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Ministry of Business, Innovation, and Employment
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Feedback on the Regional Hydrogen Transition technical design

Introduction

1. Energy Resources Aotearoa is New Zealand's peak energy advocacy organisation. Our purpose is to enable constructive collaboration across the energy sector through and beyond New Zealand's transition to net zero carbon emissions in 2050.
2. This document constitutes our feedback on the technical design paper for the regional hydrogen transition. We are currently preparing our submission on the consultation for the Interim Hydrogen Roadmap, due 2 November, where we will be making more substantive comments about the role of hydrogen in decarbonising the economy. We refer the reader to our submissions page after that time.¹

Overarching view

3. While in some, specific circumstances, rebates, and subsidies may be useful to achieve particular policy outcomes. However, we are generally sceptical of government interference in markets on the basis this distorts market incentives. Indeed, the use of subsidies in the New Zealand energy sector is highly unusual and could potentially promote uneconomic or inefficient outcomes.

Picking winners may lead to economically inefficient outcomes

4. Rebates represent a significant market intervention by the Government and may have a range of undesirable outcomes. These include, but are not limited to;
 1. **Distorted Price Signals:** Rebates effectively lower the price of green hydrogen for consumers but does not lower the true cost of production and distribution. Consumers make decisions based on artificially low prices, and may opt for hydrogen solutions even in scenarios where other alternatives might be more efficient or cost-effective.

¹ Our submissions are available at <https://www.energyresources.org.nz/publications/submissions/> as they become available.

2. **Overemphasis on Early Adoption:** Rebates might incentivise industries or sectors to adopt hydrogen technologies prematurely, without fully understanding the long-term implications, operational challenges, or total cost of ownership.
3. **Potential for Misallocation of Resources:** If the rebate makes certain hydrogen applications appear more economically viable than they truly are, it could lead to misallocation of resources. For instance, industries might invest heavily in hydrogen infrastructure for applications where electric or other renewable solutions might have been more appropriate.
4. **Overlooking Better Alternatives:** In sectors like heavy transport, while hydrogen can play a role, there are also other competing technologies, such as battery-electric or biofuels. A rebate might skew the market in favour of hydrogen, even in cases where these alternatives might offer better efficiency, lower costs, or other advantages.
5. **Risk of "Lock-in":** If industries invest heavily in hydrogen technologies due to rebates, there's a risk of technological "lock-in." This means that even if better or more efficient technologies emerge in the future, industries might be reluctant to switch due to sunk costs in hydrogen infrastructure.
5. Where interventions are proposed, these should be specific and clear about the market failure being addressed and should demonstrate that the proposal will result in net benefits that exceed the status quo.
6. New Zealand already has an emissions trading scheme (the "NZETS"), which plays an important role in encouraging the uptake of lower carbon emissions fuels. This programme appears to cut across the workings of the NZETS, meaning it is unclear why this market market intervention, in the form of a rebate, is required.

Government support to develop regionally specific hydrogen markets has been decided

7. We acknowledge the Government has taken the decision to develop a hydrogen market, and that initially this market will be developed in the Southland and Taranaki regions.
8. The need for an intervention of this kind suggests there is a perception the uptake of hydrogen has been slow because there is a market coordination failure. This is a 'chicken and egg' problem of providing confidence to both supply and demand side participants that the market will achieve scale to support such investments.
9. Government support measures, such as rebates, could arguably be useful in overcoming decision inertia when considering alternatives to the status quo. However, we suggest that to be effective and justified these measures should:

- clearly identify and specify the market failure being addressed;
 - be clear in their purpose, outcomes, and duration; and
 - identify indicators of success and ‘offramps’, i.e., criteria which will be used to progressively reduce and remove the early market support.
10. Meeting these parameters will support commercial decision makers to invest with the confidence needed to scale up hydrogen as a fossil fuel alternative.

Programme objectives

11. The objectives of this programme appear as a confusing mix of social, environmental, and commercial aims. It is our view this programme should have a singular, primary objective to aid in the development of a regional hydrogen market.
12. We do not believe this programme should have an objective of “delivering social and economic benefits to iwi and communities in just transition regions”. These localised benefits are an outcome, not an objective of economic activity.
13. Indeed, it is not clear if the Southland region will see the closure of the Tiwai Point aluminium smelter in the near term. Indications are the smelter’s owners, Rio Tinto, see the smelter operating for another 15 years beyond the signposted 2024 closure date.² Would this potentially remove Southland from the support offered by the hydrogen rebate scheme? How would the funding be reallocated?
14. Our view is this programme should focus on ensuring early adopters of hydrogen as an alternative fuel source have the confidence and comfort that hydrogen will be available over the long-term and will be cost competitive. This should be at the national level.
15. Therefore, we agree the Government may have a role, at least in the near term, in providing support to investors in their early adoption of hydrogen technology. In part this also addresses the risk of these early adopters subsidising the “fast followers” in the uptake of new fuels.

Framing of rebate eligibility and hydrogen production is unnecessarily strict

16. The criteria read as if eligibility is only open to firms with a demonstrated track record in hydrogen manufacture and supply as well as social impact investing. Indeed, the second line of the eligibility section reads:

² See <https://www.rnz.co.nz/news/business/461084/rio-tinto-wants-to-keep-operating-tiwai-point-smelter-past-2024-closure-date>

“These firms will be established commercial entities with a demonstrated track record and capabilities for delivering innovative green hydrogen projects as well as iwi and community benefits.”

17. The competitive selection process appears to favour larger, well resourced, established players. This approach potentially sidelines smaller producers, or startups and may have the effect of reducing diversity and innovation, through an unnecessarily high barrier to entry for new players.
18. This requirement appears unnecessarily narrow and potentially excludes new entrants considering hydrogen as an alternative to fossil fuels. This criteria also suggests a shortlist of specific projects or firms, already identified, that would meet these requirements.

The requirement for recipients to verify renewable electricity supply is unnecessary

19. New Zealand enjoys a highly renewable electricity generation market. The long-term average for generation is typically over 80% of generation. Though aspirational, the current Government’s target of 100% renewable electricity generation will see this share increase.
20. This requirement largely neglects the extremely valuable role natural gas has in ensuring the stability of the electrical grid. This requirement imposes an unnecessary administrative constraint on potential hydrogen suppliers and should be relaxed.

Commercial aims

21. The rebate contracts are for a period of up to 10 years with contract scale between NZ\$10 and NZ\$60 million. Given these contracts will come with minimum consumption obligations, it is unclear from this document how these values and durations translate into any specific or proposed projects at might have broader development appeal to other potential hydrogen users – that would be able to meet the selection criteria.
22. An example of this might be a logistics firm looking to replace heavy transport vehicles and may be considering hydrogen powered alternatives. Fleet turnover timing may not lend itself to a commitment of such magnitude for these firms.
23. Indeed, in the case of heavy haul trucking, where the goal might be to encourage the uptake more broadly, the rebate design favours the supplier not the consumer of hydrogen.
24. Further, the comparison between fuels should be on a cost per kilometre per delivered tonne basis. This approach then compares the long-term average delivery metrics for conventional fuels against the low-emissions alternative, removing the difficulty in comparing energy density.

Our preference is for hydrogen to stand on its own commercially

25. The Government has a stated preference for the development of a green hydrogen market. Clearly the economics for green hydrogen are challenging, hence the perceived need for Government intervention in the form of a rebate programme.
26. The vast majority of industrial hydrogen production uses fossil fuels, with natural gas accounting for about 48% of production. It would therefore make sense for all forms of hydrogen production to be considered. This includes opportunities such as “blue hydrogen” production, with carbon capture and storage (therefore “net-zero” production). This approach would be consistent with New Zealand’s 2050 emissions target.
27. By allowing all forms of hydrogen production to be considered for this rebate this would help create and grow the hydrogen market to scale, in readiness for green hydrogen.

Conclusion

28. We acknowledge the Government efforts to support the development of a hydrogen market in New Zealand. However, we do not agree this support should be through a narrowly focused, regionally specific rebate scheme.
29. We question why eligibility is limited to Taranaki and Southland. Indeed, it is not clear whether Southland, selected as one of the beneficiaries of this programme, will see the closure of the Tiwai Point aluminium smelter in the near term, and will therefore disproportionately experience economic hardship from decarbonising the New Zealand economy.
30. It is our view that because this programme is developed as part of a “just transition” framework the eligibility criteria and social impact investing requirements give the programme an unnecessarily narrow focus. The primary objective should be hydrogen market development, with social benefits being an outcome, not an objective.
31. Finally, we wonder about the opportunity cost to support this rebate programme. Perhaps the money budgeted for this programme may well be better applied to our health or education systems.
32. Thank you for the opportunity to provide feedback on this matter. Should you wish to discuss anything in this submission further, or seek clarification, please contact Craig Barry, policy director upstream and climate, at craig.barry@energyresources.org.nz or on 021 967 326.