



# Green Hydrogen Value Chain and Green Ammonia Plant in Nepal

## Project Overview

The green hydrogen and green ammonia project aims to promote the green economy in Nepal as a commitment to combat climate change. The project is designed to explore opportunities and challenges in green hydrogen technologies, policies, and potential applications in Nepal, in the short/medium term.

A pre-feasibility study is being conducted for the design and development of a full-scale commercial project to produce green hydrogen, green ammonia and green urea utilizing hydropower.



## Why green hydrogen in Nepal and why now?

- Address the chronic shortage of urea fertilizer in Nepal
- Abundant water resource
- Utilization of surplus hydro energy and address seasonality of electricity production
- Net zero carbon emissions
- Potential to replace conventional fossil fuel and build capacity for other applications at later stage



## What is green hydrogen?

Green hydrogen is produced from green/renewable energy by separating hydrogen from water.

**Project Funding:** Korea Green New Deal Fund (KGNDP)

## Hydropower in Nepal

**Current installed capacity:** 2,200 MW

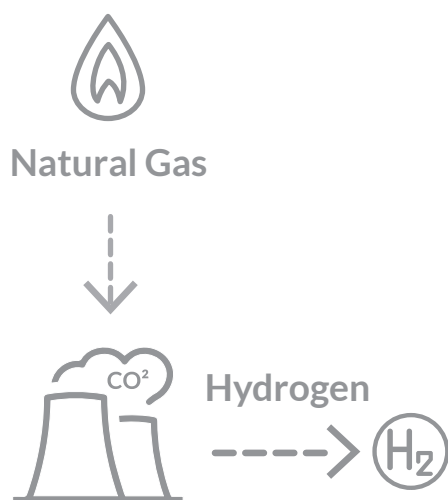
**Official projection for further capacity:** 13,000 MW (2027), 15,000 MW (2030)

**(Source:** Nepal Electricity Authority)

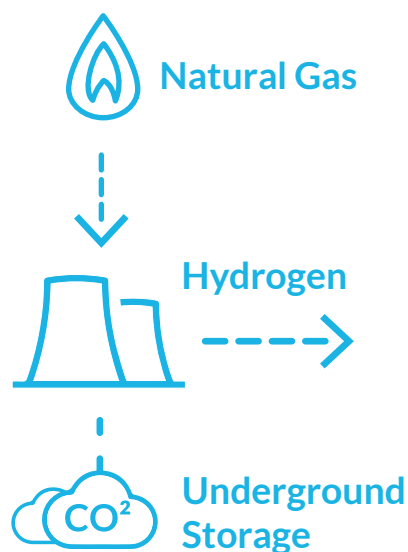
## Project Outputs

- Preparation of a government-owned, national roadmap for the development of a green hydrogen value chain.
- An assessment of options for application of green hydrogen production based on surplus hydro-based electricity.
- Preparation of a green ammonia investment project that will demonstrate the viability and feasibility of green hydrogen-based interventions.
- Investment mobilization through preparation of investor material like information memorandum, information mapping, and investor roadshows to match the project with suitable private and public investors.
- A knowledge sharing platform with participation of national public and private stakeholders, international donors and investors, and interested GGGI developing country members.

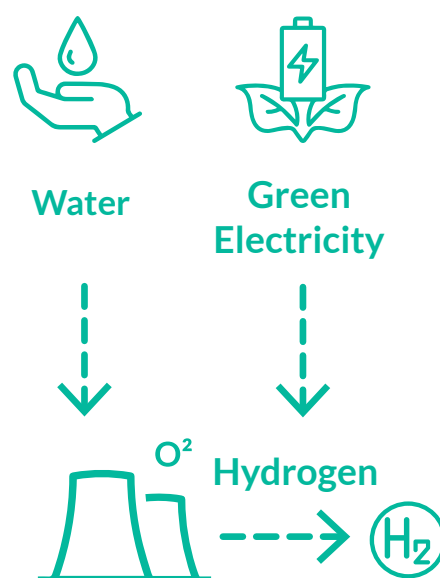
## GREY HYDROGEN



## BLUE HYDROGEN



## GREEN HYDROGEN



### Key facts

According to the World Bank, Nepal is one of relatively few developing countries where the cost of green hydrogen in 2030 could become comparable, or lower, than the cost of hydrogen generation based on fossil fuels, due to its indigenous resources.

### Programs alignment with governmental priorities

The GoN includes green hydrogen as a key component of Nepal's Long-term Strategy for Net-Zero Emissions: "The main idea is to power the industrial, commercial, and agricultural sectors with renewable energy and hydrogen technologies." (Submitted by GoN to the UNFCCC in October 2021, to reach net zero emission by 2045)

### GGGI's global green hydrogen engagement

GGGI is currently exploring green hydrogen project concepts in India, Indonesia, Malaysia and Morocco to adopt green hydrogen for accelerated transition towards clean energy to meet the climate goal under the Paris agreement. This project will build on experiences from the GGGI's Global Green Hydrogen Program.



Ministry of Energy,  
Water Resources  
and Irrigation



Nepal Electricity  
Authority



Kathmandu  
University

### About GGGI

Global Green Growth Institute (GGGI), headquartered in Seoul, Republic of Korea, is a treaty based inter-governmental organization dedicated to promoting and encourage strong, inclusive, and sustainable economic growth in emerging and developing economies.

**Lasse Ringius**  
Nepal Country Representative  
Email: [lasse.ringius@gggi.org](mailto:lasse.ringius@gggi.org)

**GGGI Nepal Country Office**  
2nd floor in II building, Department of Forests  
and Soil Conservation, Babarmahal, Kathmandu