.6.2 Certification of renewable energy production – issuance of Guarantees of Origin (GoO) and/or Certificates of Origin (CoO)

To develop a modern system for guaranteeing the origin of renewable energy (Guarantees of Origin (GoO) and/or Certificates of Origin (CoO)) and a system for registration and certification of GoO/CoO. This will include:

- Designing the process for receiving volume data from each accredited site;
- Designing and implementing the methods for validity checking of volume data;
- Designing the template for Guarantees of Origins (based on requirements set out in the EU Renewables Directive) and Certificates of Origin (based on requirements for register, transfer and redemption);
- Designing and establishing the register for maintaining a record of all issued, transferred, redeemed and cancelled Guarantees of Origin and Certificates of Origin;
- Advising on necessary steps for development of a full-fledged market for green certificates alongside the bilateral contact market.

3.6.3 Organisational and personnel capabilities

This will include

- Designing the organisational, departmental and staffing structure within the regulator/ministry responsible for accreditation, certification, verification and auditing;
- Comparing organisational and staffing options (in-house vs. outsourcing);
- Designing a training program for technical staff engaged in accreditation and certification procedures

3.7 Study Tours

To propose, arrange and finance study tours for the regulator/ministry and relevant officers from other government or non-government institutions to visit people and facilities in other countries where relevant lessons may be learnt for development of E-RES in Kazakhstan. Up to three study tours will be arranged for up to seven individuals for each tour from the stakeholders of the Assignment (including but not limited to NERC). The duration of each study tour will not exceed one week. The budget and itinerary of each study tour will be agreed in advance with the EBRD.

Implementation arrangements

The contracting entity and client will be determined between the Ministry of Ecology and the EBRD. However the stakeholders will include as well as the regulator/ministry a number of additional governmental and regulatory bodies that are involved in the regulation (rule drafting), policy-making and monitoring of E-RES. In addition, it will be important to engage with various entities responsible for planning, design, connection, network operation, and sales of E-RES, namely the TSO (KEGOC), the DNOs, Samruk Energo, design institutes, and private sector generators. The regulator/ministry will provide support as required to facilitate this process including, but not limited to, establishing, organising and convening working groups to facilitate stakeholder input and coordination and undertaking bi-lateral discussions with other institutions and entities as required for the successful conduct of the Assignment.

Annex D

Yermentau WPP Project Knowledge Management Activities

- 1) Additional evaluative activities based on CTF requirements.
- 2) Production of a Wind Developer's Handbook for Kazakhstan based on the project experience, covering:
 - Site Specific Project Development Planning Support (frameworks for future)
 - Updating wind measurement study and associated feasibility study
 - Local equipment sourcing, EPC, manufacturing, maintenance and repair capability
 - Technical design
 - Environmental permitting requirements
 - Integration to grid options
 - Tender and contracting support
 - Regulatory Framework Review based on project implementation experience
 - Environmental and Energy Policy regulation status, key stumbling blocks to further investment
 - Training Measures
 - wind measurement
 - equipment operation
 - Information Dissemination
 - training programs through first practical implementation of first project
 - case study of development path, challenges, and mitigation strategies
 - case study on impacts
- 3) Production of a publishable case study aimed at the climate finance community covering the Yerementau WPP project
 - Overview of the project
 - Barriers and challenges
 - Role of the EBRD
 - Role of the CTF
 - Specific development outputs
 - Market transformation impact
 - Lessons learnt