ATHENÆUM
Polish Political Science Studies
Polskie Studia Politologiczne

vol. 76(4)/2022, pp. 30–49
DOI:10.15804/athena.2022.76.02
www.athenaeum.umk.pl
ISSN 1505-2192

ENERGY SECTOR IN GEORGIA AND THE EXPORT POLICY OF AZERBAIJAN'S FUELS AND HYDROCARBON RESOURCES

ENERGETYKA W GRUZJI A POLITYKA EKSPORTOWA PALIW I SUROWCÓW WĘGLOWODOROWYCH AZERBEJDŻANU

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ABSTRACT

Georgia, deprived of its own hydrocarbon resources, relies exclusively on the import. It has abstained from purchasing those from the Russian Federation for political reasons, which, combined with the lack of LNG terminal infrastructure, has led to the factual monopolization of crude oil and natural gas supplies from Azerbaijan. For geopolitical reasons, Georgia remains the only export route for Azerbaijan for these resources. Easy access to those resources due to its position as a transit state has an impact on the tempo of energy transformation in Georgia. On the one hand, the significantly lower than expected dynamics of the development of renewable energy sources, and on the other hand, the growing role of Azerbaijani national companies in the market of liquid fuels and natural gas in Georgia, are visible consequences of the emergent status quo.

Keywords: Azerbaijan; Georgia; energy sector; crude oil; natural gas; fuel; hydrocarbon; resource

ABSTRAKT

Pozbawiona własnych złóż surowców węglowodorowych Gruzja zdana jest na import. Zaniechanie z przyczyn politycznych ich zakupów w Federacji Rosyjskiej oraz braki infrastrukturalne (w tym brak terminalu LNG) doprowadziły do faktycznej monopolizacji dostaw ropy naftowej i gazu ziemnego z Azerbejdżanu. Z powodów geopolitycznych Gruzja pozostaje dla Azerbejdżanu jedyną drogą eksportową tych surowców. Łatwy dostęp do nich – z racji zajmowania pozycji państwa tranzytowego – nie pozostaje bez wpływu na tempo transformacji energetycznej w Gruzji. Znacząco niższa niż należałoby się tego spodziewać dynamika rozwoju OZE z jednej strony, a z drugiej rosnąca na znaczeniu rola azerbejdżańskich spółek narodowych na rynku paliw ciekłych i gazu ziemnego w Gruzji są dostrzegalną konsekwencją powstałego status quo.

Słowa kluczowe: Azerbejdżan; Gruzja; sektor energetyczny; ropa naftowa; gaz ziemny; rurociągi

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INTRODUCTION

The severed political and economic relations between Georgia and the Russian Federation may be seen as an aftermath of the Georgian-Russian conflict in 2008 and the secession of South Ossetia. Along with the above-mentioned cessation of official contacts between them, all official trade between the countries had also stopped. For the Russian Federation this meant, inter alia, a lack of access to the Georgian fuel and energy market with all its products. The place of the supplier was taken over by Azerbaijan. This country, and more precisely its National Company – SOCAR, was present in Georgia in the context of the oil and gas sector co-created with other concerns with the launch of the BTE gas pipeline and the BTC oil pipeline in 2006. Georgia's abandonment of supplies of hydrocarbon resources from Russia did not take place at a time when infrastructural conditions made it possible to import it from another direction. However, it was tantamount to the lack of diversification of supplies, which is dangerous from the point of view of energy security. Determining the impact that this situation has on the future of the broadly understood energy industry in Georgia requires, among others, approximation of the natural conditions for the development of energy in this country, meaning: fossil fuel resources, renewable energy potential, production capacity, financial and technological facilities, investment attractiveness. Moreover, these aspects need to be cross-checked with the demand for individual types of carriers and the demand defined in this way with the import from Azerbaijan. Building on the hypothesis according to which Azerbaijani exports determine the shape of the energy sector in Georgia, its confirmation or negation should be sought in the direction and dynamics of changes related to the energy transformation in this country. For the purposes of this study, data from before the COVID-19 epidemic, i.e., until 2020, is presented so that the process of changes is not disturbed by economic turbulences related to sanitary regimes in the form of a lock-out of the economy.

GEORGIA'S ENERGY RESOURCES

Georgia does not belong to the countries rich in hydrocarbon resources. It has hardly any oil resources[1] (Tukhiashvili, 2014; *Facts about Oil*, n.d.). They are estimated at from 15 million[2] (*Georgia Oil and Gas*, n.d.) to approx. 52 million barrels, whereby the last of the above-mentioned amounts has been quoted in reports based on government information and are not confirmed by other sources (Safirova, 2019). The situation is similar with regards to natural gas, its natural reserves ranging from 2 billion cubic meters (*Georgia Oil and Gas*, n.d.) to 8 billion cubic meters[3] (*The World Factbook*, n.d.; *Huge Natural Gas Reserves…*, 2016). In both cases the range of indications is significant. However, it is not of significant importance for this country. It is because such a small amount has no impact on the condition of the energy sector in Georgia and the state of its supply.

Georgia is the only country in the South Caucasus that has natural reserves of coal, including both hard coal and lignite. The amount of these resources was estimated at 370–500 million tons. These longest known and exploited ones are located in the mountainous southwest part of Imereti (*Georgian Industrial Group-1*, n.d.). Apart from the Tkibuli-Shaori deposit, the resources of hard coal (bituminous coal) in Tkvarcheli and lignite in Akhaltsikhe are of the key importance for the country (*Georgia – Summary of Coal Industry*, n.d.). No uranium ore deposits were found on the territory of Georgia.

NATURAL CONDITIONS FOR THE DEVELOPMENT OF RENEWABLE ENERGY

The geographical location, as well as natural and climatic conditions, are extremely favorable for the development of all branches of renewable energy (*FactCheck*, 2014).

[1] The crude oil fields in question are located, among others, near Tbilisi, in the east of the country, in Kakheti, and in the west, in Adjara. The last ones are considered to be the biggest and the most promising for the future.

[2] 2.16 million metric tons.

[3] There are many hopes for new discoveries in the east of the country in Kakheti and traditionally in the south-western strip of the Black Sea shelf.

In the case of hydropower, numerous watercourses are of significant importance, originating from above-average amounts of rainfall in mountain regions, e.g., in the southwest of the country and inferior to them in size in the east. Their network densely covers the south-western territories of the state. Their total flow is 49.8 km^3, while in the east it is 16.5 km^3. There are about 25 000 of them with a total length of more than 50 000 km (*Energy.gov*, n.d.). Rivers shorter than 25 km predominate. Considering the height difference and the relatively short distance they have to cover, their current is very fast (*AQUASTAT…*, n.d.). Their usable energy potential is estimated at approx. 15 000 MW (*Energy.gov*, n.d.).

Moreover, Georgia has excellent opportunities for the development of solar energy. Annually, on average, there are about 250 sunny days and over 2200 sunny hours. It is an impressive amount that meets all the criteria for the high efficiency of photovoltaic installations located here. It is not only because of the length of exposure but also because of its quality.

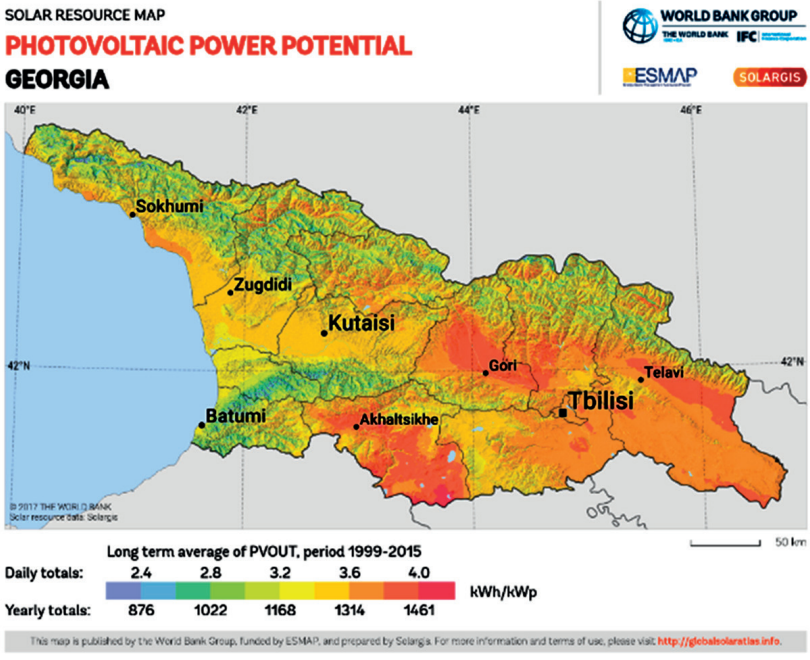

Figure 1. Georgia's Photovoltaic Potential

Source: Solargis.com.

In Georgia, the regions located above 700–800 m above sea level, where the thinner atmosphere in comparison to the lowlands translates into the greater intensity of solar radiation, prevail[4] (Markowicz, 1993). The total potential of solar energy in Georgia was estimated at 3.5 to 5 GWh in 2008 (*National Policy of Georgia on Developing Renewable Energy Sources*, 2008); ten years later it was already estimated at 60–120 GWh (*Enabling PV in Georgia*, 2020).

Conditions for development of wind energy are also favorable. The areas that seem almost predestined for locating these types of farms are extensive ridge parts of mountain ranges, plateaus, and plains extending in depressions, characterized by a gentle relief. Among the areas recommended and exposed for the location of power plants and farms of this type, the areas listed in Table 1, which take into account the velocity zones of horizontal air mass movement and the approximate annual number of hours of its impact, are mentioned.

Table 1. The Strength and Intensity of Wind in Specific Regions of Georgia

Wind speed zone	Number of hours	Regions
High	Over 5,000	the mountainous regions of southern Georgia, Kakhaber Vake, and the central region of the Kolkhida Valley
Mixed – fast and low	4,500 to 5,000	Kura gorge from Mtskheta to Rustavi, southern Javakheti, Black Sea coast from Poti to Kakhaber Vake
Low		The Iori Plateau, the Zhinvali Reservoir, the Gagra Range, part of the Kolkhida Valley, the eastern lowlands of Georgia

Source: Author's study based on data from the Ministry of Energy of Georgia (*Investment Opportunities in Energy Sector of Georgia*, n.d.).

The capacity that could be achieved was estimated at 3 to 4 GWh in 2008 (*National Policy of Georgia…*, 2008). These estimates remain correct (*Energy.gov*, n.d.).

Georgia has the potential to develop geothermal energy. More than 250 medium and high temperature (30–180°C) springs and boreholes have been evidenced in its territory (*National Policy of Georgia…*, 2008). The potential was estimated in 1998 at 90 000 m^3 per day, which corresponds to 4 070 500 kWh/year. The areas of the southern flank of the Caucasus, as well as the central part

[4] The higher the atmospheric pressure, the more solar radiation is absorbed by atmospheric pollutants.

of the country: the Tbilisi region, and Adjara, are of key importance for the future of this sector (Melikadze, Vardigoreli, & Kapandze, 2015). The possibilities of geothermal energy have been estimated at 2 GWh (*National Policy of Georgia…*, 2008).

When analyzing the potential for the use of individual renewable energy sources, biomass should be given special attention. The stereotypical presentation of Georgia as a horticultural and orchard reservoir is not far from the truth. Among export goods, agricultural raw materials are significant. Among them one can mention, among others, walnuts, hazelnuts, etc. Until 2015, they had a greater share in external sales than wines, brandy, and liqueurs (*Georgia's 2015 Foreign Trade*, 2016). Since 2016, the situation has changed in favor of alcohol (*Georgia's Foreign Trade in 2017*, 2018). It is not only an important source of the state's income in international trade but, given the agricultural specificity of Georgia, also a reservoir of biomass. The digestate is an excellent input material for a biogas plant (Kowalczyk-Juśko, 2015). The largest resource for obtaining raw material is the rich and intensively used lands stretching along the central part of the country from the east to the Black Sea coast (*Biomass Energy in Georgia*, n.d.).

The possibilities of producing energy from biomass have been estimated at 2 GWh (*National Policy of Georgia…*, 2008), which may be considered a very modest value and with a certain degree of probability one that is not fully reflecting the full potential of Georgian agriculture and forestry.

DEMAND

The demand for individual carriers or electricity itself is specific to Georgia and is not analogous to any region in the South Caucasus. In many ways, the characteristics of the consumption there resemble those known from beyond the northern border, i.e., from the Caucasian lands of Russia. The fossil fuels used in transport can serve as a benchmark. Contrary to the world leader (*Expert: Armenia World No. 1…*, 2018) in using fossil fuel for that purpose, namely, Armenia – and to some extent Azerbaijan, gradually switching its public transport to CNG – in Georgia, its popularity is lower than one would expect. Liquid fuels dominate the road transport market in this country.

The daily consumption of crude oil fluctuates around 22–24 thousand tons bbl/d. The level of consumption has remained virtually unchanged for a decade,

the cyclical fluctuations in the demand for the raw material in the aforementioned period are close to 2,000 tons bbl/d (*Georgia – Total Petroleum Consumption*, n.d.). These are only processed refinery products. Almost all consumption is taken up by transport, and only a marginal part is used for heating purposes. The demand for diesel oil and engine gasoline is very similar and is around 12 000 bbl/d for each of the above-mentioned types of fuel (*Supply and Consumption of Oil and Oil Products*, n.d.).

In the context of the demand for petroleum products, the scarce demand for LPG draws attention. This fuel is not very popular anymore, although there are many reasons for it in Georgia. As a result, LPG sales are around 500 barrels per day. Traditionalism in the approach to fuels used in car transport also applies to CNG. It is met with much lower interest than in Armenia or Azerbaijan, for instance. In the case of natural gas, a significant increase was recorded in 2019, as compared to 2018. Consumption in households is noteworthy. In 2019, it was responsible for almost 36% of raw material consumption. Power plants and industry have followed on the list (*Energy Balance of Georgia, 2019*, n.d.). The increased demand can be explained by the progress in the gasification of the province.

Hard coal and lignite were practically not used in the economy of this country during the first years of the twenty-first century. Until 2007, it was used only in trace amounts (*Observers to the Treaty Establishing the Energy Community*, n.d.).

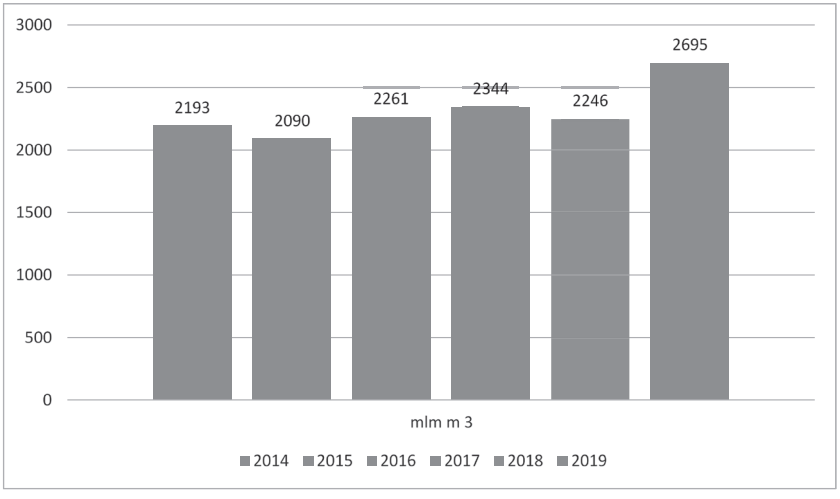

Figure 2. Natural Gas Consumption in Georgia in 2014–2019

Source: Author's study based on the National Statistics Office of Georgia.

The situation changed in the following years. Since 2008, the consumption of this raw material has been systematically increasing, which was largely a consequence of using it in industrial plants in the production process to generate heat and steam (*Energy Balance*, n.d.). It should be emphasized that in the Georgian energy sector, coal is used extremely rarely for heating or as fuel in power plants. This type of consumption does not exceed 4% of the total consumption of raw materials by the economy. In 2016 and 2017, the industry was responsible for 90% of the raw material absorption. Slightly more than a third of this was used in metallurgy, while the vast majority, almost $^{2}/_{3}$, in the production processes mentioned in the previous section (*Supply and Consumption…*, n.d.).

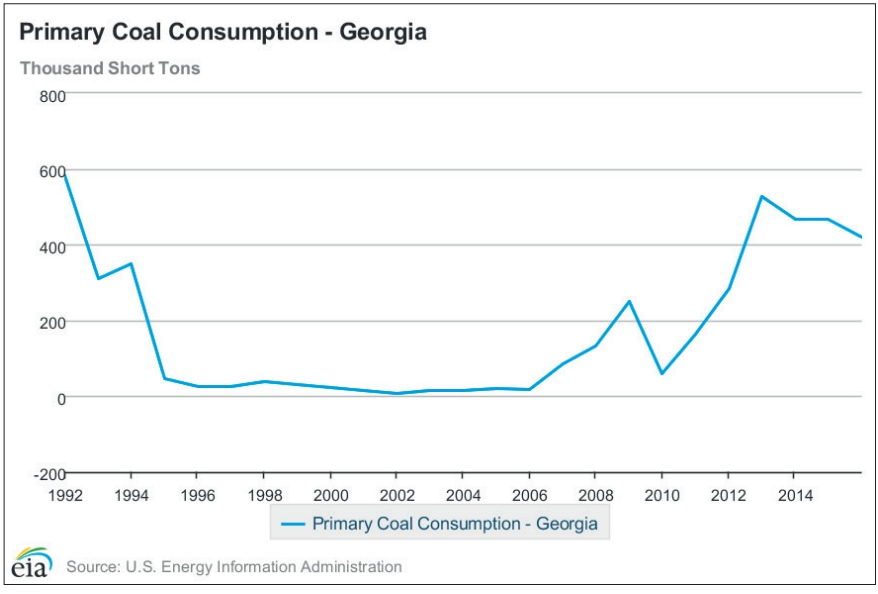

Figure 3. Georgia – Coal Consumption

Source: *U.S. Energy Information Administration-1*, n.d.

Electricity consumption has stabilized at around 11 billion kWh per year. Although the growth dynamics are noticeable, it is nevertheless very conservative. The economic situation in the second decade of the twenty-first century is a factor that contributes significantly to the Georgian economy and may be regarded as a key factor stimulating consumption. Citizens' incomes in terms of prices per kWh remain a serious obstacle. Nominally, electricity in Georgia may be considered relatively inexpensive compared to other countries in the region.

SUPPLY

a) Raw materials and hydrocarbon fuels

The extraction of crude oil in Georgia, due to the trace amounts of the raw material obtained, is currently of no economic importance. It is at the level not exceeding 400–700 bbl/d (*U.S. Energy Information Administration-2*, n.d.; *Geostat*, n.d.). As a consequence, the production of liquid fuels in Georgia is closely related to imports, although the existing refining potential was originally predestined to process material derived from native natural resources and, most importantly, adjusted to the volume of consumption on the domestic market. Nominally, it allows processing of all imported crude oil. Monopolization of the supply of raw materials and its products by SOCAR does not always serve to fully use the processing capabilities of local petrochemical plants. In the case of motor gasoline, in 2016 only slightly more than 1% of the fuel available on the market came from domestic refineries. In the following years, this state was maintained. The situation with diesel oil was almost the same, also only approx. 1.5% was of local production (*Supply and Consumption of Oil and Oil Products*, 2019; *Geostat*, n.d.). The rest was imported from Azerbaijan. Mazut, which comes entirely from Georgian refineries, may be an exception. It is even exported. Due to the limited possibilities of its use by Georgian-flagged vessels or supplying it with power generation facilities, its economic importance in the area of energy security is insignificant.

Table 2. Deliveries and Consumption of Crude Oil and Petroleum Products in 2019 (in Thousand Tons)

	Crude Oil (1000 tons)	Liquefied Petroleum Gases (1000 tons)	Motor Gasoline (1000 tons)	Kerosene type Jet Fuel (1000 tons)	Road diesel (1000 tons)	Heating and other gas oil (1000 tons)	Fuel oil-low sulfur (<1%) (1000 tons)	Lubricants (1000 tons)	Bitumen (1000 tons)	Non-specified Petroleum Prods. (1000 tons)
Production	35,1	-	-	-	-	-	-	-	-	-
Imports	9,1	28,3	544,5	102,1	534,6	18,1	0,3	23,8	170,9	2,0
Exports	-	0,2	0,4	-	0,3	-	15,5	5,3	0,0	1,8
International Marine Bunkers	-	-	-	-	2,1	-	-	-	-	-

	Crude Oil (1000 tons)	Liquefied Petroleum Gases (1000 tons)	Motor Gasoline (1000 tons)	Kerosene type Jet Fuel (1000 tons)	Road diesel (1000 tons)	Heating and other gas oil (1000 tons)	Fuel oil-low sulfur (<1%) (1000 tons)	Lubricants (1000 tons)	Bitumen (1000 tons)	Non-specified Petroleum Prods. (1000 tons)
International Aviation Bunkers	-	-	-	101,1	-	-	-	-	-	-
Stock Changes	-6,6	-0,5	4,9	-0,4	20,5	-	-0,1	0,0	0,0	-2,9
DOMESTIC SUPPLY	37,6	27,6	548,9	0,6	552,7	18,1	-15,2	18,5	170,8	-2,7
Transformation Sector – Input	37,6	-	-	-	-	-	-	-	-	-
Petroleum Refineries	37,6	-	-	-	-	-	-	-	-	-
Transformation Sector – Production	-	-	1,4	-	15,5	-	15,7	-	-	4,0
Petroleum Refineries	-	-	1,4	-	15,1	-	15,7	-	-	4,0
Final consumption	-	27,6	550,3	0,6	568,2	18,1	0,4	18,5	170,8	1,3

Source: National Statistics Office of Georgia (*Geostat*, n.d.).

The situation of natural gas is analogous to crude oil and its products. This raw material is exclusively imported. Domestic extraction is scarce and does not exceed one per mille of needs. The only source of supply is Azerbaijan. The supply of raw material increases proportionally to the increase in demand. The main factor generating higher demand is the gasification of rural areas. There can be observed an expansion of the distribution network and the associated increase in the number of recipients. New subscribers are mainly households, small farms, and family service and trade companies. Their purchasing potential is limited. Its advantage is stability and sale at retail prices. Considering the key role of SOCAR in the very process of network expansion, it can rightly be perceived as the main beneficiary of the ongoing gasification.

The main pillar of the country's electricity security remains over 30 run-of-river hydroelectric plants with a capacity of 1.3 GW (the Enguri Dam) to

facilities equipped with a turbine with a capacity of several dozen MW. Their total potential is calculated at about 3 GW (2.924 MW), which corresponds to over $^3/_4$ of the generation capacity in the area of electricity generation. In 2016, it was estimated at 3.869 GW. The remaining 24% was installed in thermal power plants – 924 MW, and less than 0.5% – in wind power plants – 21 MW.

In 2020, this value was enriched by the 300 MW power plant in Gardabani II, powered by coal mined by the mines of the Saknakhshiri company (*Georgian Industrial Group-2*, n.d.). According to the plan, the next stage of expansion are gas units (*New Prospective Projects*, n.d.).

In 2019, a total of 11,856.8 GWh was generated in Georgia (*Energy Balance of Georgia, 2019*, n.d.). This allows the local consumption to be satisfied, which, as mentioned above, oscillates around 12 TWh, and more precisely – 12,059.3 GWh (*Energy Balance of Georgia, 2019*, n.d.). It seems almost perfectly balanced. Considering the dominant role of hydroelectric power plants among generating sources with their specificity and the resulting technical limitations in terms of generating greater power, the above-mentioned demand-supply balance does not have a stable basis. Taking into account the losses incurred on account of transmission and distribution, the margin of differences between the demand and its fulfillment is narrowed to the minimum.

The issue of losses raised is extremely interesting in the case of Georgia. A small scale of those draws attention. In 2019, only 918.2 GWh in total did not reach the recipients, i.e., less than 8%. Considering the poor condition of the infrastructure, from power poles through power stations to power line cables, this result can be considered extraordinary. It is close to the EU average (*Electric Power Transmission and Distribution Losses*, 2018), i.e., not all member states can boast of such a favorable ratio of the generated power to that delivered to end-users, although they have much more modern production and transfer facilities, etc.

Comparing these data to the countries of the region, Georgia may appear to be an enclave of efficiency. The reason for this state of affairs can be attributed to the far-reaching decentralization of the system. In terms of the ratio of the country's area to the number of utility power plants, Georgia may be considered a model example of distributed energy. Probably a great simplification, in this case, would be to limit the explanation of the causes of low transmission losses only to the ratio of the distance between the generating source and the recipient. The progress that has taken place in this respect, in the light of statistical data since the beginning of this century, can be regarded as the best evidence

of this (*Report on Compliance with the Energy Community Acquis…*, 2017). Nevertheless, due to the lack of visible investments in the sector, historical data from the period of far-reaching anarchy in Georgia's political and economic life may raise doubts.

SUPPLY AND TRANSIT

In the discussed context of the analysis of the relationship between Azerbaijan's export policy and the development of the energy sector in Georgia, one should not forget gas and oil transmission lines. In the case of both raw materials, the country remains both a target recipient and a transit country, and given the geopolitical conditions, there is no indication that this status could change in the foreseeable future.

The oldest of the pipelines transporting "blue fuel" through Georgia is the North Caucasian Main Line [Transkaukaska Magistrala] (hereinafter PKTK). It is a gas pipeline owned by Gazprom with a diameter of 1,200 mm and a capacity of 12 billion cubic meters (Gurbanov, 2016). It is used to deliver the raw material from Russia to Armenia. However, its capabilities are not fully utilized. No more than $^1/_6$ of the pipeline's transport potential, i.e., approximately 2 billion m^3, reaches Armenia through the northern border. Until 2017, Georgia charged 10% of the natural gas transmitted through this connection as a transit fee (Maisuradze, 2018). In 2017 and 2018, it switched to financial settlements with the Russian company, resigning from barter for the provided service of making its territory available. The amount collected on this account has not been disclosed, however, according to the representatives of the political opposition, it is unfavorable for Georgia and the state loses with this deal (Maisuradze, 2018).

All natural gas goes to Georgia from Azerbaijan. Natural gas is transported via pipelines running from the Sangachal terminal south of Baku. In Georgia, their route is 249 km long. They bear the burden of responsibility for gas supplies to Georgia. The first of these busses is the already discussed BTE. Its launch in spring 2007 fundamentally changed the structure of Georgia's energy supply. For the first time since the collapse of the USSR, a real alternative to imports from Russia has emerged (Badalyan, 2011). It was utilized and since 2007 there has been a diversification of gas supplies. The 2008 war with South Ossetia in the background confirmed the political and economic importance of the BTE for Georgia. The gas which it transports from Azerbaijan effectively displaced the

gas from Gazprom, gradually eliminating the Russian company from its supplier function. In 2017, after the aforementioned switch to cash settlements for the transit of the natural gas via the North-South pipeline to Armenia, the BTE main became the only source of supply for Georgia (*Georgia Quits Buying Natural Gas from Gazprom in 2017*, 2017).

The Trans-Anatolian Natural Gas Pipeline (hereinafter TANAP) project has also been operating since 2018. Similarly to BTE, it starts its run in the Sangachal terminal and transports the raw material coming mainly from the Shah Deniz field. It is also located along its route as part of the Southern Gas Corridor (*Why TANAP?*, n.d.). However, it is a separate thread, not integrated with the BTE, with a slightly larger cross-section, amounting to 1,220 mm, and transport potential of 16 billion m^3 per year. This ability was obtained thanks to gas compression and sending it under the pressure of 20 MPa.

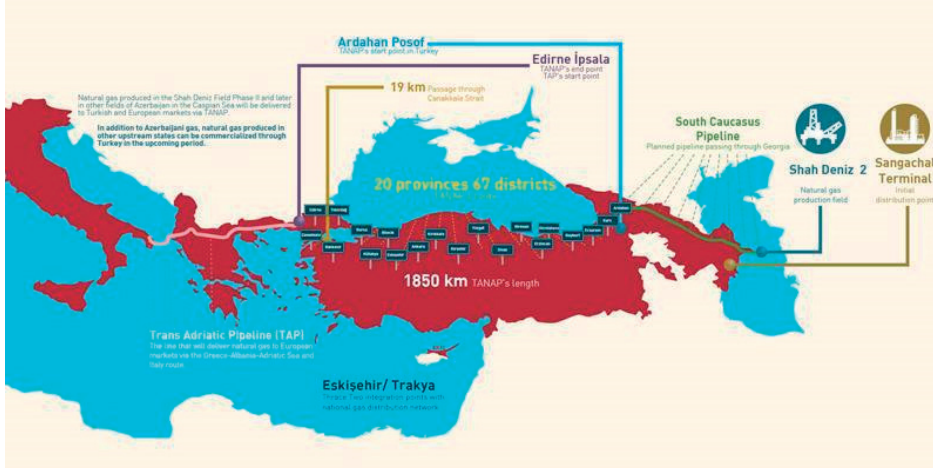

Figure 4. Crude Oil and Natural Gas Transmission Directions from BTC Deposits
Source: BP Azerbaijan.

Until the launch of TANAP by Georgia, an average of approx. 8 billion m^3 of natural gas. This volume consists of an average of 2 billion m^3 of the PKTK and approx. 6 BTE (*Gas Transportation…*, n.d.).

The same circumstances that made Georgia a transit area for the pipeline transfer of natural gas also play an important role in the case of trade in crude oil and its products. It was on the map of transmission routes for this raw mate-

rial as early as nineteenth-century Tsarist Russia[5] (Shammazov, Mastobajev, & Soshchenko, 2017). However, their delineation in this area was not caused by political reasons. Purely pragmatic considerations were decisive, as this was the shortest route from the Caspian oil fields to the seaport, from which the raw material could be sold to the West. Even V.I. Lenin and his associates were able to properly assess this and assume the role of continuers of undertakings initiated before the revolution. In 1921, the Baku-Batum pipeline originally intended for kerosene was put into operation again, and in 1930 a new line for the transport of crude oil was put into operation, which significantly supplemented the export capacity of the USSR[6] (Mishin, 2005). In the 1990s, a part of it was included in the project of a new mainline connecting Baku with Supsa. It was put into use in 1999. Currently, it is one of the two main lines used to transfer oil to Georgia. Its transmission potential is estimated at 145 000 bbl/d.

The BTC pipeline discussed in the previous chapter is crucial. It runs 249 km through the territory of Georgia. There are two pump stations located on it. It also has a slightly wider diameter of 46-inches, instead of 42-inches like in Azerbaijan and Turkey (*Baku – Tbilisi – Ceyhan Pipeline*, n.d.).

The situation is favorable given the possibility of stockpiling and storing crude oil. The key importance is attached to the Black Sea oil terminals in the ports. This includes Batumi, Poti, Supsa, and Kulevi. The last of them is an important one. It is a new investment, which had been completed in 2008 (*Ot Redut-Kale do Kulevskogo Neftyanogo Terminala*, n.d.). Ownership supervision is performed by SOCAR (*Georgia's Kulevi Opens a New Oil Terminal*, 2008). It is equipped with 16 tanks with a capacity of 320 000 m^3, which allows for annual reloading of 10 million tons, or approx. 70 million bbl (*Kulevi Oil Terminal*, n.d.). This amount

[5] The first concept of a pipeline for the transport of purified kerosene and crude oil was established in 1878. Its author is engineer I. Ilimov. Two years later, D. Mendeleev put forward a proposal to construct a pipeline through which the valuable raw material could be delivered to the port of Batum (now Batumi). The first project of the oil main was developed in 1884 by V.G. Shukhov. It was designed to be 6 inches in diameter, 884 km long, and served by 35 pumping stations. A year later, I. Ilimov founded the Caspian-Black Sea Pipeline Company, and in 1887, obtained a concession from the tsarist authorities that allowed him to carry out the project. On the basis of Shukhov's plans, in the years 1897–1907, an oil pipeline was built along the Baku-Batum railway track, which was used to transport kerosene. It was 8 inches long, or even 12 inches in some sections, while the number of pumping stations was reduced to 16.

[6] Work on it began in May 1928 and was completed in April 1930. The diameter of the oil pipeline is 10 inches, or 250 mm. It was 834 kilometers long, with 13 pump stations, each of which was equipped with three devices of this type powered by a Man AG diesel engine with a capacity of 360 HP. The transmission potential of the bus oscillated around 370 000 bbl.

is adjusted to the needs of SOCAR as a representative of Azerbaijan's interests and its upstream capabilities.

A dozen kilometers south of Poti, on the Supsa River, a modern oil terminal has been placed in the village of the same name. Conceived as a warehouse complex, ultimately a warehouse and a refinery, it is intended for the collection and export of crude oil from Azerbaijan (*Georgia – Oil & Gas Politics*, n.d.). The decision to launch it was related to the so-called "contract of the century" and the construction of the BTC oil main. The operator of the facility commissioned in 1999 is also BP. It is equipped with four tanks with a capacity of 40 000 m^3 each. It is not located directly on the seashore and is therefore connected to it by a special pipeline 5.6 km long and 36 inches in diameter (*Supsa Terminal*, n.d.). It is ended with a Pipe Line End Manifold, from which two 20-inch flexible floating hoses leading to the Catenary Anchor Leg Mooring are led out. It acts as a distributor. This allows for deliveries without any inconvenience related to the topography to units anchored further from the land. This solution is known from offshore platforms, among others. Applying it in this context allows the facility, which is in fact several thousand meters from the sea and several kilometers from a fully-fledged port, to fulfill all the tasks assigned to it. It is therefore adapted to the handling of supertankers and today it can accept vessels up to 150 000 DWT, and its loading capacity reaches 6 000 m^3/h, or approx. 40 000 bbl/h (*Supsa Terminal and Pipeline, Georgia*, n.d.).

SUMMARY

When analyzing the relations between the state and directions of development of the energy sector in Georgia and the policy of exporting hydrocarbon resources in Azerbaijan, one clearly notices the tightening of this cooperation. Georgia acts as an end-user and a country that provides transit service on its territory. For Azerbaijan, being a supplier, both of these functions are important, but taking into account the volume of the transferred raw material and the consumption potential of the local market, the last of them should be given unquestionable primacy. Considering the other fields of cooperation in the area of international trade in hydrocarbon raw materials, it does not seem that SOCAR, and other BTE or BTC shareholders could afford to apply monopoly practices in the supply sphere to Georgia by making themselves dependent in terms of the future of their export. It is also difficult to indicate any facts related to the activities of

SOCAR and other entities related to Azerbaijan that could indicate such intentions. Their raison d'être would be more than questionable. Any attempts to shape the future of the energy industry in Georgia so that its consumption profile would remain dependent on the supplies of hydrocarbons from Azerbaijan are at risk of retaliation. The fuel and energy market in Georgia, which is relatively small compared to the volume of hydrocarbon exports from Azerbaijan to third countries, would not be able to compensate for potential losses related to transmission perturbations.

A serious argument in favor of the fact that Azerbaijan does not exert any intentional influence on the shape of the energy sector in Georgia is the situation of its electricity sector, and more precisely, of the production capacities installed there. Hydropower has a dominant position in the country. This applies to both working facilities and new investment projects. Since the launch of the BTC and BTE projects, none of the thermal power plants that have been commissioned has been powered by hydrocarbon fuels. The 230 MW Gardabani (2015) and Gardabani II (2020) units are coal-fired, and the gas is still in the pipeline. None of the circumstances speak in favor of external attempts to shape the future of Georgian energy by Azerbaijan. Confirmation of this state of affairs can also be found in the above-mentioned decentralization of the power system. Its dispersion is an extremely unfavorable circumstance for the fossil fuel supplier, in this case, SOCAR.

The main benefit that Azerbaijan derives from cooperation with Georgia remains the possibility of transferring raw materials through its territory to the West. It is also lucrative for the latter country. In addition to the obvious benefits in the form of infrastructure investments, e.g., the terminal in Supsa, access to transported and stored goods, the transit of hydrocarbons through Georgia brings other benefits to the country. One of them is Georgia's potential to become a gas hub in the future. This possibility pushes the economic entities operating here to act as intermediaries and shippers of crude oil and natural gas. However, it is doubtful whether Georgia is taking full advantage of its opportunities. This is reflected in the condition of the local storage infrastructure, and more precisely – its scarcity. The localized investments serve to a greater extent to ensure internal energy security than to create a regional distribution center for raw materials and hydrocarbon fuels[7] (*The Reconstruction Credit Institute of Germany…*, 2018). The

[7] An example is JSC, "Georgian Oil and Gas Corporation", which decided to build underground gas tanks in Samgori near Tbilisi. Ultimately, they will have a capacity of 150 million m^2, which gives

aforementioned shortcomings are of particular importance after the agreement concluded in the summer of 2018 at the summit of the leaders of the Caspian states in Baku, which, as mentioned in the paper, allows for the construction of pipelines crossing the Caspian Sea and the transfer of hydrocarbon resources from the East to the West (Auyezov, 2018). The implementation of such investments would significantly strengthen the importance of Georgia in transit. It is probably through its seaports that natural gas and crude oil were delivered to recipients from other parts of the world. Due to the natural resources of Turkmenistan and Kazakhstan, the first of the aforementioned fuels would be of particular importance.

In conclusion, it is difficult to avoid the opinion that the lack of involvement of Georgia's Azerbaijani partners in shaping the local energy sector also has its drawbacks. One of them is Georgia's failure to use the potential generated by geopolitical factors. There is also no indication that this could change at any definable moment in time. Without gas storage facilities, and lacking an LNG export terminal, Georgia is more than limited to reach for those things that give it the advantage of being a transit country. These shortages not only destroy the chance to derive greater profits from transport and transmission through its territory but also pose a serious threat to the energy security of the country (Tarimanashvili, 2018).

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them strategic importance and does not allow their wider use in the international trade of hydrocarbons.

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