OFFICIAL APPLICATION GUIDELINES

H2 Twin Cities 2021

Modified on May 27, 2022

MODIFICATIONS SUMMARY

Date	Modifications
Revision 3 05/27/2022	• Page 7: Updated Phase 1 and Phase 2 Submission deadline to July 25, 2022. To provide more opportunities for cities/regions to indicate their interest and/or to submit applications, the H2 Twin Cities Phase 1 and Phase 2 submission deadlines will be extended and will remain open, in parallel, until July 25, 2022. As a reminder, Phase 1 is an optional step for cities/regions that are looking for potential partners. The Phase 1 submission signals your interest as a potential H2 Twin City on the HeroX website to facilitate new connections. Once a partnership has been established, the partner cities can jointly apply for Phase 2.
Revision 2 03/18/2022	• Page 5: Updated information in the "Eligibility" section. • Page 6: Updated information in the "Funding" section. • Page 7: Changed the Phase 2 submission deadline to May 27, 2022.
Revision 1 12/27/2021	• Page 4: Clarified information in the "Applicants" section. • Page 5: Specified that CEM member countries may provide in-kind support. • Page 5: Specified the maximum number of cities that can apply together in the "Terms and Conditions for Award" section. • Page 6: Updated information in the "Funding" section. • Page 6: Extended the Phase 1 deadline to January 17, 2022. • Page 7: Changed the Phase 2 opening to January 20, 2022. • Page 7: Updated the "Letter of Commitment" section to clarify that city officials from both partner cities must submit letters of support.

Contents

1. Background

H2 Twin Cities is an initiative under the Clean Energy Ministerial (CEM) Hydrogen Initiative to incentivize global partnerships and enhance collaboration, coordination, and information exchange between cities in different countries to accelerate hydrogen deployments and user acceptance. Through an online platform and community outreach, the initiative will share lessons learned and best practices, showcase partner cities, and increase awareness of hydrogen and fuel cell technologies worldwide. Priorities include energy and environmental justice, social equity, and the intent to enable concrete impact through fostering market adoption, scaling up hydrogen technologies, providing training and outreach resources, and achieving emissions reductions. This document summarizes the 2021 application guidelines for the H2 Twin Cities initiative.

2. Introduction

Today there are very limited regions in the world where clean hydrogen and fuel cell technologies are being deployed at scale. As clusters[1] of hydrogen production and end use applications at scale start to develop worldwide, sharing best practices and lessons learned can help *accelerate progress and adoption*. Encouraging partnerships between cities across different continents who are at the forefront of hydrogen deployment can help build strong ties and a community of practice for leaders and implementers from cities, industry, government, and a broad group of stakeholders.

In addition to communities who are already front-runners in hydrogen deployments, an increasing number of regions, particularly cities that have committed to meeting climate goals, are interested in using hydrogen and fuel cell technologies but lack the resources and experience to realize these deployments. Pairing these relatively inexperienced cities with cities more advanced in hydrogen and fuel cell deployments can capitalize on common interests, build awareness, help accelerate deployments, and showcase success stories. The H2 Twin Cities initiative is a coordinated and targeted effort that addresses unique challenges of hydrogen, such as safety, permitting, and end user acceptance, and bridges activities across different regions of the world where hydrogen and fuel cell technologies have the potential for energy, environmental, and economic benefit.

[1] For example, the European Commission and Mission Innovation's Clean Hydrogen Mission has a Hydrogen Valleys initiative to promote the development of clusters or hubs of large scale production, infrastructure, and end use of hydrogen technologies.

3. Application Categories

There are two categories under the H2 Twin Cities initiative under which entrants can apply.

Category 1: Sibling Cities

Sibling Cities are pairings of cities from different countries, with strong preference for cities on different continents, that are already at the forefront of deploying hydrogen and fuel cell technologies and have extensive experience and success in end use acceptance, building infrastructure, and community awareness. These cities would share and develop best practices and lessons learned to showcase to each other, as well as to other regions through the H2 Twin Cities platform, to further accelerate progress. While the focus is initially on sharing best practices to further advance hydrogen in their own regions to enable scale, cost reductions, and user acceptance, it is also expected that these sibling cities would subsequently adopt a "mentee" city to transmit their learnings and achieve further impact and value to global partners. In this regard, if entrants apply to this category, by year 2, these cities would be required to identify a mentee city to provide guidance to. This third city would be added to the initial sibling pair.

Category 2: Mentor-Mentee Cities

Mentor-Mentee Cities are pairings of cities from different countries, with strong preference for cities on different continents, that are at *significantly different levels* of hydrogen implementation. One city would be considered the Mentor city and would share lessons learned and best practices with the Mentee city, which is committed to future deployment of hydrogen technologies and addressing challenges of adoption. Both Mentor and Mentee cities would self-assemble and submit a joint application. This "twinning" of Mentor and Mentee cities would allow for an immediate benefit to the Mentee city. However, because it is not necessarily the case that the Mentee city's country would be able to support the initiative with funding, entrants may also consider the Category 1 route.

In both categories, the inclusion of disadvantaged communities, diversity, equity, and engagement across a broad group of stakeholders will be considered highly favorable in the selection/scoring process.

4. Duration of H2 Twin Cities Relationship/ Designation

It is anticipated that cities will partner for a minimum of five years. Once the H2 Twin Cities designation is conferred, the partner cities may retain a long-term relationship and may also partner with additional cities, pending availability of resources.

5. H2 Twin Cities Goals and Examples of Activities

The following list provides examples of goals and activities that may be of interest under the H2 Twin Cities initiative. These are not exhaustive and additional examples may be proposed in the application. Innovative approaches to foster collaboration and inclusion and accelerate concrete progress are highly encouraged.

- Develop municipal partnerships between cities, deploying a critical mass of hydrogen and fuel cell technologies, with concrete plans for accelerating deployment and addressing specific barriers such as codes, standards, and community acceptance.
- Provide information sharing resources on lessons learned and best practices (e.g., online reports and tools) to showcase cities that are achieving hydrogen deployments at scale.
- Stimulate communities, city officials, and relevant deployment-focused stakeholders to creatively learn, work, and solve problems together through reciprocal educational, municipal, business, professional, and technical exchanges and projects. Examples include best practices in streamlined permitting and community acceptance such as through tutorials and webinars.
- Create and share business cases and fact sheets on mechanisms such as financing and developing a value proposition for hydrogen production technologies and end uses across applications and sectors (e.g., bus fleets, hospitals, trucks, industry, energy storage, resiliency).
- Propose personnel exchanges for specific groups, such as students, professors/teachers, code officials, transit agency representatives, labor union representatives, hydrogen producers and end users, and other relevant stakeholders, to better understand options for accelerating deployment and adoption.
- Develop curricula and training tools and incorporate hydrogen and fuel cell technologies into other energy and environmental planning resources.
- Provide concrete mechanisms and tools to encourage participation of disadvantaged communities and opportunities for environmental justice (e.g., air quality improvements, jobs, and engagement). For instance, specific plans for pairing displaced workers from a decommissioned coal plant with new hydrogen construction and/or maintenance/manufacturing projects may be of interest.

6. Criteria for Selection

The following are general criteria for selection. Detailed scoring criteria will be posted when the Phase 2 application period begins.

APPLICANTS

- Two cities[2] must apply as ***lead partner cities*** ("the applicant"). However, if additional cities are interested, up to two additional cities may collaborate with the two lead partner cities. The proposal must contain concrete examples that include both existing and planned deployments of hydrogen and fuel cell technologies. To encourage global partnership and avoid pairing of adjacent cities that may already have initiatives or opportunities, the intent is to partner two cities on different continents.[3]
- It is envisioned that the applicant will include a team of partners in the program. In addition to the cities themselves, a regional association/coalition, hydrogen producers, end users, and other organizations, such as transit agencies or universities/schools, could be part of the team.

PROGRAMMATIC CONSIDERATIONS

- A holistic approach is encouraged to enable large-scale regional production, transport, storage, and utilization of hydrogen, minimizing carbon and other emissions across the value chain.
- Opportunities for public engagement and visibility are also encouraged through real-world everyday exposure—such as through buses, trains, other vehicles, stationary fuel cells, backup power.
- Engagement of diverse stakeholders, particularly with emphasis on energy/environmental justice, equity, and inclusion, are strongly encouraged.

WORK PLAN AND SCOPE

- Specific examples with sufficient detail to gauge interest and commitment should be provided.
- Developing metrics for success and demonstrating the ability to meet specific goals would be of value in the application process.

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[2] The term city includes municipality, town, or county. However, the focus is not on entire regions (or entire states) to avoid duplication with Mission Innovation's/the European Commission's Hydrogen Valley initiative.
[3] While cities from different countries on the same continent may apply, strong preference will be given to cities on different continents.

RESOURCES AND CAPABILITIES

- Matching funds/cost share by applicants (e.g., cities, states, and the private sector) is encouraged. However, it is understood that mentee cities or disadvantaged communities/developing countries may not have sufficient resources available.
- Dedicated time commitments by city officials, hydrogen producers, end users, and other stakeholders should be clearly noted.
- Member cities/communities need to provide a letter of support from the city official (e.g., mayor's office/equivalent) as well as hydrogen and fuel cell developers and relevant end users (e.g., transit agencies) to demonstrate both existing deployments and commitment to future deployments.
- Diversity, equity and inclusion, and environmental justice considerations:
    - Participation of under-represented populations or disadvantaged communities is highly encouraged.
    - Consideration of training, jobs, and outreach and engagement across diverse groups is also strongly encouraged.

Eligibility

Any city in any country that has a demonstrated commitment to advancing hydrogen and fuel cell technology is eligible. For example, the country may have a hydrogen roadmap, policies to advance hydrogen, and/or resources to support the advancement of hydrogen technologies. Participation by Clean Energy Ministerial (CEM) member countries is encouraged, and funding or in-kind support has been committed by CEM members for cities within their countries. Strong preference will be given to pairing of cities on different continents to avoid duplication with other programs and partnerships of adjacent countries that may already have collaboration mechanisms.

Terms and Conditions for Award

Applicants must commit to a minimum period of 5 years, over which they will build their relationship and develop and demonstrate metrics for success. They will be expected to present annually to the CEM H2 initiative and other partnerships and keep an up-to-date workplan on their activities.

The intent is for two cities to apply as ***lead partner cities***. However, if additional cities are interested, up to two additional cities may collaborate with the two lead partner cities. Funding and/or in-kind support is subject to availability if there are more than two cities. In future years, consideration may be given to adding cities or 'satellite' cities to the H2 Twin Cities program.

It is anticipated that CEM will hold one H2 Twin Cities competition annually or biannually, subject to availability of resources and value of the program. Once the twin cities are selected for award, they will negotiate the final terms and conditions.

Funding

Selected twin cities may receive support, either in the form of a fixed amount of money or in-kind support, which may, for example, consist of technical assistance or the assignment of a third party that will support execution of the work scope. In cases where an individual Ministry is able to provide funding, the amount of funds per city will depend on the number of awardees and scope of work and the budget processes within each Ministry. Note that the funding is not for demonstration or deployment of technologies, which typically entails at least several hundred thousand USD. The funds (or in-kind support) for the H2 Twin Cities initiative will be focused on enabling activities such as fostering collaboration, information exchange, outreach and awareness, facilitating and encouraging diversity, equity, inclusion, etc. Therefore, the amount for a selected city could range from approximately $10,000 USD to $100,000 USD, subject to individual country Ministry funding availability and budget appropriations processes. Each selected city pair may seek funding from its respective country Ministry (or delegate organization) or other sources. The decision on the type of support to be provided for selected city pairing(s) (fixed amount of money vs. in-kind support) is dependent on the individual country Ministries. The applicants may state the entity to receive the funding; it may be the city itself or a third-party organization (to be specified) such as but not limited to a regional association/coalition, a non-profit entity, or consulting organization that will be responsible for execution of the work scope. The applicants may also provide funding recipient information subsequent to selection. Additional funds may become available depending on the individual countries engaged as sponsors.

7. Application Process

All application information must be submitted through the HeroX platform at https://www.herox.com/h2twincities.

Phase 1: November 10, 2021, through January 17, 2022
Reopened: May 27, 2022, through July 25, 2022

Applicants may self-identify on the H2 Twin Cities website during Phase 1. This step is optional but if cities are not already aware of potential partners, it provides an opportunity for visibility and signaling interest in serving as a potential H2 Twin City. Posting interest on the website is not required and cities may self-assemble for Phase 2 without completing a Phase 1 submission.

To submit a Phase 1 application, applicants must create an account on the HeroX platform and complete the online submission form, which is outlined in section 8.

Phase 2: January 20, 2022, through July 25, 2022

One application must be submitted by all parties (jointly) who have agreed to the terms and intent of the H2 Twin Cities initiative. Interested cities may self-identify on the H2 Twin Cities website during Phase 1 but any partnering is left entirely to the entities involved and will not be determined by the country or CEM representatives. A single city submitting an application cannot be judged without a partner city.

The Phase 2 application package consists of the following:

- **Online Application Form and Attached Project Narrative**
    - Online Application Form—Applicants must create an account on the HeroX platform at https://www.herox.com/h2twincities and complete the Phase 2 online submission form, which is outlined in section 9.
    - Project Narrative—Applicants must upload a written narrative of the proposed project activities, goals, budget, and timeline that is no more than 10 pages in length. Please include the following in the narrative:
        - Detailed plan and budget for how the cities would use funds to work toward competition goals, including metrics for success and regular coordination plans.
        - Timeline for utilization of funding.
        - Detailed timeline for carbon neutrality.
- **Letter of Commitment**

  The applicants must provide a letter of commitment signed by the relevant mayors or similar high ranking city officials committing to the terms and intent of the H2 Twin Cities program. Additional letters of commitment such as from hydrogen producers, end users, transit agencies, environmental justice or social equity organizations, etc., may also be submitted and are encouraged.
- **Optional (encouraged): A short video introducing the applicant cities and their cooperation plan**

  The applicants are encouraged to submit a 2-minute (maximum) video that introduces the cities, their current hydrogen-related activities, and their twin-cities cooperation plan. The videos may be showcased on the teaming page and various social media platforms.

8. Phase 1 Application (Optional)

A Phase 1 application form should be submitted only if a city would like to self-identify on the H2 Twin Cities website to solicit interest in potential partners for the Phase 2 application. If cities already have partnerships formed, they may proceed to the Phase 2 application.

State which category you are interested in applying for:

[ ] Category 1: Sibling H2 Twin Cities Application

[ ] Category 2: Mentor-Mentee H2 Twin Cities Application

General City Information

1. City:
    a. Country:
    b. Lead Representative
        i. Name:
        ii. Title:
        iii. Mailing Address:
        iv. Email Address:
        v. Phone Number:
    c. Population of city[4]:

H2 Twin City Pairing Information

2. What participation role(s) is your city interested in?
    a. [ ] Mentor (will provide guidance to a Mentee city)
    b. [ ] Mentee (looking for guidance from a more established H2 city)
    c. [ ] Sibling (will undergo cooperative development on similar projects)
3. What sectors are you most interested in? Prioritize by inserting a numerical value from 1 to 4 (or 5) with 1 being the highest priority.

[4] Please specify definition (i.e., metro or including suburb regions)

a. [ ] Transportation (vehicles [e.g., buses, trucks], rail, maritime, aviation, other)

b. [ ] Industrial (e.g., steel, ammonia, cement, renewable/synthetic fuels, other)

c. [ ] Electric grid integration (e.g., energy storage, power generation, blending, other)

d. [ ] Workforce development and equity/energy and environmental justice, diversity, and inclusion (e.g., stakeholder engagement, outreach and information development, value proposition, personnel exchanges, other)

e. [ ] Other—please specify _____

General H2 Sector Background Information

HYDROGEN PRODUCTION

4. How much hydrogen is currently produced in your city and what are your plans for increasing hydrogen production within the next five years?

5. How much hydrogen is currently consumed in your city and what are your plans for increasing hydrogen consumption within the next five years?

6. What energy resources/feedstocks are present locally that could be used to produce hydrogen today? Which resources/feedstocks do you plan to focus on within the next five years?

    a. [ ] Solar

    b. [ ] Wind

    c. [ ] Hydro

    d. [ ] Geothermal

    e. [ ] Biomass and waste

    f. [ ] Nuclear

    g. [ ] Fossil with carbon capture and storage

    h. [ ] Other

HYDROGEN INFRASTRUCTURE

7. What existing hydrogen infrastructure is present in your city and in which areas will you increase deployment in the next five years?

    a. [ ] Refueling stations

    b. [ ] Hydrogen production facilities (e.g., electrolyzers)

c. [ ] Hydrogen pipelines

d. [ ] Large-scale hydrogen storage (e.g. underground caverns, liquid storage)

e. [ ] Hydrogen liquefaction plants

f. [ ] Hydrogen distribution trucks

g. [ ] Other—please specify _____

HYDROGEN END USE

8. What sectors currently consume hydrogen in your city?

   a. [ ] Transportation

   b. [ ] Industry

   c. [ ] Power generation and energy storage, including hydrogen blending

   d. [ ] Other—please specify _____

Other Information

9. Provide any other information to be shared publicly that may be of value in being selected as a potential twin city.

   _____

9. Phase 2 Application

The Phase 2 application package should be submitted by the city pair pursuing recognition and award under the H2 Twin Cities program. Only one application should be submitted between the cities.

State which category you are applying for:

[ ] Category 1: Sibling H2 Twin Cities Application

[ ] Category 2: Mentor-Mentee H2 Twin Cities Application

General City Information

1. City 1:
    a. Country:
    b. Lead Representative
        i. Name:
        ii. Title:
        iii. Mailing Address:
        iv. Email Address:
        v. Phone Number:
    c. Population of city[5]:
2. City 2:
    a. Country:
    b. Lead Representative
        i. Name:
        ii. Title:
        iii. Mailing Address:
        iv. Email Address:
        v. Phone Number:

[5] Please specify definition (i.e., metro or including suburb regions)

c. Population of city[6]:

3. Summary Statement:

   This section should focus on the areas of mutual interest, the compelling rationale for the partnership, the proposed activities, and outcomes, including measurable results and metrics that define success. Please see Criteria section and Example Goals and Activities section.

4. What sectors are you most interested in? Prioritize by inserting a numerical value from 1 to 4 (or 5) with 1 being the highest priority.

   a. [ ] Transportation (vehicles [e.g., buses, trucks], rail, maritime, aviation, other)

   b. [ ] Industrial (e.g., steel, ammonia, cement, renewable/synthetic fuels, other)

   c. [ ] Electric grid integration (e.g., energy storage, power generation, blending, other)

   d. [ ] Workforce development and equity/energy and environmental justice, diversity, and inclusion (e.g., stakeholder engagement, outreach and information development, value proposition, personnel exchanges, other)

   e. [ ] Other—please specify _____

General H2 Sector Background Information

HYDROGEN PRODUCTION

5. How much hydrogen is currently produced in each city and what are your plans for increasing hydrogen production within the next five years? State which companies/organizations are involved/plan to be involved.

6. What energy resources/feedstocks are present locally that could be used to produce hydrogen today? Which resources/feedstocks do you plan to focus on within the next five years?

HYDROGEN INFRASTRUCTURE

7. What existing hydrogen infrastructure is present in each city and in which areas will you increase deployment in the next five years? Examples include but are not limited to refueling stations, hydrogen production facilities (e.g., electrolyzers), hydrogen pipelines, large-scale hydrogen storage (e.g., underground caverns, liquid storage), hydrogen liquefaction plants, hydrogen distribution trucks, or other (please specify).

[6] Please specify definition (i.e., metro or including suburb regions)

HYDROGEN END USE

8. What sectors currently consume hydrogen in each city and what are plans for increased deployments/consumption? Transportation, industry, power generation and energy storage, including hydrogen blending, or other (please specify).

Diversity, Equity and Inclusion, and Environmental Justice Considerations

9. How will each city show commitment to diversity, equity, inclusion, and environmental justice (e.g., providing jobs or engagement in disadvantaged or economically distressed communities, resiliency and pollution reduction)?

10. Job opportunities: Do your cities have a projection for increased job opportunities related to hydrogen and how do you plan to provide training or best practices, particularly to disadvantaged communities and other minorities?

Work Plan and Scope

11. Please provide a detailed plan and budget for how the cities would use funds to work toward competition goals, including metrics for success and regular coordination plans.

12. Please provide a timeline for utilization of funding.

13. Please provide a detailed timeline for carbon neutrality.