

EBRD: Financing opportunities for Renewable Energy Sources projects in Central Asia

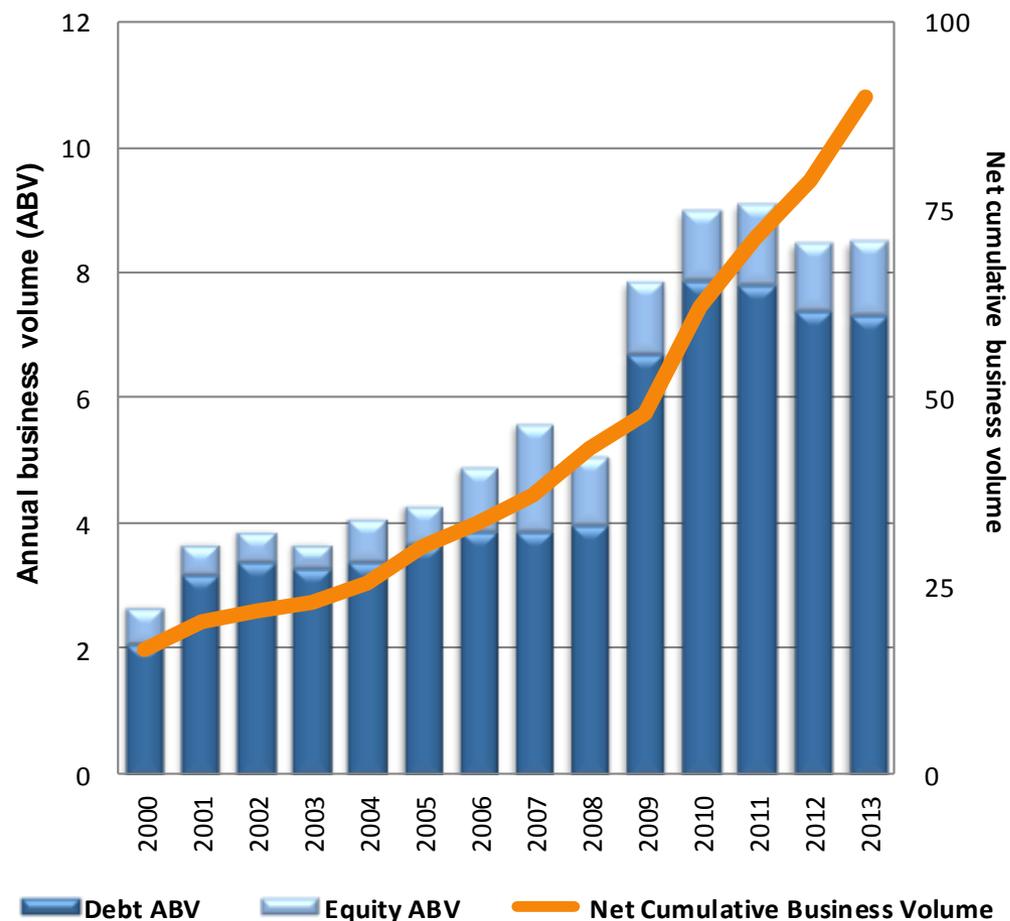
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Key figures

- **€90bn** invested since 1991
- **3,944** projects to date in 2013
- **€38bn** portfolio in 2013
- **86%** debt and **14%** equity in 2013
- **79%** of portfolio in the private sector in 2013
- **€8.5bn** invested in 2013
- **392** projects signed in 2013
- **AAA/Aaa** rated institution

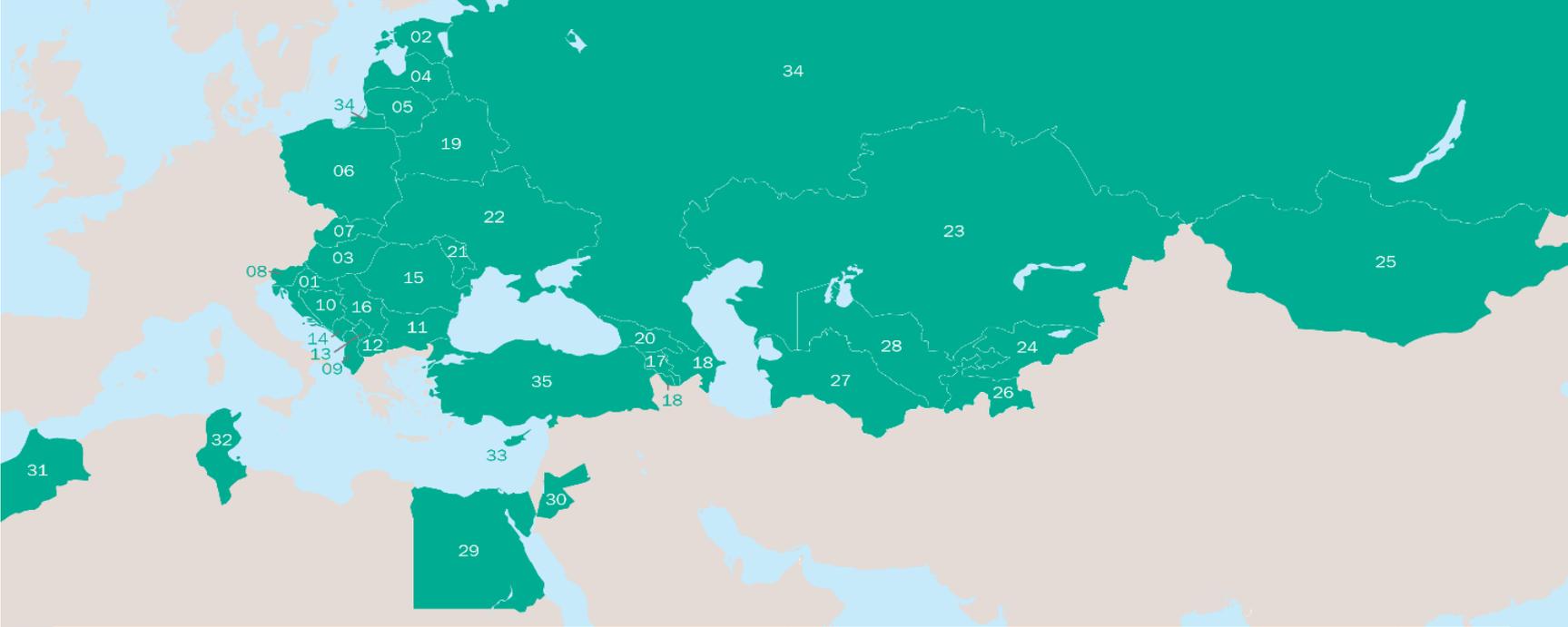


Where do we operate?



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38 offices and 34 countries. Half of banking team in the region.



WHERE WE INVEST

Central Europe and the Baltic states

- 01 Croatia
- 02 Estonia
- 03 Hungary
- 04 Latvia
- 05 Lithuania
- 06 Poland
- 07 Slovak Republic
- 08 Slovenia

South-eastern Europe

- 09 Albania
- 10 Bosnia and Herzegovina
- 11 Bulgaria
- 12 FYR Macedonia
- 13 Kosovo
- 14 Montenegro
- 15 Romania
- 16 Serbia

Eastern Europe and the Caucasus

- 17 Armenia
- 18 Azerbaijan
- 19 Belarus
- 20 Georgia
- 21 Moldova
- 22 Ukraine

Central Asia

- 23 Kazakhstan
- 24 Kyrgyz Republic
- 25 Mongolia
- 26 Tajikistan
- 27 Turkmenistan
- 28 Uzbekistan

Southern and eastern Mediterranean

- 29 Egypt
- 30 Jordan
- 31 Morocco
- 32 Tunisia

- 33 Cyprus
- 34 Russia
- 35 Turkey

Loans

- Project-based financing to public or privately-owned companies and concessionaries
- Senior, subordinated, convertible
- LT (up to 10 years or more) or ST revolving
- Floating / Fixed rates.
- Choice of currencies (€, \$, KZT, RUB)
- Possibility to structure A/B financings and syndicate to market

Equity

- Common stock or preferred
- Minority position only (up to 35%)
- Mezzanine

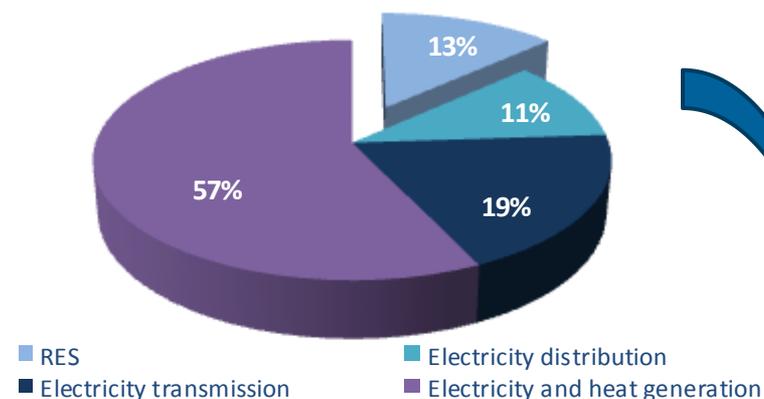
Other

- Partial guarantees
- Currency swaps
- Bonds
- TCs and facilities

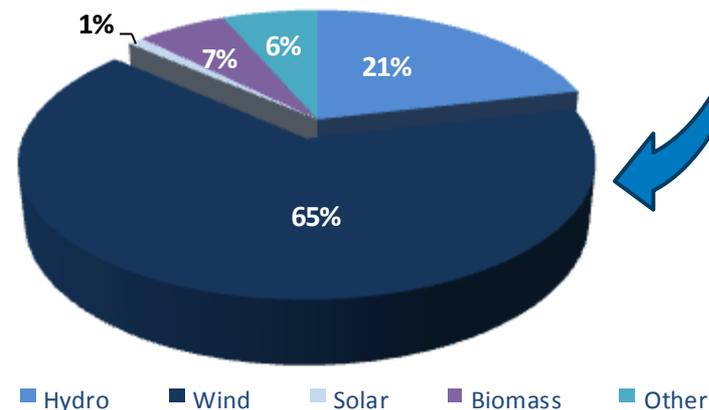
EBRD exposure to Renewables

- Since 1992, EBRD has financed 44 RES projects for the total amount of about €1 bn or 13% of all investments in power sector
- Regional focus (top-3):
 - Romania – 14.8%
 - Bulgaria – 14.4%
 - Turkey – 13.5%
- Syndication: Total amount of syndicated loans for RES projects – €228 million

Investments in power sector



Investments in RES projects



Source: EBRD

- Long-term agenda to reduce GHG emissions through market based mechanisms
- Environmental and Social Policy plays a crucial role (IED, BAT)
- Supporting EITI (Extractive Industries Transparency Initiative)
- Laying the foundations for Carbon Capture Storage (CCS)
- Regulatory best practices
- Gas Flaring Reduction
- Demand side management

Our Regional Focus

- Dedicated sector approach and multidisciplinary teams
- 11 professional bankers focused on Russia and Central Asia with permanent presence in: Almaty, Astana, London, Moscow

Global Energy Sector Challenges



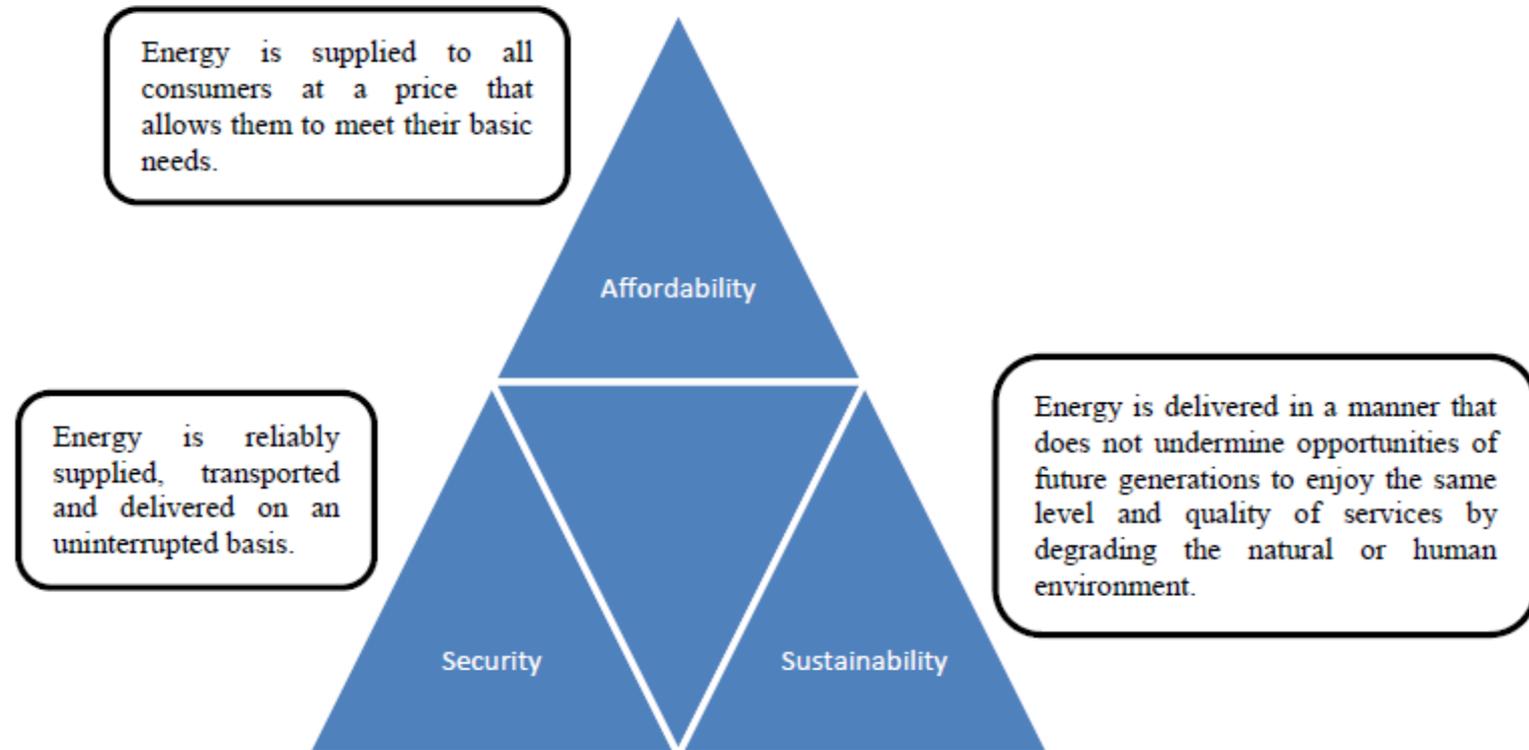
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- Rapidly changing environment
 - Global financial and economic crises
 - Climate change agenda
 - Dramatic growth in renewable energy generation
 - Smart infrastructure and decentralized energy systems
 - Unanticipated revolution of unconventional reserves
- Persistent challenges
 - Small markets, not cost-reflective prices and limited private participation, damaging explicit and implicit subsidies
- Security, affordability and sustainability
- Operational approach

Striking a Balance “TRILEMMA”



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Renewables in Kazakhstan

General framework



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- Significant renewable energy resources
 - **Mostly hydropower** plants
 - Wind potential estimated at 18 TWh per year*
- A new strategic initiative launched – “**Green Economy**”
- **Renewable Energy Law** passed in June 2013 accompanied with a number of other acts in 2014, which set:
 - **Priority of dispatch** for electricity generated by RES
 - **Specific rules for RES’ connection** to grid supplementing the Grid Code
 - **15 year feed-in-tariffs** indexed at CPI
 - **The unified off-taker** – the Cost Settlement Centre (“CSC”) within the National Grid operator
 - The Ministry of Energy (“ME”) as a **policy making body** for RES

* 20% of the current annual consumption

Renewables in Kazakhstan

Opportunities and Challenges



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Starting point

- Exceptional resource potential (especially wind, solar, hydro) for developing renewables
- Strong but pragmatic political will – Green Energy Strategy in Kazakhstan
- Existing legal framework, support mechanisms (FIT, CSA)
- Untested market

Challenges

- The costs of renewables remain significantly above conventional power
- 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 (no balancing market).

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 coal-fired CHP
- Carbon footprint and emission reduction
- Supply of carbon credits to the carbon credit market currently being launched

Renewables financing

Project requirements

- Reliable, financially stable shareholders (sponsors) of the project, preferably with successful experience in implementing similar projects
- The use of advanced technologies for renewable source facilities
- Adequate cost of equipment, construction, and the total project cost
- Confirmation of renewable energy resources potential
- For the wholesale market:
 - Projects successfully passed competitive selection (CSA for RES)
 - A project should comply with the requirements for "qualification of renewable energy generation facility"
- For retail:
 - Confirmed tariff level providing for reasonable project returns
 - Long-term contract(s) for the supply of electricity with reliable consumer / customer in the contract with a fixed minimum level of price / price formula

EBRD and Renewables

What role can we play?

- 'Bankable' transactions attracting other lenders + 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

Renewable energy (2012)

EBRD's first renewable energy project in Kazakhstan



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CLIENT

Shardarinskaya GES, fully owned by Samruk-Energo, a state-owned power subsidiary of the National Welfare Fund, Samruk-Kazyna

PROJECT

The first modernisation of a Kazakh hydropower plant since Soviet times

Involves full replacement of all major mechanical and electrical equipment and control systems with state of the art equipment

FINANCIAL STRUCTURE

EBRD loan (*all SEI*) € 46 million



EXPECTED IMPACT

Energy produced: 700,000 MWh per year

Increase in capacity by 24%
(final capacity of 124 MW)

Emission reductions: 875,000 tCO₂ per year

Energy efficiency (2009)

The first equity investment in Kazakh power sector



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CLIENT

CAEPCO, the largest private power and district heating company in Kazakhstan.

PROJECT

Equity and debt investment for the upgrade and rehabilitation of the company's generation and distribution assets.

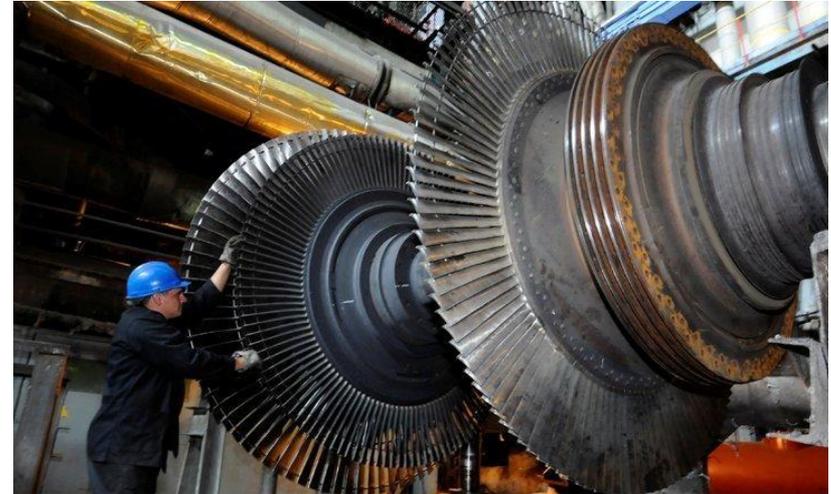
TECHNICAL ASSISTANCE

Identifying priority rehabilitation and efficiency improvement projects; and assisting in the improvement of distribution tariffs benchmarking.

FINANCIAL STRUCTURE

EBRD equity (all SEI): € 43 million

EBRD loans: € 93 million (USD-denominated)



EXPECTED IMPACT

Improvement of overall cogeneration efficiency: from 45% to more than 60%

Emission reductions (based on current operation): around 1.3 million tCO₂ per year

Qairokkum Rehabilitation (Tajikistan, 2014)



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CLIENT

OSHC Barki Tojik

STATUS

On-going

FUNDING

USD 75 m

PROJECT

The project involves rehabilitation of hydro-mechanical and electro-mechanical equipment of two units out of six at the Qairokkum hydro power plant.

For this project, the EBRD acted as a catalyst to attract co-financing from the Pilot Program for Climate Resilience of the Climate Investment Funds.

EXPECTED IMPACT

Rehabilitation will increase current installed capacity of the plant from 126MW to 142MW by installing two new turbines with increased rated capacity, which shall prevent unnecessary discharge of water through spillways and generate more electricity with the same flow of water. The project shall also raise the safety level of the power plant and strengthen its resilience against projected impacts of climate change.

TECHNICAL COOPERATION

€800,000 was provided by the Austrian Technical Cooperation Trust Fund to prepare the feasibility study for the plant rehabilitation. In addition, the following technical assistance is envisaged: international assistance to the Project Implementation Unit; climate resilience and energy sector regulation cooperation programs.

Transmission (1999 - 2011)

5 loans to National Power Transmission Operator



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CLIENT

Kazakhstan Electricity Grid Operating Company
KEGOC JSC

PROJECTS

5 loans progressing from sovereign-guaranteed
to project finance structure

- KEGOC Transmission and Rehabilitation
- KEGOC: North-South Power Transmission
- KEGOC: Ekibastuz-YukGres power transmission
- KEGOC Modernization II
- KEGOC Ossakarovka

FINANCIAL STRUCTURE

5 loans progressing from Sovereign-Guaranteed
to Project Finance structure



EXPECTED IMPACT

Improved reliability of supply, reduction of
transmission losses and development of the
regional electricity trade

Contacts



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For all further enquiries, please contact:

Aida Sitdikova

Director

Energy & Natural Resources
Russia & Central Asia

Tel: +7 495 787 1111 (ext. 103)

Email: SitdikoA@ebrd.com

Yerlan Ramazanov

Principal Banker

Energy & Natural Resources
Russia & Central Asia

+7 7172 580 204 (ext. 113)

Email: RamazanY@ebrd.com

EBRD, One Exchange Square
London, EC2A 2JN
United Kingdom
www.ebrd.com

Marat Yelibayev

Principal Banker

Energy & Natural Resources
Russia & Central Asia

+7 7172 580 204 (ext. 131)

Email: YelibayM@ebrd.com

Xeniya Rogan

Associate Banker

Energy & Natural Resources
Russia & Central Asia

Tel: +7 7273 320 025

Email: RoganX@ebrd.com

