Georgia's Energy security: Challenges of Policy Methodology and Practice

1. Introduction

Energy security is a complex, multi-dimensional concept that connects technological, economic, political, social, and environmental domains. Every country interprets and applies it through the lens of its specific geopolitical circumstances, resource base, and structural vulnerabilities. For Georgia—characterized by heavy reliance on monopolistic suppliers, profound seasonality in hydropower generation, strategic energy transit flows, and challenges arising from occupied territories—a more refined, tailored approach is required.

To address these national specifics, it is essential to articulate and internalize the more general principles, criteria, and methodological standards of defining, measuring, and addressing energy security. Without a shared foundation for stakeholder coordination, it is impossible to accurately assess risks and identify coherent strategic priorities. Yet Georgia lacks a consistent analytical tradition and an agreed set of definitions in this field. Energy security studies are limited in scope, and the public debate frequently relies on slogans and political statements rather than evidence-based analysis. As a result, Energy security is often presented interchangeably with "energy independence", both as a distant political aspiration, typically equated with reducing imports, rather than as a structured process of risk management.

The absence of a clear Energy security methodology contributes to policy confusion and hinders effective decision-making. While ensuring Energy security is a core component of national security, it requires systematic consideration of diverse risks and trade-offs, long-term institutional commitment, and analytical capacity for balancing multiple objectives. This demanding task calls for tools and approaches that enable policymakers and sector experts to evaluate alternatives, build consensus, and generate the credibility needed to attract investment and public support for specific projects.

This paper provides a concise assessment of Georgia's current Energy security policy and proposes directions for its improvement. Specifically, it reviews key definitions and documents, assesses the current discourse and its major shortcomings, and suggests fundamental principles, highlights priority areas, and initial steps to strengthen energy security policy making .

The analysis in this and subsequent publications will be grounded in a core assumption: ***the independence and security of the Georgian state constitute the country's highest national values*** *to be served by sectoral institutions and their policies.*

2. Energy Security and Energy Independence — Core Definitions

Energy security has played a central role in global political and economic systems for more than a century. It continues to shape the foreign and domestic policies of states, influencing strategic decisions, alliances, and national development trajectories. In practice, countries operationalize Energy security through their own methodologies, shaped by historical experience, resource endowments, structural vulnerabilities, and political priorities. As a result, the literature contains more than a hundred definitions and indices, frequently creating conceptual ambiguity. Yet despite its importance, the concept of Energy security is

often interpreted inconsistently, treated as a **static condition**—a state of "being secure"—rather than a **dynamic process** that must continuously respond to evolving dynamic risks, technologies, and geopolitical contexts.

One of the most widely cited definitions comes from Daniel Yergin, who describes Energy security as the ability to ensure *"adequate, reliable supplies of energy at reasonable prices in ways that do not jeopardize major national values and objectives"*[1] . This formulation highlights three central dimensions—**adequacy** (sufficiency), **reliability**, and **affordability**—while explicitly linking energy supply to national security.

The International Energy Agency (IEA) similarly defines Energy security as the "uninterrupted availability of energy sources at an affordable price." The IEA subsequently refines this concept by sector, distinguishing among oil, natural gas, electricity, and critical minerals security[2].

The Energy Community, following the EU's policy architecture, adopts a more practical approach. It conceptualizes Security of Supply as the ability to: "ensure reliable and uninterrupted energy supply critical for daily functioning and economic stability; prevent, prepare for, and manage electricity and gas crises; maintain energy availability during emergencies and transitional periods through risk-management plans". These definitions form the foundation for the EU's regulatory framework, which its members—and Energy Community Contracting Parties such as Georgia—are expected to implement[3].

Beyond these widely used definitions, a diverse array of definitions and methodologies for defining and assessing Energy security has been developed by states, international organizations, and academic circles—ranging from the European Union's security-of-supply frameworks and the U.S. Department of Energy's resilience models to Japan's multi-pillar strategy and various academic indices. This diversity reflects differences in national contexts and priorities, and underscores a key conclusion: **each country in each period requires its own specifically tailored approach, and superficial, universal definitions are insufficient for shaping high-quality energy policy.**

3. Energy Security Discourse and Policy in Georgia

Georgia, in its energy policy, also employs the general definitions of Energy security outlined above and, as a Contracting Party to the Energy Community, adopts and essentially implements the corresponding directives and regulations set out in its legislation. However, determining and formulating assessment criteria and long-term target indicators remains a persistent challenge, often reduced to superficial evaluations of external dependence. This ambiguity, along with contradictions between strategic documents, does not provide sufficiently credible conditions for making and implementing strategic, long-term decisions and projects.

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[1] D. Yergin, "Energy security in the 1990s "Forreign Affaris, Vol.67, No. 1, 1988

[2] Energy security – Topics - IEA

[3] Directive 2009/119/EC *Oil Stocks,* Regulation (EU) 2017/1938 *Security of Gas Supply;* Directive (EU) 2019/944 *Common Rules for the Internal Market in Electricity;* Regulation (EU) 2019/941 *Risk-Preparedness in the Electricity Sector;* Regulation (EU) 2019/943 *Internal Market for Electricity*

The general framework for discussing Energy security is set out in the 2011 National Security Concept[4]. In this document, ensuring Energy security is defined as part of the country's unified security architecture and as one of the national interests that, alongside other national interests, serves the protection of the country's fundamental values. Unfortunately, the well-structured framework presented in this document was never developed into a methodology for Energy security analysis and, moreover, since then the national security risks have not been adequately reassessed, which limits the possibility of conducting a comprehensive Energy security analysis. This gap is further exacerbated by the fragmented nature of Georgia's strategic energy documents.

Georgia's National Energy Policy (NEP)[5] identifies specific challenges and measures related to Energy security, but it does not contain a concrete plan of action. For reporting purposes, it relies on the supply–demand forecast scenarios of the National Energy and Climate Plan (NECP) and the measures therein. For an indicator of Energy security, NECP uses the electricity sector's combined (electricity and gas) dependence on imports. The main NECP scenario sets the objective of reducing this dependence from 21% to 15% by 2030 (or down to 25% during low-water periods). Such an approach to Energy security is simplistic, reducing it to external dependence in electricity. It fails to distinguish between the different sources and risks associated with gas and electricity imports, provides an incomplete assessment of the vulnerabilities linked to gas dependence, and overlooks the risks associated with markets for surplus electricity.

The State Concept of Energy Independence (the CEI)[6] goes even further in its requirements and sets as its goal for "energy independence" that "by 31 December 2030, the amount of electricity generated by renewable energy power plants must equal or exceed the amount of electricity consumed domestically." With such a requirement, the problems noted above become even more pronounced, and additional challenges arise related to the cost of thermal power plants remaining idle or operating solely for export. Electricity supply risks are not fully resolved, and a wide range of technical and political risks associated with the supply of natural gas and petroleum products remain unaddressed. It should also be noted that, despite the stated coherence between documents, the Policy does not align with the Concept on this requirement.

The incorporation of European legislation through Georgia's membership in the Energy Community partially compensates for weaknesses in the country's Energy security policy, mainly in the areas of supply security and emergency response[7]. In accordance with the EU model and legislation, ten-year development plans have been prepared for the electricity system and the gas network, as well as five-year development plans for distribution networks. Rules for electricity supply security have been created, which include detailed procedures and instructions for reducing, preventing, and managing electricity crisis risks. Methodologies have also been developed for identifying and assessing electricity security risks and crisis scenarios, for evaluating seasonal and short-term adequacy, and for assessing medium- and long-term adequacy. Plans for emergency responses in the gas network are also being developed. However, the establishment of oil (petroleum product) and gas storage facilities — required under

[4] https://faolex.fao.org/docs/pdf/geo212922GEO.pdf

[5]https://www.economy.ge/uploads/files/2017/energy/2024/sakartvelos_sakhelmcifos_energetikuli_politika_damtkicebuli_24/sakartvelos_sakhelmcifos_energetikuli_politika_damtkicebuli_.pdf

[6] https://matsne.gov.ge/ka/document/view/6200432?publication=0

[7] Georgia - Energy Chttps://www.gse.com.ge/projects/ten-years-network-development-planommunity Homepage

European Union rules — as well as the development of reservoir hydropower plants, which could serve as a backbone of Energy security, remain major unresolved challenges.

The ten-year network development plans (TYNDP) include demand forecasts and the means for meeting them, as well as a list of new and rehabilitated infrastructure intended to ensure the reliable satisfaction of projected demand. However, the ten-year development plan for the electricity transmission network is even more radical in its projections than CEI: although it is formally designed for 2034, it already forecasts, for 2030, electricity exports of 12.7 billion kilowatt-hours (almost equal to today's annual consumption), above the level of moderately growing domestic demand. This projection is inconsistent with the National Energy and Climate Plan, with the CEI, and likely with Georgia's real capabilities and needs. Dependence on secure supply is effectively replaced with the strong dependence on external market. It may therefore be said that the network development plans function more as sectoral documents that, to some extent, reflect short-term project planning, but are less reliable in their long-term scenarios and are not aligned with other strategic documents.

As a result, the inconsistencies among the country's official documents, as well as political decisions that diverge from them, lead to ambiguity in strategic priorities and to the dispersion of effort across various, including suboptimal, directions. This creates an environment in which questionable projects can be easily justified, while critically important projects are postponed, resulting in the waste of financial, temporal, and natural resources. A vivid example is the policy of "maximizing hydropower development," which in practice evolved into the issuance of numerous questionable memoranda to "developers" and created fertile ground for opposition to hydropower. As of today, memoranda have been issued for 11 gigawatts of renewable energy projects — an entirely unrealistic figure that exceeds more than twice the total installed capacity of the entire energy system of Georgia.

Meanwhile, projects that are fundamental to Georgia's Energy security—including underground gas storage, new high-efficiency combined-cycle power plants, and strategically located reservoir hydropower stations remain delayed or stagnant. These investments could mitigate seasonal shortages, strengthen resilience, and reduce the most consequential risks to the system. Instead, they now signal the inability of successive governments to address the energy sector's core long-term strategic vulnerabilities.

Taken together, Georgia's Energy security discourse remains fragmented, superficial, and insufficiently grounded in systematic analysis. This dynamic leads to the **misallocation of financial, institutional, and human resources**, delays essential projects, and ultimately reduces the country's preparedness to defend its core national interests amid energy dependence risks. Without a clearer strategic direction and a more coherent planning framework, the country is likely to continue to struggle with misaligned priorities and delayed implementation of critical infrastructure.

4. Steps Forward and Basic Considerations

To improve the situation, it is necessary to establish a solid methodological foundation, strengthen policy-analysis capacities, develop decision-making mechanisms, and ensure effective communication so that the preconditions are created not only for tactical steps but also for strategic actions and projects. This requires revising some entrenched stereotypes and reconsidering other circumstances often overlooked. Specifically:

- **Energy security is part of state security.** It cannot be reduced to dependence on external energy

sources, much less on any single source (including electricity). Energy-related threats extend far beyond supply interruptions and encompass multiple other dimensions, including physical and cyber security. Cyberattacks, economic expansion, and the acquisition of political influence over political decisions by energy supplying countries can pose risks equal to, or greater than, physical supply disruptions. Energy security analysis requires a general security framework that identifies the referent object to be protected, assesses all relevant threats, and establishes priorities, which makes it possible to evaluate energy-related risks.

• **Energy security is not a static attainable end-state.** There is no absolute or acceptable level of Energy security; there is always room—and the need—for improvement. In a dynamic and interconnected environment, where economic, political and technological developments continuously reshape the energy landscape, new threats and opportunities constantly emerge. Accordingly, ensuring Energy security is a continuous process.

• **Energy security has both long-term and short-term dimensions.** At the tactical level, it is defined by various types of response plans, reserves, and preventive measures. At the strategic, long-term level, it requires work on long-term policy measures and projects, including the deployment of technologies, regional initiatives, long-term strategic contracts, strategic reserves, security-related investments, and other actions that will determine the country's Energy security status decades from now. There is inherent conflict and competition for resources between long-term and short-term Energy security objectives. Under these conditions, governments naturally tend to favor short-term objectives in line with their immediate priorities. This makes it necessary to establish independent, professional mechanisms that ensure long-term stability against shorter political priorities.

Energy independence is hardly a realistic objective for Energy security. In practice, an energy-independent country does not exist, as it is exceedingly rare for any state to be completely isolated and fully self-sufficient. Import-dependent countries face the risk of supply interruptions or price spikes, while exporter countries depend on the security of their sales markets (a dynamic clearly illustrated by the reassessment of Russia–EU energy relations in the context of the ongoing war in Ukraine).

• **The share of external dependence is an insufficient indicator for assessing Energy security.** In reality, countries' dependence on external energy sources ranges from +100% (Luxembourg) to –700% (Norway), and only a handful of states (e.g., Uzbekistan, Malaysia) are close to zero. However, this metric does not capture seasonal fluctuations or dependence on specific energy carriers, nor does it reflect the actual risks associated with that dependence. For example, based solely on external dependence, Georgia—with its 80% dependence—ranks 22nd among the most import-dependent countries, yet it is difficult to claim that it is supplied more securely than Belgium (87%, ranked 14th), Japan (90%), or Luxembourg, which is 100% import-dependent. Clearly, this figure does not directly represent security, and deeper, detailed analysis is required, taking into account specific energy carriers and associated risks.

• **Energy security should be measured by the total risk associated with energy supply and consumption**, insofar as these risks may threaten the country's core values, its national interests, and the functioning of society. The risks arising from energy dependence are far broader and more multidimensional than can be captured by annual—or even seasonal—import volumes or percentage indicators.

• **Prioritization and optimization of measures.** Hundreds of different—preventive, responsive, and diversification-related —measures can be undertaken to strengthen Energy security, and all of them might

yield positive effects. However, because resources and time are always limited, it is essential to identify priority directions and actions; otherwise, scarce resources will be dispersed and used inefficiently through non-targeted expenditures. The quality of an Energy security policy should be judged by how accurately it identifies high-priority risks and how effectively it implements measures to reduce them.

• **Efforts to reduce import dependence must be commensurate with other risk-reduction measures.** Lower import levels do indeed reduce certain political risks, but oftentimes the same effect can be achieved through parallel and more efficient actions like supply and demand diversification, risk management through diplomacy, enhancing internal system resilience, energy efficiency, and strategic reserves. Although increased domestic production is inevitably necessary, it may be inefficient in reducing the supply risks on the background of growing consumption.

• **Effective Energy security policy rests on sound planning, reliable data, strong analytical capacity, and coordinated action across institutions.** Because the energy sector is long-cycle and inertia-bound, meaningful change requires years of sustained investment and project implementation. Planned measures must also be mutually reinforcing to achieve lasting impact.Future security objectives must therefore be planned using today's information, with the understanding that current decisions will shape the system for decades.

A full Energy security assessment and policy design is a complex, multidimensional task that demands coordinated engagement across institutions and experts. High-quality data and professional analytical processes are essential both for making informed decisions and for securing the financing needed to implement them effectively.

5. Conclusions and Recommendations

Georgia's current Energy security discourse and analytical foundation do not yet provide the basis for a coherent, credible, and strategically aligned national Energy security policy. While EU-aligned documents and donor-supported initiatives have strengthened important elements of supply security—particularly in crisis response and short-term operational planning—these measures address only part of Georgia's needs, leaving little coverage of risks and opportunities in strategic regional energy interactions. The country continues to face major challenges in implementing **strategic, long-term energy projects**, which are essential for true long-term resilience.

For Georgia, with its roughly 80% external dependence, "energy independence" is an unattainable objective in the short and medium term. Likewise, there is no evidence that "electricity independence"—especially when interpreted as achieving an annual zero-balance between demand and supply by renewable sources —is an optimal or effective target for enhancing Energy security. Relying on such concepts only highlights weaknesses in policy analysis and planning, and makes it less convincing to international or local financial institutions..

Institutional and professional weaknesses in energy planning, policy analysis, and policy formulation constitute an Energy security challenge in their own right, as they prevent the country from directing limited time, institutional capacity, and financial resources toward its highest-risk vulnerabilities, and increase the risks of errors. Substantial improvements are needed in the methodological, institutional, and professional capabilities that underpin energy policy analysis, and these must be firmly connected to real policy-making.

It is necessary to:

- **Develop a national Energy security assessment framework methodology for Georgia**, along with the institutional and professional capacities required to implement it. Such a methodology must be grounded in full-spectrum energy risk analysis rather than relying solely on annual import volumes and sub sectorial targets.
- **Initiate the revision of Georgia's National Security Concept** to formulate the risk assessment framework for Energy security and articulate strategic visions for socio-economic and political development.
- Establish and strengthen research and analytical capacity within the energy sector, and **enhance cooperation on multidisciplinary research with academic institutions, universities and think-tanks**.
- Implement the well-founded recommendation of the CEI to **create a research institution or structural unit tasked with preparing strategic energy documents** and coordinating key policy-defining activities across the sector.

• A comprehensive Energy security analysis and the formulation of policy constitute a complex, labor-intensive, and multidimensional process, in which the involvement and coordination of numerous institutions, experts, and responsible actors are essential. **The foundation of Energy security lies in ongoing, data and knowledge based planning.** The energy sector as a long-term, inertia-driven domain should be planned ahead of time with Energy security objectives and optimal mutually reinforcing actions embedded in its core decisions.

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