

# Green Hydrogen for Road Transport in Western Australia

July 2022 - June 2025

This project aims at designing and implementing a pilot program which will contribute to the development of the entire industry supply chain for hydrogen fuelled heavy haul vehicles in WA, including hydrogen production, transportation, refuelling infrastructure and vehicle marketing. In Phase 1 of this project, a techno-economic analysis for hydrogen-based heavy transport infrastructure in WA will be completed. The pilot program will be designed and executed in Phase 2, using, initially, a maintenance truck operated by MRWA and a concrete agitator operated by BGC in the Midwest and Perth regions respectively, which will be serviced in a purpose-built hydrogen refuelling station.

## Objectives

The project aims to achieve the following objectives:

1. To assess the strategic potential of renewable hydrogen for heavy haul road transport in WA.
2. To map preferential routes in WA for the deployment of heavy-haul hydrogen-fuelled vehicles.
3. To evaluate the criteria ready to input to a design - to include relevant technical, safety and market - related variables.
4. To conduct a pilot program to assess the performance of the vehicles and supporting infrastructure.
5. To contribute towards building a critical mass to achieve market activation, technology maturity, economic viability and public acceptance and enable a wide uptake of hydrogen in heavy transport both in WA and nation-wide.

## Industry Outcomes

This project will contribute to The Western Australian Climate Policy, developed by the Department of Water and Environment, which was released in November 2020. This policy outlines priorities for WA to transition towards a low carbon and climate resilient economy. The aspiration of Net Zero emissions by 2050 is keystone to the policy. In summary, it is expected that this project will deliver positive impacts to the government, private businesses and general public by:

1. Reducing the total GHGs (CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>x</sub>) and particulates emissions from the road transport sector in WA.
2. Achieving market activation critical to decrease the current cost of ownership of hydrogen fuelled trucks and supporting infrastructure.
3. Demonstrating the technical, economic, environmental, and social advantages of adopting a low (zero)-emissions technology in heavy-duty transport and supporting infrastructure.
4. Enabling the WA Government transport sector goal of a refuelling renewable hydrogen used in mining haulage and regional transportation by 2030.
5. Strengthening fuel security by replacing imported diesel with locally generated hydrogen.
6. Demonstrating hydrogen safety, raise public awareness and community acceptance for hydrogen fuelled vehicles and their positive impact in decarbonising the transport sector.
7. Exploring RD&D opportunities for hydrogen use in heavy and long-range transport and introduce and test innovations in this area.
8. Educating industry professionals about safety standards for hydrogen refuelling stations and safe response to hydrogen related incidents.



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