

# **Kazakhstan coal-to-electricity energy storage device**





## Overview

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Will Kazakhstan throw coal out of the energy sector?

“The energy sector of Kazakhstan traditionally operates mainly on coal, and the share of coal consumption is quite large. We will not throw coal out of the equation. Moreover, we want to build new coal power blocks and modernise those coal power plants that we already have”.<sup>8</sup>.

Could coal-fired power plants be used in Kazakhstan?

As already mentioned in the previous chapter, some existing coal-fired power plants could be used in Kazakhstan to increase flexibility so as to integrate more variable renewable power in the medium term.

Why is coal important in Kazakhstan?

Coal is the backbone of Kazakhstan's energy sector, generating 66% of all electricity<sup>15</sup> and 80% of thermal energy.<sup>16</sup> It also plays an important role in industry, most prominently in steel production. Kazakhstan fully meets its domestic demand for thermal coal.

Does Kazakhstan need a heat supply system?

However, the ‘Concept for the development of the electric power industry of the Republic of Kazakhstan until 2035’ notes that the creation of an effective heat supply system would be made possible by increasing the share of thermal energy sources based on the use of renewables and alternative energy sources.<sup>59</sup> Kazakhstan therefore requires.

Should Kazakhstan switch from coal to renewables?

In the next few years, Kazakhstan will have to make a choice between trying to maintain the existing structure of its electricity sector (and thus the status quo of its whole economy) at any cost, as one option, and pursuing a transition of its power sector from coal directly to renewables, as the other option.



What is the connection between electricity and heat in Kazakh-Stan?

Electricity and heat are interconnected in Kazakh-stan through CHP to a much higher extent than in most other countries of the world – over one-third of heat in the country is generated at CHP power plants,<sup>74</sup> and CHP is highly reliant on coal. This means that planning for the electricity sector cannot be entirely separated from the heat sector.



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### [What are the energy storage projects in Kazakhstan?](#)

Kazakhstan is engaged in various energy storage projects, employing technologies that range from battery storage systems to pumped hydroelectric storage. Each technology ...

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unity to modernise and diversify the economy. Forward-looking alternative economic activities include renewable energy generation, cleantech manufacturing such as solar PV panels, net ...

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### Energy industry in Kazakhstan

The largest power plants in Kazakhstan are: MAEK gas power plant with a capacity of 625 MW [29], Kashagan oil power plant, with an installed capacity of 238 MW [30], ...

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### **Kazakhstan Energy Information**

Kazakhstan Coal and Lignite Production & Consumption Coal production has decreased by 3% in 2024 to 106 Mt. Previously it had increased by 3%/year since 2015, reaching 110 Mt in 2023. ...

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### [kazakhstan energy storage station](#)

ASTANA - Primus Power, a provider of long-life and long-duration energy storage systems, is working on its second project in Kazakhstan with Samruk Energy, a subsidiary of the Samruk ...

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Therefore, developing energy storage systems is a complex issue that shall be addressed in a comprehensive and prompt manner by all stakeholders involved in order to reap the benefits ...

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Coal-fired power plants are dominant technology in Kazakhstan; Pulverised coal (PC) combustors are mainly used in almost all coal-fired PP; Energy balance shows 82% for thermal PP; 8% for ...

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The newly formed Ministry of Energy is a key policymaking institution with regulatory authority over oil and gas extraction, oil refining, transportation of ...

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## Energy Resource Guide

Kazakhstan - Renewable Energy Take advantage of our market research to plan your expansion into the Kazakhstan oil & gas market. This guide includes information on: Current market ...

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## Kazakhstan's Energy Transition

Kazakhstan finds itself in a situation of carbon lock-in, with a strong reliance on the exports of oil and, to a lesser extent, gas. Its domestic economy is fuelled by cheap ...

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Thermal energy storage. Electricity can be used to produce thermal energy, which can be stored until it is needed. For example, electricity storage can be used to help integrate more ...

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## [Enabling a just coal transition in Kazakhstan](#)

Introduction Coal forms the backbone of Kazakhstan's energy sector and serves as a crucial pillar of the country's entire economy. It is the most important fuel not only for power generation, but ...

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Key Findings 1 Kazakhstan is at a critical juncture where decisive policy action could unlock its significant clean energy potential. Coal powers 66 percent of Kazakhstan's electricity and is ...

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