



Implementation of projects to increase energy efficiency in high-voltage power transmission systems



Sergey Katyshev
JSC "KEGOC"

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Agenda

1. JSC “KEGOC”
2. Investment Projects
3. Consulting Assistance

1. JSC “KEGOC”



General information on the Company

- KEGOC JSC includes: National Dispatch Center of System Operator, 9 Branches of Intersystem Electric Networks, “Energoinform” Agency and “KEGOC-Service” Agency
- Natural monopoly subject
- System Operator of the Unified Power System of Kazakhstan;
- Member of Electric Energy Council of CIS countries and Council of Integrated Power Systems of Central Asian Countries
- Owns grid facilities including:
 - 24.5 ths km of transmission lines
 - 74 transformer substations with total capacity of 33.7 ths MVA



Functions of System Operator

1. Provision of system services for:
 - electricity transmission via the National Power Grid;
 - technical dispatching;
 - frequency and capacity control.
2. Arrangement of operation in parallel with CIS power systems;
3. Coordination with System Operators of neighboring countries power systems of the values of energy flows via interstate transmission lines;
4. Management of real-time balancing electricity market

2. Investment Projects

Projects for the High-Voltage Power Transmission Systems Modernization and Development

- Kazakhstan Electricity Transmission Rehabilitation Project. Phases I. II
- Construction of 500 kV Second Transmission Line of Kazakhstan North-South Transit
- Construction of 500 kV Alma SS Connected to Kazakhstan Power Grid via 500. 220 kV Lines
- Moinak Electricity Transmission Project



“Kazakhstan Electricity Transmission Rehabilitation Project”

Project value – KZT 43.77 bln., including:

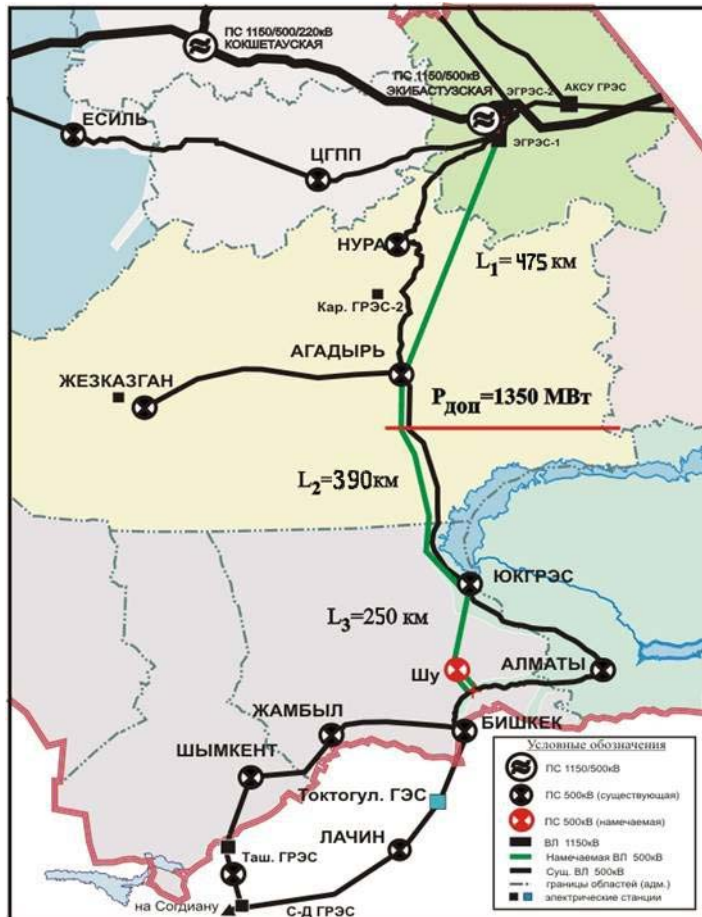
Loan proceeds of IBRD and EBRD - USD 185 mln., own funds of KEGOC JSC

Project components

- Modernization of high-voltage equipment
- Substations automation and relay protection replacement
- Installation of Supervisory Control and Data Acquisition and Energy Management System SCADA/EMS
- Implementation of digital Corporate Telecommunication Network
- Integration of Commercial Metering System (CMS)
- Implementation of Electricity Trading System



Project “Construction of 500 kV Second Transmission Line of Kazakhstan North-South Transit”



Project value – **KZT 41.4 bln.**
 Route: **Ekibastuz – Agadyr –**
YuKGRES – Shu

Line length: **1 115 km**

Implementation period: **2004 - 2009**

Financing sources: **IBRD and EBRD,**
DBK and own funds

Loan of IBRD – USD 100 mln.

Syndicated loan of EBRD – USD 147.8
 mln.

Loan of Development Bank of
 Kazakhstan JSC – USD 21 mln. and
 KZT 6.97 bln.

“Kazakhstan Electricity Transmission Rehabilitation Project - II”

Project goals:

Improvement of technical level, energy efficiency, reliability and stability of UPS Kazakhstan operation

The Project envisages as follows:

- Modernization of equipment at National Power Grid substations not covered by the scope of works provided under Modernization of National Power Grid, Phase I
- Construction of 220 kV lines, total length – 316 km.

Value – KZT 52, 0 bln., EBRD (255 € mln.), own proceeds of KEGOC JSC

Implementation period: 2009-2016



“Moinak Electricity Transmission Project”

Project goal:

Ensuring power delivery from Moinak HPP

The Project envisages:

- Construction of 220 kV OHTL MHPP – Shelek SS
- Construction of 220 kV OHTL MHPP – Robot SS
- Construction of 220 kV OSG at Moinak HPP
- Extension of 220 kV OSG at 220 kV Robot SS
- Extension of 220 kV OSG at 220 kV Shelek SS

Value – KZT 10.4 bln.

IBRD, Republican Budget, own proceeds of KEGOC JSC

Implementation period: 2009-2012



“Construction of 500 kV Alma SS connected to Kazakhstan National Grid via 500 kV, 220 kV lines”

Project goals:

- improvement of power supply reliability and coverage of power needs of consumers in Almaty and Almaty region
- ensuring of power delivery of the first stage of Balkhash TPP (1320 MW)

Value – KZT 30.0 bln.

Republican Budget, IBRD, own proceeds of KEGOC JSC

Implementation period: 2009-2014



3. Consulting Assistance



Consulting Assistance

- ❖ **SwedPower/MVV (Sweden/Germany) – Project Management and Procurement Consultancy Contract**
- ❖ **KEMA Consulting (USA) – Contract for Development of Tender Documents for SCADA/EMS**
- ❖ **KEMA Consulting – Contract for Development of Grid Code**
- ❖ **ESBI (Ireland) – Contract for Design & Procurement of MIS**
- ❖ **SASK Power (Canada) – Technical consulting on Circuit Breakers, Disconnect Switches & Insulators, Current & Voltage Transformers, Automation & Protective Relays**
- ❖ **Nord Pool Consulting - Spot Market Rules**
- ❖ **MVV Consulting (Germany) - Project Management and Procurement Consultancy Contract**
- ❖ **RSW International/Khatib&Alami (Canada/Lebanon) - Technical consulting**