

Western Green Energy Hub

Input to Hydrogen Production Tax Incentive Treasury consultation

July 2024

Overview

1. Western Green Energy Hub (WGEH) welcomes the opportunity to respond to the Government's request for feedback in response to the proposed Hydrogen Production Tax Incentive (HPTI), announced in the 2024-25 Federal Budget as an important pillar of the Government's overarching *Future Made in Australia* agenda and associated legislative package.
2. [WGEH](#) is a multi-phased wind, solar and green hydrogen / ammonia project under development on approximately 15,000 square kilometres of [Mirning Native Title determined lands](#) (WAD6001/2001) across the Shire of Dundas and the City of Kalgoorlie-Boulder in the south-east corner of Western Australia.
3. At full scale, the WGEH project has the potential to generate more than 50 GW of hybrid wind and solar power, which would make it one of, if not the biggest, power projects in the world. When fully realised, the project could produce up to 3.5 mtpa of renewable hydrogen, to be made available and converted to hydrogen derivatives for use in power generation, supply of shipping fuel, minerals processing and heavy transport.
4. The WGEH project shareholders consist of [Intercontinental Energy](#) (46%), [CWP Global](#) (44%) (both with significant global portfolios of renewable energy and green hydrogen hub projects) and Mirning Green Energy Ltd (MGEL) (10%).
5. Alongside their 10% equity in the WGEH project development corporation, the Mirning Traditional Owners also enjoy a permanent seat on the WGEH P/L Board of Directors, 'free carry' for development expenditure in the period through to Financial Investment Decision (FID) on the project's first phase, and full involvement in relevant aspects of the project's co-development. The Indigenous Land Use Agreement (ILUA) currently under negotiation for WGEH is likely to be one of the most significant ILUAs in Australian corporate history.
6. The WGEH project was awarded Lead Agency status by the WA Department of Jobs, Tourism, Science and Innovation in December 2021. An application for Commonwealth Major Projects status is currently being prepared with a view to its submission in Q3 2024.
7. In mid-2023, WGEH signed an MOU with [Korean Electric Power Corporation](#) (KEPCO), Korea's largest energy utility, with a view to negotiate a Joint Development Agreement on the project's first stage and initial production. Work is underway to progress and deepen WGEH-KEPCO collaboration on commercial feasibility development work, and to explore opportunities aligned with Australian and Korean Government priorities, including hydrogen, decarbonisation, trade and new green industrial strategies. WGEH personnel are regular visitors to Korea for meetings with KEPCO and other interested Korean companies.

8. The project consortium last year completed a Concept Feasibility Study for the development of the project, including its phased development approach. We are currently refining plans for a project Phase 1, which could potentially produce up to 8GW of hybrid wind and solar power, and is aimed at Final Investment Decision in 2029, with production to commence in the early 2030s.
9. We understand that this timeline and trajectory for the WGEH project aligns broadly with the vision for rapid scale-up of the renewable hydrogen industry foreseen in the National Hydrogen Strategy (to “become a major global player” by 2030), and brings into focus various avenues for potential Government support as the project develops, including through ARENA, CEFC and Export Finance Australia. The proposed new government “front door” to support investors on the project journey is a welcome development.
10. More detailed information on the WGEH project is available in the annexed Case Study.

The proposed HPTI: the “big picture” and key principles

11. We recognise that at this early stage, there are many important co-design and administrative details to be carefully considered and worked through to ensure the HPTI delivers on its overarching objective to build on the [National Hydrogen Strategy](#) and the Hydrogen Headstart program, and to provide a further boost for the emerging renewable hydrogen industry in Australia.
12. With its vast potential and scale, its position as an islanded, its renewables-only hydrogen production method, and its unique approach to Traditional Owner participation and shareholding, WGEH seeks to position itself as a forerunner project of strategic national importance, including as part of the *Future Made in Australia* policy agenda. WGEH has the potential to support development of a new regional green industrial hub in a thus-far undeveloped area, to reinforce Traditional Owner engagement in economic and social development opportunities, and to be a significant contributor to Australia’s emergence as a “leading global player” and top three exporter of H₂-derived green fuels and processed minerals into key Asian markets.
13. Put simply, Australia will not be able to scale-up its project development and delivery and the resulting renewable hydrogen and derivatives production in a sufficiently timely and competitive manner without early support to accelerate ultra-large scale projects with the potential to meet rapidly expanding markets in Asia and globally. In this regard, we welcome the Government’s commitment to refresh and significantly enhance the resourcing of existing sources of support for renewable energy, green hydrogen and green industrial initiatives, including the second round of Hydrogen Headstart, the Future Made in Australia Innovation Fund and the boost to ARENA’s baseline funding, alongside other support through the Rewiring the Nation and Powering the Regions initiatives.
14. We also believe strongly that there is an imperative for the Commonwealth and State Governments to work collaboratively on progressing the national hydrogen policy and industrial agenda, and provide coordinated support to strategically prioritised projects. By way of example, the WA Government is also refreshing its state hydrogen strategy and has developed new “front door” mechanisms to streamline and accelerate approvals and promote investment. Alignment on these and the multiple approval pathways (eg. environmental referrals at state and federal levels) is critical to incentivise investment and achieve project delivery by the 2030 milestone.

15. With the above framing in mind, and noting the limited time window to respond, we share the following general feedback on the Government's consultation paper and the broader Commonwealth Government policy landscape in which the proposed HPTI sits:

A. A preference for an HPTI scheme that is well-embedded and carefully aligned with national and state-level strategic policy settings and related support schemes.

- We welcome the *Future Made in Australia* policy agenda and proposed legislation (introduced into Federal Parliament on 3 July 2024) as a bedrock for Australia's pursuit of frontrunner status and a leadership role in renewable hydrogen, critical minerals, green metals, low-carbon liquid fuels and clean energy manufacturing.
- Ensure alignment of the soon-to-be finalised updated National Hydrogen Strategy. In previous submissions to the Commonwealth Government, WGEH shareholders have called for:
 - (i) an **updatable series of hydrogen production targets and industry-development milestones**, including a quantified, national green hydrogen production target for 2030, and indicative targets for 2035 and 2040 as part of Australia's overall climate change / decarbonisation effort, and
 - (ii) specific, corresponding renewable hydrogen **export targets** (both firm in the shorter term, and indicative for longer timeframes) **to send a clear signal internationally of Australia's anticipated role in the international marketplace**. Time-bound vector or sector-based targets, (e.g. for green ammonia /shipping fuels, and/or for green iron and/or steel) could also be considered.

B. A simple and certain HPTI to build confidence and facilitate investment in the very best projects.

- We welcome the embedding of the HPTI in FMIA-related legislation and associated regulations to provide the greatest possible investor certainty of tax credit delivery over the long timeframes for renewable hydrogen projects. Guidelines should be as clear, simple and as easy to understand as possible.

C. Eligibility criteria that align closely with the Government's stated policy objectives to support the net zero transition, establish new emissions-lowering technologies and industries, and seize the economic opportunities of the transition by attracting private investment, both at home and from abroad.

- Support the proposed **emissions intensity threshold** of 0.6 kg CO₂e per kg of hydrogen produced on a well-to-gate basis, given it broadly aligns with thresholds for the top-tier of other hydrogen incentive schemes in key target markets. We support a strong verification scheme based on Australia's Guarantee of Origin guidelines, which draw upon best international practice.
- Support inclusion of a requirement that grid-connected electrolyser projects match their hydrogen production with electricity generated in the same electricity grid in order to access the HPTI, thereby **encouraging renewable hydrogen production that is co-located with the best renewables resources** and avoids diversion of

renewables-generated electricity urgently required for accelerated electrification of key economic sectors, including transport.

- Noting that large-scale renewable hydrogen production facilities like WGEH are likely to be developed and financed in a series of consecutive stages, define “**location on a single site**” broadly to allow access to the HPTI to an overall project TopCo and/or Special Purpose Vehicle entities established to take forward consecutive project stages in different areas or “sectors” within the wider project site, each potentially involving different consortia of partners, financiers and offtakers.
- Welcome the proposed **absence of a cap** on the maximum production facility size and the amount of incentive claimed to ensure appropriate support for pursuit of projects with real economies of scale and cost / price competitiveness.
- Welcome and strongly support the inclusion of criteria that prioritise “**community benefit**”, particularly as it relates to:
 - The local and regional communities that emerge and evolve as a direct result of progress by a project like WGEH
 - Real First Nations involvement and participation in intergenerational projects on traditional lands, like WGEH, which concern matters well beyond negotiation of land use arrangements.

D. We support inclusion of clear guidelines and transition mechanisms to **smooth the interface between Hydrogen Headstart’s Round 2 and the new HPTI**. We see logic in allowing concurrent access to both support schemes, noting that the commencement of the HPTI will reduce the requisite reliance on the Hydrogen Headstart scheme in overlapping periods.

E. We encourage broad and creative thinking on the **future of regional and remote Australia**, particularly in areas that have world class wind and solar resources and are relatively unencumbered. The South-East Goldfields location of the WGEH project is one such area. While the location does not have proximity to early-identified hydrogen hub locations or strategic industrial areas, it has the benefit of vast, open and uninhabited space, minimal competing uses, and some proximity to potentially useful infrastructure, for example the strategically important Trans-Australia Railway.

F. While not strictly an aspect of the HPTI’s design and implementation by Treasury, we recommend that the Government adopt **a proactive trade and investment diplomatic strategy** to educate international government partners, investors and potential offtakers of the key elements of the new Australian Hydrogen Headstart and HPTI schemes, particularly in Korea and Japan. Our experience is that government and commercial players in key potential markets for Australia’s hydrogen and derivatives products have been keen to see evidence of stronger Australian Government support for the new industry, not least to reciprocate and contribute to establishing competitiveness for renewable hydrogen in countries already pursuing their own renewable / clean / low-carbon hydrogen incentive schemes. This diplomatic strategy should include close collaboration with the developers of strategically important projects, and incisive advocacy to prevent recipients of Australian “state aid” becoming ineligible for incentive schemes in target markets i.e. to allow two-sided support.



WESTERN GREEN ENERGY HUB

GREEN ENERGY FROM MIRNING TRADITIONAL LANDS

Case Study

INTRODUCTION

The Commonwealth Government is leading a review of Australia's National Hydrogen Strategy to best position Australia "on a path to be a global hydrogen leader by 2030 on both an export basis and for the decarbonisation of Australian industries". The future legal and regulatory framework for green hydrogen production, use and export and the relevant industry and infrastructure support mechanisms put in place by both the Commonwealth and State Governments will be fundamental to the success of Australia's nascent hydrogen industry.

The Western Green Energy Hub (WGEH) project is mid-way through a process to establish commercial feasibility and pursue development of an ultra-scale green hydrogen and green fuels project on a 15,000 sq km site in the south-eastern corner of Western Australia (WA).

The developers intend that the WGEH project will be built in several consecutive phases and potentially operate for many decades. As such, development of the WGEH project will necessarily consider and influence local, regional, and national 'environments' – cultural, social, natural, regional, and economic. WGEH is working to maximise benefits for all stakeholders, with deep and wide consultation and participation envisaged throughout the project development process.

This case study highlights some of the unique characteristics and key enablers related to the early development phases of the project.

WESTERN GREEN ENERGY HUB

WGEH is a phased wind, solar and green hydrogen/ammonia development located on approximately 15,000 sq km of Mirning Traditional lands across the Dundas Shire and the City of Kalgoorlie-Boulder, with an eastern boundary at the WA - SA border.

At full scale, the WGEH project has the potential to generate more than 50 GW of hybrid wind and solar power, which would make it one of the biggest power projects in the world, with the potential to produce up to 3.5 Mtpa of zero-carbon green hydrogen for use in power generation and minerals processing, as well as production of hydrogen-derivative green fuels for long-range shipping fuel and heavy transport.

While it is envisaged that much of the product will be exported, WGEH will have the capability to supply both domestic and international customers, as well as a more immediate supply of low-cost power and water for local offtake.

The WGEH project shareholders comprise Intercontinental Energy (46%), CWP Global (44%) and the Mirning People (10%), with the latter holding exclusive Native Title rights across most of the proposed project area.



Under current plans, the project will consist of:

- Wind and solar power generation and dispersed electrolysis assets across the site area, together with appropriate electrical and hydrogen connection infrastructure.
- A large downstream and processing area where the green hydrogen produced will be converted into green fuels and subject to validation, used for value-added products.
- Supporting / service infrastructure, including a marine loading and offloading facility (MoF); desalination facilities; and workforce residential and commercial facilities.

It is anticipated that many of the inputs for required project infrastructure and assets will be manufactured at site, supported by use of existing trans-continental highway and rail, as well as a new MoF for raw material delivery and green fuels export.

The Mirning have a 10% equity stake in the WGEH project development company and are integral to the conduct of cultural heritage assessments and the negotiation of an Indigenous Land Use Agreement (ILUA) to underpin project activities.

Environmental assessments are underway, as are broad site wind and solar measurements.

WALKING WITH THE MIRNING PEOPLE

WGEH continues to enjoy a unique and fruitful relationship with the Mirning People, who are the Traditional Owners and custodians of the land on which the project is situated. The Mirning's deep spiritual connection to their land and respect for indigenous culture is intrinsic to the development of the WGEH project, with Mirning bringing their unique knowledge and cultural heritage to WGEH business activities.

Under the WGEH shareholders' agreement, the Mirning have a permanent seat on the WGEH Pty Ltd Board and enjoy a significant minority shareholding (with free carry) of 10% in the period through to Final Investment Decision (FID). After the passage of 50 years from FID, the Mirning can pursue majority ownership of the project.

This partnership arrangement described above precedes, and is standalone from, the negotiation of the necessary ILUA arrangements between the Mirning and WGEH. In this way, the partnership reflects the minimum set of benefits that must accrue.

Mirning knowledge-holders are integrated into all on-country assessments for the project, including cultural heritage, environmental and the positioning of wind and solar assets. One critical requirement is the identification, perseverance, and management of Cultural Heritage sites.

Mirning and Spinifex knowledge holders have shared with WGEH the significant Cultural Heritage values of the Tjukurpa (song lines), as well as identified localised Cultural Heritage sites. An exclusion zone 15km north of the escarpment line has also been requested, and agreed to by WGEH, and has guided the planning and layout of infrastructure.

Culturally, appropriate project communications and deep consultation are key to both mutual understanding and consent.

As early-stage project planning progresses, WGEH is exploring opportunities for First Nations-related initiatives, for example: the return of Mirning families to country; intergenerational opportunities for skills, training, and jobs; and ranger programs.

GREENFIELD REGIONAL DEVELOPMENT

While other large-scale renewable and green energy projects are proposed in regions that have historical development and industrial activities, WGEH is in an area that has thus far been relatively undeveloped.

The project's location was identified primarily by reference to the impressive renewable energy resources of the area, including the benefits of the diurnal solar and wind patterns in that part of coastal Australia.

The South-Eastern Goldfields region of WA is relatively unencumbered, offering the potential to pursue project plans and layouts most suited to the development of an ultra-scale green hydrogen hub with various PtX opportunities. This enables the project focus on multiple, "stackable" economic benefits, including new and repurposed infrastructure, new green jobs and industries, cheap green processing of raw materials/minerals and new, value-add exports.

New supply chains and supporting infrastructure will be established to develop WEGH from project inception, precipitating the growth of the economic base of the region.

It is anticipated that many of the inputs for infrastructure and other project assets will be manufactured at site with materials delivered to site via sea, road, and rail. This may include plate steel for the construction of wind turbine towers, as well as the manufacture of blades.

Electricity

WGEH will be built in phases, each based around several concentrated renewable energy generation nodes, and each potentially capable of generating around 2GW of hybrid wind and solar power.

At full scale, WGEH will potentially produce a total of more than 50 GW of renewable energy. According to early planning, there is likely to be available power capacity for use both within and external to the project hub, offering a potential catalyst for new business, industry, and regional development.

Potential availability of power for external use, together with the central Australian location of WGEH, creates an opportunity to consider investment in transmission infrastructure to enhance stability across the South-West Interconnected System (SWIS) in the west and the National Electricity Market (NEM) in the east

Water

WGEH proposes to develop an 80 GL desalination plant, which would draw water from the Southern Ocean for ultimate use in electrolyzers to produce green hydrogen

A 20GL expansion to the plant would be readily achievable, with the extra capacity offering a potential stimulus to new opportunities locally and throughout the region. For example, water could be made available for the local pastoral industry, as well as for new ventures in horticulture and aquaculture, as well as other industries reliant on water.

A potential link to the existing integrated Goldfields supply system, which is presently operating with constrained supply, is also a possibility for future consideration.

Township

WGEH is in principle committed to considering alternatives to traditional fly-in, fly-out (FIFO) arrangements for the construction and operation of the project. This includes the potential development of township / village options within the project site to support dedicated local jobs and promote broader regional development.

Currently, the nearest settlement to planned key infrastructure within the project site is Eucla, with a population of approximately 50.

Village/town options in both the eastern and western regions are under consideration in the early planning phase of project development.

Strategic Location

WGEH is strategically located on the central south coast of the Australian mainland. Development of the WGEH project may open opportunities to enhance monitoring for maritime security and safety, availability of medical services and emergency treatment response, and as a through point for integration of transport and other key infrastructure.

It is notable that there is no safe haven presently available between Esperance and Port Lincoln.

COLLABORATING FOR VALUE

WGEH recognises that projects of this proposed scale and complexity require on-going collaboration with a range of partners and key stakeholders, from the private sector, government and the broader regional community.

JTSI Study

WGEH and the WA Department of Jobs, Tourism, Science and Innovation (JTSI) are engaged in a study to help define the areas where effective collaboration between the project and the WA Government could deliver mutually beneficial outcomes as between the State and other industry and community stakeholders. This includes:

- The potential for marine, accommodation, power, rail, road and other project infrastructure to deliver benefits for other projects and the State.
- The potential for upstream manufacturing and heavy engineering requirements to create new and sustainable commercial activity and economic / industrial sectors within the WA economy.

- The potential for the green hydrogen and other green fuels that will be produced by the project, together with abundant cheap power and water, to create downstream opportunities to produce green chemicals and related products.
- The cross-sectoral development opportunities for local and WA economic growth, particularly in sectors such as agriculture and food, where the availability of large amounts of zero-emissions, low-cost power and water may offer a distinct comparative advantage.
- The likely requirement for the township of Eucla to develop into a major regional centre, both in support of the project development phase and in the pursuit of both upstream and downstream economic opportunities.

Bioregional planning and assessment

During the development phase prior to construction, WGEH will consider the inter-related environmental impact of past, present, and future activities. These considerations are required under both State and Commonwealth legislation.

WGEH continues an engagement in a wide range of environmental studies, including vegetation, fauna habitats, karst features and the potential for significant flora and fauna species to occur. These studies extend to the marine environment, where oceanographic and biodiversity studies are also taking place.

WGEH and the WA Environment Protection Authority have embarked on early discussions regarding the various environmental assessment protocols that would apply to the broad regional scale of the project. WGEH is committed to ensure that robust environmental studies are undertaken in a manner that sets a benchmark for the development of ultra-large-scale green energy projects in WA and nationally.

It is acknowledged that the project area is presently under-represented in the State's environmental database, and the WGEH project development process will add new scientific, landscape and environmental information for broader use.

It is also recognised that reforms to Federal environmental legislation may seek to develop a more comprehensive process of strategic environmental assessment, so that climate adaptation and regional recovery plans are considered alongside a broad range of activities across different bioregions, including the development of ultra-large-scale green energy projects.

Further partnering

WGEH continues to pursue discussions and opportunities with a wide range of potential partners, collaborators, and investors, including in the areas of infrastructure build, technology and other supply chains, as well as potential offtakers. This effort is a critical pillar for the project development process given the immense project scale, the phased development timelines and the anticipated capital expenditure and costs.

By way of example, WGEH recently signed a MOU with KEPCO, Korea's largest energy utility, with a view to negotiating a Joint Development Agreement to underpin participation in the WGEH project. In the first instance, the MOU provides a platform for further, and more detailed collaboration between WGEH and KEPCO as potential future joint project developers.

This development highlights that WGEH is a significant ultra-scale green hydrogen project at both the national and international levels, with invested shareholders and an outlook to secure further project partners and offtake opportunities.

INTERNATIONAL MARKETS AND EXPORT OPPORTUNITIES

The existing National Hydrogen Strategy (NHS, 2019) seeks to position Australia as a major player in the emerging global green hydrogen industry by 2030 and beyond. Studies by the International Energy Agency (IEA), the World Energy Council and others have shown that Australia has the potential to be one of the world's biggest producers of green hydrogen and derivatives, and at a globally competitive cost and deliverable price range, particularly through the development of large-scale hydrogen hubs.

WGEH is well suited to play a significant role in delivering on the National Strategy's vision to pursue a "clean, innovative, safe and competitive hydrogen industry that benefits all Australians, and is a major global player by 2030". The project's massive scale, enviable renewable-energy resource, location, regional development opportunity and First Nations participation make it an exemplar of the myriad opportunities that can potentially flow to Australia from a concerted push into this new industry.

This includes the potential supply of green hydrogen, green fuels and other value-add derivatives to satisfy increasingly clear demand signals from key trading partners, particularly in East Asia and Europe.

In Asia, recent policy announcements in the form of Japan's New Hydrogen Strategy (2023) and Korea's "3UP" H2

Growth Strategy (2022), as well as demonstrated interest from their energy and industrial conglomerates, utilities and potential investors, suggests a ripening of hydrogen energy demand in key East Asian economies. In turn, there is real potential for collaboration, offtake and foreign direct investment to accelerate the emergence of hydrogen industry in Australia.

This is demonstrated by the recent signing of an MOU between WGEH and KEPCO, and an expectation that international offtaker and investor interest will grow as the WGEH project continues to take shape.

WGEH looks forward to deepening its cooperation with East Asian and other partners globally.

IN SUMMARY

WGEH will continue to work closely with the WA and Federal Governments on opportunities that promote and accelerate the development of the WGEH project in line with domestic industry, trade and investment policy priorities to deliver maximum benefit and leadership status for Australia.