

EGU24-4703, updated on 11 Aug 2024

<https://doi.org/10.5194/egusphere-egu24-4703>

EGU General Assembly 2024

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Carbon sequestration potential of the Mae Moh mine, Northern Thailand

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The main source of carbon dioxide (CO₂) emissions in Thailand is the energy sector, particularly coal-fired power plants. The Mae Moh lignite-fired power plant, owned by the Electricity Generating Authority of Thailand (EGAT), stands out as the primary point source of CO₂ emissions in the energy sector. Situated in Northern Thailand, this power plant relies on lignite supplied from the Mae Moh lignite open-pit mine in the same vicinity. Consequently, this study conducts a preliminary assessment of the geological CO₂ storage potential of the Mae Moh mine, evaluating its suitability as a CO₂ storage site. The concept of CO₂ sequestration in unmineable coal seams is considered as a potential approach to mitigate CO₂ emissions by injecting CO₂ into these seams. While a substantial portion of the remaining coal at the Mae Moh mine may still be extractable through traditional methods, the feasibility of opening new mines is uncertain. This study aims to evaluate the suitability of coal seams for CO₂ storage, taking into account geological, technical, economic, and safety criteria. The findings of this study are anticipated to contribute to an enhanced understanding of carbon sequestration in coal seams in Thailand.