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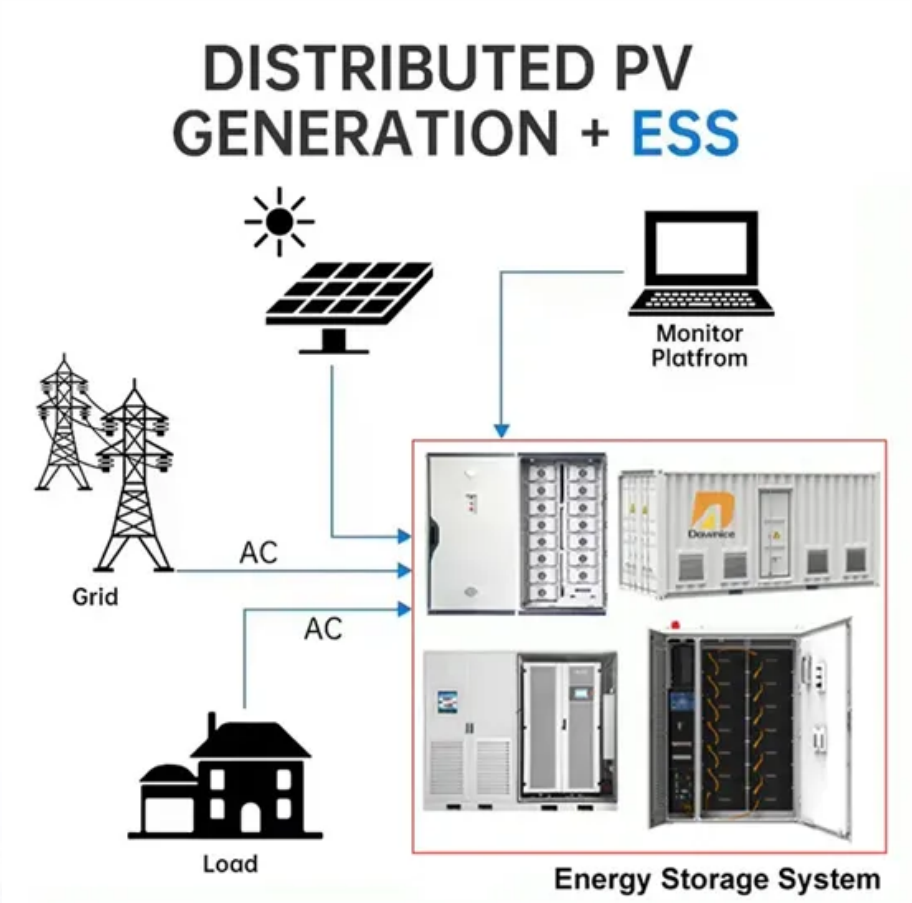
Kazakhstan Low Carbon Energy Storage System Project



Overview

Kazakhstan ratified a $1.4 billion agreement with UAE-based Masdar to build a 1 GW wind farm and 300 MW energy storage system in Zhambyl Oblast, aiming to boost renewable energy capacity and reduce annual CO 2 emissions by 2 million tons.How much CO2 is stored in Kazakhstan?

In Kazakhstan, CO 2 produced from Ammonia production accounts for only 0.2% (Fig. 4). Seven storage sinks from the CCS hubs are considered for CO 2 storage. The Precaspian basin, with a potential total effective storage of 602 Gt CO 2 (Abuov et al., Dec. 2020), shares three storage sinks for Atyrau, Oral, and Aktobe CCS hubs.

What if a CO2 pipeline is built in north central Kazakhstan?

For example, if one CO 2 emitter in North Central Kazakhstan decides to build a 2000–2500 km CO 2 pipeline to storage sites in West Kazakhstan to send its CO 2 emissions, that would be quite an expensive project for one enterprise.

What are the CO2 quality standards for CCS operations in Kazakhstan?

As of now, Kazakhstan has no CO 2 quality standards for CCS operations. Usually, the purity of CO 2 should be more than 95% (by volume) for storage, EOR, and pipeline cases. There are limits on the maximum concentrations of water, nitrogen, and oxygen in the transported and injected gas (Shirley and Myles, 2019).

How many CO2 emitters are there in Kazakhstan?

Notably, the most significant portion of CO 2 emitters in Kazakhstan refers to the power generation sector, and mainly, the power generation plants are concentrated in the Central-North region of Kazakhstan. In our study, 77 CO 2 emitters from various industries were considered, and the total CO 2 emission rate was around 154 Mt/year.

How does manufacturing affect energy supply in Kazakhstan?

tworks results in distribution losses of up to 30% of energy supply.IndustryIn Kazakhstan, manufacturing a counts for roughly 12.9% of total domestic production and 6.6% of employment.In the past 20 years, manufacturing in Kazakhsta has increased significantly leading to an increase in related GHG emissions. By 2020, emis.

How can Kazakhstan achieve a smooth energy transition?

at various dialogue and expert platforms.3.3.2.5. International cooperationTo achieve the objectives, Kazakhstan needs financial and institutional support from the in ernational community to ensure a smooth energy transition across all sectors. Kazakhstan will implemen

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