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Chief Scientist, Dr Alan Finkel AO
Chair
COAG Energy Council Hydrogen Working Group

Lodged online via: [The Department of Industry, Innovation and Science's Consult Hub website](#)
Copied to the National Hydrogen Strategy Taskforce: hydrogen@industry.gov.au

Dear Dr Alan Finkel AO,

National Hydrogen Strategy – Discussion Paper

TransGrid welcomes the opportunity to respond to the COAG Energy Council Hydrogen Working Group's (**Hydrogen Working Group's**) discussion paper in relation to its development of a National Hydrogen Strategy.

TransGrid is the operator and manager of the high voltage transmission network connecting electricity generators, distributors and major end users in New South Wales and the Australian Capital Territory. TransGrid's network is also interconnected to Queensland and Victoria, and is instrumental to an electricity system that allows for interstate energy trading.

TransGrid supports the Hydrogen Working Group's development of a National Hydrogen Strategy.

Hydrogen could have a promising future role in Australia as a clean fuel and export commodity. Its potential application as a form of renewable energy storage and dispatchable power generation could provide multiple benefits for the National Electricity Market (**NEM**).

TransGrid believes that a holistic and national approach will be important to promote the efficient development and integration of new energy technologies, including hydrogen. This will help ensure that the synergies across different work streams and industries are maximised to achieve the greatest benefits and lowest costs of delivering a new hydrogen industry in Australia.

A strategic and planned national approach will play an essential role in aligning market signals with long-term requirements for industry sustainability, facilitating future investment and achieving an affordable, reliable and low carbon supply of hydrogen.

A practical example of a strategic national approach delivering lower costs and more efficient industry outcomes is the strategic support provided by the Australian Renewable Energy Agency (**ARENA**) and the Clean Energy Finance Corporation (**CEFC**) to the clean energy sector, particularly for large scale solar and battery projects. Research, development and demonstration are supported by ARENA, followed by de-risking and low-cost capital structuring provided by the CEFC to help bridge the gap between concept and commercialisation.

It is important for any domestic or export hydrogen industry to be integrated with the NEM, allowing synergies to be captured across the different work streams, including hydrogen as an export, and to capture co-benefits for the electricity system. Integration with the NEM creates the ability of electricity generation and the network to provide multiple co-benefits for the power system, including:

- > The production of hydrogen creates very large and potentially flexible new load that could provide cost effective energy and balancing services into the NEM, such as the ability to fill in the gaps around variable renewable energy supply and provide some frequency control services.
- > The increased generation and transmission required to serve this new load, if properly integrated into the NEM, could also create a more meshed power system, increasing the resilience and security of the system.

- > The increased utilisation of existing transmission assets could reduce costs for consumers.
- > The potential use of hydrogen for energy storage for certain applications, particularly if it becomes cost-competitive with other storage technology options, could help support the reliability of the power system.

Given NSW is physically at the heart of the NEM, locating aspects of the hydrogen supply chain in this jurisdiction should be considered as part of this National Strategy, where the benefits to the electricity sector are likely to be maximised. It will also be important to consider where new or existing transmission congestion issues may prevent the hydrogen sector from being well-integrated into the greater power system. For example, current constraints in North Queensland create difficulty in exporting energy to Southern parts of the NEM.

It will be important to have clear governance and responsibilities set for the coordination of this national approach. Given the importance of effective integration with the NEM, it will also be critical that the body with the role of coordinating this national approach effectively consults and communicates with key energy industry stakeholders, particularly with the Australian Energy Market Operator (**AEMO**) in its capacity as national transmission planner.

As the National Hydrogen Strategy progresses and solidifies, it is important that projections – such as expected level of supply, availability for domestic consumption and impact on energy demand and infrastructure requirements – are integrated into the NEM planning process. This includes AEMO's Integrated System Plan and transmission network service providers' annual planning reports.

We also recommend the Hydrogen Working Group consider the broader context of their decisions, including the potential implications that a newly established hydrogen industry will have on the energy sector and how it would be integrated into the relevant policy and regulatory frameworks. Without this, there is the potential to undermine efficient investment (including in transmission) and the benefits it brings to consumers.

We appreciate the opportunity to comment on the Hydrogen Working Group's discussion paper and look forward to engaging with the Hydrogen Working Group and other stakeholders further on this project. If you would like to discuss our submission, please contact Dominic Adams, Regulatory Reform Manager on 02 9284 3377.

Yours faithfully



Tony Meehan
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