Albania's energy sector: towards a new era of large and sustainable developments

Summary Presentation

In this seminar, based on my daily experience, it will focus on an assessment of the most significant opportunities for foreign investors offered by the traditional HPP sources and the emerging energy sectors in Albania.

The presentation will aim to offer an analysis on the different incentives and benefits provided in the last decade and the new ones offered by the liberalization and the regional integration of the market, which is making the following, with more and more, large-scale and sustainable projects.

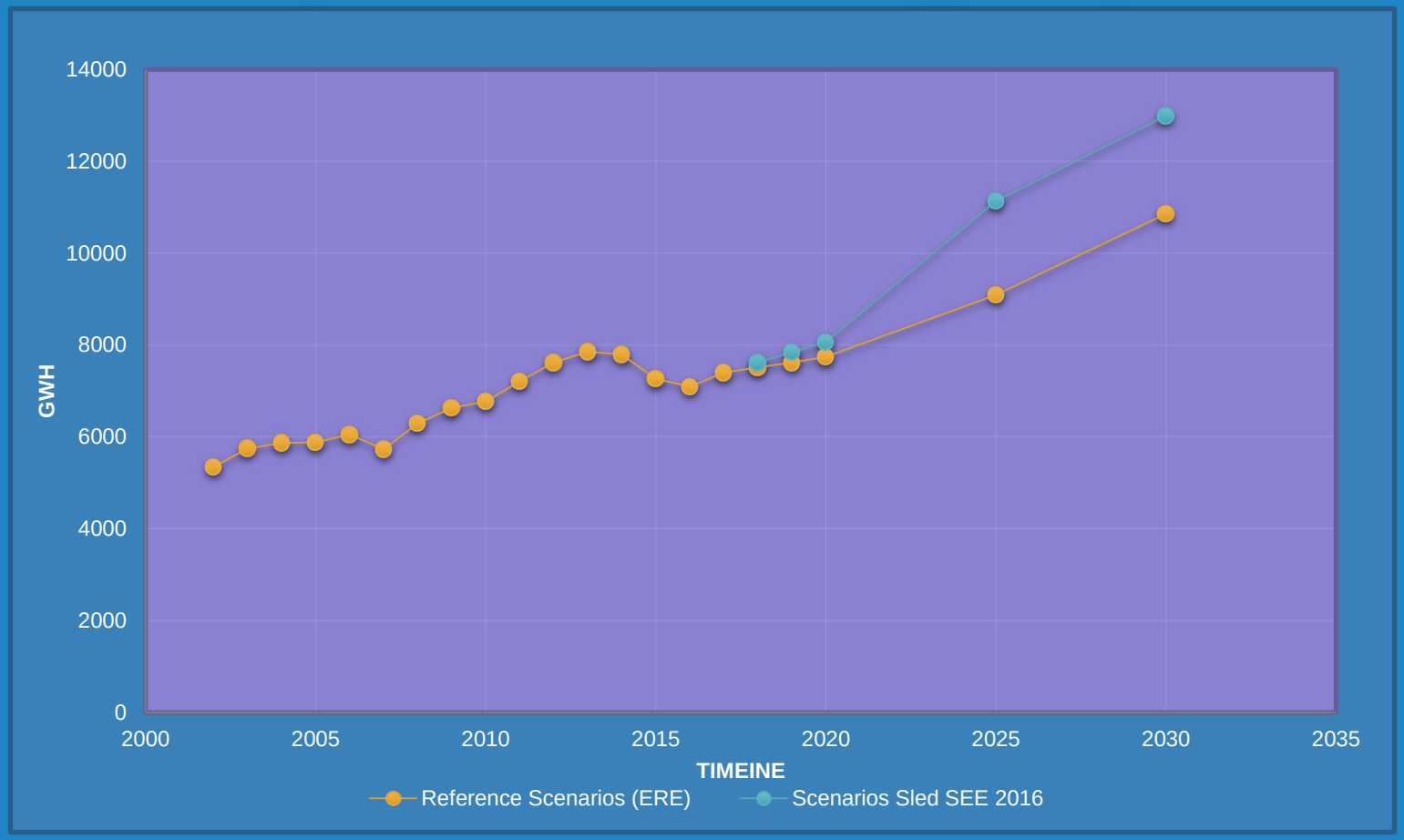
You can also find me at:
adviser.albaniaenergy.org

1.

Why invest in Albania?

Let's start with an introductory set of slides about the technical potential and favourable legal framework

Prospect of Demand Growth and Need for Development of New Energy Projects



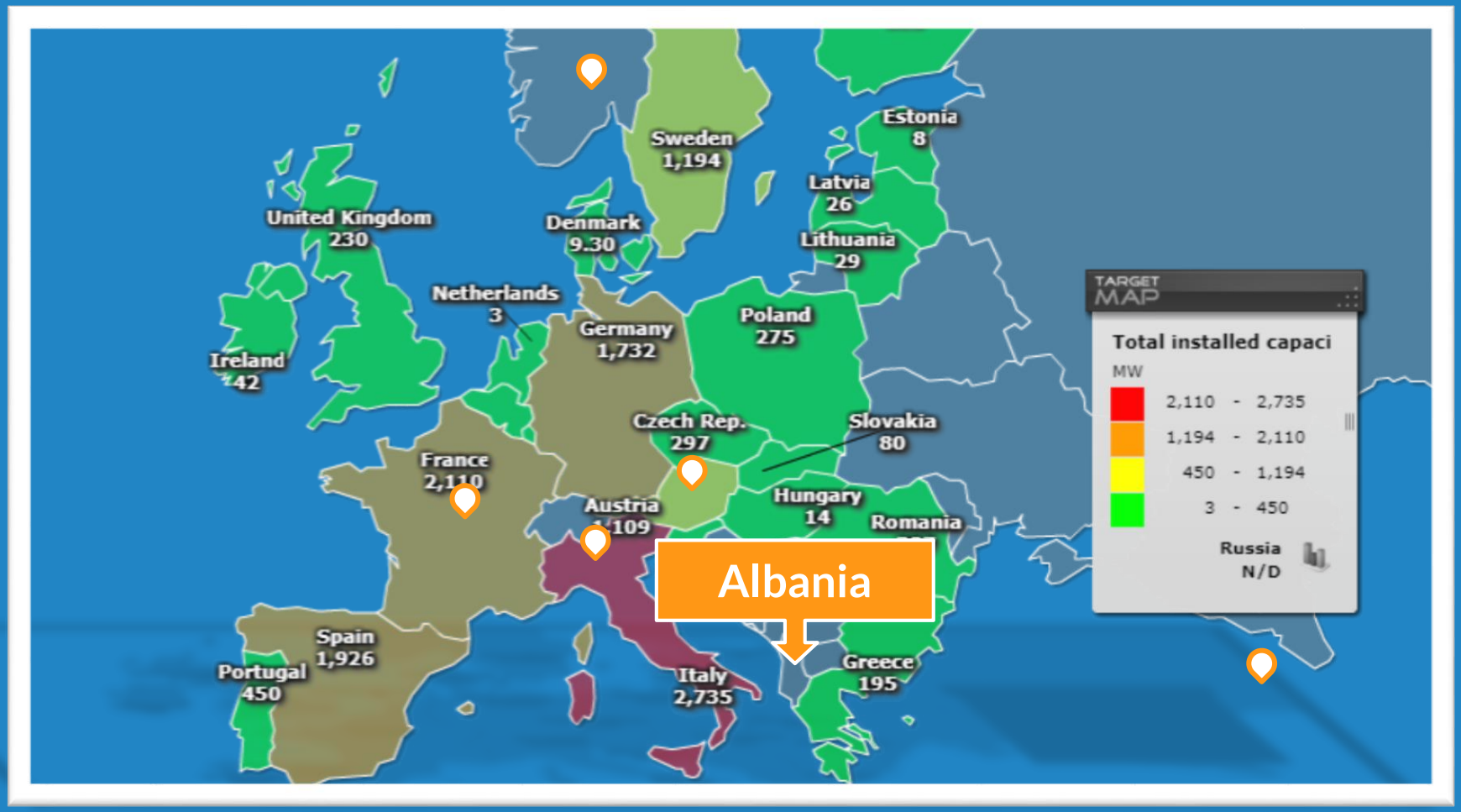
Electricity Consumption Developing Scenarios Growth Rate 1,5% and 3%

ATTY. Lorenc Gordani, PHD

Favourable policies and soft measures

- The **national priority** of any government platform for many decades
- **Governmental facilitation** and **subsidy support** schemes for investments
- High-quality **experienced engineering** and **technical workforce**, created in the hydropower sector
- Proven record of successful foreign investments in the industry (Statkraft, EVN/Verbund, Ayen, Essegei, etc.)

Geography of Investors in the Albanian HydroPower Sector



ATTY. Lorenc Gordani, PHD

Albania has a huge hydroelectric energy potential: eight major rivers crossing a river basin with over 57% of its current administrative extension, an average height of 700 m above sea level and perennial flow of 1245 m3/s, for the combined water supply of 40 billion cubic meters

ATTY. Lorenc Gordani, PHD

A snapshot of Albanian HPPs

2400 MW

Total installed capacity

Above 1485 MW

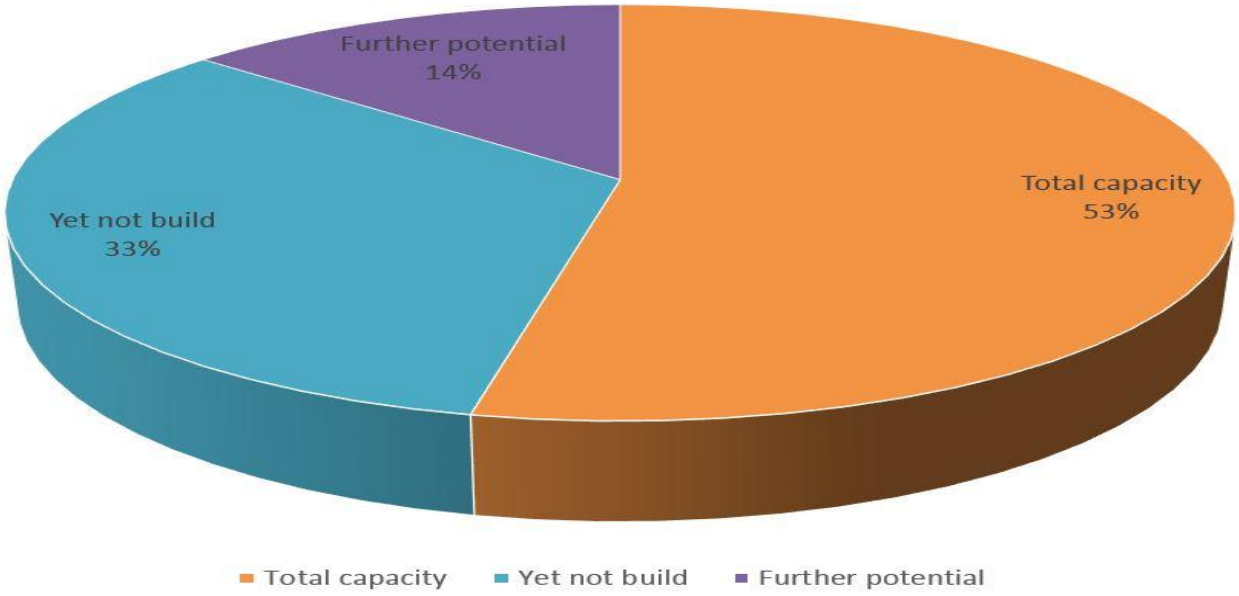
Concessions awarded, eligible for partnerships

Up to 615 MW

Further potential capacity

Atty. Lorenc Gordani, PhD

Potential of hydro energy by 4500 MW used in Albania



Around 53% of hydroelectric potential is currently utilized

Lower LCOE in Europe

Water reserves *per capita* value is the second-highest in the whole of Europe making the country offer an average cost of hydro production starting at around 30 Euro/MWh

ATTY. Lorenc Gordani, PHD

Average annual radiation (kWh/m2, territorial distribution of sunny hours)

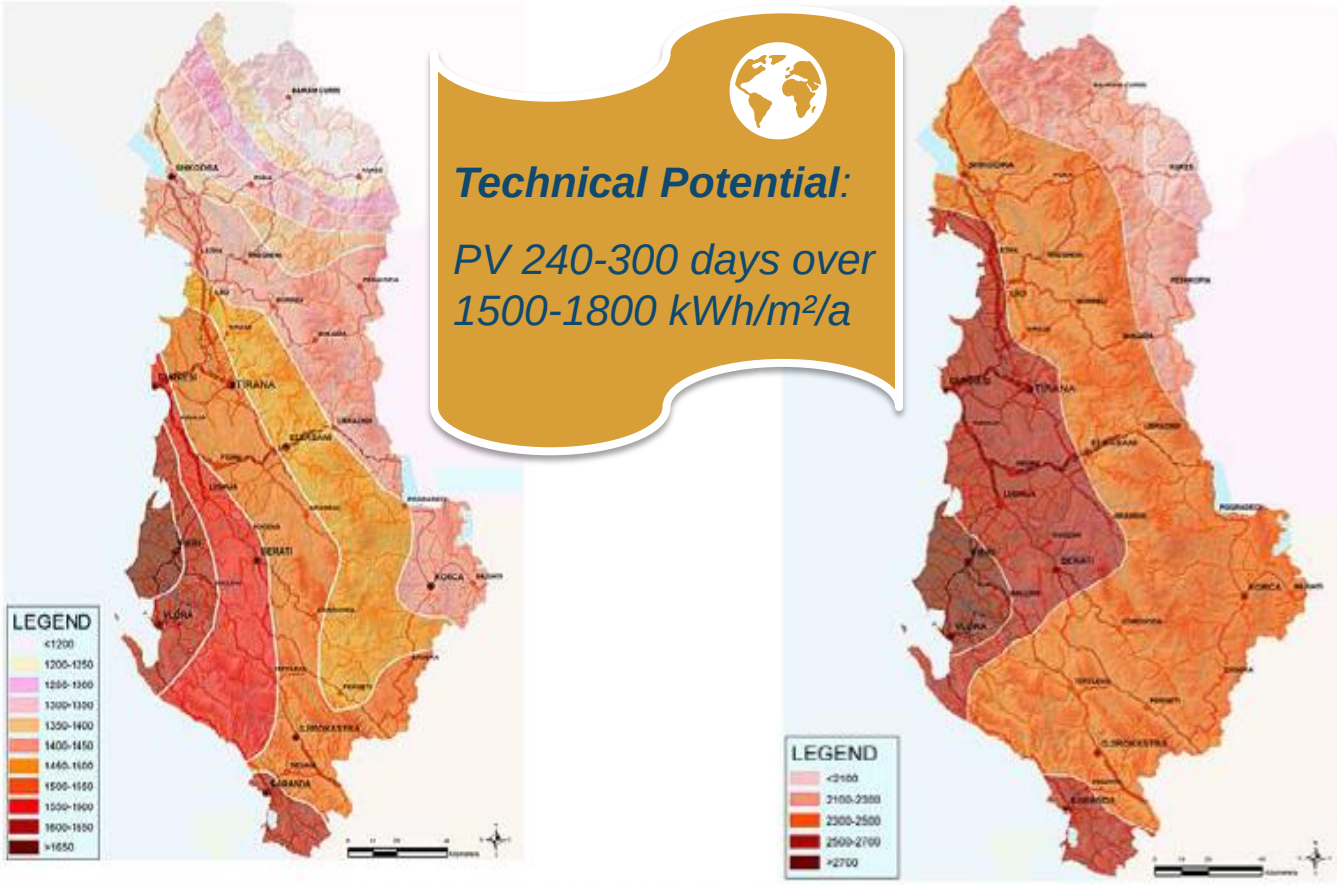
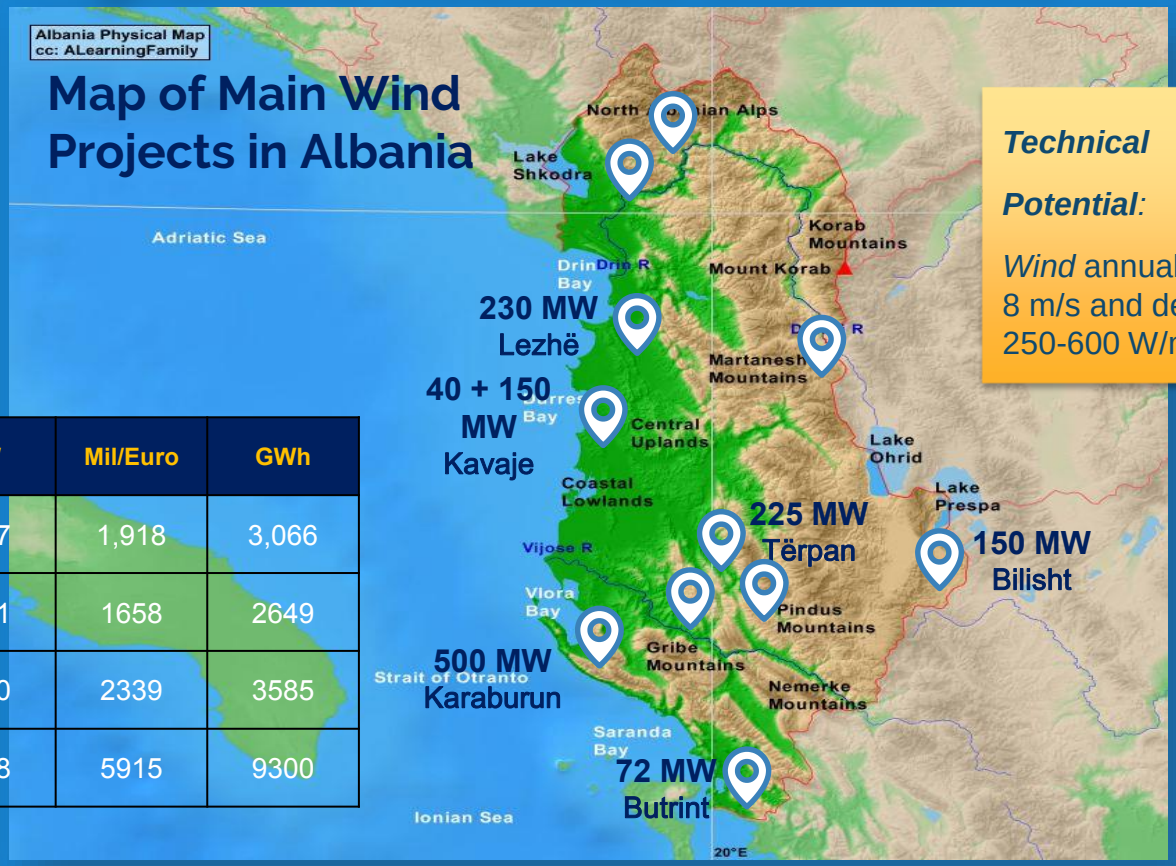


Figure 3. [1] Average Annual Radiation (kwh/m²), [2] Territorial Distribution of Sunny Hours.

The main wind projects of the 4200 MW granted licenses in Albania



Technical Potential:

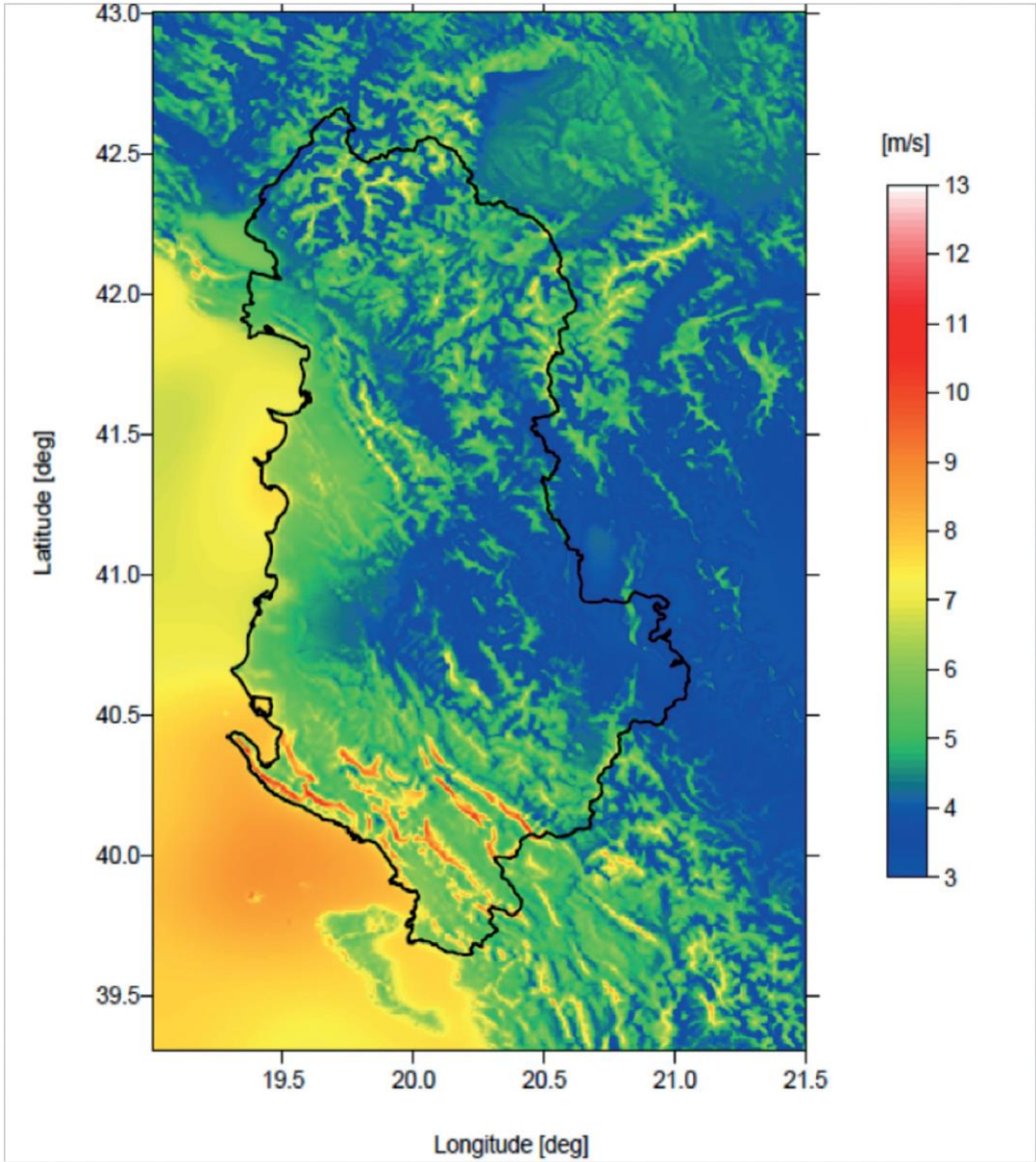
Wind annual speed of 6-8 m/s and density of 250-600 W/m2

	MW	Mil/Euro	GWh
2008	1367	1,918	3,066
2015	1181	1658	2649
2020	1650	2339	3585
Total	4198	5915	9300

A tendency that is in continue growth with the rise of new target of the NREAP 2019-2020 which has passed the wind-planned capacity from 70 MW to 150 MW within 2020

Average Wind Speed at 50 m

The map of the simulated average wind speed at 50 m a.g.l. over the Albanian territory, shows an excellent wind potential, with wind speed values exceeding 7-9 m/s in different areas.



Trans Adriatic Pipeline (TAP) Project's Key Facts and Figures

- 867 km the length of the route
- 547 km across Greece
- 211 km across Albania
- 104 km under the Adriatic Sea
- 5 km in Italy
- 810 m below sea level – the deepest offshore section
- 1800 m highest elevation point TAP will cross – in Albanian mountains

- 48 inches (1200 mm) diameter pipe onshore – designed for a gas pressure of 95 bar
- 36 inches (914 mm) diameter pipe offshore – designed for a gas pressure of 145 bar
- 17.5-31 the thickness of the steel pipe walls onshore
- 21-34 the thickness of the steel pipe walls offshore

ATTY. Lorenc Gordani, PHD

Projections on the Extension Use of the Natural Gas in Albania

Back-up reserve: already Valona CCGT 97 MW

Capacity market: Albpetrol pre-agreed on 0.3 bcm

New plans of CCGT Vlora II and III, 200 & 160 MW, to come online in 2020 & 2025

Albania Gas Master Plan (GMP) 2017: Total penetration rate of thermal demand to 1.5 bcm & 3 bcm within 2020 & 2040

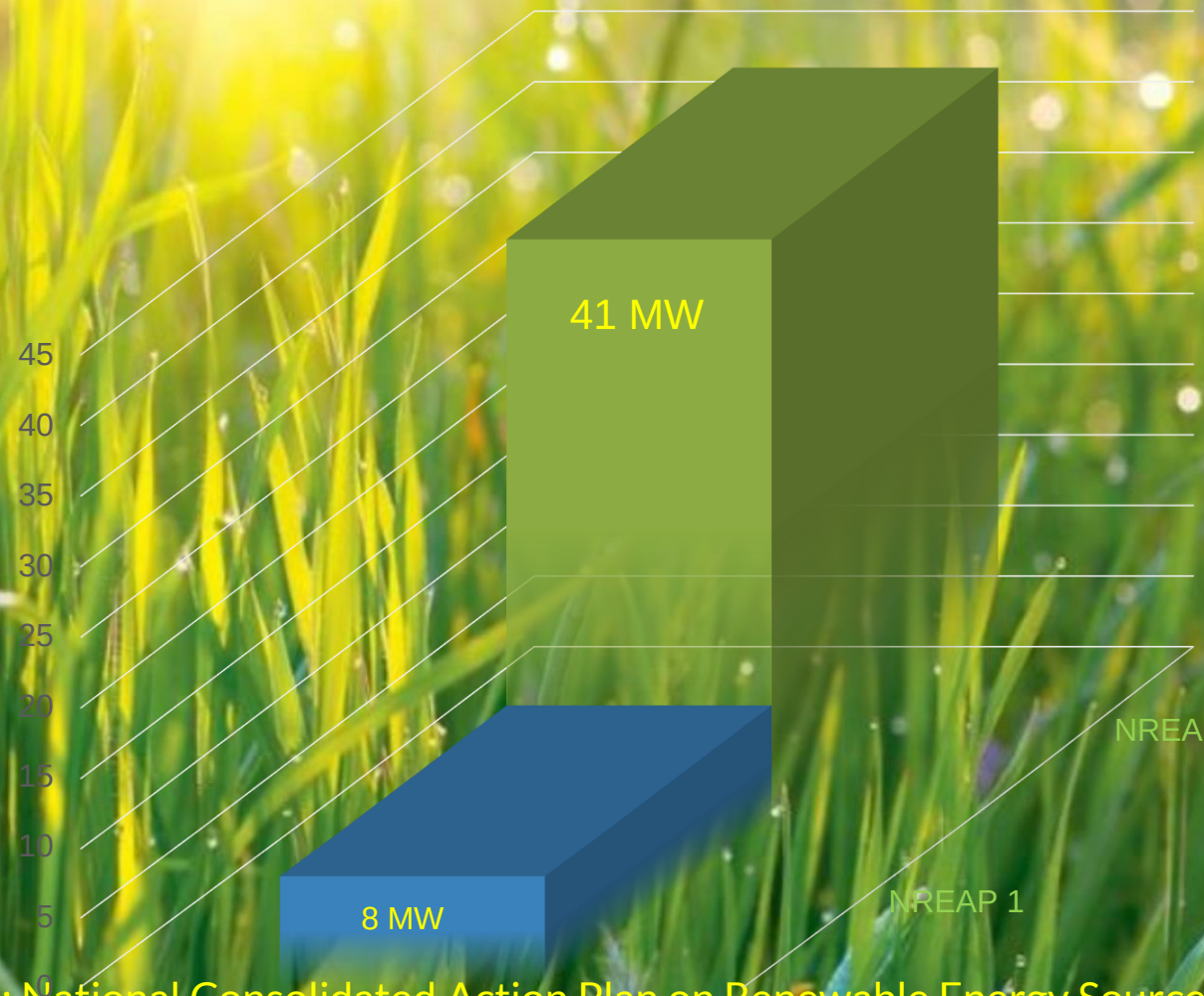
CCGT Korçë 480 MW, with consumption for electricity generation 660 mcm after 2020

From the begin of 2020, a high level of discussion with US authorities to make Albanian one of the main gate of the **US LNG port** projects.

ATTY. Lorenc Gordani, PHD

Albania towards Energy Transition

➡ Expanding the RES-E / Biomass 8 to 41 MW



Source: National Consolidated Action Plan on Renewable Energy Sources, 2019–2020

Atty. Lorenc Gordani, PhD

Energy Efficiency and Audit of Energy Options

Energy audits are **mandatory** for:

- large energy consumers (3 million kWh) (to decrease at the 1 mil/MWh).
- for each applying to the fund x energy efficiency

Building **performance certification**:

All buildings: that will be sold or rented; built or renewed; public area 500 m2 and 9 July 2018 to 250 m2.

National plan to increase the number of "**almost zero energy**" buildings:

- After December 31, 2018, all new buildings, which are in use by public authorities;
- All new buildings after December 31, 2020.

Private Capitals Expected to be Activated within the Energy Efficiency

The implementation of the proposed measures in the NEEAP presents an estimate of direct costs from the public budget to around 110 million euros within 2020.

Only for the renovation of buildings is estimated at EUR 1.1 billion for the period from 2015 to 2030, or EUR 72 million per year.

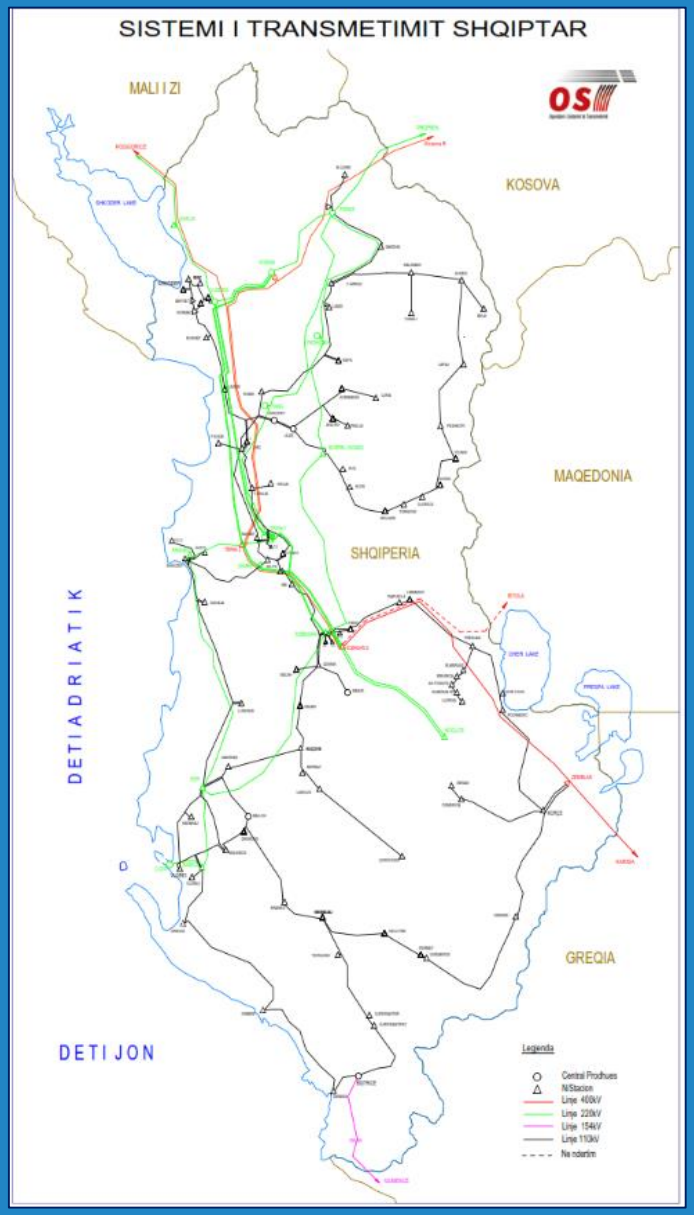
Moreover, the additional investment costs in new buildings should be 593 million EURO in the period from 2015 to 2030 or 40 million per year.

The renovation of university campus of Tirana promoted by German government in Albania, bringing an investments package at 18,5 m euros.

2.

New prospective open by market integration with the SEE region and Italy

Now let us continue with the key topic of this presentation regarding the options presented by the energy transition



Albanian Power System Map

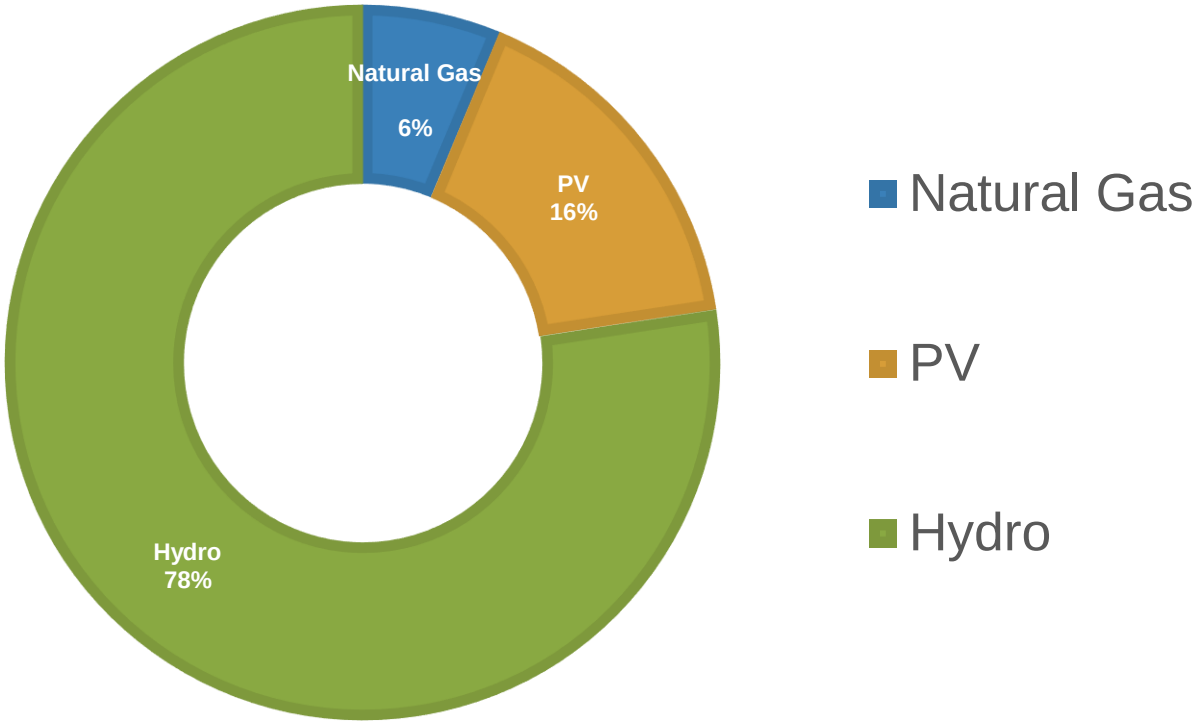
The interconnections with neighbouring countries include the following lines:

- Interconnection line 400 kV **Zemblak** (Albania) - **Kardia** (Greece)
- Interconnection line 400 kV **Tirana** (Albania) - **Podgorica** (Montenegro)
- Interconnection line 400 kV Tirana (Albania) - Pristina (Kosovo)
- Interconnection line 220 kV **Fierzë** (Albania) - **Prizren** (Kosovo)
- Interconnection line 220 kV **Koplik** (Albania) - **Podgorica** (Montenegro)
- Interconnection line 150 kV **Bistrica** (Albania) - **Myrtos** (Greece)

Source Ost sh.a.

Strategy: A more balanced mix of energy, sustainability and liberalization

Electricity Forecast Production until 2030



ATTY. Lorenc Gordani, PHD

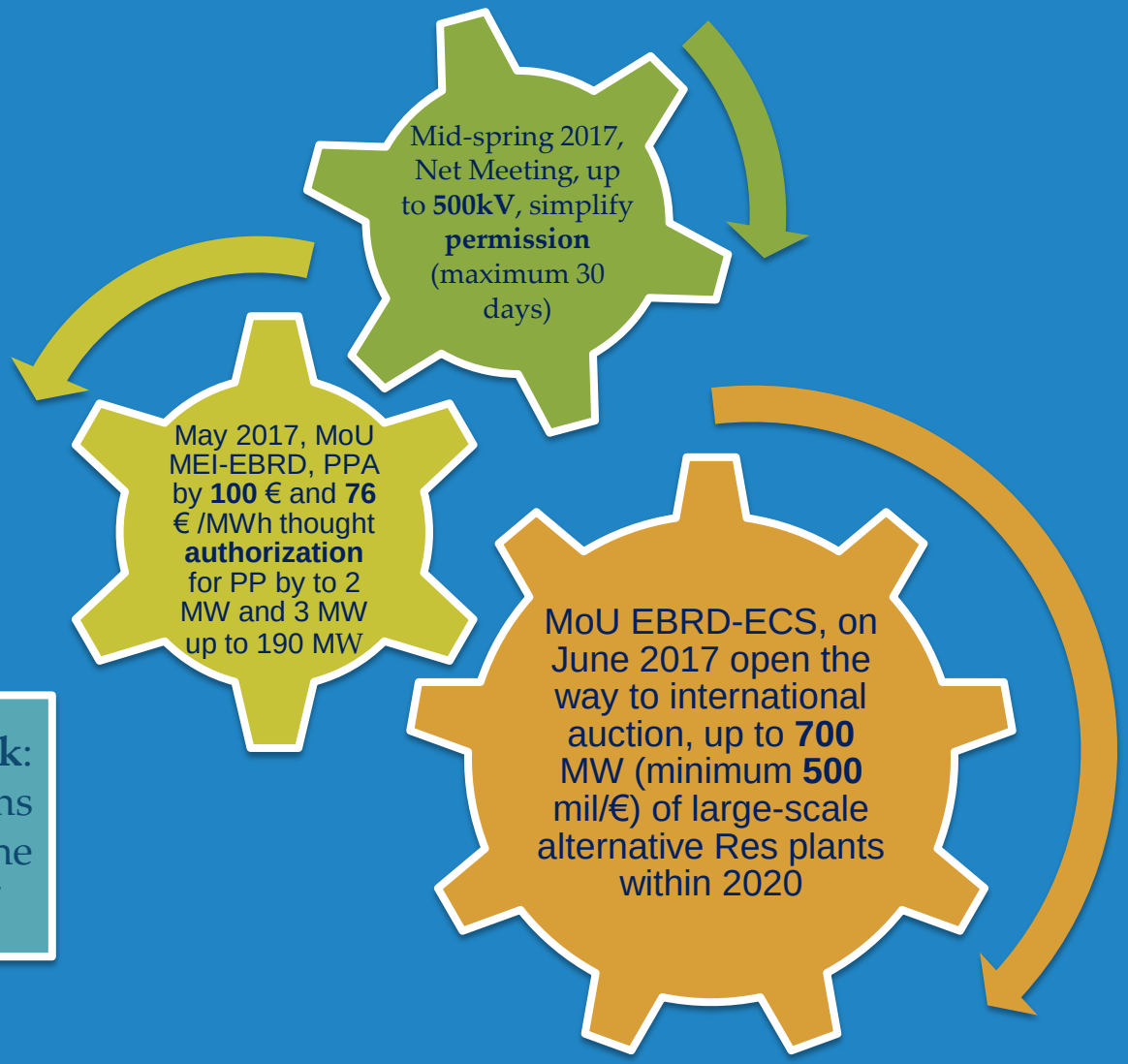
Support mechanisms, incentives and tariffs in Albania energy market

Public assessments and reports confirm that renewable investments will continue to rely on incentives and facilities, fiscal and non-tax incentives even after 2020. However, this is likely to be somewhat more limited and deeply integrated with the aspects connected to the market mechanism.

738 MW (20–35%)

Additional increase need to reach the national target of RES consumption by 38% in 2020

Alternative RES Deployment Revolutions Era in Albania



Legal Framework: Favorable provisions introduced with the new RES Law 7/2017

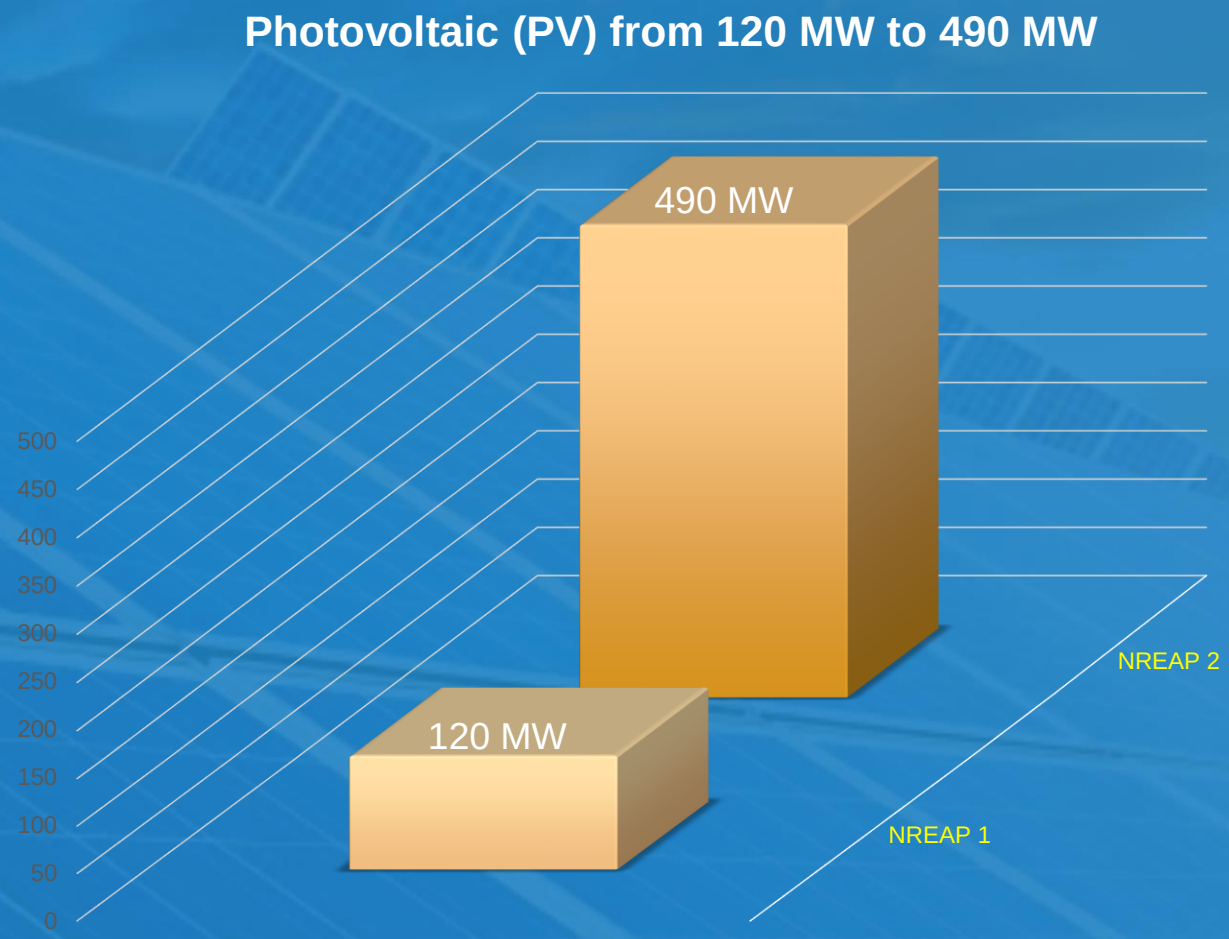
ATTY. Lorenc Gordani, PHD

A summary of RES-E aimed to be added to gross final energy consumption in 2020

	Feed-in tariff (Euro/MWh)	Generation (GWh/Year)	Installation (MW)
Hydropower up to 15 MW (SHPP)	56-66	217	57
Wind	76	555	150
Photovoltaic (PV)	100-72	784	490
Waste to Energy	-	205	41

Albania towards Energy Transition

➡ Expanding the RES-E / PV



Source: National Consolidated Action Plan on Renewable Energy Sources, 2019–2020

ATTY. Lorenc Gordani, PHD

Power Plant PV of Akerni Main Data's

The auction launched in **August 2018** with the support of the EBRD and EnC.

Solar Park with a total capacity of **100** MW.

The 50 MW section was awarded a **15-year** tariff of € **59.9** per MWh.

The remaining **50** MW will be selling power to the local retail electricity market.

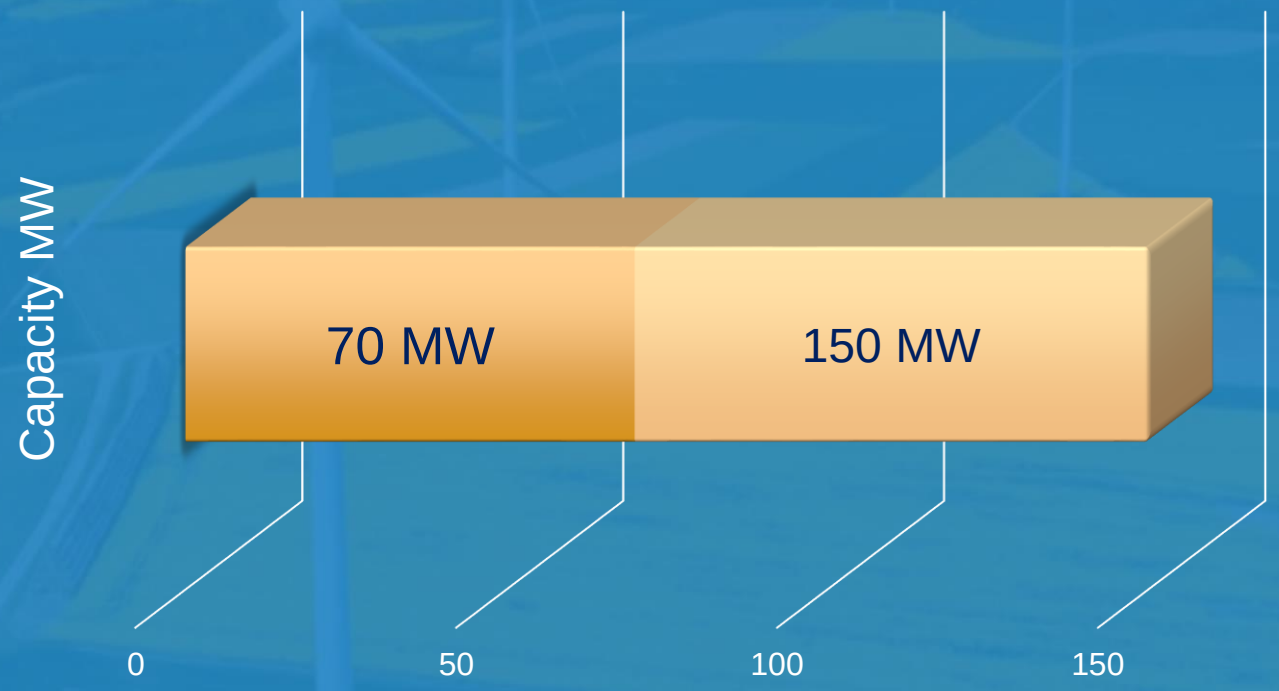
More than **40** companies expressed their interest, with **six bids submitted** and **three** developers shortlisted.

Albania's MIE has awarded a contract to build the large-scale PV project to the **India Power Corporation Limited**.

Albania towards Energy Transition

➡ Expanding the RES-E / Wind

Wind from 70 MW to 150 MW

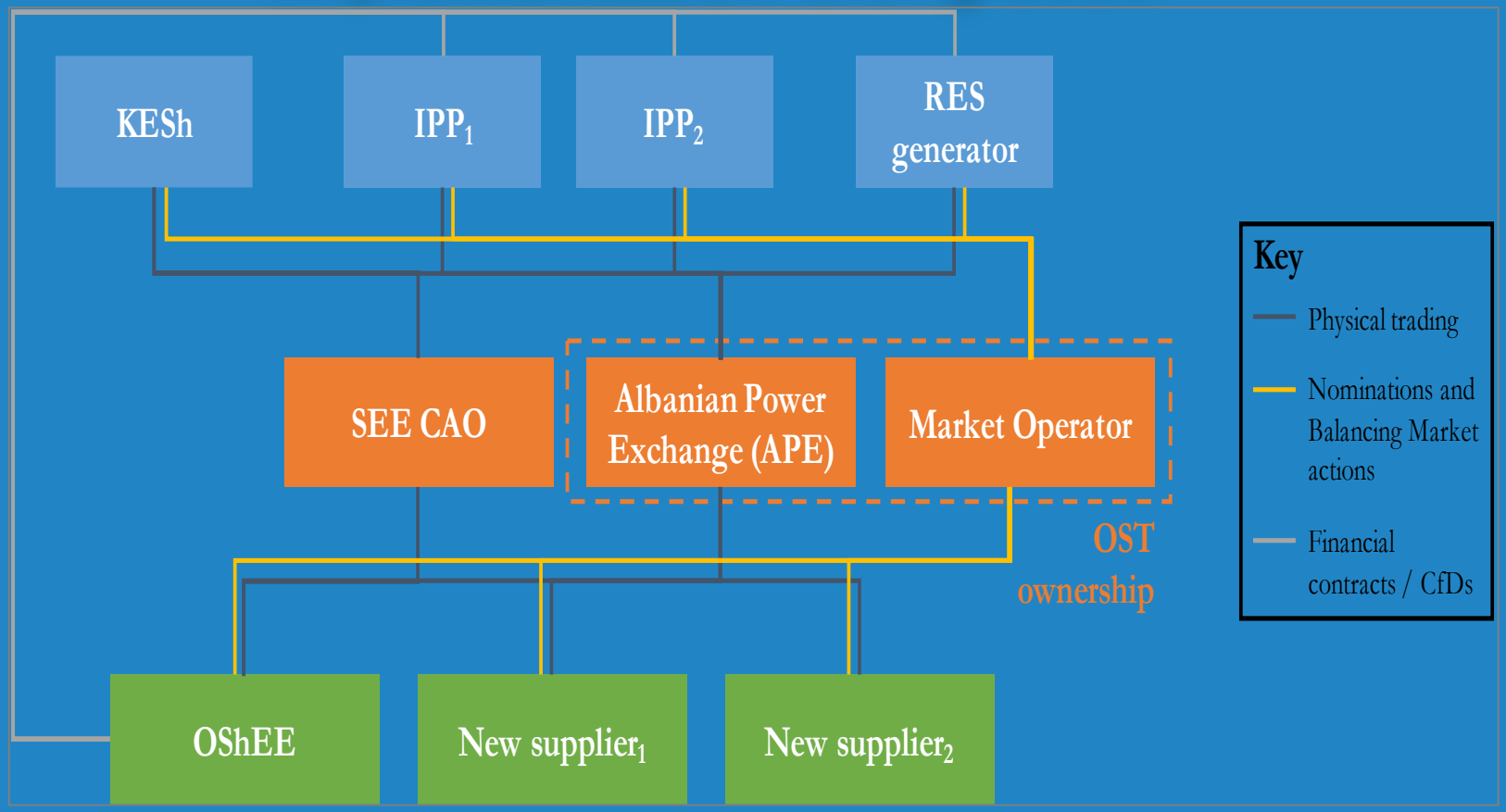


	Expanding of the RES-E 70 + 80 = 150 MW
NREAP 2018	70
NREAP 2019	80

Source: National Consolidated Action Plan on Renewable Energy Sources, 2019–2020

ATTY. Lorenc Gordani, PHD

Albanian Electricity Market Structure implementation along 2020



Source: National Energy Strategy for Albania by 2030

The current state of the Albanian energy market and its future options

- **Networking capacities from SEE CAO**
- **Power Market**
  - Day - Head Power Exchange (APEX)
  - Intraday balancing market
  - Partnering with Kosovo in the first part of 2020 =>
  - Partnering with Greece or
  - PXs SEE or
  - PXs 3WB + Italy (AIMS)

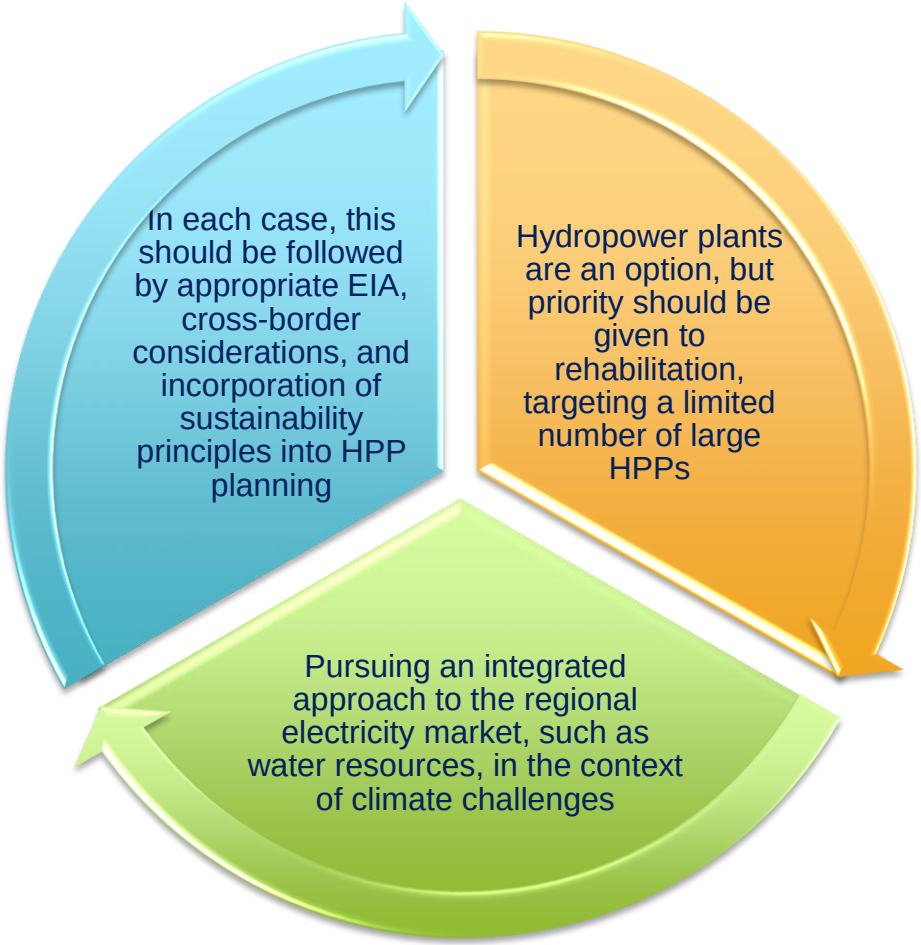
The **market model** and **rules** determine the transition of energy through an **organised market**:

- Large consumers account for about **40%** of consumption;

- Acquisition of power by public companies in the free market of their **losses** (about **22%**);

- Household customers, around **38%**, with regulated tariffs in the cost-reflective methodology.

The indicate approach to the sustainable development of HPPs



Atty. Lorenc Gordani, PhD

A Statkraft hydropower plant by 184 MW starts producing electricity in May 2020

- **Present in Albania since 2007**
- **Two hydropower plants in operation**
- **Installed capacity of approximately 256 MW**
- **Annual production of approximately 700 GWh**

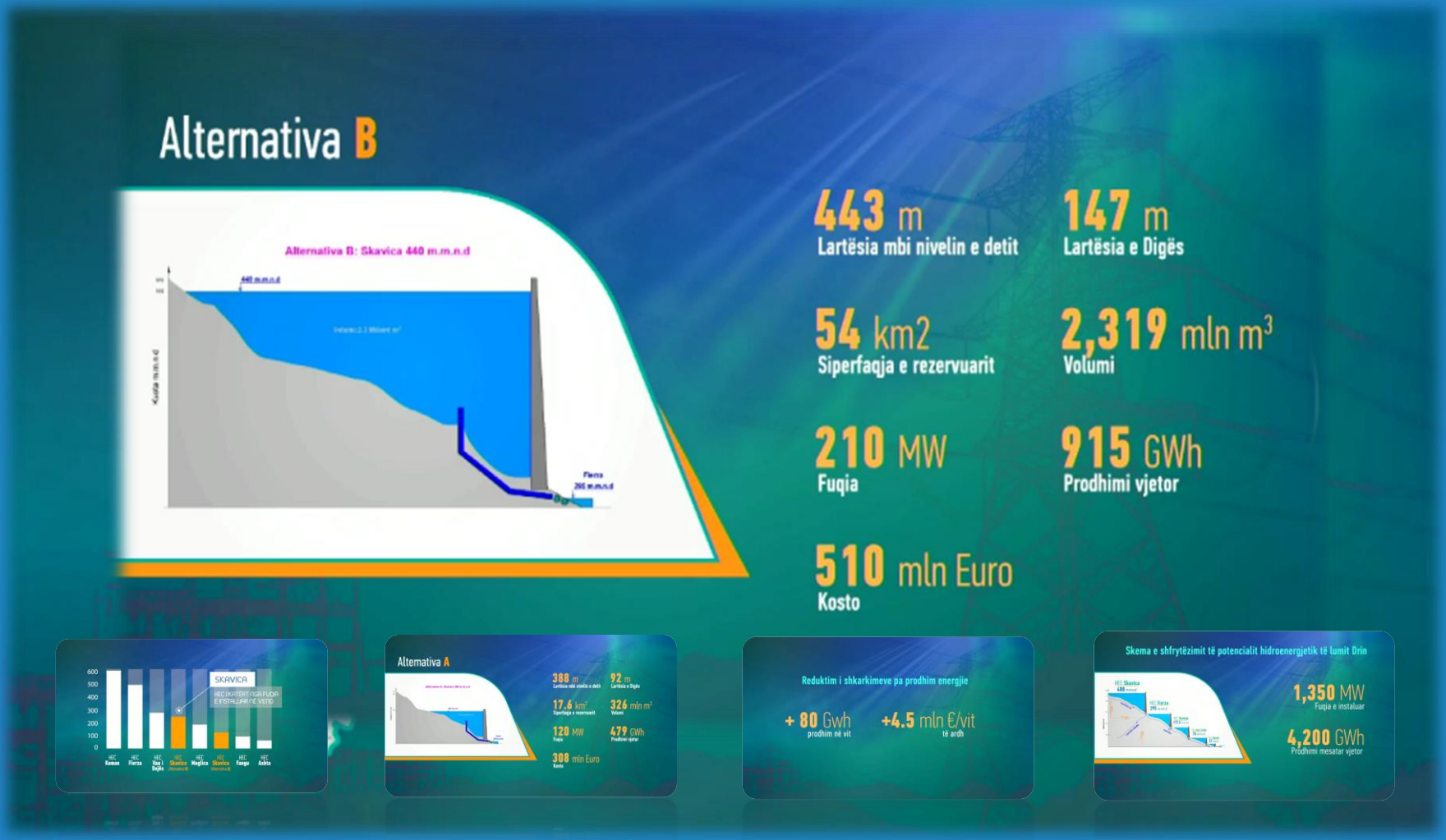
Banja HPP

The first step in the development sequence of Devoll Hydropower Project. 80 metre high embankment dam, which has created a reservoir of approx. 14 square kilometres. The powerhouse approx. 72 MW and generates in average 255 GWh/year.

Moglicë HPP

One of the world's tallest asphalt core dams of approx. 167 metre high, the tallest dam ever constructed by Statkraft. The underground powerhouse installed capacity of 184 MW. The project is entered into commercial operation in the second quarter of 2020.

The start of the HPP Skavica investment of 500 mil/Euro within 2020



ATTY. Lorenc Gordani, PHD

Personal Blog LG

Web | adviser.albaniaenergy.org

This portal is based on a long-term strategic projection, aiming to use technology as a carrier to catalyse opportunities and shorten distances between interested parties.

Thanks!

Any questions?

You can contact me at:

MOB | + 355 68 307 64 88

E-MAIL | lorenc_gordani@albaniaenergy.org

Social Media | LinkedIn Twitter, Fb