Session III - SEE VREs grid integration workshop - IRENA
7 November 2018, Vienna, Austria

Albanian Transmission System
OVERVIEW

1. Energy Planning Framework
2. Power Sector Planning
4. Generation Scheduling with high share of VRE
5. Network analysis
Energy Planning Framework

Sources:
- Updated Ten Year Network Development Plan 2018-2028
Power Sector Planning

- Power System Planning Software: Power System Simulation for Engineering (PSS/E), version 33.5.

- PSS/E can be utilized to facilitate calculations for a variety of analyses, including:
  
  - Generation capacity investment scenarios
  - Future generation dispatch scenarios

- For the purpose of conducting a full analysis in the transmission network, has been exploited The Southeast Europe model provided by SECI (The Southeast European Cooperative Initiative) considering Ten Year Development Plan of ENTSO-E.

- Regarding Power demand Forecast module, OST does not use any specific software, but taking in account influence factors in power demand, builds corresponding correlations for a more accurate prediction.
Representation of Renewable Energy in Generation Capacity Expansion Planning Tools

Simulations are performed, starting from base case scenario and implementing planned generation sources as PV node. Later, on the prepared model we perform different analysis such as system stabilities and transmission capacities.
Generation Scheduling with high share of VRE

Step 1: Prepare different scenarios with low share of VRE

Step 2: Managing first instances of grid congestion, and incorporate forecasts of VRE generation in the scheduling and dispatch of other generators

Step 3: Increasing the amount of VRE Generation

- Due to 95% Hydro generation, OST doesn’t have problems regarding flexibility – relating to supply and demand in the face of higher uncertainty and variability

- Very low VRE generation is expected

- Forecasted accuracy not tested yet, actually 0 MW VRE are implemented
Network analysis

- Actually 95% of installed capacity in Albania is RES
- Aim to remain 95% RES
- Network studies are performed using Power System Simulation for Engineering (PSS/E)
- Main concerns are in a maximum generation condition:
  - Low system security
  - Increased voltage profile
THANK YOU FOR YOUR ATTENTION!