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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:

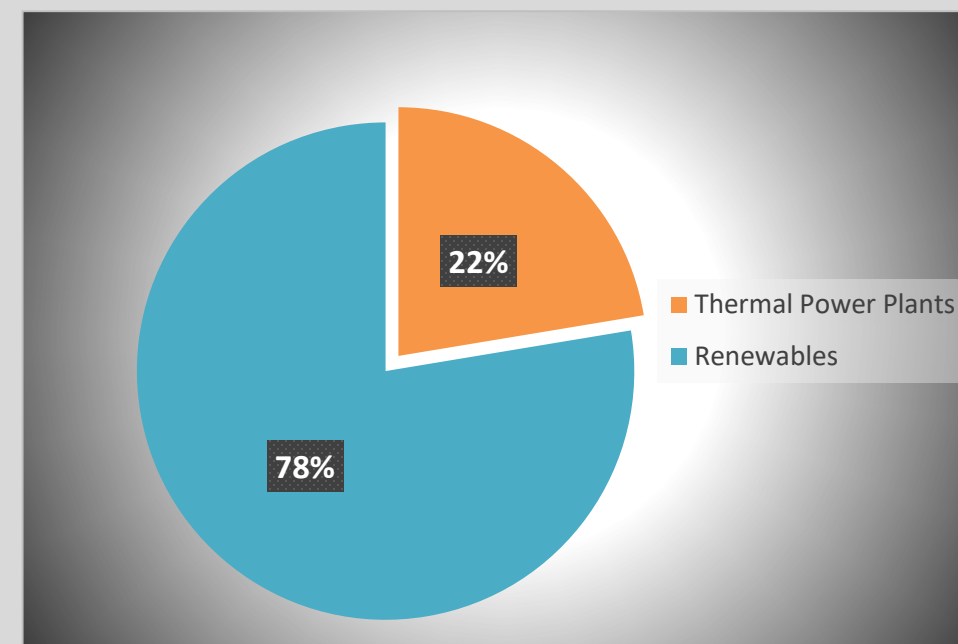
1 Operating WPP

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
- Only 22% of total hydro potential is utilized
- HPP Greenfield potential of 40 TWh
- World's second highest concrete arch dam with a height of 271.5 meters (891 ft)





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Wind and Solar Energy Potential

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.



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Renewable Energy: Advantages and Challenges

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

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

Regulatory Framework



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- Law of Georgia on Energy;
- The Law of Georgia On Promotion of Production and Utilization of Energy from Renewable Sources;
- National Renewable Energy Action Plan (NREAP) of Georgia;
- Law of Georgia on Energy Efficiency;
- National Energy Efficiency Action Plan (NEEAP) of Georgia 2017-2020;
- Law of National Construction Code;
- Law of Georgia on Energy Labelling;
- Law of Georgia on Energy Performance of Buildings.

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:

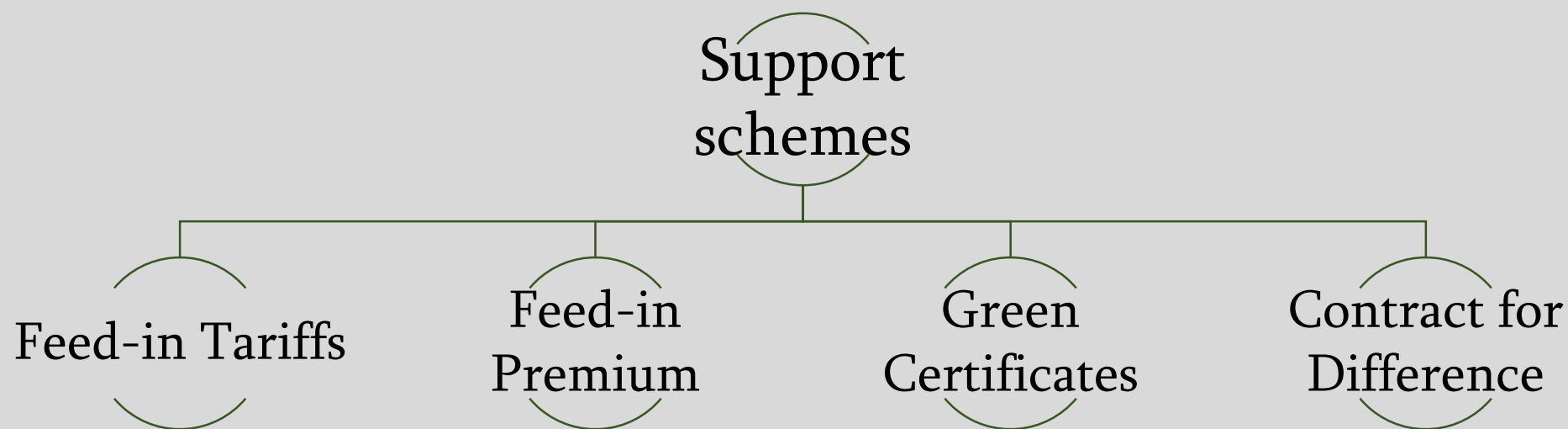
- a) to establish a legal basis for the promotion, facilitation and use of energy from renewable sources;
- b) to set mandatory national targets for the overall share of energy from renewable sources in gross final consumption of energy, as well as in transport.

The share of energy from renewable sources, calculated in accordance with this Law, 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





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In-depth Objectives

Support schemes

Feed-in Tariffs

- Long term agreements
- Guaranteed pricing
- Guaranteed grid access

Feed-in Premium

- Long terms agreements
- Guaranteed pricing
- Guaranteed grid access
- Fixed or floating pricing

Green Certificates

- Tradable commodity
- Proof of RES

Contract for Difference

- Long terms agreements
- Bilateral contracts

Climate Change - Paris Agreement Georgia



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2014	• Ratification of UNFCCC
2015	• INDC submission to UNFCCC
June 2017	• Ratification of climate change issues
By 2020	More Ambitious NDC to be developed

“Climate action plan 2020-2030” is now under preparation

- CAP is a set of strategies intended to guide country and community efforts for reducing GHG emissions
- It will be finalized alongside the submission of the updated NDC.

INDC



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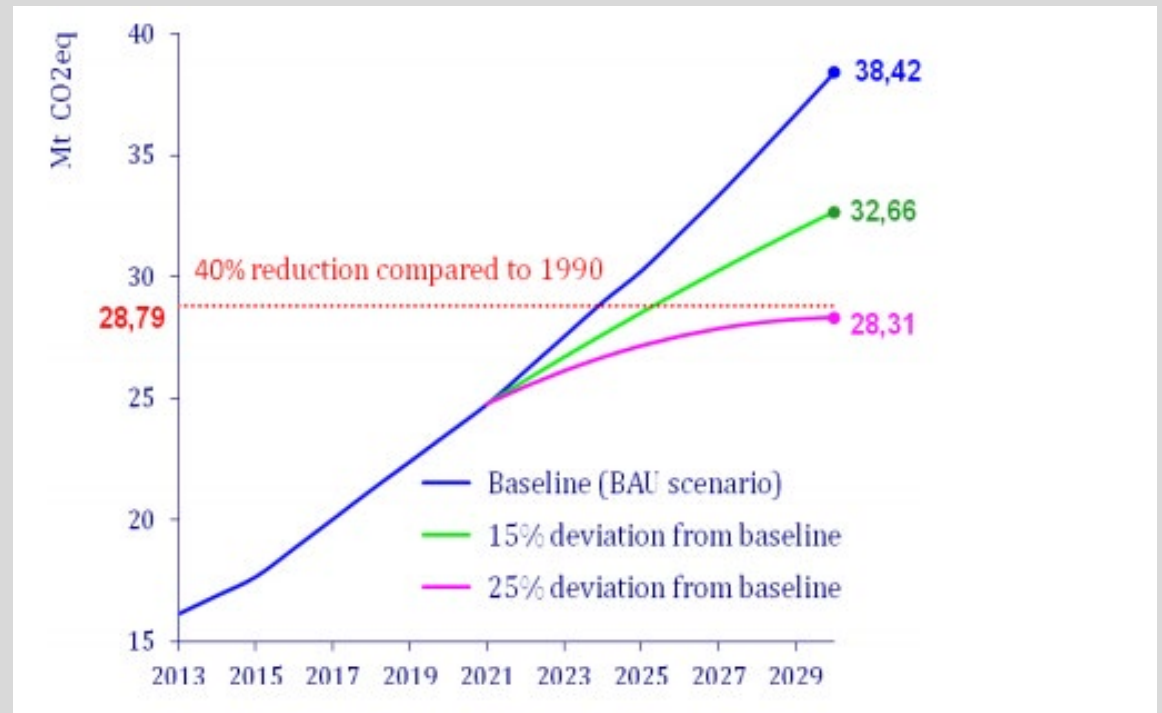
Georgia plans to unconditionally reduce its GHG emissions by 15% below the Business as usual scenario (BAU) for the **year 2030**.

This is equal to reduction in emission intensity per unit of GDP by approximately 34% from 2013 to 2030.

The 15% reduction target will be increased up to 25% in a conditional manner, subject to a global agreement addressing the importance of technical cooperation, access to low-cost financial resources and technology transfer.

This is equal to reduction of emission intensity per unit of GDP by approximately 43% from 2013 to 2030.

The 25% reduction below BAU scenario would also ensure that Georgian GHG emissions by 2030 will stay by 40% below the 1990 levels.





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Thank you for your attention!