NATIONAL CONVENTION ON THE EU IN GEORGIA

Energy Security Assessment, Including the Legal and Institutional Framework

Natalia Shatirishvili, Giorgi Mukhigulishvili
Veronika Oravcova, Alexander Duleba

PROJECT PARTNER: SLOVAK FOREIGN POLICY ASSOCIATION
IMPLEMENTING PARTNER: THE LEVAN MIKELADZE FOUNDATION
DONOR ORGANISATION: SLOVAKAID AND FRIEDRICH EBERT STIFTUNG
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Introduction

The report represents a summary of two studies:

- Energy Security Legal and Institutional Assessment - case studies of Georgia, Slovakia, and the EU
- Energy Security Assessment Indicators, including the framework for quantitative assessment and the assessment results for the base year.

The first part of the report summarizes 27 energy security assessment criteria developed by the project team and the key findings of the assessment. The developed criteria are based on EU energy security related Directives and relevant international research papers. Using these assessment criteria, the authors assessed the legal and institutional framework in Georgia and Slovakia.

The set of criteria represents an assessment framework that can be used for re-assessing/updating the legal and institutional framework to track changes, identify improvements, etc. This information will support national reporting (e.g. the NECP) and development of other strategic documents, such as, for example, a national energy strategy.

The second part of the report describes the framework for the quantitative assessment of energy security. The framework includes a set of quantitative indicators, their assessment methodology, data sources, and benchmark values (ranges) to support comparative assessment. The full version of the framework is presented in Excel format as an attachment to this report.

Additionally, the project team assessed the energy security state of Georgia using the framework indicators for the base year, 2019. This first assessment can serve as a basis for a regular update using the formulas and data sources presented in the main file. The indicators can serve as an analytical basis for strategic document development and comprehensive assessment of energy security in Georgia. In contrast to international energy security indexes, this approach allows for consideration of the specificity of the national energy sector. The conducted assessment is the very first attempt to comprehensively assess the state of energy security in Georgia and to create a prerequisite for its further evolution.

Institutional and Legal Assessment of Energy Security in Georgia and Slovakia

The table below summarizes the assessment of the institutional and legal framework of energy security in Georgia and Slovakia. In both countries, the assessment was conducted by the same set of indicators that provides the grounds for comparative assessment. The assessment was performed jointly by Georgian and Slovak experts.

Table 1 Energy security institutional and legal framework assessment of Georgia and the Slovak Republic

Criteria	State of the Art/Georgia	State of the Art/Slovakia
Legal and Policy Framework		
1. Does the country have a national security strategy/concept and how is energy security considered/reflected there?	The LAW OF GEORGIA ON NATIONAL SECURITY POLICY PLANNING AND COORDINATION (2015) determines the areas of the national security policy, the process of planning and coordination of the policy, and the authority of agencies that coordinate the policy planning process. Energy Security is one of the national security policy areas. The National Security Concept of Georgia is a basic document that outlines national values and interests, defines the vision of the safe development of the country, determines the threats, risks and challenges that the country faces, and identifies basic areas of the national security policy, including energy security. All national and agency-level documents of national security policy planning shall comply with the National Security Concept of Georgia. The Government of Georgia shall develop the National Security Concept of Georgia and submit it to the Parliament of Georgia for approval. The National Security Concept of Georgia shall be approved by resolution of the Parliament of Georgia. The process of planning the national security policy is coordinated by the National Security Council. In 2011, Georgia published its latest National Security Concept. The concept provides information on the National Interests of Georgia, Threats, Risks and Challenges to its National Security and Priorities of National Security Policy. Opportunities and prospects of cooperation in energy security with the EU, Turkey, and the USA, and Georgia's role as a transit country, are also discussed in the document. The National Security Council is updating the national security concept and will submit it to Parliament by the end of 2021.	Strategic documents in the field of energy: • ***Energy Policy of SR*** https://rokovania.gov.sk/RVL/Material/11327/1 • English version: https://www.mhsr.sk/uploads/files/47NgRIPQ.pdf • ***Energy Policy of SR*** (2014; furthermore EP) https://rokovania.gov.sk/RVL/Material/4819/1 The EP is the strategic document defining the energy sector's primary objectives and priorities to 2035 with a view to 2050. It is a component of Slovakia's national economic policy strategy (title of the document: ***Economic Policy Strategy of the Slovak Republic until 2030***, Ministry of Economy of SR – the last version of the document was approved by the Government of SR on 27 June 2018, https://rokovania.gov.sk/RVL/Material/23019/1) EP identifies four pillars of the EP of SR as follows: ***energy security*** (in terms of energy supply), ***energy efficiency***, ***competitiveness*** of energy market, and ***sustainable energy*** (RES). In addition to EP (2014) there is a specific strategic document in force which sets goals and measures in the field of decommissioning of nuclear facilities and management of nuclear waste, entitled ***Strategy for the Final Part of Peaceful Utilization of Nuclear Energy in SR*** https://www.mhsr.sk/uploads/files/lTgnG37d.pdf . EP 2014 has been upgraded by the adoption of the ***Integrated National Energy and Climate Plan of SR for 2021 to 2030*** (Ministry of Economy of SR and Ministry of Environment of SR, 2019 – furthermore NECP), https://ec.europa.eu/energy/sites/ener/files/sk_final_necp_main_en.pdf The Ministry of Economy of the Slovak Republic (MoE) is responsible for developing the Energy Policy for a minimum period of 20 years, and updating it on a five-year cycle at a minimum pursuant to Section 88 of ***Act 251/2012 Coll. on energy*** (see below). Following ***Act. 575/2001 Coll. on the organization of the Government activities and the organization of central state administration bodies*** (https://www.zakonypreludi.sk/zz/2001-575#cast2), the MoE (Energy Section) is responsible for planning and implementing the energy policy of SR, including drafting policy documents and legislation as well as supervising their implementation. It does not use the services of either domestic or foreign consulting companies. NECP has been developed by the MoE of SR together with the Ministry of Environment of SR. Corresponding strategic documents (sorted in descending order by year of adoption): • ***Long-term strategy for renovation of buildings*** (Ministry of Transport and Construction of SR – before submission to legislating process, which is expected to start in 2021), https://www.slov-lex.sk/legislativne-procesy/-/SK/dokumenty/LP-2020-575

- ***Recovery Plan for SR*** (Government of SR under the coordination of Ministry of Finance of SR, completed the Plan in April 2021); an interim summary of proposed reforms and investments as of March 2021 see at https://www.mfsr.sk/sk/media/tlacove-spravy/plan-obnovy-putuje-do-pripomienkoveho-konania.html.
- ***Modern and Successful Slovakia. Integrated National Reform Plan*** (developed by the Ministry of Finance of SR, 2020, in cooperation with other ministries), https://www.mfsr.sk/sk/financie/institut-financnej-politiky/strategicke-materialy/ine-strategicke-materialy/ - basic planning document for the elaboration of the Recovery Plan, which defines the main reform areas (measures/actions and investments) for RP, including in the area of *green economy* (it will influence the adaptation of strategic documents and legislation in the coming years).
- ***Security Strategy of SR*** identifies "energy, raw material, environmental and food security" as one of the 20 strategic security interests of SR; climate change, and disruption or destruction of critical infrastructure, including in the field of energy, together with the interruption of the supply of energy raw materials, are identified as threats to national security.
- ***Low-Carbon Development Strategy of SR until 2030 with a View to 2050*** (Ministry of Environment of SR, approved by the Government of SR on March 5, 2020), English version: https://www.minzp.sk/files/oblasti/politika-zmeny-klimy/ets/lts-sk-eng.pdf
- ***Action Plan for the Development of Electro-mobility in the Slovak Republic*** (Ministry of Economy of SR, approved by the Government Resolution No 110/2019): https://www.mhsr.sk/uploads/files/5wuw3Lle.pdf
- ***Resolution No 336/2019 on the Action Plan of the Transformation of the Upper Nitra Coal Region*** (approved by the Government on 3 July 2019) – decision to phase out coal mining in Upper Nitra region:
- ***Greener Slovakia. Strategy of Environmental Policy of SR until 2030*** (Ministry of Environment of SR – approved by the Government of SR, February 2019, English version: https://www.minzp.sk/files/iep/greener_slovakia-strategy_of_the_environmental_policy_of_the_slovak_republic_until_2030.pdf - coordinated with the NECP; it sets a goal of achieving carbon neutral economy by 2050 and includes a section on green economy, including clean energy (focus on energy efficiency and RES).
- ***Strategy for Adaptation of SR to Climate Change*** (Ministry of Environment of SR, 2018), https://www.minzp.sk/files/odbor-politiky-zmeny-klimy/strategia-adaptacie-sr-zmenu-klimy-aktualizacia.pdf
- ***Preventive Action Plan*** (for natural gas supply) (Ministry of Economy of SR, 2017), https://www.mhsr.sk/uploads/files/PS41ZTp9.pdf
- ***Emergency Plan*** (for natural gas supply) (Ministry of Economy of SR, 2017), https://www.mhsr.sk/uploads/files/CFF8Tt6y.pdf
- ***Energy Efficiency Action Plan of SR*** for 2017-2019 with a view to 2020 (Ministry of Economy of SR, 2017), https://www.mhsr.sk/energetika/energeticka-efektivnost/spravy-o-pokroku – regularly updated for a three-year-period since 2008
- ***Strategic Plan for the Development of Transport in SR until 2030*** (Ministry of Transport, Construction and Regional Development, December 2016), https://www.mindop.sk/ministerstvo-1/doprava-3/strategia/strategicky-plan-rozvoja-dopravy-sr-do-roku-2030/strategicky-plan-rozvoja-dopravy-sr-do-roku-2030

		• ***National Policy Framework for the Development of the Alternative Fuels Market*** (Ministry of Economy of SR, approved by Government Resolution No 504/2016): https://rokovania.gov.sk/RVL/Material/21564/1 • ***National Renewable Energy Action Plan*** (Ministry of Economy of SR, 2010): https://www.mhsr.sk/uploads/files/krFyTZfZ.pdf - the document was revised in 2011: https://www.mhsr.sk/uploads/files/W58vMbYo.pdf • ***Energy Efficiency Conception of SR*** (Ministry of Economy of SR, 2007), https://rokovania.gov.sk/RVL/Material/19492/1 • ***Strategy on Higher Utilization of Renewable Energy Sources in SR*** (Ministry of Economy of SR, 2007), https://www.mhsr.sk/uploads/files/MuZlb3Ut.pdf • ***The Concept of Utilization of Renewable Sources of Energy*** (Ministry of Economy of SR, 2003), https://www.mhsr.sk/uploads/files/59a0GhtE.pdf
2. Main law on energy security	The Law of Georgia on Energy and Water Supply (2019) provides a general legal framework for the generation, transmission, distribution, supply and trade in the electricity sector and for the transmission, distribution, supply, storage and trade in the natural gas sector, with a view to promoting the establishment, opening, development and integration of proper, transparent and competitive electricity and natural gas markets. The law incorporates the requirements of the following EU legal acts: a) Directive 2009/72/EC of 13 July 2009 concerning Common Rules for the Internal Market in Electricity and repealing Directive 2003/54/EC; b) Regulation (EC) No 714/2009 of 13 July 2009 on Conditions for Access to the Network for Cross-border Exchanges in Electricity and repealing Regulation (EC) No 1228/2003. **c) Directive 2005/89/EC of 18 January 2006 concerning Measures to Safeguard Security of Electricity Supply and Infrastructure Investment.** d) Directive 2009/73/EC of 13 July 2009 concerning Common Rules for the Internal Market in Natural Gas and repealing Directive 2003/55/EC. e) Regulation (EC) No 715/2009 of 13 July 2009 on Conditions for Access to the Natural Gas Transmission Networks and repealing Regulation (EC) No 1775/2005. **f) Directive 2004/67/EC of 26 April 2004 concerning Measures to Safeguard Security of Natural Gas Supply.**	***Act 251/2012 Coll. on energy*** (last amendment as of January 1, 2021), https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2012/251/ This law regulates a) conditions for doing business in the energy sector, b) market access, rights and obligations of energy market participants, c) ***measures aimed at ensuring security of electricity and gas supply and the functioning of the internal market in electricity and natural gas***, d) rights and obligations of persons whose rights and obligations may be affected by energy market participants, e) performance of state administration in energy, f) performance of state supervision and control over business in the energy sector. This law is continuously amended depending on the adoption of strategic and planning documents.

3. Key laws and bylaws relevant to energy security

1. Law of Georgia on Oil and Gas (1999) adopted by the Parliament
2. The Order of the Minister of Economy and Sustainable Development on the Security of Electricity Supply Rules (2020)
3. The Ministry of Economy and Sustainable Development (MoESD) is developing the Rules for Security of Gas Supply
4. Ordinance of the Georgian National Energy and Water Supply Regulatory Commission on Network Rules (2014)
5. Ordinance of the Georgian National Energy and Water Supply Regulatory Commission on Natural Gas Network Rules, 2018
6. Ordinance of the Georgian National Energy and Water Supply Regulatory Commission on Electricity Market Rules, 2020
7. Order of Minister of Energy on Approval of the Natural Gas Market Rules, 2006
8. Law on maintaining mandatory stocks of crude oil and oil products is under development
9. Resolution of the Government of Georgia №365 - On the Rule of Protection of Main Pipelines (Oil, Petroleum Products, Petroleum Related and Natural Gas and Their Transformation Products) and the Establishment of Their Protection Zones

In addition to the above ***Act 251/2012 Coll. on energy***, there are the following laws relevant to energy security, which are continuously amended depending on the adoption of strategic documents:
Constitutional Act 227/2002 Coll. on state security in time of war, state of war, martial law and state of emergency (last amendment of December 29, 2020), https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2002/227/
Act 110/2004 on functioning of the Security Council of the Slovak Republic in peacetime (last amendment of January 1, 2016), https://www.zakonypreludi.sk/zz/2004-110
This law established the ***Committee for Energy Security*** as a permanent working body of the Security Council of SR (together with committees on foreign policy, defence planning, civil emergency planning, coordination of intelligence services, and cyber security).
Act No 218/2013 Coll. on emergency stocks of petroleum and petroleum products (last amendment of January 1, 2021), https://www.zakonypreludi.sk/zz/2013-218
The law established ***Emergency Oil Stocks Agency*** that maintains emergency stocks on behalf of industry participants.
Act 179/2011 Col. on economic mobilization and on amendments to Act 387/2002 Coll. on the management of the state in crisis situations outside the time of war and martial law (last amendment of January 1, 2021), https://www.zakonypreludi.sk/zz/2011-179

Pillar I: Energy supply
Act 45/20021 Coll. on critical infrastructure (last amended on March 1, 2021), https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2011/45/20210301.html - regulates operation of critical infrastructure also in the energy sector in four areas: mining, power system, gas, oil and oil products
Act 308/2018 Coll. on the National Nuclear Fund and on the amendment of Act no. 541/2004 Coll. on the peaceful use of nuclear energy (atomic law), https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2018/308/20190101
Act No 218/2013 Coll. on emergency stocks of petroleum and petroleum products (last amendment of January 1, 2021), https://www.zakonypreludi.sk/zz/2013-218
Act 251/2012 Coll. on energy (last amendment of January 1, 2021), https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2012/251/ - see above.
Act 179/2011 Coll. on economic mobilization and on amendments to Act 387/2002 Coll. on the management of the state in crisis situations outside the time of war and martial law (last amendment of January 1, 2021), https://www.zakonypreludi.sk/zz/2011-179
Decree 459/2008 Coll. of the Ministry of Economy of SR (16 October 2008), https://www.mhsr.sk/uploads/files/ew1l5ckO.pdf [identifies detailed procedure for declaring a state of emergency in the field of supply of electricity and natural gas, announcing restrictive measures at the state of emergency, and measures to eliminate the state of emergency]
Act 657/2004 on thermal energy (last amendment of December 25, 2015), https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2004/657/20151229.html
Act 82/1994 Coll. on state material reserves (last amended on February 1, 2008), https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/1994/82/20080201.html - regulates operation of strategic oil reserves

Pillar II: Energy efficiency

Act 321/2014 Coll. on energy efficiency (last amendment of January 1, 2021), https://www.zakonypreludi.sk/zz/2014-321

Decree 364/2012 Coll. of the Ministry of Transport, Construction and Regional Development of SR (12 November 2012) on the implementation of Act No. 555/2005 Coll. on the energy performance of buildings, https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2012/364/

Act 182/2011 Coll. on labelling of energy-related products, https://www.epi.sk/zz/2011-182

Act 529/2010 Coll. on environmental design and the use of products (eco-design act) (last amendment of April 1, 2018), https://www.zakonypreludi.sk/zz/2010-529

Act 555/2005 Coll. on energy performance of buildings (last amendment of September 1, 2019), https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2005/555/

Pillar III: Competitiveness of the energy market

Act 251/2012 Coll. on energy (last amendment of January 1, 2021), https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2012/251/ - see above.

Act 250/2012 Coll. on regulation in network industries (last amendment of November 1, 2020), http://www.urso.gov.sk/sites/default/files/dokumenty/ZZ_2012_250_20201101.pdf

Act 24/2006 Coll. on the environmental impacts assessment, (last amendment July 21, 2020), https://www.zakonypreludi.sk/zz/2006-24

Act 98/2004 Coll. on excise duty on mineral oil (last amendment of January 1, 2020), http://www.urso.gov.sk/sites/default/files/dokumenty/ZZ_2004_98_20200101.pdf

Pillar IV: Support for renewable energy sources

Act 309/2009 on the support of renewable energy sources and high-efficiency cogeneration, https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2009/309/20180201

Note: as already mentioned, the above laws are continuously amended depending on the adoption of strategic documents

Nuclear energy:

A***ct 541/2004 Coll. on the peaceful use of nuclear energy (Atomic Act)*** (last amendment of October 1, 2019), https://www.zakonypreludi.sk/zz/2004-541

Act 238/2006 Coll. on the National Nuclear Fund for decommissioning of nuclear installations and for management of spent fuel and radioactive waste (the Nuclear Fund Act) (last amendment of January 1, 2019), https://www.zakonypreludi.sk/zz/2006-238

Act 54/2015 Coll. on civil liability for nuclear damage and its financial coverage (last amendment of January 1, 2016), https://www.zakonypreludi.sk/zz/2015-54

Act 87/2018 Coll. on Radiation Protection (the Act is in force until December 31, 2023), https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2018/87/

4. Does the country have a national energy security policy and strategy documents (incl. an NECP)? Are those documents consistent with the National Security Concept?	Georgia does not have a national energy security policy or strategy documents, however, in 2015 the Parliament of Georgia adopted the resolution on the Main Directions of the State Policy in the Field of Energy. According to the resolution, the goal of Georgia's energy policy is to improve the country's energy security, which ensures the implementation of national interests by providing a sufficient quantity, high quality, uninterrupted supply of various types of energy at an affordable price. In 2019, the Minister of Economy and Sustainable Development adopted **the Energy Strategy of Georgia 2020-2030**. The strategy is in compliance with "The Main Directions of the State Policy of Georgia in the Energy Sector". The MoESD is updating energy policy priorities and the strategy according to the new law on Energy and Water Supply. According to the law on Energy and Water Supply (article 7) the Ministry (MoESD), in cooperation with the Government of Georgia, the Commission (GNERC) and other relevant parties, shall develop a state energy policy for at least a 10-year period, and ensure its implementation, following its approval and promulgation by the Parliament of Georgia, in accordance with the appropriate procedure. The State Energy Policy shall consider all the energy resources used in the country, and it shall include a **national integrated energy and climate plan (NECP)** aiming to provide energy security and solidarity, the management of energy markets, the reduction of greenhouse gas emissions, the management of innovation, competition, and energy requirements in the energy sector. Every year, electricity transmission operator (TSO) – Georgian State Electro system (GSE) publishes a **Ten Year Network Development Plan of Georgia**. The latest plan covers the period 2021-2031. In the gas sector, the Georgian Oil and Gas Corporation (GOGC) publishes a **Ten-Year Development Plan for the Georgian Gas Transmission Network.** The latest plan covers the period 2021-2030. In March 2021, the MoESD published the **Security of Supply Statement in Electricity Sector - 2021.** In April 2021, the Government of Georgia approved Georgia's updated **Nationally Determined Contribution (NDC), Climate Change Strategy 2030, and Climate Change Strategy Action Plan for the period 2021-2023.**	The NECP (2019) has been developed as an upgrade of EP (2014). In addition to the four-pillar-structure of energy security understood in its wider context, it added decarbonisation as a cross-cutting fifth pillar for the energy sector. The NECP has integrated strategic documents developed previously by the Ministry of Economy of SR and Ministry of Environment of SR. The recently upgraded ***Security Strategy of SR*** (2021), developed by the Ministry of Foreign and European Affairs of SR and the Ministry of Defence of SR: http://mepoforum.sk/wp-content/uploads/2021/01/Bezpe%C4%8Dnostn%C3%A1-Strat%C3%A9gia-SR-2021.pdf identifies energy (and climate) threats to Slovakia, as well as outlining policies to address them. However, it refers to the NECP/EP and ***Greener Slovakia*** document (2019, Ministry of Environment of SR) in the field. The primary aim of a "general" security strategy, under which we understand here the ***Security Strategy of SR***, is to provide guidance in the field of national security and foreign policy, not so much in the field of energy (and climate) policies. In Slovak national policy planning and legislating practice, it works exactly the opposite in the field of energy (and climate) policy/security. It is the Ministry of Economy (energy policy) and the Ministry of Environment (climate policy) that provide guidance, estimate risks, and develop policies to address them, amending legal acts and taking responsibility for their implementation. It follows from the division of the role between ministries, which is established by ***Act. 575/2001 Coll. on the organization of the Government activities and the organization of central state administration bodies*** (https://www.zakonypreludi.sk/zz/2001-575#cast2). The ***Strategy for Adaptation of SR to Climate Change*** (Ministry of Environment of SR, 2018) mentions threats that the energy sector is exposed to and deals with threats connected to climate change. The ***National Strategy for Cyber Security*** (prepared by the National Security Authority and approved by Government Resolution 5/2021) does, however, not deal with specific threats to the energy sector, https://www.nbu.gov.sk/wp-content/uploads/kyberneticka-bezpecnost/Strategia_kybernetickej_bezpecnosti_2021.pdf The ***National Strategy of Security Risks Management of the SR*** (Ministry of Interior of SR, 2015) identifies security risks related to critical infrastructure which also includes the energy sector: https://rokovania.gov.sk/RVL/Material/12589/1

	The Ministry of Environmental Protection and Agriculture (MEPA) is updating the **Low Emission Development Strategy of Georgia (LEDS)**.	
5. Does the country set National Energy Security Goals and Objectives, targets for 2030?	The draft of the National Energy and Climate Plan (NECP) defines the following objectives within the energy security dimension: • Minimize the supply risks through diversification of energy sources and supply routes; • Reduce energy import dependency; • Increase the flexibility and resilience of energy systems; • Protect critical infrastructure and mitigate risks related to cyber security and climate change; • Develop the demand side measures and establish sustainable power distribution over the whole territory of Georgia; • Stabilize and curb the energy security risks stemming from the occupation of Georgia's territories. Although the NECP does not provide quantitative targets for energy security by 2030, it defines the following targets: • Increase the share of final energy consumption from renewable energy sources (target of 35% by 2030); • Achieve primary energy consumption savings (target 15% under the BAU in 2030); • Georgia is fully committed to an unconditional limiting target of 35% below 1990 level of its domestic total greenhouse gas emissions by 2030 – equivalent to a maximum of 27.2 million tCO2eq including the LULUCF sector; • Georgia is committed to a target of 50-57% of its total greenhouse gas emissions by 2030 compared to 1990, if the global greenhouse gas emissions follow the 2-degree or 1.5- degree scenarios respectively, with international support;	See Section 2 "National objectives and targets": ***Integrated National Energy and Climate Plan of SR for 2021 to 2030*** (Ministry of Economy of SR and Ministry of Environment of SR, 2019 – furthermore NECP), https://ec.europa.eu/energy/sites/ener/files/sk_final_necp_main_en.pdf, p. 39-79. European Commission, however, in the ***evaluation*** of Slovak NECP emphasized that Slovakia states in its final plan that diversification and the reduction of energy dependency are key areas to be worked on but does not set any concrete national objectives for energy security: https://ec.europa.eu/energy/sites/default/files/documents/staff_working_document_assessment_necp_slovakia_en.pdf

6. Are EU energy security framework directives and regulations reflected in the national legislation?	As a member of the Energy Community, Georgia is obliged to transpose the following directives into the national legislation: • **Directive 2005/89/EC of 18 January 2006 concerning measures to safeguard the security of electricity supply and infrastructure investment** • **Directive 2004/67/EC of 26 April 2004 concerning measures to safeguard the security of natural gas supply** • **Council Directive 2009/119/EC of 14 September 2009 imposing an obligation on Member States to maintain minimum stocks of crude oil and/or petroleum products** The law on Energy and Water Supply reflects the requirements of the Directives 2005/89 and 2004/67. The deadline for the transposition of the Directive 2009/119 is 1 January 2023.	In the EU Accession Treaty, Slovakia has committed itself to transposing all legal EU acts. The degree of transposition depends on the form of legal act of the EU. Slovakia has transposed all legal acts of the EU related to energy security into its national legislation. The transposition of European legislation is one of the main reasons for the relatively frequent amendment of relevant national laws in the field of energy, including the adoption of regulations that may be issued by the Slovak government (in the form of Regulation) or individual ministries (in the form of Decree), which, together with laws, are constituent parts of the national legislation. Main Regulations / Directives: ***Regulation (EU) 2017/1938*** of the European Parliament and of the Council of 25 October 2017 concerning measures to safeguard the security of gas supply, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32017R1938 ***Directive (EU) 2019/944*** of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity, https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32019L0944
7. Does the country have emergency plans, or an emergency response strategy in the electricity and gas sectors? Energy risk management plans (electricity/gas, other sub sectors)?	Utility companies usually have their own plans in emergency situations, and in most cases those plans are confidential. In the electricity and gas sectors of Georgia, the TSOs are currently developing emergency and risk management plans in accordance with the EU requirements. According to the law on Energy and Water Supply (articles 132, 140) the MoESD shall develop a strategy of action during a state of emergency in the electricity and natural gas sectors. The strategy is under development. The Security of Electricity Supply Rules defines the rules for reducing the risks of an electricity crisis, as well as the rules for crisis prevention and management in the electricity sector, including rules for the provision of emergency risk management. The rules include three annexes: Annex 1- "Methodology for Identification and Evaluation of Electricity Safety Risks and Crisis Scenarios" Annex 2- "Seasonal and Short-Term Adequacy Assessment Methodology" Annex 3- "Medium and Long-Term Adequacy Assessment Methodology" (The Energy Law, Article 60 and 68) The rules of the electricity/natural gas transmission network establish the procedures of operation of the electricity/gas systems under regular and emergency conditions, in cases of malfunction, during force majeure circumstances, and any other impediment, taking into consideration the rules for emergency management and safety of supply, established by relevant legal acts.	***Act 251/2012 Coll. on energy*** (last amendment of January 1, 2021), https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2012/251/ identifies rules and procedures at the emergency situation (in electricity and natural gas) if market fails in ensuring energy supply. There are specific plans dealing with the prevention of disruption to the natural gas supply: ***Preventive Action Plan*** (for natural gas supply) (Ministry of Economy of SR, 2017), https://www.mhsr.sk/uploads/files/PS41ZTp9.pdf as well as dealing with a disruption to natural gas supply if it happens: ***Emergency Plan*** (for natural gas supply) (Ministry of Economy of SR, 2017), https://www.mhsr.sk/uploads/files/CFF8Tt6y.pdf

8. Analytical methods and planning tools used in assessment of energy security risks, planning prevention and mitigation measures.	With the support of donors, the MoESD has developed the TIMES model for the National Integrated Energy and Climate Plan (NECP). TIMES[1] is a technology rich, bottom-up model generator which uses linear-programming to produce a least-cost energy system, optimized according to a number of user constraints, over medium to long-term time horizons. TIMES is used for "the exploration of possible energy futures based on contrasted scenarios". The TIMES model generator combines two different but complementary systematic approaches to modelling energy: a technical engineering approach and an economic approach. The Georgia/MARKAL (MARKet and ALlocation) model and LEAP (Long-range Energy Alternatives Planning System) planning tools were used in developing NEEAP, NREAP, NDC, CAP and LEDS documents.	In developing the NECP/EP, the Ministry of Economy of SR applied a scenario model based on a projection with the existing policies/measures against identification of adjusted policies/measures in order to achieve defined goals. This analytical approach has been applied in the development of most national strategic documents in the field. The increase RES ambition was based on the PRIMES-EUCO model scenario. For elaboration of the ***Strategic Plan for the Development of Transport in SR until 2030*** (Ministry of Transport, Construction and Regional Development, December 2016) the Ministry applied analytical modelling of the transport sector: https://www.mindop.sk/ministerstvo-1/doprava-3/strategia/strategicky-plan-rozvoja-dopravy-sr-do-roku-2030/strategicky-plan-rozvoja-dopravy-sr-do-roku-2030 for description of applied models, see ***Methodical manual for the compilation of traffic models and traffic forecasts***: https://www.mindop.sk/ministerstvo-1/doprava-3/dopravne-modelovanie The World Bank, which was commissioned by the Ministry of Environment of SR for the elaboration of the ***Low-Carbon Development Strategy of SR until 2030 with a view to 2050*** (Ministry of Environment of SR, 2020), applied two primary analytical models: Compact Primes Model (CPS) and ENVISAGE Slovakia (Slovak CGE). For a description of applied models see the end of the document: https://www.minzp.sk/files/oblasti/politika-zmeny-klimy/ets/lts-sk-eng.pdf
9. Does the country have a climate change adaptation strategy/plan in the energy sector?	Georgia has not developed a climate change adaptation strategy/plan in the energy sector. However, in its **Fourth National Communication to the UNFCCC,** Georgia assessed the vulnerability of the energy sector by considering climate change development scenarios.	***The Strategy for Adaptation of SR to Climate Change*** (Ministry of Environment of SR, 2018), https://www.minzp.sk/files/odbor-politiky-zmeny-klimy/strategia-adaptacie-sr-zmenu-klimy-aktualizacia.pdf (updated) is not linked just to the energy sector. The strategy seeks to link scenarios and possible consequences of climate change to proposals for appropriate adaptation measures in the widest possible range of areas and sectors. In terms of adaptation to the adverse effects of climate change, the following areas are considered key: environment and geology, soil, biodiversity, landscape and water management, settlement environment, population health, agriculture, forestry, transport, travel industry, energy, and other areas of business and risk management. It includes a special section dealing with identification of climate change risks for the energy sector of SR, as well as outlines policies/measures to address them (pp. 73-75).
10. Are energy crisis scenarios reported (can be confidential)?	As one of the closest partners to NATO, Georgia is also eligible to apply for the NATO Science for Peace and Security programme. Leading areas for cooperation include Advanced Technologies, Counterterrorism, and Women, Peace and Security. The program supported research into critical energy security issues such as geohazards to the Enguri Hydropower Infrastructure and Black Swan Scenarios in the Black Sea and Balkans. However, systematic analysis of potential energy crises and energy risks scenarios is not being performed. As per the Law on Energy and Water Supply (articles 132, 140) the MoESD shall develop a strategy of action during a state of emergency in the electricity and natural gas sectors. An informal working group has already been formed, and it started work on security scenarios (currently, only covering the	The Ministry of Economy of SR issues a yearly **Report on the results of the monitoring of security of gas supply** and a **Report on the results of the monitoring of security of electricity supply**, https://www.mhsr.sk/energetika/energeticka-politika/sprava-o-vysledkoch-monitorovania-bezpecnosti-dodavok These reports are issued based on the provisions of ***Act 251/2012 Coll.*** on energy and include the responses to energy crises and measures that have been deployed. National procedures for the prevention and management of emergencies are included in the ***Act 251/2012 Coll***. on energy and in the Decree of the Ministry of Economy of SR ***No 416/2012***, laying down details on the procedure during a state of emergency in the electricity and gas sectors, and Decree of the Ministry of Economy of SR ***No 80/2019***, amending and supplementing Decree 416/2012 (since April 1, 2019). Potential threats to the energy sector are addressed in several documents:

[1] GitHub - etsap-TIMES/TIMES_model: The Integrated MARKAL-EFOM System (TIMES) - a bottom-up optimization model for energy-environment systems

	electricity sector). A similar working group will be formed to look into security in the natural gas sector.	***Strategy for Adaptation of SR to Climate Change*** (Ministry of Environment of SR, 2018), https://www.minzp.sk/files/odbor-politiky-zmeny-klimy/strategia-adaptacie-sr-zmenu-klimy-aktualizacia.pdf ***National Strategy of Security Risks Management of the SR*** (Ministry of Interior of SR, 2015), https://rokovania.gov.sk/RVL/Material/12589/1 ***Preventive Action Plan*** (for natural gas supply) (Ministry of Economy of SR, 2017), https://www.mhsr.sk/uploads/files/PS41ZTp9.pdf ***Emergency Plan*** (for natural gas supply) (Ministry of Economy of SR, 2017), https://www.mhsr.sk/uploads/files/CFF8Tt6y.pdf **Electricity:** The transmission system operator ***Slovenská elektrizačná prenosová sústava (SEPS)*** has measures available to deal with and prevent states of emergency. SEPS has a defence plan to prevent major malfunctions, measures for emergency changes of frequency and voltage, as well as a plan to restore the system after any full or partial state without voltage (blackout). If, during operation, there is a change in the system that causes a sudden overload, in order to remove the overload, SEPS will activate purchased support services, contractually agreed emergency reserves, and/or change the connection of electrical power equipment in the transmission and distribution systems: https://www.sepsas.sk/media/4362/priloha-0013-2020-e-pp.pdf **Natural gas:** The roles of the main actors involved are set in the ***Preventive Action Plan*** and ***Emergency Plan*** (Ministry of Economy of SR, 2017). The Emergency Plan sets out that in case of a crisis, a crisis management plan is created and conveyed by the Ministry of Economy. The management consists of ministry representatives, operators of gas infrastructure (transmission and distribution networks, storage), representatives of the Regulatory Office for Network Industries, and representatives of the Ministry of Foreign and European Affairs. Other members may be invited based on the situation, such as transmission operators in case of a need to balance the grid. The crisis management team will meet on a daily basis and coordinate all the strategies and decisions at national level based on information from operators of the gas infrastructure. They also communicate their decisions to society and other institutions at national or the EU level. The model implied in the Emergency Plan results from real crisis management in 2009. Crisis management then also informed the media (thus also the public) on a daily basis about the progress made. **Nuclear energy:** The ***Nuclear Regulatory Authority of the SR*** (NRA) is a central government authority for nuclear regulation that exercises state supervision over the safety of nuclear installations, including radioactive waste management, spent fuel management and other stages of the fuel cycle, over nuclear materials, including their inspection and registration, as well as over physical protection of nuclear installations and nuclear materials provided for by the relevant license holder: https://www.ujd.gov.sk/ujd/www1.nsf/viewByKeyMenu/En-01 A***ct 541/2004 Coll. on the peaceful use of nuclear energy*** and ***Decree of NRA No. 55/2006*** on details concerning emergency planning in case of an incident or accident in compliance with ***EU Directive No. 89/618 EURATOM*** on public information and provisions to protect health,

		which should be implemented, and on steps to be done in case of a radiological emergency situation and with ***EU Decision No. 87/600*** on the establishment of set arrangements for the community for the urgent exchange of information in case of an extraordinary radiological event. Emergency planning means a set of measures and procedures to identify and cope with incidents and accidents at nuclear installations, and to identify and mitigate and eliminate the consequences of a release of radioactive substances into the general environment upon managing radioactive materials, radioactive wastes or spent radioactive fuel, and upon transportation of radioactive materials. The set of above mentioned provisions is a part of a document which constitutes an emergency plan.
11. **Energy risk management plans (electricity/gas, other sub sectors)**	**See section 7**	**Electricity**: National procedures for the prevention and management of emergencies are included in the ***Act 251/2012*** on energy, Decree of the Ministry of Economy of SR ***No 416/2012*** and ***No 80/2019*** (amending and supplementing decree 416/2012 reflecting ***Regulation (EU) 2017/2196*** of 24 November 2017, establishing a network code on electricity emergency and restoration), laying down details on the procedure during a state of emergency in the electricity and gas sectors. The key document is the ***Operational Rules*** of TSO ***SEPS***: https://www.sepsas.sk/en/documents/operational-rules/ (see also above section) Plans and procedures for security of the electricity supply based on the implementation of ***Regulation (EU) 2019/941*** of 5 June 2019, on risk-preparedness in the electricity sector and repealing Directive 2005/89/EC: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2019.158.01.0001.01.ENG are being implemented, including the responsibility of the competent authority (Ministry of Economy of SR) to prepare a risk-preparedness plan after consultation with stakeholders in order to ensure a common approach to crisis prevention and management. **Natural gas:** The national secondary legislation regulating the conditions for the operation of gas supply control and the procedures in the event of a declaration of emergency, is provided through ***Decree No 416/2012*** issued by Ministry of Economy of SR: https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2012/416/ (see also above section). In regard to gas supply security, market participant obligations are addressed in the ***Energy Act 251/2012 Coll***., in ***Regulation (EU) No 2017/1938*** of the European Parliament and of the Council of 25 October 2017 concerning measures to safeguard the security of gas supply and repealing Regulation (EU) No 994/2010 (the Regulation): https://eur-lex.europa.eu/legal-content/SK/ALL/?uri=CELEX:32017R1938 Other relevant documents are the ***Preventive Action Plan*** and the ***Emergency Plan*** (see also above section). In connection with the application of the Regulation, a working group was set up to propose the application of solidarity measures under Article 13. The working group prepared material that included proposals for the resolution of this issue, especially from the perspective of legislation. The material has been submitted to the Ministry of Economy of SR, and the process is still ongoing.

12. Transparency/anti-corruption mechanisms	Despite International Donor projects' efforts to strengthen the good governance, there are still a number of issues, and the sector lacks transparency. A number of strategic documents, such as for example PPA agreements with new generation facilities, an agreement with Gazprom, etc., are closed and confidential. These shadow areas lead to mistrust among the public and at the same time create possibilities for corruption. The civil society plays an important role as they spotlight the problematic issues; however, the institutional mechanism to improve transparency does not work efficiently. The Anti-Corruption Strategy and Action Plan for 2019-2020 were approved at a meeting of the Interagency Coordinating Council for Combating Corruption on July 26, 2019. It reflects the analysis and assessment of the challenges and risks in the fight against corruption in each relevant area and offers effective ways to address them within the 16 key priorities[2].	***Act 54/2019 Coll on the Protection of Whistle-blowers of Anti-Social Activities*** (in force since March 1, 2019): https://www.zakonypreludi.sk/zz/2019-54 This law introduced several new features in the protection of whistle-blowers, such as the extension of the protection and rights of a whistle-blower in criminal and administrative proceedings, and the establishment of a special (new) ***Office for the Protection of Persons Reporting on Anti-Social Activities***: https://www.bojprotikorupcii.gov.sk/odbor/ Corruption can be also reported at: ***The National Criminal Agency*** (Ministry of Interior of SR): https://www.minv.sk/?NAKA ***The General Prosecutors Office of SR:*** https://www.genpro.gov.sk/ NGOs are relevant actors at the national level in promoting transparency and accountability and also help with corruption spotlighting. ***Transparency International Slovakia*** (since 1998): https://transparency.sk/en/ ***Stop Corruption Foundation*** (since 2014): https://zastavmekorupciu.sk/en/home/ Some energy companies have their own anti-corruption programme, for example oil company ***Transpetrol***: https://www.transpetrol.cc/o-spolocnosti/protikorupcny-program-transpetrol or ethical codex – electricity TSO ***SEPS***: https://www.sepsas.sk/media2/Dokumenty/EtickyKodex/2016/11/Eticky_kodex_spolocnosti.pdf Monitoring of effective government spending: The financial unit ***Value for Money,*** was established under the Ministry of Finance of SR in June 2016. Its main objective is to achieve higher effectiveness of general government expenditures, improve public services, and consolidate public finance, https://www.mfsr.sk/en/finance/value-money/about-value-money/ ***Supreme Audit Office of the SR*** – conducts audit activities based on a yearly plan for the given year. The yearly plan for the given year is based on the tri-annual plan, where strategic goals and audit objectives are set for that period. Further, it is obliged to perform an audit if asked by the National Council of the SR (Parliament). Among its audit reports are energy efficiency or subsidies for climate and energy policy, https://www.nku.gov.sk/web/sao/audit-reports

[2] Georgian National Anti-Corruption Strategy and Action Plan for the period of 2019-2020 (matsne.gov.ge)

13. Competition/Anti-monopoly regulations in the energy field	Georgia is in the process of energy reforms, part of which directly relate to energy market liberalization. Electricity Exchange has recently been established and electricity market opening was planned for July 2021. However, due to the fact that the electricity trade system and market participants are not fully prepared for electricity trade on the liberalized wholesale market, this was delayed for another 6 months. From 2022, day ahead and balance markets should be launched. The largest consumers will be direct customers and will trade electricity through contracts from 2021. At the same time, by July 2021, unbundling of distribution companies will be completed which will contribute to competition on the market. The National Energy and Water Regulatory Commission (GNERC) is the main regulator for the electricity, natural gas and water markets. GNERC also regulates natural monopoly, like TSO and DSOs (Transmission/Distribution system operators). Oil and the oil products market competition is currently overseen by the Georgian Competition Agency. The oil products sector is quite diversified in Georgia, however, the Agency monitors and investigates potential for Cartel agreements. The main regulative acts related to competition monitoring of the energy sector are: the Law on Competition and GNERC's Decree # 28 on Establishment of Rules for Energy Market Monitoring.	***Antimonopoly Office of the Slovak Republic*** is an independent central body of state administration of the country for the protection of competition. The Office intervenes in cases of cartels, abuse of a dominant position, vertical agreements; it controls mergers that meet the notification criteria; assesses actions of state and local administration authorities if they restrict competition, and ensures the protection of competition in the area of state aid, https://www.antimon.gov.sk/antimonopoly-office-slovak-republic/
14. Energy efficiency legislation/implementation	Following its Energy Community membership, Georgia took commitments to implement the respective Directives, including Directives related to energy efficiency. The Law on Energy Efficiency and Law on Energy Efficiency of Buildings were developed in alignment with EU requirements and entered into force. The Law on Energy Labeling was also developed and entered into force. However, a set of secondary legislation still needs to be developed for the full implementation of the energy efficiency legislation. Donors are supporting the government in the development of a legislative and regulatory framework to enable the development of energy efficiency. KfW financed a project to support energy efficiency reforms in Georgia under which the missing parts of the energy efficiency legislation will be developed. However, aside from the development of the respective secondary legislative acts, there is a need for the capacity building of market participants (developers, energy auditors, industry, etc.) and a strong communication campaign to prevent or minimize a lobby against the introduction of energy efficiency regulations and requirements.	The national energy efficiency policy is built largely on directives from the EU, of which the ***Energy Efficiency Directive (2012/27/EU)*** is the most important: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02012L0027-20210101 Other important EU Directives: ***Directive 2010/31/EU*** of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02010L0031-20210101 ***Directive 2009/125/EC*** of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of eco-design requirements for energy-related products: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02009L0125-20121204 ***Regulation (EU) 2017/1369*** of the European Parliament and of the Council of 4 July 2017 setting a framework for energy labelling and repealing Directive 2010/30/EU: https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32017R1369 National legislation: See Section 3) Key laws and bylaws relevant to energy security (other relevant laws) In December 2014, SR adopted ***Act 321/2014 Coll. on energy efficiency*** (last amendment of January 1, 2021), https://www.zakonypreludi.sk/zz/2014-321, which sets up a legal framework for energy efficiency in the country. It also introduced compulsory energy audits for enterprises and in the agricultural sector in 2011, as an alternative policy measure to meet energy saving targets.

The main ministry responsible for energy efficiency is the Ministry of Economy of SR, which delegates part of its work to the ***Slovak Innovation and Energy Agency*** (SIEA) - a state allowance organization established by the Ministry. SIEA provides energy audits, advice on energy efficiency measures and energy services for individuals and municipalities, monitors energy efficiency, and updates the heat map: https://www.siea.sk/en/
Based on ***Decree 31/2014*** of the Ministry of Economy of SR, SIEA operates (since 2014) an ***Energy Efficiency Monitoring System***. The system monitors primary and final energy consumption in different sectors, and evaluates energy efficiency improvements to reach targets: https://www.siea.sk/monitorovaci-system/

Under the ***Energy Efficiency Directive (2012/27/EU)***, all EU countries are required to present a ***National Energy Efficiency Action Plan*** every three years. These should include estimates for energy consumption, planned energy efficiency measures, their expected results, information on energy efficiency targets and performance, and policies that have been introduced to reach the targets. In 2017, SR presented its fourth Plan: ***The Energy Efficiency Action Plan 2017-19 with an outlook up to 2020*** (Ministry of Economy of SR, 2017): https://rokovania.gov.sk/RVL/Resolution/16825

Further, EU countries also publish annual progress reports on achieving the energy efficiency targets and update their targets and fulfilment according to the latest monitored data and improvements. The most recently published document is the ***Energy Efficiency Annual Report for 2019*** (prepared by the Ministry of Economy of SR, 2019, calculated with 2018 data): https://www.siea.sk/wp-content/uploads/monitorovaci_system/monitorovacie_spravy/Sprava_efektivnost_2019.pdf

The Ministry of Transport and Construction of SR deals with energy efficiency in the building sector by implementing ***Act 555/2005 Coll. on energy performance of buildings***, such as energy certification of buildings: https://www.mindop.sk/ministerstvo-1/vystavba-5/stavebnictvo/energeticka-hospodarnost-budov/zakony-vyhlasky-metodicke-usmernenia

The Ministry of Transport and Construction of SR also provides subsidies for the renovation of households and apartments through the ***State Housing Development Fund*** (since 1996): https://www.sfrb.sk/

The Ministry of Economy of SR regularly updates guaranteed energy service provider lists as well as the list of professionally qualified persons performing guaranteed energy services. The method for enrolling on the list is addressed through ***Decree No 99/2015*** of the Ministry on providers of support and guaranteed energy services: https://www.mhsr.sk/energetika/energeticka-efektivnost/poskytovanie-energetickej-sluzby

15. Renewable energy legislation	Following Energy Community membership, Georgia took commitments to implement the respective Directives, including Directives related to renewable energy. The Law on PROMOTING THE GENERATION AND CONSUMPTION OF ENERGY FROM RENEWABLE SOURCES was developed in accordance with the renewable energy Directive and entered into force. Additionally, a National Renewable Action Plan has been developed and is going to be updated this year. Apart from legislation, GNERC also introduced the regulation of Net-Metering that allows owners of micro capacity (up to 100 kw) solar panels to sell excess energy to the grid. At the same time, the National Forestry Agency, which is responsible for the management of forest resources, is introducing changes to the Forest Code to improve regulation and management of forest resources, mainly biomass that is used for heating.	National legislation: ***Act 309/2009 on the support of renewable energy sources and high-efficiency cogeneration***, (last amended January 1, 2021): https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2009/309/20180201 The Ministry of Economy of SR holds the main responsibility to develop policies and regulations on renewable energy. It analyses various RES to develop legislation and strategic plans, such as the ***National Renewable Energy Action Plan*** (Ministry of Economy of SR, 2010):: https://www.mhsr.sk/uploads/files/W58vMbYo.pdf The Ministry of Environment of SR is responsible for developing and implementing domestic sustainability criteria. The Ministry of Agriculture and Rural Development of SR co-operates with the Ministry of Economy of SR to set criteria and prepare strategic plans for using biomass and biofuels: Decree of the Ministry of Agriculture and Rural Development ***No 295/2011***, determines a detailed declaration by the producer and supplier of biomass for the production of biofuels or bioliquids: https://www.zakonypreludi.sk/zz/2011-295 The Regulatory Office for Network Industries sets FiT rates, issues certificates of origin for electricity generated from renewable energy supplies, and licenses business operations: http://www.urso.gov.sk/?q=Information%20service/International%20cooperation%20-%20Licenses&language=en Feed-in tariffs were introduced in 2009 that guarantee a fixed price for a duration of 15 years after the commissioning or a renovation. In 2013, ***Act 309/2009*** was further amended to limit the subsidies for solar PV to only rooftop installations of at most 30 kW of capacity, and from 2014, distribution companies decided not to accept new installations, which halted further RES development. Subsidies for hydropower were also substantially reduced. In 2018, the Act was amended to introduce the “local source” institute that can be connected to a distribution system, but only with 500 kW of capacity at most. The planned green auctions were stopped in 2020 by the Ministry of Economy of SR. ***The Slovak Innovation and Energy Agency*** provides subsidies for the purchase of small RES (biomass, solar, heat pumps) within a programme called ***Green for Households***: https://zelenadomacnostiam.sk/sk/ During the first period (2015 – 2018), it allocated 45 million EUR support for 18,501 installations, and currently, they are in the second period (2019 – 2023) – where 48 million EUR has so far been allocated to support 25,000 installations. Altogether, 140 MW of RES should be installed.
16. Membership of regional and international energy organisations and international agreements	In 1991, Georgia signed the European Energy Charter, and later, in 1995, ratified the Energy Charter Agreement[3]. In 2015, Georgia signed the International Energy Charter, which aims to strengthen the rule of law in the field of energy, to create a level playing field for all participating countries and thus to mitigate the risks associated with energy investment and trade[4]. In June 2014, the EU and Georgia signed an Association Agreement (AA), which entered into force on July 1, 2016.	***International Energy Agency*** (on the basis of Government Resolution 528/2007 from June 20, 2007), https://www.iea.org/countries/slovak-republic ***International Energy Charter*** (on the basis of Government Resolution 1190/1994 and ratified in 1995), https://www.energycharter.org/ ***ENTSO-E (European Network of Transmission System Operators for Electricity)***, https://www.entsoe.eu/ ***ENTSO-G (European Network of Transmission System Operators for Gas),*** https://www.entsog.eu/

[3] https://www.energycharter.org/who-we-are/members-observers/countries/georgia/
[4] https://www.energycharter.org/process/overview/

	This, along with the Deep and Comprehensive Free Trade Area (DCFTA) Agreement, builds a foundation for far-reaching Georgian political and economic integration with the EU. In 2017, Georgia became a member of the Energy Community and, as a Contracting Party to the Energy Community Treaty, Georgia has the obligation to implement the energy acquis in force[5]. In 2000, Georgia became a member of the World Trade Organization (WTO). One of the most important areas of the WTO is energy, regulating the trade and services of energy resources and resolving trade disputes[6]. The Charter of Strategic Cooperation between Georgia and the United States was signed in 2009. The Charter emphasizes the need for cooperation between the parties in the field of energy security. Development of Georgia's transit potential and the introduction of renewable and energy efficient technologies are among the priorities of the Charter[7]. In 2019, Georgia and the United Kingdom signed a Strategic Partnership and Cooperation Agreement. Like the Charter with the United States, the key priorities of the agreement include promoting security of energy supply, developing energy transit projects to Georgia, and introducing renewable and energy-efficient technologies[8]. Since 1996, Georgia has been a member of the International Atomic Energy Agency (IAEA). In November 2020, Georgia signed the Country Programme Framework (CPF) for the period of 2020-2025. Two of the priority areas of the CPF are: Ensuring nuclear and radiation safety and security and assessing the national potential to use renewable energy[9].	Nuclear energy: Slovakia is a member of several international organisations concerning nuclear energy. These are monitored by the ***Nuclear Regulatory Authority of the SR***, a central government authority for nuclear regulation, established with effect from 1 January 1993, originally by Act 2/1993 Coll., on organization of government activities and on organization of central government: https://www.ujd.gov.sk/ujd/www1.nsf/$All/BEBF4732B581600AC1257CB300483FCD ***The International Atomic Energy Agency*** since 1993, https://www.iaea.org/ ***Organisation for Economic Co-operation and Development/The Nuclear Energy Agency*** since 2002, https://www.oecd-nea.org/ ***The Comprehensive Nuclear Test Ban Treaty Organisation***. On November 15, 2015, this was signed and approved by an agreement between the government and the Preparatory Commission for the Organisation of the Comprehensive Test Ban Treaty on mutual cooperation in the training and implementation of the Commission's activities relating to on-site inspections. This agreement has been effective from August 12, 2016, https://www.ctbto.org/ ***Forum of National Regulators Supervising Nuclear Safety of Countries Operating NPP of WWER type*** since 1993, https://gnssn.iaea.org/regnet/Pages/WWER-Forum.aspx

[5] https://energy-community.org/news/Energy-Community-News/2021/04/09.html
[6] https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm
[7] https://georgiaembassyusa.org/wp-content/uploads/2017/08/STRATEGIC-PARTNERSHIP.pdf
[8] https://www.gov.uk/government/publications/ukgeorgia-strategic-partnership-and-cooperation-agreement-cs-georgia-no12019
[9] https://www.iaea.org/newscenter/news/georgia-signs-country-programme-framework-cpf-for-2020-2025DSO

17. Is an energy infrastructure insurance policy in place?	There are private insurance companies that provide insurance policies for energy infrastructure. For example, TBC insurance (a local insurance company) provides insurance policies that cover equipment (in case the equipment is not covered by the factory guarantee), buildings and business operation disruptions. Local companies are backed by large international insurance companies for such policies, as in the case of the TBC insurance –Vienna Insurance Group. However, it should be noted that due to an absence of mandatory rules for insurance of energy infrastructure and absence of regulative framework, the development of the energy infrastructure insurance market is ongoing. It is mainly used by HPPs (mainly private ones), while other critical infrastructure, such as transmission lines, is not covered by private insurance policies.	Insurance is guided by national legislation: In a state owned company, insurance must follow public procurement rules: ***Act 98/1991 Coll. on Commercial Code*** (last amendment of October 1, 2020), ***Act 343/2015 Coll.*** on public procurement (last amendment of January 19, 2021) ***Act 39/2015 Coll. on insurance*** (last amendment of November 28, 2020), https://www.zakonypreludi.sk/zz/2015-39 Covers the damage caused by nuclear energy ***Act 54/2015 Coll. on civil liability for nuclear damage and its financial coverage*** (last amendment of January 1, 2016), https://www.zakonypreludi.sk/zz/2015-54 Neither ***Act 251/2012 Coll. on energy*** nor ***Act 45/20021 Coll. on critical infrastructure*** deal with the insurance of energy infrastructure.
Institutional Framework		
18. Main entity or unit responsible for energy security at the national level. Does it have sufficient permanent analytical staff?	**The Ministry of Economy and Sustainable Development (MoESD)** is the key entity responsible for energy security in Georgia. The ministry is responsible for the development, implementation and monitoring of state policy, strategy and programs in the field of energy; enhancing the investment environment within its competences; and developing and implementing appropriate measures to ensure the security of the energy system and emergency preparedness. At the strategic level, to plan and coordinate the national security policy (including energy security issues), a **National Security Council** was established in 2019 under the Prime Minister. The Council, in cooperation with the MoESD, analyses energy security issues for further reflection in the National Security Concept.	The agenda of energy security lies primarily upon the ***Ministry of Economy of SR***. According to the structure of the Ministry, energy falls under the responsibility of the Second State Secretary. The energy section is further divided into three sub-sections: Department of Energy and Raw Materials Policy, Department of international relations, and Department of Fuels and Energy, https://www.mhsr.sk/uploads/files/UNpdwyod.pdf

19. Other relevant state entities	**The Georgian National Energy and Water Supply Regulatory Commission (GNERC)** regulates and supervises the activities of the electricity, natural gas, and water supply sectors. The Commission issues licenses and sets tariffs for electricity and natural gas production, transportation, and supply. The regulator approves the tariff setting methodology and ensures that tariffs and fees are reasonable, verifiable, non-discriminatory, and transparent, protecting consumers from monopoly prices. Among the important tasks of the Commission in terms of energy security is market monitoring. Transmission System Operator (TSO) in the Electricity Sector - **The Georgian State Electro System (GSE)** is responsible for the operation, maintenance, and development of the electricity transmission system, as well as for interconnection with neighboring transmission systems. The Gas Transmission System Operator - **Georgian Gas Transportation Company (GGTC)** ensures non-discriminatory and unrestricted access of the system users to the natural gas transmission system. As of 2021, there are **2 Distribution System Operators (DSOs) in the electricity sector and 26 in the gas sector**. **The Georgian Oil and Gas Corporation (GOGC),** as the owner of the main gas pipeline system of Georgia, plays a major role in ensuring the energy security of the state. It contributes to unimpeded operation of transboundary oil and gas transportation systems on the territory of Georgia, which significantly increases the security of the country's, EU's and international energy markets through their diversification, and manages the transit revenues. Owing to the strategic location of the country, GOGC supports the development of new transit routes for full use of the energy potential of the Caspian and the Black Sea basins and further integration of Georgia into regional/global economic and political structures. **The State Agency for Oil and Gas (SAOG)** is responsible for the regulation of oil and gas operations, oil refining, gas processing, and/or transportation activities in Georgia. **The Security Police Department under the Ministry of Internal Affairs** of Georgia - carries out protection of critical energy infrastructure from kinetic threats.	***The Administration of State Material Reserves of the SR,*** established by the ***Act 372/2012 Coll,.*** is responsible for material reserves management, including responsibility for the preparedness to respond to an oil emergency https://www.reserves.gov.sk/index.php/en/introduction/ ***Institute for Environmental Policy*** is an analytical unit of the Ministry of the Environment SR providing environmental analysis and forecasts for the Slovak government and public.: https://www.minzp.sk/en/iep/ ***JAVYS*** (single shareholder is the Ministry of Economy of the SR, established in 2006) holds responsibilities for the operation, management and decommissioning of nuclear facilities, radioactive waste management and related transportation activities and spent nuclear fuel management and related transportation activities: https://www.javys.sk/en/index.php ***MH Management*** (single shareholder is the Ministry of Economy of the SR) was established by ***Act 375/2015 Coll.*** cancelling the National Property Fund. It manages, among others, six major district heating companies: http://www.mhmanazment.sk/vyrocne-spravy/ ***The National Nuclear Fund,*** (under the Ministry of Economy of SR, established by ***Act 238/2006 Coll.*** and governed by ***Act 308/2018 Coll. on National Nuclear Fund for decommissioning and spent fuel management***) performs financing the activities connected with the National Programme for the Management of Spent Nuclear Fuel and Radioactive Waste, accumulates and manages financial resources earmarked for the back-end of nuclear power engineering, secures financial resources from the state budget for the management of radioactive and nuclear materials of unknown origin, and manages financial guarantees for high-activity sealed radiation sources: https://www.njf.sk/en/ ***The National Security Authority*** is the central government body for Protection of Classified Information, Cryptographic Services, Trust Services and Cyber Security since 2001: https://www.nbu.gov.sk/en/index.html ***The Nuclear Regulatory Authority of the SR*** is a central government authority for nuclear regulation established by ***Act 2/1993 Coll.*** on organization of government activities and on organization of central government. It exercises state supervision over the safety of nuclear installations https://www.ujd.gov.sk/ujd/www1.nsf/viewByKeyMenu/En-01 ***The Regulatory Office for Network Industries,*** established in 2001, is the national regulatory authority for network industries – an independent regulator for district heating, electricity, gas and water. The Office provides licences for district heating and electricity production and distribution, and regulates the prices for each supplier and network based on ***Act 250/2012 Coll. on Regulation in Network Industries***. Although it is independent, the chairman is named by the government: http://www.urso.gov.sk/?language=en ***The Slovak Innovation and Energy Agency*** is a contributory organization established by the Ministry of Economy of SR.: https://www.siea.sk/ ***The Security Council of the SR*** is the advisory body of the government and participates in the creation and implementation of the security system of the country, fulfilment of international obligations in the field of security, evaluates the security situation in the SR and globally, prepares for the government proposals for measures to maintain the security of the SR to prevent crisis situations, and offers proposals to resolve the crisis situation. The Council was established by the ***Act 227/2002 Coll. on the security of the state in times of war, states of war, and states of emergency***, https://www.vlada.gov.sk//bezpecnostna-rada-sr/

20. **Cross sectoral and inter agency coordination mechanism to improve national energy security**	In accordance with the rules of electricity supply security, an **Interagency Energy Security Group** (IESG) has been established which acts as an inter-agency coordination body for energy security issues and convenes its meetings as needed by the Ministry. The IESG is staffed by representatives of the Ministry, the Commission, the Transmission System Operator (TSO), distribution system operators (DSOs), manufacturers and other relevant stakeholders in the field of electricity security which the Ministry deems relevant. In accordance with these rules, the Ministry of Economy and Sustainable Development of Georgia, in cooperation with the Transmission System Operator, Distribution System Operators, Georgian National Energy and Water Regulatory Commission and other stakeholders, shall assess all relevant risks related to electricity security in accordance with pre-established conditions. Based on electricity security risks and crisis scenarios, the Ministry will develop an emergency risk management plan in cooperation with the IESG. The draft plan will be developed by the TSO, if necessary, in the relevant section, in consultation with the distribution licensees, and submitted to the Ministry for approval.	There is no such mechanism in place. The agenda of energy security lies primarily upon the ***Ministry of Economy of SR***, which prepares and monitors the strategies and coordinates the activities. According to the structure of the Ministry, energy falls under the responsibility of the Second State Secretary. The energy section is further divided into three sub-sections: Department of Energy and Raw Materials Policy, Department of international relations, and Department of Fuels and Energy, https://www.mhsr.sk/uploads/files/UNpdwyod.pdf
21. **Regional cooperation mechanisms on energy security issues**	According to the Main Directions of the State Energy Policy "Georgia is an important transit country. Georgia as a connecting corridor between Europe and Asia, and has the potential to strengthen its role in implementation of East-West and North-South transit projects. Effective utilization of its geopolitical location will contribute to the country's energy security and economic development. Georgia's wealth in existing hydro-resources, corresponding infrastructure and favourable investment climate enables the country to establish itself as a regional platform for the generation and trading of clean energy." Therefore, it is important for Georgia to continue to support international transit projects by providing appropriate security measures, and to create a favourable investment environment. Although Georgia does not have a direct land connection with the Energy Community countries, or access to the European internal energy market to use the mutual assistance mechanism, it should establish direct and indirect connections with the EU and Energy Community countries through regional transit projects. (Example – Under Black Sea Electricity Network Development, LNG Swap).	Slovakia cooperates especially with the Czech Republic, Hungary and Poland in so-called Visegrad Group. ***V4 Presidency*** rotates every six months. These regular meetings are, however, not institutionalised with binding conclusions, and it is only a platform for discussion. Yet, energy security is on the regular agenda, especially since the 2009 crisis: https://www.visegradgroup.eu/documents/presidency-programs ***Projects of Common Interest*** were the main tool for Visegrad countries to articulate their priorities to strengthen their cross-border interconnections in electricity, oil and the natural gas sector: https://ec.europa.eu/energy/topics/infrastructure/projects-common-interest_en

22. Energy Security Monitoring Mechanism in place	According to the law on Energy and Water Supply (article 143) once every two years, before July 31, the MoESD shall publish a unified monitoring report on the security of electricity and gas supply in the country that shall include information collected by the Ministry, the Commission, and, where appropriate, by other competent state authorities, and a transmission system operator. The report shall reflect the results of supervision performed with respect to the issues referring to the security of the electricity/gas supply and the measures taken or to be taken. The report prepared by the Ministry shall immediately be submitted to the Energy Community Secretariat. In March 2021, the MoESD published the **Security of Supply Statement in Electricity Sector - 2021.** The deadline for the first monitoring report on the security of gas supply (Article 143 of the Energy law) is 31 March 2022.	***Ministry of Economy of SR*** issues a yearly **Report on the results of the monitoring of security of gas supply** and a **Report on the results of the monitoring of security of electricity supply**, https://www.mhsr.sk/energetika/energeticka-politika/sprava-o-vysledkoch-monitorovania-bezpecnosti-dodavok These reports are issued based on the provisions of ***Act no. 251/2012 Coll.*** on energy. The reports in the gas sector are prepared by the Ministry of Economy of SR using documents from gas market participants (eustream, SPP-d, local distribution system operators, underground storage operators, gas suppliers), provided on the basis of Decree of the Ministry of Economy of SR ***no. 193/2014 Coll.*** on the scope and procedure for providing the information necessary for the performance of state administration, https://www.epi.sk/zz/2014-193 The gas reports are issued in accordance with Directive Parliament and of the Council ***2009/73 / EC*** of 13 July 2009 on common rules for the internal market as well as in accordance with the provisions of ***Regulation (EU) 2017/1938*** of the European Parliament and of the Council of 25 October 2017 on detention measures in the security of gas supply. The reports for electricity are drawn up in accordance with Directive of the European Parliament and of the Council No. ***2009/72/EC*** concerning common rules for the internal market in electricity, and ***Regulation (EU) 2019/941*** of the European Parliament and of the Council of 5 June 2019 on risk-preparedness in the electricity sector. National TSO ***SEPS*** provide proposals to the Ministry upon request to address the balance between supply and demand of electricity for a period of five years and perspective security of the electricity supply for a period of five to fifteen years for the purposes of preparing a report on the results of monitoring the security of the electricity supply.
23. How is assessment of ES vulnerabilities and risks organized?	The order of the Minister of Economy and Sustainable Development on the Security of Electricity Supply Rules (2020), with its annexes, provides comprehensive assessment guidance for security of the electricity supply. Annex 1- "Methodology for Identification and Evaluation of Electricity Safety Risks and Crisis Scenarios" Annex 2- "Seasonal and Short-Term Adequacy Assessment Methodology" Annex 3- "Medium and Long-Term Adequacy Assessment Methodology" Rules for the Security of the Gas Supply are under development.	**See previous section**

24. Who is responsible for compiling and publishing the energy balance? Frequency of publishing EB and time-lag?	The national energy balance has been published annually since 2013 by the national department of statistics GEOSTAT (geostat.ge). Before that, in the period of 2002-2012, no energy balance was compiled, which affected the quality of energy statistics in a negative way. The time lag is almost a year, as each year in late autumn-winter the energy balance for the previous year is published. The quality of energy statistics is continuously being improved through various international cooperation programmes and the strong international links of Geostat, such as support from the International Energy Agency, twinning with EU member states' official statistics producers, etc. However, at the same time, there are currently a number of energy indicators for which official statistics are not being produced, and researchers and policy analysts have to estimate them.	***The Statistical Office of the SR*** (independent since January 1, 1993) is the central body of the state administration for the branch of statistics (by the ***Act 575/2001*** on the organization of the Government activities and the organization of central state administration bodies) and carries out tasks by ***Act 540/2001*** on State Statistics. Energy statistics are oriented towards relevant and comparable statistical information on the production, flow, and consumption of energy. http://datacube.statistics.sk/#!/view/sk/VBD_SK_WIN/en3001rr/v_en3001rr_00_00_00_sk The statistics are published annually and data are collected throughout the year. The Statistical Office also issues a publication with the annual overview. ***The Slovak Innovation and Energy Agency*** operates an energy efficiency monitoring system on the basis of the decision of the Ministry of Economy of SR ***no. 31/2014***, monitors primary and final energy consumption in the sectors according to the Energy Efficiency Action Plans, and evaluates energy efficiency measures to demonstrate the achievement of the energy savings targets: https://www.siea.sk/monitorovaci-system/ The Agency also collects and publishes information on the locations of energy operators – the heat map of the SR. Detailed requirements which the map should contain are given in ***Act 321/2014 Coll.*** on energy efficiency, drawn upon the Directive on Energy Efficiency ***2012/27/EU***: https://tepelnamapa.siea.sk/#loc=19.156944!48.738610999999999!8 ***Slovenská elektrizačná prenosová sústava (SEPS)*** – Slovak transmission system operator, Annual data on system operation in electricity, https://www.sepsas.sk/sk/dispecing/rocne-udaje-o-prevadzke/rocenky-sed/. These data serve as a basis for the ***Ministry of Economy of SR*** to prepare its annual ***Report on the results of the monitoring of security of electricity supply,*** https://www.mhsr.sk/energetika/energeticka-politika/sprava-o-vysledkoch-monitorovania-bezpecnosti-dodavok ***The Slovak Hydrometeorological Institute*** - Department of Emissions is the national entity with the responsibility of the national inventory system for GHG emissions and projection, developing and maintaining a National Emission Inventory System - database of stationary sources to follow development of emissions of SO2, NOx, CO2 at the regional level: http://www.air.sk/en/index.php According to ***Act 478/2002 Coll***. on Air Protection, the competencies and decision-making process of large, medium and small pollution sources are given to regional, district levels and municipalities.
25. Monitoring mechanisms for investment needed in energy infrastructure development in the short and long term	Electricity and Gas distribution companies regularly provide reports with indicative volumes of investments they are going to implement in the network. GNERC reviews these plans and approves those investments that it considers reasonable. Later, corresponding amendments are applied to end-user tariffs to allow distribution companies to recover the investments. TSO also develops and publishes 10-year network development plans where it states the investment plans and justifies their need. The plans are approved by the Ministry of Economy and Sustainable Development, and the same Ministry performs the monitoring of its implementation. Natural gas network 10-year development plans are developed by the Georgian Oil and Gas Corporation (GOGC), where it identifies investment needs and states plans for their	<u>Natural gas:</u> Based on Act 251/2012 Coll., and in line with European Regulation EC/715/2009, Transmission System Operators (TSO) has to publish a Gas Regional Investment Plan every two years. The aim of this Plan is to show a regional gas infrastructure outlook consistent with the community-wide Ten Year Network Development Plan, assessing and identifying potential future infrastructure investments. The Slovak TSO eustream is participating in two regional investment plans – for the Southern corridor region and for the Central and Eastern Europe region: https://www.eustream.sk/en_transmission-system/en_development-of-the-network/en_network-development-plan <u>Electricity:</u> The Ten Year Network Development Plan in electricity is prepared by the Slovak TSO ***SEPS*** based on Act 251/2012 Coll: https://www.sepsas.sk/media2/Dokumenty/ProgRozvoj/2018/07/DPR_PS_2018_2027.pdf

	implementation. The plan is developed and periodically updated by the GOGC.	The Ten Year Network Development Plan in natural gas and electricity is evaluated by the Regulatory Office for Network Industries. The Office also publishes a draft of the Plan for public consultation.
26. **Responsible bodies for security reserves of critical energy carriers. Monitoring mechanism**	The Georgian Oil and Gas Corporation has the status of a National Oil Company and protects state interests in the Production Sharing Agreements signed with investors. GOGC as the owner of the main gas pipeline system of Georgia plays a major role in ensuring the energy security of the state. GOGC is planning to construct the first Gas Underground Reserve that will improve the energy security of the country. Water reserves in the HPP reservoirs are controlled by regulated HPPs and data is sent to the Dispatch at GSE to monitor. As for oil reserves, a legislative framework is under development.	***The Emergency Oil Stocks Agency*** –is the central entity for the management of emergency stocks of crude oil and petroleum products The government maintains a majority share of decision rights through the state controlled ***Stock Company***: https://www.spsas.sk/. The Agency is an interest association of legal entities whose object of activity is to maintain emergency stocks of crude oil and petroleum products. As part of its responsibilities, the Agency maintains emergency stocks for SR in at least the amount stipulated by law, corresponding to at least 90 days of average daily net imports of crude oil and petroleum products. Emergency stocks must be constantly ready for immediate removal in order to deal with emergencies: https://www.eosa.sk/en ***The Administration of State Material Reserves of the SR***, is responsible for preparedness to respond to an oil emergency. It is responsible for stockpiling and ensuring the secure supply of all the resources considered essential for the protection of the public interest during a crisis, with the exception of emergency oil stocks. https://www.reserves.gov.sk/index.php/en/introduction/ Oil storage facilities are operated primarily by the two major oil companies – ***Transpetrol*** and ***Slovnaft***, and other smaller companies which address the country's emergency stockholding obligations. Natural gas: The ***Ministry of Economy of SR*** is the competent authority with respect to the security of natural gas supply. It is also responsible for maintaining and updating Preventive and Emergency plans: See Section 10. Since the 2009 gas crises, each supplier of natural gas is required to hold gas stocks in underground stores for emergencies or to secure supplies contractually. However, at most, 50% of the volume may be secured by using cross border capacity. ***SPP-d*** fulfils the security of supply standard for all household customers by holding sufficient gas volumes in storage. Two underground storage operators ***Nafta*** and ***Pozagas*** are also connected to the Czech and Austrian markets and distribution systems. Storage is mainly used for security of supply, as an instrument of elasticity, or as arbitrage.
27. **Energy infrastructure insurance institutional mechanism**	At this point, insurance of energy infrastructure (e.g. HPPs, high voltage transmission lines, etc.) is not regulated and not obligated by any legislative or regulatory act. Insurance is voluntarily purchased by private HPPs based on their business interests and needs.	**See Section 17**

Framework for Energy Security Assessment Indicators

For the energy security quantitative assessment, the project team developed an energy security indicators framework that unites 24 indictors of 6 domains: energy availability, energy accessibility, energy affordability, reliability of infrastructure, flexibility of the energy system, and sustainability. The framework provides a basis for systematic assessment of the energy security state, enabling analysis of dynamics to support informed decision making. The indicators are selected in such a way to account for the specificity of the Georgian energy system on the one hand, and on the other to cover all the main domains for comprehensive analysis of energy security.

The full framework includes a description of indicators, their calculation methodology, values for the year 2019, and benchmark ranges considering the best experiences of EU member states and Energy Community member states. The framework file is available in the attachment to this report.

Availability of energy

- **Share of domestic production of energy in domestic energy supply, % per year,** described as percentage share of domestic energy production in domestic energy supply.
- **Net Energy Import Dependence, % per year -** percentage share of net energy import in gross energy consumption. This indicator is included in the Energy Union indicators.
- Net Electricity Import Dependence, **% per year/month** with the highest value - percentage share of net electricity imports in total electricity consumption (including transportation losses) on an annual and monthly (highest) basis.
- Natural Gas Net Import Dependence **% per year/month** with the highest value - percentage share of gas net-import in total gas consumption (including transportation losses) on an annual and monthly basis. This indicator is included in the Energy Union indicators.
- Seasonal Difference in Electricity Consumption - assesses whether a country has a vulnerability in electricity consumption on a monthly basis.
- Seasonal Difference in Gas Consumption - assesses whether a country has a vulnerability in gas consumption on a monthly basis.
- Share of Renewable Energy Sources in Domestic Energy Supply – indicates the availability of domestic energy resources, flexibility and sustainability. This indicator is included in the Energy Union indicators.
- Gas storage capacity - assesses whether a country has a gas storage facility with sufficient capacity and strategic reserves.
- Oil storage capacity - assesses whether a country has a crude oil/oil products storage facility with sufficient capacity and strategic reserves.
- Electricity interconnection capacity - the electricity interconnectivity level is the ratio of the electricity import interconnection capacity of a given Member State and its total power generation capacity. This indicator is included in the Energy Union indicators.

Accessibility to Energy

- Access to electricity - share of households that have access to electricity (% of population).
- Access to gas - share of households that have access to gas (% of population).

Reliability of Energy Infrastructure

- Reliability of electricity supply- the System Average Interruption Frequency Index (SAIFI) is the average number of interruptions that a customer would experience.
- Reliability of electricity supply (considering hours of interruption)- the System Average Interruption Duration Index (SAIDI) is the average outage duration for each customer served.
- N-1 rule for gas infrastructure - is an indicator of infrastructure adequacy, as it tests the resilience of the system in ensuring that gas demand on extremely cold days can be covered even if the largest infrastructure fails. This indicator is included in Energy Union indicators.
- N-1 rule for electricity- is an indicator of infrastructure adequacy, as it tests the resilience of the system in ensuring that electricity demand on extremely cold days can be covered even if the largest infrastructure fails.

Energy Affordability

- Affordability of energy for households (%) - measures the exposure of consumers to price shocks. This indicator is included in the Energy Union indicators (IM8: Energy affordability - energy expenditure share in final consumption expenditure for the poorest 20% of the population).

Flexibility of the Energy System

- Diversification of oil product import - the supplier concentration index (SCI) shows the concentration of main energy carrier imports from suppliers outside of the country. The SCI is a Herfindahl-Hirschman Index (HHI) scaled in the range of 0-100. This indicator is included in the Energy Union indicators.
- Diversification of natural gas import - the supplier concentration index (SCI) shows the concentration of main energy carrier imports from suppliers outside of the country. The SCI is a Herfindahl-Hirschman Index (HHI) scaled in the range of 0-100. This indicator is included in the Energy Union indicators.
- Volatility of hydropower generation - this indicator measures both the risk and resilience aspects of hydropower production.

Sustainable Energy Indicators

- Energy intensity per GDP (TJ/$ real mln GDP) - measures energy use in relation to economic output (real GDP). As an indicator of domestic resilience, it is a sign of a country's economic exposure to energy disruptions.
- Energy consumption per capita (GJ/capita) - measures energy use in relation to population.
- Energy expenditure intensity per GDP - indicates the magnitude of energy costs in the economy related to energy price shocks, and exposure to price changes.
- Grid emission factor - refers to a GHG emission factor (gCO2 eq/kWh) which is associated with each unit of electricity provided by an electricity system.

Assessment of Energy Security in Georgia

The quantitative assessment of energy security was conducted using the framework indicators described above for 2019.

Table 2 Quantitative assessment of energy security in Georgia (2019 data)

Dimensions	Indicator	Value	Ranges of value
Availability of energy	Share of domestic production of energy in domestic energy supply (%) Year	21.4%	1 - 0-20% (Very Bad) 2 - 20%-40% (Bad) 3 - 40%-60% (Average) 4 - 60% - 80% (Good) 5 - 80% - 100% (Very Good)
	Net Energy Import Dependence (%), Year	80.72%	1 - 80% - 100% (Very Bad) 2 - 60%-80% (Bad) 3 - 40%-60% (Average) 4 - 20% - 40% (Good) 5 - 0-20% (Very Good)
	Net Electricity Import Dependence (%) Year, Month (highest)	10.6% Annual 2019 19.7% October 2019	1 - 80%-100% (Very Bad) 2 - 60%-80% (Bad) 3 - 20%-60% (Average) 4 - 10%-20% (Good) 5 - 0-10% (Very Good)
	Natural Gas Net Import Dependence (%) Year, Month (highest)	99.64% Annual 2019 99.81% December 2019	1 - 80% - 100% (Very Bad), EU 16 countries 2 - 60%-80% (Bad) 3 - 40%-60% (Average) 4 - 20% - 40% (Good) 5 - 0-20% (Very Good), Denmark and Netherlands
Availability of energy	Seasonal Difference in Electricity Consumption	1.10 December	1 - 1.8< (Very Bad) 2 - 1.6-1.8 (Bad) 3 - 1.4-1.6 (Average) 4 - 1.2-1.4 (Good) 5 - 1.0-1.2 (Very Good)
	Seasonal Difference in Gas Consumption	1.73 December	1 - 1.8< (Very Bad) 2 - 1.6-1.8 (Bad) 3 - 1.4-1.6 (Average) 4 - 1.2-1.4 (Good) 5 - 1.0-1.2 (Very Good)
	Share of Renewable Energy Sources in Domestic Energy Supply	20.4%	1 - 0-10% (Very Bad), Luxembourg=7.05% in 2019 2 - 10%-20% (Bad), EU 27=19.73% in 2019 3 - 20%-30% (Average), Croatia=28.45% 4 - 30% - 40% (Good), Denmark=37% 5 - 40%< (Very Good), Iceland=78.20%, Norway=74.63%
	Gas storage capacity	Plan to develop by 2024	1 - NO (Very Bad) 2 - Plan to develop (Bad) 3 - Storage without sufficient capacity (Average) 4 - Storage with sufficient capacity (Good) 5 - Storage with more than the sufficient capacity (Very Good)

	Oil storage capacity	Plan to develop by 2023	1 - NO (Very Bad) 2 - Plan to develop (Bad) 3 - Storage without sufficient capacity (Average) 4 - Storage with sufficient capacity (Good) 5 - Storage with more than the sufficient capacity (Very Good)
	Electricity interconnection capacity	41%	1 - 0%-5% (Very Bad), Poland=4% in 2016 2 - 5%-10% (Bad), Italy=7% 3 - 10%-15% (Average), Belgium=13% 4 - 15% - 20% (Good), Czech R=19% 5 - 20%< (Very Good), Slovenia=85%, Luxembourg=163%
Accessibility to energy	Access to electricity	100%	1 - 50%-70% (Very Bad) 2 - 70%-90% (Bad) 3 - 90%-95% (Average) 4 - 95% - 99% (Good) 5 - 100% (Very Good)
	Access to gas	72%	1 - 50%-60% (Very Bad) 2 - 60%-70% (Bad) 3 - 70%-80% (Average) 4 - 80% -90% (Good) 5 - 90% - 100% (Very Good)
Reliability of infrastructure	Reliability of electricity supply	Telasi - 5.90 Energo-Pro Georgia - 27.30	1 - 7< interruption/customer (Very Bad), Portugal 7< 2 - 5-7 interruption/customer (Bad) 3 - 3-5 interruption/customer (Average) 4 - 2-3 interruption/customer (Good) 5 - 0-2 interruption/customer (Very Good)
	Reliability of electricity supply (hours)	Telasi - 9:52:26 Energo-Pro Georgia - 55:26:20	1 - 1000< minutes/customer (Very Bad), Latvia 1000 min< in 2016 2 - 400-1000 minutes/customer (Bad) 3 - 100-400 minutes/customer (Average) 4 - 10-100 minutes/customer (Good) 5 - 0-10 minutes/customer (Very Good)
	N-1 rule for electricity	Less than 100% by 2019	1 - <70% (Very Bad) 2 - 70%-90% (Bad) 3 - 90%-100% (Average) 4 - =100% (Good) 5 - 100%< (Very Good)
	N-1 rule for gas infrastructure	87% - when transit to Armenia is restricted due to low demand or prior agreement with Armenia. (2020)	1 - <70% (Very Bad), Sweden <50% 2 - 70%-90% (Bad) 3 - 90%-100% (Average) 4 - =100% (Good) 5 - 100%< (Very Good), Czech republic >350%
Affordability of Energy	Affordability of household energy (%)	8.78% (in total expenditure) 8.56% (in total income)	1 - 16% < (Very Bad), Slovakia 20%< in 2016 2 - 12%-16% (Bad) 3 - 8%-12% (Average) 4 - 4%-8% (Good) 5 - 1%-4% (Very Good), Sweden <5% in 2016

Flexibility of Energy System	Diversification of oil product import	12.94 – Supplier Concentration Index (SCI) for Gasoline (2019) 4.57 – Supplier Concentration Index (SCI) for Road Diesel (2019)	1 - 80-100 (Very Bad), Lithuania>80% 2 - 60-80 (Bad) 3 - 30-60 (Average) 4 - 15-30 (Good) 5 - 0-15 (Very Good), Luxemburg <10%
	Diversification of Natural Gas import	99.64 – Supplier Concentration Index (SCI) for Natural Gas (2019)	1 - 80-100 (Very Bad) 2 - 60-80 (Bad) 3 - 30-60 (Average) 4 - 15-30 (Good) 5 - 0-15 (Very Good)
	Volatility of hydropower generation	39.5% - on an hourly basis 33.1% - on a monthly basis	1 - 80%< (Very Bad) 2 - 40%-80% (Bad) 3 - 20%-40% (Average) 4 - 10%-20% (Good) 5 - 0%-10% (Very Good)
Sustainable energy indicators	Energy intensity per GDP (TJ/$ real mln. GDP)	14.94	1 - 10< (Very Bad), Iceland=13.7 2 - 8-10 (Bad) 3 - 5-8 (Average) 4 - 2-5 (Good) 5 - 0-2 (Very Good), Ireland=1.3
	Energy consumption per capita (GJ/capita)	57.46	1 - 0-20 GJ/capita (Very Bad) or 160<, African countries<15 in 2019 2 - 20-40 GJ/capita (Bad), Albania=34 3 - 40-80 (Average), Romania=71 4 - 80-120 (Good), Switzerland=119 5 - 120- 160 GJ/capita (Very Good), Germany=148
	Share of energy expenditure per GDP (Energy expenditure intensity)	15.3%	1 - 20%< (Very Bad) 2 - 15%-20% (Bad) 3 - 10%-15% (Average) 4 - 5%-10% (Good) USA=5.8% in 2017 5 - 1%-5% (Very Good), Italy=2.4% in 2018
	Grid emission factor	113.60	1 - 400< (Very Bad), Bulgaria=486 in 2017 2 - 300-400 (Bad), Portugal=350 in2017 3 - 200-300 (Average), EU28 Average=294 in 2017 4 - 100-200 (Good) Denmark=147 in 2017 5 - 1-100 (Very Good), Sweden=9.3 gCO2 eq/kWh, Norway=18 in 2017

Key findings

Energy security is an issue of critical importance to many different stakeholders, including policy makers, businesses, and the larger community whose quality of life depends on uninterrupted energy supply. The use of energy security indicators/indexes for self-assessment, tracking progress and/or cross-country comparisons is growing. The given framework can be used for analytical support for the development of country strategic documents, as well as informed decision making, especially in the field of energy security. The key findings from the first round of assessment for the base year 2019 are the following:

- Georgia's overall score was 2.67 (corresponding to benchmark range value "bad") in 2019, where equal weights were given to each indicator.
- Georgia is a heavily import-dependent country, especially in gas.
- There is a high seasonality pattern of gas consumption.
- The country needs strategic storage reserves of gas and oil products.
- There is a very low reliability of electricity supply in the network operated by Energo–Pro Georgia.
- Georgia has to improve its N-1 indicator in gas and electricity.
- The Georgian natural gas market has a critically high concentration.
- The energy intensity per GDP and energy expenditure intensity per GDP are very high, indicating inefficient use of energy in different economic sectors.
- However, the country has very good results in terms of electricity interconnection capacity, access to electricity, diversification of oil product import, and grid emission factor.

The results of institutional and legal framework assessment can be used for analysis of current situation and to provide input for analytical parts of country strategic documents. Like the energy security indicators framework, the institutional assessment framework can be updated periodically to track progress and support policy impact analysis. The framework includes a set of indicators that cover all aspects of institutional and legal arrangements relevant to energy security domains/principles. However, in contrast to a quantitative assessment, there is no need to conduct an update of the legal and institutional assessment on a yearly basis. Instead, it can be conducted once every 2-3 years.

Both frameworks create a basis for regular analysis and assessment of energy security to support informed decision-making in the field, as well as implementation of EU Directives as per the Energy Community Accession protocol.