

Czech republic solar energy storage

In 2020, the Covid-19 pandemic strongly affected coal production, which decreased by 24% compared to 2019. The contribution of coal in TES declined by 15%, mainly driven by a decreased use of coal in electricity generation (-17%). The share of coal in electricity generation decreased to 41% in 2020, and was replaced by natural gas, bioenergy, nuclear and solar PV.

Renewables do not yet play a major role in TES in the Czech Republic, although their share has increased by 71% since 2009, reaching 16% of total final energy consumption (TFEC) in 2019, mainly driven by bioenergy. Renewables accounted for 22% in heating and cooling, 14% in electricity generation, and less than 8% in transport in 2019.

The transport and building sectors drove growth in final energy consumption, while demand from industry declined. Overall, total final consumption has increased by 2% since 2009.

After declining noticeably from 2005 to 2015, the Czech Republic's total greenhouse gas emissions have been relatively stable, and more efforts are needed to reach the 2030 target of reducing emissions by 30% compared to 2005 levels. To note, however, that energy-related emissions decreased by 14% between 2009 and 2019, reflecting the reduced role of coal in the energy sector.

Looking forward, the government is revising the country's energy policy and related legal and regulatory framework. This in-depth review and its recommendations are intended to contribute to the development of the new State Energy Policy (SEP) and related policies and measures.

The Czech government is studying options of how and when to phase-out coal from its energy mix. For this purpose, the government established a Coal Commission in 2019 that delivered its recommendations in December 2020. It recommended phasing out coal by 2038 at the latest. The government has not yet decided when coal will be phased out and has requested that the Coal Commission analyse options for and the implications of an earlier coal phase-out.

In its recommendation for a phase-out by 2038, the Coal Commission projects that initially coal would be replaced largely by natural gas generation, while the share of renewable sources would increase to 25%, largely in line with the SEP of 2015 and the country's National Energy and Climate Plan (NECP) of 2019. Nuclear capacity would become the single largest generation source if coal were to be phased out in 2038, as new nuclear capacity would become available in 2036. For comparison, according to the NECP, coal would still account for 38% of electricity generation in 2030.

Hence, an earlier phase-out of coal than that recommended by the Coal Commission in 2038 is conceivable purely based on economic considerations. The Czech Republic is not well placed to substitute coal-fired

capacity on short notice other than by importing electricity, as there is currently no new large generating capacity of any kind under construction, or in the pipeline. Any new capacity additions to 2030 are likely to come from smaller renewable installations and decentralised sources.

Independent studies show a potential for around 7 gigawatts (GW) of solar photovoltaic (PV) capacity in 2030 and 1.6 GW of wind power, which combined could contribute 15% of total generation in the same year, compared to 3.6% in 2019. However, the renewables shares for 2030, in both the SEP and the NECP, appear to lack ambition to harvest this potential, with just 4 GW of solar PV and just under 1 GW of wind power. The government is encouraged to undertake a thorough review of the potential of each alternative fuel and to plot pathways of how best to exploit them.

For the renewable potential to materialise, the Czech Republic needs to establish a legal and regulatory framework that would enable new business models, such as energy communities and prosumers. The IEA encourages the Czech Republic to swiftly move forward with the implementation of new framework conditions.

The phase-out of coal and coal mining in the Czech Republic poses important economic and social challenges. Coal mining is an important sector for the regions' employment and economy. The energy transition cannot be successful unless it is supported by the people.

In recognition of these challenges, in 2015 the government launched the "RE:START Programme" as a comprehensive framework for the restructuring and fair transformation of the concerned mining areas. The Czech Republic is hence well placed to leverage the funding to be provided under the European Just Transition Fund, which can be used, among others, to retrain coal miners and power plant workers.

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