

Future Energy in Albania

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Artan Leskoviku

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CURRENT CONDITIONS

Energy consumption in Albania

Annual rate: 11 percent in recent years.

2015, Albania's total primary energy production was 2,805 ktoe.

Gross inland consumption was 2,346 ktoe, while net imports were 1490 ktoe.

Albania's primary energy supply is dominated by oil, hydropower, and imported electricity, imports of oil by products. Electricity and a small amount of coal comprise over 56% of all primary energy consumption.

The transport sector consumes the most final energy, followed by households and industry, and the three dominant final energy fuels are oil products, electricity and wood.

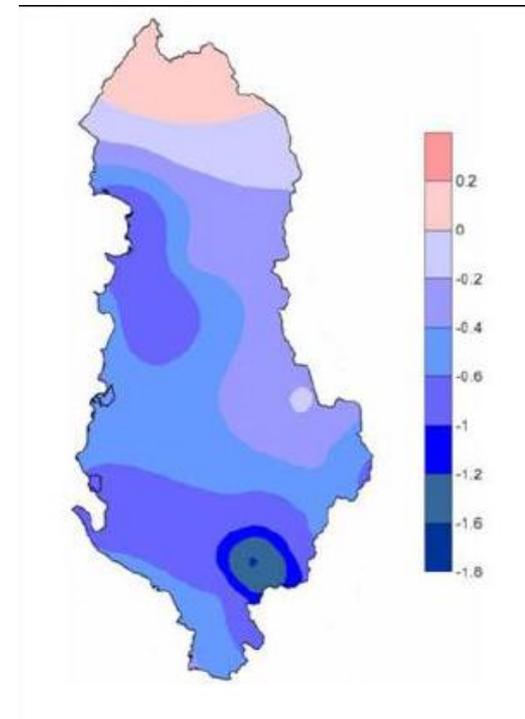
Albanian energy sectors introduces:

The heavy dependence on oil imports

The importance of hydro power

The large transport sector share of energy consumption

The absence of a natural gas sources.



CURRENT CONDITIONS

Electricity generation

Historically met almost exclusively by hydropower plants, with a total installed power capacity of 1,895 MW at the end of 2015.

The country has exploited only 35% of its hydropower potential, and future expansion of hydropower capacity is possible mainly along the Drini, Mati, Vjosa, Devolli, and Bistrica rivers.

The only thermal power plant, Vlora TPP, with capacity 98 MW

Albania imports electricity from neighboring countries, although imports have progressively dropped in the last ten years following the increase in domestic power generation and the reduction in electricity losses, which have been reduced from 45% in 2013 to 25% by the end of 2016 with a clear investment and management plan to reduce them further to 17% by the end of 2020.

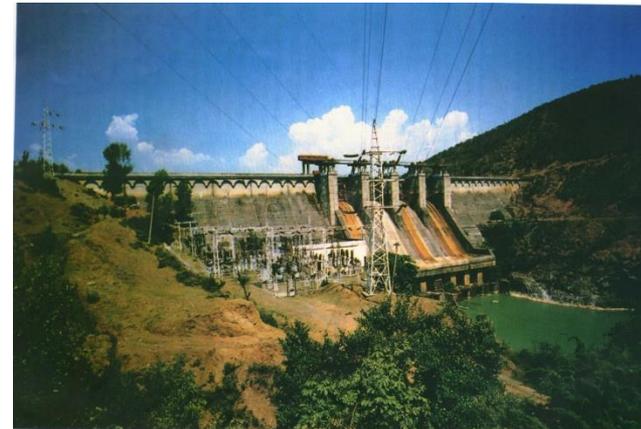
Oil and Gas

HYDROCARBON RESERVE POTENTIAL

Over 10 billion barrels of oil in place

Over 1 Tcf of gas in place

Government policy focused on privatization of the hydrocarbon sector



LEGAL AND INSTITUTIONAL REFORMS IN THE ENERGY SECTOR

Ministry of Energy and Industry together with all other energy stakeholder are working to fulfill their commitments to implement the Third Energy Package. In addition, Albania had the first gas transmission system operator, TAP AG, certified under Third Energy Package procedures, which has laid the groundwork for development of a gas market via the Trans Adriatic Pipeline.

The new Power Sector Law transposing the Third Energy Package in the electricity sector was adopted in April 2015 and entered into force on 13 June 2015. Following the obligations stipulated therein, the Energy Regulatory Entity (ERE) and the Ministry of Energy and Industry started the process of harmonizing the secondary legislation required for the reforms and liberalization of the electricity market.

In July 2016, the Council of Ministers adopted a new market model for the regulation of Albania's electricity market. The Council also adopted a plan to phase-out price regulation and to enable all market participants to freely trade on the market. An action plan for setting up a power exchange, which envisages an organized day-ahead market in the second half of 2017, was also part of this package. The market model envisages the coupling of the Albanian market with the Kosovo market and other the neighboring countries.

As part of Albania's strategic objective to accede to the EU, the Government has worked to align its legislation with the legal framework of the EU, and aims to establish clear and transparent responsibilities for the implementation of EU Acquis. The relevant primary legislation includes the Power Sector Law No. 43/2015, the Natural Gas Sector Law No. 102/2015, the Energy Efficiency Law No. 124/2015, the Renewable Energy Sources Law No. 8/2017, the Law No. 68/2012 "On Information of the Consumption of Energy and Other Resources by Energy-Related Products", and the Law on Energy Performance of Buildings No. 116/2016.

ENERGY SECTOR CHALLENGES

The Energy Future in Albania for 2017-2030 will be the core strategic document for the country's energy sector.

National efforts to sustain economic development, and meet commitments to EU integration and other international agreements.

Increasing the security of energy supply and minimizing environmental impacts with affordable costs for Albanian will be a crucial point.

Long-term strategic objectives for the Albanian government are:

- Improving the reliability and security of energy supply;
- Improving the cost-effectiveness of energy supply systems;
- Achieving the targets for renewable energy sources and energy efficiency established in the second National Energy Efficiency Action Plans and the National Renewable Energy Action Plan;
- Integrating the Albanian power and natural gas markets with regional and European markets; and
- Achieving the Nationally Determined Contribution (NDC) targets for greenhouse gas (GHG) emission reductions.



POLICIES AND OBJECTIVES

Policies and Objectives will focus on:

- Reduced energy imports and increased domestic energy generation to meet future energy demand
- Improved energy efficiency in the household, services and industrial sectors
- Increased use of RES technologies, based on least-cost planning and environmental protection principles
- Penetration of natural gas in the Albanian energy sector through key infrastructure investments
- Development of mechanisms to encourage foreign direct investment in the Albania energy sector.
- Increased competition in the energy market while preserving customer interests and without impairing the government's responsibilities on energy system functioning and security of supply;
- Improved alignment and integration of Albanian energy-sector policy and regulation with the EU's energy acquis and regional and EU energy markets.
- Development of a more consumer-oriented and decentralized future Albanian energy system.
- Focused activities regarding the use, remediation or removal of existing Soviet-era energy infrastructure that adversely impacts environment and potentially high value areas for other development sectors, i.e. tourism, agriculture, etc.

ANALYSIS OF POLICIES (Energy Scenarios)

The Baseline scenario to accomplish specific policy goals are:

The **Energy Efficiency** scenario is also based on Albania's commitments under the Energy Community Treaty, the 2015 law on Energy Efficiency (No. 124), and the new law on Energy Performance in Buildings. The EE scenario also assumes that Albania implements the second NEEAP. The scenario includes 14 specific measures needed to increase energy efficiency in both supply and demand.

The **Renewable Energy** scenario is based on Albania's obligations as a Contracting Party to the Energy Community Treaty to comply with EU Directives on the promotion of renewable energy sources. One of the directive's requirements is the preparation and adoption of a National Renewable Energy Plan (NREAP). The RE scenario incorporates Albania's NREAP, which calls for increase the portion of renewables to 38 percent of the total final energy consumption by 2020, which was maintained until 2030.

The **Natural Gas Promotion** scenario calculates how much natural gas could penetrate in the different demand sectors (residential, service, industry, transport and agriculture) as well as power generation. This scenario assesses the costs and benefits of accessing natural gas from the Trans Adriatic Natural Gas Pipeline.

The **Albania-Kosovo Coupling** scenario assesses the impacts of integrating the operation of the electricity generating systems in Albania and Kosovo into a coupled electricity market,

Policies of all scenarios are:

- Fraction of energy imports in the total energy supply;
- Percentage of renewable energy utilization;
- Reduction in energy-related CO₂ emissions;
- Level of final energy consumption,
- Level of electricity generation; and
- Energy intensity of GDP.

Intended Nationally Determined Contribution (INDC)

Albania's Energy Sector Strategy is harmonized in terms of goals, energy sector details and timeline with a number of other strategic and legal documents that are in force, adopted or drafted in the same time frame as this document. Part of this document is and National Determined Contribution (NDC approved by the Albanian Government on September 2015);

Albania is a candidate country in accession to the EU, which means that in the period of the currently considered INDC it will likely accede to the EU, it is advisable to take the levels of ambition expressed in EU targets and political goals, and their characteristic into consideration when applying the above mentioned principles except of the one of acquired rights.

INDC of Albania : it commits to reduce CO₂ emissions compared to the baseline scenario in the period of 2016 and 2030 by (11.5 %). This reduction means (708kT) greenhouse gas emission reduction in 2030.

The emission trajectory of Albania allows to have a smooth trend of achieving 2 tons of greenhouse gas emissions per capita by 2050, which can be taken as a target for global contraction and convergence of greenhouse gas emissions.

NDCs integrate to SDGs through two scenarios Energy efficiency and Renewable energy in order to reduce Co2 emission 11.5 %.

ENERGY EFFICIENCY

Target is 3% to reach in the period of short term and in the upcoming years energy savings will be increased reaching the objective of 11%.

Our work:

- Transposition and adoption of technical regulations and other secondary legislation, which should be prepared in the following short term period;
- Capacity building at all levels;
- Continuous awareness raising campaigns;
- Permanent advice and technical information on EE for all energy consumers;
- Establishment of the state energy efficiency fund and an energy tax as a source of income for the energy efficiency fund;
- Grants for low cost EE investments for vulnerable groups,
- Energy audits of public buildings;
- Grants for energy audits of multi-apartment buildings, commercial services and industry,
- Loans at lower interest rates from IFIs for EE investment in public buildings,
- Investment deduction for selected EE investments,
- Detailed studies on appropriate fiscal mechanisms to support EE investments, especially related to VAT reduction for selected EE investments the relevant sector,
- Specific financing schemes for vulnerable groups (e.g. a 'Pay as You Save' mechanism),
- Detailed studies on poverty and energy service affordability,

Legal:

The new EE Law's primary objective was to align with the EU's Energy Efficiency Directive (2006/32/EC). The main objectives of the Law can be summarized as follows:

- Setting of a National Energy Saving Indicative Target, and preparation of a National Energy Efficiency Action Plan ("NEEAP") that is to be updated at least every three years.
- Creation of an Agency for Energy Efficiency ("Agency for EE") to oversee implementation of many of the Law's provisions, and an Energy Efficiency Fund ("EE Fund") to support and finance energy efficiency measures.
- Putting in place requirements for larger energy consumers to improve their energy efficiency, requiring them to employ an energy manager, and carry out regular energy audits.
- Establishing criteria and standards for energy auditors and energy services providers.



RENEWABLE ENERGY

Albania has significant renewable energy resource potential from hydro, wind, and solar energy.

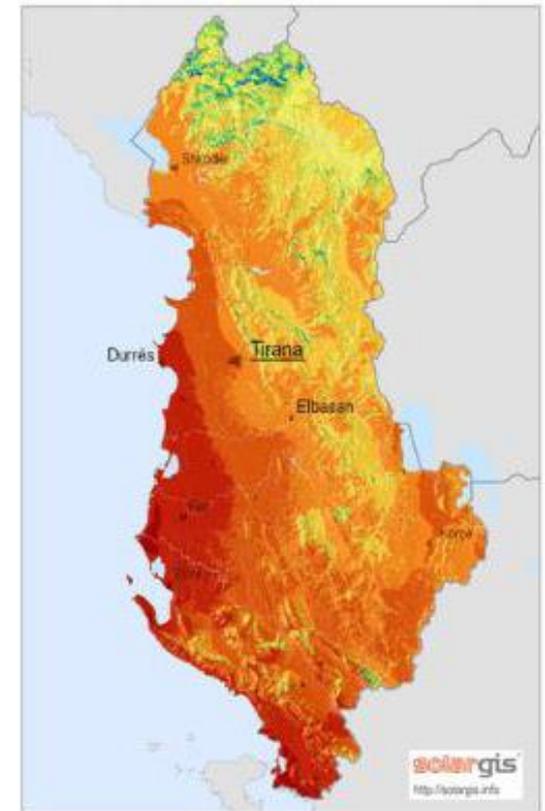
Target of energy from renewable sources in gross final consumption of energy in 2020 is 38 %.

The renewable energy market in Albania is developing based on the government's objective to prioritize renewable energy. This is also reflected in the revision of the legal framework and the development of a new Renewable Energy Law.

Revision of this law will integrate different aspects connected with the utilization of renewable energy. Through the integration of the various RES the RE law should better correspond to the EU Directive on Renewable Energy.

A core issue regulated by this law is a new tariff methodology and how the cost of incentivizing new renewable energy projects are pass on to final customers.

As the private sector involvement has been identified as the key player in the development of the RE sector, the focus of the methodology was to consider the view of the private investor and consider the rate of return of an investment project.



Average annual sum (2004-10)



FINANCIAL RESOURCES

POWER SECTOR

The generation investment cost is determined from the investment costs for each power plant in the expansion plan and are based on current Albanian data according to many feasibility study for SHPPs, medium and large HPPs, WPPs, PvPP, Natural Gas CCs and GTs, using average figures for the specific investments for the respective technologies.

The investment cost for expansion of the high voltage transmission system, including 400 kV, 220 kV and 110 kV networks, is based on the cost information contained in the Electricity Demand Forecast by OST, which were used to determine average the system expansion cost as a function of the overall increase in electricity consumption, which is specific to each scenario.

Investment costs for the distribution system include: a) upgrading the sub-transmission distribution system to improve reliability; b) targeted investments in the medium voltage grid (6-20 kV); c) customer metering d) system metering for the low voltage network; and e) upgrading of the company's management information and billing and collection system. The basic investment data was taken from an ongoing project of OSHEE and WB/IBRD regarding improvements to the distribution and transmission system.



FINANCIAL RESOURCES

NATURAL GAS SECTOR

Investment costs for natural gas infrastructure are based on data in the Masterplan of Natural Gas for supplying gas to different sectors according to the following assumptions: Interconnection costs include the incremental costs needed to prepare TAP for off take within Albanian territory; Transmission and distribution system investment costs include the following:

- Connection of Vlora TPP;
- Connection of Fier-Ballsh areas and their internal distribution network;
- Connection of Durres-Tirana areas and their internal distribution network;
- Connection of Korca areas and their internal distribution network.



FINANCIAL RESOURCES

OIL SECTOR

This Energy Future in Albania supports the exploration and production of the crude oil from the existing oil fields and new ones.

Our Strategy takes into account the current domestic import, and identifies the internal infrastructure of crude oil and oil by products transport, product stocking, and modern standards management needed to reach a minimal cost of service for oil and oil byproducts and avoid temporary market abnormalities.

The Strategy supports the rehabilitation of Ballsh and Fier refineries to European norms and standards, including adoption of environmental norms for refinery products and technology, increasing refinery processing capacity to 1.5 Mt/year, modernization of Vlora terminal, and modernization of transport infrastructure from Vlora to Ballsh.

Investment costs for rehabilitation and modernization of the two refineries depends directly on the actual situation of installations, equipment and environment pollution level. Ministry of Energy and Industry also is considering the option of building new refineries with 3.2 Million tons capacities.

Fuel oil by product market infrastructure in Albania includes a large number of distributors, and the total number of retail stations should be reduced and better optimized according to European norms and standards.



FINANCIAL RESOURCES

EE AND RES

Energy efficiency funds are helpful in overcoming market barriers to energy efficiency investments in general and for specific energy consumer groups. At start-up, such a fund needs access to grant financing from global trust funds such as the Global Environment Facility (GEF), and this strategy recognizes that MEI is working in this direction with the support of the UNDP Climate Change Unit. Furthermore, the Government will try to get loans on favorable terms from IFIs like the World Bank, foreign financial institutions such as KfW, EBRD and the EIB, and bilateral donors for securing the initial EE Fund budget. In addition, the EE Fund will secure an initial fund from the State Budget based on the State Budget Law. The sustainable operation of the Fund will be guaranteed through a stable annual income coming from energy carrier and environmental pollution taxes. When a market segment is sufficiently developed to attract commercial financing, the Energy Efficiency (EE) Fund's objective has been reached and it can be phased out over the medium-term (at least five years).

The Government has committed to a policy of increasing the **use of renewable energy**, primarily hydropower, solar and wind, with small-scale hydropower having the highest priority. Methodologies for offering FiTs is developed as part of this strategy

MONITORING AND EVALUATION ENERGY

Main energy indicators

Indicators	Baseline	Short term goals - 2020	Medium term goals - 2025	Long term goals-2030	Responsible institution
	Value - 2015				
Reduction of transmission technical electricity losses	2.20%	2.00%	1.80%	1.70%	MEI/ERE/OST
Reduction of distribution non-technical electricity losses	14.04%	8.00%	6.00%	4.00%	MEI/ERE/OSHEE
Reduction of distribution technical electricity losses	14.00%	9.00%	7.00%	6.00%	MEI/ERE/ OSHEE
Increasing rate of electricity collection	90%	92%	95%	98%	MEI/ERE/ OSHEE
Opening of electricity market	35%	40%	100%	100%	MEI/ERE
Self-sufficiency of domestic primary energy sources vs total primary energy supply (%)	47.47%	50.37%	52.31%	52.40%	MEI/AKBN
Imports of energy sources vs total primary energy supply (%)	52.53%	49.63%	47.69%	47.60%	MEI/AKBN
Energy Efficiency Target (%)	0.2%	6.8%	10%	15%	MEI/AEE
Utilization of renewable energy in TPES (RES Target) (%)	32.50%	38.00%	40.50%	42.00%	MEI/AKBN
Biofuel Targets as share of biofuels versus total fuel consumption in transport sector (%)	3.55%	10%	10%	10%	MEI/AKBN
CO2 emission as percentage reduction versus baseline (%)	0%	0%	5.75%	11.5%	ME/MEI/AKBN
Natural Gas Penetration (ktoe) versus total primary energy supply	0.36%	0.37%	5.10%	19.81%	ME/AKBN

Thank you

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