

## SolarTech Power Solutions

# Laos Chemical Energy Storage Project



## Overview

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Can decarbonised hydrogen and ammonia help Lao PDR achieve net-zero emissions?

1. Introduction The global impetus towards a low-carbon economy has led to the emergence of decarbonised or renewable hydrogen and ammonia as crucial energy carriers that can support the transition of Lao People's Democratic Republic (Lao PDR) towards a net-zero emissions status and sustainable energy system.

Why should Lao PDR invest in renewable hydrogen & ammonia?

Ultimately, the existing and planned hydropower fleet places Lao PDR in a unique position to rapidly adopt renewable hydrogen and ammonia as a new and dynamic industry geared to emerging global trends in decarbonised energy systems and transitions.

Are hydrogen and ammonia production maps enabling factors in Lao PDR energy systems?

To identify additional enabling factors, a group of experts familiar with Lao PDR energy systems were invited to review the hydrogen and ammonia production maps developed by Lao PDR officials during a series of participatory systems mapping workshops (Ward and Smajgl, 2023).

Why is Lao PDR hydropower fleet a good investment?

Utilising the existing surplus from Lao PDR hydropower fleet avoids capital expenditure of new renewable energy. Renewable energy represents up to 66% of total project capital expenditures, and the remaining investment is related to domestic manufacturing and installation.

Why should Laos invest in a refined oil refinery?

With a total processing capacity of three million tonnes per year, the refinery will provide a stable supply of refined oil to Laos, helping it to reduce the

dependence on fuel imports and boost the domestic petrochemical industry. The project will cut oil prices in the domestic market and promote long-term stability in Laos' economic development.

Can alternative ammonia catalytic reactors be used in Lao PDR?

Alternative ammonia catalytic reactors to the Haber-Bosch process are being rapidly developed and tested and may play a substantial role in future ammonia production in Lao PDR (MacFarlane et al., 2020; The Royal Society, 2020; Chegade and Dincer, 2021; Suryanto et al., 2021). 4. Hydrogen Outlook

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