

PROJECT INFORMATION UPDATE

October 24

Context

Western Green Energy Hub (WGEH) continues to progress its multi-phased wind, solar and green hydrogen development, which is located on Mirning traditional lands across the Shire of Dundas and the City of Kalgoorlie-Boulder. The project area is relatively unencumbered, and advantaged by some of the world's best solar and wind resources.

The WGEH project will, over several generations, stimulate a diverse range of industry and other activities and interests in the region. As such, the project will not be built all at once, but in stages, with the first stage responding to the following key considerations:

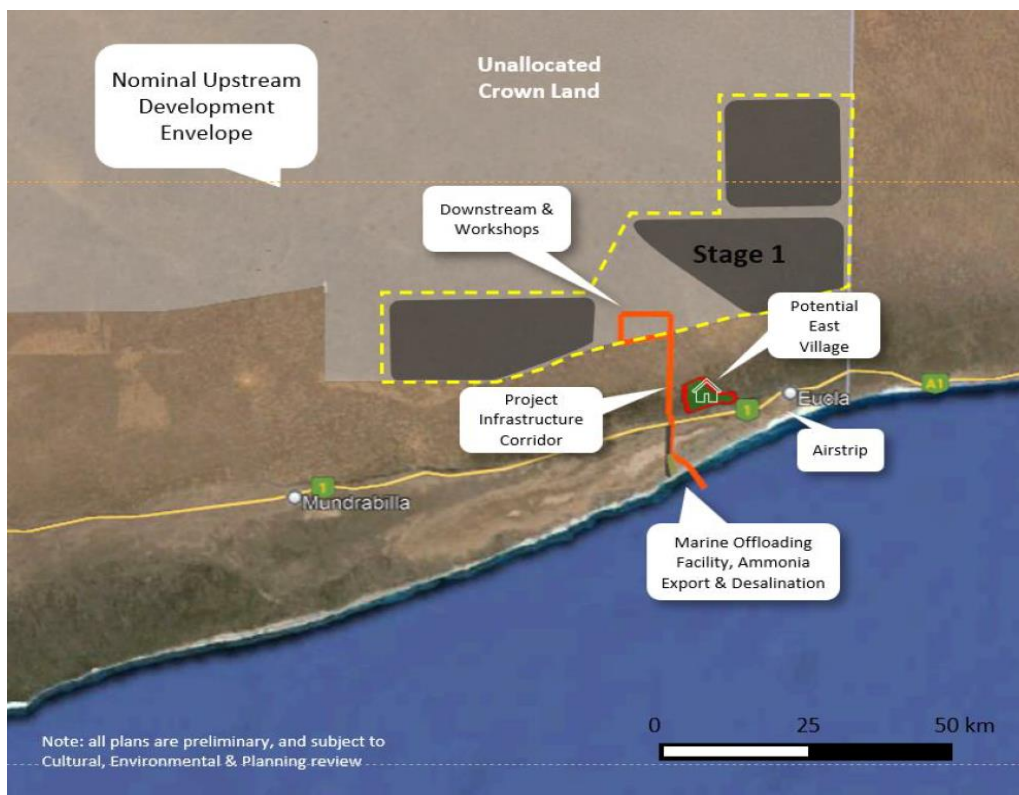
- To be close to the coast for the import of materials during construction and the export of product
- To be able to easily access the main highway for logistics
- To be of a sufficient size to cover initial mobilisation
- To enable the integrated development of power, hydrogen and water infrastructure



Introducing WGEH Stage 1

WGEH Stage 1 represents the first phase of a development cycle. It covers an area of around 1900 sq kms close to Eucla and would generate around 6GW of hybrid wind and solar power, enabling production of 330,000tpa of green hydrogen.

The present configuration of WGEH Stage 1 area is outlined in the map below. This configuration may change as further cultural, environmental, planning and engineering matters are reviewed.



WGEH Stage1 - key elements

WGEH Stage 1 will comprise the following five key project components –

- 'Upstream' wind and solar renewable power generation
- 'Midstream' electrical transmission and renewable hydrogen production, transmission and storage
- 'Downstream' green ammonia/synfuels/hydrogen production storage and export, seawater desalination and brine management
- A Marine Offloading Facility (MOF) for inbound equipment, construction support and other coastal facilities
- Village, temporary construction camps and workshops supporting long-term construction and operation of WGEH

Upstream and midstream

Through the various project stages, WGEH will adopt a modular construction approach with a 'Node' concept – a term simply used to describe 2GW clusters of wind and solar upstream renewable power and a 1GW electrolysis 'Node' installed at the centre of this generation system to produce hydrogen. This will minimise electrical infrastructure and losses and permit the storage of energy within hydrogen transmission pipelines.



Three nodes have been provisionally identified in WGEH Stage 1. Following the establishment of the MOF and some other early works, it is expected that this first stage will take around four years to construct.

Downstream

WGEH presently intends to produce hydrogen across multiple formats, including green ammonia, with related plants to be constructed in the 'downstream'. The downstream area will allow for alternate production options, as technological advantage allows in the future. Downstream also supports site workshops for construction, operations and maintenance and includes, for example, the future assembly of key components and manufacturing of pipes and wind turbine blades.

A dedicated services corridor comprising access roads, piping and electrical transmission will link downstream (Tablelands) to the coast.

MOF and coastal facilities

A MOF is a necessity for the project, given the remoteness of the site and the difficulty of developing without local marine access. The MOF will comprise an excavated channel and basin; breakwaters; and a wharf and hardstand.

A desalination and demineralisation facility is required, which will be set close to the MOF. Most of the water demand comes from the electrolysis process; desalinated water will be available for service and drinking water requirements.

Ammonia will be piped to an offshore export facility. A technology of inner/ outer pipes provides both leak protection and insulation.

Village, camps and workshops

Accommodation and workshop facilities are initially proposed as an 'east village'. This would begin as fly-in fly-out workers accommodation (~100 workers) and transition to a permanent sustainable community, based around the need to accommodate upwards of 1,000 workers to build and support the full WGEH Stage 1.

Summary

WGEH Stage 1 planning and technical solutions may change as further cultural, environmental, planning and engineering matters are reviewed. WGEH places a priority on minimising local impacts, including respecting designated 'no-go' areas and ensuring infrastructure does not infringe upon key features and habitats. The approach to minimise impact remains a priority in developing the project and will continue through each phase of development.

The land requirements of the key project elements have been estimated. While the project will deploy significant numbers of wind turbines and solar panels, the footprint on the Tableland will be minimal. Coastal infrastructure will also be consolidated.

WGEH / KEPCO Collaboration Agreement

Early in September, WGEH and Korea Electric Power Corporation (KEPCO) signed a Collaboration Agreement enabling detailed examination of the WGEH project, including a WGEH Stage 1 feasibility study. This follows an original MoU during 2023 and is another step towards a future WGEH/ KEPCO Joint Development Agreement.

KEPCO is the largest electric utility in South Korea, responsible for the generation, transmission and distribution of electricity and a developer of overseas energy projects, including hydrogen and ammonia. KEPCO is responsible for around 70% of power generated in-country.

The Collaboration Agreement sets out a detailed plan for pursuing a full feasibility study for executing Stage 1 of the project, and covers advancement of project engineering and cost modelling; collaborative engagement with key Korean and Australian authorities and potential sources of project support; and integration of respective Australian and Korean firms that may partner in executing the project.

WGEH Chief Executive Ray Macdonald said "Progressing a feasibility study with KEPCO, which is a proven global performer with large-scale infrastructure projects, and with its extensive national and international network, is invaluable to realising this potential."

General WGEH project information is available here – www.wgeh.com.au