

UNECE Sustainable Energy Expert Week 2022

Ninth Session of the Group of Experts on Renewable Energy

Renewable energy opportunities and challenges in
Albania

National Agency of Natural Resources

5-6 October 2022, Geneva

Challenges and Possible Solutions after Hard Talk

- Renewable energy zoning
- Comprehensive energy master plan
- Strengthening of the distribution Network
- RE requirements and balance responsibilities

LEGAL FRAMEWORK

- THE POWER SYSTEM IN THE REPUBLIC OF ALBANIA CONSISTS OF: production, transmission and distribution of electricity in order to supply electricity to customers. Activities are exercised by licensed entities pursuant to Law no. 43/2015 “On Power Sector” amended.
- ALBANIAN ENERGY STRATEGY 2018-2030, Decision of Council of Ministers No.480, date 31.07.2018;
- THE LAW No 7/2017 OF 2.02.2017 “ON PROMOTION OF THE USE OF ENERGY FROM RENEWABLE SOURCES”;
- NCREAP(2019 - 2022), revised and consolidated with DCM. No. 580, dated 28.08.2019;
- THE DECISION OF COUNCIL OF MINISTERS No 349, dated 12.06.2018 (FOR AUCTION);
- DCM No. 822, dated 7.10.2015 “On the approval of the rules and procedures for the construction of new generation capacities of electricity, not subject to concession”.

SUPPORT SCHEMES

"Feed in Tariff"

- Establishment of FiT tariff "Feed-in-Tariff", which consists of a financial support for producers with priority electricity, through the purchase of electricity, at a fixed price, for a period of 15 years;
- "feed-in-tariff" Tariff, photovoltaic power generation plants, with installed capacity up to 2MW(72 Euro/MWh). Wind power plants with installed capacity up to 3MW (76 Euro/ MWh) and HPP up to 15 MW (50.35 Euro/MWh).

"Contract for difference"

- The contract for difference support is based on a variable remuneration, calculated as the difference between the price at which the renewable energy producer is declared the winner in the competitive bidding process (fixed price) and the electricity market price (reference price).

TRANSMISSION SYSTEM OPERATOR

- The Transmission System Operator is a legal entity licensed to perform the activity of electricity transmission, which owns the transmission system and respects the principle of independence. (OST sh.a.) is a public company with 100% of state shares.
- OST sh.a. currently performs the functions of Transmission Network Operator, Market Operator as and System Dispatch System Operator.
- The interconnection lines with neighboring countries:
 - • 400 kV interconnection line Zemblak (Albania) - Kardia (Greece)
 - • 400 kV interconnection line Tirana (Albania) - Podgorica (Montenegro)
 - • 400 kV interconnection line Tirana (Albania) - Prishtina (Kosovo)
 - • 220 kV interconnection line Fierzë (Albania) - Prizren (Kosovo)
 - • 220 kV interconnection line Koplik (Albania) - Podgorica (Montenegro)
 - • 150 kV interconnection line Bistrica (Albania) - Myrtos (Greece).

SYSTEM OPERATION CHALLENGES

Power System Operation is expected to have the major impact from RES:

- Congestion due to loading of transmission lines
- High voltage, especially in low load situations (spring, autumn)
- Frequency Issues (RES lowers significantly the system inertia)
- Observability of RES Generation.

SYSTEM Distribution Problems

SWAT Analysis of RES connection in the Distribution Network

1. Conventional old network
2. Smart Network Distribution absence
3. Distribution capacity insufficiency
4. Old devices
5. Higher technical losses
6. Weak protection system
7. Lack of automatic MV/LV voltage adjustment (No OLTCs)
8. Technical problems, caused by small Hydro Power Plants connections in electrical distribution network, mainly in northeastern region
9. Lack of financial fund
10. Weak inter-institutional cooperation
11. Lack of a standard control according to Photovoltaic connections in distribution network.

1. Worsening of distribution network technical indicators (I, U and $\cos\varphi$)
2. Economic costs increase for maintenance, strengthening and configuration
3. Technological challenges of control and monitoring
4. Weak cooperation between DSO and Hydro Power Plants proprietor.
5. Short circuit current increase in distribution network
6. Electric shock increase during employees network operation.

RES integration in distribution and transmission of electrical energy

- 1. Active Distribution Networks**
- 2. Integration of power electronic technologies**
- 3. Building Smart Grids**
- 4. Establishment of DSM (Communication for DSM) platform**
- 5. Installation of Accumulators (Stationary energy storage)**
- 6. Merger and operation according to the concept of Virtual Companies**

Net Metering Scheme proposed for Pv Auto Producers

- It is suggested that the surplus of the electricity sold to the grid is compensated with the average price of HUPEX of the previous year, until the APEX (Albanian Power Exchange) will be established. This price reflects the concept that the system will offer to the PV produced the price it pays to import electricity.
- The selling prices of electricity produced from PVs, do not influence significantly the financial performance of the investments, as there is a limit in capacity and production. The only exception is the seasonally operated facilities (e.g. summers hotels).
- PVs, including net metering, create an additional cost for the distribution system. This additional distribution cost should be take into account and PVs Autoproducers should pay a certain monthly fee (charge) for using the distribution grid.
- ERE supported by Albanian Energy Stakeholders should initiate a Pv Autoproducer study to define on the WIN-WIN CONCEPT for all above mentioned points

TRANSMISSION NETWORK DEVELOPMENT

- Following another auction round in **January 2020**, a **further 140 MW of solar will be built in Karavasta**, near the **city of Fier**, of which 70 MW will be supported through a PPA with the off-taker at EUR 24.89/MWh, while the rest will be sold at market price. Subsequently, the PPA for this project was signed in November 2020.
- The latest auction bidding round was launched at the end of 2020 for the construction of a 100 MW solar PV **plant in Spitalle, Durrës with a price ceiling of EUR 55/MWh.**
- **WIND AUCTION 100 MW**, The minimum capacity of 10 MW and a maximum capacity of 75 MW. Through this competitive process MEI will select Projects with a total capacity of 100 MW who will benefit from the support measures described below. The Contracting Authority may later decide to increase the total tendered capacity up to 150 MW
- **LONG TERM NETWORK DEVELOPMENT**
 - **New 400kV Line Fier-Arachtos and Closing the Internal 400kV Ring**
 - **Reconstruction of the 220kV double circuit OHL Vau i Dejes-Podgorice**



Thank You!



National Agency of Natural Resources

Bll. "Vasil Shanto"

Tirana, Albania

E-mail: aleskoviku@gmail.com