



Renewable Gas Certification Pilot Public consultation summary paper

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Cover image Aerial view of Malabar Biomethane Project. Image courtesy of: Jemena Gas Networks and Sydney Water

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1. Pilot development and consultation process

The purpose of this paper is to:

- summarise the feedback received from submissions to the national Renewable Gas Certification Pilot (the Pilot) [Consultation Paper](#)
- describe how feedback and suggestions have been used to optimise the Pilot design.

GreenPower is developing the Pilot to help build a market for renewable gases. It will initially focus on biogas, biomethane (upgraded biogas), and renewable hydrogen. Greenpower accredited renewable gas projects will create Renewable Gas Guarantee of Origin certificates (RGGOs) which can be sold to network-connected commercial and industrial gas customers. This will enable these gas customers to match their gas use with renewable gas that is added to the gas network on their behalf, which will help reduce their emissions. Each RGGO will represent accredited low-emission renewable gas that displaces fossil fuel natural gas use within Australia. This directly supports renewable gas projects and will allow gas customers to choose an energy source which is better for the environment.

GreenPower released a [consultation paper](#) about the Pilot's design in February 2022. Submissions were open until 24 March 2022. The stakeholder consultation process aimed to determine the appropriateness, feasibility, and any unintended impacts of the proposed Pilot design. Stakeholders were asked for their feedback on 49 topic-specific questions.

We received 34 submissions from a mix of gas developers/producers, retailers, consumers, consultants, and advisory groups. In some instances, a relative consensus was reached on a topic, while in other instances there were diverging views.

The key findings of the consultation and the next steps can be found in Section 2 of this paper. A summary of the responses received for each consultation question, as well as how we plan to incorporate the feedback in the Pilot design, can be found in Section 3 of the paper.

The design of the Pilot was also informed by relevant national and state policy development, projects that expressed interest in participating in the Pilot, and by input from the newly established Pilot Steering Committee.

2. Executive summary

Submissions strongly supported establishing the Pilot to help with developing a renewable gas market, especially focusing on hard-to-abate gas use. Since the consultation in early 2022, GreenPower has further developed the design and taken the necessary steps to implement the Pilot. The start of operation of the Pilot's certificate registry is planned for Q2 2023.

We have considered the consultation feedback in the design of the Pilot Rules which will govern the scheme. The Pilot Rules set out the objectives, terms and conditions, eligibility criteria, participation fees, and other aspects of the Pilot. The Pilot Rules will be available on the [GreenPower](#) website.

Key consultation findings

We have adopted the following key outcomes from the consultation feedback into the Pilot Rules:

General outcomes

- Respondents suggested that end-users should be limited to commercial and industrial hard-to-abate activities. Concerns were raised that the Pilot could unintendedly affect the decarbonisation and electrification of households. In response to these concerns, residential customers will initially not be eligible to purchase RGGOs or gas products that include RGGOs.
- In response to strong recommendations received from stakeholders, biogas that is produced and used behind the meter (BTM) has been added to the eligible renewable gas types (in addition to biomethane and renewable hydrogen).
- The Pilot will use an established online registry platform for creating, selling, transferring, and retiring of RGGOs.
- For the chain of custody, the Pilot will proceed with a decoupled approach (or 'book and claim' approach), which means RGGOs can be traded separately to the gas molecules. The Pilot will have a national trading boundary so that projects can also sell their RGGOs to gas users that are not connected to the same gas network.
- The Pilot will be technology agnostic so as not to restrict gas project eligibility.
- No price cap or price floor will be put in place for RGGOs. This will provide flexibility to the market for RGGOs and enable direct negotiations between sellers and buyers.

- For Emissions Reduction Fund (ERF) projects that create 'displacement Australian Carbon Credit Units (ACCUs)', all such ACCUs must be voluntarily retired to avoid double counting of the project's environmental benefit. Two options will be available:
 - i) upfront retirement before RGGOs are created
 - ii) 'stapling' of the relevant ACCUs to RGGOs and simultaneous retirement on behalf of the end-user.
- We have established a steering committee to provide input throughout the implementation of the Pilot. The committee is open to new members subject to their approval by the National GreenPower Steering Group.

Outcomes related to feedstock and electricity use

- The list of eligible feedstocks will be broadened, which will allow for more projects to participate. The eligible feedstocks will be in line with the listed renewable energy sources in the Renewable Energy (Electricity) Act 2000.
- A restriction will be placed on the use of energy crops as a feedstock. For a project to be eligible, energy crops must be no more than 10% of the total feedstock energy content used for gas production during a reporting period.
- Projects are not required to offset emissions, however, any non-renewable electricity usage must be matched with the purchase of accredited GreenPower.
- Projects can produce renewable hydrogen through:
 - electrolysis
 - steam methane reforming from direct supply of biomethane and biogas
 - steam methane reforming using network-supplied gas matched with RGGOs generated by biomethane projects connected to the same gas distribution or transmission network.
- Responsible water use will be an eligibility criterion and Pilot guidelines will set out how this criterion will be assessed.

Outcomes related to emissions intensity of the renewable gas

- A renewable gas project must produce renewable gas that has lower greenhouse gas (GHG) emissions than the equivalent fossil natural gas.
- To determine the emissions intensity (and to assess other eligibility criteria), a Life Cycle Assessment (LCA) will need to be completed on the renewable gas project.
- The system boundary of the LCA will be cradle-to-gate, with the gate being the point of grid injection at the renewable gas project or the point of supply to the end-user for BTM projects.

Producers will be required to report their projects' GHG emissions intensity, which will be displayed on the RGGO retirement statements.

3. Feedback on consultation questions

This section provides a summary of responses from stakeholders to each of the questions in the consultation paper, and how feedback was incorporated into the Pilot Rules. The original questions and associated context from the consultation paper are shown in black boxes titled 'in the public consultation paper'. Summaries of how the feedback from each group of questions has been incorporated in the design of the Rules are highlighted in coloured boxes titled 'how GreenPower incorporated the feedback'.

1. Which renewable gases should be included in the Pilot?

In the public consultation paper:

The term renewable gas describes gaseous fuels that can be used to complement or replace natural gas, and which have low or zero GHG emissions associated with their production and use. This section defined and described the renewable gases proposed to be included in the Pilot: biomethane and renewable hydrogen.

Question 1: Do you agree with the definitions outlined above? If not, what should they be?

There was strong support for the proposed definitions. It was suggested to use consistent terminology for 'renewable gas' and avoid using the term 'zero-emissions' gas.

Question 2: Do you agree with an initial focus on biomethane? If not, why not?

There was overall alignment amongst respondents for the proposed focus on network-injected biomethane and hydrogen. Mixed responses were received for the inclusion of other renewable gases in the Pilot. Of these other renewable gases, biogas for direct use in BTM projects received the strongest support.

Question 3: Should the pilot be open to other renewable gases, if so, which and why?

To expand the eligibility for renewable gas projects to participate in the Pilot, respondents suggested additional gases to be included in the Pilot. As mentioned above in Question 2, the inclusion of direct-use biogas received strong support from respondents as it could have a high environmental benefit and is produced by relatively mature production technologies. There was also minor support for the inclusion of synthetic methane in the Pilot.

How GreenPower incorporated the feedback:

Renewable gas will be defined in the Pilot as biomethane, renewable hydrogen, and biogas either injected into the natural gas network, or used behind the meter that:

- is produced from a renewable energy source and feedstock that meets the requirements defined in the Pilot Rules eligibility criteria
- has lower GHG emissions than an equivalent fossil fuel product
- meets the quality requirements of the gas network into which it is being injected, or of the directly supplied gas user in projects that are BTM or supplied by road, ship, or rail.

2. Eligibility to participate in the Pilot

In the public consultation paper:

Producer eligibility criteria

The suggested eligibility criteria for producers listed in the consultation paper included a renewable gas producer:

- must have commenced operation in 2020 or later
- must use only waste-derived feedstock and energy sources
- must use an eligible renewable gas production process/technology
- must displace network gas use, and have approval for the gas network connection, transmission pipeline connection, or direct supply pipeline
- must adhere to Ecological Sustainable Development (ESD) principles
- all electricity use associated with the production of renewable hydrogen by electrolysis must be matched with accredited GreenPower purchases. Any Scope 1 and 3 emissions must be fully offset using ACCUs
- must demonstrate best practice compliance with planning approvals and environmental management procedures related to production, transport, injection, and other associated activities.

Question 4: Do you agree with the above eligibility criteria? If not, why?

The proposed criteria were broadly supported. Some respondents noted that simple criteria should be used to achieve scale and that carbon offsets shouldn't be a core component of RGGOs. Instead, RGGOs should ensure the gas is made using renewable energy and feedstock and should disclose its GHG emissions intensity. In addition to this:

- Respondents noted that renewable gas projects that are not network-connected i.e., direct biogas BTM could have a high environmental benefit and should be considered.
- Responses asked for clarity regarding what ESD means for project development and suggested more specific requirements to ensure tangible outcomes.
- Some respondents support GreenPower purchase being required for electricity use, while others would prefer all large-scale generation certificates (LGCs) to be eligible.
- There was general support for projects having to meet planning requirements, however, it was unclear to respondents how this criterion would add value.

Question 5: Are there other eligibility criteria that should be included, and what would they achieve?

Additional eligibility criteria were suggested by respondents. These included:

- sustainable water use (important for hydrogen)

- principles to protect cultural heritage and consultation with Aboriginal and Torres Strait Islander communities
- determining a project's avoided emissions in addition to the emissions intensity of the renewable gas.

Question 6: Which technologies and production processes should be included in the Pilot?

Respondents noted the Pilot should be technology agnostic so as not to place restrictions on gas project eligibility. Several respondents specifically suggested including steam methane reforming (SMR) of biomethane or biogas for producing renewable hydrogen.

Question 7: What factors do you consider essential when defining best practice planning compliance and environmental management?

Respondents generally supported an 'industry-leading best practice' in planning and environmental management of projects. Some stakeholders noted that the best practice is difficult to define and could result in a high-cost burden on participants. It was suggested that the approach should be cost-effective, quantifiable, outcome focussed, and targeted.

How GreenPower incorporated the feedback:

- BTM projects will be eligible to participate in the Pilot, subject to the gas users site being connected to the gas network.
- Projects will need to demonstrate responsible water usage.
- All electricity consumption used by a project to produce renewable gas must be matched with renewable electricity sources and evidenced for each reporting period. This electricity consumption may be sourced from either or combination of the below options:
 - on-site BTM renewable electricity generation that doesn't receive LGCs under the Renewable Energy Target (RET)
 - GreenPower purchases as part of an accredited GreenPower product
 - an electricity retail contract that is not a GreenPower product, which is matched with an equivalent number of LGCs acquired and retired by or on behalf of the Producer through a certificate-only GreenPower product, or in accordance with GreenPower Corporate Direct.
- The Pilot will be technology agnostic.
- An independent Statement of Environmental Effects, and Environmental Impact Statement (or similar) will be required in compliance with ESD. More details on compliance with ESD will be provided in the participant guidelines document.

In the public consultation paper:

Displacing network gas use as a requirement for the Pilot

The Pilot aims to enable renewable gas purchases to displace fossil fuels and encourage emissions reductions. To achieve this, renewable gas projects need to displace network gas use. The following questions addressed this.

Question 8: Do you agree that only projects that displace network gas use should be eligible to participate in the Pilot? If not, why not?

Strong support was received for projects having to displace network gas use, however, there was also support for BTM projects, with or without a network connection.

Question 9: Should BTM production and use projects without a network connection be able to participate in the Pilot, and why?

Most respondents supported BTM projects participating even if there is no gas network connection. The following was noted by stakeholders in this regard:

- Prospective projects in a remote area with an objective to produce renewable gas to replace liquified petroleum gas (LPG) or diesel would still be displacing fossil fuel use even without a network connection.
- BTM projects should be able to prove the displacement of fossil natural gas use.
- Including non-network connected BTM projects would lead to greater participation as many more projects would be eligible.
- Non-network connected BTM projects will save on capital costs if not required to invest in connecting to the gas network and would therefore be able to supply renewable gas at lower cost.

Question 10: If BTM projects without network connections were eligible, how could metering and other verification activities be done?

It was suggested by some stakeholders that BTM projects will need to be assessed and verified case-by-case. It was also noted that the standard metering and quality measurement need to be tailored for BTM projects.

How GreenPower incorporated the feedback:

The Pilot Rules will require projects to displace network gas use. This also applies to BTM projects, meaning BTM projects need to supply a gas user that has a gas network connection.

Question 11: Are there any barriers to injecting renewable gas into the network in your jurisdiction that GreenPower should be aware of for the Pilot?

Suggested barriers to injecting renewable gas into the network included:

- hydrogen upper blending limits
- regulatory approval and recognition
- market demand
- cost of network connection
- pipeline pressure limitations (cost of pressurisation)
- distance from waste/biomass source to gas network/demand
- restrictive injection specifications
- overall capacity constraints.

How GreenPower incorporated the feedback:

The listed potential technical barriers for injection of renewable gas into gas networks have been considered in the design of Pilot Rules (e.g., meeting the gas quality and other relevant standards is a requirement for participation in the Pilot). The added revenue stream introduced by the sale of RGGOs will also support the economics of renewable gas projects.

In the public consultation paper:

Network boundary

This question addressed the certificate trading boundary, or geographical area, within which gas producers and customers can buy and sell certificates and make a renewable gas claim. The proposed option was to apply a national network boundary which would provide the greatest flexibility for customers to purchase RGGOs from producers. For example, a renewable gas producer in Queensland who injects gas into the local gas distribution network could sell certificates to a gas customer in Western Australia even though there is no gas pipeline connecting the two parties. A national network boundary is consistent with the 'book and claim' chain of custody approach. It is also consistent with how renewable electricity certificates are treated and could result in more efficient outcomes, potentially improving end user access to certificates.

Question 12: Do you agree with the proposed national network boundary approach and if not, why?

Most respondents supported the proposed national network boundary approach to give flexibility for customers to purchase RGGOs from a gas project of their choice from anywhere within Australia. Others preferred to limit the boundaries to within an interconnected gas network to:

- encourage investment near demand
- increase credibility and tangibility of the impact of certificates
- avoid consumer confusion and low credibility.

How GreenPower incorporated the feedback:

For the Pilot, the proposed national network boundary will apply - consistent with the majority of respondents. By not having a location or grid network-based restriction on the purchase of RGGO's, this national network boundary model will help with accelerating the development of the renewable gas market across Australia. It will allow RGGOs to be tradable nationally, meaning that the trade of RGGOs will not be limited by the location of gas production or the point of injection into the network.

In the public consultation paper:

Eligible feedstocks for biomethane

Feedstocks for renewable gas can have numerous sources. For biomethane, this can include different organic waste streams and energy crops. GreenPower proposed to align permitted feedstocks under the Pilot with the Clean Energy Regulator's (CER) Emissions Reduction Fund (ERF) methodology for displacement and abatement which allows the following sources of biogas for biomethane production (includes correction of an error in the consultation paper):

- landfill gas
- wastewater treatment
- animal effluent.

GreenPower proposed to exclude native forest biomass as an eligible feedstock.

Questions 13 and 14: Do you agree with the Pilot aligning eligible feedstocks with the ERF methodology? Should any other feedstocks be included? Which ones, and why?

Most respondents agreed with the proposed list of feedstocks, however, some stakeholders suggested additional eligible feedstocks to be included in the Pilot.

Respondents were concerned that limiting feedstocks to the biogas sources eligible under the ERF would exclude certain biomethane facilities, and that any biomethane should be eligible to create RGGOs. Other respondents suggested the addition of agricultural waste and energy crops (to be assessed on a case-by-case basis) as eligible feedstocks.

Question 15: Do you see any risks of unintended consequences from incentivising anaerobic digestion of waste-derived feedstocks and landfill gas capture? If so, which risks and are there any risk mitigation options?

No major concerns were raised; however, some respondents noted the Pilot needed to consider:

- fugitive emissions associated with leaks and losses in the renewable gas production process and landfill gas capture
- the impact on organic waste diversion from landfill, i.e., the risk of more organic waste being added to landfill if landfill gas is eligible to be sold as renewable gas
- trade-offs and baselines, for example where injecting landfill gas into gas networks may result in less landfill gas for electricity generation and reducing renewable electricity output.

How GreenPower incorporated the feedback:

The Pilot rules will allow feedstocks listed in the Renewable Energy (Electricity) Act 2000 (REE Act). The use of energy crops will be limited to 10% of total feedstock use for each project. This will limit negative impacts of energy crop use while providing projects with feedstock security where required.

Any materials from native forests will be classified as a prohibited feedstock in the Pilot.

Questions 16 and 17: Should the use of energy crops be permitted? What conditions and considerations would ensure these projects still adhere to the principles of Ecological Sustainable Development?

Using energy crops as feedstock was supported on the basis that it would provide feedstock security and efficiency for anaerobic digestion. A respondent also noted that the use of energy crops on marginal land may represent a best-use case for that land.

There were arguments opposing the use of energy crops which included the uncertain net social and environmental benefits, and that land suitable for agriculture should be used only for food production. It was also noted that energy crops could cause long term biodiversity loss and/or soil degradation.

Respondents suggested the following conditions and considerations for the use of energy crops as feedstock regarding ESD principles:

- consideration of net environmental impact
- consideration of finite water and land resources
- no land clearing
- no impact on food production
- no monoculture or first generation genetically modified crops.

Question 18: Should methane produced using hydrogen methanation of the carbon dioxide in biogas be included?

Some stakeholders supported this process on the basis that the hydrogen is produced using certified renewable energy and subject to capturing and disclosing full emissions associated with this method. Other respondents acknowledged that methanation should only be included where technology or projects are mature to a state that large commercial gas production is viable.

How GreenPower incorporated the feedback:

GreenPower understands that currently there aren't many projects in Australia that produce renewable methane through hydrogenation of biogenic CO₂ (hydrogen methanation) at large scale. However, the Pilot identifies this technology as eligible and is open to receiving applications as this technology evolves and new projects emerge.

3. Project scope and treatment of emissions

In the public consultation paper:

Project scope and life cycle analysis

Two potential boundaries can be considered for project assessment: cradle-to-gate and cradle-to-grave. Cradle-to-gate would incorporate supply and transport of feedstock, biogas production, upgrading and injection into the gas networks. Cradle-to-grave additionally includes transport, use, and any recycling and disposal of the product.

GreenPower proposed to limit the system boundary to 'cradle-to-gate' to align with other certification approaches such as the Department of Industry, Science, Energy and Resources (DISER) Hydrogen Guarantee of Origin (GO) scheme. To provide a clear scope boundary, the point of network injection is proposed as the 'gate' for the LCA and project assessment. This ensures any upstream activities and emissions resulting from renewable gas production are captured. However, it excludes gas network and end-use assessment, as these are considered outside the control of the renewable gas project.

Questions 19 and 20: Do you agree that, for project assessment, the Pilot should use the cradle-to-gate approach? Do you agree with the definition of the gate being the gas network injection point? If not, why not?

Strong support was received for the Pilot to use a cradle-to-gate LCA approach aligned with other schemes regarding the assessment boundary. Some commentary to note from various respondents included:

- For projects injecting into a gas network, the 'gate' should be the point of grid injection.
- For BTM projects, the 'gate' should be the point of use.
- Within the assessment boundary, all scopes (1, 2, 3) should be included in the reported emissions.
- The potential of double counting of emissions should be considered when setting the inclusions and exclusions of emission sources.

Questions 21 and 22: Are there any other LCA standards or requirements that should be considered? Should there be different requirements for biomethane and hydrogen projects? If so, what should they be?

Regarding any other LCA standards or requirements it was suggested where possible aligning with existing recognised standards, regulations, and approaches such as the California

Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation (GREET) model, or Local Government Act waste standards.

Regarding if there should be different requirements for biomethane and hydrogen projects, respondents noted that:

- Consistency between LCAs for different gases is needed.
- Gas quality monitoring standards need to be fit for purpose when hydrogen is injected into the network (100% hydrogen or hydrogen blended with natural gas).
- The LCA approach for hydrogen projects should align with the principles of the Federal hydrogen Guarantee of Origin (GO) scheme where possible.

How GreenPower incorporated the feedback:

Based on the feedback received from stakeholders, the following has been included in the Pilot Rules:

- The LCA system boundary will be 'cradle-to-gate', with the gate being the point of grid injection at the production plant, or the point of supply to the end-user for BTM projects.
- The LCA approach will be consistent for all renewable gas types.
- Producers will be required to report their projects GHG emissions intensity. The emissions intensity value will be displayed on the RGGOs retirement statements.
- An eligibility requirement for renewable gas projects is that the produced renewable gas must have a lower GHG emission intensity than the equivalent fossil natural gas.
- All renewable projects will need to demonstrate that they are using water responsibly.

In the public consultation paper:

Fugitive emissions

GreenPower proposed that fugitive emissions from gas network pipelines are not considered in the project's LCA as they remain the same irrespective of whether the renewable gas project is implemented or not. This assumption is only accurate for low percentages of hydrogen blending and would need to be revisited if large-scale hydrogen blending occurs. However, upstream fugitive emissions from the renewable gas production process are to be included in the projects LCA.

Question 23: Do you agree with this approach? If not, how should fugitive emissions be treated?

There was strong support for the approach, however, some respondents noted that:

- fugitive emissions must be considered and accounted for in relation to the broader emissions associated with RGGOs, inside and outside the LCA
- renewable hydrogen will be subject to higher losses than biomethane.

How GreenPower incorporated the feedback:

For the Pilot, it will be a requirement for producers to account for fugitive emissions of their gas projects as part of the LCA.

In the public consultation paper:

Offsetting emissions

GreenPower proposed that producers offset any emissions through ACCUs before a certificate can be created. Limiting offsets to ACCUs will ensure project impacts are offset domestically and is expected to result in higher certificate credibility.

Questions 24 and 25: Do you agree with the proposed approach? If not, why? Should other carbon offsets be permitted to offset upstream emissions?

Support for the Pilot requiring offsets to account for upstream emissions was mixed. Suggestions from respondents included:

- If carbon offsets are used to offset gas production emissions, the RGGOs can be considered as a zero emissions certificate. This would enable 'net zero emissions' gas retail products, which is easier for customers to understand.
- In addition to offsetting the upstream emissions, a maximum GHG emissions intensity threshold (pre-offsets) should be set.
- The renewable gas emissions should be reduced at source rather than using offsets to avoid unintended consequences. Setting strict eligibility criteria may mean offsets are not needed.
- Double counting should be avoided for ERF projects where the upstream emissions would already be considered in calculation of ACCUs.
- To enable full carbon neutrality, additional offsets including international certificates could be retired under a separate existing mechanism, such as Climate Active.

How GreenPower incorporated the feedback:

Based on the received feedback from stakeholders, the Pilot will not require renewable gas projects to offset all project emissions. Instead, gas producers must report the emissions intensity of the produced gas, which will be shown on the certificate retirement statement.

In the public consultation paper:

Baseline emissions

Most existing renewable gas projects are landfill gas and biogas projects that burn waste methane without beneficial use (flaring) or generating electricity. These processes are incentivised through the creation of ACCUs and LGCs under the Emissions Reduction Fund and Renewable Energy Target, respectively.

When participating in the Pilot, existing projects may divert biogas or biomethane from current uses for injection into the gas network. In some cases, this could increase overall emissions, for example, if biogas power generations are replaced with coal power generation because the biogas is used for injection into a gas pipeline instead.

To consider the original emissions baseline, projects would need to conduct a cradle-to-grave LCA, and potentially conduct complex energy market modelling. This could place a high-cost burden on applicants and may not result in any added value to the project assessment. Hence, GreenPower proposed such baseline emissions considerations are outside of the boundary of the LCA and therefore projects should be assessed as new projects.

Question 26: Do you agree with the proposed approach? If not, why?

The majority of respondents agreed with the proposed approach noting that this would help with increasing renewable gas supply which is important to get the market started. Some stakeholders suggested that existing renewable gas projects that are already producing gas for generating renewable electricity should be excluded from participating in the Pilot as a measure to protect the integrity of the Pilot against the risks of delaying the electrification.

How GreenPower incorporated the feedback:

For the Pilot, a baseline will not be applied to avoid exclusion of projects that are close to completion or already producing renewable gas. However, GreenPower will in future reassess whether a 'newness' additionality test would be appropriate to drive investment in new renewable gas infrastructure.

4. Interaction with other schemes

In the public consultation paper:

The Pilot intends to enable multiple production pathways while avoiding duplication of other schemes, namely:

- Emissions Reduction Fund (ERF) – Australian Carbon Credit Units (ACCUs)
- Australian Government hydrogen Guarantee of Origin (GO) scheme
- Smart Energy Council Zero Carbon Certification Scheme (ZCCS)

GreenPower proposed to limit the scope of the Pilot to biomethane and renewable hydrogen that displace network gas use. This helps with minimal overlap with other schemes.

Questions 27 and 28: Are there any other new schemes not mentioned here that the GreenPower consultation should be aware of? What linkages between these schemes and the Pilot should be considered?

Stakeholders provided a range of national and international certifications for GreenPower to be aware of:

- Low-Carbon Ammonia Certification Scheme
- Building Sustainability Index (BASIX)
- Climate Active
- Corporate Emissions Reduction Transparency (CERT)
- Green Building Council of Australia (GBCA)
- GH2 Green Hydrogen Standard
- International Partnership for Hydrogen and Fuel Cells in the Economy (IPHE)
- International Sustainability and Carbon Certification (ISCC)
- National Australian Built Environment Rating System (NABERS) accreditation
- National Greenhouse and Energy Reporting (NGER)
- NSW Energy Savings Scheme (ESS)
- NSW Renewable Fuel Scheme (RFS)
- New Zealand Energy Attribute Certificate System (NZECS)
- Victorian Energy Efficiency Certificates (VEEC)

Some respondents were against the GO scheme recognition of RGGOs issued from the production of hydrogen from natural gas. The conversion of natural gas to hydrogen with RGGOs can be seen as inefficient and may extend reliance on fossil fuels, and there are alternative pathways to producing green hydrogen that don't use natural gas. Other

respondents noted that linkages and reliance on ERF ACCUs should be minimised to enable non-ERF projects to also participate in the Pilot.

How GreenPower incorporated the feedback:

GreenPower has engaged with many of the suggested schemes and will continue to develop opportunities for alignment with them. Linkages between the Pilot and other schemes have been considered in the design of the Pilot Rules.

In the public consultation paper:

Recognition of RGGOs by existing schemes

GreenPower is investigating opportunities for recognition of the Pilot's RGGOs by related programs and schemes. These include the National Greenhouse and Energy Reporting (NGER) scheme, the safeguard mechanism, Climate Active, National Australian Built Environment Rating System (NABERS), Green Building Council Australia (GBCA) and B Corp. Achieving recognition will vary on a case-by-case basis and may depend on a scheme's eligibility requirements, what methods they use for carbon accounting and other factors.

Questions 29 and 30: What recognition is needed for the Pilot to provide value for customers? What design elements of the Pilot are most crucial for recognition by other programs and schemes?

Respondents suggested that RGGOs should be recognised by NGER as an emissions reduction mechanism, especially for industrial customers. Recognition by Climate Active and CERT are also seen as essential.

Respondents stressed the importance of measures being in place to minimise the risk of double counting of environmental attributes of RGGOs and in other schemes. Visibility of key attributes of produced gas (such as emissions intensity and feedstock characteristics) on the RGGO retirement statement was seen as a crucial element.

How GreenPower incorporated the feedback:

The Pilot Rules will include strict eligibility criteria which is crucial for the integrity of the program and to gain recognition by related programs and schemes. GreenPower is actively engaging with the administrators of these programs and schemes to gain recognition of RGGOs.

5. Transaction steps for pilot certificates

In the public consultation paper:

The value and credibility of certificates issued under the Pilot relies on a consistent and accurate assessment of project impacts, and related emissions. Interactions with carbon offsets are one of the key elements that impact how and when RGGOs are created and surrendered. Two separate transaction approaches for ERF and non-ERF eligible participants were suggested by GreenPower (refer to the consultation paper for details of approaches).

Question 31: Do you agree with the proposed approaches for non-ERF and ERF projects? If not, which step should be changed and why?

Strong support was received for the proposed approaches for non-ERF and for ERF projects. Some suggested modifications included:

- step c) from the consultation paper, the ERF projects should not be required to surrender ACCUs for upstream emissions as they're already included in the abatement calculation of displacement ACCUs
- step f) from the consultation paper, rather than gas producers surrendering certificates, this should be adjusted to enable traders to surrender certificates.

Questions 32 and 33: Do you agree that any displacement ACCUs should be surrendered before an RGGO is created? Do you see any risks with the alternative approach of the displacement ACCU being surrendered at the same time as the RGGO is surrendered?

Strong support was received for the proposal that displacement ACCUs be surrendered before an RGGO is created. However, respondents noted that uncertainty of recognition by NGER, Climate Active and the Australian Government's Safeguard Mechanism may mean ACCUs need to be attributable to the end-user of the RGGO so they can claim the emissions reduction.

How GreenPower incorporated the feedback:

Based on respondents' feedback, the proposed approach to staple displacement ACCUs to the RGGOs will be implemented. This will allow end-users of RGGOs to claim emissions reductions related to the displacement ACCUs under existing NGER reporting. To provide flexibility, the Pilot will also allow upfront voluntary surrender of displacement ACCUs. Both approaches are considered equivalent in terms of preventing the risk of double counting of environmental attributes.

6. Other Pilot design elements

In the public consultation paper:

Chain of custody

The chain of custody is how the physical gas relates to the RGGOs. There are 2 predominant approaches: the coupled (or 'mass balance' which refers directly to physical gas molecules) and the decoupled (or 'book and claim' which doesn't link to physical gas molecules) approach. GreenPower proposed the decoupled approach for the Pilot and to apply this approach to a national network boundary.

Questions 34 and 35: Do you agree with the decoupled approach being applied for the Pilot? Please specify why you think one or the other is more suitable, and if any other options should be considered.

There was unanimous support for the Pilot using a decoupled approach as it is consistent with GreenPower's renewable electricity certification and the RET, is more flexible and supports market liquidity. However, some respondents noted that integration with international schemes may be difficult with this approach as product certification generally uses the coupled approach.

How GreenPower incorporated the feedback:

The Pilot will proceed with the proposed decoupled (or 'book and claim') approach to be applied to a national network boundary.

In the public consultation paper:

Registry functionality

The Pilot registry will operate similarly to the LGC registry operated by the CER. It will allow for the creation, trading, surrender, or cancellation of RGGOs. The registry is used for auditing and reporting purposes and to ensure the accountability of projects.

GreenPower will own and operate the Pilot registry and deliver auditing, verification, and administration activities such as the collection of fees. GreenPower plans to work with an existing gas registry or platform that can be used for the Pilot.

Key functionality for the registry includes but is not limited to:

- registration of project data including technology type, feedstock and location that is also displayed on certificates
- the ability for participants to enter gas production/injection data, upload metering evidence, submit RGGO creation requests, trade, and surrender certificates
- administrator control of the creation and approval of certificates
- the ability for the administrator to publish registry data for transparency purposes
- the ability for producers and traders to surrender certificates on behalf of end-use customers
- clearly identify the status of certificates (active, surrendered, expired etc) with unique identification numbers.

Question 36: Do you agree with the proposed approach of using an existing registry?

There was unanimous support for the proposal to use an existing registry to lower the cost of the Pilot and ensure robust systems are in place within a short timeframe.

Question 37: Is it important for customers to be able to access the registry and manage their own surrenders?

Most respondents thought customers should be able to access the registry and make their own surrenders.

Question 38: Is there a particular registry functionality you think should be included in the Pilot, and why?

Overall, the CER Renewable Energy Certificate (REC) registry's functionality was noted as suitable. Key functionality that was noted in addition to the proposed functions included:

- ability to surrender RGGOs on behalf of a particular end-user
- reporting on RGGO trends on production, trades, and surrenders

- transfer of RGGOs to customers and certificate tradability between customers
- being user-friendly and publicly accessible
- disclosure of the gas delivery mechanism (grid injection or BTM) on the certificates.

How GreenPower incorporated the feedback:

The Pilot will proceed with using an established online registry platform for creating, selling, transferring, and retiring RGGOs. GreenPower will not own the registry.

In the public consultation paper:

Gas attributes captured in the registry certificates

Producers will use the registry and renewable gas certificates to disclose attributes of the produced gas, such as the production location or the feedstock that was used. This information is intended to help end users decide which certificates meet their needs so that they can be used to support renewable energy claims and for corporate reporting.

GreenPower proposed for the registry and certificates to capture:

- producer details including business name, facility location, postcode, and jurisdiction
- the technology used for production, e.g., dry anaerobic digestion
- the feedstocks and energy sources used in the production process
- the water use per unit of gas, and what type of water (e.g., recycled water)
- the location and gas network where the renewable gas was injected
- the time period over which the renewable gas was injected
- emissions intensity of the produced renewable gas before and after the use of offsets
- what, if any, ACCUs and other offsets or certificates were created and surrendered in relation to the unit of gas.

Questions 39 and 40: Do you agree with the proposed attributes? Are there any other attributes that should be included?

The proposed attributes were supported by most respondents. Additional suggested attributes included:

- other certificates that have been used/created/surrendered in relation to an RGGO
- the time period during which the gas was produced
- renewable resources used to produce the gas
- emissions intensity in CO₂-equivalent.

How GreenPower incorporated the feedback:

There are some restrictions within the registry platform limiting the information that can be listed on the certificate retirement statements. However, the following attributes will be shown:

- renewable gas type, e.g., biogas, biomethane or hydrogen
- producer details including business name, facility location, capacity, delivery method (injection or BTM), unique meter identifier, and commissioning date
- production technology, e.g., anaerobic digestion, and feedstocks used
- amount of injected gas and the time period during which the gas was produced
- the emissions intensity of the produced renewable gas
- the owner and end-use customer of a certificate.

In the public consultation paper:

The functional unit of measurement

A functional unit is a unit of measurement used to represent the primary use of the gas. Defining a functional unit should be in line with market practice, and product-specific emissions accounting established under ISO standards 14040/14044 and the GHG Protocol Product Life Cycle Standard. The GHG Protocol Product Life Cycle Accounting and Reporting Standard provides requirements and guidance to quantify and report an inventory of GHG emissions and removals associated with a specific product.

The functional unit for renewable gas could be 1 kilowatt hour (kWh), 1 megawatt hour (MWh) or 1 gigajoule (GJ) of renewable gas. The unit used differs across international schemes as each country has their specific units of measurement. Depending on the platform used for the Pilot and its functionality, the registry may operate in kWh with conversion into GJ on the certificate. GreenPower proposes to include a GJ figure on certificates but notes that the registry may operate in a different unit.

Questions 41, 42, 43: Do you agree with GJ as the functional unit? How important is it that the registry is based on GJ in addition to using this unit on the certificate?

Should a certificate be issued for each 1 GJ of renewable gas produced, or should certificates be issued incrementally for any volume chosen by the producer?

Almost all respondents supported GJ being used as the RGGO unit, however, some noted that kWh would be more suitable for international alignment and would match the unit used for different energy carriers such as electricity. It was noted that units could be converted easily by participants, if needed (1 GJ = 277.778 kWh).

There was strong support from respondents for one certificate to be issued per unit of gas, rather than certificates with different associated amounts of gas.

How GreenPower incorporated the feedback:

As previously stated, the Pilot will use an established online registry platform. Currently the registry operates in kWh and certificates will be based on kWh volumes. Conversion factors to GJ will be included in the retirement statement for ease of use. Changing the energy units to GJ will be considered in future if/when a new independent platform is planned for development.

In the public consultation paper:

Certificate period of validity

Certificates expire if they are not surrendered on behalf of an end user within the validity period. Expired certificates would be invalid and could not be used for environmental claims, including by the renewable gas producer. Internationally, renewable gas certificates are valid for periods between 12 months and 39 months. The purpose of the period of validity is for the gas consumption to occur in a similar timeframe to the production of the gas, which is relevant to the proposed decoupled approach where molecules are not directly linked to the certificate.

GreenPower proposed not to have a validity period in the expected duration of the Pilot. If the Pilot is extended, GreenPower will consider applying a validity period of 36 months to align with the validity requirements for LGCs under Climate Active and general guidance under the GHG Protocol.

Question 44: Do you agree with the proposed validity period?

There was strong support for no validity period being introduced at this stage.

Question 45: Are there other schemes or programs that the Pilot should align with regarding the certificate validity period?

Respondents generally agree with the list of related schemes and programs that the Pilot should align with (Climate Active and GHG Protocol). ACCUs and LGCs were noted as important certificates for interaction with an RGGO. It was noted that some international schemes require the surrender of certificates within the same reporting year that the gas use occurred. In addition, alignment with the Smart Energy Council's Zero Carbon Certification Scheme was suggested to ensure ease of transfer between the two schemes.

How GreenPower incorporated the feedback:

Considering the current operation of the registry platform, a RGGO will expire 3 years and 3 months after the production of the renewable gas. Once a RGGO held by a Producer or Trader expires, it can no longer be transferred or retired and will be cancelled in the registry account.

In the public consultation paper:

Governance

To oversee the Pilot's implementation, GreenPower proposed to establish a project steering committee. This steering committee would advise and provide feedback on the design and operation of the Pilot, and relevant market developments. Proposed participants in the steering committee included:

- federal government agencies who are involved in clean energy and gas schemes and regulations
- state and territory governments
- renewable gas developers
- gas network and pipeline operators
- gas consumers and/or representatives.

Question 46: Which organisations should be represented on the project steering committee?

The proposed steering committee membership was supported, with respondents suggesting the Australian Energy Market Operator (AEMO), the CER, peak bodies, gas retailers, environmental experts, certificate traders and consultants be invited to participate.

How GreenPower incorporated the feedback:

A steering committee was established in December 2022 to provide input throughout the implementation of the Pilot. The current members of the steering committee are industry experts across renewable gas producers and developers, advocacy and peak bodies, certificate traders and renewable gas customers. Government agencies are generally consulted directly and are not part of the steering committee. Participation in the steering committee is open to relevant stakeholders subject to approval by the National GreenPower Steering Group.

In the public consultation paper:

Auditing

For the Pilot, GreenPower proposed to audit the sales and surrenders of renewable gas certificates at the end of each defined reporting period. Reporting periods are proposed as calendar years. GreenPower proposed a similar auditing regime to the current GreenPower program for renewable electricity to build credibility in the Pilot's environmental credentials. Participants' certificate creation, trades and surrenders will be audited by an independent auditor to confirm compliance with the Pilot's requirements. An annual audit report will provide independent assurance and a record of key statistics.

Question 47: Do you agree with the proposed approach for auditing?

There was strong support for annual audits, with some respondents noting that more frequent reporting should be done.

How GreenPower incorporated the feedback:

For the Pilot, an annual audit in respect of each reporting period will be carried out to ensure compliance with the Pilot Rules and related guidelines, and to enhance the integrity of the Pilot.

In the public consultation paper:

Participation fees and certificate price

GreenPower aims to minimise the cost of participation in the Pilot. There will be an annual participation fee per project, and it is proposed that there will be no certificate creation or surrender fees. This will minimise the administrative complexity of the Pilot and enable participants to have certainty regarding participation costs. Under the ERF, there are no creation or surrender fees. Therefore, if a project needs to surrender ACCUs to offset their emissions for the Pilot, there will be no additional fees.

The price of an RGGO will not be set by GreenPower. This is to enable the market to decide the value of a certificate. Therefore, no price cap or minimum certificate price is proposed, to not encumber commercial arrangements.

Question 48: What price would you expect for a renewable gas certificate?

Respondents expected a price range of \$1-7 per GJ with some noting that over time, the value of RGGOs may approach the price of equivalent ACCUs.

Question 49: Do you agree with the proposed approach of not setting price caps or minimum prices?

There was strong support for no price cap or minimum being put in place, with just one respondent suggesting a minimum guaranteed price.

How GreenPower incorporated the feedback:

Based on responses to the consultation, the Pilot will not set a price cap or price floor for RGGOs. This will enable the market and direct negotiations to decide the price of RGGOs.

4. Conclusions and next steps

The feedback received from stakeholders has provided invaluable input into the design of the Pilot Rules.

The Pilot is planned to start operating in the second quarter of 2023. Learnings gained throughout the implementation of the Pilot will be used to update and improve the Rules on a regular basis.

Participation will be open to renewable gas projects across Australia including biogas, biomethane (upgraded biogas) and renewable hydrogen projects injecting into a gas network, as well as behind the meter (BTM) biogas projects that can demonstrate displacement of fossil fuel natural gas.

We are now calling for expressions of interest from renewable gas producers. You can express interest in joining the pilot by contacting GreenPower at www.greenpower.gov.au/contact-us.