

Clean Energy Ministerial New Hydrogen Initiative

Cooperation Framework

Signed in Vancouver, May 22, 2019

1. Background

The New Hydrogen Initiative (the Initiative) is a voluntary multi-government initiative, developed according to the CEM framework document, which aims to advance policies, programs and projects that accelerate the commercialization and deployment of hydrogen and fuel cell technologies across all aspects of the economy. It operates under the auspices of the Clean Energy Ministerial (CEM), involving non-binding arrangements among participating national government ministries.

The Initiative intends to:

- Encourage the sharing and identification of policies, program and project approaches, tools and methods, and reflect on the necessary developments of energy, transport, climate and environmental policies that would enable hydrogen to play an appropriate role in the economy;
- Inform high levels of decision making in key national and subnational governments through peer-to-peer dialogues on infrastructure deployment, policy, program and project implementation;
- Conduct, support and foster empirical analysis that advances global understanding of the hydrogen and fuel cell technology market, and provide an evidence-base for policy and program development;
- Synthesize and share global experiences on hydrogen and fuel cells development activities and deployment across all aspects of regional, national, and municipal economies;
- Help facilitate dialogue in relation to policies and programs to enable the development of global supply chains for Hydrogen deployment and foster its scale up globally and across regions
- Support the development and dissemination of new analytical tools that enable hydrogen and fuel cell deployment across countries; and
- Engage hydrogen and fuel cell stakeholders (including those indirectly supporting the hydrogen and fuel cell industry (i.e., infrastructure, renewable fuels)) through technical consultations and peer-to-peer dialogues.

2. Purpose

This “Cooperative Framework” document outlines the key expectations of the Initiative’s participants. It is also intended to serve as a process guide for the Initiative’s activities and to define the envisaged roles and responsibilities of participants, the Initiative’s Advisory Group, the Coordinator, and the CEM Secretariat as it pertains to the Initiative. It also defines key expected non-binding outputs, deliverables and the resourcing of the Initiative’s activities.

3. Term

This Cooperative Framework is to be effective as of May 29, 2019, or otherwise agreed by Initiative Participants, and continue until it is discontinued, modified or replaced by the Participants after consultation of the Initiative's Advisory Group.

4. Participation

Participation in the Initiative is open to any CEM Member willing to fulfil the roles and responsibilities of participation. States that are not CEM Members may also become Initiative Participants upon approval by the Initiative's Advisory Group. Any participating government may designate a third-party organization(s), such as a national laboratory, to engage on its behalf. The Coordinator should maintain an up-to-date list of the Initiative's Participants.

4.1 Initiative Participants

Each Initiative Participant should identify and assign the following representatives to participate in the Initiative:

Representative – a primary point of contact(s) responsible for attending Initiative meetings, voting on the Initiative's Advisory Group decisions (e.g. approval of the Initiative's annual Program of Work, non-CEM Member participation, etc.), and facilitating overall coordination related to their government's participation. The Initiative Representatives may be government officials or representatives of third parties (e.g., energy agency or national laboratory) designated to engage on behalf of that government ministry/agency.

Senior Representative – a senior level (e.g. Deputy-Director General or equivalent) government official to whom the Initiative's activities should be regularly reported by the designated Representative (as defined above). The Senior Representative should ensure overall coordination between their government's participation in the Initiative and their country's domestic hydrogen and fuel cell technology programs and policies, and, with respect to CEM Member Initiative participants, for ensuring coordination between their government's participation and representation in the Initiative and CEM overall. The Senior Representative should be a government official and the role should not be delegated to a third party.

Initiative Participants should promptly communicate in writing any changes to their Representative or Senior Representative to the Coordinator.

4.2 Technical Experts

Initiative Participants may designate Technical Experts (individuals or entities) to participate in the Initiative's tasks. The Initiative Representative should inform the Coordinator and Advisory Group if it wishes to assign the participation of a Technical Expert in an Initiative task.

The Coordinator may also designate Technical Experts to execute Initiative's tasks where necessary for its role as defined below in section 5.3 and in accordance with its own regulations, rules, policies and procedures, if applicable. The Coordinator should inform the Advisory Group of such participation.

Technical Experts should report progress to their respective country participant on any tasks in which they are involved, or to the Coordinator for communication to the Initiative's Advisory Group.

Expenses incurred by Technical Experts in executing the Initiative's tasks may be covered directly by the Technical Expert executing such tasks, or by the Participant's entity that designates and engages the relevant Technical Expert to carry out such tasks.

4.3 Other Organizations

The Initiative would benefit from contributions from both the public and private sector, including direct participation from representatives of other international collaborative activities or organizations, focussed on hydrogen. Participation of the following partnerships should avoid redundancies, and ensure the activities carried out under the CEM Initiative fully complement existing actions. Therefore, Non-government organizations should be encouraged to engage and collaborate in the Initiative's tasks at the discretion of the Initiative's Advisory Group.

International Partnership for Hydrogen and Fuel Cells in the Economy (IPHE): Participation from the IPHE will be essential given their focus and expertise in education and outreach, as well as international safety code and standard activities. The IPHE has a strong (and growing) presence in social media, which will also be leveraged. IPHE can also provide perspectives from member countries which are not officially CEM members.

Mission Innovation: The global RD&D activities and coordination which is being carried out through Mission Innovation will be essential to inform policy discussions carried out through the CEM Initiative. Having direct, formalized participation from Mission Innovation would ensure that global collaboration on hydrogen covers the entire innovation spectrum, from fundamental research and development, to pilot scale, and large-scale demonstration to policies which address non-technical barriers to full commercialization, in the true spirit of CEM/MI.

Hydrogen Council: The global hydrogen industry has made strong commitments to supporting and fostering greater deployment of hydrogen technologies, and decarbonizing the global hydrogen supply. Participation of the Hydrogen Council will be essential to ensure that policy

discussions are informed by industry priorities and that the global industry perspective is understood. Multinational stakeholders can also provide an overview of policies and programs that are effective in different jurisdictions.

Private Sector: The focus of this Initiative should be actual, tangible commercialization efforts across multiple jurisdictions. As such, the private sector will play an essential role in ensuring project success and can contribute to discussions within the initiative, especially focussed on effective policy application.

Such organizations may, at the invitation of an Initiative Participant or Initiative's Lead(s), participate as observers in the Initiative's Advisory Group meetings; however, given the government-to-government nature of CEM, such organizations are not intended to become official Initiative Participants and therefore will not have an official Representative on the Initiative's Advisory Group nor have a say in the Initiative Advisory Group, including regarding the views and opinions on administrative matters.

5. Roles & Responsibilities

5.1 Initiative Participants

Initiative Participants are encouraged to fulfil, at minimum, the following responsibilities:

- Regular attendance at the Initiative's Advisory Group meetings;
- Identification of topics and development of proposals for the Initiative's tasks
- Advisory Group members contribute to the Initiative by voluntarily hosting Advisory Group meetings from time to time;
- Lead of at least one, or active participation in at least two, Initiative tasks under the Initiative's annual Program of Work, either through direct participation or through the designation of Technical Experts;
- Voluntary financial support for the Initiative's activities (in accordance with section 7 of this document); and,
- Timely provision of quantitative data, as requested by the Coordinator or Technical Experts, for analysis and publications.

5.1.1 Initiative Lead(s)

Lead countries of the Initiative (the 'Initiative Lead(s)') are the Initiative's Participants with are also encouraged to take up an additional responsibility for:

- Providing updates, periodic reporting, and responses to inquiries on initiative activities to the CEM Secretariat;
- Chairing semi-annual Advisory Group meetings, in collaboration with meeting hosts and ideally on the margins of other relevant meetings (e.g., IPHE, global conferences, etc.);

- Regular engagement with the Coordinator to advance the Initiative Program of Work and other Initiative business;
- Representing the Initiative’s Participant at international events, workshops and conferences;
- Providing additional administrative support, beyond the minimum responsibilities of the Initiative’s Participants, as needed, to ensure the successful completion of the Initiative tasks; and,
- Initiative Leads should aim to serve two-year terms, after which new or continuing leadership should be selected by vote of the Initiative’s Advisory Group.

5.2 The Initiative’s Advisory Group

The Initiative’s Advisory Group should be comprised of all Representatives of the Initiative Participants, as well as a representative of the Coordinator in a non-voting capacity. The Advisory Group should undertake the following responsibilities:

- Develop and approve an annual Program of Work;
- Select and monitor the work of the Coordinator;
- Supervise and direct the actions of the Technical Experts in executing the annual Program of Work;
- Advisory Group members contribute to the initiative by voluntarily hosting Advisory Group meetings from time to time;
- Identify and build strategic partnerships between the Initiative and other initiatives and programs; and,
- Develop proposals and recommendations for CEM ministers through CEM campaigns or other policy mechanisms.

5.3 The Coordinator

The Coordinator should coordinate, facilitate and advise the Initiative’s Advisory Group on its activities. Specifically, the Coordinator should perform the following functions:

- Annual tracking of progress for all Initiative activities and outputs, summarizing them in a short report;
- Financial management, involving informing the Initiative’s Advisory Group about the total amount of income and expenditure that was received by the Coordinator in relation to its functions during the previous calendar year, at the first Initiative Advisory Group meeting of a new year;
- Facilitate (in collaboration with Initiative Leads) the development of forward work plans, which identify short and medium term deliverables actions and specific resource

allocations, while also reporting on the results and progress made on previous years work plans;

- Developing/coordinating of research/analytical tasks such as trainings, workshops, peer-to-peer dialogues, development of analytical tools and analysis included in the Initiative's Program of Work; such function may be carried out by the Coordinator in its own capacity or through the engagement of contractors or third party experts and may include the purchase of material, data or information;
- Develop and dissemination an annual trends report, including analytical findings and outputs to hydrogen and fuel cell stakeholders in the Initiative's Participant countries;
- Planning and coordinating the Initiative's Advisory Group meetings, on the basis that the relevant host country volunteers to organize and provide for related logistical matters such as venue hire, catering, interpretation where necessary, print materials, etc.;
- Maintaining regular communication with Initiative Participants, including Initiative Representatives, Technical Experts and other relevant partner organizations;
- Maintaining close relationships with the CEM Secretariat, in particular staff responsible for the development, direction and review of other CEM initiatives, to ensure that the work of the Initiative is relevant and useful in the broader context of the CEM; and,
- Performing other functions agreed upon by the Initiative's Advisory Group members, the Initiative Lead(s) and the Coordinator.

The role of the Coordinator may be performed by an Initiative Participant or by a third party, as agreed by the Initiatives Advisory Group. The arrangement may be further specified through an administrative arrangement such as an exchange of letters between the incumbent Initiative Lead(s), on behalf of the Initiative's Advisory Group, and the Coordinator. The Coordinator will have a two year term, after which the role is subject to renewal, at the discretion of the Advisory Group.

The activities performed by the Coordinator should be subject to the receipt of sufficient funding by the Coordinator and the alignment with the Coordinator's own Program of Work, if applicable. The Coordinator should inform the Initiative's Advisory Group about misalignments as soon as possible, and propose solutions to correct the misalignment for discussion at Initiative's Advisory Group meetings.

The Coordinator's acceptance and use of funding should be in accordance with its own regulations, rules, policies and procedures, if applicable.

The Coordinator should inform the Initiative Lead(s) if it is unable to continue performing the aforementioned activities or if it finds it necessary to reduce the scope of its activities for example because of limits in available funding. The applicable administrative arrangement should specify that the Coordinator may terminate the arrangement by providing six (6) months' notice in writing to the Initiative's Advisory Group, such notice to be addressed to the relevant Initiative Lead(s).

Similarly, the applicable administrative arrangement should specify that the Initiative Lead(s), upon a recommendation of the Initiative's Advisory Group, may terminate the arrangement by providing six (6) months' notice in writing to the incumbent Coordinator. The cost of the Coordinator activities during the notice period should continue to be covered by Initiative Participants.

6. Initiative Advisory Group Meetings

The Initiative's Advisory Group should aim to meet twice per year; special meetings may be convened at the request of an Initiative Lead. The Initiative's Advisory Group should attempt, as best as possible, to be co-locate its meetings with those of other relevant international organizations and events. On a case-by-case basis, the Initiative's Advisory Group can consider meeting by virtual means, such as teleconference or webinar.

The Initiative's Advisory Group meetings should follow these guidelines:

- All meetings should be chaired by the Initiative Lead(s) and Host Country Representative(s), with support from the Coordinator;
- Meeting locations should be agreed on at least 90 days in advance of the meeting date;
- Decisions are to be made by consensus (i.e., Participants do not object to a proposed decision). If consensus cannot be reached, decisions are to be made by majority vote. If a majority cannot be reached, then the Initiative Lead(s) may make final decisions. This does not alter the non-binding character of this cooperation framework and the decision taken under it.
- The Coordinator should endeavour to prepare and distribute:
 - Meeting agendas and supporting materials at least 14 calendar days prior to the relevant meeting, and
 - Meeting minutes no more than 14 calendar days following the relevant meeting.
- Observer countries or organizations may be invited to attend meetings at the discretion of the Initiative Lead(s). In general, most meeting sessions will be open to external parties unless otherwise decided in advance of the meeting by the meeting Chair(s), or agreed to by the Advisory Group.

7. Resources

Initiative Participants are invited to provide the necessary financing to support the functions of the Coordinator and to carry out the Initiative's tasks effectively and efficiently. Contributed resources may take the form of:

7.1 In-kind Contributions

Each Initiative Participant may provide in-kind contributions to the work and tasks of the Initiative. This may include, among other things, staff time, expertise, data and meeting organization.

7.2 Support for the Coordinator

Starting in the first year of the Initiative (i.e., 2020), each Initiative Participant is expected to provide a voluntary annual financial contribution which would be expected at EUR 20,000 directly to the Coordinator, which should be used to cover its costs associated with the activities outlined in section 5.3, including costs faced directly (e.g., staff costs) and indirectly (e.g., costs associated with the engagement of technical experts/contractors, third party experts and the purchase of material, data or information) by the Coordinator.

As needed, the Initiative's Advisory Group may adjust the target amount for this voluntary contribution for any given year based, for example, on declared in-kind contributions, the cost estimates for activities foreseen in the annual Program of Work (in consultation with the Coordinator), and similar factors.

Annual financial contributions should be made as early as possible.

7.3 Other Contributions

Initiative Participants are also encouraged to provide additional contributions to cover costs related to substantive activities beyond the scope of funding raised through voluntary annual financial contributions outlined in section 7.2. Tasks that require additional funding should be highlighted by either the Coordinator or Initiative Lead(s). For an activity to be considered an Initiative activity, it should meet the following criteria:

- Alignment with the Initiative's mission;
- Additive beyond existing activities commissioned under another initiative or domestic program; and,

- Involving two or more countries.

Additional contributions should be provided directly to the entity that engages any Technical Expert needed to execute the activity once it has been established as an Initiative task (unless the Technical Expert will meet its own costs).

8. Initiative Activities

8.1 The Initiative's Program of Work

The Initiative's Advisory Group, lead by the initiative Leads, and facilitated by the Coordinator, is expected to develop an annual Initiative Program of Work consisting of Tasks and tangible commercialization projects.

This can include real world, full-scale deployment activities, organized at least initially, under the themes of transportation (with a focus on mass transit and light rail), industry, and communities. Project activities should be informed by:

- Sustainable Finance:
 - Analysis of the mechanisms available for reducing risk perception to attract lower-cost green capital at the scale that will incent large-scale deployment of green hydrogen technologies and infrastructure.
- Best-in-class case studies
 - Identify countries or regions that have excelled at hydrogen as a fuel market penetration
 - Case study analysis of why there has been success (i.e. what policy instruments, market mechanisms and R&D investment etc. has helped move this forward).
 - Replicability or adaptability of the model in other jurisdictions (i.e. can this model be applied in other countries and why or why not).
- Actions to identify and address gaps in the global Supply Chain
 - Lifecycle gap from supply chain issues and scale up, to end-demand issues, to consumer awareness.
 - Development of key value chains as an organising framework for forming sub-groups of countries to focus on specific challenges related to those value chains.
 - Derivation of concrete proposals for key policy actions for each one.
- Energy Systems Analysis
 - Projections for the entire energy mix, recognizing that hydrogen as a fuel has an important role to play in sustainable transportation
 - Competition with fossil fuels (natural gas, diesel, gasoline), EVs, and biofuels.
 - Projections over the next 5, 10, 15+ years.
 - Advantages of hydrogen that might allow it to get a strong place-hold within the diverse sectors of the economy.
- Regulatory Issues
 - Develop of a regulatory framework for each of the themes described above as an essential component, leveraging the fundamental, and foundational work on safety

codes and standards, carried out through the IPHE, HySAFE, and the Hydrogen Safety panel, amongst others.

Initiative Participants and entities involved in the execution of the Initiative's Program of Work should attempt to achieve the annual goals identified for each Initiative Task in advance of the following year's CEM Ministerial preparatory meeting.

8.2 Initiative Tasks

For an activity to be established as an Initiative Task, Initiative Participants should submit a Statement of Work for the Initiative's Advisory Group approval that includes the following information:

- Objective/purpose;
- Value to the Initiative's Participants;
- Suggested Project lead (Technical Expert), if any;
- Initiative Task milestone(s) and deliverables;
- Timeline for activities; and
- Budget and funding mechanism (e.g. in-kind, direct funding to the Technical Expert or funding through the entity that engages the Technical Expert).

Proposals should be solicited from Advisory Group members 90 days prior to the second meeting of the year. Proposals should be submitted to the Coordinator and shared with the Advisory Group at least 21 days before the meeting.

All proposals should be reviewed, and discussed at the final face-to-face meeting of the Advisory Group each year. Once there is consensus on work to be undertaken, the Coordinator should incorporate all new items into the forward work plan, and resources will be allocated to ensure the Tasks can be delivered effectively and efficiently.

In the event that available resources are insufficient to complete all Tasks outlined in the annual Program of Work, the Initiative's Advisory Group in consultation with the Coordinator will determine what changes to make to align the Program of Work and resources.

9. Amendment, Modification or Variation

This Cooperative Framework may be modified in writing by the Participants after consultation with the Initiative's Advisory Group. The initiative should in any case remain voluntary and be developed within the scope of the CEM framework document.

The initiative does not create any legally binding obligations between or among the Initiative Participants.