



**NATIONAL ENERGY AND WATER SUPPLY REGULATORY  
COMMISSION OF GEORGIA**

# **Access to power networks and integration of RES-E**

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Kiev 2012

## Main components of access

- To ensure transparent and non-discriminatory rules and procedures for utilization of transmission and distribution networks for end consumers of electricity, for electricity generation facilities and for suppliers;
- Creation of beneficial (acceptable) regulatory framework for investors and protection of their rules;
- Promotion of cross-border trade in electricity and convergence of electricity markets.

# Main problems of RES-E integration (1)

- Technical problems:
  - Distance from the source to load;
  - Network infrastructure (physical and moral depreciation, insufficient transfer capacity, insufficient flexibility of management);
  - Instability of the resource and low efficiency of use of renewable energy sources;
  - Low accuracy of forecasting and planning of generation of electricity from RES;
  - Need of additional measures for ensuring security of supply of electricity and integrity and stability of the power grid.

# Main problems of RES-E integration (2)

- Organizational-regulatory problems:
  - Asymmetric schemes of support and integration of RES-E. The main focus was transferred to promotion of sources of generation from RES, while network companies do not have relevant incentives for network development;
  - Time needed to obtain a permission and to install equipment for generation is usually shorter than the time needed to obtain TOR for connection, relevant expansion and network upgrade;
  - Lack of coordinated integrated planned layout charts for generating facilities and development of the network infrastructure and information on availability of free capacities for connection and free transfer capacity for the purpose of choosing the most economically expedient connection pattern.

## **Regulatory tasks in connection with such issues as access to networks and RES-E integration**

- Elaboration of efficient incentive regulation for investments into networks in connection with priority access of electricity from RES. Determination and allocation of costs associated connection and upgrade of networks between RES generators, network companies and final consumers;
- Normative-legal base for priority dispatch and rational use of renewable resources;
- Implementation of the efficient system of monitoring of the process of access and sanctions, reward or penalties.

# **Determination and allocation of costs associated with connection**

The principle – expenses should be born by those who caused them:

- Elaborators pay the total connection cost;
- The regulatory body determines connection fees (the cost of connection), which reflect costs and do not depend on the source of electricity;
- Full or partial socialization of costs of connecting RES-E in the form of increasing the tariff for final consumers;
- State investments in expansion of the network infrastructure for the purpose of promoting RES and fostering cross-border trade;
- Monitoring of activities of network companies related to connection of new market facilities (income and expenses).

# Managing the Queue

- Creation of mechanisms of transparent and fair management of competing requests of investors concerning connection to certain sections of networks;
- Preliminary determination of the volume of RES capacity allowed to the network and availability of free connection capacity and transfer capacity by points and lines (network operators).

# Balancing

- Creation of incentive mechanisms for providing producers with accurate forecast of electricity generation and for the system operator to give more flexibility to producers to adjust the generation forecast;
- Setting a fee for imbalance depending on deviation of actual generation from forecasts, this fee has to reflect actual expenses related to balancing;
- Creation of an incentive scheme for the system operator with respect to rational use of renewable resources not subject to be stored.



## **Enhancement of flexibility of the system**

- Promotion of stable electricity generators that enhance flexibility of the power grid (storage or secondary use of energy resources;
- Promotion of load regulation by the demand side management;
- Promotion of introduction of smart networks.

**Thank you for attention!**