





Georgian Power System

Georgian State Electrosystem



Georgian Power System

- ✓ Georgian power system is mainly hydropower system
- ✓ Hydropower covers around 80% of total consumption, but during the dry periods thermal generation has also a big share into the monthly energy balance.
- \checkmark Only one 21 MW wind power plant in the center of Georgia.
- ✓ In total there is around 50 MW PV power plants (<0.5 MW) connected to the net metering.
- ✓ The operating capacity of biggest generating units are 250 MW, so sometimes one unit covers around 25% of the system load.
- ✓ Georgia has very inconstant demand profile. highest point of consumption is in winter when it reaches 2350 MW and the lowest point of demand profile is in spring and autumn when demand gets as low as 1100 MW.



Fleet of Georgian power plants



Georgian Power System

- ✓ Most of the hydro generation is located in the western part of Georgia and biggest consumption is located in the eastern part of the country,
- ✓ 500kV lines are backbone of system which transmits a large amount of energy.
- ✓ Georgian electrical grid has following interconnections with neighboring countries:

Russia – 500kV and 220 KV AC connections Türkiye – 400kV AC (with DC B2B) connection Azerbaijan – 500kV AC and 330kV AC connections Armenia – 220kV AC connection

 Georgia most of the time works in parallel with Russian or Azerbaijan system. Also, there are some certain periods when Georgian power system operates in an isolated (electrically island) mode.





Geographical Distribution of Wind Potential





Potential of Solar Power in Georgia





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GSE's main Directions of facilitation of RES Integration

- Building the hub substations near to the concentration of RES sources and constructing the transmission lines to the backbone grid
- Reinforcement of the cross-border transmission lines for creating of more export potential to the neighboring power systems
- Reinforcement of internal transmission grid, connecting RES sources and generation
- ✓ Collaboration with the vendors and VRE developers to develop the Energy Storage devices, including BESS and PSHs to increase the VRE (solar, wind) integration limits
- ✓ Support of RES developers to find the optimal grid connection points.



Transmission Projects for RES integration







THANKS!

