Investment environment, barriers and opportunities to scale-up renewable energy deployment

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Striking a Balance “TRILEMMA”

Energy is supplied to all consumers at a price that allows them to meet their basic needs.

Energy reliably supplied, transported and delivered on an uninterrupted basis.

Energy is delivered in a manner that to enjoy the same level and quality of services by degrading the natural or human environment.
EBRD direct investments in renewables
2007 – Oct. 2017

- 127 projects in 25 countries
- 6,500 MW of renewable capacity
- EUR 4.1 billion of EBRD investment
- EUR 12 billion of project value

MW total is greater than totals shown on map due to regional projects not included and other minor adjustments.
Catalysing new markets

Selected examples show how in key countries EBRD combines policy dialogue and consultancy advice to create the enabling framework, before supporting first of a kind projects.
EBRD Portfolio in Renewables

Renewables accounted for 34% of PEU’s portfolio as at October 2017

Renewables - by Country

- Poland 16%
- Egypt 15%
- Turkey 15%
- Jordan 10%
- Serbia 7%
- Kazakhstan 5%
- Morocco 4%
- Bulgaria 4%
- Greece 4%
- Others 16%

Others include Ukraine, Romania, Montenegro, Lithuania, Georgia, Cyprus, Macedonia, Albania

Renewables - by Technology

- Wind 48%
- Solar 26%
- Geothermal 11%
- Hydro 6%
- Biomass 5%
- Various 2%

*Data as of 31 October, 2017.
Source: EBRD data
**RES market overview: Power Market Reform**

### Objectives

- The objective of the power market reform – to provide non-discriminatory, efficient, locational market-based signals both in the short and long term while maintaining quality and reliability of supply.

- The region needs stronger macroeconomic policies and clear, independent and predictable sector regulation.

- **LONG TERM REGULATORY CERTAINTY/PREDICTABILITY IS THE KEY!**

### Modern capacity markets

- The capacity market - fully integrated with the electricity market to promote competition in both the wholesale and retail electricity markets.

- Capacity purchases - committed several years in advance and for long-term periods.

- Power consumers - entitled to participate in the power market through energy efficiency projects and demand side management.

- Renewable energy producers - fully incorporated in, or non-discriminated by the power market design.

- While the mechanism may commence solely with central purchases and sales, the scope for bilateral trading is introduced.

- Any distinction between old and new capacity - eliminated to avoid discriminatory treatment.
### Opportunities

- Attracting reputable foreign and local investors
- Attracting “know-how” and the best available technology on the market
- Diversification of the economy relevant for the energy sector dominated by aged power stations
- Carbon footprint and emission reduction
- Supply of carbon credits to the carbon credit market currently being launched

### Challenges

- **Intermittent and unpredictable nature** of wind and solar power, seasonality of hydro
- Growing competitiveness of technologies
- **Impact of large power volumes** interfering with system stability because of priority of dispatch (balancing market in imitation regime)
RES market overview: Transition Challenges of Regional Integration in the Power Sector

**STRENGTHS**
- Existing but ageing infrastructure
- Political will for integration and trade

**WEAKNESSES**
- Institutional infrastructure and market development
- Technical and regulatory harmonization

**OPPORTUNITIES**
- Increased market that offers innovation, the fixed costs of which can be spread across a larger customer base
- Optimization of regional projects in the power sector
- Liberalization of services markets

**THREATS**
- Coordination of different objectives
- Different market characterizations
- Possible aggravation of macroeconomic vulnerabilities
- One size does not fit all
Renewables in Kazakhstan

General framework

- Significant renewable energy resources
  - Mostly hydropower plants
- A strategic initiative launched – “Green Economy”
- Renewable Energy Law passed in June 2013 accompanied with a number of follow-on secondary legislation acts in 2014, which set:
  - Priority of dispatch for electricity generated by RES
  - Exemption from balancing responsibility
  - 15 year feed-in-tariffs (“FIT”) indexed at CPI and limited FX
  - The unified off-taker – the Cost Settlement Centre (“CSC”), a LLC, subsidiary of the National Grid Operator “KEGOC”
  - The Ministry of Energy (“ME”) as a policy making body for RES
  - Reverse auctions to be held throughout 2018

* 20% of the current annual consumption
EBRD and Renewables
What role can we play?

- Bankable transactions attracting other lenders and third party finance
- Promoting dialogue amongst Sponsors, Governments, Civil Society
- Help organise independent due diligence and in introducing international public procurement principles
- Experience in transactions with complicated environmental aspects
- Addressing project problems through technical design improvements
- Assisting in preparation of feasibility studies (e.g. wind and solar reports)
- Project implementation assistance
- Technical co-operation: policy dialogue & finance
Renewables financing

*Project requirements*

- Robust project economics
- Reliable, financially stable shareholders (sponsors), preferably with successful track-record implementing similar projects, equity at 30% of project cost
- The use of advanced technologies for renewable source facilities
- Adequate cost of equipment, construction, and total project cost
- Confirmation of renewable energy resources potential (wind/radiation study)
- Independent Technical/Environmental/Legal due diligence
- Procurement plan (EBRD procurement rules)
- Possibility to mobilize commercial financing or A/B loans
Barriers for deployment of renewables in Kazakhstan (FAQs)

- Licensing of EPC?
- Auction bidding with vs without land? Land for the transmission line?
- Grid connection? Substation modernization?
- Curtailment?
- 15 year PPA is it long enough?
- Logistics?
Barriers for deployment of renewables in Kazakhstan (survey)

- Bankable PPA and overall legal framework?
- Availability of financing?
- Limited FX indexation?
- Creditworthiness of the off-taker?
Case 1: EBRD’s RES projects in Kazakhstan

Yereymentau
Wind Farm (50MW)
- first large-scale wind farm in Kazakhstan
- EBRD loan – EUR 59.2 MM
- CTF loan – EUR 18 MM

Shardara
Hydro Power Plant
- EBRD loan – EUR 46 MM

Burnoye
Solar Park (50MW)
- first large-scale PV power plant in Kazakhstan
- EBRD loan – USD 76 MM
- CTF loan – USD 15 MM

Burnoye extension
Solar Park (50MW)
- EBRD loan – USD 44.5 MM
- CTF loan – USD 10 MM
Thank you!

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