

EU- Kazakhstan: Sustainable Energy Days

International Conference

Sustainable Energy in Kazakhstan: Prospects and Challenges

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Energy poverty and strategies to eliminate it Example of Georgia

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World Experience for Georgia (WEG)

Country Background

Georgia	2022
Population	3.7 mln.
GDP, current US\$ billion	24.6
GDP Per capita USD	6,657.6
Life Expectancy at birth, years	72.8



2014: Association Agreement with the EU
2022: European Perspective Granted
Next: EU candidate country
Member of the Energy Community

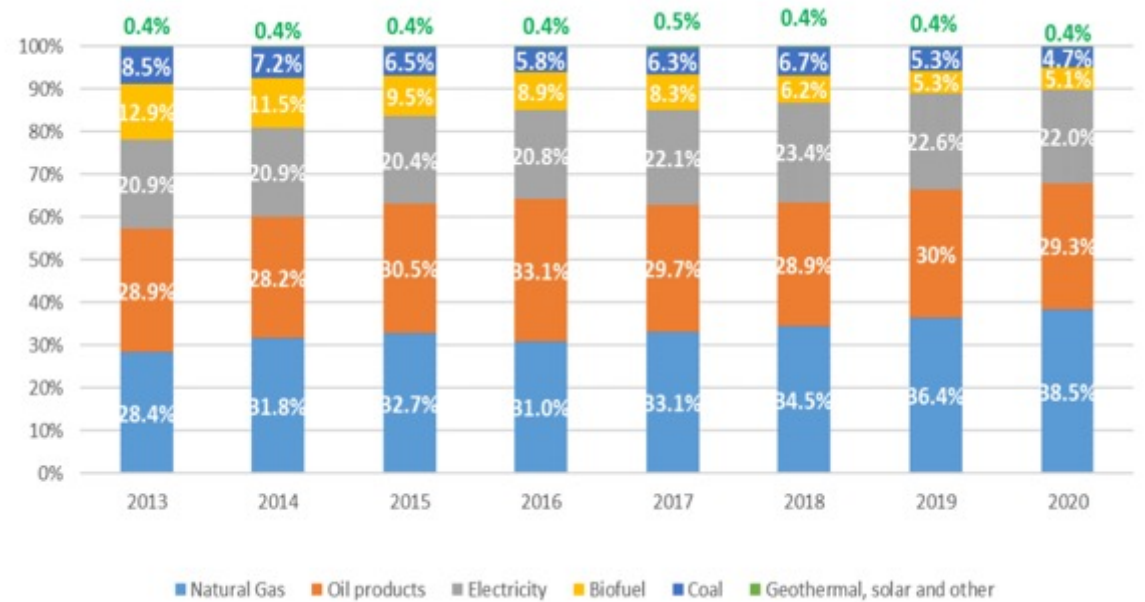
Georgia – Energy Profile

Dominated by Fossil Fuels - account **>70%** of primary energy consumption. Almost all fossil fuels (95%) are imported.

Electricity **70%** from renewable sources (Hydro) Import dependence 10-13%

Most of the energy is consumed by Transport Sector (**30%**) and Households (**28%**).

Georgian Energy Mix



SOURCE: GNERC based on GEOSTAT energy balance

What is Energy Poverty?

*Energy Poverty - “**lack of access to modern energy services and products.**” It is defined as a situation where the absence of sufficient choice of **accessing adequate, reliable, affordable, safe, and environmentally suitable energy services** is found (World Economic Forum, 2010)*

*Energy Poverty - “In developing countries some 2.5 billion people are forced to rely on **biomass**—fuelwood, charcoal, and animal dung—to meet their energy needs. **These people are energy poor, in that they have an absence of choice in the energy they access or use in their daily lives.** Therefore, biomass plays an enormously important role in the lives of the rural poor in these developing countries, in the form of wood for cooking and heating (UNDP).*



Photo: World Economic Forum, 2019

What is Energy Poverty?

Energy Poverty in the European Context

In the European context, “Energy poverty occurs when energy bills represent a high percentage of consumers’ income, or when they must reduce their household's energy consumption to a degree that negatively impacts their health and well-being” (European Commission)

Components of energy poverty

- *Access to clean energy*
- *Household income /energy prices*
- *Inefficient energy performance of buildings (thermal insulation, heating systems /equipment).*



Photo: EURACTIV



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Why is Energy Poverty Important?

Living in cold Homes - are linked to an increased risk of developing a wide range of health conditions, especially **respiratory and cardiovascular**, asthma (through damp and mold) as well as **poor mental health and unintentional injury**.

Household air pollution exposure (through using biomass in inefficient appliances) leads to noncommunicable diseases including **stroke, ischemic heart disease, chronic obstructive pulmonary disease (COPD) and lung cancer**. Household air pollution was responsible for an estimated 3.2 million deaths in 2020 (WHO)



Photo: radiotavisufleba, Georgia 2021

Energy Poverty in Georgia

Access to electricity almost 100%

Access to natural gas – up to 70%

81% of the population use individual heating facilities, **35.4%** rely on firewood and agricultural waste for heating. **70%** in rural areas use firewood for heating. combustion of firewood (particularly wet wood) in **inefficient appliances**.

Biomass - reduced quality level of energy service provision

- No automated heating devices – need to attend the fire
- come back from work to a cold home or wake up in frozen houses in the morning
- Requires physical labor



Photo: Skews.ge Georgia

Energy Poverty in Georgia

Households heat much smaller space than the total dwelling space.

Dwelling areas range mostly from 51 to 100 m² (46%) and over 100 m² (40%) while 46.8% of rural households and 40.5% of urban households heat less than **30 m²**

rural households - 65% of households have 3 or more members (33% have 5 members or more).

people crowded in one room:

- increased risk of viral infections
- children who need to do homework
- adults who are deprived of personal space.



Photo: Netgazeti, 2021 Georgia

Energy Poverty in Georgia - Buildings

Old buildings - not designed to conserve energy or facilitate the rational use of energy

Up to **80%** of all buildings were constructed before 1990. Almost half (43.3%) of the building stock has never been reconstructed

Most of the building stock has **no thermal insulation** - share of households living in the dwellings with insulated external walls, ceiling, and floor does not exceed **6.0%**.

- poor construction legislation - > Poor energy Efficiency
- Reforms underway – new law on Energy Efficiency



Policy

- Subsidized Energy Tariffs for all household consumers – “social gas” 55.5 tetri m³/=0.20 eur.
- Financial support schemes for socially vulnerable consumers (7 measures - aid to households in need related to energy expenses).
- All the measures represent **short-term** aid to energy-poor households and are not considered a possible solution to **alleviate energy poverty**.
- National Energy Policy Document and NECP **recognize energy poverty** as a problem in Georgia -Working Group Created During the process
- Several studies conducted by Energy Community Secretariat; WEG
- WEG – **develop guidelines with indicators** for assessing and monitoring energy poverty
- Forest Sector reform and Gasification program
- Introduce vouchers for **Energy Efficient Woodstoves**

Policy – Future Energy

Net Metering System

satisfy the consumer's own consumption through micropower renewable energy sources (wind, solar etc).

500 kw - installed capacity of the micro power plant

In 2021, a total of 368 subscribers were registered in the net metering system, with a total capacity of 17,711 kW



Photo: Helios Energy, Georgia

Thank you!

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