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RS Global Sp. z O.O.
ISNI: 0000 0004 8495 2390

Dolna 17, Warsaw,
Poland 00-773
+48 226 0 227 03
editorial_office@rsglobal.pl

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ENERGY DEPENDENCY INDEX OF GEORGIA

Lena Shatakishvili

Professor, Georgian Technical University, Georgia

Tamar Shoshiashvili

Ph.D., Invited Lecture, International Black Sea University, Georgia

Nino Bukhnikashvili

Ph.D., Student, Georgian Technical University, Georgia

ABSTRACT

Energy independence is a central objective for national energy security. Energy import dependency measures the share of imported energy in a country's total energy demand. The European Union (EU) applies the Energy Dependency Index (EDI) to quantify energy independence. This study assesses Georgia's energy dependency using the EU methodology and compares Georgia's position with that of EU member states.

KEYWORDS

Energy Dependency, Energy Security, Diversification

CITATION

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Introduction.

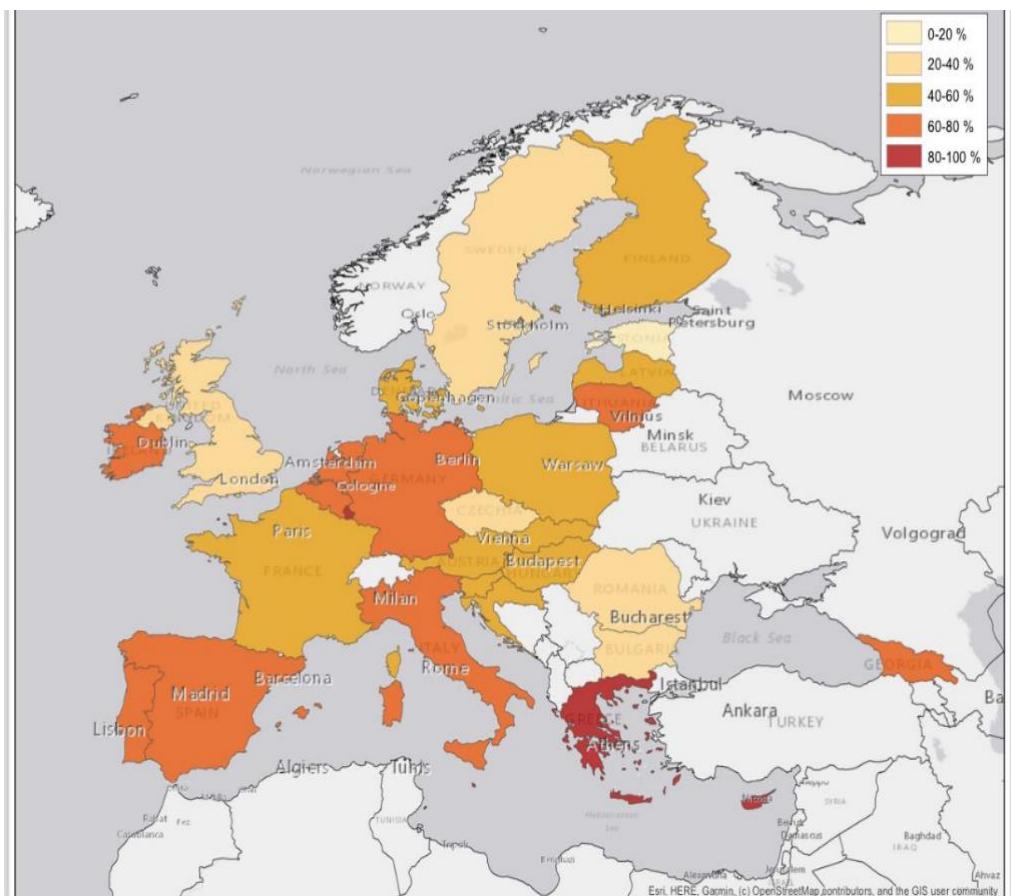
Dependency on specific energy suppliers has long been a concern for the European Union and is a key factor in energy security. The EU aims to strengthen energy security by ensuring a secure, interconnected, and competitive internal market. Geopolitical developments in recent years have underscored the importance of reducing energy import dependency. Dependency on energy carriers can expose economies to price volatility and energy deficits, especially when infrastructure location amplifies risk. Consequently, indicators such as the Energy Security Strategy emphasize the importance of developing domestic energy generation, including local renewable sources, improving energy efficiency, and expanding infrastructure.

Energy import dependency is defined as the share of imported energy in a country's total energy demand and is calculated as: Energy dependency = (import – export) / gross available energy. A negative dependency index signifies that the country is a net exporter. Following the EU methodology, Georgia's energy dependency was estimated using gross energy consumption and domestic generation data. According to the International Energy Agency (IEA), Georgia's gross energy consumption in 2022 was 6.5 Mtoe, while domestic generation (coal, natural gas, hydro, and other renewables) was 2.5 Mtoe¹. Applying the formula: Energy dependency = (6.5 – 2.5) / 6.5 = 4.0 / 6.5 ≈ 0.6154, or 61.54%.

The calculated energy dependency index indicates that approximately 61.5% of Georgia's total energy demand in 2022 was met by imports. This value reflects a relatively high reliance on energy imports and has implications for energy security and policy.

To facilitate international comparison, the results were incorporated into an energy dependency map illustrating EU countries alongside Georgia.

¹ Iea.org/data



Map: Energy Dependency Map of EU Countries and Georgia

Georgia's energy dependency remains notably high, highlighting the need for policy actions in several areas:

- ✓ Diversification of energy resources;
- ✓ Promotion and integration of renewable energy sources (including hydroelectric power);
- ✓ Improvement of energy efficiency and demand-side management;
- ✓ Enhancement of energy infrastructure resilience and regional interconnections.

A sustained focus on these areas can reduce import dependency and strengthen overall energy security.

To conclude, Georgia exhibits a high energy dependency by EU standards. Policy measures aimed at resource diversification, renewables expansion, efficiency gains, and infrastructure resilience are essential steps toward reducing import reliance and improving energy security.

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