

PDEOZE PowerContainer

Borneo Wind Solar and Energy Storage Project



Overview

Why was Borneo selected as a subject of Investigation?

Borneo Island is chosen as the subject of investigation because of its strategic importance in providing energy for Southeast Asian countries in the last 50 years (International Energy Agency (IEA), 2022; BP Statistical Review of World Energy 69th edition, 2020; International Energy Agency (IEA), 2021).

How much CO₂ is stored in Borneo?

There is 164 Gt of mid-CO₂ storage capacity in the eleven sedimentary basins in Borneo. Four CCS hubs have been identified which can mitigate up to 41 Mtpa of CO₂ of Borneo's stationary emission. Borneo, the third-largest island in the world, is divided among three countries – Brunei, Indonesia, and Malaysia.

Is Borneo a hydrogen hub?

Overall, Borneo possesses the resources to produce hydrogen. This is based on abundant coal deposits that can be used to produce hydrogen and the numerous oil and gas fields that can be used to store CO₂. Borneo can serve as a hydrogen hub by exporting hydrogen to countries such as Singapore, Japan, and South Korea.

How many CCS hubs are there in Borneo?

Furthermore, this study has identified four CCS hubs for CCS projects in Borneo. The Balikpapan, Kalimantan, Sarawak, and Brunei hubs can temporarily handle up to 41 Mtpa CO₂, or 57% of Borneo's stationary emission, before it is transported to nearby subsurface sites for permanent storage.

Which oil and gas fields are suitable for CCS projects in Borneo?

Results show that 75 oil and gas fields in Borneo are suitable for CO₂-enhanced oil recovery (EOR) or enhanced gas recovery (EGR), with potential

amounting to 1889 MMbbl and 794 MMbbl, respectively. Furthermore, this study has identified four CCS hubs for CCS projects in Borneo.

Is CO₂-EOR a viable option for CCS in Borneo?

The Island of Borneo has enough storage capacity to store 167 years of stationary CO₂ emission of 71 Mtpa in its oil and gas fields. Due to the absence of a carbon tax in the region, CO₂-EOR in the Baram Basin is the economically most attractive option for CCS in the island, which has a cluster of oil and fields close to shore.

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Although it is now possible to build affordable, low-carbon wind and solar systems, and to couple them with energy storage, they still face constraints, including political preferences for large infrastructure projects.

Discover the MCA renewable energy project, based on solar and storage technology, located in the province of Kalimantan, on the island of Borneo.

This ambitious project not only addresses the pressing need for clean energy but also contributes to the preservation of the rich biodiversity of the Bornean rainforest.

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