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Renewable Energy in Georgia Challenges and opportunities

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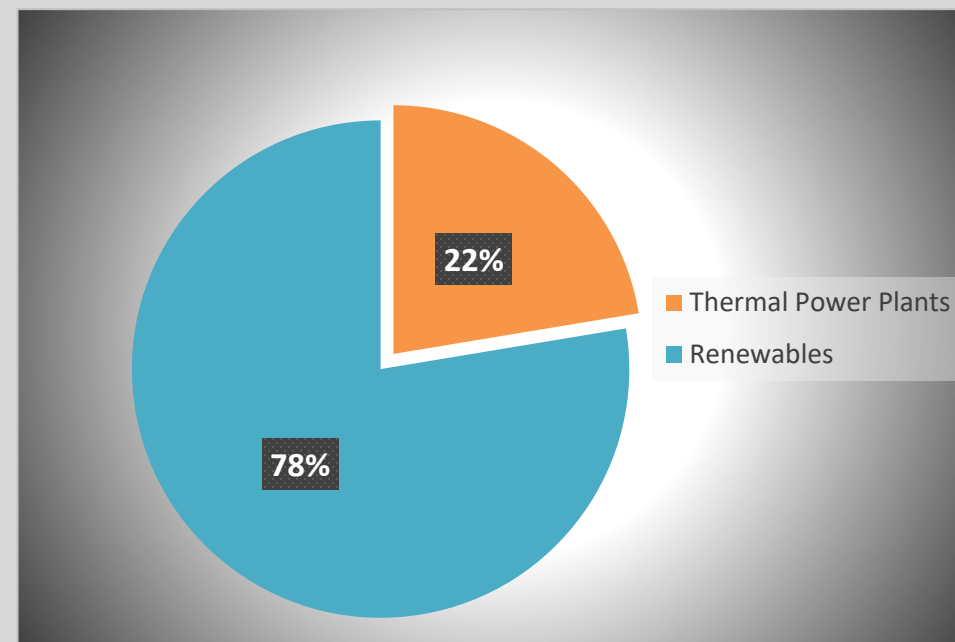
Total Installed Capacity of the Energy System

Total: 4206.8 MW

Hydro Power:
87 Operating HPPs
Installed Capacity – 3260.07 MW

Wind Power:
1 Operating WPP
Installed Capacity – 20.7 MW

Thermal Power:
5 Operating TPPs
Installed Capacity – 926 MW



Hydro Potential of Georgia



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- Untapped hydro resources
- One of the top countries in water resources per capita
- 300 out of 26,000 rivers capable of providing excellent opportunities for hydropower production
- Hydro potential of 40 TWh
- Only 22% of total hydro potential
- World's second highest concrete arch dam with a height of 271.5 meters (891 ft)



Wind and Solar Energy Potential



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Wind Energy

- The total installed capacity of wind power projects can be up to 1500 MW with average annual electricity generation of 4 billion kWh



Solar Energy

- During the year in most regions there are 250-280 sunny days and the annual average amount of sunshine hours is over 2000



Grid limitations for VRE integration



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Solar Energy

The system can integrate solar energy:

By 2020 -130 MW,
By 2025 -260 MW,
By 2030 -520 MW.

Wind Energy

The system can integrate wind energy:

By 2020 – 333 MW,
By 2025 – 665 MW,
By 2030 – 1332 MW.

Ongoing RE Projects



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- 24 Projects on Construction and Licensing – with installed capacity of 235 MW, annual generation – 1,062 mln. kWh
- 26 Projects on the Feasibility Study Stage with Construction Liability - 383 MW, annual generation – 1,719.9 mln. kWh
- 89 Projects on the Feasibility Study Stage - 2,552 MW, annual generation – 11,027 mln. kWh

116 HPP, 18 WPP and 5 SPP projects

Towards EU



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2014

- EU Association Agreement Signed

2017

- Energy Community Treaty ratified

New Regulatory Framework



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- Law of Georgia on Energy and Water Supply;
- The Law of Georgia On Promotion of Production and Utilization of Energy from Renewable Sources;
- National Renewable Energy Action Plan (NREAP) of Georgia;
- National Energy and Climate Plan

The Law of Georgia On Promotion of Production and Utilization of Energy from Renewable Sources



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The purpose of this Law is:

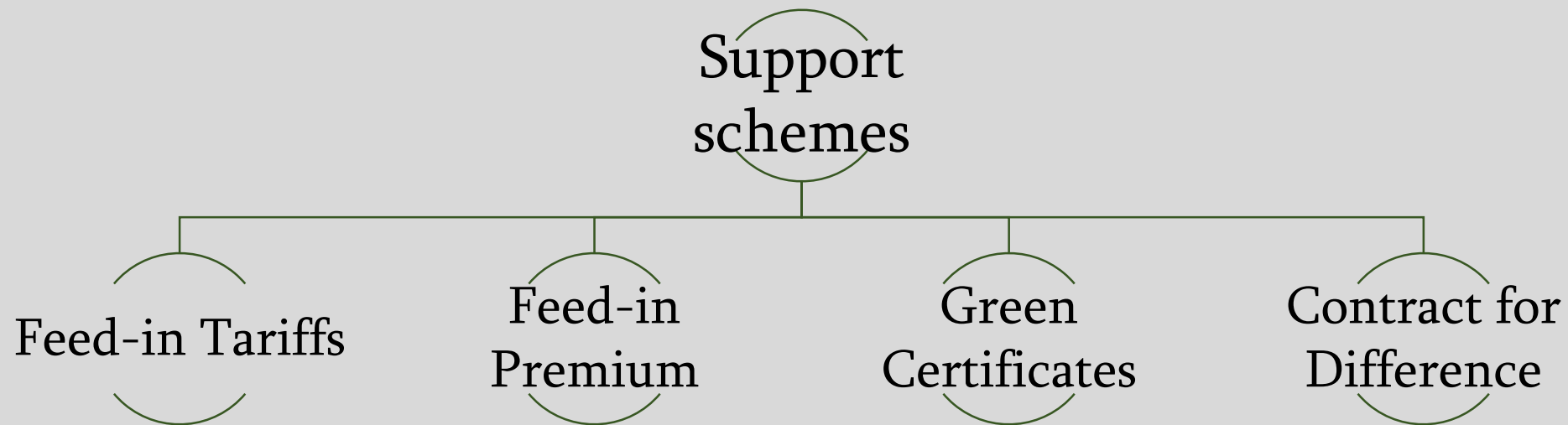
- a) to establish a legal basis for the promotion, facilitation and use of energy from renewable sources;
- b) to set mandatory national targets for the overall share of energy from renewable sources in gross final consumption of energy, as well as in transport.

The share of energy from renewable sources in gross final consumption of energy in 2030 is at least its national overall target for the share of energy from renewable sources in that year, which is equal to 35%



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Applicable Instruments: Georgian Scenario



Renewable Energy: Advantages and Challenges



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Advantages

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

Challenges

- Difficulties of certain technologies causing unreliability of the energy system;
- Technology price;
- Environmental aspects;
- Regional characteristics



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Thank you for your attention!