

**Task Force Meeting on Regional Electricity Cooperation in  
Central and South Asia, Energy Charter Secretariat,  
Almaty, Kazakhstan, April 2009**



**AO «KEGOC»**

## **Indicators for electric energy sector in Kazakhstan for 2008**

<b>Installed capacity (as of 01.01.2009)</b>	<b>18 992,7 MW</b>
<b>Available capacity</b>	<b>14 558 MW</b>
<b>Maximum electric load</b>	<b>12 211 MW</b>
<b>Electric energy consumption</b>	<b>80,62 bln. kWh</b>
<b>Electric energy production</b>	<b>80,07 bln. kWh</b>

# Unified Power System

## Generation – 59 power plants

- Heat power plants – 88%
- Hydro power plants – 12%

## Network

- 220-1150 kV National Power Grid - 23.3 ths. km
- Network spread of 6 kV and higher - 325 ths. km

**Parallel operation with power systems of Russia and Central Asia countries**



## “Action Plan for development of electric power industry of the Republic of Kazakhstan for 2007-2015”

- Forecast the electric power balance for 2007-2015
- Compile the list of electric power facilities subject to upgrade, modernization and construction
- Increase the investment attractiveness of power sector
- Forecast the prices for electric energy
- Promote energy saving technologies
- Incorporate renewables into the power balance
- Create basis for nuclear power development



## Generating Capacities

- **Balkhash TPP** - **2640 MW**
- **Extension of Ekibastuz GRES -2** - **1050 MW**
- **CPP-3 in Astana** - **240 MW**
- **Extension of CPP-2 in Almaty** - **240 MW**
- **Karaganda CPP-4** - **570 MW**
- **Extension of CPP-2 in Astana** - **240 MW**
- **GTPP Agip KCO** - **235 MW**
- **Moinak HPP** - **300 MW**

**Commissioning of new capacities about**  
**Amount of investments**

**8000 MW**  
**USD 13 bln**



# Development and Modernization of Electrical Networks

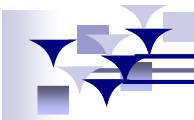
## 1. National Power Grid

- Kazakhstan Electricity Transmission Rehabilitation Project
- Construction of 500 kV Second Transmission Line of Kazakhstan North-South Transit
- Construction of the interregional electricity transmission line North Kazakhstan – Aktobe Oblast
- Construction of 500 kV Alma SS connected to Kazakhstan National Grid via 500, 220 kV lines
- Power delivery from Moinak HPP

**Amount of investments in National Power Grid by 2015 - USD1.6 bln**

## 2. Regional power networks

**Amount of investments by 2020 - USD 7 bln**



# **Increasing investment attractiveness in electric energy sector**

## **Pricing Policy in the State**

- forecasted price level
- tariff policy

## **State Support of the Sector**

- specific transfers
- sovereign guaranties and warranties
- public private partnership
- increase of authorized capital

## **Amendments and Addenda to existing Legislation**

- Tax Code
- Land Code
- Law “On Investments”



# Tariff Setting Methodology

Tariffs for KEGOC JSC services on electric energy transmission are calculated based on power deficiency in zones, transmission capacity of overhead transmission lines between and inside zones.

Adopted methodology for tariffs calculation:

- Excludes direct dependence of tariff level on electric energy transmission distance, thus contributing to development of competitiveness on electric energy wholesale market;
- Ensures application of unified methodology under electric energy purchase on bilateral contracts market and centralized trade;
- Encourages elimination of “bottlenecks” in inter-zonal and zonal electric energy networks (stimulating principle)





## Tariffs of energy producing companies

- Ceiling tariff – approved maximum value of selling tariff (price) for electric energy for the group of energy producing companies;
- Government approves ceiling tariffs for the groups of power plants for the period not less than 7 years with breakdown by years; they are annually revised based on possible costs growth (fuel, materials etc. ) and necessity of ensuring investment attractiveness of the sector.
- The basis for setting the ceiling tariff for its first year is maximum actual price formed in the corresponding group within a year preceding to the year of ceiling tariffs introduction.



## Tariffs of energy producing companies

- In case the investment commitments of energy producing company can not be fulfilled out of the proceeds gained from sale of electric energy under the **ceiling tariffs**, the energy producing company is entitled to apply **calculated** or **individual tariff** for the investment program implementation subject to approval of terms of reference by the authorised body and conclusion of investment agreement.



# Energy Saving

The Concept and the Draft Law “On energy saving” have been developed

The Concept of Sectoral Program on Energy Saving has been developed

Collaboration with **EBRD** (Sustainable Energy Action Plan) and **IBRD** on the matters of energy saving



# Renewables

**The Draft Law “On State Support of Renewables Use” is under elaboration**

## **Economic potential of renewables**

- |                           |                  |
|---------------------------|------------------|
| ■ Mini-Hydro Power Plants | 7.5 bln kWh/year |
| ▪ Wind power              | 3.0 bln kWh/year |
| ▪ Solar power             | 1.0 bln kWh/year |



## “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
- During Project implementation 95 % of the funds have been invested in the Project.



# 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.



# Project “Construction of Interregional Transmission Line “North Kazakhstan – Aktubinskaya Oblast”

Ministry of Energy and Mineral Resources of the Republic of Kazakhstan and “Batys Transit” JSC concluded concession agreement on the basis of public private partnership.

## Main technical characteristics of Interregional Transmission Line “North Kazakhstan – Aktubinskaya Oblast” (Zhitikara - Ulke)

length	- 500 km
voltage	- 500 kV
number of circuits	- 1
transmission capacity	- 700 MW
project value (FS)	- KZT 15.7 bln
commissioning period	- 2008



# “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 (119.11 km)
- Construction of 220 kV OHTL MHPP – Saryozek SS (214.7 km)
- Construction of 220 kV OHTL cross-connections at Saryozek SS (4.2 km)
- Construction of 220 kV OSG at Moinak HPP
- Reconstruction of 220 kV Saryozek SS
- Extension of 220 kV OSG at 220 kV Shelek SS

## **Value – KZT 10.4 bln.**

IBRD, own proceeds of KEGOC JSC, Republican Budget or stabilization fund proceeds

## **Implementation period: 2009-2011**



# Project “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.**

IBRD, own proceeds of KEGOC JSC

**Implementation period: 2009-2014**

