



EPWA-info@dmirs.wa.gov.au
Energy Policy WA

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Thank you for the opportunity to provide feedback on the idea of stimulating demand for clean hydrogen through an electricity target for the South West Interconnected System (SWIS). We would like to commend the WA Government for exploring ways to stimulate demand for clean hydrogen. It is clear hydrogen will play a major role in the future energy mix and as an export that can over time replace fossil fuels. For this to happen we need to establish domestic demand to build supply chains and bring costs down. Your efforts will be very valuable in that regard.

ITP Thermal has extensive experience in this area and would be keen to assist the WA government further if there were an opportunity. Previously we helped the ACT government look at these issues and our report from that is in the public domain at [Green Gas Trading](#). More recently we assisted the Federal government (DISER) with an investigation of the future of chemical feedstocks in a world where green hydrogen plays an ever increasing role.

Your specific support for hydrogen in power generation is in fact one example of the introduction of dispatchable renewable electricity generation. This is an area that will be critical as we move to decarbonise electricity and as increasing amounts of variable PV and wind generation enter our systems. The ITP Thermal report, [Comparison of Dispatchable Renewable Options](#) provides a useful overview of the various dispatchable options, including the use of stored hydrogen.

ITP Thermal is also a shareholder in www.ardentunderground.com a company that is targeting commercialisation of novel large scale underground hydrogen storage. Such storage we believe will increasingly be essential as larger amounts of renewable hydrogen are employed in a de-carbonising world.

ITP Thermal supports an economy wide, renewable gas target for the whole State and ideally the whole nation. Applying the target to more than the SWIS will further stimulate renewable and clean hydrogen demand, innovation and business models that provide value to multiple parties.

	to react from a commercial and investment perspective to each target level.	
12	At a whole-of-economy and / or sectoral level, what do you consider to be some of the benefits, costs and implications of a 1% target, a 5% target, and a 10% target?	<p>Due to industry's need for certainty, the target could be specified in MWh or GJ per year, in the year before the obligation arises. A better approach may be to design the target based on annual fuel inputs.</p> <p>The higher the target and the broader the sectors targeted accelerates progress down the cost-curve. However, the initial years are very high costs, so it is a political decision on how to balance the high short-term costs with the long-term benefits.</p>

Target terms

13	Is the suggested approach of a medium term aggregate target, with annual entity targets, an efficient and effective means to achieve the objectives of the Renewable Hydrogen Target for electricity generation in the SWIS? Why or why not?	The RET operates on annual targets, a similar mechanism would work for the RHT.
14	To what extent should banking and borrowing of liabilities be permitted under the scheme? What are the benefits and costs of a borrowing mechanism as described in the paragraph above?	The RET has allowances for banking and shortfalls, a similar mechanism would work for the RHT.

Scheme commencement and ramp up

15	How soon do you believe a Renewable Hydrogen Target for electricity generation in the SWIS could be feasibly delivered from a technical perspective (i.e. if cost was not a consideration)? Please reflect on your own organisation and/or sector when providing your answer.	ATCO's Clean Energy Innovation Park (CEIP)
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18 In the short (<5 years), medium (5-15 years) and long (15+ years) term, where do you expect the cost of production of renewable hydrogen to move from the estimated levels of today? What do you expect to be the drivers of this change?

The cost of hydrogen production will fall as per standard technology learning curve models as production increases. The rate of cost-reduction will mainly depend on global uptake rates. An additional important consideration is the cost of storing and transporting hydrogen as well as the