Georgian National Energy and Water Supply Regulatory Commission

Ministry of Economy and Sustainable Development of Georgia

Renewable energy development in Georgia: challenges and opportunities

Baku, March 12, 2018

Content

- Statistical outlook of Georgian electricity market
- Overview of existing structure of Georgian electricity market
- Legislative amendments and regulatory issues
- Main priorities and regulatory challenges for the future

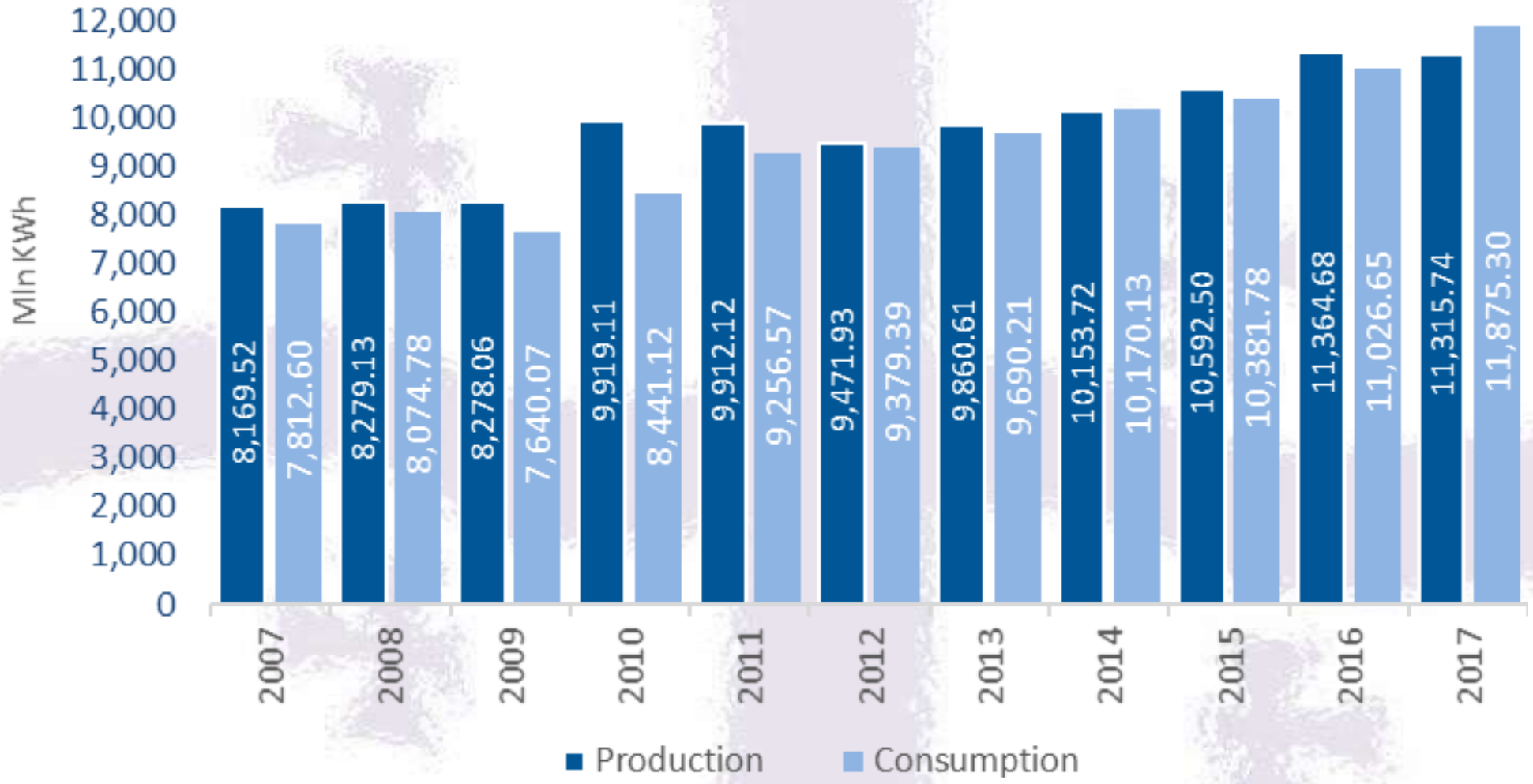
Statistical outlook

Electricity production in 2017 was **11,365 mln kWh** which decreased by 0.4% compared to last year but increase 6.4% compared to 2015

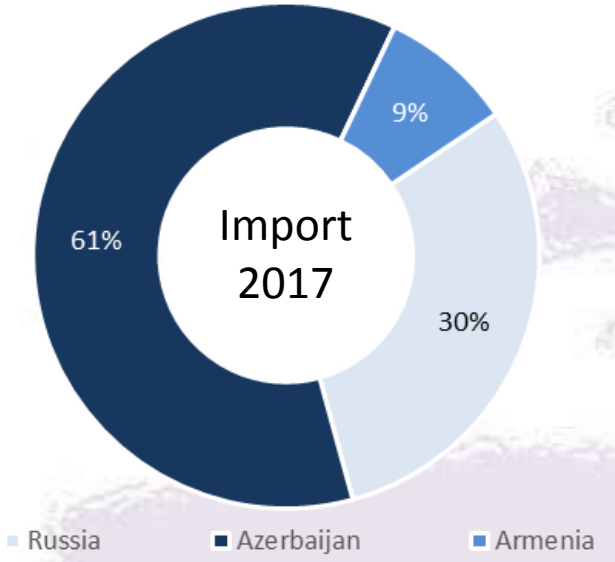
Electricity consumption in 2017was **11,027 mln kWh** which increased by 7.7% compared to last year and by 14.4% compared to 2015

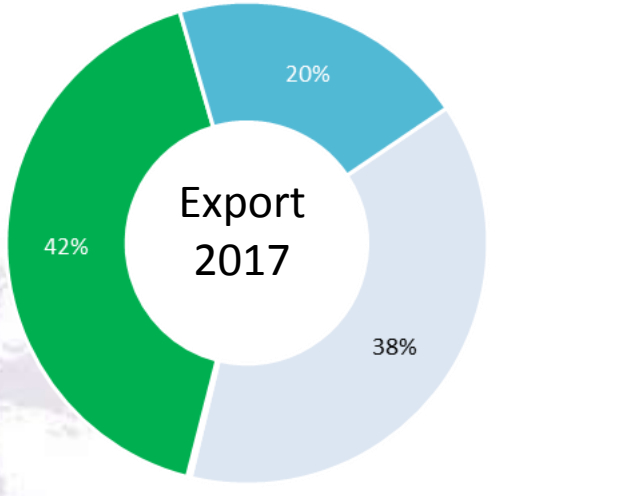
Electricity transit in 2017 was **254 mln kWh** in 2016 transit was 849.6 mln kWh

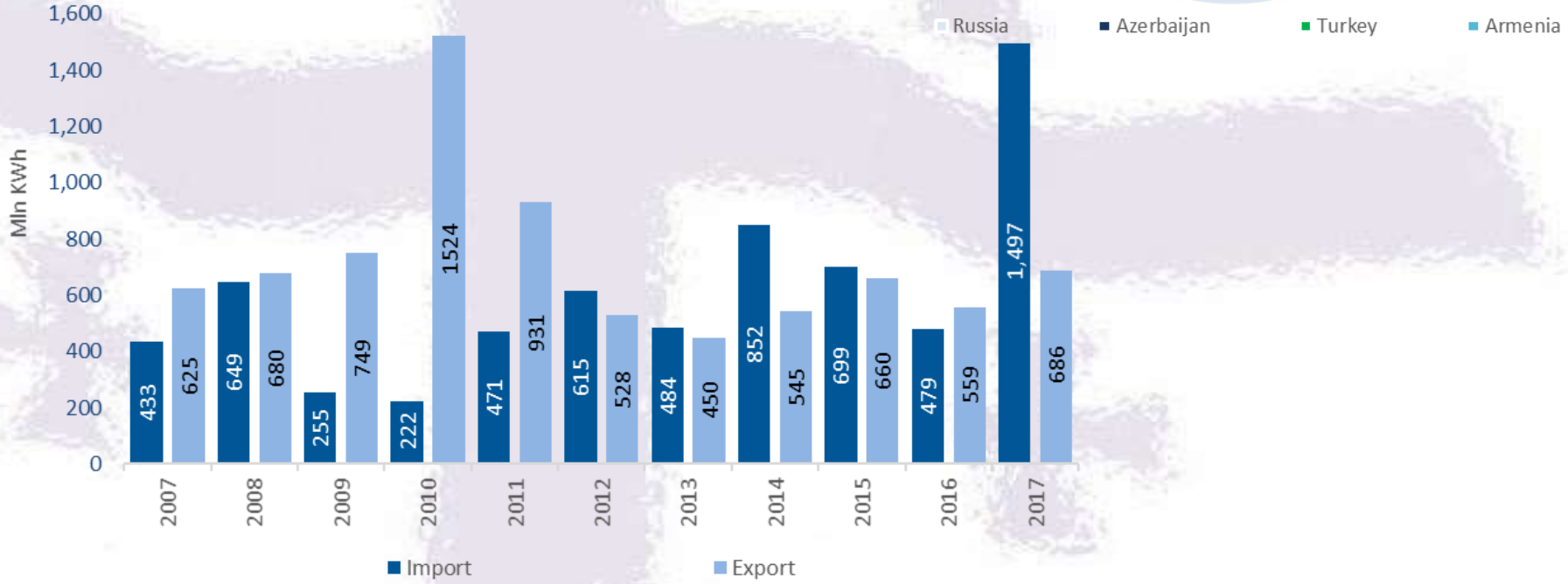
Electricity Production and Consumption



Electricity Import and Export







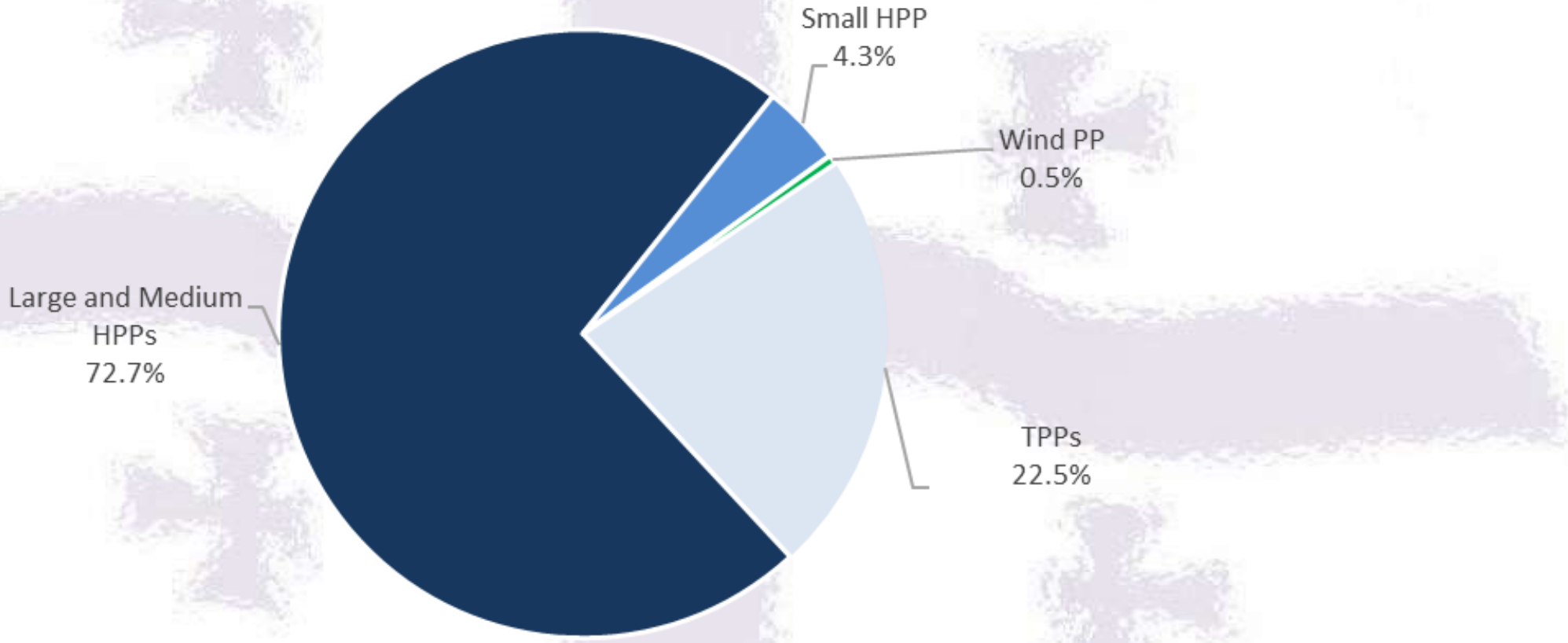
Generation capacities commissioned in 2017

233.75 MW of installed capacity was added which increased total installed capacity in the country by 6.3%

Energy Resource	Name	Activity with license/ without license	Installed Capacity (MW)
	Shuakhevi HPP	with license	178.72
	Khelvachauri HPP	with license	47.48
	Nabeghlavi HPP	without license	1.9
	Ghoresha HPP	without license	0.15
	Kintrisha HPP	without license	5.5
		Total	**233.75**

შუახევი	178.72
ხელვაჩაური	47.48
ნაბეღლავი ჰესი	1.9
ღორეშა ჰესი	0.15
კინტრიშიჰესი	5.5

Generation Capacities by Source in 2017



Electricity Sector Priorities

- The development of electricity transmission infrastructure with the aim to raise security and capacities;
- The development of generation capacities on the basis of renewable resources;
- Liberalization of electricity markets (Unbundling of supply and distribution activities);
- Introduction of modern electricity trade mechanisms and cross-border capacity trading;
- Strengthening of authorities of regulatory body within the frames of regulatory framework harmonization

Georgia and European Energy Community

- On 14 October, 2016 during the 14th Energy Community Ministerial Council, Georgia signed protocol concerning the accession of Georgia to the treaty establishing the Energy Community

- On 25 April, 2017 Georgian Parliament ratified the accession agreement with majority members of the Parliament present voting unanimously in favour.

- Under this protocol Georgia commits to approximate Georgian energy sector with the European Union energy market rules.

Renewable energy potential of Georgia

Hydro Potential	**Theoretical 137 billion KWh**
	Technically feasible 90 billion KWh
	Economically feasible 50 billion KWh
WIND Potential Theoretical	**Generation - 4 billion KWh**
	Installed capacity -1500 MW
SOAL Theoretical	**250-280 sunny days**
	average radiation 4.2 kwh/m^2
	2000-2500 MW
Geothermal water reserves	**250 mln m^3 per year**
	30-100 ^{0} C

Renewable Energy Utilization

Wind Power Plant KARTLI – Pilot Project

Location: Shida Kartli, Gori

Installed Capacity: 20.7 MW

Annual Generation: 88 GWh

Exploitation: October, 2016

Company: JSC GEDF

Operating Solar Pvs: 400 kv in remote areas for households

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

Renewable Energy Utilization

❖Construction and licensing Stage:

35 HPP projects - total installed capacity 1.642 MW; Generation 5371 GWh; Estimated total investment - 3 billion US Dollars;

❖Feasibility stage with construction liabilities:

23 HPP Projects - total installed capacity 1,173 Mg. 5,189 GWh. Estimated total investment - 2 billion US Dollars;

❖ Feasibility Study Stage - 60 RE Projects - estimated total investment 3 billion US Dollars

10 Wind Project total installed capacity 822 MW;

3 Solar Project total installed capacity 555 MW.

RE Supporting Policy Development

- ✓NET Metering for small scale RE technologies – Implemented;
- ✓Drafting the regulation for RE integration in to the electricity grid - initial stage under the DANIDA Project
- ✓ Improvement of existing legislative framework in compliance with EU Directives -2017-2018:
  - Emending Law on Electricity and Natural Gas ;
  - Finalization of first National Energy Efficiency Action Plan;
  - Elaboration of National Renewable Energy Action Plan

Results of Net Metering Regulation

- Installed capacity of Micro Power Plant should not exceed 100 kW.
- The total installed capacity of Micro Power Plants stations connected to the distribution licensees' network shall not exceed 2% of the peak load on its network.
- By the end of 2017, 22 Micro Power Plants were connected to the distribution licensees' network with a total of 188.7 kW installed capacity.

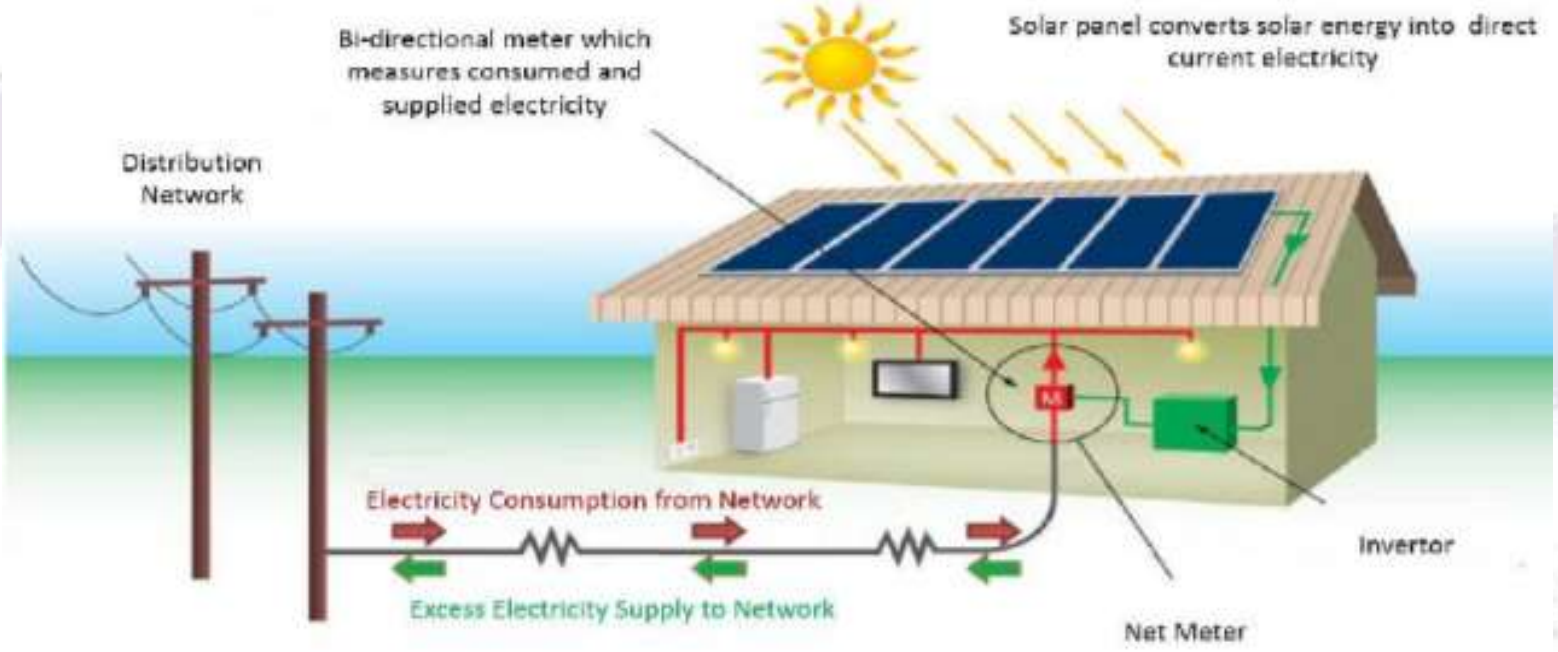


Illustration of "Net-Metering"

RE Supporting Policy Development

Advantages

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

Challenges

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

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Thank you

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