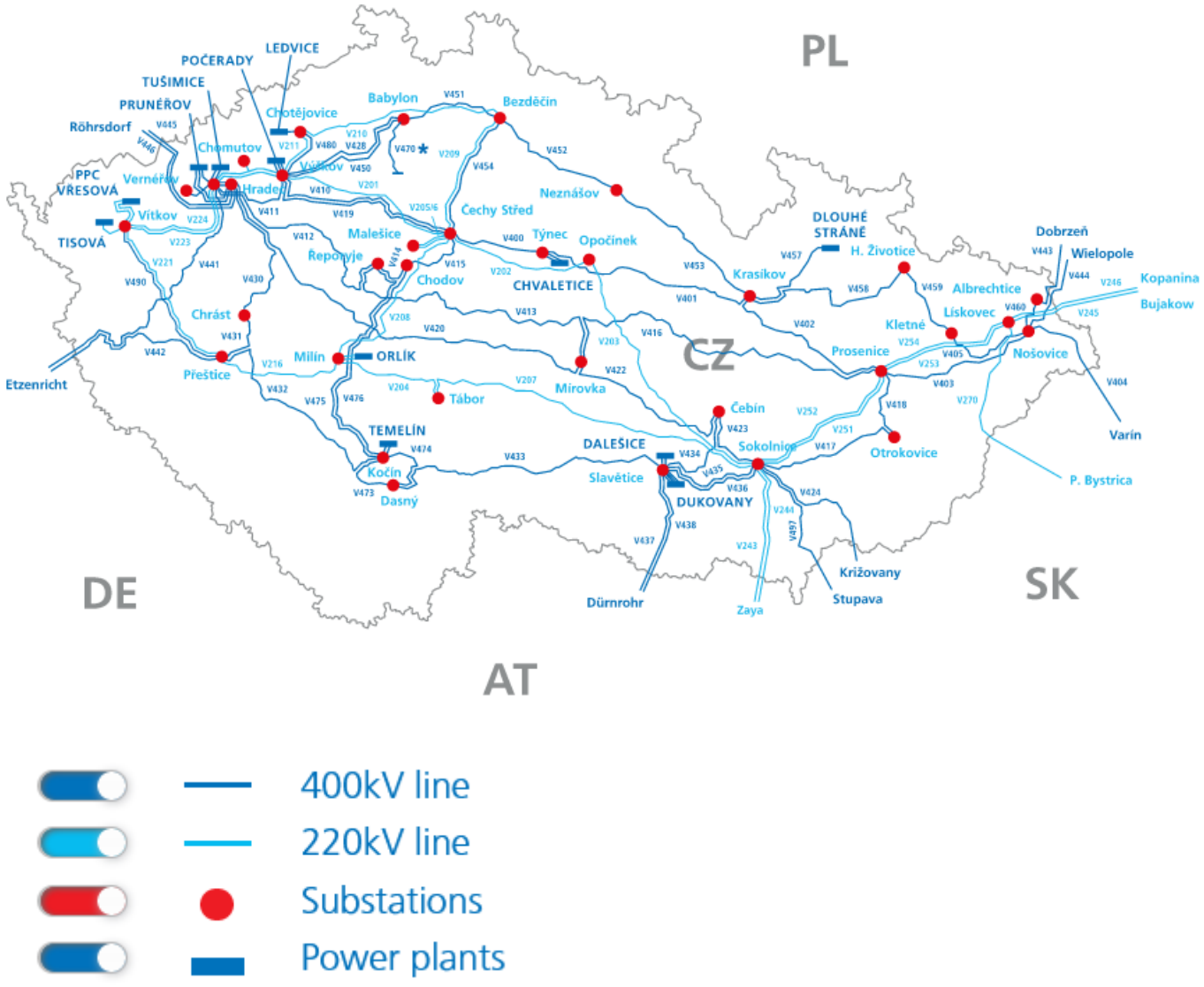
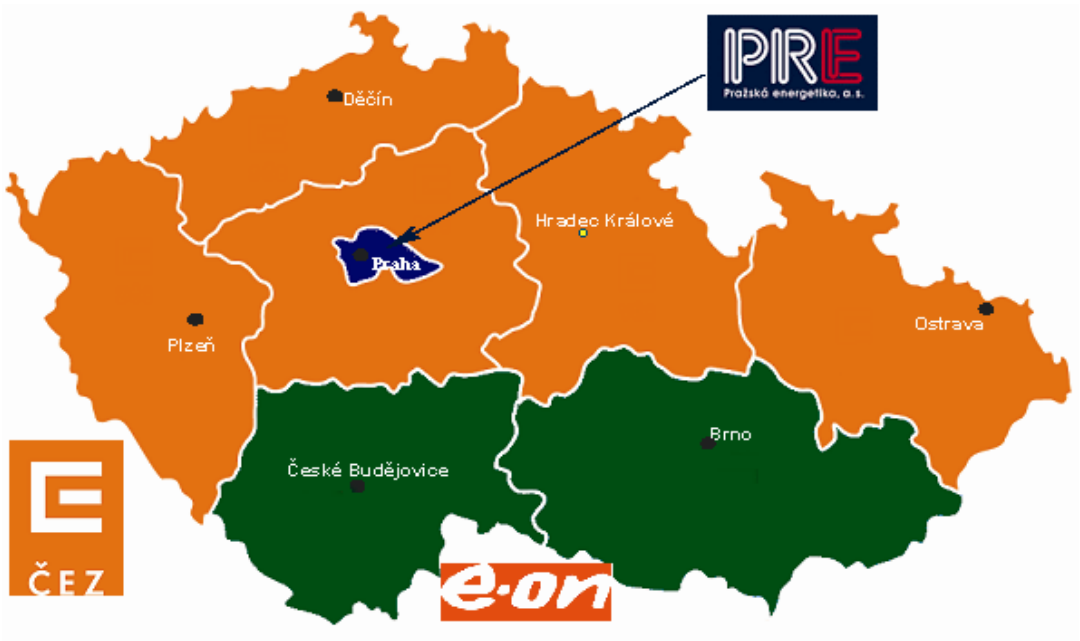
Electric power system of the Czech Republic

The electric power system of the Czech Republic is intensively connected to the ENTSO-E system and is operated with significant international cooperation. The Czech electric power system directly cooperates with five electric power systems in the neighboring states (DE – 50Hertz, TenneT, A - Austrian Power Grid (APG), SK - SEPS, PL – PSE) through eleven 400 kV lines and six 220 kV lines.

Transmission system is operated by ČEPS. It maintains, renovates and upgrades 44 substations with 79 transformers and approx. 5,800 km of 400 kV and 220 kV power lines.



At present, 3 main players in electricity distribution are companies: ČEZ Group (distribution system operator, trader and big electricity producer), company E.On (distribution system operator, trader and small electricity producer in South-Bohemia and South-Moravia) and PRE (distribution system operator and trader in the Czech capital city Prague).



Supply areas of main DSOs

An important role in the liberalized market environment is played by the Energy Regulatory Office (ERO). The competence of ERO mainly comprises the protection of economic competition and protection of interests of consumers in such spheres of power industries where competition is not possible. Its activities include:

- Granting licenses for business in energy industries, their modification, and cancellation
- Price regulation
- Quality regulation
- Ensuring continuity and security of power supply
- Resolving disputes resulting from non-observance of business rules that cannot be postponed due to specifics of energy markets.

Power system parameters

Un	I"k [kA]	Δ U [%]	Max. output of transformers
400 kV	40 - 60	± 5 %	500 MVA (400/110 kV)
220 kV	20 -30	± 10 %	200 MVA (220/110 kV)
110 kV	15 – 30 (2 TR) 9 – 15 (1 TR)	± 10 %	63 MVA (HV/MV)
MV (22 and 35 kV)	15	± 10 %	1,6 to 2,5 (MV/LV)
LV	2 - 40	± 10 % (-15%)	

Czech Power System

Voltage level	Neutral earthing	Network configuration		Design	
		design	operation	substations	power lines
400 kV 220 kV	Solidly earthed neutral point	Meshed	Meshed	Outdoor, rarely enclosed (SF_6) design	Overhead lines, rarely cables
110 kV		Meshed	Meshed or radial		
MV (22 kV, 35 kV)	Isolated neutral point Neutral point earthed via arc-suppression-coil or resistor	Mainly loop system or radial one (less important network)	Radial, sometimes as loop system	Mainly indoor	Cables (cities) and also overhead lines
LV (400 V)	Solidly earthed neutral point	Mainly radial or loop network Meshed network	Mainly radial network	Indoor	Mainly cables (cities) and also overhead lines (rural areas)

