

Ministry of Energy of Georgia

Investment Opportunities in Energy Sector of Georgia

Power Potential in Georgia



- Hydropower Potential
 - ✓ HPP Greenfield potential of 40 TWh
- Wind energy potential
 - ✓ annually generation equals 4 billion kilowatt-hours.
- Solar Energy Potential
 - ✓ annual solar energy potential in Georgia is estimated to be 108 MW

Hydropower Potential

- Immense untapped hydro resources
- One of the top country in water resources per capita
- **300** out of **26,000** rivers are significant in terms of energy production
- Only 18% of total hydro potential is utilized
- HPP Greenfield potential of 40 TWh



Wind and Solar Power Potential

Wind Power Potential

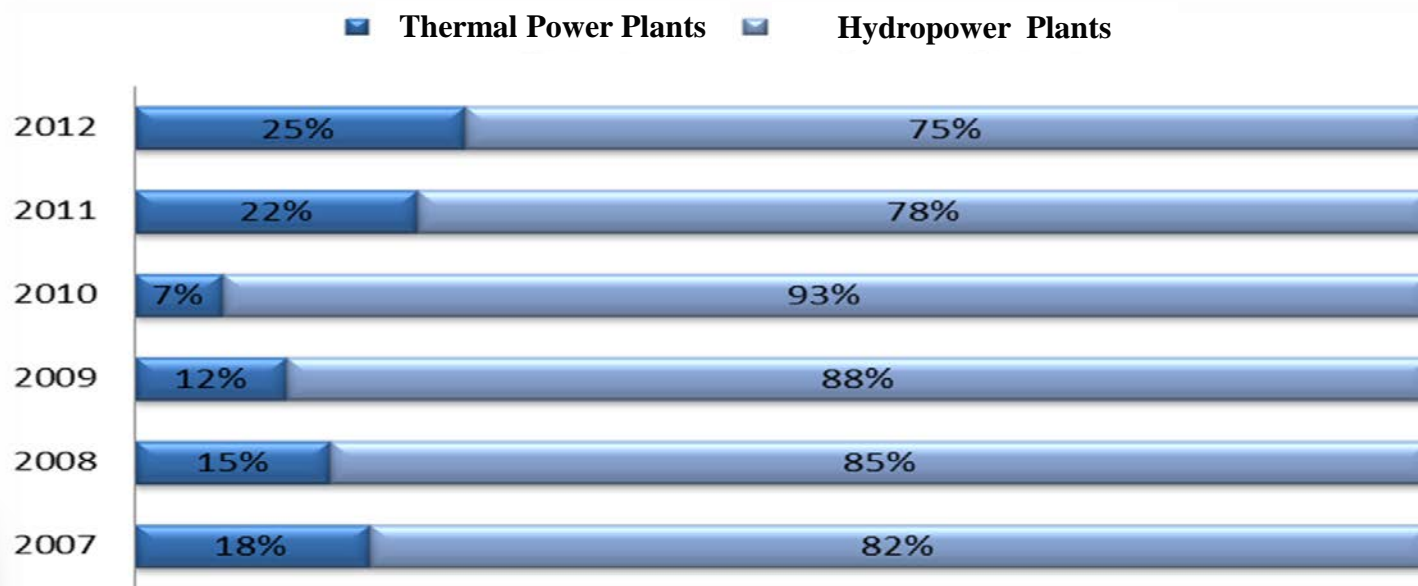
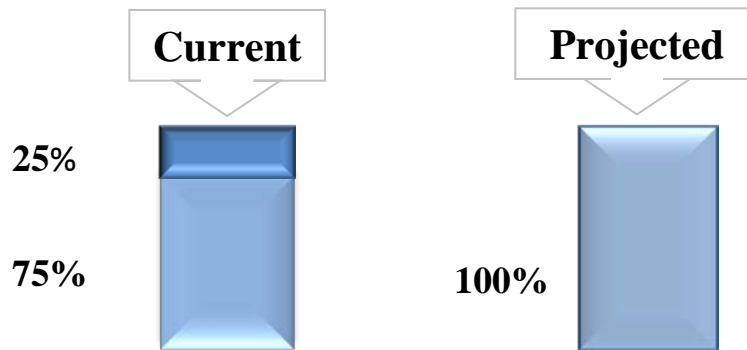
- ✓ A high speed zone - mountainous regions of Southern Georgia, Kakhaberi Vake and the central region of Kolkheti Valley. The working duration period is more than 5000 hours per year
- ✓ A partly high speed and low speed zone - the Mtkvari gorge from Mtskheta to Rustavi, Southern part of Javakheti, Black Sea line from Poti to Kakhaber Vake. The working duration is 4500-5000 hours per year
- ✓ A low speed mountain range effective exploitation zone - Gagra mountain range, Kolkheti Valley and Eastern Georgian lowlands
- ✓ A low speed mountain range limited exploitation zone - Iori Zegani and Sioni water reservoir

Solar Power Potential

- ✓ The solar energy in Georgia makes it possible to get 40-500 °C temperature water
- ✓ In most regions of the country there are 250-280 sunny days in a year, which is approximately 6000-6780 hours per year.

Existing and Planned Power Projects

- Existing Power Plants Generating electricity in Georgia
 - ✓ 53 Hydropower plants-75%-85%
 - ✓ 3 thermal plants, including import- 25%-15%



Planned Power Projects

45 HPP on-going Projects

- ✓ Total installed capacity of 2,213 MW and annual generation up to 8.2 TWH
- ✓ Projected investment USD 3.0 bln.
- ✓ Construction works are planned to be finished in 2014-2020

Major companies operating in Georgia

- ✓ Anadolu (Turkey)
- ✓ Peri (Georgia)
- ✓ Ağaoğlu (Turkey)
- ✓ Trans Electrica Ltd.(India)
- ✓ Energo Pro (Czech)
- ✓ Clean Energy Group (Norway)
- ✓ KGM (Turkey)
- ✓ Rusmetal (Georgia); and etc

Energy Balance

2007-2012

Year	Generation	Consumption	Import	Export	Net Export	% of Import in total Consumption	% of Export in total Generation
2007	8345.7	7815.4	433.3	625.5	192.2	6%	7%
2008	8450.5	8074.8	649	679.6	30.6	8%	8%
2009	8407.7	7642.1	254.8	749.4	494.6	3%	9%
2010	10057.6	8441.1	222.1	1524.3	1302.2	3%	15%
2011	10104.5	9256.6	471.0	930.6	459.6	5%	9%
2012	9694.7	9379.4	614.6	528.2	-86.4	7%	5%

Potential Projects

Hydro Power Projects

✓ Up to 100 MW

67 HPP projects on pre feasibility level with financial and technical projections

✓ Over 100 MW

Up to 10 large projects with pre-feasibility studies

Wind Projects

✓ From 50 MW to 2000 MW

9 projects with Georgian wind energy atlas

Annual Development and of Peak Load and Electricity Demand in Turkey

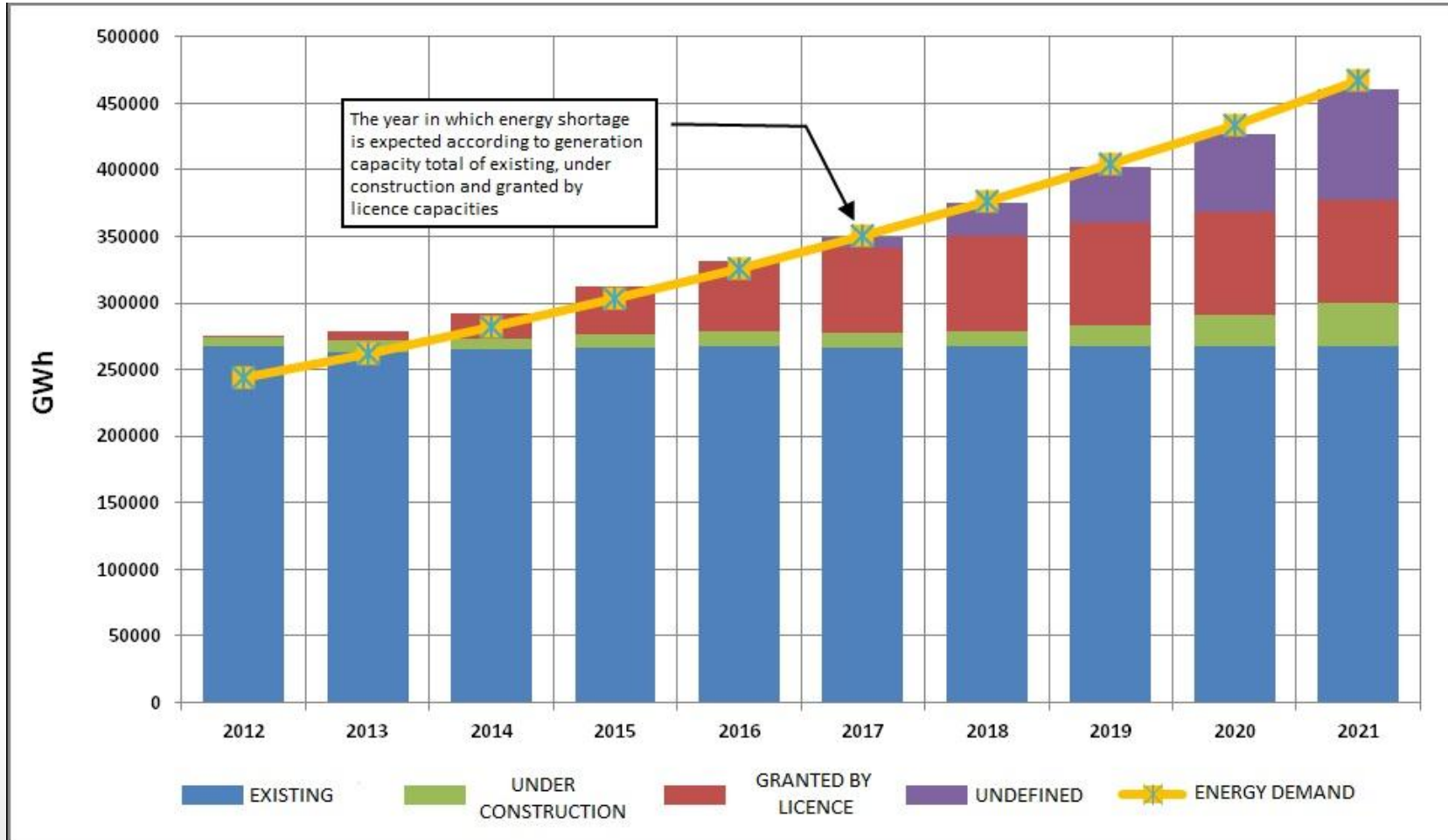
Growing demand of neighboring countries and rapidly expandable Turkish market projects to have Turkey as a net importer of electricity

Year	Peak Load		Electricity Demand	
	MW	Increase (%)	GWh	Increase (%)
2012	38000	5.2	244026	6.4
2013	41000	7.9	262010	7.4
2014	43800	6.8	281850	7.6
2015	46800	6.8	303140	7.6
2016	50210	7.3	325920	7.5
2017	53965	7.5	350300	7.5
2018	57980	7.4	376350	7.4
2019	62265	7.4	404160	7.4
2020	66845	7.4	433900	7.4
2021	71985	7.7	467260	7.7

Source: TEIAS

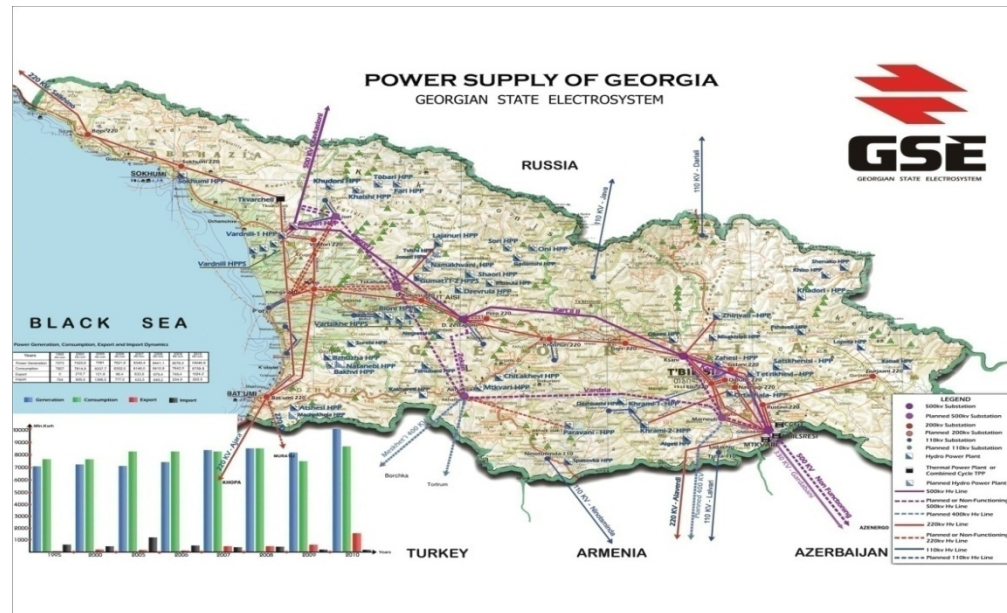
Description of Development of Electricity Demand, Production and Shortage During the Period of 2012-2021 in Turkey

Figure: 1 Peak Load and Demand Forecast



Strong Support from the Government of Georgia

- GoG's strong support and commitment aims at developing renewable resources and construction of additional transmission lines for export opportunities.



- ✓ Construction of new high voltage 500/400 KV line to Turkey is finished
- ✓ Construction of additional interconnection with Turkey is under negotiation