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Re: Renewable Fuel Scheme Rule consultation

Dear Sir/Madam,

Jemena welcomes the opportunity to respond to the consultation paper about the draft Renewable Fuel Scheme (RFS) Rule.

Jemena owns and operates a diverse portfolio of energy assets throughout northern and east coast Australia. With more than \$12 billion of major gas and electricity infrastructure, we deliver energy to millions of households, institutions, and industries every day.

Our assets include the Jemena Gas Network in New South Wales, the Jemena Electricity Network in northwest Melbourne and gas transmission pipelines such as the Eastern Gas Pipeline, Darling Downs Pipeline, Queensland Gas Pipeline and the Northern Gas Pipeline.

Our group is also in partnership in the ActewAGL gas and electricity networks in the Australian Capital Territory and owns 34 per cent of the United Energy electricity network in southeast Melbourne and the Mornington Peninsula. In addition, our group includes Zinfra, an energy services business, which provides project management, construction, operations and maintenance services for the electricity and gas sectors. Together with Zinfra, the Jemena group employs nearly 3,000 people.

For this reason, we are uniquely placed to understand the potential of renewable gases and gas infrastructure to decarbonise the NSW economy and how the RFS can support this objective.

We support the development of a market-based certificate scheme and other mechanisms to activate a market for renewable gases in NSW such as green hydrogen and biomethane, which provides optionality and a cost-effective decarbonisation pathway for gas users and other energy consumers. We have valued the opportunity of working with NSW Department officials as they have developed the RFS and would be pleased to continue to engage on this important initiative.

We understand that this consultation paper is seeking feedback on the key proposals for the first draft RFS rule, which sets out the requirements for creating renewable fuel certificates for green hydrogen production and we have provided the following key recommendations.

Key recommendations

- The RFS should provide liable parties (i.e., gas users) with the **exclusive right** to purchase the green hydrogen and claim it against their total gas consumption to ensure that the beneficiaries of the scheme are the ones paying for it.

- **Gas networks** can transport a blend of green hydrogen (10% by volume) to consumers to support a least cost emission reduction outcome for natural gas users without any substantive change to networks or end use appliances.
- It is important to align the RFS rule with the forthcoming '**GO Act 2024 (Cth)**', on the proviso that the GO scheme will enable the certification of network-injected hydrogen and emission reduction claims for domestic users, and future renewable fuels are included in the RFS scheme.
- **Liable entities** should be able to **claim Scope 1 emission reductions** using certificates (either GO or RFS) under the National Greenhouse and Energy Reporting (NGER) scheme. This would avoid a double cost impost on gas users seeking to use renewable fuels to meet the requirements of carbon reduction schemes, such as the Safeguard mechanism.
- Limiting the eligible renewable energy certificates to **GreenPower products** creates additional complexity and costs without further assurance on the use of renewable electricity or additionality requirements to certificates to be recognised under the GO scheme.
- The **Western Sydney Green Hydrogen Hub** is currently an R&D facility and should be able to create RFS certificates below annual baseline generation if it transitions to commercial production of green hydrogen.
- Consideration needs to be given to the integration of the RFS with the **Australian Carbon Credit Unit (ACCU)** scheme to prevent misalignment of incentives and double counting of emissions reductions for fuels included in both schemes such as potentially biomethane.
- **NSW Government's financial commitment** to purchasing RFS certificates, and/or providing targeted support for green hydrogen, will be critical to minimising excessive cost implications for liable parties including existing gas users, such as large users and vulnerable customer groups.
- The RFS should be **expanded** to other renewable fuels (particularly **biomethane**), production pathways and liable parties as soon as practicable to accelerate the reduction of Australia's emissions.

We have provided below our specific responses to the key proposals and future work included in the Consultation Paper. In addition, we have also taken the opportunity to provide our general feedback on the scheme design, including the key issues and risks for gas users.

For more information regarding Jemena's submission or to arrange a discussion please contact Tania Coltman, Manager Policy and Government Relations via tania.coltman@jemena.com.au

Yours sincerely,



Shaun Reardon

Executive General Manager

Jemena Networks

Jemena's general feedback

Whilst the purpose of this consultation is to seek feedback on key proposals in the draft RFS rule, Jemena would first like to provide general comments on the RFS and in particular highlight the key issues and risks for gas users.

We note that the purpose of the NSW Hydrogen Strategy is to develop a cost-competitive hydrogen industry and the introduction of a Renewable Fuel Scheme is one of the key initiatives to create financial incentives for the production of green hydrogen.

We understand that, as currently designed, the RFS is a market-based certificate scheme with annual green hydrogen production targets set in the Electricity Supply (General) Regulation 2014. Green hydrogen producers create certificates based on the amount of hydrogen they produce while retailers and large gas users that don't purchase gas through a retailer (i.e., liable parties) are required to buy and surrender certificates equivalent to their share of production target. As a result, gas consumers would be paying for the full cost of the scheme as it is reasonable to assume that the certificate purchase price paid by the retailers would usually be passed on in full to gas consumers.

Risk of most gas users not having access to the hydrogen, thus cross subsidising the decarbonisation of others

Whilst we agree that financial incentives are critical to supporting the nascent hydrogen industry, we believe that the scheme in its current design would create an inequitable outcome for gas users by requiring them to pay for the full cost of the scheme without the assurance of deriving a direct benefit from it. We understand that renewable fuel certificates would only be used to meet liabilities under the RFS and could not be used to claim the purchase or use of green hydrogen. Instead, the 'physical hydrogen' and the associated emission reduction claim could be purchased by any end user (as outlined in Section 4.5 of the Consultation paper).

This would result in gas users bearing the full cost of the scheme, potentially cross subsidising the decarbonisation of other users that purchase the physical hydrogen (e.g., transport). This risk of cross-subsidisation would appear to eventuate as soon as the scheme commences. Our understanding, based on discussions with the Department, is that the planned NSW Hydrogen Hubs of Illawarra, Moore and Hunter will produce sufficient hydrogen to meet the 2025 target and will participate in the scheme at its commencement. We also understand that all that hydrogen produced will be used by a few select end users, such as transport fuel, preventing the majority of gas users from accessing the hydrogen despite having directly subsidised its production as liable parties. This will result in gas users effectively cross subsidising the decarbonisation of the transport sector.

Additionally, the scheme would incentivise specific gas users to meet their liability under the scheme through the production of hydrogen and direct consumption to reduce their own emissions profile. But this will only be possible for a small percentage of gas users that have the ability to produce and use the hydrogen directly and this hydrogen production will be largely subsidised by other gas users (residential, commercial and industrial), for whom hydrogen production is impractical or cost prohibitive and where direct use is not possible. For these users, access to hydrogen can only occur when it is blended into the existing gas network, which can already accommodate hydrogen blending of up to 10% by volume.

Recommendation: A 'benefit principle' approach

Jemena believes that liable parties for the scheme should be determined according to a 'benefit principle' approach, whereby the beneficiaries of a policy intervention should pay for it. For this reason, we do not support the allocation of liability under the currently proposed scheme.

A 'benefit principle' approach for a hydrogen only scheme would be best implemented by prescribing the use of the hydrogen for the liable parties only (i.e., gas users) and allowing them to claim the purchase of hydrogen against their total gas consumption.

The scheme creates significant financial exposure to gas users

We also believe that the cost of the scheme could create a significant cost impost for gas users, with a potential financial exposure of \$200M per year in 2030 (see Table 1) or a cumulative cost of \$500M to 2030, excluding implementation and administrative costs. This would prompt switching to electricity for customers for whom electrification is possible and practical, which would further amplify the cost impacts on remaining gas users, for whom it may not be possible or affordable to electrify (e.g., high-heat industrials, vulnerable consumers), as network charges will be recovered from a smaller customer base leading to further price increases.

In a certificate market where the price is driven by uncertain certificate supply and required demand, there is the risk that the liable entities would effectively buy certificates at a price nearly equal to the penalty rate or decide to pay the penalty rate. This occurred in the electricity market over 2015 and 2016, when the spot price of large-scale generation certificates (LGCs) under the Renewable Energy Target (RET) was on average around \$85/MWh (nearly equivalent to the \$65/MWh after tax) in response to an expected shortfall in certificates, with spot prices frequently over \$100/MWh. To this point, the scheme could have significant cost impacts of \$29 per year for households and \$489 per year for small businesses in 2030, assuming gas retailers will pass the cost of acquiring certificates onto energy consumers in the form of higher energy tariffs (see Table 1).

Table 1. Maximum potential impact on consumer bills connected to the NSW distribution network

Year	Annual production target (GJ)	Maximum total annual cost	Potential annual impact on average residential customer	Potential annual impact on small business and commercial customers
2025	360,000	\$ 9M	\$ 1	\$ 22
2026	890,000	\$ 22.2M	\$ 3	\$ 55
2027	1,780,000	\$ 44.5M	\$ 6	\$ 111
2028	3,200,000	\$ 80M	\$ 11	\$ 199
2029	5,330,000	\$ 133.2M	\$ 19	\$ 332
2030	8,000,000	\$ 200M	\$ 29	\$ 498

Assumptions: No exemptions; 1.4 million residential customers and 36,000 small business and commercial; constant consumption of 29 PJ consumption per year for residential and 12PJ per year for small business and commercial distributed gas and out to 2030.

Jemena does not support the allocation of liability and unprescribed end users in the proposed RFS design

As described above, due to the allocation of liability and the unprescribed end users, we do not support the proposed RFS design for green hydrogen production, as it creates a significant risk for gas users, including significant financial exposure, not deriving direct benefits and cross subsidising the decarbonisation of other sectors.

Our preference is for a scheme that allocates the liability based on a 'benefit principle', where those who pay for the scheme also benefit from it. If the NSW Government were to implement a hydrogen only scheme in 2024-25 with the liability exclusively on gas users, we strongly believe that, in order to receive the full benefit of the scheme, gas users should have the exclusive right to purchase the hydrogen and claim the associated Scope 1 emission reductions through NGERs recognition of RFS certificates.

This could be achieved by adopting a Market-Based Instrument (MBI) method for Scope 1 emissions under NGER to recognise the purchasing of RFS certificates as evidence of renewable fuel use, as it is currently done for renewable electricity certificates for Scope 2 emissions (e.g., LGCs, GreenPower). This would allow liable parties to claim that their fuel use has been matched with renewable fuel, ensuring the credibility of the emission reductions through direct fuel substitution and allowing the use of certificates to offset against mandatory carbon reduction schemes such as the Safeguard Mechanism.

This could also be achieved through the stapling of GO and RFS certificates, if the GO scheme adopts a 'book and claim' system for network-injected hydrogen that allows GO certificates to be traded independently of the physical commodity for domestic users. This was our recommendation in response to the proposed approach 2023 consultation on the Guarantee of Origin Emissions Accounting Approach (for which the proposed design does not allow the emissions accounting of hydrogen when transported through the existing gas infrastructure).

As mentioned above, this approach could be facilitated through existing gas networks, which can already accommodate a hydrogen blend of 10% by volume. This would also contribute to achieving the NSW Government's target of 10% hydrogen by volume gas network blending set out in the NSW Hydrogen Strategy.

NSW Government could mitigate the cost impact of the scheme on liable parties

Given that hydrogen could be used in multiple applications without a clear benefit-liability relationship and the significant cost impost on gas users imposed by the scheme, the NSW Government could consider becoming a liable party to mitigate impacts on other liable parties, in particular vulnerable consumers and large users. This is particularly relevant to the nascent hydrogen industry, which lacks a reference price and could be used in various applications and replace fuels with different market prices and variables.

For example, the NSW Government could commit to purchasing a set amount of certificates to incentivise initial production with a view to reducing this amount over time, thus shifting the whole liability to end users as the market develops and the cost of production reduces.

We believe that this approach would drive the maximum aggregate benefit at minimum aggregate cost with a wider distribution of the burden, thus preventing the exposure of liable parties to excessively high costs.

Jemena's responses to the proposals

Part 2: Core concepts

Proposal 1: Renewable energy is the “eligible renewable energy sources” as defined in the forthcoming ‘GO Act 2024 (Cth)’.

We support the proposal.

More broadly, we believe it is important that the RFS is aligned with the Product GO scheme to ensure consistency and interoperability. However, we note that they are different types of certificate schemes with different objectives and may follow different implementation timelines. The RFS imposes an obligation to liable parties to buy certificates to support renewable fuel production and decarbonisation while the Product GO is a tracking system to provide proof about the energy attributes of the product to the end-consumer. Given the different timelines, the Department could consider the inclusion of other fuels or production pathways that can support the objectives of the RFS that are not yet covered under the GO scheme, particularly if the RFS scheme were to be expanded, with the creation of separate definitions. These definitions could align with existing national legislation (e.g., NGL, Emission Reduction Fund, NGER) and programs (e.g., GreenPower Renewable Gas Certification Pilot) as well as international standards.

Proposal 2: Product GO certificates will be required to create renewable fuel certificates.

We partly support the proposal.

As mentioned above, we believe it is important that the RFS is aligned with the Product GO. However, exemptions should be made for production pathways to be included in the RFS that may not (yet) be eligible for a Product GO certificate.

As the RFS scheme expands to other renewable fuels, producers of these fuels should be able to create renewable fuel certificates even if these fuels are not covered under the Product GO scheme. For example, GreenPower certificates for biomethane, which could readily be available and are underpinned by a robust and credible framework, could be used if the scheme was expanded to biomethane and GO certification was not yet available.

Proposal 3: The eligible production method is the electrolysis of water using renewable electricity.

We support the proposal.

Proposal 4: The RFS emissions boundary is the hydrogen “production boundary” as defined in the forthcoming ‘GO Act 2024 (Cth)’.

We support the proposal.

We would like to note that the proposed system boundary for the GO scheme's emissions accounting methodology is based on a well-to-delivery gate system boundary, which includes both production and post-production boundaries. While we recommended that only the production boundary should be applied for a domestic market for consistency with renewable electricity certificates, it is not clear yet the system boundary that will apply to both domestic and export markets. If the RFS certificates were used to claim Scope 1 emission reductions, as recommended above, and post-production boundaries are included the system boundary for a domestic market, consideration will need to be given on how that aligns with emissions accounting under the Product GO scheme.

Proposal 5: The Local Use Factor is 1 for all green hydrogen produced in NSW.

We do not support the use of a Local Use Factor.

While the use of a local use factor could incentivise the use of the green hydrogen in NSW, it would not address the benefit-liability issue as it would not provide any assurance that the liable parties paying for its production (i.e., gas users) would receive the benefits.

As outlined above, we believe that the RFS should establish a clear benefit-liability relationship for green hydrogen, where the liable entities have the exclusive right to purchase the hydrogen and receive the carbon emission reduction benefit.

In the future, a local use factor could disincentivise hydrogen production investment in NSW by reducing financial incentive for hydrogen producers that are aiming to sell the hydrogen outside NSW potentially affecting the ability to meet the production target.

Proposal 6: Green hydrogen must have a minimum purity of 99.9 volume percent at the point of exit from the RFS emissions boundary.

We support this proposal.

Proposal 7: IPART will only accredit green hydrogen producers to create renewable fuel certificates.

We support the proposal for the initial stages of the RFS given that there would only be a small number of hydrogen producers, and this would contribute to minimising the cost to gas users.

However, we would like to note that under an expanded scheme, aggregators may have the potential to increase economies of scale, reduce transaction and other business costs and help manage performance risk. We recommend the Department conduct further analysis on this as part of the future work on scheme expansion.

Part 3: Green hydrogen requirements

Proposal 8: For the production of green hydrogen:

- **Electricity emissions must be zero by matching the electricity use with an equivalent number of renewable energy certificates.**
- **Direct combustion emissions must be less than 2.5% of total production emissions.**

We support point 1 of the proposal.

We support point 2 of the proposal based on the assumption that the emission reduction benefits of combusting renewable gases (and other renewable fuels) are recognised in the emissions accounting methodology to ensure that this requirement does not exclude the use of processes that rely on fuel combustion. However, we would like to note that the EU does not establish a requirement on direct combustion emissions for green hydrogen production but instead a minimum greenhouse gas emission

saving threshold of 70% against their fossil fuel comparators.¹ We recommend the Department consider introducing a similar requirement instead.

Not setting up additional requirements, such as an emissions intensity threshold, could be beneficial in the early stages of the scheme as the industry developed, as the hydrogen production volumes are low. However, we recommend the Department consider setting additional requirements as hydrogen production increases and the scheme is expanded to other renewable fuels. These are outlined in response to section 5.4.

Proposal 9: Renewable energy certificates:

- **Only include certificates eligible under the GreenPower Program Rules.**
- **Involve the surrender of certificates through an accredited GreenPower Product.**

We do not support this proposal as we believe that all renewable electricity certificates recognised under the GO scheme should be included as eligible renewable energy certificates to minimise the complexity and costs of the RFS whilst demonstrating the use of renewable electricity. These include the Renewable Electricity Guarantee of Origin certificates (REGOs) and Large-scale Generation Certificates (LGCs), and other voluntary scheme certificates recognised by the GO scheme such as GreenPower.

understand that under the proposed GO scheme, all these certificates could be surrendered to demonstrate renewable electricity use for products under the GO scheme, including hydrogen GO certification. Since hydrogen GO certificates would be required to create RFS certificates, the assurance of having used renewable electricity would be provided by the GO scheme and the information on the GO certificates.

In our submission to Australia's Guarantee of Origin Scheme Emissions Accounting Approach Paper, we highlighted the importance for the GO scheme to enable system interoperability and allow the transfer of renewable attributes from one product to another.

For these reasons, we do not support a requirement on green hydrogen producers to surrender GreenPower certificates only and recommend full alignment with all certificates recognised under the GO scheme to minimise costs, complexity and help kickstart green hydrogen production.

In the future, the Department could consider 'additionality' requirements for green hydrogen production using grid-connected electricity to ensure that the increased hydrogen production goes hand in hand with new renewable electricity generation capacities. This is further outlined in response to Section 5.4.

Part 4: Renewable fuel certificates

Proposal 10: The number of renewable fuel certificates is calculated using Equation 1.

No further views in addition to our response to Proposal 5 regarding the use of Local Use factor.

Proposal 11: The duration of the production period is not less than the Product GO batch period and not greater than 12 months.

We support this proposal.

¹ Delegated Act establishing a minimum threshold for greenhouse gas emissions savings of recycled carbon fuels and by specifying a methodology for assessing greenhouse gas emissions savings from renewable liquid and gaseous transport fuels of non-biological origin and from recycled carbon fuels (EU) 2023/1185.

Proposal 12: The sites listed in clause 9.4 of the draft rule can only create renewable fuel certificates for producing green hydrogen above their annual baseline production.

We do not support this proposal as it may lead to the closure of the Western Sydney Green Hydrogen Hub, foregoing some potential green hydrogen production in the future.

The Western Sydney Green Hydrogen Hub is currently operated as an R&D facility for the purpose of testing the blending of hydrogen into the network. This hydrogen is not made available to the market and will not contribute to the green hydrogen production target. However, the Hub has the potential to increase its production volumes and sell green hydrogen to the market in the future but, like all green hydrogen producers, would need ongoing financial incentives to cover the significant green premium. Without financial incentives, the Hub would remain a testing facility and may cease operations in due course, thus foregoing potential green hydrogen production in the future.

Given this and the fact that the main purpose of the RFS is to incentivise hydrogen production, we recommend the Western Sydney Green Hydrogen Hub be able to create RFS certificates below annual baseline production in the event that it transitions to commercial production facility.

Part 5: Future work

5.1 Expanding the RFS

We understand that the Department is investigating options to expand the RFS scheme to other renewable fuels and liable parties. We strongly support this, as indicated in our submission to the discussion paper on scheme expansion released in 2023. Expanding renewable fuels and liabilities would incentivise the production and use of renewable fuels needed to achieve net zero emissions by 2050, provide optionality for consumers and enable least cost emission reduction with more equitable outcomes for NSW energy consumers. We would like to invite the Department to refer to our submission for more detailed feedback.

5.2 Other hydrogen production technologies

We believe that in order to accelerate emissions reduction at the least-cost, low carbon hydrogen (that is lower emission than the fossil alternates), could be considered as part of the scheme expansion. This would help to create sufficient hydrogen supply and allow demand sectors to start using it at some scale to reduce their emissions, providing the basis for technological development towards more cost-competitive 'green hydrogen' production. For example, the EU defines low carbon hydrogen as hydrogen with an energy content that is derived from non-renewable sources, and that meets a GHG emission reduction threshold of 70% compared to fossil-based hydrogen. This could be easily integrated with the proposed GO scheme certification, which recognises low carbon hydrogen from three main production pathways: electrolysis, coal gasification and steam methane reforming with carbon capture and storage.

This would also mitigate the risk that in the short-term new renewable electricity investment will be directed towards green hydrogen production and away from the NEM, which would have negative consequences for greenhouse gas emissions, prolonged reliance on coal fired generation, and related gas and electricity prices.

5.3 Supporting other policies and programs

We support the Department's intention to continue to investigate how the RFS will complement other Commonwealth and NSW incentives schemes.

We believe that all renewable fuels that meet appropriate sustainability criteria and production requirements can contribute to achieving net zero in line with their potential to substitute fossil fuels and reduce emissions across various sectors of the economy.

According to Bioenergy Australia, at present renewable fuels are not currently at price parity with traditional fuels and until such time they all require policy and financial support to incentivise substitution and drive the scale necessary to reduce prices.² A market-based certificate scheme such as the RFS is one of the many ways through which renewable fuels could be supported. For example, other options could include feed-in-tariffs, supply-side auctions allocating fixed premium payments or contracts for difference.

Any consideration of scheme design, and which renewable fuels should be included, need to be cognisant of evolving mechanisms, barriers, incentives and certificate schemes in national and international markets while minimising the cost on consumers and ensuring that the liable parties derive the benefits.

Specifically, we would like to note that a level of support for hydrogen production consistent with the current penalty rate of \$25 per GJ, may not be sufficient to financially incentivise hydrogen production as a single measure. We acknowledge the availability of multiple incentive schemes for hydrogen production, including the \$2 billion Hydrogen Headstart program and other initiatives as part of the NSW Hydrogen Strategy, and we therefore recommend the Department assess the commercial viability of hydrogen production and the need for further support while minimising the total liability on gas users.

Additionally, we would like to note that there are no ongoing financial incentives for biomethane production in Australia, other than ACCUs generation, and there are existing commercial and regulatory barriers to biogas upgrading into biomethane and its use. Currently, electricity generation from biogas combustion is incentivised through the generation of renewable electricity certificates. However, biomethane injection into the gas network is only recognised through a location-based method under NGER, which uses an average emission factor for the network but does not recognise market-based emissions using purchased certificates. Jemena believes this misalignment of incentives should be addressed as a priority and would provide further support for biomethane as a cost-effective decarbonisation option for natural gas use at no additional cost.

We also note that there are existing liabilities under other schemes and initiatives to support decarbonisation of industry, such as the Safeguard Mechanism, which apply to certain entities that will be liable under the RFS.

The RFS should be linked to the National Greenhouse and Energy Reporting (NGER) scheme and upcoming Guarantee of Origin (GO) scheme so that certificates (either RFS or GO depending on the final GO scheme design) can be used by liable entities for Scope 1 emission reduction claims against mandatory carbon reduction schemes (e.g., Safeguard Mechanism), to avoid a double cost impost on gas users seeking to use renewable fuels to achieve these targets.

Consideration needs to be given to the integration of the RFS with the Australian Carbon Credit Unit (ACCU) scheme to prevent misalignment of incentives and double counting of emissions reductions for fuels included in both schemes such as biomethane.

5.4 Total emissions intensity threshold and requirements for other emission sources

We believe that emissions intensity thresholds, as well as other requirements, should be set as the scheme expands to other renewable fuels and the hydrogen market develops. These could include sustainability criteria to avoid negative environmental effects, such as competition with other uses for the feedstock, as well as additionality and timestamping.

² [Australia's Bioenergy Roadmap, ENEA and Deloitte for ARENA, 2021.](#)

Additionality for grid-connected green hydrogen production

As currently proposed, green hydrogen under the RFS could be produced using an off-grid or an on-grid setup and producers must procure an amount of renewable electricity certificates that matches the total electricity use (i.e., market-based approach). In the off-grid setup, the energy source would be clearly identifiable and there would be certainty that the electricity used to produce hydrogen is 100 % renewable. When electricity is sourced from the grid, it would be more difficult to ensure its renewable nature, because grid electricity is usually generated by a mix of renewable and fossil sources, and green hydrogen production would divert renewable electricity away from other uses.

We would like to note that the RFS 2030 production target for green hydrogen would require approximately 1.4GW per annum of renewable generation electricity, which is just short of 10% of the 2022 installed solar and wind generation capacity in the NEM (i.e., 19GW).³

To ensure that renewable hydrogen production does not slow down NEM decarbonisation, a criterion on additionality could be introduced so that only new and additional renewable electricity generation capacity would be used (this is further discussed in response to Proposal 9). The EU recently introduced an ‘additionality’ requirement that requires hydrogen producers to conclude power purchase agreements (PPAs) with new and unsupported renewable electricity generation capacity.

Criteria on temporal and geographic correlation

Criteria on temporal and geographic correlation (e.g., timestamping) could also help to ensure that there is a physical flow of renewable electricity to the electrolyser and mitigate the risk that the additional electricity demand required for electrolysis will prolong NSW’s reliance of fossil fuel electricity generation. The EU recently introduced criteria on temporal and geographic correlation to ensure that hydrogen is produced when and where renewable electricity is available and avoid demand for renewable electricity used for hydrogen production resulting in more fossil electricity generation.⁴

This could include requirements such as those described in response to Proposal 8.

5.5 Time of use matching

We support the use of time and location matching, and we recommend alignment with the REGOs under the forthcoming Product GO scheme, which is intended to allow the tracking of additional temporal and spatial information in the future. We believe this would incentivise investment in hydrogen as a firming and storage solution to support the grid and enable physical matching of renewable electricity use with green hydrogen production, to support resilience, 24/7 grid renewable electricity and the national NEM target of 82% renewable electricity.

We support the Department’s intention to continue to investigate interaction as indicated in Section 5.9.

5.6 Local use factor

See our response to Proposal 5.

³ Calculations using assumptions of 65 per cent electrolyser efficiency and solar photovoltaic generation is used with a 25 per cent capacity factor. Source: Wood, T., Reeve, A., and Yan, R. (2023). Hydrogen: hype, hope, or hard work?. Grattan Institute.

⁴

5.7 Market transformation

Renewable fuels have different market circumstances, including production costs and applications, and therefore need varying amounts of incentives to be commercially viable. For example, in our submission to the discussion paper on RFS scheme expansion, we recommended separate end user group targets for gas and liquid users with corresponding liabilities which would allow user groups to determine the value of the certificates and the market to allocate the renewable fuel to all potential end-users within a user group in the most cost-effective way.

We recommend the scheme be operational for a minimum of 20 years to provide sufficient investment certainty, bankability of certificates and allow for a reduction in the long-run average cost of production. However, it should be adjusted over the period to reflect changing market conditions, including the financial incentives required as production costs come down for certain fuels and/or other revenue pathways are identified.

5.8 Purity

Please refer to our response to Proposal 6.

5.9 Renewable Electricity Guarantee of Origin

Please refer to our response to Proposal 9 and Section 5.5.

5.10. Water source requirements

Please refer to our responses to Proposal 8 and Section 5.4.

5.11 National and international standards

We agree with the statement, and we support the Department's intention to continue to investigate compliance as the scheme progresses.