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Page 2: Respondent Background

Q1

What type of organization do you work for? Check all that apply.

Industry consultant,

Other (please specify):
Trade Association

Q2

Although this field is not required to complete the survey, we would appreciate it if you provided your contact information. This will help us if we have follow-up questions for you. We will not distribute your contact information; it will only be used for follow-up related to the Standard.

Name	Rafik Ammar
Company	eNG Coalition
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Q3

May we contact you for more information or if we have follow-up questions on your feedback?

Yes

Q4

Would you like to be added to our mailing list for updates and information regarding the Green-e® Renewable Fuels program?

Yes

Page 3: Definitions

Q5

Please provide feedback on the use of the term "Renewable Fuel Certificate" and whether the definition is sufficient to encompass renewable attributes associated with renewable hydrogen.

Yes, "RFC" should be used as an overarching term for certificates from any type of renewable fuel, including renewable hydrogen.

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Comments::

RFC is an acceptable term for renewable fuel certificates in this context.

Q6

Is there a more specific term that should be used to differentiate the certificates from renewable hydrogen? Please choose or suggest an option. (If you chose "Yes" in the previous question, we will treat your answer as a clarifying name that falls under RFCs; if you chose "No" above, then we will treat your answer as the name that should be used in place of "RFC.")

Other (please specify):

The Standard should generally reflect that there are many names for RFCs. In our view it makes sense to list other names that are common (i.e., EAC) and to note that additional names may exist. The criteria for qualification under Green-e should continue to be based on which environmental attributes are included in a given certificate.

Q7

At which point in the fuel life cycle should the RFC be created?

At the point renewable hydrogen leaves the gate of the production facility

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Please explain your response::

Generation of RFC when renewable hydrogen leaves the gate of the production facility is the most universal option, and would cover the interactions listed in option 3. Furthermore, generation at the point of production is unnecessarily early as RFCs are unlikely to be utilized for volumes that are used on-site (i.e., volumes that are not transported in some way to an end-user). Finally, generation at the point of consumption is too late in the process and would preclude broader trading of attributes that we believe is envisioned by this standard.

Q8

Are there any circumstances or product types where you think that unbundled RFCs for renewable hydrogen should not be allowed?

No, unbundled RFCs for renewable hydrogen should always be allowed. (Please explain below).

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Explain::

The goal of the Standard should be to ensure that transacted hydrogen is sustainable, not to limit offtake markets for hydrogen.

Q9

What, if any, requirements should CRS consider for utility retail programs for renewable hydrogen? Please explain:

CRS should allow all PUC approved products to be eligible for Green-e certification.

In particular, the limitation that "costs must only be paid by customers signed up for the program" is unnecessarily prohibitive, because the ability for utilities to rate-base renewable fuel offerings is widely viewed as essential for the growth of these technologies.

PUC processes are designed to follow strict process and rules regarding public interest. The PUC driven process should be sufficient for CRS to accept a renewable fuel offering.

Q10

Is disclosure of the location of RFC production sufficient, or should there be location requirements for bundling the RFCs? Please explain:

Decisions regarding location requirements should be left up to the customer of the renewable fuel.

Q11

Should there be a minimum purchase quantity, or a minimum percentage of renewable fuels offered in utility retail programs? If so, to which customer types should the minimum purchase quantity / percentage apply? Select all responses that apply, and suggest any details (e.g., amounts, customer types, structure) in the comment box.

Comments::

The Standard should not mandate a minimum purchase quantity for utility customers. Customers will purchase renewable fuels in line with their needs. Furthermore, with renewable hydrogen being such a nascent market, transactions of smaller volumes may be necessary to finance additional supply. In order for eNG Coalition to provide a fully informed answer it would be helpful to further understand why CRS would consider minimum volume requirements.

Page 5: Production Facility (Section I.B. of Standard)

Q12

Are the production facility definitions sufficient as written? If not, please provide feedback and include any suggested edits to improve the definitions

Yes, the definitions are sufficient,

Comments::

The definitions are sufficient as written, however, CRS should commit to adding additional bio-hydrogen production technologies that are not biomethane-to-SMR. eNG Coalition would be happy to help source information on additional technologies.

Q13

For renewable hydrogen production from the SMR process, is a disclosure of biogenic emissions needed for the end-users of the renewable hydrogen, and for CRS?

Yes, disclosure is needed,

Comments::

The resulting hydrogen itself does not release carbon when combusted and therefore will not require biogenic reporting associated with scope 1. The step where biogenic emissions occur will be upstream of the production process. Whether or not the hydrogen end-user discloses these emissions will be dependent upon if they are reporting lifecycle CI, and where these emissions occur in the process, and if this is scope accounting. This topic is currently under consideration by WRI.

Q14

Should the SMR pathway for renewable hydrogen production include capturing the carbon produced through carbon capture and storage (CCS)?

No, carbon capture does not need to be included because the feedstock is 100% biomethane

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Comments::

Inclusion of CCS should not be required because the feedstock (biomethane) is biogenic, however, capture of biogenic CO2 resulting in negative emissions should be accounted for.

Q15

Please provide feedback on which types of production pathways should be included in this Standard for renewable hydrogen production

Electrolysis,

Steam Methane Reforming,

Gasification,

Pyrolysis,

Other. If there are any other types of renewable hydrogen production pathways that you think should be included in this Standard, please write them below with an explanation on why you think they should be included::

CRS should seek to include as many renewable hydrogen production pathways as possible. There are additional ways to make biohydrogen beyond the pathways listed here.

Q16

If you think that biomass gasification should be included, please select the impacts below that you think the Standard should address, and suggest specific criteria for each in the comment box:

Air pollution including dust, biomass ash, fly ash/char,
Water pollution, specifically phenolic and terry
components present in gasifier wastewater, and organic
gaseous pollutants such as polycyclic aromatic
hydrocarbons (PAH) and benzene, toluene,
ethylbenzene and xylene (BTEX) from condensate
produced during the cooling process

Impacts of chemical substances discharged on soil,

Other health and safety hazards, specifically the
production of gases such as CO, SOx, NOx and volatile
organics

Other (please specify):

eNG Coalition does not oppose the Standard seeking to address any given environmental impacts, however, CRS should consult with biomass gasification experts and be sure that these impacts are considered fairly and are not used to prevent biomass gasification from qualifying.

Q17

If you have selected biomass gasification as an eligible production pathway for renewable hydrogen, please provide feedback on what kind of biomass feedstocks should be considered. (Biomass gasification is a process of converting solid biomass into a mixture of gasses consisting mostly of hydrogen and carbon monoxide through a sequence of thermo-chemical reactions. The resulting synthetic gas, or "syngas," can be used to generate electricity, used as hydrogen gas.)

All relevant feedstocks should be included. This list should be determined through consultation with biomass gasification technology providers.

Page 6: Geographic Location (Section II. of Standard)
Q18

Location of Renewable Hydrogen Production Facility (Section II. A of Standard): Please provide feedback on whether RFCs should be allowed to substantiate renewable hydrogen usage claims on island territories (such as American Samoa), and if RFCs should be allowed to be traded in locations where renewable hydrogen is not physically delivered to the same pipeline system.

Renewable hydrogen RFCs should be allowed to be
used where there is no physical connection to the
renewable hydrogen network where renewable
hydrogen was delivered, as long as the user is within
the same country.

Please provide any further, thoughts, details or support for your response::

This approach would best align with CEAP rules, and would allow for more book-and-claim options that grow hydrogen supply.

Q19

Location of Renewable Electricity Generator (Section II.B of Standard): The Standard currently requires that electricity generators and electrolyzers are in the same region as defined by the National Transmission Needs Study that was released by the DOE on October 30, 2023. Is this sufficient, or are other geographic boundaries preferable?

The renewable electricity generator location rules in the current version of the draft are sufficient as written.

Page 7: Incrementality (Section III. of Standard)

Q20

Age of electricity generation facility Please provide feedback on the electricity generation facility age criteria for electrolytic hydrogen production. The draft requires electrolyzers to source electricity from new or incremental resources that have come online no more than 36 months prior to the date of the hydrogen production came online. The window for an eligible electricity generation facility is referred to as the “New Date”. Is a 36-month New Date requirement for the renewable electricity generation facility appropriate?

Yes, a 36-month New Date requirement for the renewable electricity generation facility is appropriate.

Q21

Use of standard delivered renewable energy from the grid Should the renewable energy portion of the standard electricity grid mix be counted toward the renewable electricity procurement calculations for an electrolytic hydrogen production facility, or should the facility be required to procure 100% voluntary renewable energy regardless of the local grid mix?

Yes, standard delivery renewable energy in the grid mix should be counted toward renewable electricity procurement calculations; please provide details on when you think grid renewables should be allowed, for example the maximum allowed, as well as your reasoning.

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Comments::

Any source of renewable electricity should be allowed to count toward renewable hydrogen production, as long as there is no risk of double-counting.

Q22

Should CRS allow for a certain percentage of electricity procurement for electrolytic hydrogen production facilities to be exempt from incrementality requirements? The original 45v proposal suggested that 5% of generation from existing clean power sources could be deemed to satisfy the incrementality requirement, but this was not included in the final 45v regulations.

Yes, some percentage of renewable electricity procurement should be allowed to come from older generators. Please describe the percentage allowed below, and any other limitations or parameters that you suggest:

,
Comments::

Generally speaking, CRS should design the Standard to include as much flexibility as possible. The Standard should generally align with 45V given that all participating hydrogen is likely to utilize 45V.

Q23

Age of hydrogen production facility Please provide feedback on whether there should be a limitation on the age of the electrolytic equipment/hydrogen production facility:

No, there should not be any limitation on the electrolytic equipment/hydrogen production facility.

,

Comments::

Renewable hydrogen is still such a nascent technology that it would be counterproductive to impose this type of limitation.

Q24

Incrementality exemptions - Renewable Portfolio Standards (RPS) and Clean Energy Standards (CES) Please provide feedback on whether there should be exemptions for incrementality requirements as defined in section III.B of the Standard for states with qualifying electricity decarbonization standards and qualifying GHG cap program, currently California and Washington.

Yes, states with qualifying electricity decarbonization standards and qualifying GHG cap programs should be exempt from incrementality requirements

Page 8: Vintage and Time Matching (Section IV. of Standard)

Q25

Vintage of Renewable Hydrogen production (Section IV.A. of Standard) Please indicate which of the following types of vintage criteria you prefer, or suggest other criteria for renewable hydrogen production or RFCs.

A rolling vintage window, in which once the renewable hydrogen or RFC is created, it must be retired within a specific period of time (e.g. a monthly or quarterly vintage, where sales in each month or quarter can be met with RFCs created x months or x quarters prior)

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Comments::

Can these rules generally be aligned with 45Z?

Q26

Vintage Window Duration Based on your selection in the previous questions, please provide feedback on the allowable amount of time between hydrogen production and sale.

1 year,

Comments::

Need feedback from members.

Q27

Should vintage rules differ based on user type (residential, commercial and industrial), and/or differ based on purchase size? Please Explain.

No, vintage rules should be the same for all types of user types

Q28

Time Matching of Renewable Electricity for Electrolysis (Section IV. B of Standard) The current draft allows annual matching of renewable electricity used toward eligible electrolytic hydrogen production through December 31st, 2029. From January 1st, 2030, electricity used in each hour toward hydrogen production must be matched with renewable electricity generated in the same hour ("hourly matching"). Please provide your feedback on this phase-in time matching approach.

Yes, annual time matching through 2029 and hourly matching from 2030 onwards is appropriate as written

Comments::

Annual matching should not be a near-term requirement for hydrogen production.

Page 9: Green House Gas Emissions (Section V. of Standard)

Q29

Should CRS require a LCA to account for the upstream emissions of a given renewable fuel pathway, and require sellers to disclose the results and CI value in marketing and sales materials?

Only a LCA should be required, but CI disclosure should not be required

Please support your choice::

LCA is the most important metric for assessing the sustainability of fuels and should be used wherever possible. Requiring the end-user to disclose CI in marketing and sales materials may not be helpful given that layman customers are not likely to understand the significance of CI, and given that the end-user will inherently record this information as part of their GHG inventory. Furthermore, given that Green-e imposes CI and other requirements for certification, disclosure may not be necessary to prove sustainability.

Q30

What is an appropriate upstream CI limit for renewable hydrogen up to the point of injection or shipping? 4 kg of CO₂e per kg of hydrogen is the CI limit in 45v. CRS would not set a limit that exceeds 4 kg of CO₂e per kg of hydrogen. Please suggest what this limit should be and/or provide feedback on why a limit is or is not necessary.

4 kg of CO₂e per kg of hydrogen,

Please justify your choice, or offer another limit::

Best to align with 45V.

Q31

Select one or more of the following LCA tools, and identify preferred models, if any, to best calculate the LCA for renewable fuels in the non-transportation market. Then provide feedback on why you chose the particular LCA tools. (Please note that the GREET and GHGenius models were intended for use in the transportation sector, so the "well-to-gate", which reflects the production and delivery footprint addressed in this Standard, calculation will be used for these tools).

Please provide your reasoning for picking the above tool(s) and rank your selections if applicable. If you chose "Other" above, please specify the other tool(s) you suggest:

CRS should allow all models to qualify.

Q32

Midstream and Downstream Carbon Emissions (Section V.B of Standard) Leakage of hydrogen molecules from distribution infrastructure plays a big role in the breaking down of methane in the atmosphere and can impact GHG emissions. Hydrogen itself is not considered a pollutant or a greenhouse gas; however, H₂ emissions may exert a significant indirect effect on the concentration of other GHGs such as methane and ozone. Should the effect of hydrogen emissions on GHG emissions be accounted for in any specific way in the carbon intensity calculations?

No, I am not aware of any effects or I do not think that any effects should be accounted for in the carbon intensity calculations.

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Comments::

CRS can remedy this question by relying on models that are produced by organizations like the US Department of Energy, that follow scientific principles and are standardized across technologies.

Q33

Should CRS require hydrogen producers to disclose fugitive emissions associated with distribution?

Yes, disclosure on fugitive emissions associated with distribution is necessary.

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Comments::

CRS should rely on existing models to determine what is included in CI. It is likely that fugitive emissions would be included if those fugitive emissions have a GHG impact.

Q34

Is it appropriate to ask for disclosure on the fugitive emissions such as venting and leakage?

Comments::

No. This would already be included in CI modeling.

Q35

A significant amount of energy is used to liquify hydrogen, and the current industrial processes typically use electricity for liquification. Should the Standard account for the energy used for liquifying hydrogen in the CI score calculation for renewable hydrogen? Also, should there be provisions for reducing the CI if this energy input is renewable?

Yes to both questions. The energy input for liquifying hydrogen should be accounted for in CI calculations and if the energy input is renewable then CO₂ emissions related to these emissions should be zeroed out.

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Comments::

This would be included in CI modeling.

Page 10: NO_x Emissions (Section VI. of Standard)

Q36

Should there be a maximum NO_x emission limit for hydrogen production facilities that capture carbon?

No, the Standard should not set a NO_x limit for the hydrogen production facility which is equipped with carbon capture facility.

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Comments::

Assume that this would be regulated by a government agency.

Q37

Should the burning of pure hydrogen in households be allowed under this standard?

Yes, the use of hydrogen in households should be allowed under this standard. Please justify your reason below.

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Comments::

Burning of pure hydrogen in households is unlikely, and therefore should not be a concern for CRS at this time. Furthermore, CRS should not limit end-uses under the Standard.

Q38

Should the maximum blending limit be imposed for the hydrogen used in household burners/stoves?

No, the Standard should not impose a maximum blending limit if renewable hydrogen is used in households. Justify your reason below.

,
Comments::

This blending limit would be imposed by a utility regulator or by the end-user based on equipment capability.

Q39

If end use of renewable hydrogen in households is allowed under this Standard, one of the main applications is to use hydrogen combustion cookers for cooking in households. Hydrogen combustion cookers equipped with catalytic converters have very low nitrogen-oxide emissions. Should the use of stoves/cookers without catalytic converters be allowed under this program?

Yes, use of hydrogen stoves/cookers without catalytic converters should be allowed under this program.

,
Comments::

We question whether imposing this type of limitation would be practical or possible for CRS. Generally speaking, CRS should not impose limitations on end-users, especially given that these technologies are currently deployed at a very small scale.

Q40

For the application of renewable hydrogen in households, should there be any limit criteria on the ventilation, and how can the limit be applied?

See answer to question 39.

Page 11: Water Use in Electrolyzers (Section VII. Of Standard)

Q41

Should water sourcing from all four drought areas D1, D2, D3, and D4 be restricted and facilities sourcing water from these areas should only use recycled/repurpose water or use dry cooling systems for electrolyzers to reduce water consumption?

Yes, water sourcing from all four drought areas D1, D2, D3, and D4 should be restricted.

Q42

Should water sourcing from all four drought areas D1, D2, D3, and D4 be restricted for SMR (biomethane to renewable hydrogen) as well?

Yes, water sourcing from drought areas for SMR production facilities should also be restricted and only recycled and repurposed water usage should be allowed in these areas.

Q43

Are there any other concerns and regulations related to water usage in electrolyzer and SMR? Please explain below:

Respondent skipped this question

Page 12: Distribution Infrastructure for Hydrogen Supply (Section VIII. of Standard)

Q44

Should we consider chemical transportation of hydrogen in this Standard, or should we reconsider in the future depending on technology readiness?

Yes, chemical transportation of hydrogen should be included in this standard. Please justify your opinion below, and explain which means of chemical transportation should be included, in the form of ammonia or methanol or both.

,
Comments::
eNG Coalition strongly supports CRS' consideration of chemical transportation of hydrogen within the Standard. Our association focuses on e-methane, which is an energy carrier for hydrogen in this manner. We are providing feedback on this draft Standard in anticipation of CRS adapting either the hydrogen or biomethane program to include e-NG in the future. We would be happy to speak with you about this further.

Q45

Is there any other kind of infrastructure outside the distribution that we should have requirements for? Please provide the explanation below:

CRS may want to consider how this Standard relates to e-fuels that are used in the aviation and maritime sectors, and stored and transported accordingly.

Page 13: Pipeline Blending (Section IX. of Standard)

Q46

Should this Standard impose a maximum blending limitation of blending hydrogen to natural gas pipelines?

No, this Standard should not impose a limit on blending percentage of hydrogen into natural gas pipelines.

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Comments::

Utilities and their regulating agencies are extremely well equipped to establish hydrogen blending limits. Indeed, pipeline safety is a primary mandate for these organizations. It is not necessary for CRS to take on this role.

Page 14: Environmental Justice (Section X. of Standard)

Q47

Respondent skipped this question

Should this Standard make it mandatory for renewable hydrogen producers to share the information on NOx emissions with residential communities? Justify your answer below:

Q48

If any renewable hydrogen production facilities also have ammonia production facilities, then NOx emissions are a concern. Should there be any limitations/criteria imposed on ammonia producing facilities coexisting with renewable hydrogen facilities? If yes, what limit should that be?

eNG Coalition has no position on ammonia production facilities.

Q49

Are there other environmental justice concerns or criteria that should be considered in this Standard?

eNG Coalition has no position on additional environmental justice concerns.