

As we approach the halfway mark of Mission Innovation 2.0 in 2025 and our anticipated goals in 2030, understanding where we are and how we are doing is more important than ever. The following provides the framework for the 2024 work plan and Key Performance Indicators (KPI) that help illustrate success, challenge and opportunity for the mission and help to view our trajectory towards those 2030 goals.

# Mission 2024 Work Plan & Key Performance Indicators – Clean Hydrogen-

Plotting the path to 2030

Mission Innovation Secretariat

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## Introduction

### Definitions

KPIs have been divided into three categories:

**Inputs** – What members directly contribute to the Mission – e.g. human resources (FTEs), financial resources, and/or other ways (e.g. data sets, knowledge sharing) that members directly contribute to the Mission.

**Outputs** – These are the direct products of the Mission – e.g. collaborative or coordinated funding calls, new research collaborations established, reports published, stakeholders engaged, events hosted, or other projects that are *directly* the result of Mission efforts.

**Outcomes** – These reflect the general activity within the field of the mission on the journey towards the 2030 goals. While some activities may be a direct result of mission activity (which should be highlighted) they are often part of larger global initiatives that align with mission goals and in some cases have been inspired by mission activities. These KPIs help to plot the journey to the overarching mission goals for 2030.

## Section 1 – Key Contacts

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## Section 2- Mission Goals & Outcomes

### 2Euro/USD/kg tipping point for Clean Hydrogen

#### Progress Update:

The Clean Hydrogen Mission (CHM) is built on three pillars 1) Research and Innovation (R&I) 2) Demonstration and 3) Enabling Environment. The overall goal of the Mission is to reduce the end-to-end costs of clean hydrogen to 2 USD/kg by 2030.

Much of the costs of clean hydrogen production are outside the influence of the Mission, such as the cost of clean electricity and the cost of capital which raised a lot in 2023. In some regions, clean hydrogen is already below 2 USD/kg but the demand in these regions is in general limited and the cost for distribution and storage to bring it to off-takers will be much higher. In general, the production of green hydrogen is estimated around 5 USD/kg.

As such, there is a strong case for revisiting and refining the CHM goal, in line with the independent TAG review panel's recommendation to focus the Mission's efforts on areas in which it can lead most impact and to include hydrogen valleys within the Mission goal. Where the Mission will continue to focus on reducing the costs of clean hydrogen production, this will mostly be through the lens of the role that R&I can take in achieving this.

Hydrogen valleys are an important concept for not only reducing the cost of hydrogen but for bringing together all activities associated with a hydrogen economy, which are covered under the three pillars. They are the ideal test beds for existing and novel hydrogen technologies, for connecting producers with off-takers, for understanding how to integrate systems, for connecting industry to government and academia. The CHM relaunched its hydrogen valleys platform in 2023 and by the end of 2023 89 valleys have already signed up to the platform, while this was in 2022 below 40. It allows for information sharing, connections between valleys and provides overall statistics on barriers for example. The Mission will now turn its attention to addressing some of the independent TAG review's feedback in relation to the Hydrogen Valleys, including improving data accessibility.

The Mission has been running successful workshops, which are enhancing collaboration, particularly focussed on pillar three, to encourage knowledge sharing and is now including developing countries in Latin America. The Mission will now turn more attention to capturing and communicating the outcomes of these workshops, ensuring that they can be carried forward to future activities and widely shared amongst the Mission's networks.

Progress against the Action Plan is occurring. Overall, the Director and the team have put in significant efforts to ensure that the Mission is progressing through the three pillars. But because there are many areas within each pillar and the engagement of supporting members is limited, the CHM is not making sufficient progress. In 2024, the Mission leads will progress some work to ensure a strategic and innovation-focused approach.

In December 2023 the MI Technical Advisory Group has reviewed the Clean Hydrogen Mission and provided the following recommendations:

- The Mission needs to have a laser focus on areas where it can make a difference and achieve significant impact. As identified in the 2023 Breakthrough Agenda report there is a clear need to stimulate demand.
- Hydrogen valleys, which are already a part of the Mission's focus, need to be a part of the overall Mission goal.
- The Hydrogen Valley platform is an excellent resource but more needs to be done to make it more accessible so it can answer and respond to needs of different stakeholders. For example, illustrating

more clearly what the key distinctive contribution of each valley is to the overall progress on demonstrating different technologies (on supply, demand, storage, etc.), gaps and priorities, lessons learnt etc. Legal frameworks also need to be put into place so there can be more sharing of data to allow this to occur and to avoid conflicts of interest which can arise when bringing together government and private sector stakeholders.

- To increase the impact of workshops it would be good to see some distillation of the information and outcomes of these workshops. This can be used for future action plans. Communication is very important, and it would be excellent if a communications officer could be hired. This would assist with providing targeted and useful outputs from the Mission, as well help increase the participation in knowledge sharing workshops.
- There needs to be more collaboration with industry as their involvement is important to ensure the success of hydrogen valleys. Industry, real-world and up-to-date data is a key input needed in the Platform as it will help to identify gaps where further R&I is required, for example.
- There are too many KPIs, particularly qualitative ones that cannot have any meaningful measurement. The KPIs need to be focussed on the goal and they need to be quantitative. Doing this will help to refine the scope of the Mission under each pillar and reduce and target the overall workload.
- There is no risk register for the Mission however the risks are similar to other Missions, such as under-resourcing and lack of participation from developing countries.
- Because there are too many areas within each pillar the CHM is not making significant progress in any one area. The Mission needs a refined goal and then there needs to be a focus on where the Mission can achieve impact, while sharing relevant information and data to support development and research and innovation which will increase impact.

The MI Clean Hydrogen Mission will continue to implement its Action Plan published in September 2022 during the GCEAF in Pittsburgh (USA) but will focus on areas where more impact can be reached.

In that respect the mission will develop in 2024 a first global clean hydrogen R&I agenda and continue to identify best practices along the value chain with a focus on distribution, storage and end-use/demand. It will publish at the end of 2024.

It will continue to stimulate the development of Hydrogen Valleys and the aim is to showcase at least 100 valleys at its platform by the end of 2024. To further develop the hydrogen valleys, Actions on the enabling environment under pillar three will focus on further development of hydrogen valleys with a focus on knowledge exchange on regulatory issues and finance.

During 2024 the CHM will develop together with its members an action plan for 2025-2026 considering the recommendations of the TAG.

#### Outcome Indicators:

Indicator	Target	Milestones	Current
Levelized cost of Hydrogen from production to end-use including storage and distribution	2 Euro / USD / kg tipping point for clean hydrogen by 2030	International recognised cost model for the levelized cost of hydrogen from production to end-use	Production cost of clean hydrogen varies between 2-6 EUR/USD per kg not considering storage and distribution and its use. Different cost models are in use. The cost of clean electricity and the cost of capital are outside the scope of the mission while these have an important impact on the price.
Hydrogen Valleys presented on the H2V.eu platform	100	100 H2Vs presented on the H2V.eu platform by the end of 2024	90 H2Vs are presented in different stages of development.

## Section 3 – 2024 Deliverables

### 2024 – 25 Goals

Goals: The Clean Hydrogen Mission’s goal over 2024-25 is to address the feedback from the independent TAG review, by reconsidering the overall Mission goal, refocusing efforts on specific areas of potential impact, and applying a laser-focused innovation lens to all its activities.

Work in the R&I pillar will continue but with a clearer focus to identify best practices for demonstration, and also to define a global R&I agenda which can be used for national and international funding programmes. The work on Hydrogen Valleys will be continued.

The Hydrogen Valleys Platform, the Mission’s strongest output, will be built on and developed further, e.g., improving the accessibility of the platform, and identifying a handful of key examples among the Hydrogen Valleys to help demonstrate best practice.

The enabling environment pillar will focus on the support of Hydrogen Valleys and to engage with non MI countries interested to develop as well a ‘hydrogen economy’ and in particular hydrogen valleys.

At the end of 2024 a new action plan for 2025-2026 must be presented.

## Mission Deliverables

Priority Deliverable – committed	Details	Target Date	Output Category	Lead (Support)
Short stock take report 'Towards 100 Hydrogen Valleys - 2024'	Report presenting the progress related to the development of hydrogen valleys globally. Identification of best practices to enable further development of the hydrogen valleys. This report can lead to another deliverable: Hydrogen Valley policy recommendations which can be presented at the CEM/MI ministerial (September 2024)	June 2024	Report + event	EC (Clean Hydrogen Partnership)/
Identification of successful examples of case studies to identify best practices in creating demand and unlock investment.	Develop off road sector strategies for development and deployment including mining trucks, rail locomotives, and small marine vessels	November - December 2024	Monthly workshops, task team meetings, develop an HD test facility + Reports, monitor industry collaboration and commercialization of ofd-road applications	USA / EC / EC CHP
Collection of R&I results along the value chain from production storage distribution to end-use	Publication of >30 projects from all MI CHM members advancing hydrogen technologies.	November 2024	publication	Co leads R&I pillar + EC
MI CHM Action plan 2025-2026	The current action plan is for 2023-2024 and needs to be updated. More focus on actions with high-impact	September 2024	Report	Co-leads team/EC/all members
Stretch Deliverable (Would like to do)	Details	Target Date	Output Category	Lead (Support)
Launch of first global R&I agenda for clean hydrogen development towards achieving USD 2/kg.	Develop strategic R&I agenda to achieve cost reduction along the value chain from production to end-use. The agenda can be used as inspiration for national and international funding programmes.	November 2024 (COP 29)	Report + event	UK ? (Other members?)
Joint call for R&I projects	Clean Energy Transition Co-fund partnership will set up a joint call with national funding agencies from the EU and non EU countries are invited to join. Aim is to have at least 4 MI	Launch September 2024	<i>Collaborative Funding Calls/Research</i>	European Commission in collaboration with CET partnership

	countries (non EU) are participating in the call for clean hydrogen projects.			
Memorandum of Collaboration with hydrogen industry associations	To increase involvement of industry in the activities of the MI CHM	September 2024 MI/CEM ministerial	collaboration	UK/MI secretariat
ECO-H2 Prize	The <b>Eco-H2 (Equitable and Clean Opportunities)</b> for hydrogen prize is proposed to be launched under the auspices of Mission Innovation's <u>Clean Hydrogen Mission</u> , in partnership with the Hydrogen Council, to foster the equitable and environmentally sustainable deployment of clean hydrogen technologies worldwide.	Pre launch April 24. Final launch Q4 2024.	Prize - Winning teams may receive cash prizes (TBD- e.g., preliminary: \$10K Phase 1 and potentially \$30K Phase 2) and /or other examples of recognition such as visibility, mentorships, and/or the ability to travel to hydrogen valleys to share results. Phase 2 winners will also be invited to present their findings at various events worldwide .	USA  Collaborations with CEM H2initiative. IPHE and other hydrogen groups are also possible.

## Section 4 – Mission Inputs

### Human Resources

Following the MI CHM Joint Mission Statement each co-lead MI member should have a personnel commitment of at least 1.0 FTE or funding equivalent for the implementation of the Mission activities and each core coalition MI member will have a personnel commitment of at least 0.5 FTE or funding equivalent for the implementation of the Mission activities.

Country/Partner	Government Officials		Contracted Technical Experts		Roles & Responsibilities
	Planned	Actual	Planned	Actual	
USA	2.0	1.0	1.0	1.0	Provide End Use WG leadership by managing WG workshops, WG meetings, presentations to stakeholders, and publications. Government officials include leaders of WG task Teams and conducting workshops. Contract experts assist with meetings and workshops.
European Commission	1.0	1.0	Via CHP		Provide leadership to the CHM and administrative support.



Clean Hydrogen Partnership (EU)			2.5	2	Set-up and monitoring H2V.eu platform. Project development assistance in support of hydrogen valleys
Germany	1.0	0.25			To be defined
UK	1.0				Currently responsible for the Production Working Group under Pillar 1 (R&I).
Australia	1.0	0.2			Provide updates and information on Australia's progress to deploying hydrogen; and where possible contribute to workshop and knowledge sharing discussions <ul style="list-style-type: none"> <li>Continue to participate in Hydrogen Off-Road Working Group</li> </ul>
Chile	1.0	0.8			Enabling environment – hydrogen development in Latin America and Africa <ul style="list-style-type: none"> <li>Continue to participate in Hydrogen Off-Road Working Group</li> </ul>
Saudi Arabia	0.5				<ul style="list-style-type: none"> <li>Support mission workshops by providing presenters and experts to speak in these sessions.</li> <li>Provide coordination between the mission and the H2 ecosystem and R&amp;D in Saudi Arabia</li> </ul>
Austria	0.5		0.5		Hydrogen Demand – collaboration with hydrogen TCP -new collaborative task on H2 Demand in Industry
Morocco	0.5				
United Arab Emirates	0.5				
Canada	0.5				R&I Pillar: <ul style="list-style-type: none"> <li>Participate in Hydrogen Off-Road Working Group</li> <li>Participate in Distribution and Storage Working Group</li> <li>Increase engagement in Production R&amp;I Working Group</li> </ul> Hydrogen Valleys <ul style="list-style-type: none"> <li>Stakeholder engagement, support requests for information to H2V platform</li> </ul> Enabling Environment Pillar <ul style="list-style-type: none"> <li>Contribute to workshops</li> </ul> Collaborative task with Hydrogen TCP: Future Demand of H2 in industry

China	0.5				
France	0.5				To be defined – contribution to H2Vs/finance – study on import of hydrogen
Norway	0.5				
Finland	0.5				
India	0.5				
Italy	0.5		tbc	tbc	Increase engagement in R&I Pillar with the focus on the results of R&D activities Continued support to the development of Hydrogen Valleys in Italy – potential knowledge sharing workshop on business case of hydrogen valleys (tbc) Increased engagement in enabling environment considering a project on education and training (tbc)
Japan	0.5	0.35		0.4	R&I pillar distribution and storage – hybrid workshop with a summary report and a technical report on hydrogen carrier technologies. R&I pillar production - workshop (either online or hybrid) and providing a summary report. (tbc)
Republic of Korea	0.5				
Netherlands	0.5				To be discussed at MI CEM Annual gathering Bali
Spain	0.5				
Total	14.5	3.35	4	3.4	

### Human Resource Gaps/Needs

Government Officials		Contracted Technical Experts		Activity at Risk
Planned	Actual	Planned	Actual	
1	0.0	3	0.0	<i>Gather data and develop strategies to move WG goals forward - Business analyst – focus on R&amp;I – analysis of R*I projects/reports – identification of project results</i>
0.5	0.0	0.5	0.0	<i>Communications specialist - The <b>Communications Specialist(s)</b> works with the MI Secretariat to coordinate external communications for the Mission. This includes communicating Mission progress and outcomes through social media, the MI website, press releases, webinars and more. They also conduct internal communications, ensuring members of the Mission stay informed.</i>
0.5	0.0			<i>Stakeholder engagement lead</i>

## Funding/Financial Resources

This input considers financial contributions that advance the work of the Mission – e.g. for asset creation (e.g. a website or other interactive portal), hosting events or meetings, or communications products. Whether you use US dollars, Euros, or another currency, please use consistent units throughout.

Note: This considers direct funding for the Mission. Funding calls supported by mission activity are considered under Outputs. Contracts for FTE support to the mission should be considered as Human Resources.

Country/Partner	Public Funding (\$)		Public/Private	Description
	Planned	Actual		
USA	\$250k USD	\$170k USD	0	Provide support in developing and planning WG goals, workshops, and publications
EC	250 k EUR	250 kEUR	Public/private (EC/CHP)	Hydrogen valley platform
Canada	?? k CAD			to be defined to support technical work in pillar 1 – or collaborative work with IEA hydrogen TCP
<b>Total</b>				

## Funding/Finance Resource Gaps/Needs

Public Funding (\$)		
Planned	Actual	Activity At Risk
500 k	0	Eco-H2 Prize – For many countries it will be difficult to make resources available. Possibility to involve other hydrogen groups such as CEM H2, IPHE, and private sector or philanthropies?

For the Eco-H2 Prize winning teams may receive cash prizes (TBD- e.g., preliminary: \$10K Phase 1 and potentially \$30K Phase 2) and /or other examples of recognition such as visibility, mentorships, and/or the ability to travel to hydrogen valleys to share results. CHM Members should make resources available. Preferably, winners will be paid by originating MI member country.

## Other In-kind Contributions

You may wish to track any other (in-kind) contributions that members make to advance the Mission. This could be in terms of insights contributed/knowledge shared from domestic projects, data sets, presentation at events, report creation etc.

Country/Partner	Planned Activity	Impact
Japan	Organize a hybrid workshop on policy and technologies on hydrogen carriers in March 2024. Provide a report on hydrogen carriers (Current and Future of technology Status and Opportunities for international Cooperation) for the Mission and public.	The workshop provides a good opportunity for future collaborations among Mission members as well as leading industries. The report provides detailed analysis and understanding on the hydrogen carriers, as the base for the collaboration on R&I.

Intangible Resource Gaps/Needs

Activity at Risk	Impact

Section 5 – Outputs

Collaborative and Coordinated Funding Calls

Funding Call	Public Funding		Private Funding		Description and Link to Mission Goals	Results of the funding call (when known)
	Expected	Actual	Expected	Actual		
Australia-UK Renewable Hydrogen Innovation Partnerships Program	10M	??TBC			Australia-UK Renewable Hydrogen Innovation Partnerships Program will support research, development and demonstration of renewable hydrogen technologies and its applications for industry and transport decarbonisation.	Call results end of 2024
Clean Energy Transition Partnership 2024	20 M EUR				Joint funding call for hydrogen R&I	Call results end of 2025
Clean Hydrogen Partnership 2024	113.5 M EUR				to support the development of hydrogen technologies across the whole hydrogen value chain. 5 topics – 25M€ funding - Renewable Hydrogen Production 5 topics – 27M€ funding - Hydrogen Storage and Distribution 4 topics – 19M€ funding - Transport 2 topics – 9M€ funding - Heat and Power 2 topics – 4.5M€ funding - Cross-cutting 2 topics – 29M€ funding - Hydrogen Valleys*	Call results start 2025 International collaboration is stimulated for EU member states and associated countries
International Researcher Collaboration Program	\$5M (Public)	Deployed			The program builds global hydrogen research, development and design (RD&D) capability through enhanced connectivity and collaboration between Australian research	Identifies areas of priority research to further develop global hydrogen supply chains and opportunities for collaboration between

					institutions and leading international hydrogen research organisations.	government, researchers, and industry.
<b>Total</b>						

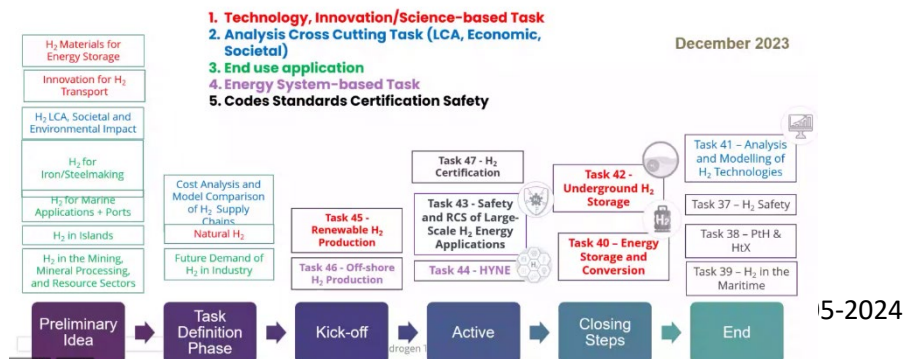
## Research Collaborations and Knowledge Sharing Communities

<b>Planned Research Collaborations Facilitated</b>			
<b>Partner Countries/Org</b>	<b>Area of Focus</b>	<b>Benefit to Mission</b>	<b>Status</b>
All members / Lead EC	Hydrogen Valleys	Identify key areas of trial and demonstration of hydrogen production & utilization around the world.	Yes – h2v.eu
All members / Lead USA	PFAS / environmental sustainability	Upcoming regulations regarding the use of PFAS will challenge the electrolyzer manufacturers. Solutions needs to be found to develop more environmental sustainable materials	New
All members/ USA	Clean Steel	Demand creation is one of the priority areas. Aim is to organize a workshop in November 2024 to 1) discuss lessons learned from early demonstrations, 2) understand current technology gaps, 3) identify challenges and pathways, 4) facilitate collaboration and cooperation, and 5) identify pathways to accelerate commercialization. Workshop will be coordinated with the Association of Iron and Steel Technologies (AIST) European Steel Forum. In advance of the workshop a discussion paper will be developed and conclusions of the workshop will eventually be presented in a vision paper with policy recommendations	New – Collaboration with Net Zero industries Mission and Breakthrough Agenda
All members/ Lead Austria	Hydrogen Demand	Future Hydrogen Demand in Industries– in collaboration with IEA Hydrogen TCP -	This is a new task which will be developed under the Hydrogen TCP in coordination with MI CHM and MI NZI. The task has been approved in the Exco meeting March 2023.
All members / lead USA	Off road	Demand creation is one of the priority areas and there is a need to develop decarbonization solutions for a range of offroad equipment markets that include open pit mine haul trucks, construction and agriculture equipment, port equipment and marine vessels, rail locomotives and passenger trains, and regional aircraft.	Ongoing, monthly working group meetings. Continue workshops and safety, powertrain, and infrastructure task team meetings.

		<ul style="list-style-type: none"> <li>• Inform a broad and diverse community of stakeholders from research and industry of the “state of the art” capabilities of hydrogen fuel cell technologies for various off road applications;</li> <li>• Conduct RD&amp;D and techno-economic progress of hydrogen fuel cell for off road applications;</li> <li>• Identify research priorities and gaps, key targets and pathways toward achieving targets, and resources that will support further RD&amp;D progress toward accelerating successful commercialization of off road hydrogen fuel cell applications;</li> <li>• Facilitate networking and the shared use of the technology in off-road applications.</li> </ul>	
All members	Distribution and storage	Sharing of information on storage and distribution of hydrogen is critical to develop global knowledge and progress innovative solutions. Aim is to identify and promote through the MI platform open access sources of information.	Japan has commissioned a study and organized a 2-day workshop. Study report to be published early May 2024
All members / lead UK	Clean Hydrogen Production	Sharing of information on hydrogen production is critical to develop global knowledge and progress innovative solutions. Aim is to identify and promote through the MI platform open access sources of information.	Ongoing (UK)

The Mission is contributing to the Hydrogen Breakthrough Agenda Demand priority action by stimulating the Hydrogen Valleys in which supply and demand are brought together. The Mission is together with the IEA Hydrogen Technology Collaboration Programme taking the lead in the Hydrogen Breakthrough Agenda R&I priority action. The IEA Hydrogen TCP has the following task portfolio:

Core Business: Task Portfolio Status



:HYNE= Hydrogen from Nuclear energy

Considering the target of the mission to reduce the cost of Hydrogen to 2 EUR/\$ per kg active involvement in the cost analysis task is considered.

Event/Report Title	Description	Date	Reach	Results	Responsible members
Policy workshop Hydrogen Valleys		21 February	Policy officers / ministries / funding agencies?	Exchange of experience on development of policy measures in support of	EC/CHP
Workshop Policy and Technology on Hydrogen Carriers	2-day hybrid workshop with 29 speakers from leading countries.	4-5 March	All hydrogen stakeholders from policy to industry	60 participants onsite and more than 150 audience online joined the workshop. Speakers had the opportunities for networking and site-visit.	Japan
Report "Hydrogen Carriers - Current and Future of technology Status and Opportunities for international Cooperation"	The report explains Current and Future of technology Status and Opportunities for international Cooperation on hydrogen carriers (liquid hydrogen, LOHC, ammonia, methanol and formic acid)	March 2024	All hydrogen stakeholders from policy to industry	The report will be uploaded to CHM website.	Japan
Clean steel R&I workshop		November 2024		As above	USA/DOE
Off Road R & I Workshops	Conduct monthly workshops on selected technical and economic topics	January - December	All hydrogen stakeholders from senior government to industry developers	Develop breakthroughs to address technical and economic barriers and challenges. Industry development of prototype and commercially ready technologies.	USA/DOE
H2Vs in Africa		Q3 2024	Hydrogen stakeholders in Africa	Convene a workshop through the Clean Hydrogen Mission on Hydrogen Valleys with African countries (collaborative work BtA Demand Creation)	DE??/Morocco??

<i>Joint Workshop at CEM/MI ministerial on global R&amp;I needs for clean hydrogen from production to end-use (Q3)</i>	Hydrogen TCP/MI	Q3 2024	CEM/MI ministerial	Collaborative work BtA R&I priority action  Input for global R&I agenda for clean hydrogen development.	MI CHM R&I pillar/Hydrogen TCP
Launch of first global R&I agenda for clean hydrogen development towards achieving USD 2/kg.		November 2024 COP29	All hydrogen stakeholders from senior government to industry developers	Focus R&I investments and support impactful projects	MI CHM R&I pillar/Hydrogen TCP
Short stock take report 'Towards 100 Hydrogen Valleys - 2024'		June 2024	All hydrogen stakeholders from government to industry developers	Increase stakeholder engagement and Identify and publish case studies on projects that have successfully partnered with off-takers to identify bestpractices that can be replicated by public and private actors (collaborative work BtA Demand Creation)	EC/CHP
Identification of successful examples of case studies to identify best practices in creating demand and unlock investment.		November 2024 COP29	All hydrogen stakeholders from senior government to industry developers	Stimulating industry to invest in decarbonization trajectories using clean hydrogen Stimulating government support for decarbonization trajectories using clean hydrogen	DoE/EC/CHP
MI CHM Action plan 2025-2026		September 2024 CEM/MI ministerial	All hydrogen stakeholders from senior government to industry developers	Stakeholder engagement	MI CHM
Webinars on different 'Enabling Environment'topics for non MI countries		Q3/Q4 2024	Open to interested stakeholders LAC and Africa	Sharing knowledge and networking among non MI countries. Webinars in the OLADE platform. One of the topics would be on the development of a national Green Hydrogen Action Plan 2030.	MI CHM / Chile together with OLADE and ??? / collaboration with UNIDO/IRENA ???



Webinars on different 'Enabling Environment' topics in support of hydrogen valleys.		Q2/Q4 2024	Open to hydrogen valley developers.	Sharing knowledge and networking among hydrogen valleys. Topics to be defined but focus will be on finance.	EC
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## Stakeholder Engagement

For 2024 it is the aim to extend outreach to more developing countries, which is aligned with MI's wider ambition. The focus for 2024 would be to build further in Latin America and to explore needs/potential actions in Africa.

Key Stakeholders	Objectives & Intended Impact	Results
Hydrogen Europe, Hydrogen Council, industry associations	Engage at C level to enable resources to support the mission especially in engaging industrial stakeholders and communication – MoU to be signed at CEM MI ministerial	Engagement of industry in MI R&I actions and development of hydrogen valleys.
Latin America (continuation 2023 work) / UNIDO / IRENA / Worldbank	Increased engagement of non-MI countries and development of hydrogen ecosystems in Latin America	Development of Hydrogen Valleys in Latin America
Africa (New) / UNIDO / IRENA / Worldbank	Engagement of non-MI countries / Identification of needs of non-MI countries to develop hydrogen economy and development of support programme for these countries to develop Hydrogen Valleys.	Development of Hydrogen Valleys in Africa

## Section 6 – Demonstrations

Name	Description	Funding (\$ and where from)	Expected Outcomes and Impact to Mission	Stage (i.e., Concept/ Design/ Deployed)
HLiquid H2 refueling	Develop a fast fill LH2 technology for HD applications	\$7 USD (80% public/20% Private)	Enable refueling HD applications and filling rates equivalent to the incumbent fuels and technologies e.g. diesel.	Concept
Thermal management testing	Develop thermal management testing facility and test protocols	\$4 USD (Public)	Capability to test HD FCS systems with industry enabling thermal control techniques and process.	Design
90 hydrogen valley projects/ hydrogen valleys platform	See H2V.eu		Demonstrations/deployment of hydrogen technologies from production to end-use	From concept to under construction/operation

The IEA also has a clean energy demonstration projects [database](#), which can be used to support the reporting on demonstrations. Missions are encouraged to work with the IEA to help identify projects for their database and appropriately categorize projects relevant to their sector.