

Request for Information | Pacific Northwest Hydrogen Association

Start of Block: 1. Intro Questions

Foreword 1.0 Pacific Northwest Hydrogen Association (PNWH2) is a public private partnership, non-profit organization registered with the State of Washington to coordinate regional efforts aimed at clean hydrogen deployment.

PNWH2 is requesting information on potential projects aimed at the U.S. Department of Energy's (DOE) Hydrogen Hub (H2Hubs) opportunity. The H2Hubs opportunity is aimed at building several regional network[s] of clean hydrogen producers, potential clean hydrogen consumers, and connective infrastructure. This request for information aims to collect information about all potential projects in the Northwest that should be considered in the development of the initial proposal.

If you responded to the original release of this RFI, you may edit your response. Responding to this reopened RFI is optional for those who submitted a previous response – more details on the next page.

Submissions may include projects, programs, studies, demonstration projects and relevant services. PNWH2 anticipates a final H2Hubs proposal which primarily funds infrastructure projects ready to scale, but could be complemented by programs, studies and other investments that will help to reduce risk associated with infrastructure investments that reduce emissions in hard to decarbonize sectors over the longer term.

PNWH2 will evaluate candidate submissions based on their fit with the DOE's guidance on the H2Hubs Notice of Intent, potential contribution to a larger network aimed clean hydrogen deployment, Washington's 2021 State Energy Strategy, and other program objectives.

DOE is expected to publish the Funding Opportunity Announcement (FOA) in September or October 2022. Concept papers are likely to be due 4-8 weeks later, with invitations to submit a full proposal coming approximately 4 weeks after that. PNWH2 then expects to have about 4 months from the receipt of the invitation to prepare a full proposal. If successful, PNWH2 would receive up to \$10 million in the first application phase, and up to \$1 billion in the second phase, to fund hydrogen hub development.

PNWH2 seeks to gather information through this survey to support upcoming concept paper & proposal development for the DOE H2Hubs opportunity. This is the first step of an interactive process; PNWH2 will review submissions and may ask follow-up questions to respondents as needed.

For more information on the H2Hubs Program, please reference the Bipartisan Infrastructure Law provisions in 42 U.S.C. § 16161a(a) and DE-FOA-0002768 found on <https://eere-exchange.energy.gov/>

Guidelines 1.0 This RFI is the single point of entry to the PNWH2 H2Hubs concept paper and proposal. If you are interested in being involved, please participate in this survey to the best of your organization's ability.

If you need an alternative option or format for submitting a response, please contact Jaci Perez - jaclyn.perez@commerce.wa.gov.

Submission Guidelines:

- Feel free to download the full RFI to prepare your answers ahead of starting the Qualtrics survey.
- Follow all word and page count limits. Responses that do not adhere to these limits may be cut off.
- For the purposes of this RFI the word “project” is used as a placeholder for any project, product, plan, or asset related to the production, movement, and/or storage, and utilization of hydrogen.
- Please denote any proprietary information in your submission so that it may be redacted appropriately in the event of a Freedom of Information Act request.

Submissions will be evaluated as they are received. Submitting a response does not guarantee inclusion in the concept paper. This survey will close **September 19, 2022**.

If You Responded to the Original RFI (July 2022):

- Updating your response is OPTIONAL. There are some new questions for clarification and evaluation – many may not apply to your submission, but you can check in this document.
- Questions that are completely new or have been edited are highlighted in **GREEN** below and marked *NEW*. You can visually spot the new questions or use the search tool to find questions marked *NEW*. Questions that were edited have new elements highlighted in green as well.
- Please note that question numbers have changed throughout the survey. Your original response to a question will be pre-loaded into the correct original question even if the numbering has changed.
- If you choose to update your response, you can work from your original response(s) rather than starting over by using a Retake Link. When using a Retake Link, your original answers will be pre-filled into the survey and you can leave them or change them as necessary. Retake links are sent to the email address provided in the original response. If you need the link sent to a different address due to email address changes/access, please email Maraea.Skeen@wsu.edu.

Questions? Email Jaci Perez at Jaclyn.Perez@commerce.wa.gov

Intro 1.1 Project Title

Intro 1.2 Primary Contact Information

First Name _____

Last Name _____

Email Address _____

Organization Name _____

Intro 1.2a Organization Type

- For-Profit Entity
- Public Non-Profit
- Private Non-Profit
- Government Entity
- Tribal Government or Tribal-Led Organization
- Higher Education
- Individual/Sole Proprietor
- Labor Union
- Other (Please Describe) _____

Display This Question:

If Organization Type = Other (Please Describe)

Intro 1.2b Please describe the Organization Type

Intro 1.3*NEW* Is this project or program co-lead by another organization?

- Yes
- No

Display This Question:

If Is this project or program co-lead by another organization? = Yes

Intro 1.3a*NEW* Please enter the co-lead or collaborator's details.

- First Name _____
- Last Name _____
- Email Address _____
- Organization Name _____

Display This Question:

If Is this project or program co-lead by another organization? = Yes

Intro 1.3b*NEW* Collaborator Organization Type

- For-Profit Entity
- Public Non-Profit
- Private Non-Profit
- Government Entity
- Tribal Government or Tribal-Led Organization
- Higher Education
- Individual/Sole Proprietor
- Labor Union
- Other (Please Describe) _____

Display This Question:

If Collaborator Organization Type = Other (Please Describe)

Intro 1.3c*NEW* Please describe the collaborator's Organization Type

Intro 1.4*NEW* Project Type

- Capital, Infrastructure or Construction Project
- Programmatic - Workforce Development, Community Engagement, Diversity-Equity-Inclusion, Studies
- General Interest or Services/Consulting Relevant to the PNW Hydrogen Value Chain

Display This Question:

If Project Type = Programmatic - Workforce Development, Community Engagement, Diversity-Equity-Inclusion, Studies

Intro 1.4a*NEW* What type of program are you proposing?

- Workforce Development
- Community Engagement & Consent
- Diversity, Equity and Inclusion/Justice40
- Life-Cycle Analysis
- Techno-Economic Analysis
- Market Analysis
- Other _____



Intro 1.5 Please include an executive summary/abstract of the project or program. Identify the project title, objectives & description of the project, and the expected impact of the project. If including proprietary or sensitive business information, please denote it *Proprietary* so that it may be appropriately redacted in the case of a freedom of information act request. Limit responses to 2000 characters or less.

Siting 1.6 Will the project take place primarily in the Pacific Northwest?

- Yes
- No (Please Explain) _____

Siting 1.7*NEW* Has a project site already been identified?

- Yes - Brownfield / A Site Already In Use
- Yes - Greenfield / A New Site
- Site Identification In Progress
- No
- Other _____

Siting 1.8*NEW* Please enter the address of the proposed site or a nearby landmark. Location data will be used in mapping the regional value chain.

- Street _____
- City _____
- State _____

Siting 1.9 Please enter the zip code of the proposed primary project site.

- Zip Code _____

Q1.10*NEW* Is this a pipeline project?

- Yes
- No

Display This Question:

If Is this a pipeline project? = Yes

Q1.11*NEW* Has right of way for the pipeline been established?

- Yes
- Partially
- No

End of Block: 1. Intro Questions

Start of Block: 2. Program Objectives

Objectives 2.1 Which of the Bipartisan Infrastructure Law objectives does the proposed project/program work to address? Check all that apply.

- Investing in American manufacturing and workers, including supporting high-paying jobs with the free and fair choice to join a union, and effective workforce development to upskill incumbent, underrepresented, and dislocated workers
 - Expanding access to energy efficiency and clean energy for families, communities, and businesses.
 - Delivering reliable, clean, and affordable power to more Americans.
 - Building the technologies of tomorrow through clean energy demonstrations.
-

Objectives 2.2 Which of the H2Hubs program objectives does the proposed project/program work to address? Check all that apply.

- Demonstrably aid achievement of the clean hydrogen production standard developed under section 822(a) of Energy Policy Act of 2005 (EPAAct 2005, 42 U.S.C. § 16166)
 - Demonstrate the production, processing, delivery, storage, and end use (Make, Move, Store, Use) of clean hydrogen
 - Contribute to development into a national clean hydrogen network to facilitate a clean hydrogen economy
 - Use of US-made materials and domestic supply chains and minimizing the use of critical materials
-

Objectives 2.3 Which of the following additional objectives does the proposed project/program work to address? Check all that apply.

Reference: [2021 Washington State Energy Strategy](#)

- Demonstrates progress toward greenhouse gas (GHG) reduction recommendations in the 2021 State Energy Strategy
- Developing research and/or education programs to support the hydrogen value chain
- Workforce training to meet the needs of the growing hydrogen economy
- Advancing equity and environmental justice through investments that directly benefit one or more overburdened or disadvantaged communities
- Long-term strategic planning or implementation projects related to supply chain and economic resilience in the Pacific Northwest region

End of Block: 2. Program Objectives

Start of Block: 3. Objective Descriptions

Carry Forward Selected Choices from "Which of the Bipartisan Infrastructure Law objectives does the proposed project/program work to address? Check all that apply."



Objectives 3.1 Please briefly describe how your project meets the BIL Objectives indicated above. Limit responses to 500 characters per objective.

Investing in American manufacturing and workers, including supporting high-paying jobs with the free and fair choice to join a union, and effective workforce development to upskill incumbent, underrepresented, and dislocated workers _____

Expanding access to energy efficiency and clean energy for families, communities, and businesses.

Delivering reliable, clean, and affordable power to more Americans.

Building the technologies of tomorrow through clean energy demonstrations.

Carry Forward Selected Choices from "Which of the H2Hubs program objectives does the proposed project/program work to address? Check all that apply."



Objectives 3.2 Please briefly describe how your project meets the H2Hubs Objectives indicated above. Limit responses to 500 characters per objective.

Demonstrably aid achievement of the clean hydrogen production standard developed under section 822(a) of Energy Policy Act of 2005 (EPAAct 2005, 42 U.S.C. § 16166)

Demonstrate the production, processing, delivery, storage, and end use (Make, Move, Store, Use) of clean hydrogen _____

Contribute to development into a national clean hydrogen network to facilitate a clean hydrogen economy

Use of US-made materials and domestic supply chains and minimizing the use of critical materials

Carry Forward Selected Choices from "Which of the following additional objectives does the proposed project/program work to address? Check all that apply. Reference: 2021 Washington State Energy Strategy"



Objectives 3.3 Please briefly describe how your project meets the additional objectives indicated above. Limit responses to 500 characters per objective.

- Demonstrates progress toward greenhouse gas (GHG) reduction recommendations in the 2021 State Energy Strategy _____
- Developing research and/or education programs to support the hydrogen value chain _____
- Workforce training to meet the needs of the growing hydrogen economy _____
- Advancing equity and environmental justice through investments that directly benefit one or more overburdened or disadvantaged communities _____
- Long-term strategic planning or implementation projects related to supply chain and economic resilience in the Pacific Northwest region _____

End of Block: 3. Objective Descriptions

Start of Block: 4. State



Objectives 4.1 Please explain the project's contributions to reducing emissions in hard-to-decarbonize sectors, if applicable. Limit responses to 800 characters.



Objectives 4.2 Please explain how the project supports PNWH2's focus on clean, electrolytic green hydrogen. Limit responses to 800 characters.

End of Block: 4. State

*If Project Type = Programmatic - Workforce Development, Community Engagement, Diversity-Equity-Inclusion, Studies OR
General Interest or Services/Consulting Relevant to the PNW Hydrogen Value Chain
Then: Skip to Block 10: Project Readiness.*

Start of Block: 5. DOE Capital Project Questions

Objectives 5.1 End-use diversity: Which hydrogen end-use best fits the project? Check all that apply.

- Electric power generation
 - Grid-scale energy storage or backup power
 - Industrial heat/power
 - Industrial feedstocks
 - Transportation
 - Residential and commercial heating
 - Agriculture
 - Other (please explain) _____
-

Objectives 5.2 Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean hydrogen? **Please only select options that are included in your organization's project planning.**

Make (Accelerate Commercialization)

Make (Demonstrate Production)

Make (Demonstrate Processing)

Move

Store

Use

End of Block: 5. DOE Capital Project Questions

Start of Block: 6. Make Follow-Up

Display This Question:

If Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Accelerate Commercialization)

Or Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Demonstrate Production)

Or Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Demonstrate Processing)

Production 6.1 What is the projected level of production and cost of hydrogen will the project meet in the following years?

	\$ cost / kg H2	kg / day production
2023		
2024		
2025		
2026		
2028		
2030		
2035		

 Display This Question:

If Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Accelerate Commercialization)

Or Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Demonstrate Production)

Or Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Demonstrate Processing)

Production 6.2 What is the project's CO2 intensity for production in CO2e/kg H2?

Display This Question:

If Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Accelerate Commercialization)

Or Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Demonstrate Production)

Or Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Demonstrate Processing)

Production 6.2a*NEW* What is the project's CO2 intensity for production in CO2e/kg H2?

- Carbon intensity is <0 kg CO2/kg H2
- Carbon intensity is <0.45 kg CO2/kg H2
- Carbon intensity is <1.2 kg CO2/kg H2
- Carbon intensity is <2 kg CO2/kg H2

Production 6.3*NEW* Which technology will the proposed project utilize for production?

- Electrolysis
- Pyrolysis
- Liquefaction
- Other (Please describe) _____



Production 6.4*NEW* How much energy will the project require in MW?

Production 6.5*NEW* Have you had discussions about power availability with a power supplier?

Yes

No

End of Block: 6. Make Follow-Up

Start of Block: 7. Move Follow-Up

Display This Question:

If Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Move

Move 7.1 What is the method of transport for the H2?

Display This Question:

If Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Move

Move 7.1a*NEW* What is the transport capacity in kg/day?

Display This Question:

If Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Move

Move 7.2 What is the proposed distance of transport in miles?

Display This Question:

If Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Move

Move 7.3 What is the CO2 intensity in kg CO2e/kg H2 for transport?

Display This Question:

If Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Move

Move 7.3a*NEW* What is the CO₂ intensity in kg CO₂e/kg H₂ for transport?

- Carbon intensity is <0 kg CO₂/kg H₂
- Carbon intensity is <0.45 kg CO₂/kg H₂
- Carbon intensity is <1.2 kg CO₂/kg H₂
- Carbon intensity is <2 kg CO₂/kg H₂

End of Block: 7. Move Follow-Up

Start of Block: 8. Store Follow-Up

Display This Question:

If Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Store

Storage 8.1 Please describe the method of storage.

Display This Question:

If Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Store

Or Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Accelerate Commercialization)

Or Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Demonstrate Production)

Or Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Demonstrate Processing)

Storage 8.2*NEW* Which form of H₂ will the project be focused on?

- Liquid
 - Gaseous
 - Other (Describe) _____
-

Display This Question:

If Which form of H₂ will the project be focused on? = Gaseous

Storage 8.3*NEW* At what pressure will the project store gaseous hydrogen? (Bar)

Display This Question:

If Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Store

Storage 8.4*NEW* What is the proposed storage capacity in kilograms?

Display This Question:

If Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Store

Storage 8.5 What is the proposed duration of storage?

End of Block: 8. Store Follow-Up

Start of Block: 9. Use Follow-Up

Display This Question:

If Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Use

End-Use 9.1 What is the demand in kg/day?

Display This Question:

If Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Use

End-Use 9.2*NEW* What is the projected level of demand and the associated viable cost of hydrogen this use-case can tolerate in the following years?

	\$ cost / kg H2	kg / day consumption
2023		
2024		
2025		
2026		
2028		
2030		
2035		

 Display This Question:

If Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Use

End-Use 9.3*NEW* What is the use-case's needed state of H2 as fuel?

- Gaseous (Denote Pressure) _____
- Liquid (Is regasification needed?) _____
- Synthetic Fuel (Please Specify) _____
- H2 Carrier (Please Specify) _____

Display This Question:

If Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Use

End-Use 9.4 What is the industry sector?

Display This Question:

If Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Use

End-Use 9.5 What is the viable range of H2 cost/kg?

End of Block: 9. Use Follow-Up

Start of Block: 10. Project Readiness

Display This Question:

If Project Type = Capital, Infrastructure or Construction Project

Readiness 10.1*NEW* Has a risk assessment been performed for the project?

- No
- Yes (Please describe) _____

Display This Question:

If Project Type = Capital, Infrastructure or Construction Project

Readiness 10.2*NEW* Has a risk mitigation plan been developed?

- No
- Yes (Please describe) _____

Display This Question:
If Project Type = Capital, Infrastructure or Construction Project

Readiness 10.3*NEW* Has your company performed any techno-economic analysis for this project? Please briefly describe the results.

- No
- Yes _____

Display This Question:
If Project Type = Capital, Infrastructure or Construction Project

Readiness 10.4*NEW* Has your company started lifecycle analysis or made plans to? Please describe briefly

- No plans made for lifecycle analysis
- We have begun lifecycle analysis (briefly describe)

- We have future plans for lifecycle analysis (briefly describe)

Display This Question:
If Project Type = Capital, Infrastructure or Construction Project

Readiness 10.5 Please check all project development activities that have been fully or partially completed?

Reference: [NEPA Information](#)

	Not Started	Partially Completed	Completed
Feasibility Studies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preliminary Engineering Reports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
National Environmental Policy Act (NEPA) Reviews	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Permitting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Readiness 10.6*NEW* Please describe **tentative project scheduling** including other project development activities that have begun. Limit responses to 800 characters.



Readiness 10.7 When will the project be operational? (mm/dd/yyyy)

Readiness 10.8*NEW* Is your project already connected with other hydrogen-related activities such as off-take agreements, partnerships, infrastructure nodes (i.e. highway or port corridors, educational institutions, communities)?

Yes

No

Display This Question:
If Is your project already connected with other hydrogen-related activities such as off-take agreeme... = Yes

Readiness 10.9*NEW* Please describe how your project is connected with other hydrogen-related activities such as off-take agreements, partnerships, infrastructure nodes (i.e. highway or port corridors, educational institutions, communities) etc. Please list partners or describe collaborations as possible.

Display This Question:
If Project Type = Capital, Infrastructure or Construction Project

Readiness 10.10*NEW* Have you assessed the project's exposure to supply chain challenges (such as critical mineral sourcing and need for domestic manufacturing) as referenced in the DOE's Notice of Intent?

Reference Executive Order 14017.

- Yes _____
- No _____
- Not Applicable _____

Display This Question:
If Project Type = Capital, Infrastructure or Construction Project



Readiness 10.11*NEW* Please describe any relevant supply chain challenges identified for the project.

End of Block: 10. Project Readiness

Start of Block: 11. Financing

Financing 11.1 What is the total estimated cost of the project?

Financing 11.2 What dollar amount of federal share will you seek from the federal government?

Financing 11.3 Will your organization be able to provide the minimum 50% cost share

Yes

No

Financing 11.4 Can your organization exceed the minimum 50% cost share?

No

Maybe

Yes (by how much?) _____

Financing 11.5 What dollar amount of non-federal match will your organization contribute?



Financing 11.6 Please describe how this project will be financially sustained after the period of DOE funding has ended? Please limit response to 1,000 characters.

Financing 11.7*NEW* Does the organization have a plan to use H2 related assets after termination of DOE funding?

- Yes (Provide brief plan outline) _____
- No

End of Block: 11. Financing

Start of Block: 12. Org Resources

Org. Resources 12.1*NEW* What corporate resources have already been put toward the project? Please convert to a dollar amount if possible.

- Personnel _____
- Funds _____
- Equipment _____
- Engineering** _____
- Other (please explain) _____



Org. Resources 12.2 What is the approximate number of staff that will directly contribute to the project from your organization or contractors? Please report in Full Time Employee (FTE) equivalent.

Org. Resources 12.3 Does your organization have experience managing DOE or other federal contracts?

- Yes
 - No
-

Display This Question:

If Does your organization have experience managing DOE or other federal contracts? = Yes

Org. Resources 12.3a*NEW* Briefly describe your experience managing DOE contracts. (Number of grants or contracts, size of awards.)

Org. Resources 12.4 Does your organization have the ability to meet and report in accordance with Federal Cost Accounting Standards?

- Yes
- Maybe
- No

Org. Resources 12.5 Does your organization have capacity and capability to manage and perform on a large federal project without additional support?

- Yes
- No

Org. Resources 12.6 Does your organization have the expertise and capacity to support the application process to capture the DOE Hydrogen Hub award?

- Yes
- No

End of Block: 12. Org Resources

Start of Block: 13. Public Engagement

Engagement 13.1 Was this project/program developed by or in partnership with a Tribe or Tribal organization?

Yes

No



Engagement 13.2 What consultation with Tribes or Tribal members has occurred? Limit response to 1,000 characters.



Engagement 13.3 To what extent is this project/program expected to benefit disadvantaged communities (DACs) [as defined by DOE](#)? Limit response to 1,500 characters.

Reference:

EO 13985, Advancing Racial Equity and Support for Underserved Communities;

EO 14020, Establishment of the White House Gender Policy Council;

and EO 14008, Tackling the Climate Crisis at Home and Abroad The Justice40 initiative, established by E.O. 14008, states that 40% of the overall benefits of certain federal investments should flow to disadvantaged communities (DACs).

Engagement 13.4 Have unions or workforce-related organizations contributed to the development of the project/program?

- No
- Yes (Please describe) _____

Engagement 13.5*NEW* Does your company have a workforce development plan/apprenticeship program or plans to create one in collaboration with local education and professional training institutions?

- Yes
- No

Engagement 13.5a*NEW* Please briefly describe the plan for workforce development, apprenticeship and/or collaboration with local education and professional training institutions.



Engagement 13.6 Please describe any community engagement that has occurred to date. Limit response to 1,200 characters.



Engagement 13.7*NEW* Briefly describe the organization's plan to address social and environmental justice considerations associated with this project.

Reference: EO 14005, 14025, EO 13985, EO 14020, EO 14008, *Tackling the Climate Crisis at Home and Abroad*, and *The Justice40 initiative*, established by EO 14008.

End of Block: 13. Public Engagement

Start of Block: 14. Job Creation



Job Creation 14.1 How many construction and/or initialization jobs will the project create?



Job Creation 14.2 How many permanent jobs will the project create?

Display This Question:

If If How many construction and/or initialization jobs will the project create? Text Response Is Not Empty

Or Or How many permanent jobs will the project create? Text Response Is Not Empty



Job Creation 14.3*NEW* As a rough estimate, please indicate the approximate breakdown of jobs created by skill type/level.

Skilled Labor (i.e. engineers, scientists) : _____

Trained Technicians (i.e. materials handling, equipment operators) : _____

Administrative Staff : _____

Other : _____

Total : __100%__



Job Creation 14.4 What percentage of jobs created will use union labor or otherwise meet prevailing wage standards?



Job Creation 14.5 Please explain how project-related jobs will be accessible to a local workforce, and describe the tools and techniques that will be used to ensure employment benefits to the local economy. Limit response to 1,500 characters.

End of Block: 14. Job Creation

Start of Block: 15. Environmental Impacts

Environmental 15.1 As a rough estimate, how much will the project reduce greenhouse gas emissions per year? (Use metric tons of CO2 equivalent)

Environmental 15.2 As a rough estimate, how much will the project reduce CO2 emissions per year? (Use metric tons of CO2 equivalent)



Environmental 15.3 What non-GHG air quality impacts do you anticipate from this project? Limit response to 800 characters.

Display This Question:

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Or Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Demonstrate Production)

Or Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Demonstrate Processing)

Environmental 15.4*NEW* Is water access secured or still being identified?

- Secured
- Still Being Identified
- Not Applicable

Display This Question:

If Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Accelerate Commercialization)

Or Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Demonstrate Production)

Or Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Demonstrate Processing)



Environmental 15.4a*NEW* Please describe the water footprint of the project in gallons per minute. Please add any details as you see necessary. Limit your response to 800 characters.

Display This Question:

If Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Accelerate Commercialization)

Or Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Demonstrate Production)

Or Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Demonstrate Processing)

Environmental 15.4b*NEW* Which body of water will the project utilize?

Display This Question:

If Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Accelerate Commercialization)

Or Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Demonstrate Production)

Or Where does the proposed project fit within the DOE's Make, Move, Store, Use framework for clean h... = Make (Demonstrate Processing)

Environmental 15.4c*NEW* What is the project's estimated volume of water consumption in tons/year?



Environmental 15.5 What are the expected impacts on the local and/or regional environment and natural resources, positive and negative? Limit response to 1,500 characters.

End of Block: 15. Environmental Impacts

Start of Block: 16. Safety



Safety 16.1*NEW* Does your organization have a safety plan for this project and what are the important considerations? Please describe briefly.



Safety 16.2*NEW* What consultations with local authorities, emergency services and other permitting authorities have occurred? Please limit your answer to 1,000 characters.

Safety 16.3 Are additional safety studies needed or planned? If yes, please explain.

- Yes (please explain) _____
- No

End of Block: 16. Safety

Start of Block: 17. Documentation



Miscellaneous 17.1 Please briefly tell us anything else you'd like us to know about your project. Limit response to 1,000 characters.

Miscellaneous 17.2 Attach additional figures or appendices here. Feel free to use this space to attach your abstract with figures.

End of Block: 17. Documentation