



SDG LENS

Monitoring Sustainable Development
in Eastern Europe & South Caucasus



**SPOTLIGHT REPORT ON THE IMPLEMENTATION
OF SDG 6: CLEAN WATER
AND SANITATION
AND SDG 7: AFFORDABLE
AND CLEAN ENERGY
IN GEORGIA**

BY EXAMPLE OF GURIA REGION

6 CLEAN WATER
AND SANITATION



7 AFFORDABLE AND
CLEAN ENERGY



AUTHOR:

Vakhtang Kochoradze



This publication was produced as part of the program **SDG LENS. Monitoring Sustainable Development in Eastern Europe and the South Caucasus**. SDG LENS is a capacity-building program for civic actors, representatives of NGOs and grassroots initiatives, researchers and experts from Armenia, Azerbaijan, Belarus, Georgia, Moldova, and Ukraine. It empowers civic actors to monitor, report and advocate the 2030 Agenda and to stand up for peace, climate and justice.

With support of:



Georgia, 2023

CONTENTS

1. Introduction	2
2. Objective of the Report	2
3. Methodology	3
4. Clean Water and Sanitation for All – SDG 6	4
4.1 Abstract	4
4.2 Background Information	4
4.3 Major Challenges in Water Provision	7
4.4 Recommendations to the state from civil society for the implementation of SDG 6	9
4.5 Recommendations to Civil Society	10
5. Affordable and Clean Energy - SDG 7	10
5.1 Abstract	10
5.2 Background Information	10
5.3 Major Challenges in the Energy Sector	13
5.4 Recommendations to the state from civil society for the implementation of SDG 7	15
5.5 Recommendations to Civil Society	16
6. Sources	16
Clean Water and Sanitation for All - SDG 6	16
Affordable and Clean Energy - SDG 7	18

1. INTRODUCTION

In September 2015, the United Nations approved the 2030 Agenda for Sustainable Development. The agenda calls for action from all countries, wealthy and poor and it comprises 17 SDGs (Sustainable Development Goals) and 169 targets. Since this time, Georgia and its national authorities have been responsible for executing the SDGs and contributing to global progress in the economic, social, and environmental areas of sustainable development. As this process advances towards implementation, the scale and systemic character of the 2030 Agenda, as well as the urgency of the difficulties that arise, must be addressed on a continuous basis.

Georgia adapted its SDG targets and indicators to the country's context, and the process of nationalizing all 17 SDGs had been completed by 2019. The Administration of the Government of Georgia is the principal authorized entity for implementing the SDGs.

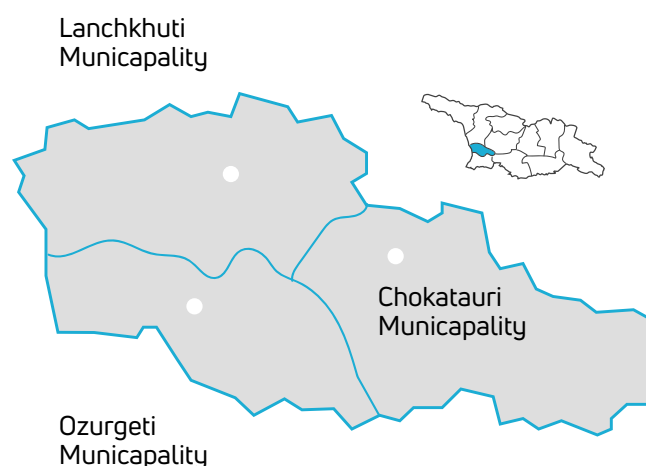
Georgia, one of the first twenty-two nations to present the Voluntary National Review (VNR) for attaining the SDGs in July 2016 and 2020, has achieved progress in terms of implementing, reporting, and monitoring the SDG targets, but the country is still confronted with substantial political and economic difficulties (20% of its territory is occupied by Russia). It is necessary to conduct and communicate data-driven progress and challenges (qualitative and quantitative) to stakeholders, such as policymakers, academia, governmental organizations, civil society, non-profit organizations, and others. Government entities, businesses, and the general public who are not familiar with the SDGs may be reoriented and encouraged to improve and speed up progress towards the set indicators by following data-driven choices that can be broken down at the regional level.

2. OBJECTIVE OF THE REPORT

The objective of the report is to identify current challenges and develop respective recommendations to accelerate Georgia's progress towards:

- SDG 6 - Clean Water and Sanitation.
- SDG 7 – Affordable and Clean Energy.

The report will also highlight conditions and provide recommendations for Georgia's Guria region:



3. METHODOLOGY

CENN, a Georgian NGO, prepared the current spotlight report. In respect to SDGs 6 and 7, the paper examines official government documents, action plans, policies, and studies by Georgian think tanks, international donors, and regional non-governmental organizations (NGOs). Stakeholders from the Guria region were interviewed and surveyed. In addition, acquired official quantitative data was compared to nationalized SDG 6 & 7 indicator targets. The analysis serves as the basis for the identification of challenges and the development of recommendations to achieve the Sustainable Development Goals. The following are the principal working methods:

A) Desk Research

(see full literature and online sources in References at the end of this document):

- Voluntary National Reviews of Georgia (2016 and 2020).
- Vision 2030 – Georgia’s Development Strategy.
- National Document of Sustainable Development Goals.
- Energy Policy Concepts of Georgia 2020.
- Sustainable Rural Energy Solutions and Decisions.
- 2022-2026 National Environmental Action Plan of Georgia.
- Sustainable Energy Action Plan 2019.
- Water Policy Analysis and Recommendations for the Central Government of Georgia.
- Media Reports.
- National Energy and Climate Plan, 2022, MoESD & MEPA
- Action plans and strategies of Guria Municipalities, etc.

B) Surveys and Consultations with Relevant Stakeholders:

- ‘Guria Development Union’ (GDU).
- Innovation and Civil Development Center - ‘Progress House’.
- Women for Regional Development.
- Guria Civic Center.
- ‘Student-Youth Council’.
- N(n)LE Young Pedagogues Union.
- Expert interviews.

C) Solicited Data Analysis from the Following State Entities:

- City Hall of the Municipality of Lanchkhuti.
- City Hall of the Municipality of Ozurgeti.
- City Hall of the Municipality of Chokhatauri.
- Georgian National Energy and Water Supply Regulatory Commission (SEMEK).

D) Analysis of A, B and C and Identification of Challenges and Development of Recommendations for SDG 6 and SDG 7 in Georgia.

4. CLEAN WATER AND SANITATION FOR ALL – SDG 6

4.1 ABSTRACT

Georgia has abundant water resources. However, the distribution of water bodies in the country is asymmetric. In addition, the water supply infrastructure has to be repaired, and new water sources must be explored. As Georgia assumes EU obligations and works to achieve SDG 6 targets, multiple initiatives are required to provide access to water, sanitation, and hygiene. This study describes the complex situation in the water sector, identifies underlying water supply challenges in Georgia and the Georgian region, Guria, and proposes solutions.

4.2 BACKGROUND INFORMATION

Georgia's population is 3.6 million, with per capita access to 15,832 m³ of sustainable freshwater resources annually. Water distribution varies throughout the nation, with West Georgia collecting 75% of surface water resources (49.8 billion m³) and East Georgia collecting 25% (16.8 billion m³). About 63% of groundwater resources are in West Georgia, 24% in East Georgia, and 13% in the south. Transboundary waters account for 14% of surface waters.¹ Water resources are utilized in domestic use, agriculture, energy production, manufacturing, and recreational use. Currently, agriculture is the greatest water consumer in Georgia (ibid).

Georgia signed the 'Georgia-EU Association Agreement (AA)' on June 27, 2014 and this entered into force in 2016.² This agreement requires Georgia to implement reforms and align its legislation with up to 300 European Union legal acts, including those related to environmental protection and sustainable development. The AA encompasses up to 96% of the nationalized SDG objectives, including water directives, imposing a dual obligation on the Government of Georgia (GoG) to meet the SDGs and AA indicators.³

The objectives set out in the nationalized SDG 6 indicator are:

- **6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all.**
 - 6.1.1 Increasing the number of registered water users (According to the existing legal framework, registration as a water user denotes access to safely managed drinking water).
- **6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.**
 - 6.2.1 Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water.⁴

Within the reforms and set indicators and the objectives set in the AA, the Ministry of Environmental Protection and Agriculture of Georgia (MEPA) has developed a new draft law on water, which is in compliance with the EU Water Framework Directive and is based on the principles of an integrated management of water resources. Unlike the current water law, the new draft water law regulates all types of water resources – surface, underground, coastal and transitional waters – and introduces watershed management principles. However, the new law is yet to be adopted by the Parliament of Georgia.

The water and wastewater industries in Georgia are decentralized. Water and wastewater services must be provided by municipalities within their administrative limits. However, the majority of them just supply water to their communities. There are instances when water is supplied by companies that are mainly legal entities founded by municipalities, unlicensed, and not subject to the regulations of the National Energy and Water Regulatory Commission of Georgia (hereafter 'SEMEC'). In terms of observing the quality and quantity of the water, according to NEAP 4⁵, the monitoring network will be expanded. The number of quality monitoring sites for surface water bodies will be increased from 201 to 240 by 2026. Furthermore, the number of quantitative and qualitative monitoring points for underground water bodies will be increased from 56 to 76. As for the expansion of the hydrological monitoring network, by 2026 the number of hydrological monitoring points will increase from 68 points to 112 points. Employee capability in terms of water body categorization will also be strengthened (ibid). However, it must be noted that according to results of the drinking water quality monitoring, about 45–47% of water samples tested between 2014 and 2017 did not meet the standards of the Technical Regulation for Drinking Water⁶. Almost 60% of samples from the Guria region failed to meet the standards for drinking water, which was a particularly high level of noncompliance (ibid). Furthermore, according to the city halls in the Guria region, only about 17% of the settlements have a drinking water quality monitoring system.

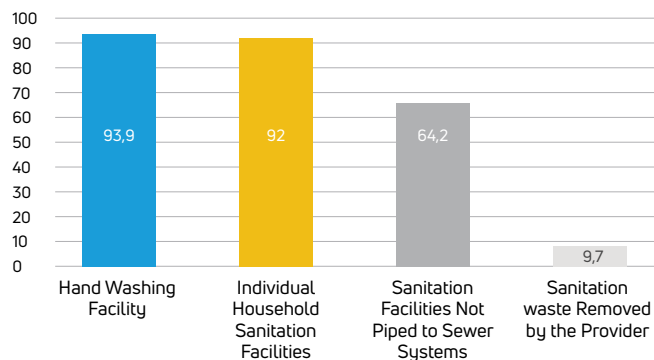
Percentage of noncompliant drinking water samples by regions:

Regions	2014		2015		2016		2017	
	Total Samples	Incompliant samples in %	Total Samples	Incompliant samples in %	Total Samples	Incompliant samples in %	Total Samples	Incompliant samples in %
Mtskheta-Mtianeti	67	56,7	32	56,3	40	40,0	44	54,5
Kakheti	85	58,8	51	58,8	58	63,8	51	49
Shida Kartli	77	45,5	31	58,1	45	57,8	42	42,9
Kvemo-Kartli	64	31,3	39	41,0	60	28,3	54	24,1
Samtskhe-Javakheti	59	40,7	36	58,3	44	52,3	46	15,2
Tbilisi*	59	3,4	56	1,8	22	4,5	22	4,5
Guria	28	57,1	26	61,5	13	53,8	23	78,3
Racha-Lchkhimi, Kvemo Svaneti	29	65,5	42	59,5	13	76,9	24	79,2
Imereti	126	32,5	158	39,2	63	52,4	97	57,7
Ajara AR	91	60,4	114	56,1	40	50,0	59	39
Samegrelo-Zemo Svaneti	82	40,2	100	16,0	41	26,8	58	20,7
Total	787	44,9	695	42,7	454	47,4	530	42,6

Source: MEPA

As the VNR 2020 reports, from 2015 to 2018 access to the installed water supply system increased by 8%. This progress is clearly seen in the latest available statistics from 2021, where the percentage of the population connected to the water supply system was the highest since the independence of Georgia, standing at 71%. In terms of sanitation, as reported in 2018 Findings of the Multiple Indicator Cluster Survey (MICS) in Georgia, the data is the following⁷:

Adequate and Equitable Sanitation and Hygiene



The share of the household population with a hand-washing facility on the premises with soap and water, or another hand-washing facility: 93.9 %.

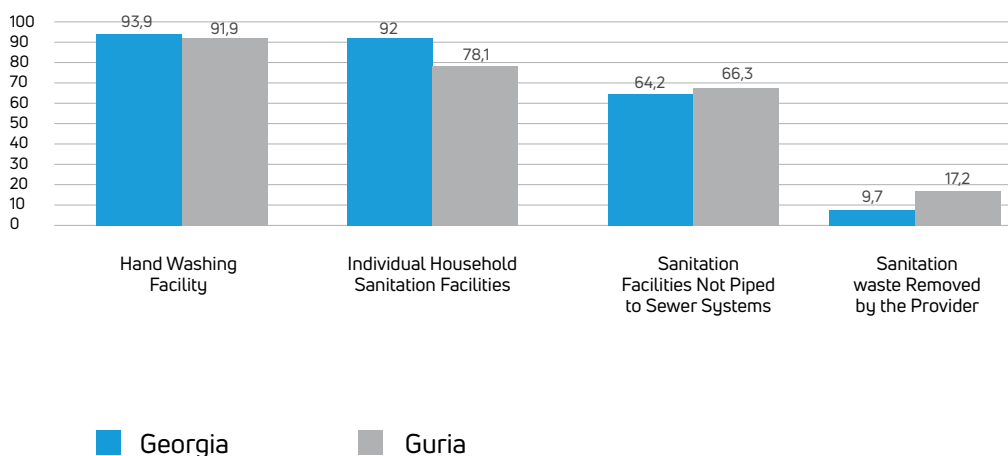
The share of the household population using improved sanitation facilities which are not shared with other households: 92 %.

The share of the household population using improved sanitation facilities that are not flushed or pour-flushed to a piped sewer system, and whose waste is never emptied into a closed pit: 64.2 %

The share of the household population using an improved sanitary knot that are not flushed or pour-flushed to a piped sewer system, and whose waste is emptied and removed by the provider for recycling: 9.7 %

However, these statistics are aggregated and include the capital of Georgia, Tbilisi, where about one third of the total population resides. If we remove Tbilisi, the percentages are different, compared to the Guria region of Georgia:

Adequate and Equitable Sanitation and Hygiene (Georgia / Guria)



Another discrepancy, among many, is the access to piped water. Tbilisi has piped water in 96.2% of dwellings compared to the Guria region, where it stands at 60%.

According to SEMEC⁸, in 2021, the average water supply in the region of Guria amounted to 20 hours per day. It must be noted that in many villages of Guria, the hours of water supply are much less. As reported by the city halls of the Guria region, only about 27% of the whole population receive water for 24 hours on average.

4.3 MAJOR CHALLENGES IN WATER PROVISION

Challenges in the Legal Framework

The Local Self-Government Code of Georgia states that, in light of experience in the EU, water delivery has been solely the duty of the municipality since 2014. The essence of this experience is that there is a divide between the responsibility for the water supply, which is assumed by public authorities, and the function of supplying water and services, which is fulfilled by the licensing company. In accordance with this standard, the government was required to draft the relevant legislative acts by July 1, 2015, for the Parliament's approval, to set the terms of the legal partnership between the municipality, SEMEC, and the water providing company. But this commitment has not been met by the government. As a result, the municipality is currently responsible for providing water, but there is no legal foundation for its execution. In places where there is no licensed company to deliver water to the community, the only option for settlement to have access to water is through the funds of state-owned institutions, which frequently lack financial resources.

At the local level in Guria, the regulatory papers have deficiencies, such as the lack of a strategy or action plan to address the issue of surface water contamination.

Challenges in Capacity Development

The GoG is undertaking reforms and providing increased financial assistance that focuses on the development of the water supply and the agricultural sector⁹. Due to a lack of political mechanisms, there is a lack of efficient water management; at the same time, the government has a duty to deliver clean water to cities, towns, and villages, in addition to the growing water resource needs in the agricultural sector. This has resulted in an increased water supply in the country, but has also resulted in significant water losses. In 2021, the land area with access to irrigation amounted to 203, 622 ha, which is 144,410 ha more than in 2012 (ibid); according to Geostat, the water supply in 2021 equaled 931.5 m³, the highest since 2015, but losses in water system transportation was 677.9 m³, which is a 72.7% loss, compared to 65% in 2020. In general, between 2015 and 2021, water losses on average amounted to around 70%.

Access to safe drinking water 24/7 is crucial, but many towns and regions in Georgia struggle with their water supply due to their outdated infrastructure and low sanitary dependability. Most water supply and sewage systems were built in the 1970s and have not been updated since, resulting in sporadic, polluted, or limited water delivery, even in well-supplied cities like Tbilisi. While 92% of the city population and 64% of villages have access to piped water, only 20% of rural and 84% of urban populations have access to sewage systems. The majority of wastewater treatment plants are non-functional, causing the pollution of water bodies. The country urgently needs to improve its WASH standards.

Furthermore, as previously noted, SEMEC does not regulate many of the municipal water-providing companies in the regions, raising concerns about the safety of drinking water. This claim is bolstered by NGOs reporting polluted water in various parts of Georgia where the quality of the water does not meet technical national specifications. The VNR 2020 reports that about 25% of the population use water sources contaminated with E. coli and 41% of 2 to 7-year-olds suffer elevated blood lead levels. Guria is no exception. The water supply system in administrative buildings in the central part of urban centers has been improved. However, there is no permanent water supply system in public schools, ambulatory centers, and kindergartens, and the sanitary condition of water is not controlled and monitored. Like in educational and medical institutions, in the villages of Guria there is no water supply with a proper water distribution system, especially in terms of drinking water. The population primarily uses individual sources for their water supply, which is unsustainable and, due to seasonal changes, they may not meet the population's needs, both for daily consumption and drinking.

The existing rate for water supply and drainage services cannot fully finance the operational costs of municipal water supply companies, which is why the state subsidizes these firms, not to mention their funding of current and future investments. The current low water tariff frequently leads to excessive water consumption, as well as increased water losses, resulting in financial liabilities. Non-residential (commercial) customers pay much higher rates than residential consumers, which can have a negative economic impact since their financial burden increases, reducing their competitiveness.

Furthermore, according to Geostat, the number of people migrating from rural to urban areas has been increasing over the previous decade. The improved indicator of populations linked to a piped water supply with complete access to water can be attributed to demographic shifts, which require more research and elaboration.

Water Quality Monitoring

Georgia's Ministry of Environmental Protection and Agriculture (MEPA) conducts state-wide drinking water quality control. Accredited laboratories conduct a quality assessment on the samples supplied. At the end of each quarter, the findings of drinking water quality control and the water supply service quality monitoring register are transmitted to Georgia's National Energy and Water Supply Regulatory Commission. Regular monitoring of water resources is still not possible in Georgia, due to a lack of finance, a shortage of accredited laboratories, a lack of testing equipment, etc.¹⁰

The quantity of samples tested across the country over the years is insufficient to manage the quality of drinking water, establish a comprehensive database, and accurately reflect the situation.

In the Guria region, surface water pollution has not been analyzed. However, visual observation clearly shows the degree of pollution, which is primarily caused by sand and gravel extraction by companies near the main water headworks buildings. Groundwater levels are also reduced, which are also polluted by the local population with household waste.

Ground waters, supplying the individual water sources for drinking, hygiene and agricultural purposes, are also one of the main reasons why the population consumes contaminated water. The reason for this is the close proximity of ground waters to the surface.

What is more, due to ground waters being present close to the surface, waste from animal husbandry is often mixed with sources of drinking water.

4.4 RECOMMENDATIONS TO THE STATE FROM CIVIL SOCIETY FOR THE IMPLEMENTATION OF SDG 6

- Georgia has both degraded infrastructure and locations with no network/infrastructure. Therefore, depending on the quality of the infrastructure development, there is a need for both competent management and for physical infrastructure construction/rehabilitation. The coverage area of licensed water supply businesses and the quality of service in rural regions should be increased. The water supply and drainage networks must also be repaired and expanded.
- To ensure that water resource management in Georgia is based on modern approaches, the Ministry of Environmental Protection and Agriculture of Georgia should adopt a new draft water law that is compliant with the EU Water Framework Directive and is based on the principle of integrated water resource management. The new water bill governs all water resources, including surface, groundwater, coastal, and transitional waters. River basin management is included in the bill. In addition, the draft water law incorporates the idea of water status, which, unlike the present law, considers not only the physical and chemical features of water bodies, but also their biological and hydromorphological indicators when assessing the condition of water. The proposed law also establishes the fundamental principles of water resource preservation and management, as well as the implementation of a system of water usage licenses. The new law would also establish a taxation system for water withdrawals, impacting the financial side of the system, which does not currently exist.
- Water suppliers should have emergency plans that can be implemented in case of an emergency. These plans should take into account probable natural hazards (e.g. earthquakes, floods, lightning damage to electrical equipment), accidents (e.g. spills in the watershed, power outages), and damage to the treatment plant and distribution system. Emergency plans should clearly define who is responsible for coordinating steps, a communication strategy to notify and educate consumers of the drinking water supply, and procedures for delivering and distributing emergency drinking water.
- In Guria, to ameliorate the situation, vital technologies and infrastructure, such as water reservoirs and water delivery systems, must be improved. Local requirements must be addressed because priorities, and as a result resources, are frequently mismanaged. The local budget is insufficient to meet challenges of this nature, and substantial support from the central government is necessary.
- It is recommended that priority is given to establishing water supply networks in villages of Guria, where ground waters are closest to the surface (Lower Guria).

4.5 RECOMMENDATIONS TO CIVIL SOCIETY

- It is critical to strengthen the process of public participation in draft legislation and statutory documents, as well as to ensure public participation in local water supply concerns.
- It is important to raise awareness among the population of Guria (and Georgia) on water access and sanitation. In this respect, teacher training and the delivery of informative and educational resources to schools and administrative centers is imperative.
- The implementation of infrastructure projects in coordination with local municipalities is essential to increase access to water.

5. AFFORDABLE AND CLEAN ENERGY - SDG 7

5.1 ABSTRACT

Georgia is an energy importer, with an 80% reliance. Because of their inadequate infrastructure and low income, the majority of communities rely on firewood, which exacerbates pressures on degraded forests and raises the danger of energy poverty. Despite the country's abundant hydropower potential, little progress has been made towards more HPP development. Access to renewable energy continues to be one of the means of diversifying the country's energy portfolio while alleviating poverty. This report underlines the key legislative trends towards Western institutions, as well as the lingering issues and potential solutions that would entail further resource allocation in the energy sector. In addition, there is a focus at the regional level in Guria, where the majority of the country's general problems remain.

5.2 BACKGROUND INFORMATION

Following Georgia's signing of the Association Agreement with the EU in 2014 and the signing of the Accession Protocol to the Energy Community Treaty by the former Georgian Ministry of Energy, reforms in the energy sector were initiated, eventually resulting in the adoption of the Law on Energy and Water Supply and the Law in Support of Renewable Energy Sources in December 2019. Furthermore, Georgia nationalized the SDGs, including SDG 7, and joined the Paris Agreement, accepting responsibility for Nationally Determined Contributions. This signifies a strong commitment by the Georgian government to assist the development and efficiency of the renewable energy sector.

The reforms stated above led to the following objectives to be achieved by 2030:

- Population with access to electricity: 100% (SDG 7);
- Population with primary reliance on clean fuels and technology (SDG 7);
- 75% of the population to have access to natural gas in 2030;

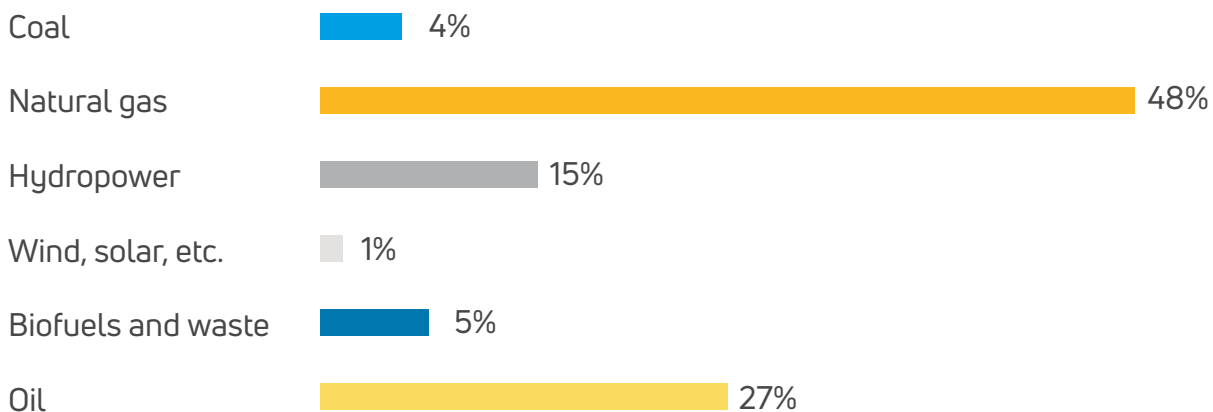
- Renewable energy share (hydro, geothermal and solar, biofuels and waste) in the energy mix will equal approximately 30% by 2030;
- Energy intensity will equal 5.787 (According to prices in 2014);
- Reduction of GHG emissions to 35% below 1990 level (NDC).

According to the VNR 2020, 100% of the population has access to electricity, and 99% are connected to the power grid¹. In 2022, the balanced electricity price was 5.7 US cents, representing a 5.5% yearly rise, while the exported electricity price was 8.7 US cents².

In 2020, Georgia’s energy output covered just 21.1% of total energy consumption, leaving the country significantly reliant on energy imports³. In Georgia, hydropower plants (HPPs) produced about 74.7% of the state’s electricity in 2020, whereas thermal power plants (TPPs), which depend on imported gas, produced 24.3% of the state’s electricity and about 1% was produced by solar and wind power (ibid). In 2020, natural gas accounted for over half of the total domestic energy supply (48%). Georgia imported 99.7% of its natural gas in 2020, making the country completely reliant on gas imports⁴. The energy supply of Georgia consists of hydropower, gas, oil, biofuels, wind, and solar energy sources ([EIA Georgia](#)).

The total share of renewable energy was 21%:

Total energy supply (TES) by source, Georgia, 2020



Source: IEA

In rural areas, fuelwood is the primary source of heating. The majority of wood for fuel is collected in an unsustainable and inefficient manner, surpassing the yearly optimal amount of firewood resources to be extracted, resulting in forest loss and associated environmental concerns⁵. Firewood allocated by Georgia’s National Forestry Agency covers approximately 25% of overall demand, implying that the majority of firewood is of unknown origin, indicating that the majority of firewood extraction is due to illegal logging (ibid). As a result, the Georgian government implemented a gasification initiative between 2019 and 2021, enabling a considerable number of rural homes to transition to gas. GEL 209 million (about EUR 60 million in 2021) was allocated from the state budget with the goal of gasifying an additional 58,894 subscribers in the country’s 223 settlements. Accordingly, more than 1.3 million subscribers (85% of subscribers in the residential sector) had a natural gas supply by 2021⁶, one of the highest in Europe.

In line with the main directions of state policy in the Energy Sector, a draft of Georgia’s Energy Strategy for 2020-2030 was prepared in 2020, describing Georgia’s energy situation, its goals, challenges, and solutions. The document states that the growth of the energy sector must take renewable energy into consideration, highlighting the importance of promoting the value chain development of forest and agricultural biomass residues/waste in the context of renewable energy and sustainable firewood collection and consumption. The Ministry of Economy and Sustainable Development of Georgia also accepted the National Renewable Energy Plan (NREAP) at the end of 2019, which for the first time acknowledged firewood as a significant energy resource, while biomass utilization was declared part of the country’s energy policy⁷.

The EU produced a guideline document on integrated NECPs (National Energy and Climate Plan) for EU member states as part of the 2015 report on the State of the Energy Union, of which Georgia is also a member. The NECPs will minimize administrative costs, promote transparency, and ensure investor engagement in the Plan’s activities up to 2030 and beyond. The NECP defines the goal indicators, and initiatives to promote energy security, develop the energy market, increase energy efficiency, decarbonize the economy, and encourage research and innovation⁸.

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 TWh/m ² /year
Wind	20,7 MW	1,450 MW	4.16 TWh/year

Source: UNECE Renewable Energy Uptake⁹

In Guria, the hydroelectric power sector is not efficiently using the energy potential of water resources. The region’s geographic location and climate conditions allow for the construction of small cascading hydropower plants on Guria’s rivers with a total capacity of 80-100 MW, which could be used to meet the region’s energy needs. It should be noted that 100% of the Guria region has access to electricity with 24-hour service and about 85% is gasified.

Winds in the Lanchkhuti Municipality of the Guria region satisfy the criteria for wind resources appropriate for use as an energy source in terms of direction, speed, and duration. A wind turbine may run for 127 days per year on average. Solar energy may be used to produce hot water in small hotels, public buildings, and individual homes. In terms of energy generation, the region has yet to fully use its natural resources of biogas, biomass (hazelnut waste and sawdust), and thermal water.

5.3 MAJOR CHALLENGES IN THE ENERGY SECTOR

Following Russia's war on Ukraine, the European Union illustrated how risky it can be for a nation's economic development to rely largely on one country to meet its energy needs, and what significant challenges are associated with achieving the goal of energy security when you are mostly dependent on one state for the supply of key energy products. In that light, Georgia imports a substantial amount of natural gas from Russia and Azerbaijan to satisfy its energy demands. In 2021, the total gas imported amounted to \$333 million, with Azerbaijani gas accounting for \$256 million and Russian gas accounting for \$77 million. When demand exceeds local production, the nation imports power from Russia and other neighboring countries. This reliance on energy imports has raised concerns about the security and stability of energy supplies.

Imports allocated per nation as of 2021 were as follows:

- Imports from Russia (for the Russian-controlled Georgian region of Abkhazia): 992 million kilowatt hours, 49.7% of imports;
- Imports from Russia (for the rest of Georgia, for which Georgia paid): 253 million kilowatt hours, 12.4% of imports;
- Imports from Azerbaijan: 600 million kilowatt hours, 29.9% of imports;
- Imports from Turkey: 161 million kilowatt hours, 8% of imports¹⁰.

What is more, energy consumption has increased by 5% on average over the last 10 years. Furthermore, some regions of Georgia receive subsidies, resulting in excessive usage of inexpensive power for business, further boosting demand for electricity. The generation of power in Georgia has increased by 2% on average over the last ten years.

In settlements that already have a natural gas supply, still gas consumption for heating is quite low, which is due to the inexpensive price of firewood in comparison to gas. Furthermore, in municipalities in which the population density and actual number of residents are low, the economic viability (cost-effectiveness) of gasification is not assured¹¹. Without emergency assistance programs, gasification remains a practically unmet aim as a means of reducing pressure on forests.

According to the VNR 2020, the increased access to a wider range of energy sources in Georgia is contributing to a reduction in energy poverty in the country. However, approximately 75% of buildings in Georgia do not meet energy efficiency standards, resulting in increased energy consumption and utility costs that double during the winter¹². As a result, many communities are unable to pay their taxes. Inexpensive and easily accessible firewood remains an alternative, increasing pressure on forests, which is exacerbated by energy-inefficient wood burning stoves, whose coefficient of efficiency does not surpass 35%, resulting in extensive consumption of firewood (CENN, 2021). Consequently, the state of Georgia's forests has deteriorated dramatically as a result of the excessive collection of timber resources (for firewood or commercial uses). Natural disasters, and environmental, socioeconomic, and energy threats have grown as a result, while the state budget has decreased. To summarize, this is due to the low price of firewood, which is primarily used for heating; a lack of alternative energy resources; a lack of awareness; the improper use of firewood (using damp firewood); energy-inefficient wood-burning stoves; energy-inefficient buildings; a lack of monitoring and enforcement in forests; illegal logging; and incomplete data on forest condition.

In addition to this, there is limited purchasing power in rural regions, as well as higher costs for renewable energy compared to older technologies. While there are currently various programs that allow for the purchase of solar water heaters or PVs (for example, 'Energocredit'), communities either do not have the necessary information or are unable to access preferential loans for other reasons. This issue is also related to developing awareness, since it is critical to realize that the running costs of energy-efficient technologies are relatively cheap, and that utilizing them would greatly reduce energy bills in the long term.

Another critical factor is the absence of national certification and testing regulations. The technologies that are constructed in Georgia are not examined in a specialist facility, and as a result, no national standard certification is given.

The Law on Promoting the Generation and Consumption of Energy from Renewable Sources explicitly mentions biomass as a renewable energy source. Unlike other renewable energy sources, however, methods and strategies to encourage sustainable biomass production and usage must be designed.

In Georgia, about 300 of the approximately 26,060 rivers provide excellent opportunities for hydropower production, whereas only 20-22% of overall hydro potential is being used.

Specific Challenges in Guria

In both towns and villages, the availability of electricity is 100%. The issue is the energy infrastructure, which is often in poor condition and is being maintained by the populace, posing a risk to public safety.

Gasification remains a challenge in Guria. One issue is that the whole region is not yet gasified; the other is that the majority of the population, especially in the rural areas, still uses firewood and refuses to use gas.

The main challenge is to improve energy efficiency and use renewable energies. Small steps have been taken towards this, such as the use of energy-efficient lamps for outdoor lighting, a single PV system installment and small-scale awareness raising. However no large-scale effective improvement involving the utilization of renewable energy resources has taken place.

As previously stated, there is a mismatch between firewood allocation and demand. According to the National Forest Agency, the official amount of firewood authorized for Guria in 2016 was 14,457 m³. Nevertheless, according to the [Assessment of Firewood Consumption and Firewood Production Potential in Georgia \(CENN & IUCN, 2016\)](#), the actual firewood demand for the same year was 158,396 m³, 143,939 m³ more than officially allotted. This trend has not changed subsequently, as evidenced by aggregated data from several pieces of research. Moreover, a protected area is to be established in Guria, limiting access to woods even further. Such a supply-demand mismatch will increase the danger of energy poverty connected with heating, cooking, and so on.

One of Guria's municipalities (the city hall of Ozurgeti) supplied very little information and data concerning water, electricity, and gas, calling into doubt their monitoring and control capacity and, as a result, how they might proceed towards attainment of the SDG.

5.4 RECOMMENDATIONS TO THE STATE FROM CIVIL SOCIETY FOR THE IMPLEMENTATION OF SDG 7

- It is critical to strengthen energy security levels. To minimize Georgia's reliance on imported gas, it is vital to promote local renewable energy generation and boost the energy efficiency of existing thermal facilities.
- With Georgia's potential to boost its energy output through HPPs, it is essential to ensure effective and informative communication, transparency, and early community involvement in infrastructure development. HPP design and management should be in line with basin management guidelines that correspond to EU directives. This approach has the potential to lessen local resistance and misinformation, both of which pose challenges to the development of HPPs.
- Accelerate the adoption of energy efficiency regulations and support programmes that will incentivize companies, households, and the rest of the commercial sector to make use of more energy-efficient technologies. Plan for the energy demand using smart networks and meters, and incentivize the use of green architecture to construct more energy-efficient buildings in order to help solve problems of increased energy use.
- With the collaboration of the Ministry of Environmental Protection and Agriculture and the Ministry of Economy and Sustainable Development, ensure that public institutions (including local municipalities) that use firewood prioritize green procurement in the form of alternative fuel derived from waste biomass. This can be helped along by the development of heating resource provision programs, which focus on the development of the entire chain of production, and the use of solid biomass as a heating resource, including the collection and processing of waste biomass and the production of energy products (pellets, briquettes, chips, etc.).
- Assure that the price of wood, particularly commercial firewood (firewood used for a commercial purpose), corresponds to its true value. The biomass waste price, which is currently more expensive than live trees with significantly more economic value, should also be changed. It is advisable to establish an optimal price for extracting solid biomass out of forest fund lands, which will contribute to the utilization of this resource and the development of the ecological condition of the forest. At the same time, the Department of Environmental Supervision should enforce rigorous controls on illegal firewood use.
- It is advisable to facilitate technological improvements in the efficiency of firewood utilization (i.e. energy-efficient stoves), and promote bioenergy plantations for long-term energy development.

5.5 RECOMMENDATIONS TO CIVIL SOCIETY

- The coordination between non-governmental and donor organizations should be strengthened for their joint effort to support the development, production and use of energy-efficient wood stoves in the Guria region.
- Local and national non-governmental organizations should conduct educational campaigns about the sustainable use of wood resources, sustainable biomass energy resources, and the benefits of energy-efficient wood-burning stoves, as well as the anticipated increase in wood costs.
- NGOs and donor organizations, in coordination with municipal authorities, should facilitate the delivery of energy-efficient and renewable energy technologies to communities in Guria as well as to public buildings (i.e. schools and kindergartens).
- Meetings should be arranged with the goal of incorporating the development of sustainable biomass energy resources (briquettes, pellets, chips), energy-efficient (stoves, thermal building insulation, green architecture), and renewable energy technologies (solar water heaters, PVs) into state policy priorities and developing effective mechanisms to facilitate this process. It is recommended that the meetings involve key decision makers, representatives of the private sector, and energy experts.
- There should be a promotion of financial incentives or grants to enhance access to energy-efficient technologies.

CLEAN WATER AND SANITATION FOR ALL - SDG 6 FOOTNOTES

1. Georgia's Environmental Outlook (GEO), Management of Water Resources in Georgia, 2019, https://geo.org.ge/wp-content/uploads/2020/12/Annex-VIII_Brochure_GEO.pdf
2. EU/Georgia Association Agreement https://www.eeas.europa.eu/delegations/georgia/eugeorgia-association-agreement_en
3. Administration of the Government of Georgia, Voluntary National Review, 2020, https://sustainabledevelopment.un.org/content/documents/26390VNR_2020_Georgia_Report.pdf
4. Administration of the Government of Georgia, Statistical Annex, Voluntary National Review 2020 Georgia, https://hlpf.un.org/sites/default/files/vnrs/2021/26391Statistical_Annex_Georgia.pdf
5. MEPA, The Fourth National Environmental Action Programme of Georgia for 2022-2026, <https://eiec.gov.ge/En/ActionPlans>
6. National Report on the State of the Environment of Georgia, 2019, MEPA <https://mepa.gov.ge/En/Reports>

7. UNICEF, Findings of the Multiple Indicator Cluster Survey (MICS) 2018, <https://www.unicef.org/georgia/findings-multiple-indicator-cluster-survey-mics-georgia>
8. SEMEC, Progress Report 2021, <https://gnerc.org/ge/commission/commission-reports/tsliuri-angarishebi>
9. Vision 2030 – Development Strategy of Georgia, 2022, Government of Georgia <https://www.gov.ge/wp-content/uploads/2022/11/khedva-2030-saqarthvelos-ganvitharebis-strategia-1.pdf>
10. SRCA, სასმელ წყალთან დაკავშირებული რისკის შეფასების ანგარიში (Risk Assessment of Drinking Water), 2018, https://srca.gov.ge/files/sasmeli_wyali.pdf

SOURCES

- Green Budget Project, 2021, CENN, http://environment.cenn.org/app/uploads/2021/02/EN_Green_Budget_A4_Print.pdf
- Guidelines for Drinking-water Quality, 2011, WHO, https://apps.who.int/iris/bitstream/handle/10665/44584/9789241548151_eng.pdf
- Guria Development Strategy 2014-2021, Guria Regional Development Council, <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC209866/>
- Human Rights to Water, 2019, CENN environment.cenn.org/rights_to_water
- Rajapakse, J., 2022, Safe Water and Sanitation for a Healthier World, <https://www.bookdepository.com/Safe-Water-Sanitation-for-Healthier-World-Jay-Rajapakse/9783030940195>
- WaSH Assessment of Public Schools in Georgia, 2019, CENN, http://www.cenn.org/app/uploads/2022/04/CENN_Final-Annual_Report-2019.pdf
- Water Supply and Sanitation—Vision and Policy Statement, 2021, MRDI, <https://bit.ly/3JgSUTu>
- Water supply and water sector development vision and policy statement, 2021, United Water Supply Company of Georgia, <http://bitly.ws/BJd3>

Web sources:

- Geostat <https://www.geostat.ge/en>

AFFORDABLE AND CLEAN ENERGY - SDG 7

FOOTNOTES

1. Administration of the Government of Georgia, Voluntary National Review, 2020, https://sustainabledevelopment.un.org/content/documents/26390VNR_2020_Georgia_Report.pdf
2. Galt & Taggart, ელექტროენერჯის ბაზრის მიმოხილვა (Energy Market Review), 2021, https://api.galtandtaggart.com/sites/default/files/2023-02/report/electricity-market-watch-fy-2022_geo_1.pdf?fbclid=IwAR0B2E9Fey4YuncuJlO65P5nwDZp2Z9hjQtMJlIKJw6yc1OYLPmEO_vtk-g
3. IEA, Country profile of Georgia, Georgia - Countries & Regions - IEA <https://www.iea.org/countries/georgia>
4. Business Media Georgia, How much is Georgia's energy dependent on Russia? <https://bm.ge/en/article/how-much-is-georgias-energy-dependent-on-russia---pmc/110181#:~:text=As%20of%20the%20report%2C%20in,satisfying%20domestic%20demand%20for%20electricity>
5. ACT, Sustainable Forest Management for Rural Development, 2019, <https://www.act-global.com/en/georgia/impact-projects/tqis-mdgradi-martva-soflis-ganvitarebisatvis>
6. CENN, Green Budget Project, 2021, http://environment.cenn.org/app/uploads/2021/02/EN_Green_Budget_A4_Print.pdf
7. MoESD, National Renewable Energy Action Plan (NREAP), 2019, https://www.economy.ge/uploads/files/2017/energy/samoqmedo_gegma/nreap_v_3_eng_21022020.pdf
8. MoESD & MEPA, National Energy and Climate Plan, 2022,
9. UNECE, Renewable Energy Uptake Factsheet: Renewable Energy in Georgia https://www.ren21.net/wp-content/uploads/2019/05/Factsheet_Georgia-HardTalk-2021.pdf
10. Business Media Georgia, Electricity consumption in Georgia will increase by 6 %, <https://bm.ge/ka/article/2022-wels-saqartveloshi-eleqtroenergiis-moxmareba-6-it-gaizrdeba/104842>
11. CENN, Sustainable Rural Energy Solutions and Decisions, 2021, <http://www.cenn.org/portfolio-item/sustainable-rural-energy-solutions-and-decisions/>
12. WEG, Energy Poverty and Vulnerable Users of Georgia, 2019, http://weg.ge/sites/default/files/weg_2019_web.pdf

SOURCES

- Guria Regional Development Council, Guria Development Strategy 2014-2021, <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC209866/>
- SEMEC, Progress Report 2021 <https://gnerc.org/ge/commission/commission-reports/tsliuri-angarishebi>
- MEPA, The Fourth National Environmental Action Programme of Georgia for 2022-2026, <https://eiec.gov.ge/En/ActionPlans>
- Government of Georgia, Vision 2030 – Development Strategy of Georgia, 2022 <https://www.gov.ge/wp-content/uploads/2022/11/khedva-2030-saqarthvelos-ganvitharebis-strategia-1.pdf>