



Renewable Energy Coordination Group 2nd Meeting,

Vienna, 10-11 November 2016

**Access to and operation of the networks with an increase
uptake of renewable energy**

Milica Andonov,

**Ministry of Economy
Energy Department**



Access to and operation of the networks with an increase uptake of renewable energy



Determining the electricity system's absorption capacity for particular types of RES is a complex procedure and implies complex technical and economic analyses.

From the pool of renewable energy sources, wind and solar energy are characterized by highest intermittent occurrence and most often their relevant shares are subject to limitations.

In general, there are no major problems related to other technologies (characterized by a relatively high intermittence).



Access to and operation of the networks with an increase uptake of renewable energy



- ▶ Transmission and distribution of electricity generated by RE Producers is guaranteed.
- ▶ The Transmission and Distribution System Operators must transmit all the power from RES delivered to the grid, and the Market Operator must purchase all the energy delivered to the grid by RE Producers that have been granted preferential status at the approved feed-in tariff as stated in Article 153 of the Energy Law.
- ▶ Suppliers and traders are obliged to buy electricity from the market operator for the needs of their consumers in the Republic of Macedonia in appropriately to the share of the nominated electricity in the total envisaged electricity needs for the consumers in the Republic of Macedonia.
- ▶ Priority access is ensured.



Access to and operation of the networks with an increase uptake of renewable energy



- ▶ According to the Energy Law, transmission and/or distribution system operators are obliged to allow access to the relevant system in a transparent and objective manner that prevents discrimination of system users.
- ▶ Further, the electricity transmission or distribution system operators must provide priority access to electricity systems for the electricity generated from renewable sources, taking due consideration of technical limits on the electricity system.



Access to and operation of the networks with an increase uptake of renewable energy



- ▶ The detailed procedures in the Transmission and Distribution Grid Codes described above require that RE Producers receive the necessary information on costs, precise timetable for processing their requests and an indicative timetable for their grid connection.
- ▶ Energy generation facilities with installed capacity of up to 10 MW are usually connected to the distribution grid.
- ▶ EVN Macedonia is obliged to adopt a Decision on the award of approval for connection to the distribution grid within 40 days from the date of receipt of the request.
- ▶ In the Distribution Grid Code there is a separate chapter for connection of the RES to the distribution grid that regulates the procedure for connection, technical issues, exchanges of data between the DSO and the RES applicant for mutually acceptable technical solution etc.



Access to and operation of the networks with an increase uptake of renewable energy



- ▶ Electricity generation facilities with installed capacity of at least 10 MW are directly connected to the transmission grid.
- ▶ The request for connection, prepared on a standard template, and accompanied by a detailed study on the connection to the transmission grid, should be submitted to the transmission system operator (MEPSO).
- ▶ If the relevant operator fails to issue the connection approval decision, or if the connection approval decision is not in compliance with the relevant Grid Code, the entity applying for connection can lodge an appeal before the Energy Regulatory Commission.



Access to and operation of the networks with an increase uptake of renewable energy



- ▶ With regard to dispatch, the only requirements placed on RES Producers are if obtaining the status of a preferential producer:
 - to sell the electricity generated to the electricity market operator, pursuant to its electricity purchase contract;
 - to submit its electricity generation plans to the electricity market operator;
 - to operate in compliance with the terms and conditions stipulated in the Decree on electricity feed-in tariffs (currently under development).



Access to and operation of the networks with an increase uptake of renewable energy



- ▶ Preferential RE Producers operate in parallel with the market in the sense that the Market Operator is required to purchase all power delivered to the grid at the approved feed-in tariff.
- ▶ In this sense, RE Producers are not dispatched, but rather run when the fuel (i.e., wind, water, solar radiation, etc.) and production facilities are available.
- ▶ RE Producers produce energy for use in the market, thus displacing generation using non-renewable resources, but do not actually participate in the market owing to the guarantees relating to access, dispatch and purchase of the energy they deliver to the grid.
- ▶ According to the Market Rules (Chapter Balance Responsibility), preferential electricity producers have privilege of being released from the balance responsibility (paying penalties for deviations from the generation schedules).
- ▶ In other words, they can produce electricity at any time and at any amount, and this electricity will be taken over, paid for, and no system control and balancing charges will apply.



Access to and operation of the networks with an increase uptake of renewable energy



- ▶ Under the Energy Law, it is explicitly stated that network charges are paid by consumers, as follows: The electricity transmission system use charge shall be settled by electricity consumers in the Republic of Macedonia, pursuant to the published tariff.

- ▶ The electricity transmission system operator shall invoice the system use charge to:
 - consumers directly connected to the electricity transmission system which act independently on the electricity market;
 - suppliers or traders, for the consumers directly connected to the electricity transmission system, who do not act independently on the electricity market;
 - electricity distribution system operators or electricity suppliers, for the consumers connected to the electricity distribution systems.



Access to and operation of the networks with an increase uptake of renewable energy



- ▶ The distribution system use charge shall be settled by electricity consumers connected to the distribution grid.
- ▶ The electricity distribution system operator shall invoice the electricity distribution system use charge to consumers connected to the electricity distribution system, as well as the electricity transmission system use charge, pursuant to the published tariffs.”
- ▶ It means that all generators not just RES are excluded from transmission charges and distributions charges.



Access to and operation of the networks with an increase uptake of renewable energy



▶ Contracts for purchase of electricity from RES Producers :

- ▶ 61 SHPP- 59 MW
- ▶ 102 Photovoltaic power plants –16.7 MW
- ▶ 3 Biogas Power Plants- 5 MW
- ▶ 1 Wind Park-36,8 MW

Total: 117,6 MW