Security of Supply Coordination Group - 10th Meeting of Sub-Group for Electricity

Ms. Margalita Arabidze
Deputy Head of Energy reforms and international relations, MoESD
**ELECTRICITY MARKET OVERVIEW**

**Ministry of Economy and Sustainable Development of Georgia**
- Responsible for Policy and Strategy Development and Implementation etc.

**Independent regulator – GNERC**
- Sector regulator, responsible for market monitoring;
- Commission licenses and monitor licensees;
- Resolve disputes between licensees and customers.

**Georgian Energy Exchange**
- establishment of bilateral contracts,
- Responsible for the activities needed to form the daily organized markets and establish the market operator.

**Technical operator / Transmission Services - HV lines, HV substations and dispatching**
- Georgian State Electrosystem (GSE) (100% state owned)

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

**Generation**
- 105 Hydropower plants
- 6 Thermal plants
- 1 Wind Power Plant

**Distribution Companies**
- under the private ownership: Telasi, Energo-Pro Georgia

**Supply Companies**
- under the private ownership: “Telmico” and “EP Georgia supply”
Installed Capacity of the System

- **Hydro Power:**
  - 105 Operating HPPs
  - Installed Capacity – 3350 MW

- **Wind Power:**
  - 1 Operating WPP
  - Installed Capacity – 20.7 MW

- **Thermal Power:**
  - 6 Operating TPPs
  - Installed Capacity – 1154 MW

Total Installed Capacity: 4524.7 MW
**EXISTING ENERGY INFRASTRUCTURE**

- 500/400/330/220/110/35 kV transmission lines with overall length of 4380 km;
- 500 kV transmission lines with total length - 923 km;
- 400 kV transmission lines with total length - 32.6 km;
- 330 kV transmission lines with total length - 21.1 km;
- 220 kV transmission lines with total length - 1797 km.

- 94 sub-stations, with total installed capacity - 12114 MWA
- 7 substations of strategic importance - 500 kV;
- 24 substations - 220 kV.

### Interconnectors

<table>
<thead>
<tr>
<th>Country</th>
<th>Transmission line</th>
<th>Nominal voltage (kV)</th>
<th>Exchange</th>
<th>TTC Summer (MW)</th>
<th>TTC Winter (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>„Kavkasioni“ AC-3x300</td>
<td>500</td>
<td>export</td>
<td>570</td>
<td>650</td>
</tr>
<tr>
<td></td>
<td>„Kavkasioni“ AC-3x300</td>
<td>500</td>
<td>import</td>
<td>570</td>
<td>650</td>
</tr>
<tr>
<td></td>
<td>„Salkhino“ AC-400</td>
<td>220</td>
<td>export</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>„Salkhino“ AC-400</td>
<td>220</td>
<td>import</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>„Mukhranis Veli“ AC-3x300</td>
<td>500</td>
<td>export</td>
<td>630</td>
<td>710</td>
</tr>
<tr>
<td></td>
<td>„Mukhranis Veli“ AC-3x300</td>
<td>500</td>
<td>import</td>
<td>630</td>
<td>710</td>
</tr>
<tr>
<td></td>
<td>„Gardabani“ AC-480</td>
<td>330</td>
<td>export</td>
<td>210</td>
<td>440</td>
</tr>
<tr>
<td></td>
<td>„Gardabani“ AC-480</td>
<td>330</td>
<td>import</td>
<td>210</td>
<td>240</td>
</tr>
<tr>
<td>Armenia</td>
<td>„Alaverdi“ AC-300</td>
<td>220</td>
<td>export</td>
<td>150 / 100</td>
<td>150 / 100</td>
</tr>
<tr>
<td></td>
<td>„Alaverdi“ AC-300</td>
<td>220</td>
<td>import</td>
<td>150 / 100</td>
<td>150 / 100</td>
</tr>
<tr>
<td>Turkey</td>
<td>„Meskheti“ AC-3x500</td>
<td>400</td>
<td>export</td>
<td>700</td>
<td>700</td>
</tr>
<tr>
<td></td>
<td>„Meskheti“ AC-3x500</td>
<td>400</td>
<td>import</td>
<td>700</td>
<td>700</td>
</tr>
<tr>
<td></td>
<td>„Adjara“ AC-400</td>
<td>220</td>
<td>export</td>
<td>150 / 150</td>
<td>150 / 150</td>
</tr>
<tr>
<td></td>
<td>„Adjara“ AC-400</td>
<td>220</td>
<td>import</td>
<td>150 / 150</td>
<td>150 / 150</td>
</tr>
</tbody>
</table>
SUPPLY AND CONSUMPTION 2020-2021

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPP</td>
<td>552.5</td>
<td>398.5</td>
<td>153.1</td>
<td>148.3</td>
<td>12.9</td>
<td>0.0</td>
<td>47.7</td>
<td>89.3</td>
<td>233.8</td>
<td>365.1</td>
<td>340.2</td>
<td>479.5</td>
</tr>
<tr>
<td>WPP</td>
<td>7.9</td>
<td>6.7</td>
<td>8.8</td>
<td>8.4</td>
<td>8.1</td>
<td>6.7</td>
<td>7.3</td>
<td>7.5</td>
<td>8.4</td>
<td>6.8</td>
<td>7.2</td>
<td>7.1</td>
</tr>
<tr>
<td>HPP</td>
<td>470.5</td>
<td>445.5</td>
<td>705.2</td>
<td>787.1</td>
<td>964.9</td>
<td>992.7</td>
<td>955.0</td>
<td>851.7</td>
<td>634.8</td>
<td>479.6</td>
<td>518.0</td>
<td>443.2</td>
</tr>
<tr>
<td>Import</td>
<td>214.3</td>
<td>312.0</td>
<td>217.9</td>
<td>36.2</td>
<td>6.6</td>
<td>0.1</td>
<td>0.6</td>
<td>47.6</td>
<td>91.6</td>
<td>122.6</td>
<td>221.4</td>
<td>339.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPP</td>
<td>341.3</td>
<td>331.3</td>
<td>177.0</td>
<td>65.3</td>
<td>0.3</td>
<td>0.0</td>
<td>0.0</td>
<td>130.3</td>
<td>309.6</td>
<td>320.3</td>
<td>331.2</td>
<td>377.4</td>
</tr>
<tr>
<td>WPP</td>
<td>5.1</td>
<td>5.8</td>
<td>8.9</td>
<td>6.9</td>
<td>9.0</td>
<td>6.5</td>
<td>7.9</td>
<td>7.9</td>
<td>7.6</td>
<td>6.6</td>
<td>6.5</td>
<td>6.3</td>
</tr>
<tr>
<td>HPP</td>
<td>461.2</td>
<td>354.8</td>
<td>475.4</td>
<td>753.3</td>
<td>1211.7</td>
<td>1457.7</td>
<td>1264.0</td>
<td>999.2</td>
<td>700.0</td>
<td>640.8</td>
<td>707.9</td>
<td>794.2</td>
</tr>
<tr>
<td>Import</td>
<td>414.1</td>
<td>414.0</td>
<td>609.7</td>
<td>259.6</td>
<td>4.1</td>
<td>0.0</td>
<td>0.0</td>
<td>37.2</td>
<td>115.0</td>
<td>164.6</td>
<td>171.9</td>
<td>179.0</td>
</tr>
</tbody>
</table>
Total losses for transmission and distribution network

- 2001 – 18.53%
- 2006 – 13.20%
- 2016 – 7.21%
- 2017 – 7.05%
- 2018 – 6.48%
- 2019 – 6.86%
- 2020 – 7.01%
  - Transmission network – 1.92%
  - Distribution - 5.10%

<table>
<thead>
<tr>
<th>Normative Losses Determined By GNERC</th>
<th>2018-2020</th>
<th>2021-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmission Licensees</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telasi</td>
<td>5.85%</td>
<td>4.81%</td>
</tr>
<tr>
<td>Energo-Pro Georgia</td>
<td>10.37%</td>
<td>9.80%</td>
</tr>
<tr>
<td>Distribution Licensees</td>
<td>2.06%</td>
<td>1.76%</td>
</tr>
</tbody>
</table>
Development of Renewable Resources
- Hydropower – 123 projects
- Wind - 18
- Solar - 12
- Biomasses

Development of Transmission Network
- Development of internal transmission network
- Development and strengthening of interconnection network

Construction of New TPPs
- 255MW TPP was put into operation in 2020
- Two new 250MW TPPs are planned to be commissioned until 2025

Gas Storage
- Feasibility study and bidding process is completed
- Technical data: volume 210-280 mln. m³
- Project completion was planned by 2024, however the construction is postponed by several years due to pandemic.
- This project is the most crucial for the energy security of Georgia
Development of the SoS Statement is an obligation processed by the Treaty

The Security of Supply Statement in Electricity Sector was adopted in March 2021

Available in Georgian and English (published on MoESD’s website)

The document contains next major parts:

- Legal Regulation on Security of Supply
- Key players in Electricity Sector
- Electricity Sector Overview
Thank you!

Ms. Margalita Arabidze  
Deputy Head of Energy Reforms and  
International Relations Department  
Email: marabidze@moesd.gov.ge