Energy Sector of Georgia toward the Sustainable Development

Division of Energy Efficiency and Alternative Energy Resources

Ministry of Energy of Georgia

Natalia Jamburia

Committee on Sustainable Energy
Geneva, September 28, 2016
Ministry of Energy
- Sets policies and is responsible for facilitating investment projects

Independent regulator – GNERC
- Establishes tariffs, licensing rules and standards
- Resolves relations between customers and companies

Technical operator/Transmission Services - HV lines, HV substations and dispatching
- GSE and ET (100% state owned)
- SakRusEnergo (50% state owned and 50% owned by Inter RAO)

Electricity System Commercial operator – ESCO
- Balances market, emergency import/export
- Reserves capacity trader

Generation
- 68 Hydro Power plants
- 5 Thermal Power plants

Distribution Companies
- All 3 Distribution Co.s under the private ownership: Telasi, Energo-pro Georgia, Kakheti Distribution
Total Installed Capacity - 3730 MW

Hydro Power:
68 Operating HPPs
Installed Capacity –2800 MW

Thermal Power:
5 Operating TPPs
Installed Capacity - 932 MW

Installed Capacity of Power Plants in Georgia
2016 year

TPPs 25%
HPPs 75%
Electricity Resources

Seasonal Asymmetry of Generation and Consumption

Winter
- Generation: LOW
- Consumption: HIGH

Summer
- Generation: HIGH
- Consumption: LOW

Electricity Supply by Sources
2015 year

- Renewable (Hydro): 21%
- Fossil (Natural Gas): 6%
- Import: 73%

Electricity Supply by Sources
2015 year

<table>
<thead>
<tr>
<th>Year</th>
<th>GWh</th>
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www.esco.ge
Since October 2012 demand on Energy increased at average 15%

The estimated annual demand growth rate assumed at 5%

According to the Parliamentary Budget Office’s Macroeconomic Forecasting Model, economy is expected to grow at 3.5% in 2016, and in the medium-term (2017-2019) forecasted real GDP growth rate on average equals to 4.9%
Energy Policy since 2015

- Diversification of the energy supply resources, optimal utilization and reserve creation of the Georgian energy resources;
- Efficient exploitation of renewable energy resources;
- Gradual approach of Georgian legislation to EU legislation;
- Georgian energy market development and improvement of the energy trade mechanisms;
- Increasing the role of Georgia as a regional transit country;
- Georgia – clean energy production and regional center for the energy trade;
- Creation of unified approach on Energy Efficiency and its execution;
- Consideration of the environmental issues while implementing energy projects;
- Improvement of the service level and consumers rights protection.
Energy Efficiency and non-hydro RE Energy Deployment

- National Energy Efficiency Action Plan first draft review by October, 2016;

- National Renewable Energy Action Plan to be develop by 2017;

- Low Emission Development Strategy completion by 2016;

- Consultancy on Energy Efficiency and Sustainable Energy in Georgia. Launched in 2016;

- Support scheme for micro power plants (up to 100 kw) in force since 2016.
Solar Energy Utilization

- 5 MW solar power plant feasibility study is being developed by GEDF;
- 50 MW solar power plant feasibility study is being developed by investor

Grant from the Japanese government for:

- 316 KW Solar PV installations at Tbilisi International Airport
  337,000 kWh annual generation, covers 40% of Terminal total consumption
- 35 KW Solar PV installations at Ilia State University
  30,000 kWh annual generation, covers 15% of building’s total consumption

PV systems are operating in high mountain area of the Country and other individual citizens are enjoying as well.
Location: Shida Kartli, Gori

Installed Capacity: 20.7 MW

Annual Generation: 88 GWh

Exploitation: October, 2016

Company: JSC GEDF
Non-hydro Renewable Energy Utilization

Feasibility Studies

**Wind power:**
7 Memorandum of Understanding to explore wind power development potential
total installed capacity around 650 MW

**Bio-mass**
3 MW Bio-mass (waste) thermal power plant
<table>
<thead>
<tr>
<th></th>
<th>Project</th>
<th>Company</th>
<th>Installed Capacity (MW)</th>
<th>Generation (GWh)</th>
<th>Commencement of Operation (Year)</th>
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Further Development

- 6 HPPs (400 MW) and 1 WPP (20.7) will be commissioning by end of 2016;

- 110 power plant projects (only RE) are at different stages of development
  - Total installed capacity 4688 MW; Around 60 projects are subject of feasibility studies;

- Decommissioning of inefficient gas-fired thermal power plants and
  construction of new gas-fired thermal power plant (230 MW) by 2020; an additional 230 MW by 2025;

- Expansion of the national grid according to the 10 Year Network Development Plan for:
  - Stable, reliable, cost-effective, efficient transmission system capable for consistent response to generation and demand growth by reliable and safe transportation of electricity, without any interruptions
  - Strengthen cross-border trade opportunities etc.
Completion of:
- State Energy Strategy;
- Individual metering in 2017;
- Gasification by 2020; Energy efficient wood-burning stove and solar solutions where gasification is not economically feasible;

Approval of 10 year development plan for gas network;
5 year development plans for distribution sector;
Membership of Energy Community - October 2016;
Gradual approximation to EU legislation.
Collaboration Between Energy and Environment Areas
Low Emission Development Strategy;
Preparation of the environmental flow methodology;
    since 2017 all power plants will be constructed considering new methodology;
Elaboration of Bio-mass Strategy;
Cooperation for NEAP elaboration and Improving legislation on EIA.
Strategic Environmental and Social Assessment for the Power Sector of Georgia

Main Objective: to prepare a Strategic Environmental and Social Assessment Report for different strategy scenarios for the Power Sector of Georgia and associated transmission infrastructure and provide recommendations for the preferred scenario taking into account:

- definitions, approaches and applicable methodologies as defined in EU Directive 2001/42/EC (Directive on the Assessment of the Effects of Certain Plans and Programs on the Environment);
- relevant national and international standards, industry guidelines and best practices,
- international experience of carrying out Strategic Environmental Assessments for energy sector;
- International best practice of public outreach;
- Consultation for Environmental Impact Assessment and Strategic Environmental Assessment.
Thanks for Attention!

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