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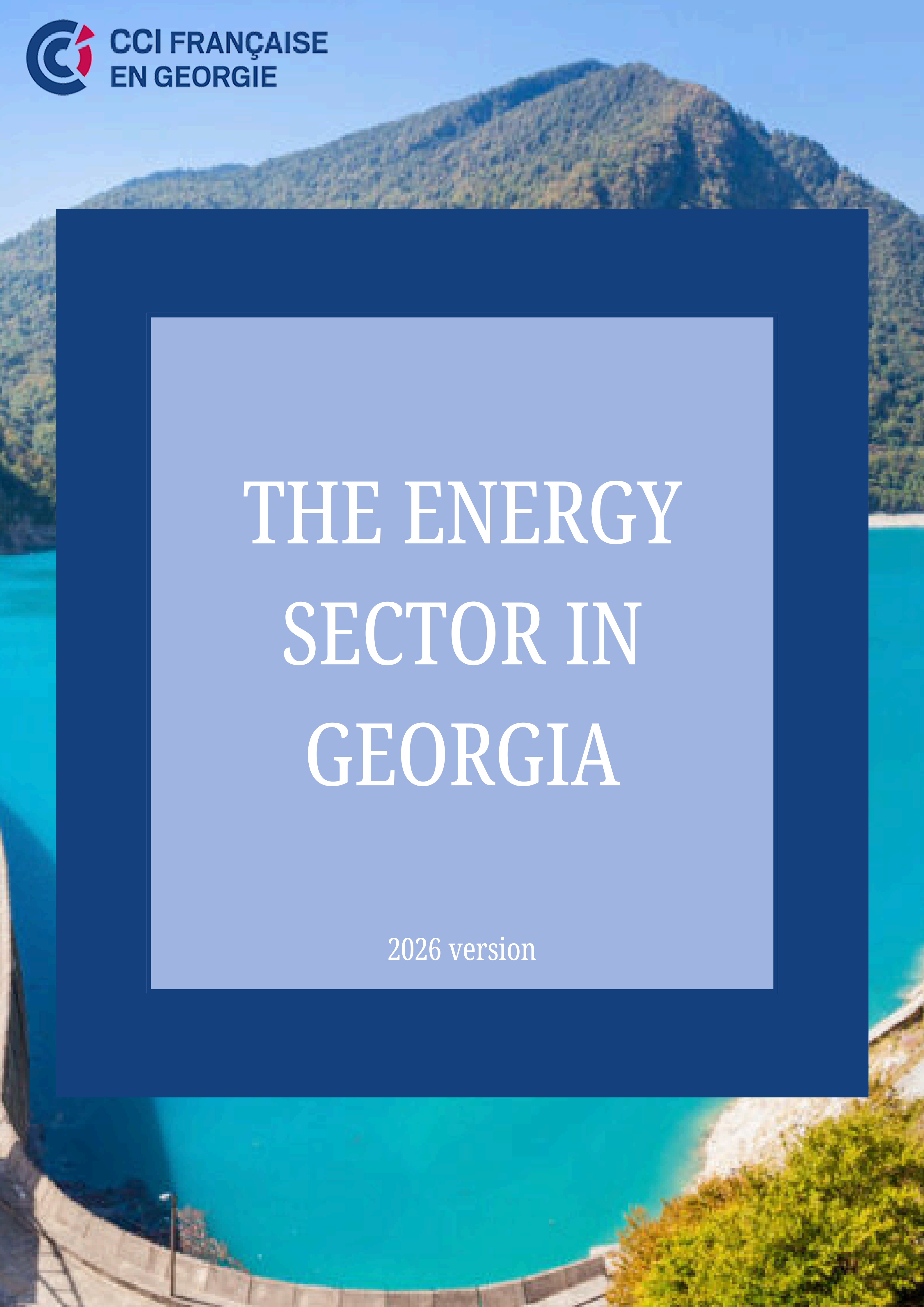

# THE ENERGY SECTOR IN GEORGIA

2026 version

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# SUMMARY

# 1. Current structure of energy consumption and production

## 1.1 National energy production

Georgia's energy production relies mainly on hydroelectricity and biomass, two resources that are abundant in the country. Electricity accounts for the major share of domestic energy production.

Thanks to its mountainous terrain and dense river network, Georgia has natural conditions that are particularly favorable for hydroelectricity. This accounts for around 70-75% of national electricity production, making Georgia one of the countries most heavily dependent on this resource in the wider European area. This specialization enables it to produce relatively carbon-free electricity at a competitive cost, but it also makes the energy system vulnerable to seasonal variations in rainfall and climatic hazards.

At the same time, bioenergy (mainly firewood and certain types of organic waste) is the second largest source of domestic energy production. It plays an important social role, particularly in rural areas where nearly half of all households use biomass for heating. This dependence can be explained by the relatively low cost of this resource and limited access to modern infrastructure in certain regions. However, the intensive use of wood raises major environmental issues, particularly in terms of deforestation and local pollution, prompting the authorities to promote more sustainable exploitation and more efficient heating solutions.

Conversely, domestic oil and natural gas production remains marginal and covers only a tiny fraction of the country's needs. Existing deposits are limited and insufficient to support significant production on a national scale. As a result, consumption of hydrocarbons relies almost entirely on imports, mainly from Azerbaijan and, to a lesser extent, Russia.

| Name | Total | City | Village |
|---|---|---|---|
| Natural gas | 1072.1 | 713.3 | 358.9 |
| Fuel wood | 329.1 | 50.3 | 278.8 |
| Electricity | 175.3 | 108.2 | 67.1 |
| Diesel fuel | 158.8 | 25.9 | 132.9 |
| Liquefied Petroleum Gases (LPG) | 7.6 | 1.4 | 6.0 |
| Animal waste | 2.7 | 0.0 | 2.7 |
| Agricultural waste | 2.6 | 0.2 | 2.4 |
| Coal | 2.2 | 0.0 | 2.2 |
| Wood waste | 0.8 | 0.4 | 0.4 |

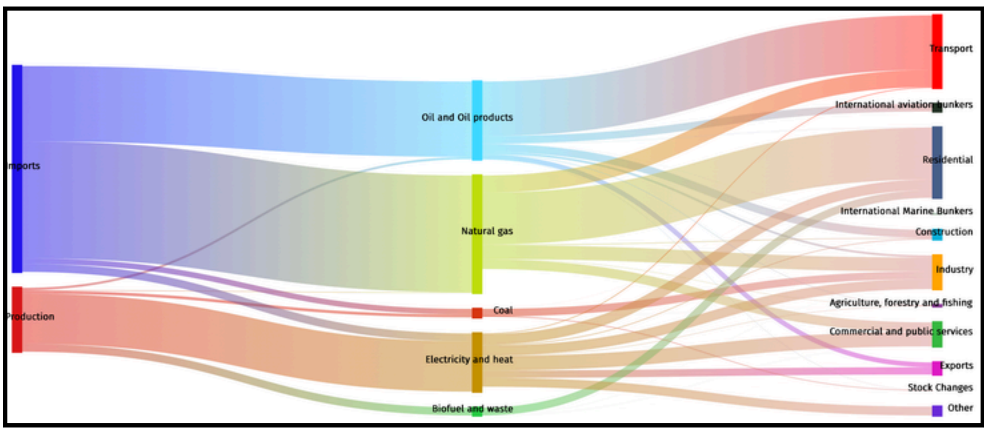
Energy consumed for household needs
(in thousands of tons of oil equivalent)

## 1.2 Energy consumption

Georgia's energy consumption in 2026 is dominated by three main sources: natural gas, petroleum products, and electricity, reflecting the country's economic structure and domestic uses.

➔ Natural gas is the primary source of energy consumed, mainly for heating buildings and industrial needs, resulting in a high dependence on imports, especially during winter peaks.
➔ Petroleum products play a central role in the transport sector, where they fuel almost the entire vehicle fleet, with domestic production remaining marginal.
At the same time, electricity consumption now exceeds 13 TWh per year and continues to grow steadily, as it has for more than a decade, driven by economic growth, urbanization, and particularly high demand in the Abkhazia region.


➔ Despite its significant hydroelectric potential, Georgia remains a net importer of electricity in winter, when the decline in hydroelectric production coincides with seasonal consumption peaks. This highlights the vulnerability of the energy system to climatic variations and the need to further diversify renewable sources.




Flows
(in thousands of tons of oil equivalent)

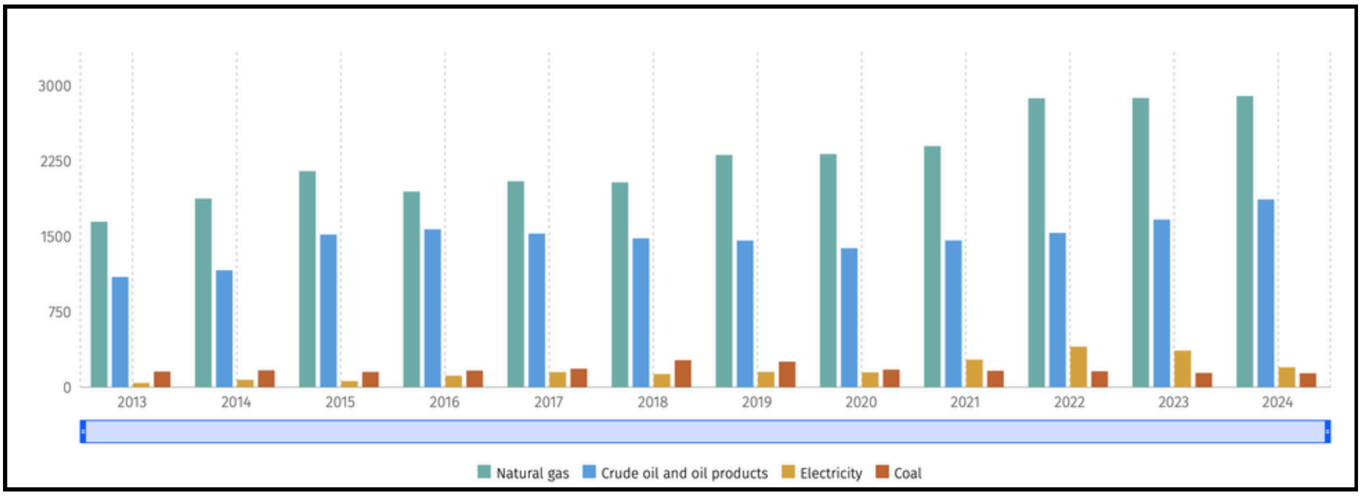
# 2. External energy dependence

## 2.1 Gas and oil imports

In 2026, Georgia remains heavily dependent on its neighbors for its supply of fossil fuels, a situation that profoundly shapes its energy policy and geopolitical balance.

➔ Azerbaijan is the country's main supplier of natural gas, via strategic regional infrastructure that provides most of the imports used for heating and industry.
➔ Russia plays a complementary role by supplying additional volumes of gas and a share of imported electricity, particularly during periods of high winter demand.
Petroleum products, meanwhile, come from various regional and international partners via a variety of commercial channels, as Georgia has only marginal domestic production.

In total, energy imports cover more than 80% of the country's hydrocarbon needs, exposing the Georgian economy to global price volatility and geopolitical tensions in the Caucasus and the Black Sea region. As mentioned above, this dependence is a major strategic challenge,
prompting the authorities to accelerate the development of renewable energies and diversify their energy partnerships in order to secure long-term supply.




Energy imports
(in thousands of tons of oil equivalent)

## 2.2 Georgia's role as a transit country

Paradoxically, in 2026, Georgia occupies a central position as a strategic energy transit country between the Caspian Sea and Europe. Its territory is crossed by major oil and gas pipelines connecting the hydrocarbon deposits of the Caspian region to Turkey and then to Southeast Europe, fully integrating it into the Eurasian energy corridors.

This transit function generates revenue, promotes investment in infrastructure, and strengthens Georgia's diplomatic weight in its relations with the European Union, Turkey, and the Caucasus states. However, this geostrategic position does not eliminate its internal energy vulnerability and it remains exposed to regional tensions that could affect the security of energy flows.

# 3. Renewable energies: a strategic pillar of the transition

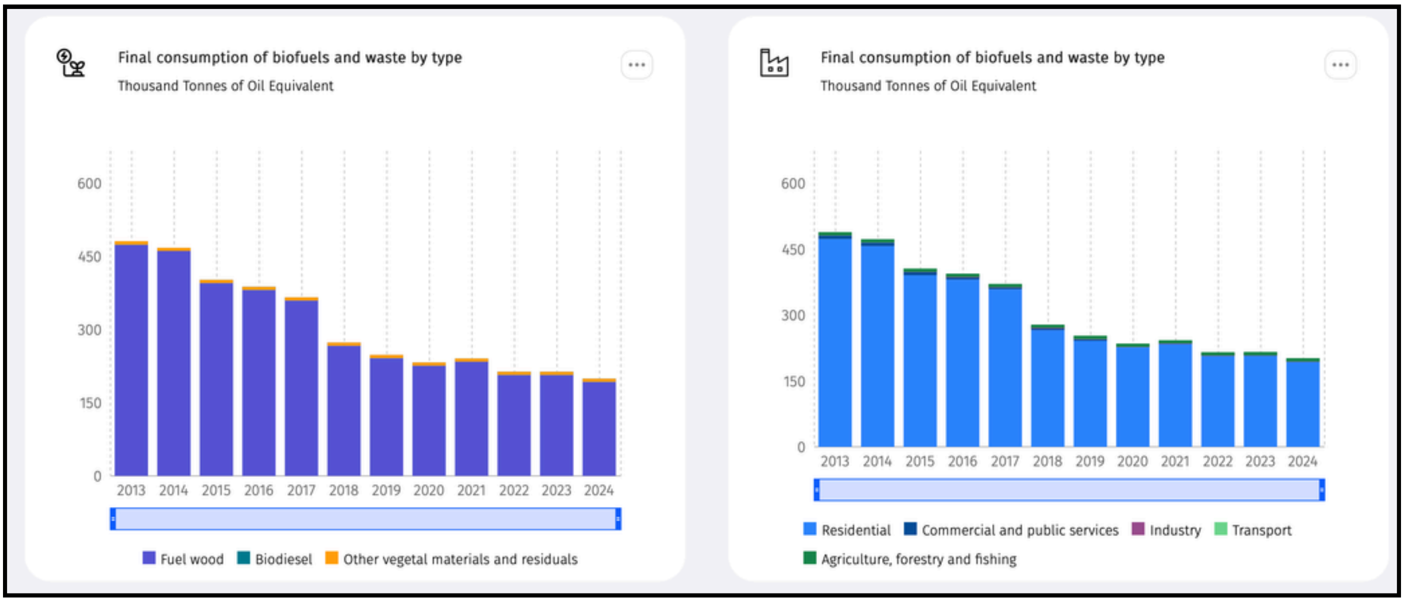
With renewable energies at the heart of Georgia's energy strategy, from 2026 onwards, this shift will accelerate significantly with the concrete implementation of the recommendations of IRENA's energy transition assessment (April 2025) and alignment with the approved National Energy and Climate Plan (NECP) and the future NDC 3.0 (Nationally Determined Contributions).

The government is launching or intensifying a renewable energy development plan aimed at attracting $3-4 billion in investment over the next 2-3 years, while exploiting the country's considerable potential: approximately 15 GW of hydropower (less than a quarter of which has been developed to date), 4 GW of wind power and 4.5 GW of solar photovoltaic power identified (with an even higher theoretical potential for solar power according to IRENA's zoning analysis of May 2025). These efforts simultaneously target four strategic objectives:

➔ Energy security is a major priority. Hydroelectric power generation dominates (around 80% of electricity), but it remains highly seasonal, leading to electricity and gas imports in winter. From 2026 onwards, the accelerated deployment of wind and solar power, combined with grid integration measures (flexibility, storage) and the strengthening of transport infrastructure, will stabilize supply. The Black Sea Green Energy Corridor project (with Azerbaijan, part of which will involve an undersea cable operational by around 2032) will further enhance this security by creating regional interconnections and diversifying sources beyond hydroelectricity and imported fossil fuels. The goal is to move from energy self-sufficiency of less than 25% to greater resilience to climatic and geopolitical variations.

➔ Reducing imports is a key concern. The development of renewables is specifically aimed at increasing domestic production, reducing external purchases (especially of gas and peak electricity), and lowering the national energy bill. According to World Bank analyses (Climate and Development Report 2025),
increasing renewable capacity to 15 GW would significantly reduce imports while generating substantial systemic savings.

➔ Compliance with climate commitments is part of an ambitious trajectory aligned with the Paris Agreement. The NECP sets a target of 27.4% share of renewables in final energy consumption by 2030, while the updated NDC provides for an unconditional reduction in GHG emissions of 35% by 2030 compared to 1990 (up to 50-57% with international support). From 2026 onwards, the implementation of the 2024-2025 Climate Action Plan and the preparation of NDC 3.0 explicitly include the acceleration of renewables (wind, solar, hydro, biomass) to decarbonize the energy sector, which remains the main emitter. This involves supporting new projects and improving the efficiency of existing thermal power plants.




➔ Economic attractiveness complements this approach by positioning Georgia as an attractive hub for green investments. The renewable energy development plan and the 2025-2030 Green Growth Strategy aim to create high-quality jobs (the energy sector could see a 21% increase according to the World Bank), develop local value chains (manufacturing, maintenance, services), and promote green electricity exports to Europe via the Black Sea corridor. These projects attract foreign investors, stimulate GDP growth (up to +4% according to some estimates) and support the emergence of a green economy, while improving the country's image as a regional leader in energy transition.

## 3.1 Hydroelectricity: a historic and future driving force

Hydropower is the backbone of Georgia's electricity system. The Enguri power plant, the largest in the country, plays a crucial role. Located on the Enguri River, on the border with Abkhazia, it remains in a politically sensitive area: joint management with the de facto Abkhaz authorities (a 1997 agreement stipulating 60% for Georgia-controlled areas and 40% for Abkhazia) creates recurring tensions, frequent negotiations, and vulnerability to seasonal or technical interruptions. Ongoing rehabilitation work, supported by the EU, aims to reduce losses and maintain reliability. The Georgian government plans to double installed hydroelectric capacity by 2031 through a combination of new dams, cascade projects, and modernization of existing infrastructure. Concrete progress is already underway for 2026: expansion projects are adding approximately 500 MW of renewable capacity along the Enguri and Rioni river basins, with the participation of private investors through public-private partnerships.

Barrage d'Enguri

However, this expansion raises major environmental issues for 2026:
➔ New dams and flow modifications may alter aquatic habitats, reduce migratory fish populations (important for biodiversity and local fisheries), increase the risk of downstream flooding, and alter moisture and riparian ecosystems. Environmental assessment reports for projects such as Kaspi HPP (22 MW on the Mtkvari) highlight these concerns about hydrology and wildlife.

➔ Riparian communities, particularly in mountainous regions (Svaneti, Rioni Valley), continue to strongly oppose dams that they believe will destroy their land, livelihoods (agriculture, nature tourism), and cultural heritage. Movements such as the "Guardians of the Rioni" and protests against "zombie" projects (Namakhvani, Nenskra) persist, highlighting a lack of adequate consultation and underestimated socio-economic impacts.

➔ In the face of climate variability (droughts, irregular rainfall), overexploitation of rivers could exacerbate tensions over drinking water, irrigation, and regional resilience. The government is emphasizing more sustainable approaches, favoring lower-impact projects and incorporating mitigation measures.

## 3.2 Solar energy: potential still largely untapped

Georgia enjoys generous sunshine, with an average of 218 to 220 sunny days per year according to data from Georgia Power and regional estimates (up to 250-280 days in the most favorable areas in the south and east, such as around Savannah or Macon, where the solar coverage rate reaches 62-66%). This favorable climate places the country among the best in the Caucasus for photovoltaics. International assessments, notably the IRENA assessment of 2025, confirm a theoretical and exploitable solar photovoltaic potential of 4.5 GW identified in priority areas, with zoning analyses (May 2025) revealing up to 87 GW of maximum potential on agricultural land, grasslands, and suitable areas. However, in February 2026, installed solar capacity remains relatively modest compared to this potential: it stands at around a few hundred domestic MW, far from the GW deployed in other regional contexts, despite gradual growth through projects and calls for tenders.

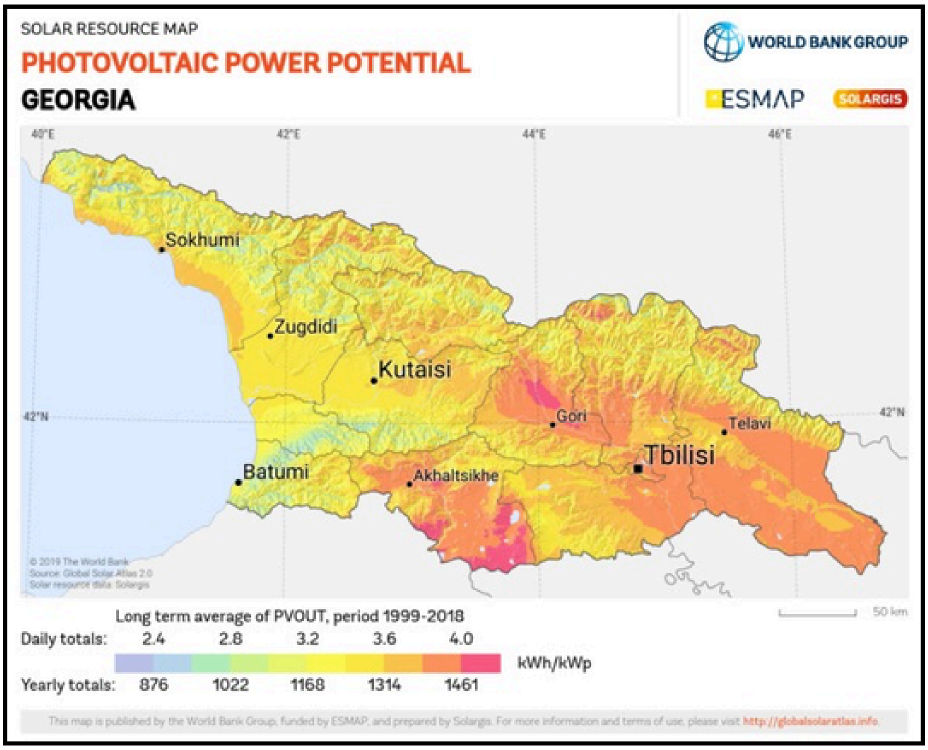
Major obstacles remain in 2026:
➔ Despite growing interest from foreign investors (as in the case of the Marneuli project financed at the end of 2025), development costs remain high (recent increase in global solar panel prices of ~15–30% impacting local projects), and access to long-term financing is hampered by perceived risks (geopolitical, exchange rate) and a need for stronger guarantees
.
➔ The country still lacks mature local value chains (maintenance, specialized training), which means that skills and equipment have to be imported, increasing lead times and costs; international partnerships are progressing, but slowly.
➔ Authorization, environmental assessment, and grid connection processes remain complex and time-consuming, although reforms (aligned with the NECP and IRENA recommendations) are underway to simplify tendering procedures; tax incentives exist but their application remains uneven for medium-sized projects.

Projet Marneuli

The development of solar energy is strategic because it makes it possible to:

➔ Compensate for hydraulic variability with highly seasonal hydroelectric production (high in summer, low in winter), solar energy offers a stable and predictable daytime supplement, helping to smooth the load curve and reduce peak import requirements.
➔ Reduce winter dependence on imports by generating local electricity during periods of low hydro and high demand (heating), reducing electricity and gas purchases, improving the trade balance and resilience.
➔ Promoting decentralized production from rooftop, community, or agricultural installations allows direct supply to local consumers, reduces transmission losses, and stimulates rural employment; this aligns with grid decentralization objectives.

Innovative pilot projects are being rolled out in 2026, including floating photovoltaic power plants on reservoirs or lakes, which offer twofold benefits: increased production thanks to natural cooling of the panels, saving land space and reducing water evaporation. These initiatives, often supported by international partners, aim to demonstrate technical and economic feasibility before scaling up, complementing large-scale land-based projects.



## 3.3 Wind energy: diversification of the mix

Wind power is a growing sector. The Kartli wind farm has demonstrated the commercial viability of this technology. New projects around Gori and the Rikoti Pass aim to significantly increase national capacity.

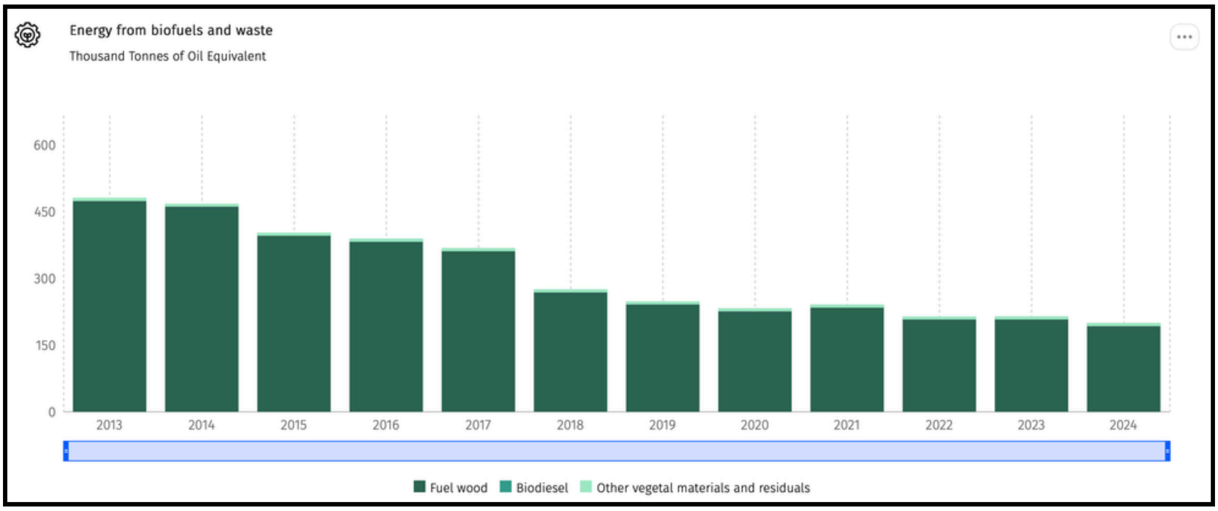
Wind power has several advantages:
➔ While hydro is abundant in spring/summer but low in winter, wind power often offers the opposite profile (stronger winds in winter in some mountainous areas), helping to balance seasonal production and reduce peak electricity imports.
➔ With virtually zero direct emissions, it contributes directly to climate targets (NECP 27.4% renewables in final consumption by 2030, NDC 35–57% GHG reduction), diversifying the mix beyond dominant hydro (80% of electricity).
➔ Players such as Goldwind (China) and other international partners are attracted by stable PPAs, tax incentives, and the potential identified by IRENA (approximately 4–5.4 GW of exploitable onshore wind power, priority areas along transmission corridors).
These projects stimulate local employment, technology transfers, and green value chains.

In 2026, wind power will move from a demonstration phase to industrial expansion. Supported by reforms to the renewable energy development plan and international partnerships, this sector will strengthen energy security, reduce dependence on winter imports, and position Georgia as an emerging player in green energy in the Caucasus, while contributing to a more balanced and resilient transition.

Site éolien à Gori

## 3.4 Bioenergy and energy efficiency

Biomass remains essential for a large proportion of rural households in Georgia. According to data from the IEA (Sustainable Bioenergy for Georgia: A Roadmap), around 80% of rural households use firewood for heating and, to a lesser extent, for cooking. This mainly concerns rural areas, which are home to just over 40% of the population, where access to natural gas remains limited and energy poverty is more pronounced. Biomass (mainly firewood) is therefore a traditional and affordable source of energy for domestic heating, even though alternatives such as gas exist in some areas. However, its uncontrolled use can lead to deforestation. Firewood consumption far exceeds the sustainable level estimated by the Forest Agency, with illegal or undeclared harvesting accounting for a significant proportion (up to 75% in some previous assessments). This leads to degradation of forests around villages, increased soil erosion, risks of landslides and flooding, and loss of biodiversity.




Current priorities, aligned with ongoing reforms, include:

➔ Improving the efficiency of heating systems by promoting modern, more efficient stoves and appliances (twice or three times as efficient as traditional systems), reducing heat loss and limiting excessive wood consumption.

➔ Sustainable forest management with enhanced implementation of the updated Forest Code to introduce sustainable management practices (controlled logging, reforestation, protected areas), increased monitoring against illegal logging, and promotion of alternative sources (agricultural residues such as hazelnut shells, certified forest waste).

➔ Modernization of bioenergy infrastructure with the development of structured supply chains for improved fuels (pellets, briquettes, biogas from waste), support for small-scale or community projects (collective heating systems and local production units) and the integration of biomass into the broader energy mix through initiatives such as agricultural bioenergy.

# 4. Structural challenges in 2026

Despite significant progress, several major obstacles remain in 2026:

➔ Gas and peak electricity imports remain high in winter, widening the trade deficit and exposing the country to external shocks.
➔ A network that is not very flexible, with significant losses and limited capacity to integrate variable renewables; reinforcement and storage are progressing, but too slowly.
➔ An inflexible grid, with significant losses and limited capacity to integrate variable renewables; grid reinforcement and storage are progressing, but too slowly.
➔ A need for billions in private investment hampered by high costs, perceived risks, and lengthy processes despite international support.
➔ Persistent local opposition to dams, wind farms, and transmission lines, linked to impacts on land, livelihoods, and lack of consultation.
➔ A balance between economic development and environmental protection, with pressure on river and forest ecosystems, requiring better integration of mitigation measures and a just transition to avoid conflicts.
➔ A lack of coordination between different stakeholders, including government agencies, private sector, and civil society.
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