



MAIN CHALLENGES OF ALBANIA'S ENERGY SECURITY, ON THE WAY OF ENERGY DIVERSIFICATION AND REGIONAL INTEGRATION

Prof. Asc. Dr. Stavri Dhima

Independent Energy and Risk Assessment Consultant &
Senior Partner of the IENE, Albania

December 9, 2024
ATHENS

MAIN CHALLENGES OF ALBANIA'S ENERGY SECURITY, ON THE WAY OF ENERGY DIVERSIFICATION AND REGIONAL INTEGRATION

Main topics:

- 1.- The importance of Energy Security in Albania as a priority issue**
- 2. – Situation in development of the energy sector in Albania**
- 3. – Government policy for the restructuring of the energy industry**
- 4. –Government Medium Term/long term Plan for the supply with electricity and gas.**
- 5. –Regional cooperation in framework of geopolitical development**
- 6. –Instead of the conclusions**

1.- The importance of Energy Security in Albania as a priority issue

Energy security in Albania is an important issue, as the country has had a heavy dependence on oil-based fossil fuels and hydroelectric resources, while efforts to diversify sources and improve infrastructure are still under development.

Some of the main factors affecting Albania's energy security are:

1. Dependence on Hydroelectric Power
2. Diversification of Energy Resources
3. Transport Network and Infrastructure
4. Regional and International Cooperation
5. National and International Policies and Regulations
6. Energy Security and Energy Prices
7. The Role of Renewable Energy and Other Resources.

As a concrete illustration regarding energy security in Albania, we mention **the Blackout of electricity in the TSO system throughout the country, which occurred on 21.6.2024 for around one hour**, as well including some parts of the neighboring countries.

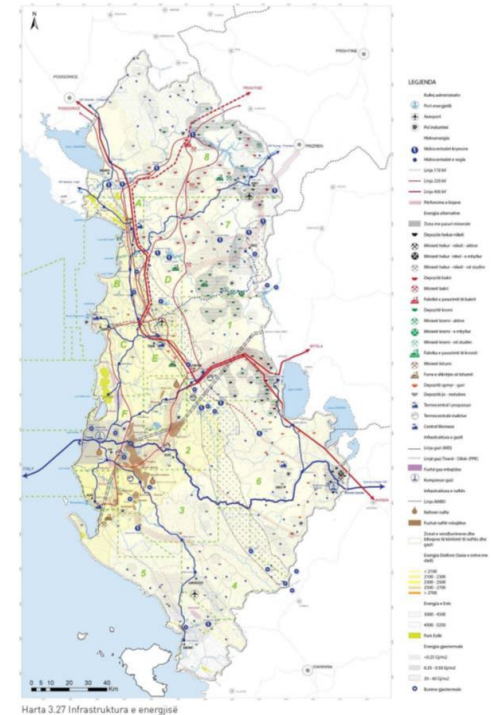
2.- The situation in the development of the energy sector in Albania

Considering the recent developments in the energy sector related to the energy crisis, Russia's unprovoked war in Ukraine, the war in the Middle East, as well as the drastic climate changes that have affected Albania and all of Europe, the **necessity for the development and diversification of energy supply sources (especially from renewable energy sources) both for Albania** and for the entire region of South-Eastern Europe.

In this context, **the further increase of energy security will be enabled through a much more substantial integration of regional energy markets and infrastructure within the South East European Region and the connection of pan-European electricity and gas networks** (especially the TAP Pipeline as part of Southern Gas Corridor), as well as the increase of import capacities through coastal terminals of hydrocarbon products, as well as the construction and operation of LNG terminals).

In response to the current developments and problems encountered in the security of energy supply of the Albanian economy, **concrete projects have recently been supported that also use Albania's geopolitical position in the region, which are related to finding new sources of energy supply,**

- development of photovoltaic and wind parks,
- the intensification of new oil operations for the discovery and exploitation of new oil and gas deposits),
- construction of new electricity interconnection lines with neighboring countries,
- development of projects in the gasification of the country, (projects for the construction of LNG terminals and those for connecting Albania with regional gas pipeline networks.



Map of Albanian Energy Infrastructure

2.- The situation in the development of the energy sector in Albania

2.1. Production and import of Electricity during 2023

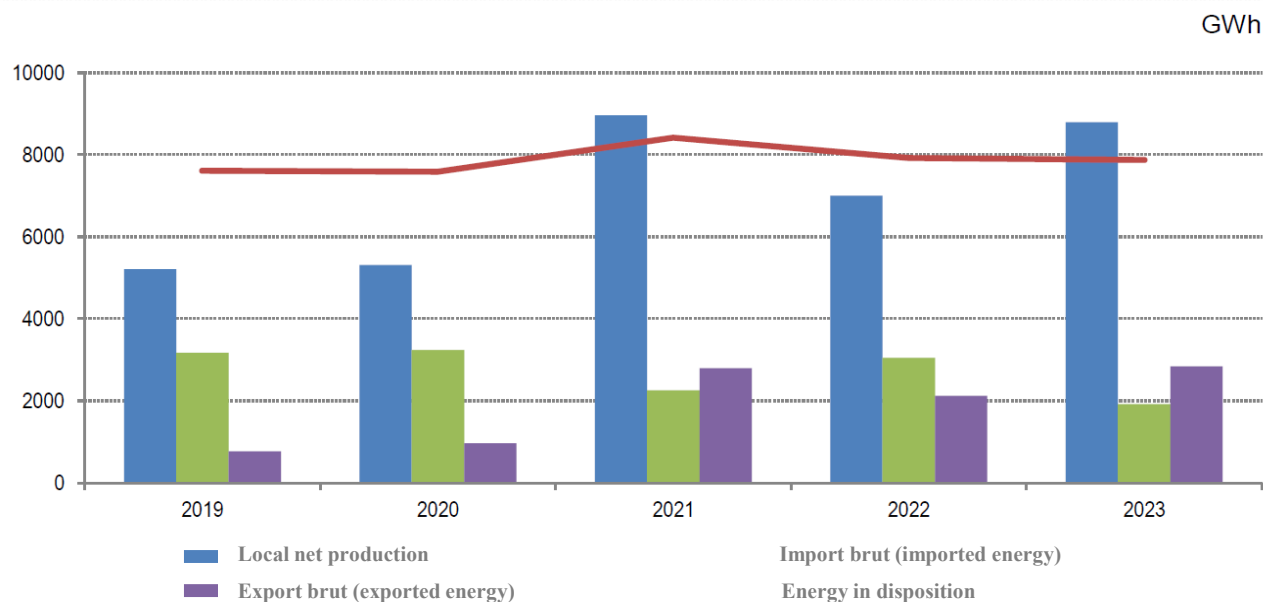
Dependence on Hydroelectricity

Albania has an energy system largely based on hydroelectricity, which accounts for about 95% of electricity production. This makes the system vulnerable to climate change, such as periods of drought, which can affect energy production and cause electricity shortages.

The year 2023 can be described as a good hydro year where **the domestic net production reached about 8,796 GWh of electricity, almost 11% more than the energy consumption.**

This production was realized by public hydropower plants (KESH sh.a.) to the extent of 58.2%, by private and concessionary hydropower plants to the extent of 40.8% and by other producers (Photovoltaics) to the extent of 1.0% of the net domestic production of electricity.

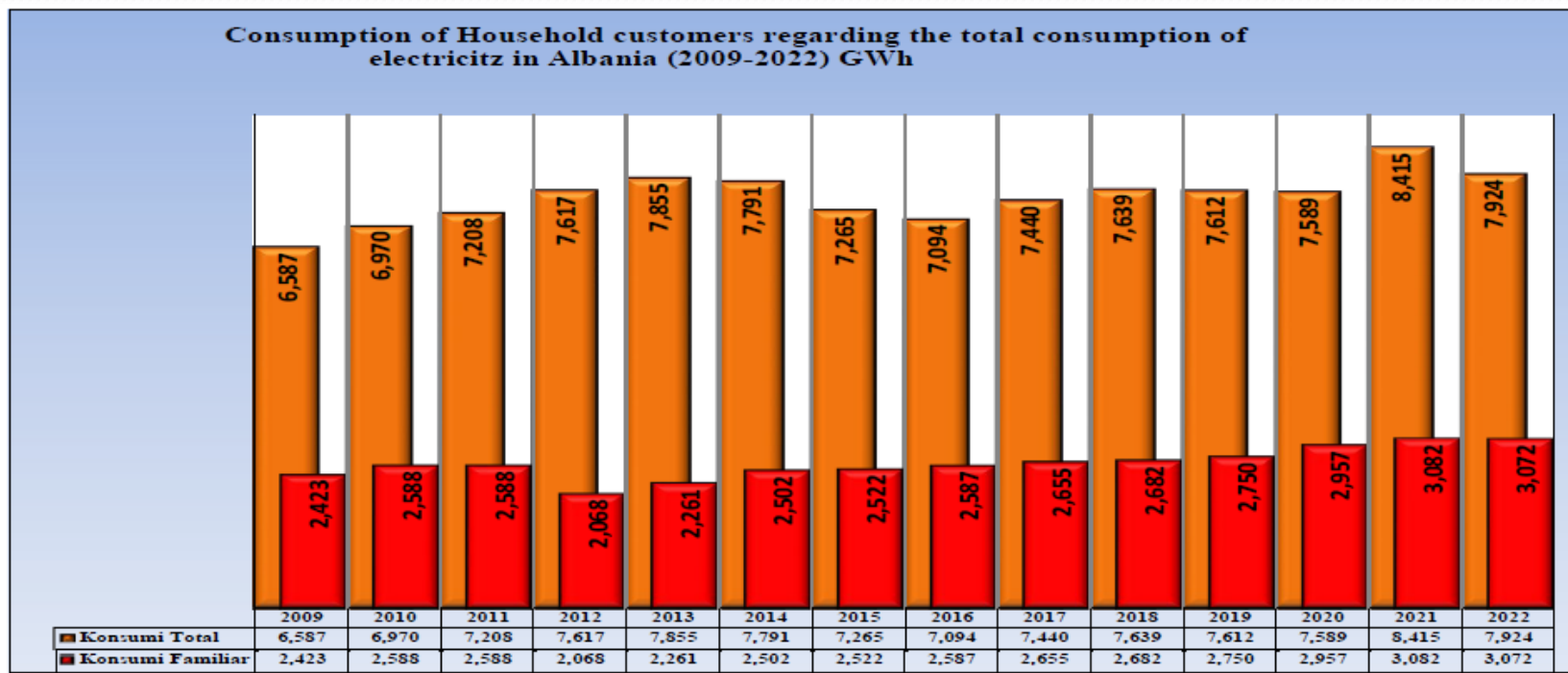
The gross import of electricity (energy in receipt) reached the value of 1,922 GWh from 3,044 GWh in 2022, marking a decrease of 36.9%. **The gross export of electricity (energy in delivery) reached the value of 2,842 GWh** from 2,123 GWh, marking an increase of 33.9%.



Available energy, net domestic production, gross import and export (Source INSTAT)

2.- The situation in the development of the energy sector in Albania

2.2. Electricity consumption by household customers in relation to total consumption for 2022, as well as consumption for 2023.



Household customers against the country's total consumption in years (Source: ERE - FSHU sh.a.)

In 2023, the use of electricity by consumers reached 6,221 GWh from 6,266 GWh in 2022.

The use of electricity by household consumers increased by 1.4%, reaching 3,117 GWh in 2023 from 3,075 GWh in 2022, while the use by non-household consumers decreased by 2.7%, reaching 3,104 GWh in 2023 from 3,191 GWh that was in 2022.

2- The situation in the development of the energy sector in Albania

2.3.- The infrastructure of the electricity sector

Transmission Network and Infrastructure

Another challenge is the aging infrastructure, and the assistance needed to modernize the electricity distribution and transmission network. Investments in this sector are important to prevent energy losses and to enable more efficient and reliable distribution. Albania has received international loans and assistance to improve this infrastructure.

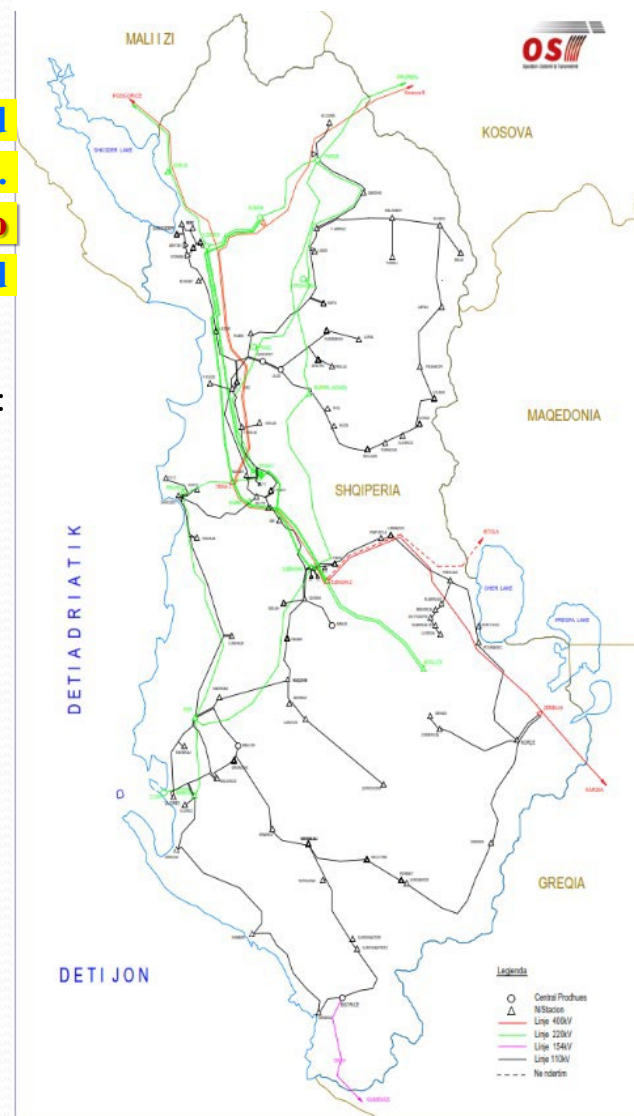
The lengths of the transmission system lines according to the voltage level are:

- 400 kV transmission lines 445.7 km
- 220 kV transmission lines 1,250 km
- 150 kV transmission lines 34.4 km
- 110 kV transmission lines 1624 .162 km

The above lines are part of the transmission system and interconnection lines with neighboring countries such as:

- 400 kV interconnection line Zemblak (Albania) – Kardia (Greece)
- 400 kV interconnection line Tirana (Albania) – Podgorica (Montenegro)
- 400 kV interconnection line Tirana (Albania) – Pristina (Kosovo)
- 220 kV interconnection line Fierze (Albania) – Prizren (Kosovo)
- 220 kV interconnection line Koplík (Albania) – Podgorica (Montenegro)
- 150 kV interconnection line Bistrica (Albania) – Myrtos (Greece).

Scheme of the Albanian Transmission System



Scheme of the Albanian Transmission System

2.- The situation in the development of the energy sector in Albania

2.4. - The current situation of the oil and gas sector

The oil sector in Albania is small by international standards, but it is important for the Albanian economy and there are still large reserves of undiscovered oil and natural gas.

Status of the national natural gas transmission and distribution network.

Albania is one of the transit countries for the Trans Adriatic Pipeline, which will transport Azerbaijani gas from Greece, through Albania, to Italy.

In order to have access to the regional and European gas infrastructure, Albania must complete both the legal acts and the infrastructural investments necessary to achieve this access.

Biomass, biofuels: market integration

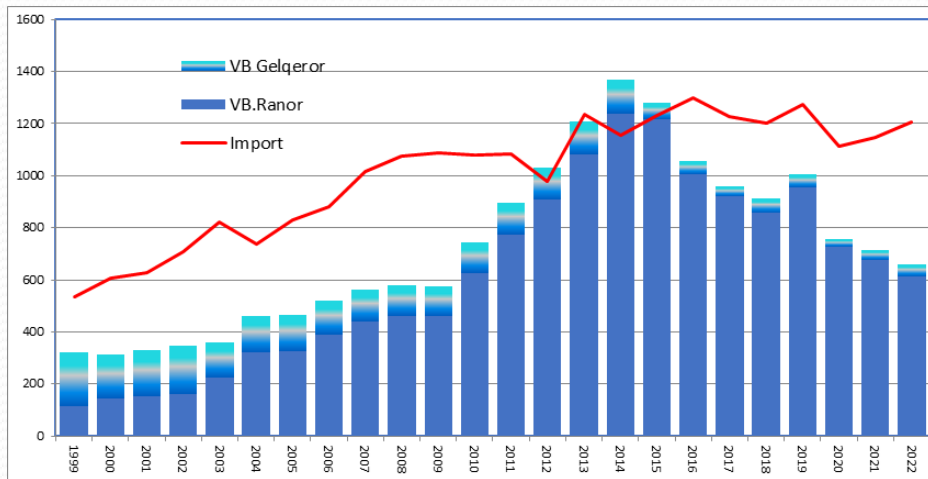
Various forms of biomass resources are available in Albania to cover energy services related to heating, electricity generation and transport. Firewood, agricultural waste, biomass pellets and biogas can contribute to a very important part of the energy demand to provide thermal energy in the framework of meeting the objectives from RES.

2.- The situation in the development of the energy sector in Albania

2.5. Domestic production of oil for the period 1999 - 2022

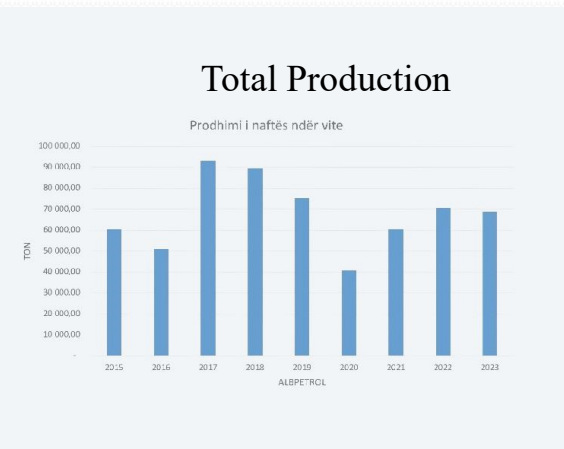
Domestic oil production for 2023 was 641.58 ktoe. while for 2022 it was 657.40 ktoe, which indicates a decrease for 2023 of 15.82 ktoe or 2.4%.

Crude oil from hydrocarbon agreements in 2023 was 572,622 ktoe, while in 2022 it was 586,831 ktoe (In 2022, domestic sales were 137,769 ktoe and exports 532,919 ktoe).



Progress of Production, Import and Export of petroleum products (ktoe) – (Source AKBN)

Viti	Prodhimi i naftës ndër vite (Ton)
2015	60 462,31
2016	50 958,80
2017	93 095,96
2018	89 477,24
2019	75 415,33
2020	40 920,30
2021	60 462,31
2022	70 570,50
2023	68 958,00
Total	610 320,76



Progress of crude oil production by ALBPETROL sh.a., period 2015 – 2023, (tons) – (Source MONITOR)

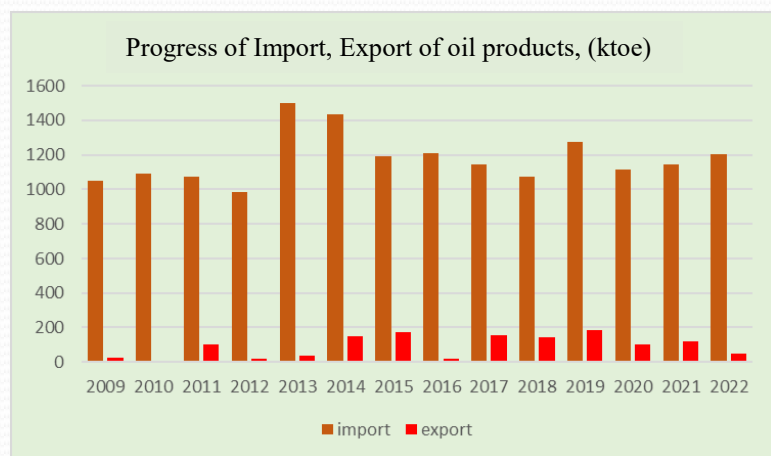
Oil export: for 2021 for crude oil was 547.84 ktoe and for 2022 crude oil export was 532.92 ktoe (a decrease of 14.92 ktoe conditioned by market demand).

2.- The situation in the development of the energy sector in Albania

2.6. Import, export and consumption of oil products for the period 2009 - 2022

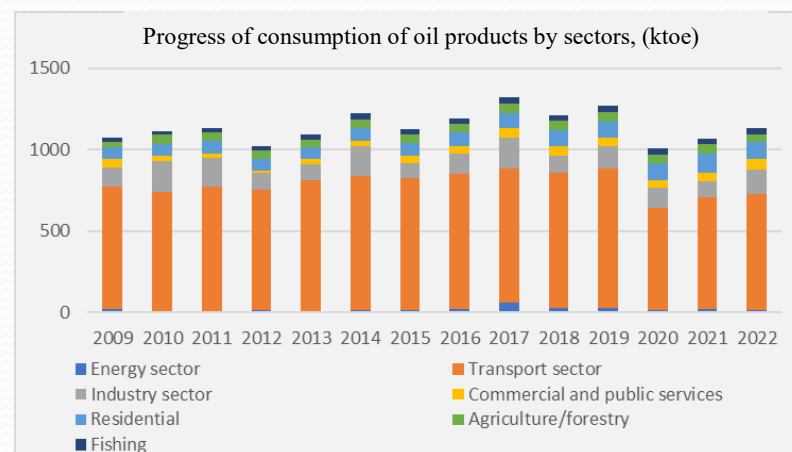
The import of petroleum products for 2022 reaches the value of 1205.68 ktoe with an increase of 60.65 ktoe compared to 2021. Diesel, gasoline and liquid petroleum gas continue to dominate the import of petroleum products. (The domestic consumption of products during 2022 is about 822 ktoe, while about 384 ktoe, about 32% were re-exported, mainly Kosovo. In 2020, re-exports were about 26%)

The consumption of oil by-products, the main weight is occupied by the transport sector with about 64%



Progress of Import, Export of oil products, (ktoe)
– (Source AKBN)

Nr.	Periudha	Sasitë e importuara në (ton)							
		Gazoil	Benzinë	Karburant avionësh	Karburant anije	Vajra lubrifikante	Bitum	GLN	Totali
1	2017	648607	91523	13785	0	7454	315	162228	923912
2	2018	851751	75162	15903	0	9171	452	153010	1105449
3	2019	889715	117487	29756	0	7716	77	215204	1259955
4	2020	1053635	79583	11343	0	8497	2733	330953	1486744



Progress of consumption of oil products by sectors, (ktoe) – (Source AKBN)

Nr	Periudha	Sasitë e produkteve të riekportuara në (ton)		
		Gazoil	GLN	Totali
1	2017	386417	20948	407365
2	2018	417219	19635	436854
3	2019	480979	52951	533930
4	2020	310023	79806	389829

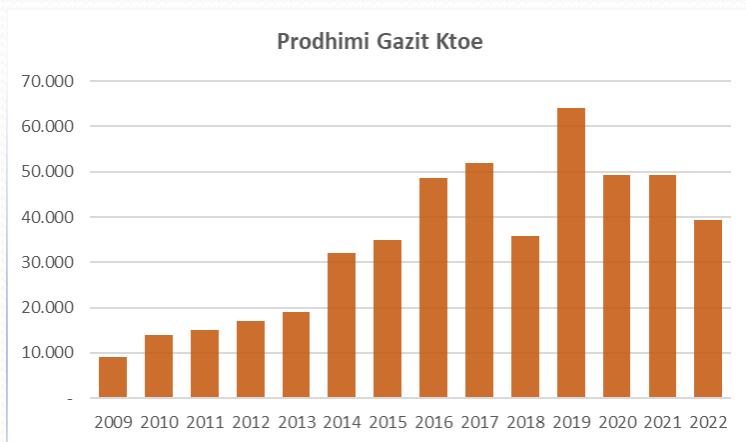
2.- The situation in the development of the energy sector in Albania

2.7. Domestic production of gas and coal for the period 2009 - 2022

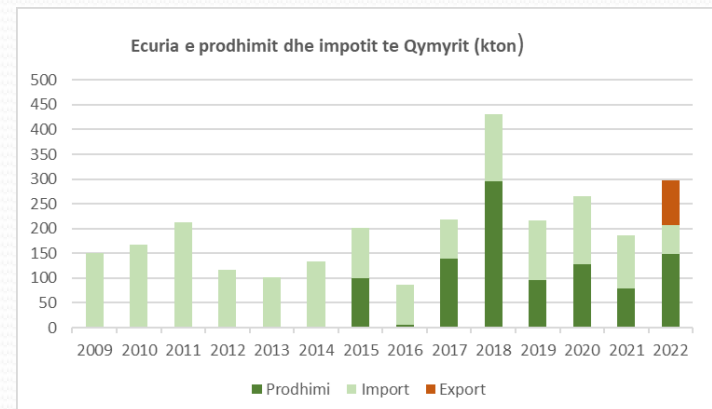
1.- The production of gas in our country for 2022 has been a total of gas associated with oil, about 49.289 million Nm³, an almost negligible amount that serves only for the technological processes of the oil industry. Despite the commitments of the state structures and the encouragement of foreign investors, our country is not connected to the international gas network.

It is understandable **that Albania's connection to the international gas network will have a positive impact on the improvement of the energy situation in the country,** significantly influencing the energy use reports, where until now the main burden belongs to oil by-products and electricity.

2.- For the year 2022, the production of bituminous gravel was 148.87 ktoe with an increase compared to 2021 of 69.42 ktoe as a result of the use by the cement industry of petroleum coke, which has a high calorific value as well as a low price in the international market . **While the import of coal is in the value of 58.68 ktoe and has suffered a decrease of 48.44 ktoe.**



Gas Production (ktoe) – (Source AKBN)



Progress of Coal Production and Import (kton)
– (Source AKBN)

2.- The situation in the development of the energy sector in Albania

2.8. The overall energy balance in Albania, period 2017 - 2022

Bilanci i përgjithshëm i energjisë
General balance of energy

(ktoe)

Emërtimi	2017	2018	2019	2020	2021	2022	Discription
Konsumi i brendshëm bruto	2,366	2,332	2,340	2,055	2,227	2,177	Gross inland consumption
Prodhimi i produkteve primare	1,661	1,997	1,727	1,480	1,773	1,615	Primary production
Import	1,569	1,377	1,636	1,498	1,452	1,532	Import
Ndryshimi i gjendjeve	177	113	100	70	47	70	Stock change
Eksport	650	899	892	822	922	863	Export
Depozituar	36	31	31	31	29	38	Bunkers
Konsumi në degën e energjisë	156	135	112	89	93	78	Consumption of the energy sector
Humbje në shpërndarje	107	100	91	71	96	74	Distribution losses
Disponibël për konsum final	2,147	2,137	2,116	1,877	2,007	2,010	Available for final consumption
Konsumi final joenergjetik	77	55	49	31	42	37	Final non-energy consumption
Konsumi final i energjisë	2,070	2,082	2,067	1,845	1,964	1,972	Final energy consumption

Burimi: Agjencia Kombëtare e Burimeve Natyrore
Source: National Agency of Natural Resources

Prodhimi dhe konsumi i energjive parësore
Production and consumption of primary energy

(ktoe)

Emërtimi	2017	2018	2019	2020	2021	2022	Description
Prodhim i produkteve parësore	1,661	1,997	1,727	1,480	1,773	1,615	Production of primary products
- Qymyr	46	98	31	42	79	149	- Lignite
- Naftë	959	911	1,005	758	712	657	- Crude oil
- Gaz natyror	82	73	64	49	49	39	- Natural gas
- Energji elektrike	389	735	448	457	767	602	- Electric power
- Dru zjarri	168	162	160	155	145	147	- Fuelwood
- Të tjera	17	18	19	19	21	21	- Others
Disponibël për konsum final	2,147	2,137	2,116	1,877	2,007	2,010	Available for final consumption
- Qymyr	100	186	113	134	187	118	- Lignite
- Naftë	1,299	1,206	1,291	1,015	1,076	1,154	- Crude oil
- Gaz natyror	54	46	7	7	7	6	- Natural gas
- Energji elektrike	515	524	532	543	573	567	- Electric power
- Dru zjarri	165	159	157	160	146	148	- Fuelwood
- Të tjera	16	16	17	17	18	17	- Others

Burimi: Agjencia Kombëtare e Burimeve Natyrore
Source: National Agency of Natural Resources

In total energy for consumption, the main contribution is made by hydrocarbon products, whose weight varies from 63% in 2017 to 57.8% in 2022, but still remaining at over 50% of the total.

2.- The situation in the development of the energy sector in Albania

2.9. Progress of energy consumption according to sectors of the economy (ktoe) – (Source INSTAT)

Konsumi i energjisë sipas degëve

Energy consumption by branches

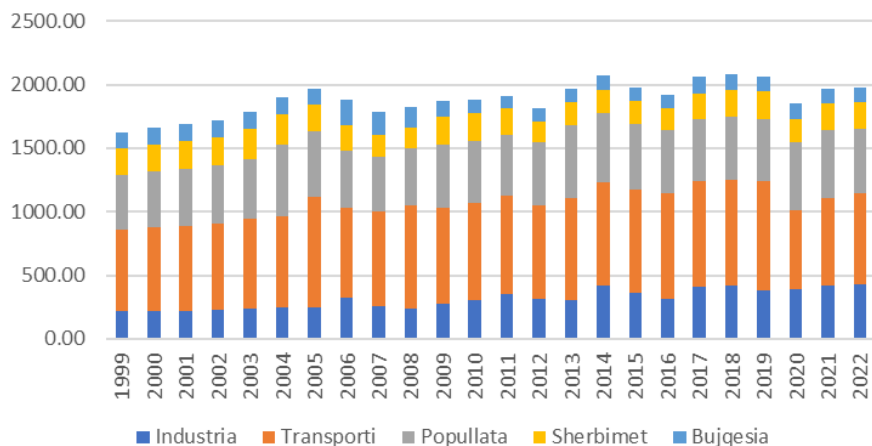
(ktoe)

Emërtimi	2017	2018	2019	2020	2021	2022	Discription
Konsumi final i energjisë në:	2,070	2,082	2,067	1,845	1,964	1,972	Final energy consumption
Industri	413	416	378	388	417	429	Industry
Transport	828	832	860	627	691	712	Transport
Konsumatorët familjarë, biznese, administrata publike	689	711	710	718	745	722	Households, commerce, public authority, etc.
- nga të cilët konsumatorë familjarë	485	500	492	528	535	516	- from which, households
Bujqësi	74	80	79	75	77	69	Agriculture
Peshkim	39	40	40	41	41	41	Fisheries
Të tjera	22	0	0	0	0	0	Other

Burimi: Agjencia Kombëtare e Burimeve Natyrore

Source: National Agency of Natural Resources

Energy Consumption by the Sectors (Ktoe)



In the total energy consumption for 2022, the main weight is occupied by the transport sector with about 36%, followed by the population with about 26% and the industry sector with about 22%.

2.- The situation in the development of the energy sector in Albania

2.10. Import-export of oil, gas and their by-products – Albania and the region

Albania's geographical position is mostly enviable due to the ease offered by its ports in maritime transport, including the transport of hydrocarbons. It has been the ability of the Albanian governments to develop them in the service of the region, to make them competitive in prices and services, not leaving them as dormant assets and without the dimension they deserve in the economy.

While **about 25 years ago the study for the development of the port infrastructure for the import-export of oil and its by-products** was carried out (approved by the Council of Ministers and KRTRRSH), **20 years ago the concessions for two companies for construction and operation of hydrocarbon ports** (Romano Port sh.a. and La Petrolifera Italo Rumena sh.a.).

- The oil port "Vlora-1" in the Bay of Vlora, which is managed by the concessionaire company "La Petrolifera Italo Albanese" s.a.
- and
- The oil ports of "Porto Romano" and "MBM" in the area of the Energy and Industrial Zone of Porto Romano, Durrës, which are respectively administered by the concession companies "Romano Port" s.a. and "MBM" s.a.

Regarding the import-export of oil, gas and their by-products, after the entry into operation of two specialized ports for oil by-products, as well as with the investments that have been made, it is estimated that the processing capacities of the hydrocarbon ports in the area of Porto Romano and of the Bay of Vlora to be more than 2 million tons per year.

In 2022, companies imported about 820 thousand tons for the domestic market, while about 384 thousand tons (or about 32%) were imported for the purpose of transiting the Kosovo market.



- "Porto Romano" and "MBM" –oil ports



- "Vlora -1" Oil port

15 Years ago, in 2009, the concessionary companies started the activity of processing oil tankers and their by-products (including LPG) for the account of the local market, as well as for the purpose of transit to the market of Kosovo and other countries in the region.

2.- The situation in the development of the energy sector in Albania

2.11 The role of TAP as part of the Southern Gas Corridor in the security of EU gas supply

TAP entered commercial activity on November 15, 2020. From the start of operations in late 2020 until April 2024, TAP has played a critical role in connecting the Southern Gas Corridor with Italy, Central Europe and the Balkans. TAP has transported over 35 bcm of gas from Azerbaijan, of which 2.14 bcm to Bulgaria, 3.37 bcm to Greece and 29.22 bcm to Italy, informs the Head of Foreign Affairs of TAP, at the Belgrade Energy Forum . **"Only in 2023, TAP transported 11.5 bcm.**

TAP will pave the way for new energy sources to enter these markets and promote the development of their energy sectors. **TAP is a project of great strategic, commercial and geopolitical importance for Albania and the Western Balkans/Southeastern Europe,** creating a tangible opportunity for future gasification for the countries of this region.

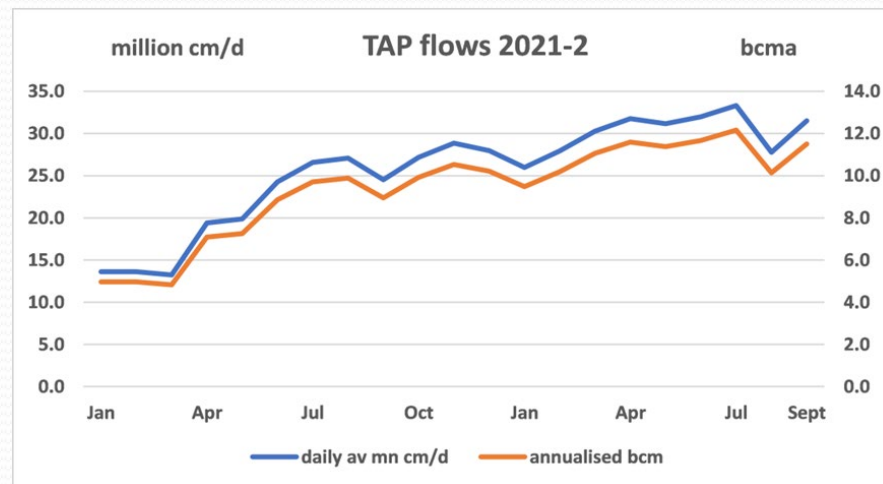
Note, TAP volumes have recently been at 12 bcma

The expansion of TAP can be realized by adding compressor units to already existing compressor stations and building new compressor stations, after successful Market Tests, which TAP must organize at least every two years, in accordance with the framework of its regulatory.



Map of the Southern Gas Corridor (Source: <https://www.flickr.com/>)

Source: *ENTSOG daily flows*



2.- The situation in the development of the energy sector in Albania

2.12-Renewable energy sources

The Albanian Government is continuing efforts for a better balance between the diversification of energy production sources, the security of energy supply and the protection of nature and sustainable system in order to increase domestic production, reduce the level of technical and non-technical losses of electricity in the distribution network as well as reducing the amount of imported energy to meet the demand for electricity in the country.

Moving on to alternative renewable sources, Albania has a high solar radiation in most of its territory. **On average, there are about 286 days, with up to 2700 hours of sunshine per year** (in Myzeqes it goes to 1700 kWh/m²/a). According to preliminary site studies, there is currently an untapped technical potential, with a low capital cost, for the deployment of solar projects of up to 2,378 MW. **The latest data show that in the project in the solar energy sector there are 1.3 GW.**

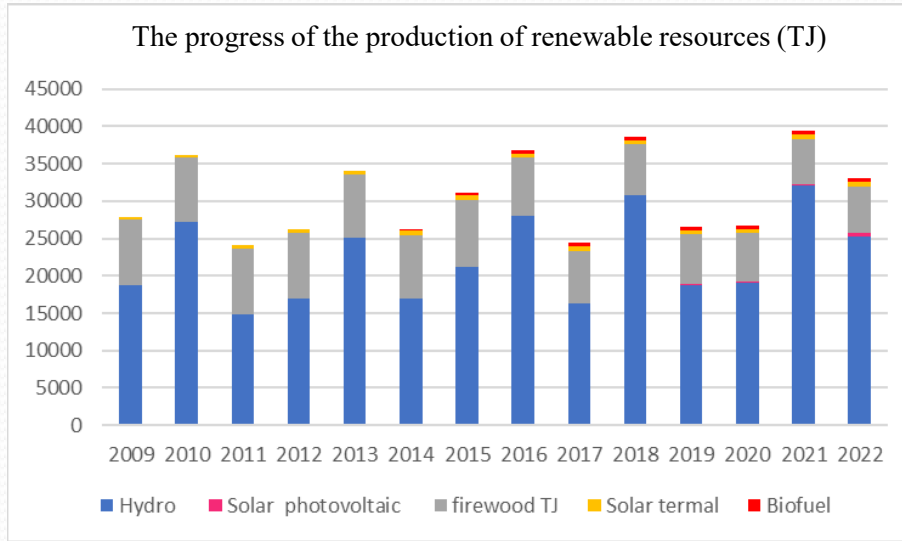
The National Plan for Energy and Climate (PKEK) 2020 - 2030, approved by decision of the Council of Ministers no. 872, dated 29.12.2021. During the period January - April 2022, the draft of the PKEK was revised based on the recommendations of the EnC. **In the revised document, it is intended to reduce final energy consumption by 9.4% compared to 8.4% in the previous version, the share of renewable energy in final energy consumption has increased to 59.4% compared to 54.4%, while GHG emissions only remain in 18.7%.**

In total, during the year 2022, the production capacity of electricity from the entities that have been licensed is 289.4 MW, of which 62.3 MW from hydroelectric power production sources and 227.1 MW from photovoltaic sources.

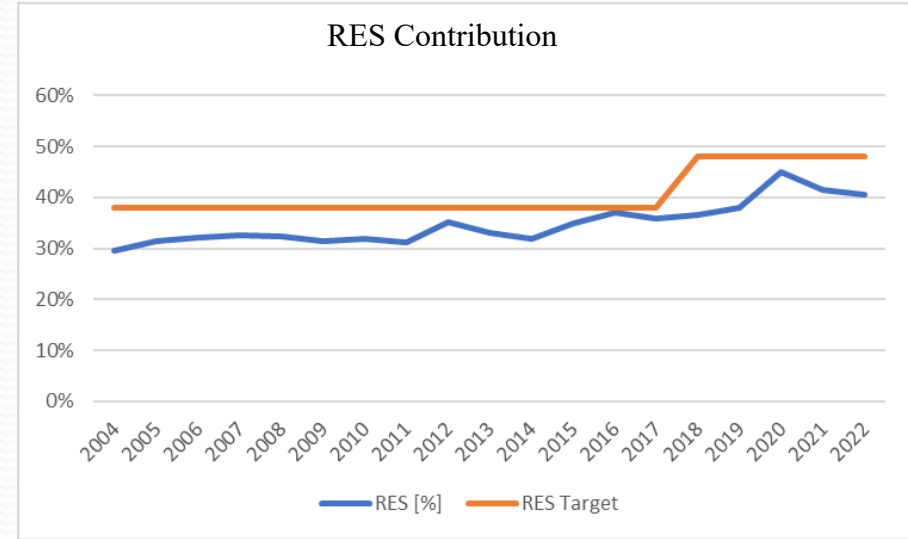
On July 10, 2024, the 300 MW hybrid photovoltaic auction was concluded, where 14 bidders submitted bids, of which 9 qualified, and the capacity that these 9 operators offered was 355.93 megawatts.

2.- The situation in the development of the energy sector in Albania

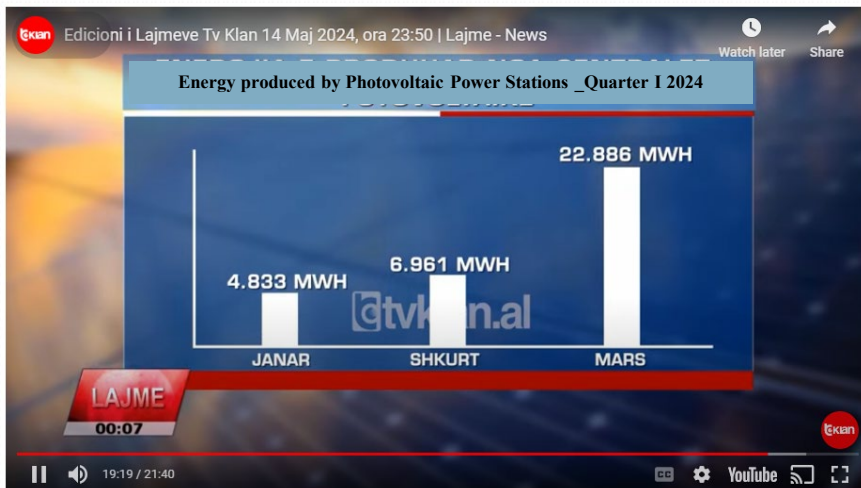
2.13. -Renewable sources and their role in the Energy Balance



The progress of the production of renewable resources (TJ) – (Source AKBN)



The current progress of RES contribution in Albania



The energy produced by photovoltaics increased even during the first 3 months of this year (2024), reaching about 34.6MWh. The Energy Regulatory Agency informs that photovoltaic parks made the main contribution, but the plants installed by businesses also have a great impact..

Energy produced by Photovoltaic Power Stations _Quarter I 2024

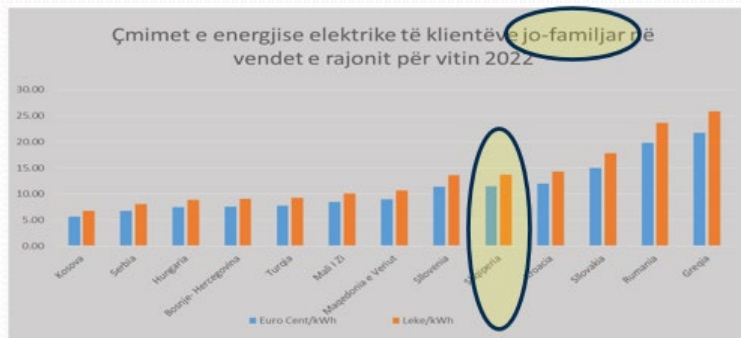
2.- The situation in the development of the energy sector in Albania

2.14. Electricity prices in the countries of the region for 2022

. Energy Security and Energy Prices

Another concern is the dependence on energy imports during periods of drought, which can increase energy prices and create social tensions. International energy prices and the influence of global markets are factors that can directly affect the country's energy security. **The Albanian Government and the ERE have ensured stability in electricity prices.**

Electricity prices of non-household customers in the countries of the region for 2022

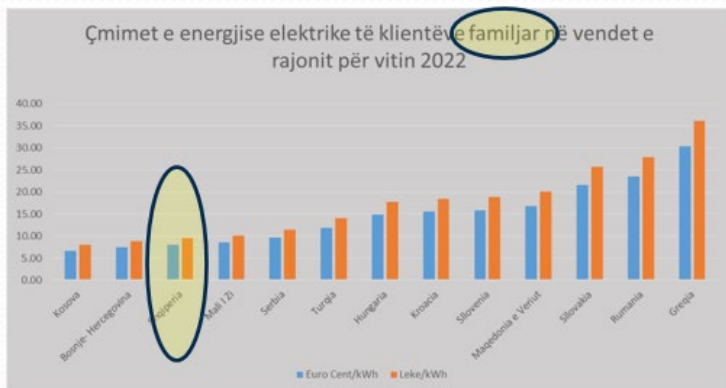


The graph shows the electricity prices for the year 2022 in Eurocents/kWh and Lek/kWh before taxation (VAT) **for non-household customers.**

According to the data published by EuroStat, the average price of electricity for non-family customers for the countries of the region for 2022 was 13.18 ALL/kWh.

(Albania is ranked among the countries with average electricity prices for non-household customers)

Electricity prices for household customers in the countries of the region for 2022



The graph shows the prices of electricity for the year 2022 in Eurocents/kWh and Lek/kWh before taxation (VAT) **for household customers.**

According to the data published by EuroStat, the average price of electricity for family customers for the countries of the region for 2021 was 17.45 ALL/kWh.

(Albania is ranked among the countries with the lowest electricity prices for family customers)

2.- The situation in the development of the energy sector in Albania

The figures presented above for both the electricity sector and the oil and gas sector illustrate the following characteristics of the energy sectors in Albania:

- High dependence on the import of oil by-products;
- The importance of hydropower plants in the energy balance of the country;
- Most of the energy consumption comes from the transport sector;
- Minimum supply of natural gas as domestic production

3.- Government policy for the restructuring of the energy industry

National and International Policies and Regulations

Albania's energy policies are in line with those of the European Union, as part of the country's integration process. The reform in the energy sector aims to increase transparency, improve efficiency and reduce losses. Albania is also working to create conditions for new investments and to guarantee a stable energy supply.

ENERGY SECTOR REFORMS

Albania is in the process of developing and implementing a series of laws, by-laws, key regulations that will affect the role of the main actors in the energy sector and in the field of energy efficiency, as well as in the climate process.

Vision for 2030:

The development of internal energy resources leading to an integrated and diversified regional energy system based on market principles, capable of meeting the demand for energy and the sustainable development of the economy, guaranteeing the security and quality of supply, security and environmental protection and climate action, as well as increasing well-being

Recommended energy policies

The National Energy Strategy addresses new laws, regulations and institutional reforms currently underway in Albania, including incentives for EE and RES, electricity tariff reform, market development and integration with the EU and regional markets.

Albania's decision to apply for membership in the European Union is accompanied by the changes necessary for the management of the oil and gas sector in Albania to be in accordance with EU directives.

Also, Albania has created the first operator of the gas transmission system, TAP AG, certified according to the procedures of the third energy package, which has laid the foundations for the development of the gas market through the Trans Adriatic Pipeline, TAP.

ERE also certified the second operator of the gas transmission system, ALBGAS sh.a., on November 8, 2017.

4.- The government's medium-term/long-term plan for the supply of electricity and gas

- **Basic Plan for the Long-Term Power Supply and Demand**

The Basic Plan for the Long-Term Supply and Demand of Electricity is defined in the document of the National Energy Strategy for the period 2018 - 2030, approved by **DCM, no. 480, 31.07.2018**. "For the approval of the national energy strategy for the period 2018-2030", Official Journal No. 119, dated 9.08.2018,

- **Basic Plan for the Long-Term Supply and Demand of Natural Gas**

Basic Plan for Long-Term Gas Supply and Demand based on the document/report "Gas Demand and Supply Assessment" (2016), prepared within the framework of the Master Plan for the Gas Sector for Albania. This document/report is part of **DCM no. 87, 14.02.2018**, "For the approval of the development plan of the natural gas sector in Albania and the identification of priority projects".

The recommended development scenario of the energy sector is the combined scenario which has the potential to achieve the following results, which in many cases exceed the commitments foreseen at the country level until 2030;

- **Reduction of energy imports by 32% compared to the base scenario;**
- **Increasing the share of RES in 2030 by 42%;**
- **Reduction of demand for final energy by 15.5%, close to the target of PKVEE;**
- **Reduction of GHG emissions by 11.5% compared to the base scenario;**
- **Reducing the energy intensity of GDP by 18%;**
- **Increase the penetration of natural gas through the TAP project in the supply of primary energy sources from 0.36% in 2015 to 19.81% in 2030,** focusing natural gas infrastructure investment to serve the electricity and industry sectors in a period short term and residential and long term commercial customers..

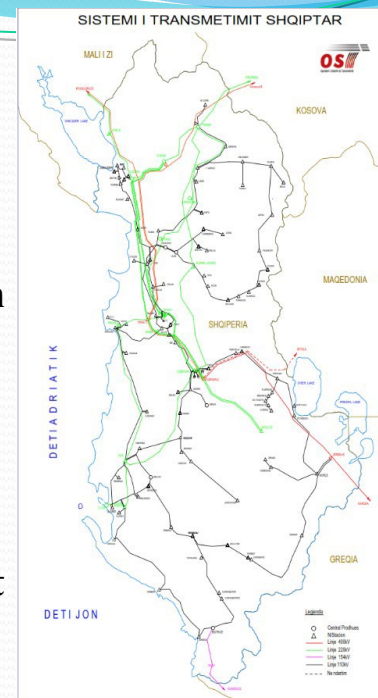
4.- The government's medium-term/long-term plan for the supply of electricity and gas

Power interconnection lines

Construction of the 400 kV interconnection line Elbasan 2 (Albania) – Bitola (Macedonia) and Elbasan 2 – Fier as well as the expansion of the Elbasan 2 and Fier substations

The financing of this project is provided by the German-Albanian Development Cooperation.

This project reinforces interconnections with the regional electricity grid, creating conditions for trade exchanges and unrestricted transits of electricity in the region, develops the 400 kV network in the Southern area of Albania where future sources of electricity production are expected to be developed, and as part of the infrastructure of the Eighth European Corridor it creates good opportunities for connection via submarine cable with Italy.



Scheme of the Albanian Power Transmission System and projects

Gas interconnection lines.

The Gas Master Plan envisages the gasification of Albania and the development of the gas network in Albania.

The three gas interconnectors that are being planned are considered the main pillars for the development of the gas sector in Albania:

- Trans Adriatic Gas Pipeline, (**TAP Project**, in operation)
- Ion Adriatic Gas Pipeline, (**IAP Project**, under development) and
- Gas pipeline Albania Kosovo, (**ALKOGAP Project**, under development).



Existing and proposed gas transmission networks

4.- The government's medium-term/long-term plan for the supply of electricity and gas

The expected level of demand and the prospect of security of supply for a period of 5 to 15 years

Demand forecasting has been carried out for four scenarios defined as follows:

- **High scenario** – based on modeling that does not include natural gas (does not foresee additional gasification in Albania);
- **Moderate scenario** – represents the scenario where natural gas supply infrastructure is available as one form of energy for consumption;
- **Low scenario** – it is assumed that economic growth will be slower (migration will be higher and population growth slower);
- **High scenario with lower population** – presents a high scenario with slower population growth and proportional reduction of GDP and no gasification of the country;

So, in conclusion we have two scenarios without gasification with high and low population and two scenarios with gasification of the country with high and low population, the results of which are presented in the table and graphically as follows:

Request for electricity (TWh)	Year 2022	Year 2025	Year 2028	Year 2030	Year 2033	Year 2035	Year 2040
High Scenario	7.424	8.476	9.299	9.861	10.897	11.584	13.436
Moderate scenario	7.424	8.315	8.921	9.34	10.067	10.549	11.914
High scenario with low population	7.424	8.283	8.928	9.373	10.233	10.803	12.392
Low scenario	7.424	8.018	8.414	8.694	9.23	9.583	10.438

Figure 36 Longterm provision of electricity requirement for the 2023 – 2040 period

Demand forecasting scenarios for electricity by 2040, where demand could go from about 7.4 TWh in 2022 to about 10.4-13.4 TWh in 2040

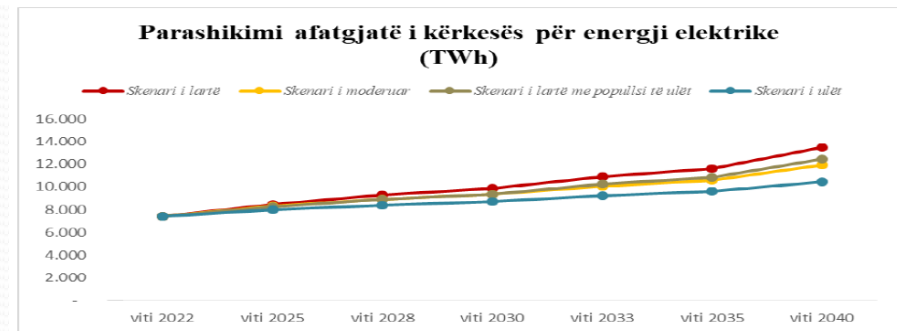


Figure 37 Scenarios for providing the request for electricity

4.- The government's medium-term/long-term plan for the supply of electricity and gas

In March 2024, the Norwegian giant Statkraft announced the launch of the study for the 1200 MW pumped hydro plant project, which it aims to build in the course of the Devoll River, in Albania. Currently, the company operates two hydropower plants within the Devolli Hydropower Project, HEC Banjën (with a total installed capacity of about 72 MW) and HEC Moglica (installed capacity of about 197 MW). The company expects the study phase to be completed this year, to start the implementation phase in 2025 and production by 2030.

In an announcement in April 2024, the Ministry of Infrastructure and Energy announced that Albania intends to add 1 GW of solar capacity through three competitive procedures, revealing that it plans to issue a call for investors by June for 300 MW in total, **where it offers power purchase agreements and contracts for difference for 300 MW in total capacity.**

On April 13, 2023, the Council of Ministers, through 3 decisions, approved the construction of wind power generating plants and ancillary works, which are not concession objects, in Tragjas, Orikum Administrative Unit, Vlora district, with generating capacities of 3MW respectively.

5.- Regional cooperation within the framework of geopolitical development

Regional and International Cooperation

Albania is part of the Balkan energy market and has connections with several neighboring countries such as Greece, Montenegro, North Macedonia and Kosovo. **This cooperation is important for energy security, as it enables the import and export of energy, helping to balance energy needs.** Furthermore, Albania is part of regional energy projects and has participated in initiatives to diversify energy sources.

The Energy Forum of the countries of South-Eastern Europe gathered in Thessaloniki on 10.09.2022 the Ministers of Energy of the countries of the region, as well as the ambassadors of the United States of America in the Balkans. Diversification of energy sources is one of the main initiatives to respond to the situation. The Energy Forum of Southeast European countries gathered in Thessaloniki on 10.09.2022 the Ministers of Energy of the countries of the region, as well as the ambassadors of the United States of America in the Balkans. Diversification of energy sources is one of the main initiatives to respond to the situation

In the meeting with the President of Azerbaijan, Mr. Ilham Aliiev, on 15.11.2022, it was discussed about the joint projects in the field of energy, which will put an end to Albania from the beginning of the gasification program with the investment of Azerbaijan, of which will start with a municipality that will be determined at one of the points of contact with TAP - until the establishment of concrete milestones for the construction of an ultramodern refinery, the great dependence on imported oil.

Cooperation between the Ministry of Infrastructure and Energy of Albania and the Ministry of Energy and Environment of Greece. On 13.05.2022, a meeting took place in Tirana between the Minister of Infrastructure and Energy of Albania, Mrs. Belinda Balluku and the Minister of Energy and Environment of Greece, Mr. Kostas Skrekas. **One of the most important issues that was discussed was the new electric interconnection line between the two countries, it is intended to be put into operation within 2030.** The issues in gasification in the next 10 years, given that both countries, both Greece with the LNG terminal of Alexandropol, and Albania with the LNG terminal of Vlora create concrete opportunities.

5.- Regional cooperation within the framework of geopolitical development

- **As of March 5, 2024, Kosovo and Albania will together be part of an important energy and regional bloc of economic, political and geopolitical importance.**

The official ceremony was organized by the Kosovo Electricity Transmission and Market Operator (KOSTT) on behalf of the Albanian Electricity Exchange-ALPEX, on the occasion of the functionalization of the Day-Ahead Market for the Kosovo Bidding Area and the Union of the Kosovo-Albania Electricity Markets

- **Deputy Prime Minister and Minister of Infrastructure and Energy, Belinda Balluku, on 25/07/2024, held a working meeting in Rome with her Italian counterpart Matteo Salvini.** At the center of the talks was the increased bilateral interest in supporting the development of investments in energy, infrastructure and transport modernization programs in our country.



- **During the COP29, on November 12, 2024, a cooperation agreement was signed in Baku between the Albanian Electric Power Corporation (KESH) and Masdar, the United Arab Emirates giant, for the creation of a joint company that will invest in Albania.**



6. - INSTEAD OF CONCLUSIONS

In conclusion, Albania has great opportunities to improve energy security through investments in infrastructure, diversification of sources and increased international cooperation. However, to achieve full energy security, it is necessary to address climate challenges, modernize production and distribution capacities and ensure sustainable and diverse energy sources.

The point of view for continuity in dealing with the issues of the situation and future developments for the Albanian energy sector and its regional and European integration:

- **The growth potential of the energy market in Albania**, including further cooperation with neighboring countries.
- **Challenges and future perspectives of energy resources currently used in Albania** and the transformation of its energy system infrastructure.
- **Energy efficiency and cogeneration and their growing importance in buildings and industry**, in the context of demand management policies.
- **The rapid growth of Renewable Energy Sources** (mainly PV and wind) and the need for energy storage
- **The need for additional balancing capacities and the main role that the production of energy from natural gas** can play, as well as the perspective of the import of natural gas for the Albanian energy sector.
- **Albania's considerable hydrocarbon exploration and production** potential within current production and planned investments and significant contribution to the country's finances as a result of crude oil exports.
- **The importance of the activity of the Albanian Energy Exchange (ALPEX)**, as well as the connection of the Albanian electricity market (mainly based on the production of hydropower plants) with Kosovo (based mainly on the production of thermal power plants), and the increasingly important role of energy resources renewables (especially photovoltaics) in the country's energy system.

6 - INSTEAD OF CONCLUSIONS

Energy efficiency has never been more important!

- It is **the greenest**... 🍀
- It is **the cheapest**... 💰
- It is **the safest**... 🌈

Energy efficiency remains an endless subject of work and a wide opportunity for development.





THANK YOU

MAIN CHALLENGES OF ALBANIA'S ENERGY SECURITY, ON THE WAY OF ENERGY DIVERSIFICATION AND REGIONAL INTEGRATION

Prof. Dr. Dr. Stavri Dhima

Independent Energy and Risk Assessment Consultant &
Senior Partner of the IENE, Albania ;

[*stavridhima@gmail.com*](mailto:stavridhima@gmail.com)

December 9, 2024
ATHENS