

EVN Macedonia: Company profile

Company profile



KEC Organization in Macedonia



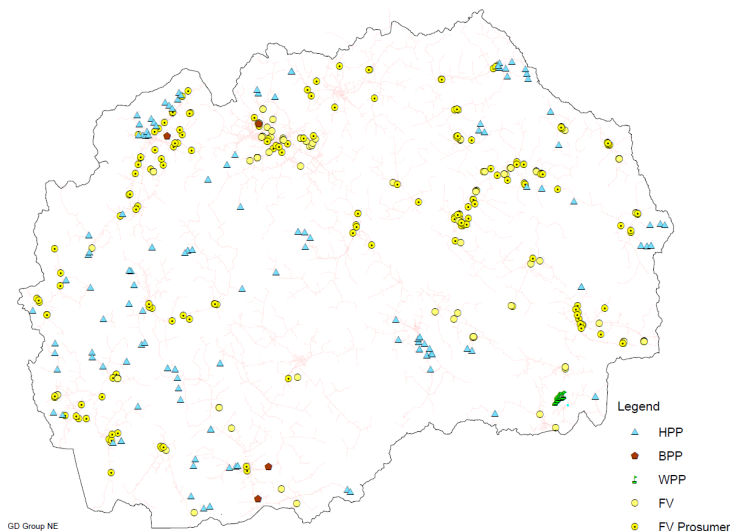
Power grid maintenance

- EVN is present in NMK since 2006, by acquiring the 90% of shares of state owned company
- Core business functions
 - Electricity distribution: Power Network with 8.000 Transformer Stations and more than 2.000 km low-voltage and high-voltage grid
 - Electricity supply: Over 800.000 customers
 - Electricity production: 11 small hydro power plants (inst. capacity 47 MW) + 1 PV (1,5 MW)
- EVN MK Revenues 2020 of approx. € 400m
- EVN currently has 1.972 employees

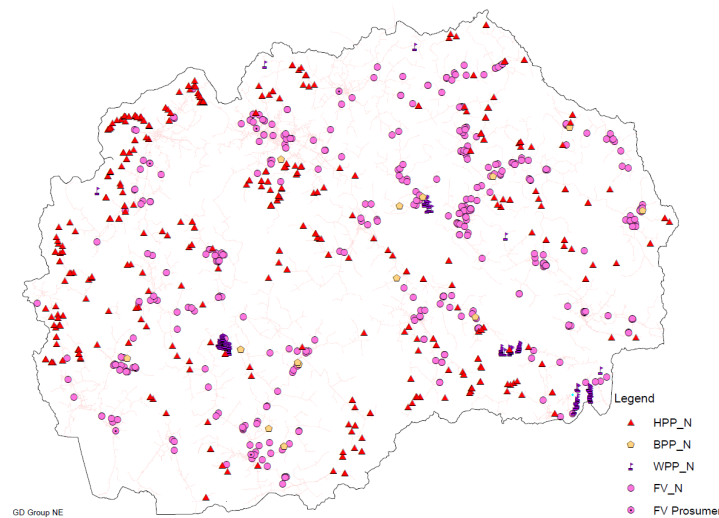
Renewable potential in North Macedonia

Overview of the status and expectations

In operation



Can be expected on mid-term



Renewables	No	Capacity
Hydro power plants	124	491.0 MW
Wind power plants	16	36.8 MW
Biomass power plants	4	7.6 MW
Photovoltaic	126	24.2 MW
Photovoltaic Prosumer	185	9.8 MW
TOTAL	455	569.4 MW

- ? Largest number is related to photovoltaics with potential capacity of about 400 MW
 - Prosumers are supposed to provide about 40%
- ? Biomass is still under feed-in regime
 - Potential of about 15 MW
- ? Additional hydro potential of 40 MW
 - Potential for small hydro plants is widely exploited

Consumers become “active” consumers

The emerging roles of consumers



- ❓ Consumers get new, more active roles across electricity sectors
 - they participate in deployment of renewables by installation of self-generation units
 - consumers are gaining active market role by becoming prosumers
 - it is possible for them to take part in the demand side management



- ❓ New roles come with obligations
 - they have to register in front of the DSO
 - they have to obtain bidirectional meter
 - their equipment must comply with the standards and the network management strategies of DSO

Deployment of Renewables is more than construction and operation of renewable plants

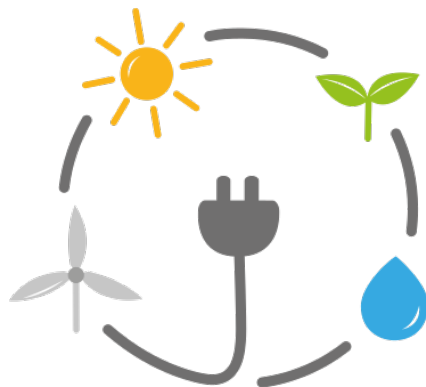


? Optimal integration into the distribution network is essential

- it requires sufficient network capacity
- has to be supported by deployment of smart technologies
- developing effective demand side management for managing the network loads
- integration of storage capacities in the network to manage the loads

? Integration of renewables is particularly challenging for the SEE region

- affordability for the needed technologies
- insufficient investments in infrastructure
- traditional roles of all incumbent stakeholders
- undeveloped electricity markets not suitable for emerging roles of market players
- undeveloped and constantly changing regulation



Market access to overall renewable generation

Additional incentive for deployment



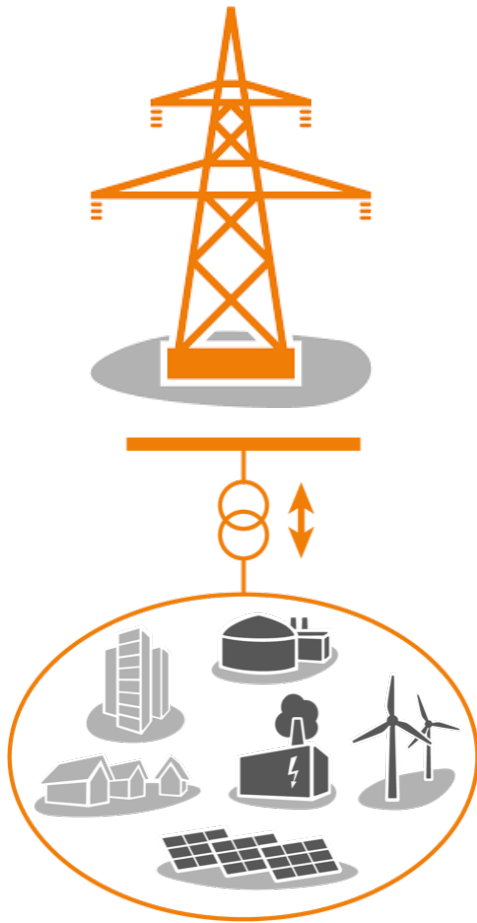
- ❓ Regardless of their size, all renewable generators should be enabled to participate to the market
 - they must have possibilities for selling their production
 - establishment of functional markets for certificates of origin of the produced electricity from renewables

- ❓ Renewable aggregators make energy products more attractive
 - products can not be guaranteed by the producers due to volatility of production → aggregation mitigates volatility
 - especially relevant for smaller scale generation units

- ❓ Market access provides mostly needed incentives for development of prosumer concept
 - it enhances feasibility of their investments

DSO is much more than a distributor of electricity

DSO should act as a facilitator of the renewable concept



- ❓ DSO has to enhance the roles of other stakeholders
 - especially market roles, through switching, providing data for market access, etc.

- ❓ Implementation of appropriate network management strategies is essential
 - possibility to alter consumers behavior, especially in peak hours
 - it is necessary to engage system services from consumers (like electro mobility or batteries)

- ❓ In its allocation of resources, DSO should consider also deployment of smart technologies
 - limited resources are mostly used for network development and reinforcement
 - smart technologies are fundamental for provision of functional renewable production concept