

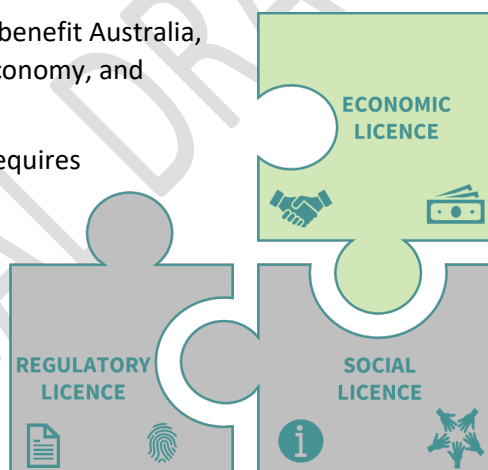
POLICY TARGETS/STANDARDS TO ACCELERATE HYDROGEN MARKETS

Objective

To establish policy targets, standards and funding mechanisms to drive hydrogen production and demand, for discussion with policymakers.

Introduction

- The hydrogen industry has enormous potential to benefit Australia, through new export markets, decarbonising the economy, and supporting energy security.
- However, the industry is still developing and still requires significant investment in infrastructure to become commercial, and particularly to export at the desired level. There is not yet an economic licence to operate.
- The need for policy and funding support remains high if we are to get the industry to scale and deliver benefit to Australian consumers.
- Government can support the development of the hydrogen market in two primary ways: direct funding of production via projects (such as via ARENA); and policy to activate the market. This paper is about policy to activate the market, and particularly incentives to help increase the volume of hydrogen demand, which improves the business case for infrastructure investment.
- Hydrogen enables energy to flow between the electricity, gas and transport systems. This sector coupling capability makes hydrogen incredibly valuable. If incentives also worked across sectors, we would see faster and more efficient growth of the hydrogen industry.



Scope of potential market activation policies

- Demand in electricity, gas, transport, safety, industrial processes, hydrogen-specific.
- Incentives, subsidies, targets, standards.
- Large and small customers.
- Enacted through legislation, regulations, standards, rules, codes.

- National and state focus but using international precedents/expectations where relevant.

Hydrogen market activation policy principles

- 1) Choose measurable targets and numbers where possible.
- 2) Ensure a level playing field with current subsidies for diesel and other energy sources.
- 3) Consider means of having incentives/measures work across sectors.
- 4) Start with transport to build familiarity with the production, handling and use of hydrogen, through the introduction of tried and tested technologies, such as fuel cell electric vehicles.
 - a) Also creates a market pull for hydrogen, with production likely to scale over time as vehicle volumes grow and other hydrogen applications multiply.
 - b) Back to base applications (such as bus fleet) look particularly promising as a first step, as do not require extensive refuelling infrastructure.
- 5) Given the uncertainty in predicting the rate of market maturation, it is reasonable to establish a framework of mechanisms mapped to 5-year intervals to provide the market with some degree of investment certainty, and to minimise the peaks and troughs observed in other renewables markets.
 - a) Identify when and for how long mechanisms such as funding, underwriting risk or demand side targets would run for, when taxes, excises or royalties would be introduced, and at what rate.
 - b) Review mechanisms aligned to the intervals in order to create approach responsive to outcomes.
- 6) Any incentives or government policies created to drive scalability should initially be hydrogen technology agnostic, but with a longer-term pathway (potentially an incentive) to zero carbon hydrogen production.
- 7) Government policy and action (policy mechanisms) should seek to ensure that any part-player in the supply chain can make a reasonable investment decision within a secure overall framework.

What's required

Potential mechanisms to activate the market for hydrogen are shown in Table 1. These support either the supply side (to reduce the cost of production and delivery) or the demand side (to reduce the cost of purchase). The mechanisms tend to fall into four main categories:

- tax credits/incentives;
- new market mechanisms to value utility scale dispatchable renewable energy;
- direct funding; and
- new compliance requirements that stimulate demand.

Table 1: Market activation mechanisms

Mechanism	Government
All uses of hydrogen	
1. Price on net-non-renewable hydrogen production/use, with a target for % of uses as below to be green over time.	Federal
Export	
2. Government-sponsored export regions and special economic zones, such as those used by Hong Kong, Shenzhen, China; Batam, Indonesia; and Berlin, Germany.	Federal
3. Tax credits/incentives for investing in export hydrogen production and distribution.	Federal
4. Shorter depreciation period for hydrogen manufacturing assets.	Federal
5. R&D tax incentive collaboration premium, or equity on R&D incentives regardless of company size.	Federal
6. Bi or multilateral government to government hydrogen trading agreements supported by contracts for difference to de-risk end to end export opportunities.	Federal
7. Hydrogen swap arrangement where zero carbon hydrogen is produced in Australia and swapped for internationally for hydrogen produced from fossil fuels.	Federal
Electricity	
8. Improve market mechanism for electrolyzers to act as flexible load and switch on/off at key times to support both generation and distribution sectors.	States and Territories (NEM and WEM)
9. New energy storage market mechanism to value long-term firming capability.	States and Territories (NEM and WEM)
10. New compensation measure to replace diesel standalone power systems.	Federal/ States and Territories
Gas	
11. Natural gas blending target of 10% to provide investment certainty for regulated asset owners.	Federal/States and Territories
12. 100% hydrogen gas network pilot in a city or precinct. See Innovation and Science's Australia 2030 report (National Mission candidate 3: Hydrogen City).	Federal/States and Territories

Mechanism	Government
Transport	
13. Light vehicle CO ₂ emissions standard suitable for the Australian new vehicle market.	Federal
14. CO ₂ emissions standard for new heavy vehicles (buses, trucks) to bring vehicles to Australia. For example, the EU target is for new heavy-duty vehicle CO ₂ emissions (average) to reduce by 15% in 2025 and by 30% in 2030, both relative to a 2019 baseline.	Federal
15. Euro 6 noxious emissions standards for light and heavy vehicles, to bring vehicles to Australia.	Federal
16. Grants programmes to directly support the installation of hydrogen refuelling infrastructure.	Federal/ States and Territories
17. Income tax concessions for new FCEV and hydrogen powered vehicle purchases (business and individual).	Federal
18. Luxury car tax exemption to all ZEVs. Alternatively, LCT collected on ZEVs diverted to dedicated infrastructure fund.	Federal
19. Remove 5% import duty for all ZEVs (applies predominately to EU sourced vehicles)	Federal
20. Exempt all ZEVs from fringe benefits tax.	Federal
21. Exempt hydrogen from fuel excise.	Federal
22. Exempt all ZEVs from stamp duty.	States and Territories
23. Apply ≥20% registration discount to all ZEVs, such as the ACT 20% discount.	States and Territories
24. Introduce suite of supportive measures such as preferential parking and transit lane access.	States and Territories
25. Procurement targets for government fleets, such as ≥50% of all new vehicles where fit for purpose. This would include privately operated public transport fleets and government owned logistics providers.	Federal/ States and Territories
26. Grants programmes that support price differentials between IC petrol/diesel/LPG equivalents and ZEV for private and public sector fleets.	Federal/ States and Territories
27. Subsidy or grant for business on new FCEV and hydrogen powered vehicle purchases when replacing existing commercial vehicle fleets (vans and trucks of all weight limits).	Federal/ States and Territories
Industrial use	
28. Technology investment rebates (perhaps via tax) that use clean hydrogen to displace gas. Focus on high value products such as ammonia and explosives.	Federal/ States and Territories