

# NSW Parliamentary Inquiry: Sustainability of Energy Supply and Resources in NSW

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*Do you have a view on hydrogen's role and mix in renewables?*

## Response to above question from Mr James Griffin

Hydrogen will play a significant role in Australia's transition to a clean energy future. Renewable hydrogen - hydrogen made from water and electricity created using the wind and sun - is an enormous opportunity for Australia, with many billions of dollars of investments possible (1).

Electricity can power any industrial heat process and we know Australia has the potential to power our country with 100% renewable electricity.

## Language matters

It is integral to ensure that our production of hydrogen is made from renewable sources rather than from gas which is a fossil fuel. Here wording is important – some will use terms such as blue hydrogen and green hydrogen. Blue hydrogen is used to describe hydrogen that is made using natural gas which as a fossil fuel, produces carbon emissions. Green hydrogen generally refers to hydrogen made using renewable electricity directly or electrolysis – however this is not always clear and has the potential to be co-opted to include hydrogen that is not from renewable sources.

I also refer the Committee to our [joint submission](#) with Beyond Zero Emissions for the National Hydrogen Strategy to explain this further (2).

We do not advocate that Australia stop using the gas we already have, but we do not need any new gas pipelines or extraction. Gas is not needed in hydrogen manufacturing processes. Indeed, switching to renewable energy would double the efficiency of many industrial processes (3).

## Recommended Hydrogen Uses

Figure 1 outlines the areas for recommended hydrogen uses. While hydrogen has many uses there are some areas that have more efficient transition pathways. For instance, battery powered electric vehicles is the most effective and efficient pathway to zero emissions for passenger vehicles.

Figure 1: Summary of Recommended Hydrogen Uses

Use of Hydrogen	Renewable Hydrogen	Hydrogen from fossil fuels
Electricity Generation	✓	X
Hydrogen export	✓	X
Industrial feedstock	✓	X
Industrial heat processes*	✓	X
Gas network	X	X
Building heating	X	X
Cars & buses	X	X
Large trucks, ships, trains	✓	X

\*For most industrial heat processes it will be cheaper and more efficient to use other forms of renewable energy, such as renewable electricity. But for some large energy users it may be economic to generate hydrogen fuel on-site when electricity is cheap (3).

For more details on hydrogen for manufacturing please see Zero Carbon Industry Plan - Electrifying Industry from Beyond Zero Emissions (3).

## References

- (1) "Meeting the future needs of Australia's energy customers with renewable energy chemicals", T. Forcey, Business Spectator, 4 June 2015.
- (2) The Two Faces of Hydrogen: Renewable hydrogen is a big opportunity for Australia, but beware the fossil-fuel industry co-opting "clean" hydrogen to further delay climate action. Beyond Zero Emissions, Community Power Agency, Queensland Conservation Council, Greenpeace & Renew, March 2019. [https://bze.org.au/wp-content/uploads/Submission\\_BZE\\_QCC\\_GP\\_CPA\\_RENEW\\_National-Hydrogen-Strategy\\_28March2019.pdf](https://bze.org.au/wp-content/uploads/Submission_BZE_QCC_GP_CPA_RENEW_National-Hydrogen-Strategy_28March2019.pdf)
- (3) Zero Carbon Industry Plan "Electrifying Industry", Beyond Zero Emissions, September 2018. <https://bze.org.au/wp-content/uploads/electrifying-industry-bze-report-2018.pdf>