Energy Sector of Georgia

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Ministry of Energy of Georgia
2017
Hydro Potential of Georgia

• One of the top countries in the world by the water resources per capita.
• Second in the Europe by the water reserves amount.
• 300 rivers out of total 26,000 are significant for the electricity generation.
• Currently, only 20% of the hydro potential is utilized.
• Hydro Potential for development is equal to 40 TWh (approximately)
Operating Power Plants in Georgia

**Total Installed Capacity - 4099 MW**

**Hydropower Plants:**
- 72 HPPs
- Installed Capacity – 3142.9 MW

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

**Thermal Power Plant:**
- 6 TPPs
- Installed Capacity – 926.4 MW
Ongoing Renewable Power Plant Projects

• Construction Stage – 17 projects (524 MW – 1.4 bln USD)

• Licensing Stage – 20 projects (223 MW – 352 mln USD)

• Feasibility Study – 102 projects (3,750 MW – 5.8 bln USD)
  - 17 Wind Power Plant projects are under feasibility study (1156 MW – 1.8 bln USD);
  - 11 Solar Power Plant projects are under feasibility study (505 MW – 497 mln USD).

TOTAL: 139 Power Plant Projects – 4,497 MW – 8.3 bln USD
Georgia is member of the energy community

- Based on RED requirement and characteristics of Sectors;
- RE policy Measures;
- Energy Statistics for RE and EE;

Ongoing projects

- First renewable energy action plans;
- Preliminary renewable energy low;
- Grid code for integration of renewable energy into national power system;
- Practical projects
- others.
Towards better policy coherence: assessment of intersectoral links, trade-offs and benefits

• A series of participatory intersectoral assessments of the “nexus” considering water resources, energy, land/agriculture and ecosystems was carried out under the UNECE Water Convention; Alazani/Ganykh Basin (Georgia, Azerbaijan) the pilot basin to test the assessment methodology


• GERE will discuss intersectoral synergies & how to address the nexus in work programme 2017-2018; synergies with other sectors can help renewable energy development!
Alazani/Ganykh Basin
Complementarity of resource bases
Georgia-Azerbaijan

### Total Renewable Freshwater Resources

<table>
<thead>
<tr>
<th>Country</th>
<th>Total</th>
<th>Agriculture</th>
<th>Industry</th>
<th>Municipal</th>
<th>Alazani/Ganykh Basin Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Georgia</td>
<td>63,330 million m³/ year</td>
<td>58.2%</td>
<td>22.1%</td>
<td>19.8%</td>
<td>3,600 million m³</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>34,680 million m³/ year</td>
<td>84.4%</td>
<td>12.9% (est.)</td>
<td>2.8% (est.)</td>
<td>3,500 million m³</td>
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</tbody>
</table>

### Installed Electricity Generating Capacity & Hydropower

<table>
<thead>
<tr>
<th>Country</th>
<th>Total</th>
<th>Hydropower</th>
<th>Fossil Fuel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Georgia</td>
<td>4.3 million kW</td>
<td>2.6 million kW</td>
<td>1.7 million kW</td>
</tr>
<tr>
<td></td>
<td>of which, hydropower: 61%</td>
<td>Fossil fuel 39%</td>
<td></td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>7.1 million kW</td>
<td>1.1 million kW</td>
<td></td>
</tr>
<tr>
<td></td>
<td>of which, hydropower: 85%</td>
<td>Hydropower 15%</td>
<td></td>
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### Agricultural Land

<table>
<thead>
<tr>
<th>Country</th>
<th>Total</th>
</tr>
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<tbody>
<tr>
<td>Georgia</td>
<td>4,000 km²</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>19,000 km²</td>
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<table>
<thead>
<tr>
<th>Alazani/Ganykh</th>
<th>Basin Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,960 km²</td>
<td>10%</td>
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</table>
Main intersectoral issues in the Alazani/Ganykh Basin

Energy sector policy and action in a key role in the possible response:

*Target setting and development of the normative frameworks* are expected to facilitate investment into different renewable energy sources. *A strengthened consultation of multiple stakeholders* would help ensure finding the best options, setting priorities and using resources efficiently. *International experience* through the application of guidelines and good practices would help to improve sustainability in the location, design and construction of hydropower plants.
Collaboration on Water-Food-Energy-Ecosystem

- The Ministry of Energy of Georgia is working with the Ministry of Agriculture on developing 150-200 MW HPPs using irrigation waters. The project will have several benefits:
  - Preventing floods;
  - Utilisation of water energy potential;
  - Developing of irrigation and drinking water systems.

Construction of the HPPs are going to be in line with the international standards. (EU, Energy Community)
Advantages (RE)

- Diversification of energy supply sources and increase of energy security;
- Boost of Economic development – Job creation;
- Reduction of GHGs;
- others

Challenges (RE)

- Difficulties of curtain technologies cussing unreliability of the energy system;
- Technology price;
- Environmental aspects;
- Regional characteristics.
THANKS FOR ATTENTION!

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