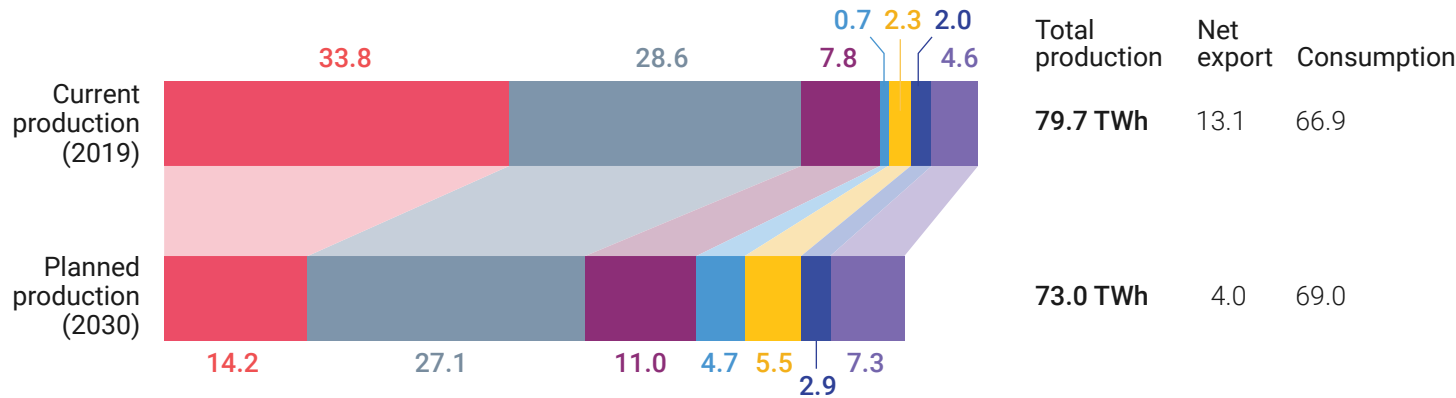


ENERGYNAUTICS: CZECH ELECTRICITY TRANSITION STUDY

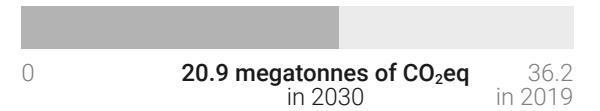
A model for 2030 with focus on transmission grid stability

■ Coal ■ Nuclear ■ Gas ■ Wind ■ Solar ■ Hydro* ■ Biomass, biogas

ELECTRICITY PRODUCTION in terawatt-hours [TWh]



EMISSIONS FROM ELECTRICITY PRODUCTION**



ABOUT

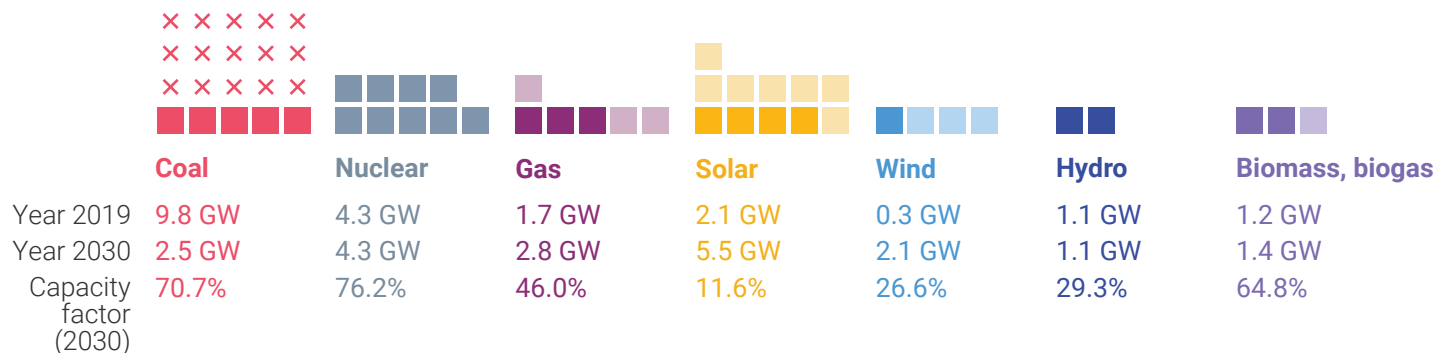
The study was prepared by **Energynautics**, a consulting firm based in Germany focusing on modelling and analysing electricity grid and energy transition.

The study provides a detailed model of Czechia's power transmission in 2030, including versions reflecting adverse weather conditions for generating electricity from wind and solar sources. It assumes that **the only coal-fired sources still in use in 2030 will be combined heat and power plants** and all other coal power plants will have been phased out by then. It also predicts the installed capacity of renewable energy sources based on expert estimates of the achievable potential.

The main conclusion of the study is that **the projected development of renewable sources will not threaten the stability of the grid or security of electricity supply** and the current grid design is not an obstacle to such development of renewable energy sources.

COMPARISON OF INSTALLED CAPACITY in gigawatts [GW]

■ 2019 Current 1× ■ = 500 megawatts of installed capacity
 ■ 2030 New
 × 2030 To phase out



INVESTMENT

Not modelled.

MODEL

Static model of Czechia's electric power transmission + aggregated model of the European grid based on ENTSO-E plans, electricity generation and consumption is modelled in 1-hour resolution. A variant with adverse weather conditions for photovoltaic and wind power plants is presented, as well as a scenario with an unplanned outage at the scale of one block of the Temelín nuclear power plant.

* Excluding pumped hydro

** Climate Facts calculation