



Request for Proposals Supply of Renewable Natural Gas and Renewable Hydrogen

April 6, 2023

Deliver Proposals to:
Hawaii Gas
Attention: Kevin Nishimura
745 Fort Street Mall
Suite 1800
Honolulu, HI 96813
hg-rng-rfp@hawaiigas.com

Responses to this Request for Proposals must be received by:
September 30, 2023 at 2:00 PM, Hawaii Standard Time

Contents	Page
1 Hawaii Gas.....	1
2 Request for Proposal Overview	2
2.1 Pricing.....	3
2.2 Supply Term	3
2.3 Quantity	4
2.4 Change of Custody	3
2.5 Community Support.....	4
3 Proposal Submission Instructions	5
3.1 Due Date	5
3.2 Questions and Answers.....	5
3.3 Proprietary Rights and Confidentiality.....	5
3.4 Disclosure of Certain Information for Regulatory Purposes.....	6
3.5 Proposal Review Criteria.....	5
4 APPENDIX 1: General Bidder Qualifications.....	7
5 APPENDIX 2: Product and Production Details.....	8
6 APPENDIX 3: Product Specifications	9
6.1 Table 1: Gas specifications for RNG and RNG/hydrogen blend.....	9
6.2 Table 2: Gas specifications for hydrogen	9

1 Hawaii Gas

Background

For more than 100 years, The Gas Company LLC, dba Hawaii Gas has been essential to the Hawaiian Islands as the only regulated gas utility in the State, providing gas energy for residents, businesses, and government. Our commitment is to provide safe, secure, reliable, and affordable gas energy to all utility gas consumers and to leverage our utility infrastructure to optimize gas distribution and cost effectiveness. Because of our isolated island environment, diversity of energy supply is critical to ensure sustainability and energy resiliency. As an engaged member of our community, we are committed to Hawaii's clean energy future. At Hawaii Gas, we are doing our part to reduce Hawaii's dependence on oil and increase the supply of renewable energy for the betterment of our people, our islands, and our planet. We support the State's goal of carbon neutrality by 2045 and seek to reduce our carbon footprint by partnering with viable suppliers of renewable energy that can integrate safely with our supply and infrastructure model. Additionally, in times of emergency or natural disasters, when the electric grid is unavailable, gas is an essential component to recovery efforts for residents, businesses, healthcare facilities, and government agencies, i.e., gas allows for a hot shower and a warm meal when it matters most.

Status of Hydrogen and Renewable Natural Gas Blending

Hawaii Gas, to our knowledge, currently blends the largest proportion of hydrogen in a gas utility in North America (typically 10-12%) with the longest operating record at that composition (since 1974). The hydrogen gas blend is distributed to Oahu utility customers through 1,100 miles of transmission and distribution pipeline network that was constructed and maintained over the past 100+ years. Hawaii Gas is exploring how to increase the amount of hydrogen in its utility pipeline. Hawaii Gas is engaged with industry and government in research and data sharing to support hydrogen blending in utility gas service, to ensure safety and reliability in pipeline infrastructure as well as end user equipment. Current industry research supports hydrogen blending up to 20% by volume for utility gas service while maintaining safe and reliable distribution infrastructure and the performance of gas equipment and appliances. Hawaii Gas seeks to increase the concentration of hydrogen in its fuel mix to further reduce the carbon footprint of utility gas.

Hawaii Gas is currently blending renewable natural gas (RNG) into its utility gas supply on Oahu, produced at the City's Honouliuli Wastewater Treatment Plant from digester biogas. Additional sources of RNG and hydrogen will enable Hawaii Gas to further diversify its fuel supplies and make progress toward the goal of carbon neutrality. Hawaii Gas intends to replace incremental volumes of synthetic natural gas ("SNG"), and/or propane ("LPG") in its Oahu utility system with a blend of RNG and renewable hydrogen where feasible and compatible. Improving diversity of fuel supply in this manner will enable Hawaii Gas to continue to provide its customers with safe, secure, reliable and affordable energy, while increasing the amount of renewable gas energy for our customers and our state.

2 Request for Proposal Overview

Hawaii Gas is seeking firm proposals for the supply of up to 65,000 therms per day of renewable natural gas, and up to 2,300 kg per day of renewable hydrogen. The upper range of 2,300 kg per day of renewable hydrogen has been scaled with the upper range of 65,000 therms per day of renewable natural gas to reach a blend of up to 15% hydrogen by volume, which is the recorded “high water” mark for the hydrogen concentration in the synthetic natural gas. Eligible proposals from new and existing production resources include but are not limited to:

- Wastewater Treatment Plant RNG
- Landfill RNG
- Bio-crop RNG
- Biomass fast pyrolysis RNG
- Food waste RNG
- Dairy RNG
- Hydrogen produced by electrolysis powered by renewable electricity
- Steam methane reforming hydrogen using renewable natural gas
- Methane pyrolysis from landfill gas, renewable gas
- Biomass gasification
- Ethanol or biomass reformation
- Microbial electrolysis cell using renewable electricity

The specifications for RNG are shown in Appendix 3 Table 6.1. Responders are to provide their gas specifications in Tables 6.1. Proposals can offer one or multiple forms of RNG, renewable hydrogen, or blends of RNG and renewable hydrogen. Proposals must include firm gas supply volume. Gas supply volume should be shown with upper and lower supply volume on a therms per day and on a therms per year basis for RNG or RNG/hydrogen blends. Renewable hydrogen supply volume should be shown with upper and lower supply volume for kilograms per day and kilograms per year.

Depending on the proposed RNG volume and delivery location, Hawaii Gas may require gas to be delivered to transmission pipeline at gas pressure greater than 500 psig, or to gas distribution pipeline system at regulated gas pressure of approximately 15 psig. Gas supply proposals should provide a specific delivery location and delivery pressure assumptions with the delivered price based on the exact location and pressure.

Depending on the proposed renewable hydrogen supply volume, it is likely that Hawaii Gas will require delivery at or very close to the SNG plant or RNG supply location and into the transmission pipeline at a gas pressure greater than 500 psig. The final supply location and pricing may be subject to adjustment based on other RNG supply variables.

All proposals must include details on project listed in the attached Appendices:

- **Appendix 1: General Bidder Qualifications**
- **Appendix 2: Product and Production Details**
- **Appendix 3: Product Specifications**

The information set out in this RFP is being provided by Hawaii Gas for information purposes only. Hawaii Gas does not make any representation or warranty as to the accuracy or completeness of any information set out in this RFP, and Hawaii Gas does not assume any undertaking to supplement such information as further information becomes available or in light of changing circumstances. Hawaii Gas shall not have any liability for any representations or warranties (express or implied) contained in, or any omissions from, the RFP or any other written or oral communication transmitted to interested parties in the course of its evaluation.

The information contained in this RFP is confidential and has been prepared to assist interested parties in performing their own evaluation and for no other purpose. The information is preliminary in nature and does not purport to be all-inclusive or to contain all information that a responsive bidder may desire. It is understood that each interested party of this RFP will perform its own independent investigation and analysis as it deems relevant. The information contained herein is not a substitute for an interested party's independent investigation and analysis. The recipient acknowledges that Hawaii Gas considers the RFP documentation to include confidential, sensitive and proprietary information and agrees that it shall use precautions in accordance with its established procedures to keep the material contained in this RFP confidential.

This RFP, and the information it contains, should be understood to supersede for all purposes any information relating to the RFP which Hawaii Gas may have previously furnished the recipient, either directly or indirectly. In preparing responses to this RFP, recipients should rely only on information contained in this RFP and on written supplements provided by Hawaii Gas or its representatives.

2.1 Pricing

Hawaii Gas seeks competitively priced proposals for the supply of RNG, renewable hydrogen, or blends of RNG and renewable hydrogen to Hawaii Gas, that provide the maximum value to its customers. Pricing shall be provided in dollars per therm (\$/therm) for supply of RNG or RNG/hydrogen blends, and in dollars per kilogram (\$/kg) for supply of hydrogen. The preference is for fixed-price, non-index linked fuel supply except for those cost components that are inherently variable. If variable cost is proposed, the variable cost component should be detailed, and the pricing calculation explained on a per therm or kilogram basis. Pricing for all delivered products will include the precise location of delivery to Hawaii Gas pipeline or facility, delivery pressure, and location and description of change of custody, on the island of Oahu.

2.2 Supply Term

Hawaii Gas intends to enter a Fuel Supply Agreement (FSA) for renewable gas and/or hydrogen supply, contingent on approval from the Hawaii Public Utilities Commission (HPUC). The term of the FSA shall be

for a minimum of five years and a maximum of 20 years. Proposals may also include options to extend the term of the contract.

2.3 Quantity

Hawaii Gas intends to enter one or more term FSAs to purchase an aggregate volume of up to 65,000 therms per day of RNG and up to 2,300 kg/day of renewable hydrogen. Proposals can include options for incremental quantities of RNG or renewable hydrogen that may be available in the future.

2.4 Change of Custody

Hawaii Gas prefers that gas supply be delivered into its transmission pipeline through a pipeline tie-in location. The alignment of the 21-mile pipeline is available upon request from bidders. Change of custody, where Hawaii Gas shall assume title to the gas product will occur at the inlet of Hawaii Gas' gas meter located where gas is delivered and measured by volumetric gas metering to Hawaii Gas' pipeline or gas receiving facility. Responders can propose a different point for change of custody if it is more appropriate for the delivery scenario.

2.5 Community Support and Outreach

Hawaii Gas is committed to strengthening the communities we serve. We foster partnerships with local non-profit organizations and provide support through corporate and employee monetary donations and sponsorships, volunteering, participating in educational, outreach, and vocational programs, investment in improving infrastructure and energy efficiency, and other philanthropic initiatives. For years, Hawaii Gas and its employees have generously supported local organizations such as Aloha United Way, Special Olympics, Hawaii Humane Society, American Red Cross, and many more, including Hawaiian cultural preservation organizations. Our intent is to partner with those who share in this commitment to community support and betterment. It is equally important that the impact of the proposed project is vetted with the community in which it is proposed. Community outreach to gain acceptance and support for the project construction and operations will be a key consideration. We ask that proposals include a section that details the community support and outreach programs that the responder's business or organization engages in, its monetary and/or non-monetary support and outreach efforts. Please include annual value of support, description and level of non-monetary support and the organization or community beneficiaries. Hawaii Gas will use the community support and outreach engagement level as one of the selection criteria for evaluating and selecting from qualified proposals.

3 Proposal Submission Instructions

3.1 Due Date

A digital PDF version of the proposal is due September 30, 2023, 2:00 p.m. Hawaii Standard Time. PDF versions may be delivered via email to hg-rng-rfp@hawaiigas.com or copied onto a thumb drive and delivered by standard carrier at the following address by the September 30, 2023, 2:00 p.m.

Hawaii Gas
Attention: Kevin Nishimura
745 Fort Street, Suite 1800
Honolulu, Hawaii 96813

The cover letter must be signed and dated by a person having authority to enter into an agreement with Hawaii Gas. Hawaii Gas will record the date and time proposals were received. Proposals that are delivered after the proposal due date, or are non-conforming may be disqualified. Hawaii Gas reserves the right to cancel or postpone the proposal due date at any time before, on or after the proposal due date.

Estimated timeline and contract award schedule:

- RFP Issue Date: April 6, 2023
- Proposals Due Date: September 30, 2023
- Proposals Review: October 2023
- Contract Discussions: November 2023
- Execute Term Sheet(s): December 2023 – First quarter 2024

3.2 Questions and Answers

Questions must be submitted by June 15, 2023, by email addressed to: hg-rng-rfp@hawaiigas.com. Hawaii Gas shall have the sole option of determining whether a response to a question is necessary or appropriate under the circumstances. If Hawaii Gas elects to respond to a question, it shall have the further option of determining whether it shall respond solely to the person asking the question or to make the response available to all bidders in the interest of transparency and fairness.

3.3 Proprietary Rights and Confidentiality

This RFP has been prepared exclusively for Hawaii Gas and is proprietary in nature. Hawaii Gas reserves all copyrights for this document and its constituent parts and prohibits any unauthorized use or reproduction hereof. All or portions of this RFP and/or Attachments hereto may be designated or marked as confidential (“Confidential Information”). Prospective bidders acknowledge and agree to maintain in strict confidence all Confidential Information and data relating to the subject matter of this RFP or to Hawaii Gas’ business or affairs which is marked as confidential and which is disclosed by Hawaii Gas to a

prospective bidder, and agrees to take normal and reasonable precautions to maintain such confidentiality so that no Confidential Information will be divulged to any party other than Permitted Persons.

3.4 Disclosure of Certain Information for Regulatory Purposes

Prospective bidders should be aware that as a regulated public utility Hawaii Gas will be required to obtain certain regulatory approvals prior to entering into a definitive fuel supply agreement with a winning bidder. Hawaii Gas anticipates that at the appropriate time it will seek the HPUC's approval to submit privileged and confidential information contained in responses to this RFP for the HPUC's and other stakeholders' review subject to a protective order and appropriate confidentiality undertakings. By submitting a response to this RFP, you agree to allow Hawaii Gas to submit privileged and confidential information for the HPUC's and other stakeholders' review.

3.5 Proposal Review Criteria

Proposals will be evaluated using the following criteria: delivery timing after HPUC approval, price, production location, proposed term in years, proven technology, carbon intensity score, community support and outreach, additional costs to HG, volume, project risks, gas quality, and proven track record of developer. Each of these criteria will have a scoring weight to determine the final score for proposals; price, proven technology, and carbon intensity score will be among the higher weighed criteria.

Proposals will also be assessed on responsiveness to HRS § 269-6(b), which requires the HPUC to consider four factors in determining the reasonableness of costs associated with potential gas utility system capital improvements and operations. The four factors are (i) price volatility, (ii) export of funds for fuel imports, (iii) fuel supply reliability risk, and (iv) greenhouse gas emissions. Hawaii Gas will select proposals based on the criteria and scoring to discuss terms for term sheets that would establish the framework for a fuel supply agreement.

4 APPENDIX 1: General Bidder Qualifications

The Bidder shall obtain and maintain all licenses, permits, liability insurance, workman's compensation insurance and comply with any and all other standards or regulations required by Federal, State statute, ordinances and rules during the performance of any contract between the Bidder and Hawaii Gas.

Bidder Information	Response
Company Name	
Address	
City, State, Zip code	
Federal Taxpayer ID	
Point of Contact, Title	
Email address for Point of Contact	
Phone number for Point of Contact with area code	

- 1) Certify that no officer of the firm or affiliates has been convicted of fraud or any felony in the past 5 years.
- 2) Demonstrate supplier has experience with energy system design and construction in Hawaii and is able to obtain all necessary permits, licenses, or authorizations.
- 3) Provide adequate evidence of the ability to meet the financial requirements and commitments of a fuel supply agreement. Provide details of similar projects and fuel supply agreements completed.
- 4) The proposal shall provide delivery or production guarantees.
- 5) Provide a Certificate of good standing or equivalent showing current license to operate in Hawaii in good standing.
- 6) Provide evidence that the Supplier has legal rights to the supplied product as well as the proposed feedstock.
- 7) Provide evidence that the supplier has experience with the proposed production, handling, and delivery of the proposed product to be supplied.
- 8) Provide description of bidder’s Community Support Programs, support level, and outreach programs.

5 APPENDIX 2: Product and Production Details

- 1) Proposed product
- 2) Owner of production facility and land
- 3) Location of production facility (if in Hawaii, provide zoning land use information)
- 4) Feedstock description and source
- 5) Feedstock owner
- 6) Ownership of gas (if gas feed is sourced from a third party)
- 7) Production start date
- 8) Product pricing: RNG in \$ per therm, for hydrogen in \$ per kilogram
- 9) Delivery location (on Oahu), provide delivery pressure and flow rate
- 10) Production technology (new build or existing)
- 11) Supply Volume: For RNG or RNG/hydrogen blend: minimum and maximum therms per day and minimum and maximum therms per year. For hydrogen: minimum and maximum kilograms per day and minimum and maximum kilograms per year.
- 12) Delivery method (pipeline, container, tube-trailer, etc)
- 13) Schedule for first delivery
- 14) Term of supply agreement in years (include proposed start date)
- 15) Carbon Intensity (CI) Score (as determine using GREET)
- 16) Project Financing description

6 APPENDIX 3: Product Specifications

The specification for the Renewable Natural Gas is defined by the following tables:

6.1 Table 1: Gas specifications for RNG and RNG/hydrogen blend

Constituent	Requested Stream Concentration	Responder Concentrations
Methane	Greater than 97 MOL % (RNG without H2)	
Hydrogen Sulfide	Less than 4 ppm	
Siloxanes	Less than 50 ppm	
Carbon Dioxide	Less than 3.0 % by volume	
Carbon Monoxide	Less than 1.0 % by volume	
Nitrogen	Less than 1.0 % by volume	
Oxygen	Less than 0.4% by volume	
Hydrogen	Less than 20% by volume	
Other Inert/HC Gases	Less than 2% by volume	
Water Content	Less than 7 pounds per million cubic feet	
Sulfur	Less than 12.6 parts per million	
Heating Value	960 – 1130 BTU/SCFT (HHV, dry)	
Wobbe Index	1280-1400	
Specific Gravity	0.52 – 0.62 (Air = 1.0)	

6.2 Table 2: Gas specifications for hydrogen

Constituent	Responder Concentrations or Comments
Hydrogen	
Please list other constituents:	