

## UNECE Renewable Energy Uptake

# Factsheet: Renewable Energy in Georgia

## Country Overview

### Status of Renewable Energy Deployment

Georgia's total primary energy supply (TPES) amounts to 5.1 Mtoe (2019) and it is dominated by natural gas (45%) and oil (27%), while renewable energy (RE) comprises 20.4% (Figure 1). Georgia's electricity demand is covered mainly by the domestic production of hydro (66%), supplemented by imports (11%) and thermal generation (22%) (Figure 2). The remaining 1% comes from other RE sources, such as wind and solar. Being heavily reliant on hydropower means that the country's RE generation is sensitive to rainfall. In addition to further hydropower resources, Georgia has great potential for solar, wind, and geothermal energy resources, which remain largely untapped.

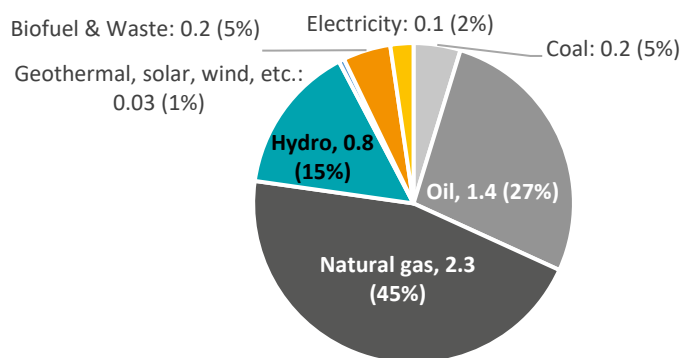


Figure 1. TPES by source (in Mtoe) (Geostat, 2020)

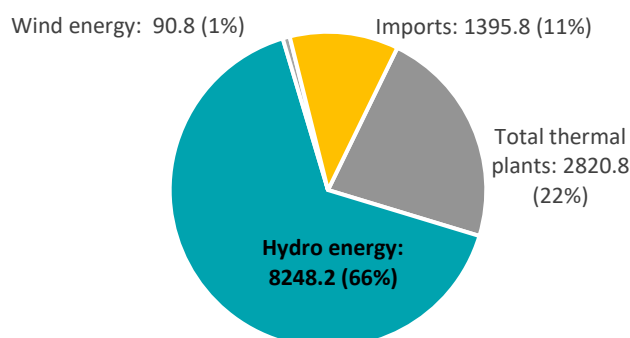
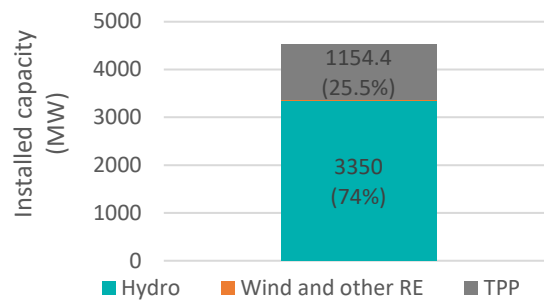


Figure 2. Electricity mix of the country (in mKWh) (ESCO, 2021)

At present, the total installed power generation capacity in Georgia amounts to 4525.1 MW, with (105 operating) hydro power plants comprising the largest share of 3350 MW (74%), 20.7 MW of wind energy (0.5%) and the remaining 1154.4 MW (25.5%) being fossil-based (Figure 3).



**Figure 3. Installed power capacity by source (MoESD, 2021)**

There are currently more than 150 ongoing hydro power projects at various stages of development, as well as further RE projects. Further tapping into those abundant, available and local, RE sources will help meet the rising electricity demand, while improving energy security and climate resilience of the energy system.

### Renewable Energy Potential

Georgia is among the top countries in the world by water resource per capita; 300 out of some 26,060 rivers provide excellent opportunities for hydropower production, while currently only 20-22% of total hydro potential is utilised. Considerable solar and wind energy potential also exists in the country, as summarised in Table 1.

**Table 1. Renewable energy potential in Georgia, 2019**

Technology	Capacity (2019)	Potential Capacity	Production potential
Hydropower	3,600 MW	15,000 MW	50 TWh/year
PV	1 MW	1,500 MW	1,250-1,800 kWh/m <sup>2</sup> /year
Wind	20.7 MW	1,450 MW	4.16 TWh/year

Source: Based on data from Georgian National Energy and Water Supply Regulatory Commission (GNERC, 2021)

### Policy Landscape and Targets

- Georgia is committed to reduce its domestic total greenhouse gas emissions by 35 % below 1990 level by 2030 as part of its Nationally Determined Contributions (NDC).
- According to Georgian Law on the generation and consumption of energy from renewable sources, the share of RE in total final energy consumption should reach 35% by 2030. There are currently nor sector or technology specific RE targets.
- Georgia’s 2030 Climate Change Strategy and 2021-2023 Action Plan (CSAP) includes the following:
  - By 2030, total GHG emissions should be lower than 29.25 Mt CO<sub>2eq</sub>
  - Reduction in emissions per sector: energy generation and transmission: 15%, industry: 5%, and transport: 15% by 2030 compared to business-as-usual.
- The Law on Public Private Partnerships (PPPs) was enacted in August 2018 in Georgia and provides a legal framework for co-operation between public and private partners, providing flexibility and exemptions for the energy sector.

## Support for Renewable Energy

- A Feed-In Premium (FiP) support scheme applies to all RE installations higher than 5MW. Initially, the policy support scheme only applied to hydro power plants. An amendment at the beginning of 2021 made the FiP support scheme applicable to all RE projects higher than 5 MW, not just hydro.
- A net-metering mechanism for self-consumption has been implemented in Georgia since 2016. In summer 2020, the installation limit of net metering mechanism for micro wind, solar, hydro and/or other RE generators increased from 100 kW to 500 kW.
- Policy support for Electric Vehicles (EVs) through tax reliefs and provision of free charging.
- There is currently no policy support for RE in heating/cooling.

## Current RE investments

- Currently, around 156 hydro power plants are in the pipeline at different development stages. Total capacity amounts to 2,792 MW and total investments are over 4.27 bln USD.
- All ongoing and potential projects (hydro, wind and solar) are financed by investors. The government is not financing the construction of power plants.

## HardTalk 2021: Building Support for Renewable Energy Investments in Georgia

### Core Challenges for building support for renewable energy investments

#### *Improving policy landscape*

Investor confidence depends on Government’s commitment to support RE. Establishing mandatory RE targets per technology would provide clear signals to private investors and the financial sector to invest in RE in the country. Furthermore, RE policy support schemes (such as net metering and FiP support mechanisms) could be adjusted to attract more small- and large-scale projects.

#### *Market structure*

To invest in RE, market participants need clear price signals, which, due to the ongoing market reforms, do not exist. Further actions to liberalise the energy market in Georgia through the development of a new market model with transparent and competitive rules, along with the adoption of secondary legislation to increase market attractiveness of renewables would encourage uptake of investments.

#### *Social opposition to hydro power projects*

Social opposition to RE technologies remains a limiting factor to the uptake of RE in Georgia. Completion of an existing 150 projects is currently hindered partly due to local opposition by Non-Governmental Organisations (NGOs) and residents. Developing a better communication and social engagement plan would decrease social opposition and consequently investment risk for developers.

## Key Stakeholders in the Georgian Energy Sector

Institution	Function
Ministry of Economy and Sustainable Development of Georgia (MoESD)	Strategic development of energy sector, state policy in the energy sector as well as policies related to the sustainable development of the country’s economy.

Ministry of Environmental Protection and Agriculture	Development and implementation of national climate change policy and co-ordination of international climate change negotiations.
Ministry of Finance of Georgia	Setting of fiscal policies.
Ministry of Infrastructure and Regional Development	Oversees building energy-related renovation projects funded by different donors through the Municipal Development Fund.
Georgian National Energy and Water Supply Regulatory Commission (GNERC)	Regulatory body for the energy sector.
The State Agency for Oil and Gas	Regulatory body for oil and gas exploration and production.
Parliament of Georgia - Sector Economy and Economic Policy Committee	Oversees energy sector developments through regular or topical hearings with the participation of the MoESD and other stakeholders.
Parliament of Georgia - Environmental Committee	Responsible for environmental impact of energy projects as well as forestry reform (effect on biomass as a fuel).
The Georgian Energy Development Fund	Develops Georgia's renewable energy potential by identifying promising renewable energy projects and supporting their development (pre-feasibility, preliminary environmental impact assessments, and finding investors). State-owned joint-stock company.
JSC Georgian State Electrosystem (GSE)	The Electricity Transmission System Operator acting in Georgia.
The National Forestry Agency	Responsible for managing the Georgian Forest Fund.
The Public-Private Partnership Agency	Adopts primary legislation according to the procedure laid out in the Constitution.
National Statistics Office of Georgia (Geostat)	Official energy statistics.
Georgian Renewable Energy Development Association (GREDA)	Non-profit organization that unifies most of developers in Georgian energy sector to improve investment climate in renewable energy business of Georgia.

## Upcoming HardTalk in Georgia

As part of the UNECE RE-Uptake Project 2021, a “HardTalk” on the uptake, integration & harmonisation of renewables in Georgia will be held with members of the Georgian and international energy community on October 12<sup>th</sup> and 13<sup>th</sup>, 2021. The “HardTalk” is a discussion format on current topics of renewable energy with the objective to identify the best methods for realising the potential of renewable energy in the respective country.

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This publication and associated works of the UNECE RE-Uptake Project was commissioned by the Federal Ministry for Economic Affairs and Energy.



*In cooperation with*

**UNECE:** The United Nations Economic Commission for Europe is one of the five regional commissions under the jurisdiction of the United Nations Economic and Social Council. All activities relating to the Hard Talks are implemented in close cooperation with the UNECE Secretariat.



**Dena:** dena is Germany's centre of expertise for energy efficiency, renewable energy sources and intelligent energy systems. As the "Agency for the Applied Energy Transition" it contributes to the attainment of energy and climate policy objectives. DENA develops solutions and put them into practice, both nationally and internationally.



**REN21:** REN21 is the global community of renewable energy stakeholders from Science, academia, governments, NGOs and industry. They provide up-to-date facts, figures and peer-reviewed analysis on global developments in technology, policy and markets, to inform decision makers.



**MoESD:** The Ministry of Economy and Sustainable Development of Georgia (MoESD) is a ministry of the government of Georgia responsible for the state policy in the energy sector and is a close country partner for the UNECE RE-Uptake Hard Talk in Georgia.

