"Developing Albania's Hydroelectric Potential"

One-day Workshop
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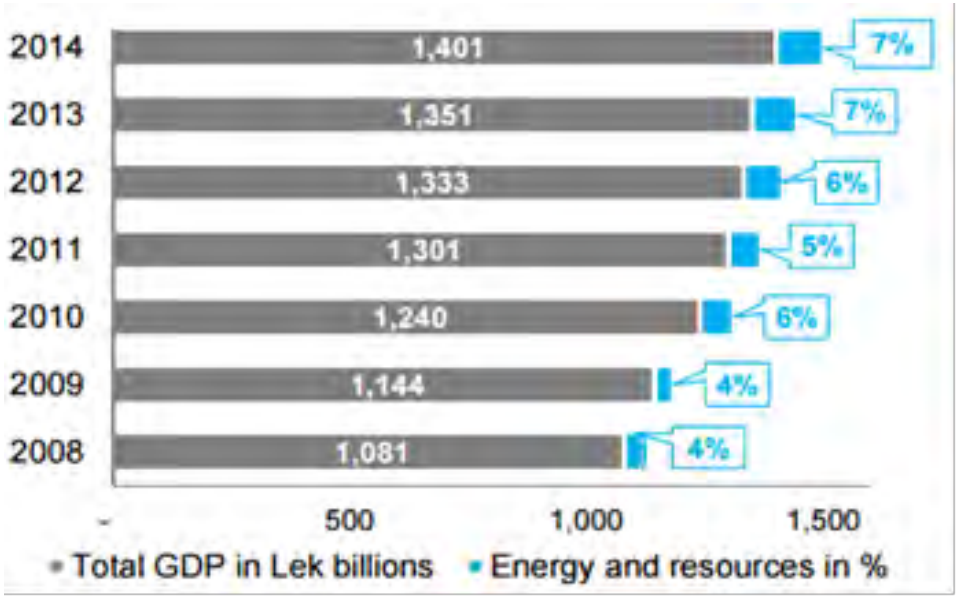
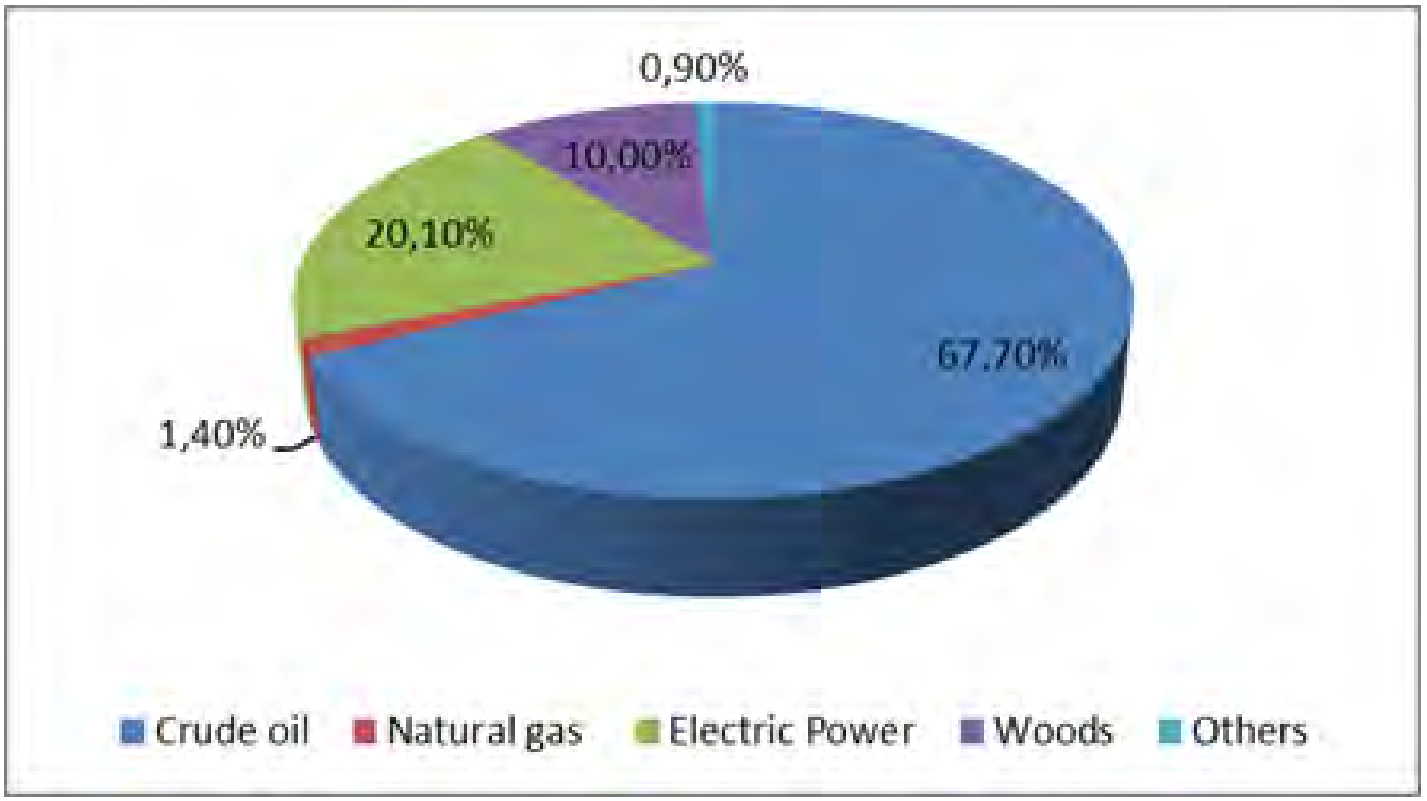
Contribution of energy and resources to GDP (at current prices) in Albania

- Energy and resources industry accounted for 7% of the country's GDP in 2013 and 2014
- Oil and mining sector accounted for 5% of the GDP in 2014
- Power sector held at about 2% of the GDP in 2014



Source: INSTAT (2015), Deloitte (2015)

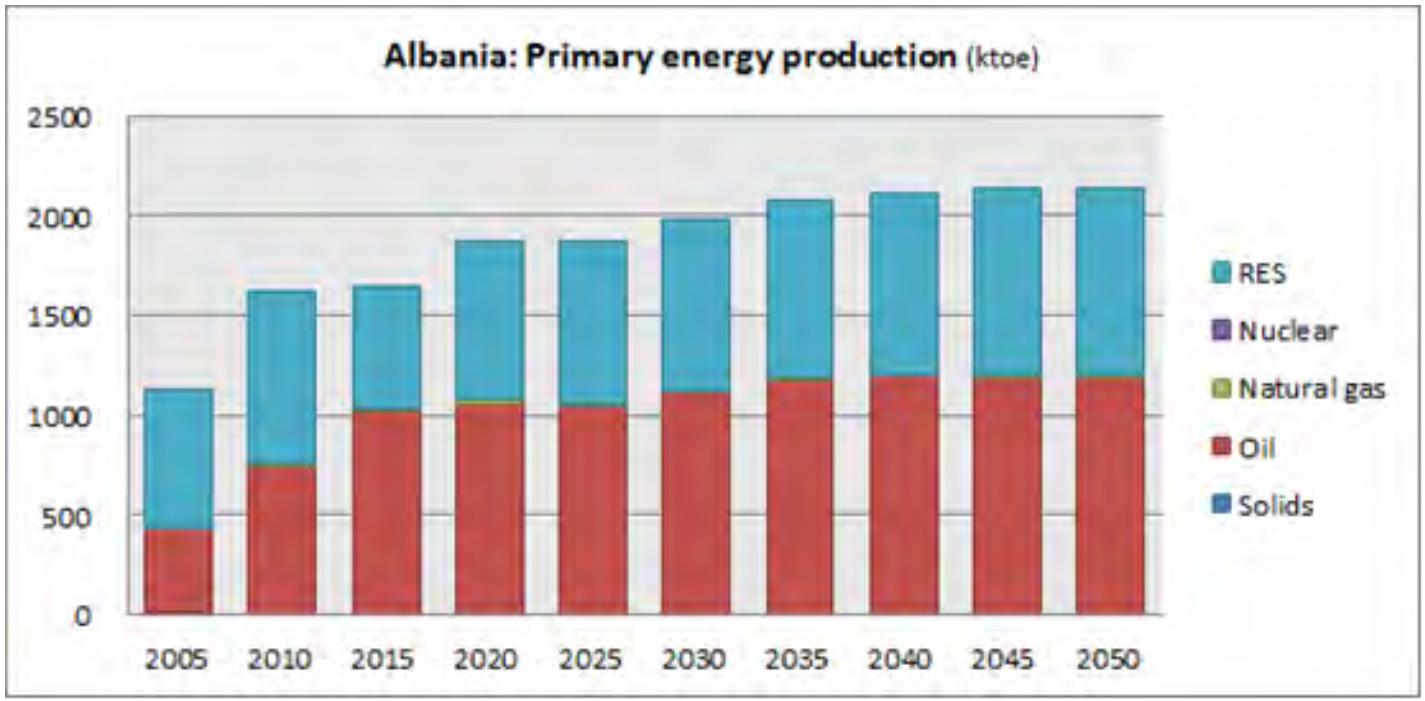
Albania's primary energy production (2014)



Source: INSTAT (2015), Deloitte (2015)

Albania's energy sector projections up to 2050

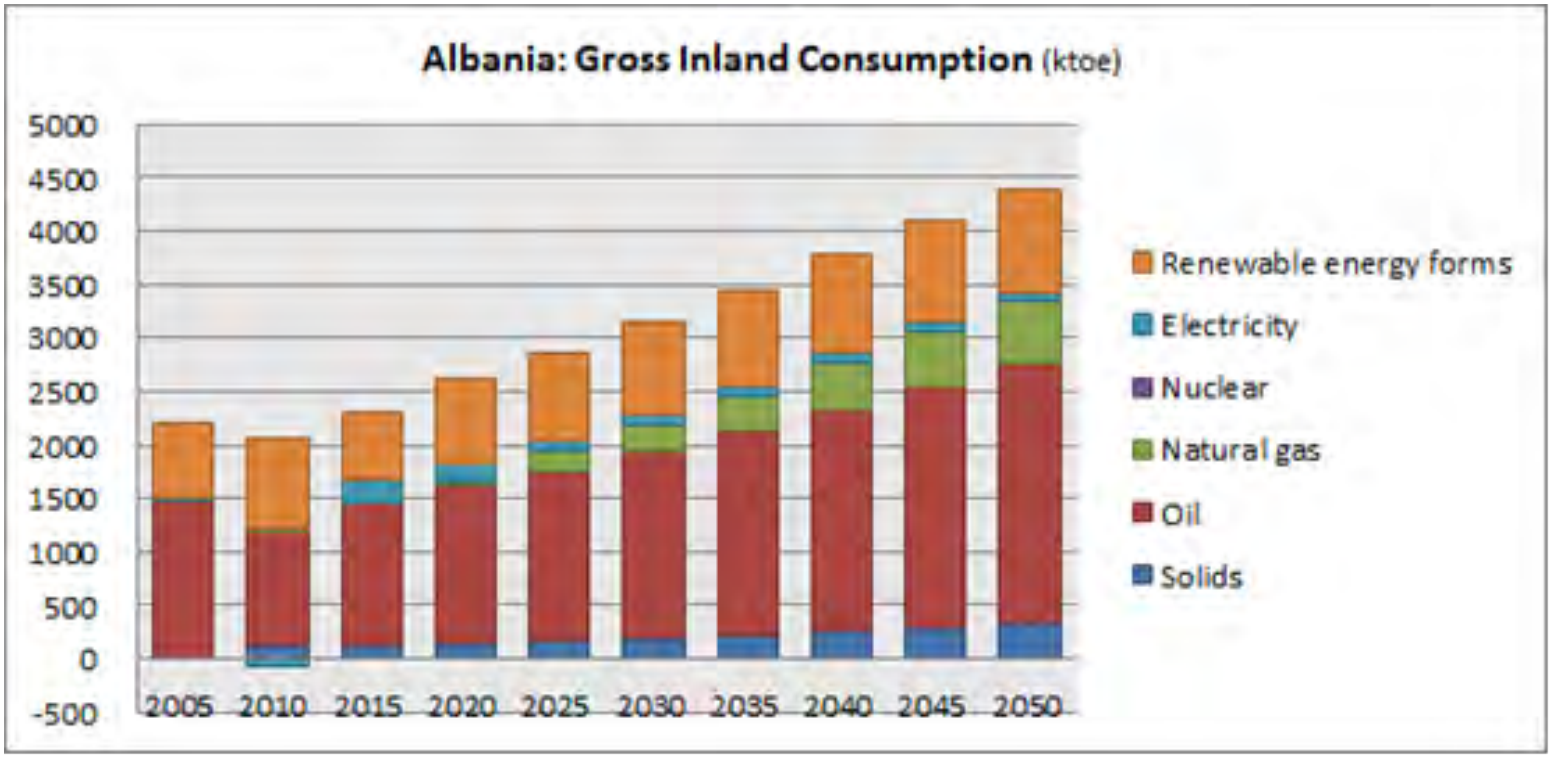
- Primary energy production (ktoe) in Albania over 2005-2050



Source: IENE study "South East Europe Energy Outlook 2016", Athens, 2016

Albania's energy sector projections up to 2050 (continued)

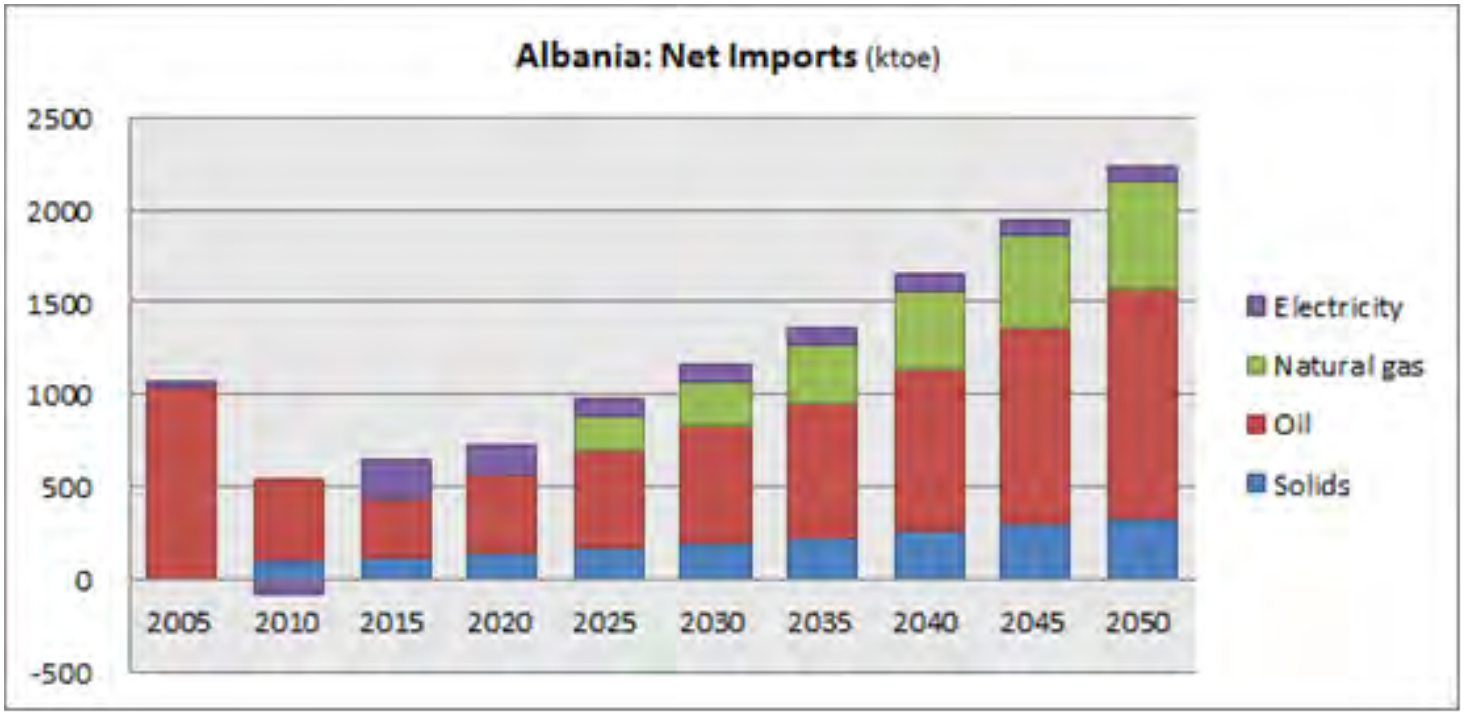
- Gross inland consumption (ktoe) in Albania over 2005-2050



Source: IENE study "South East Europe Energy Outlook 2016", Athens, 2016

Albania's energy sector projections up to 2050 (continued)

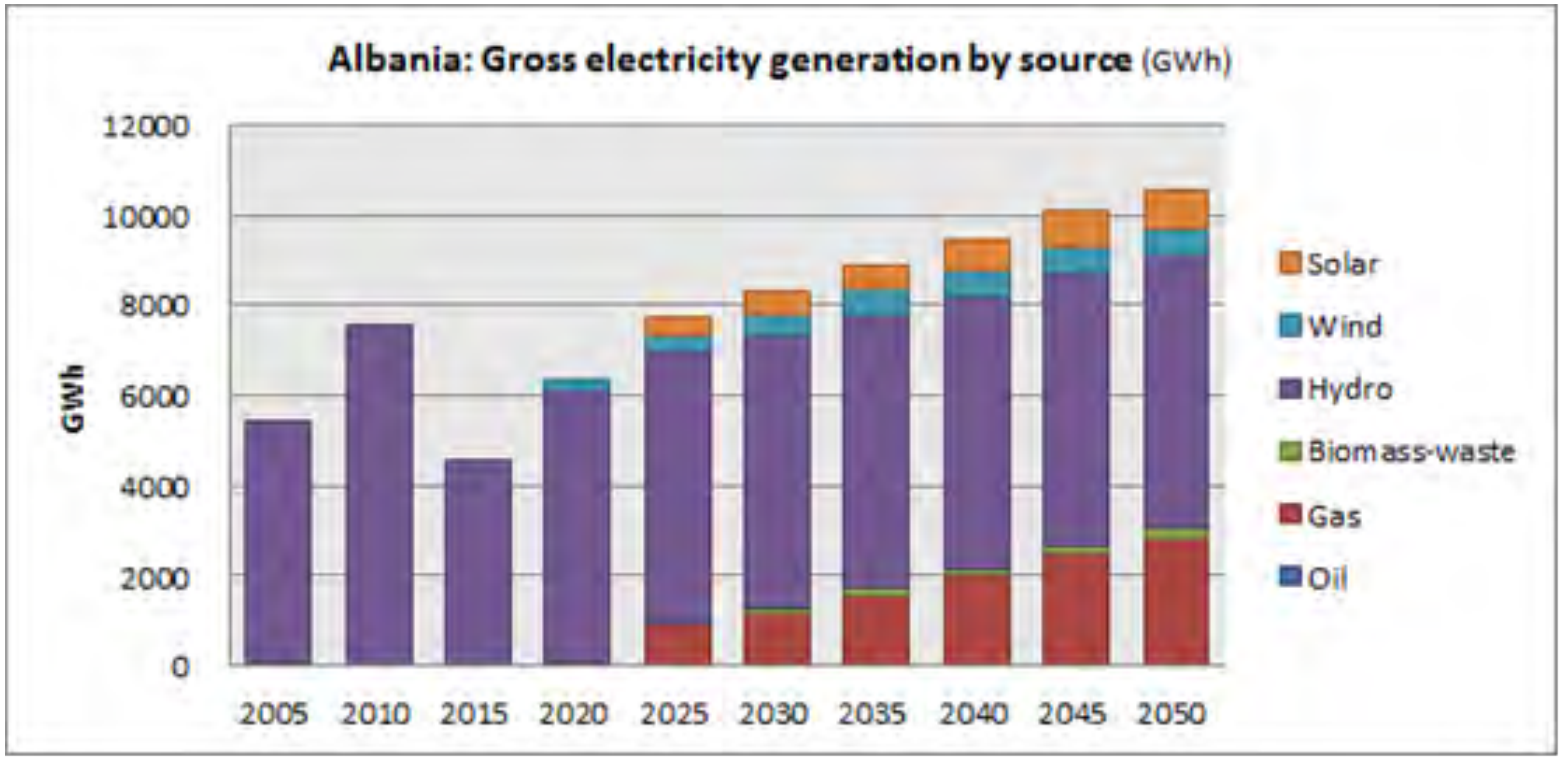
- Net imports (ktoe) in Albania over 2005-2050



Source: IENE study "South East Europe Energy Outlook 2016", Athens, 2016

Albania's energy sector projections up to 2050 (continued)

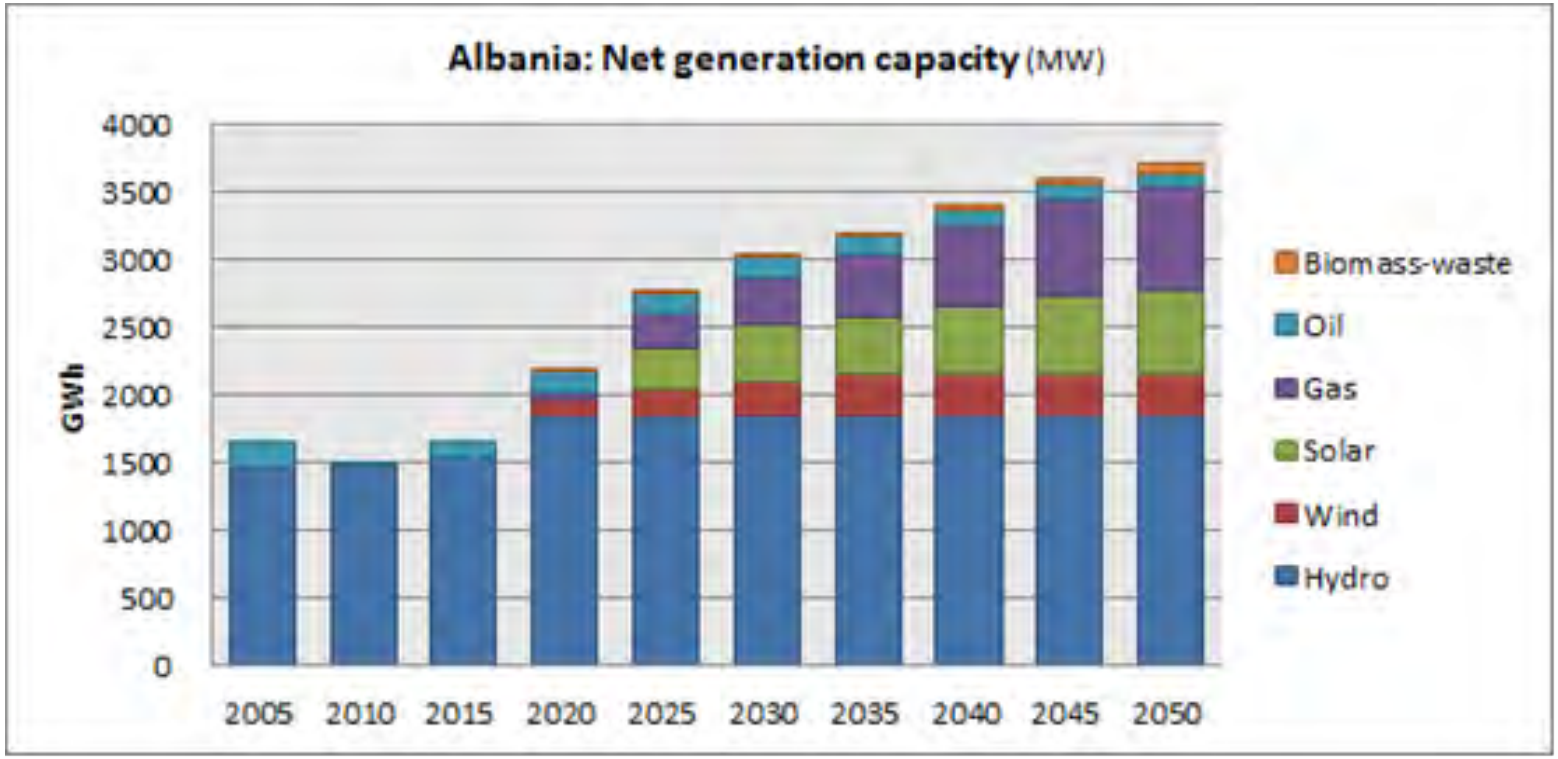
- Gross electricity generation (GWh) by source in Albania over 2005-2050



Source: IENE study "South East Europe Energy Outlook 2016", Athens, 2016

Albania's energy sector projections up to 2050 (continued)

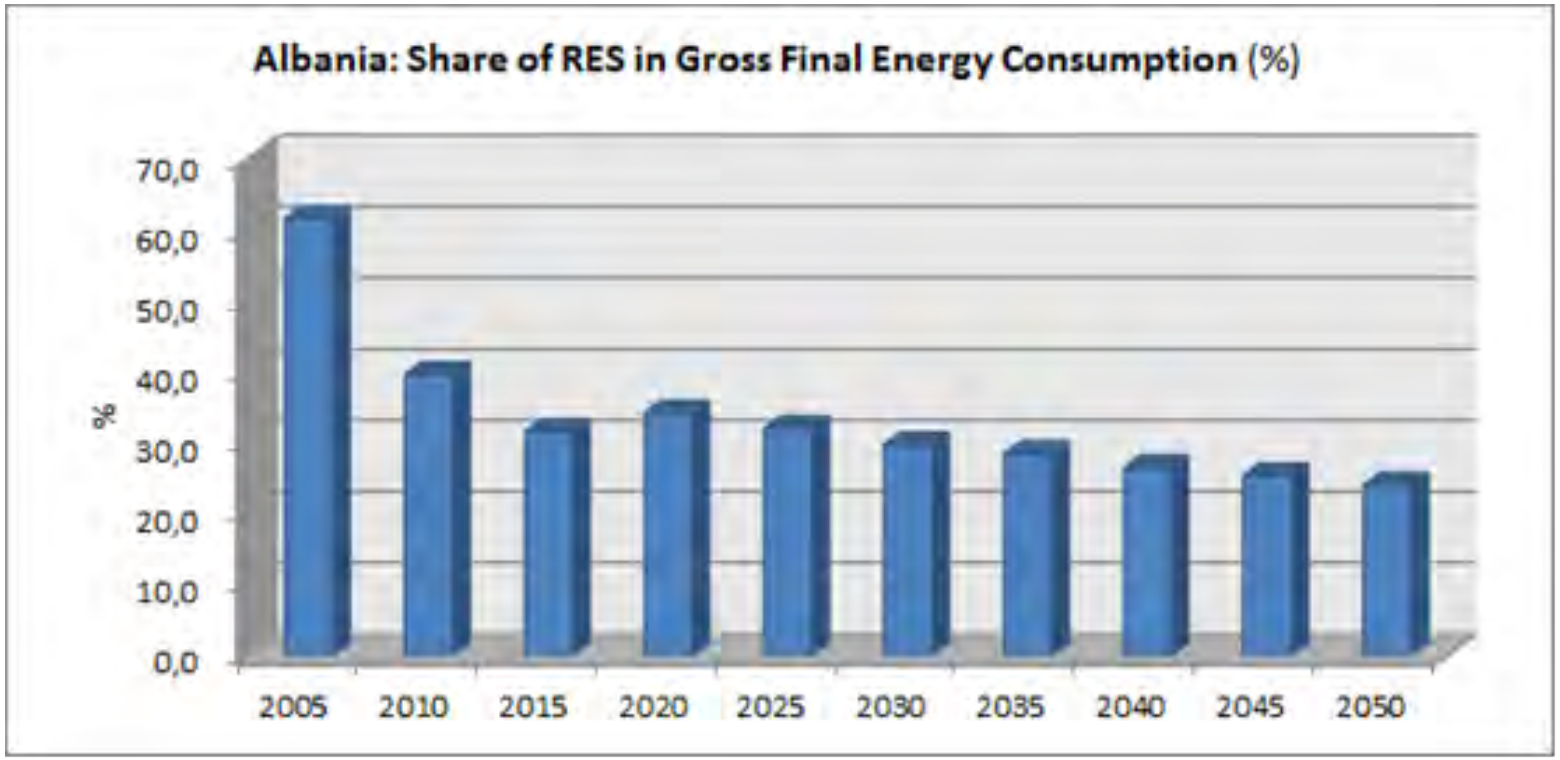
- Net generation capacity (MW) in Albania over 2005-2050



Source: IENE study "South East Europe Energy Outlook 2016", Athens, 2016

Albania's energy sector projections up to 2050 (continued)

- Share of RES (%) in Gross Final Energy Consumption in Albania over 2005-2050



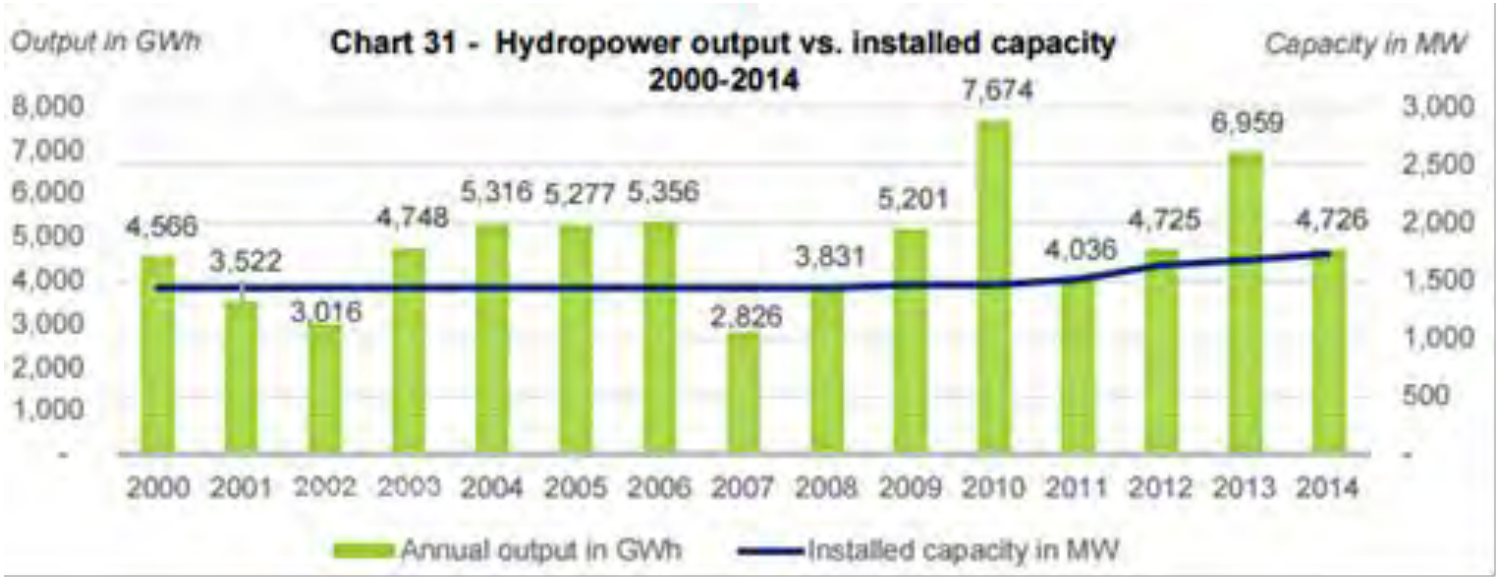
Source: IENE study "South East Europe Energy Outlook 2016", Athens, 2016

Overview of the hydropower sector in Albania

- The Albanian power system is mainly based on hydropower plants and thus it is fully dependent on hydrological conditions.
- Total annual potential production from hydropower plants (HPPs) in Albania is estimated at 10,000 GWh, which can be derived from an installed capacity of 3,000 MW.
- At the end of 2014, exploited opportunities represent 58% of the hydropower potential with a total installed capacity of 1,725 MW.

Hydropower generation and the power balance 2000-2014

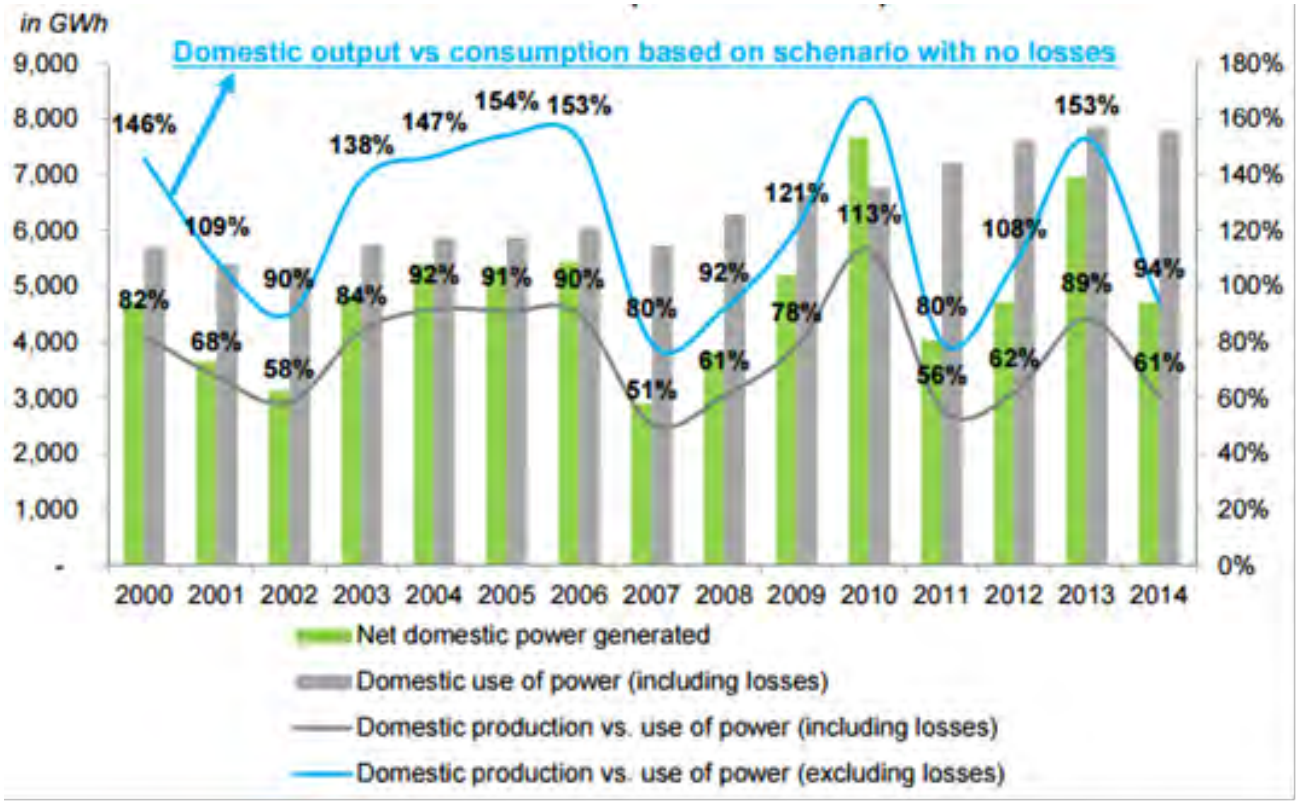
- Annual domestic output varies largely on hydrological cycles. In the last 15 years, the annual power output reached its highest peak in 2010 with 7,674 GWh and lowest peak in 2007 with 2,826 GWh.



Source: INSTAT (2015), ERE (2015), Deloitte (2015)

Production and consumption of electrical power 2000 – 2014

Despite its abundant hydropower potential, Albania has been a **net importer of electricity** to compensate for its negative power balance in the last 15 years.



Source: INSTAT (2015), ERE (2015), Deloitte (2015)

Albania's hydropower potential

Estimates show that only 30-35% of Albania's hydropower potential has been developed so far.

Indicative summary of current situation in Albania's hydropower sector and its potential

Actual situation	6 big HPP in operation	1421.5 MW
	37 small HPP in operation	34.5 MW
Main generation base	Cascade on Drin River	1350 MW
	Cascade on Mati River	49 MW
	Cascade on Bistrica River	27.5 MW
Potential and existing utilization	Potential capacity	4500 MW
	Exploited potential	1461 MW

Source: Albanian Small Hydropower Association (2015)

Electricity Trade in Albania

Exports and imports of power during 2011-2014

	2011	2012	2013	2014
Exports				
Power exported in GWh	1,225	288	938	84
Value of power exported (in Lek million)	6,672	1,972	4,123	595
Average export price in Lek/KWh	5.45	6.85	4.39	7.06
Imports				
Power imported in GWh	3,003	3,394	1,674	3,219
Value of power imported (in Lek million)	22,575	30,105	11,310	23,010
Average import price in Lek/KWh	7.52	8.87	6.76	7.15

Source: Albanian Custom Administrate (2015)

Key issues in Albania's electricity sector

Several challenges in the country's electricity sector, including:

- Full dependence on hydropower generation and its vulnerability to weather patterns
- Lack of adequate self-generation capacity
- High level of distribution losses that require significant power imports is adding financial stress to the sector and the economy.
- The retail tariffs do not fully reflect the sector cost structure, which, combined with low collection rates and high arrears, has meant that the power sector is not able to be financially self-sustaining.
- Albania's energy sector is currently suffering annual losses estimated at €160-200 million (World Bank estimates), creating an urgent need for energy efficiency improvements.
- Small and large hydropower facilitate the penetration of RES and contribute to reducing GHG emissions in the electricity sector
- Appropriate mix with other RES and proper development of the hydropower potential is recommended.

World Bank's Power Sector Recovery Project

- Worth $150 million
- Approved by the Bank's Board of Directors on September 29, 2014
- The project consists of **four components**:
  1. providing short-term complimentary power import support
  2. upgrading the distribution infrastructure
  3. upgrading the transmission meter/data center, and
  4. supporting power sector reforms and project implementation

Prospects

- Thanks to its geographical position and natural resources, Albania has a **high development potential to exploit renewable energy sources**
  - **Currently, only hydropower** makes a significant contribution to the country's electricity consumption, despite the fact that a significant potential for RES in the form of biomass, geothermal, wind, and solar are available
- The concept of combined hydroelectric plant and **pump storage** in cascade mode or with an additional reservoir in high head should be exploited in Albania
- Vision and strategy with targets in the electricity sector, in line with the EU targets
- An initiative in political level for the proper development of the hydro and the electricity sector in long-term, upgrading the role of Albania in the region
- Creation of an attractive environment for investment for SHP and large ones to achieve the strategic targets with a promising future

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Thank you for your attention

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