CLEAN HYDROGEN MISSION

8th Plenary Meeting
Clean Hydrogen Mission

08.02.23

Agenda

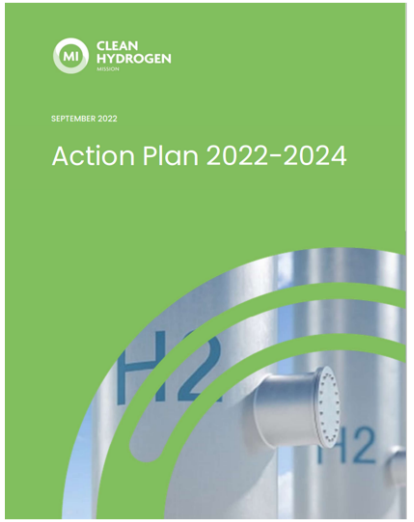
- **1. Mission direction and vision**
  - (New) Members engagement / Breakthrough Agenda Priority Actions / Communication
- **2. From Action to Implementation - Pillar updates**
  - a. R&I pillar Update working groups i. Production working group (UK/Lara Hirschhausen) ii. Distribution and Storage working group (Aus/Trevor Rapson) iii. Offroad working group (USA/Pete Devlin) iv. Proposal for new group Net Zero Industries (Canada/Kate Powe)
  - b. Demonstration/Hydrogen Valleys – progress so far i. Identification of Hydrogen Valleys – (Roland Berger – Markus Kaufmann) ii. Hydrogen Exchange (Germany/Lorena Steinle)
  - c. Enabling Measures – (Chile/Loreta Lancellotti-Angel Caviedes) i. Financing working group – (EC/Eirik Lonning)
- **3. Any other business**
- **4. Planning/Calendar**

Mission direction and vision

- (New) Members engagement
  - New member Spain
  - Interest from South Africa and Israel
- Breakthrough Agenda Priority Actions
- Communication

Action plan

- 4 Actions in Pillar 1 R&I
  - **Action 1: Analysis of global hydrogen RD&D opportunities**
  - **Action 2: Assessment of best-practice case studies**
  - **Action 3: Working Groups**
  - **Action 4: Clean Hydrogen Partnership Coalition**
- 2 Actions in Pillar 2 Hydrogen Valleys
  - **Sprint 1: Hydrogen Valleys**
  - **Sprint 2: Support non MI countries to develop Hydrogen Valleys**
- 3 Actions in Pillar 3 Knowledge centre
  - **Action 1: National Strategies and Regulations**
  - **Action 2: Codes and Standards**
  - **Action 3: Finance and investment knowledge group / Funding schemes**



Breakthrough Agenda Overview

Breakthrough Agenda was launched by world leaders at COP26 by 45 countries representing more than 70% of global GDP, with all G7 members endorsing the Agenda.

Countries committed to work together this decade to scale and speed up clean technologies, making them affordable and accessible for all, and agreed common goals – the 'Glasgow Breakthroughs' – global goals that aim to make clean technologies the most affordable, accessible and attractive option in each emitting sector globally by 2030:

- **Power**: Clean power is the most affordable and reliable option for all countries to meet their power needs efficiently by 2030.
- **Road Transport**: Zero emission vehicles are the new normal and accessible, affordable, and sustainable in all regions by 2030.
- **Steel**: Near-zero emission steel is the preferred choice in global markets, with efficient use and near-zero emission steel production established and growing in every region by 2030.
- **Hydrogen**: Affordable renewable and low carbon hydrogen is globally available by 2030.
- **Agriculture** (in development): Climate-smart, sustainable agriculture is the most attractive and widely adopted option for farmers everywhere by 2030.

By strengthening collaboration focused on these goals, we can make the transition quicker, cheaper and easier for everyone - driving faster innovation, greater economies of scale, bigger incentives to invest, and level playing fields where needed.

International Hydrogen Initiatives

BREAKTHROUGH AGENDA

Public-sector-led global Hydrogen Initiatives	International Partnership for Hydrogen and Fuel Cells in the Economy	CEM Hydrogen Initiative	Mission Innovation's Clean Hydrogen Mission	G7's Hydrogen Action Pact	UNDP's Hydrogen Initiative
	Hydrogen Energy Ministerial (HEM)	UNIDO's Hydrogen Initiative	IEA's Hydrogen TCP	IEA's Fuel Cells TCP	
Private-sector-led Global Hydrogen Initiatives	Hydrogen Council	Green Hydrogen Organisation	First Movers Coalition	Green Hydrogen Catapult	
Public & Private-sector Global Hydrogen Initiatives	IRENA's Collaborative Framework on Green Hydrogen	WEF's Accelerating Clean Hydrogen Initiative	Breakthrough Energy Catalyst		
Country-led International Initiatives	H2Global (DE)	Quad Clean Hydrogen Partnership (US, JP, AU, IN)	[Others to be added]		
Regional Hydrogen Initiatives	African Green Hydrogen Alliance	Hydrogen Europe	H2 LAC	MENA Hydrogen Alliance	[Others to be added]
Global Initiatives working on related topics	CEM Investment and Finance Initiative	Mission Possible Partnership	Green Grids Initiative	Breakthrough Energy Catalyst	Development Banks

Not an exhaustive list – feedback welcomed on other initiatives to be added

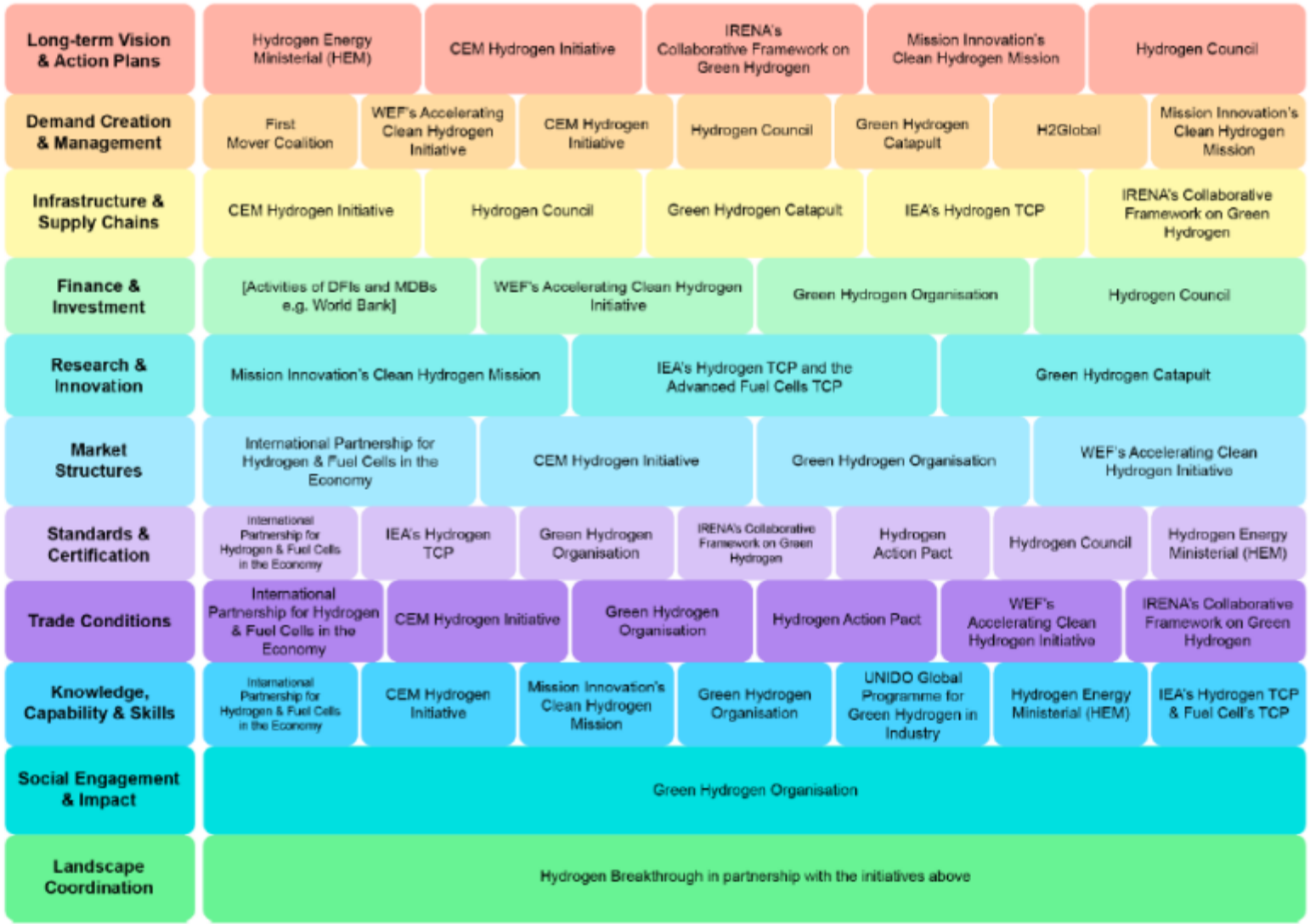
Included in the landscape map

Not yet included in the landscape map

International Hydrogen Initiatives

BREAKTHROUGH AGENDA

For each Breakthrough, we have worked with key international initiatives and country signatories to identify the existing landscape of activity, and how international initiatives contribute towards progress in that sector.



Hydrogen Breakthrough – Overview of the Priority Actions for 2023

BREAKTHROUGH AGENDA

Priority International Action	COP28 Goal	Coordinating initiative(s)
H1: Accelerate the development of standards for clean hydrogen	A programme should be fully resourced and underway by COP28 with progress reported annually at subsequent COP summits.	• IPHE • IEA's Hydrogen TCP • IRENA's Collaborative Framework on Green Hydrogen
H2: Coordinate internationally to drive demand for clean hydrogen	Aggregated commitments to be announced by COP28 and updated at subsequent COP summits.	• First Movers Coalition • Clean Energy Ministerial Hydrogen Initiative • Mission Innovation Clean Hydrogen Mission
H3: Expand the number and scope of innovative clean hydrogen projects	Progress to be reported on by COP28.	• Mission Innovation Clean Hydrogen Mission
H4: Scale and facilitate access to finance, particularly for developing countries	A broad coordinated portfolio of support mechanisms to be communicated by COP28.	• A partnership of donor countries and active financing institutions including the World Bank & the United Nations Industrial Development Organization (UNIDO)
H5: Enhance the coordination and transparency of international collaboration on clean hydrogen		• Breakthrough Agenda project team in close partnership with and in support of key international hydrogen initiatives.

H2: Coordinate internationally to drive demand for clean hydrogen

BREAKTHROUGH AGENDA

WHAT?	WHEN?	HOW?	WHO?
Priority International Action	**COP28 Goal**	**How this will be taken forward**	**Coordinating initiative(s)**
H2. Demand Creation & Management: Strengthen demand signals for renewable and low carbon hydrogen by coordinating the agreement and announcement of packages of firm and sustained public and private commitments for the large-scale use renewable and low carbon hydrogen that displaces fossil fuel use in a wide range of applications.	Aggregated commitments to be announced by COP28 and updated at subsequent COP summits.	By joining and working through one or more leading initiative in this field to encourage coalitions of leading countries & companies, to make increased and firm commitments to renewable and/or low carbon hydrogen use in end-use applications and to aggregate and communicate those commitments widely. This work would be coordinated with those initiatives active in supporting the use of renewable and low carbon hydrogen to displace fossil fuel use, including the First Movers Coalition, the Clean Energy Ministerial Hydrogen Initiative, and the Mission Innovation Clean Hydrogen Mission.	First Movers Coalition MI CLEAN HYDROGEN MISSION HYDROGEN INITIATIVE AN INITIATIVE OF THE CLEAN ENERGY MINISTERIAL

H3: Expand the scale and diversity of innovative clean hydrogen projects

BREAKTHROUGH AGENDA

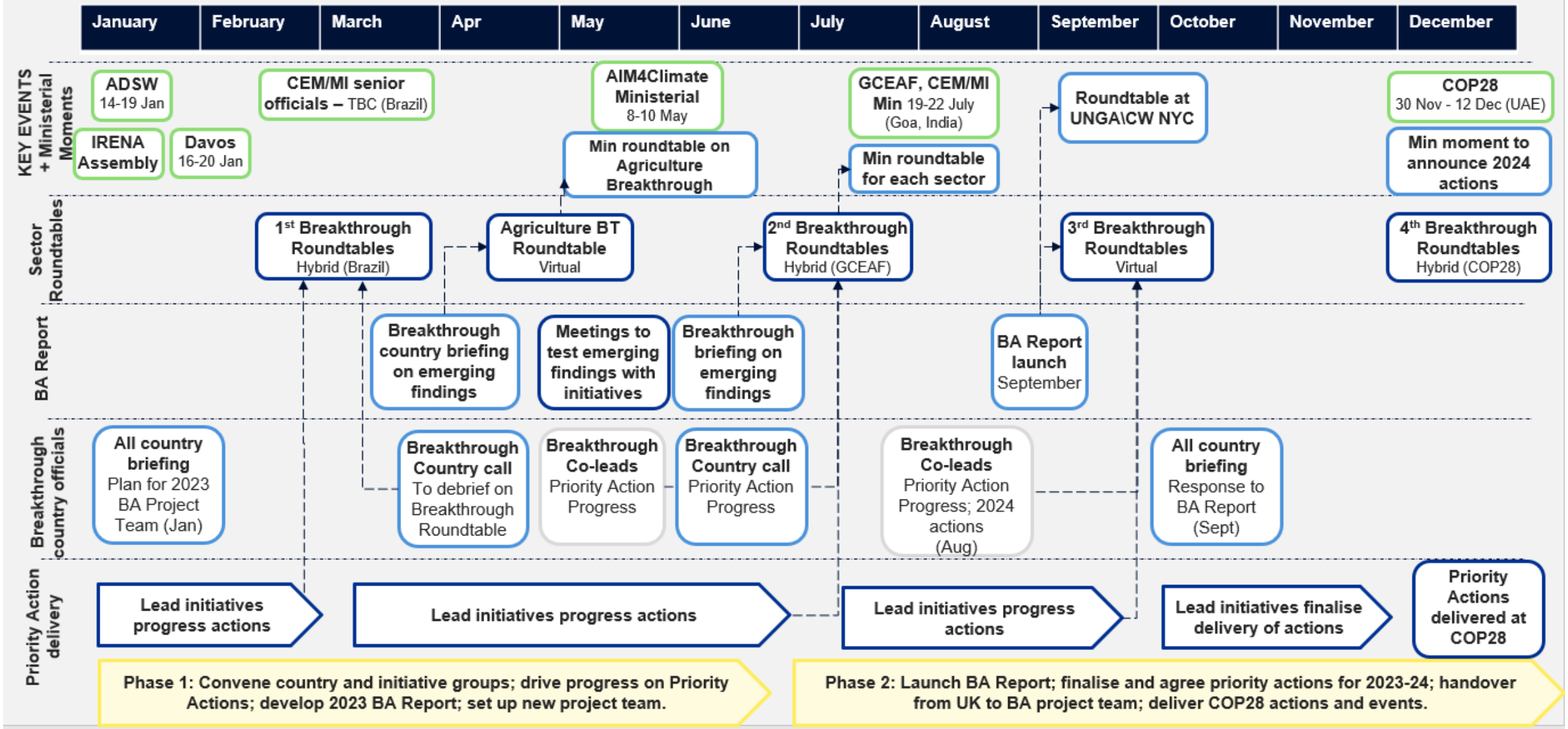
WHAT?	WHEN?	HOW?	WHO?
Priority International Action	**COP28 Goal**	**How this will be taken forward**	**Coordinating initiative(s)**
H3. Research & Innovation: Drive a significant increase in the number and geographical distribution of new hydrogen projects across a diversity of hydrogen's high-value end use sectors, backed by mechanisms to broaden and more rapidly share learnings from projects.	Progress to be reported on by COP28.	By joining and/or increasing support for and engagement with the Mission Innovation Clean Hydrogen Mission's goals, including to deliver a wider portfolio of Hydrogen Valleys, and working in coordination with other initiatives active in supporting new hydrogen projects and innovation, including the IEA's Hydrogen and Fuel Cells TCPs.	MI CLEAN HYDROGEN MISSION

BA Priority Action Delivery Plan H3 Research and Innovation Key milestones in 2023 – **still draft**

- Q1 2023: International workshop on key R&D gap requiring innovation to meet MI goal of 2 USD/EUR from production of clean hydrogen to end use.
- Q2 2023: Workshop on status of H2 Valleys/Hubs and assessment of new commitments.
- Q2 2023: Set up of a working group on finance - Determine funding required for pledges, analyse funding gaps and stimulate increased investment in clean hydrogen innovation–
- Q2 2023: update Hydrogen Valley Platform stimulating cooperation between Hydrogen Valley stakeholders
- Q3 2023: analysis on partner commitments to support clean hydrogen innovation.
- Q4 2023: Joint workshop MI/Hydrogen and Fuel Cell TCPs 'Hydrogen Valleys Research and Innovation needs and opportunities'.
- Q4 2023: Identification of at least 100 Hydrogen Valleys/hubs
- IP and journal publication analysis? continuation
- Database of R&I projects ? (suggestion by steering committee)

Timeline to COP28 – key moments

BREAKTHROUGH AGENDA



CLEAN HYDROGEN MISSION

Communication

- MI website
- Linkedin page

Event ended

Clean Hydrogen Mission Workshop - Hydrogen for Cargo Handling at Ports

Event by Clean Hydrogen Mission

Thu, Jan 26, 2023, 2:00 PM - 3:00 PM (your local time)

Online

Tom Rollason and 40 other attendees

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Details | Comments | Networking

MISSION INNOVATION

ABOUT MI | MISSIONS | INNOVATION PLATFORM

CLEAN HYDROGEN MI

Missions | Clean Hydrogen Mission

NEWS AND UPDATES

- [October 12, 2022] **Just announced:** India announced their call for proposals for Hydrogen V on Hydrogen Economy an Industry-Academia Conclave" held on 30th September. Watch t open until 30 December 2022.
- [September 22, 2022] **Just released**:The Clean Hydrogen Mission Action Plan 2022-2024
- [September 22, 2022] **Just released**: The Clean Hydrogen Mission and CSIRO present a Glob Opportunities, plus ten in depth Country analysis: Australia; Canada; China; France; Germa States; United Kingdom [coming soon!]
- [November 9, 2021] The Clean Hydrogen Mission presents a Discussion Paper for public con three annexes (1, 2 and 3). Comments by MI members, the broader stakeholder community the final version of the paper and the following *Clean Hydrogen Mission Action Plan.*
- [June 2, 2021] The "Clean Hydrogen" Mission was announced at the Sixth Mission Innovatio information.
- Watch Clean Hydrogen Launch videos

Find out more about the Clean Hydrogen Mission.

The co-leads:

MISSION INNOVATION

CLEAN HYDROGEN MISSION

Our goal is to increase the cost-competitiveness of clean hydrogen by reducing end-to-end costs to a tipping point of 2 USD/kg by 2030.

It is currently three times more expensive to produce clean hydrogen than hydrogen produced directly from fossil fuels. Clean hydrogen is vital as it has the potential to decarbonise hard to abate sectors, such as industry and heat, which are responsible for two thirds of global emissions.

Co-leads

Australia | Chile | European Union

United Kingdom | United States

You are viewing this page as a member

Clean Hydrogen Mission

Clean Hydrogen Mission

Our goal is to increase the cost-competitiveness of clean hydrogen by reducing end-to-end costs to 2 USD/kg by 2030

International Trade and Development · 138 followers

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About

Mission Innovation is a global initiative to catalyse action and investment in research, development and demonstration to make clean energy affordable, attractive and accessible to all this decade. This will accelerate progress towards the Paris Agreement goals and pathways to net zero. The MI Clean Hydrogen Mission is a new global coalition ... see more

See all details

Pages pe

From Action to Implementation – Pillar updates

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CLEAN HYDROGEN MISSION

Production Working group

First meeting was held on 24-10-2022

KEY DELIVERABLES

•Carry out a gap analysis of innovation and funding available globally for clean hydrogen electrolysis (and other production technologies).

- Landscape Analysis.
- Assessment of best-case studies in clean hydrogen production globally.
- Other deliverables, based on emerging priorities…

Production Working Group – Expected Deliverables (an example)

	Innovation need	Current technology maturity and timescale of innovation need					Stae of Internat'l cooperation	Funding support (current /future)
		Short term (2020s)		Medium term (2030s)		Longer term (2040s)		
	Hydrogen Production							
CCUS-enabled hydrogen	Demonstrate cost-effective, efficient CCUS-enabled H2 production with carbon capture integrated at multiple sites							
	Deploy aat large scale cost-effective, efficient CCUS-enabled production with carbon capture integrated at multiple sites							
Electrolytic hydrogen	Demonstrate MW scale safe, efficient electrolytic H2 production at scale at multiple sites							
	Demonstrate 100s MW scale safe, efficient electrolytic H2 production at scale at multiple sites							
	Progress development of next generation electrolysers (of different types) with reduced cost and increased efficiency							
	Progress development of electrochemical synthesis of ammonia							
	Demonstrate advanced manufacturing methods for electrolysers							
	Demonstrate efficient, cost-effective biomass gasification for potential use in BECCS; consider linkages to future CCS networks							
	Demonstrate hydrogen producing negative emission technologies							

Storage & Distribution Working group

Global case-studies & exemplars

Identify reliable solutions for distribution and storage to establish clean hydrogen's role in the global economy
Particular focus on potential for cost reduction

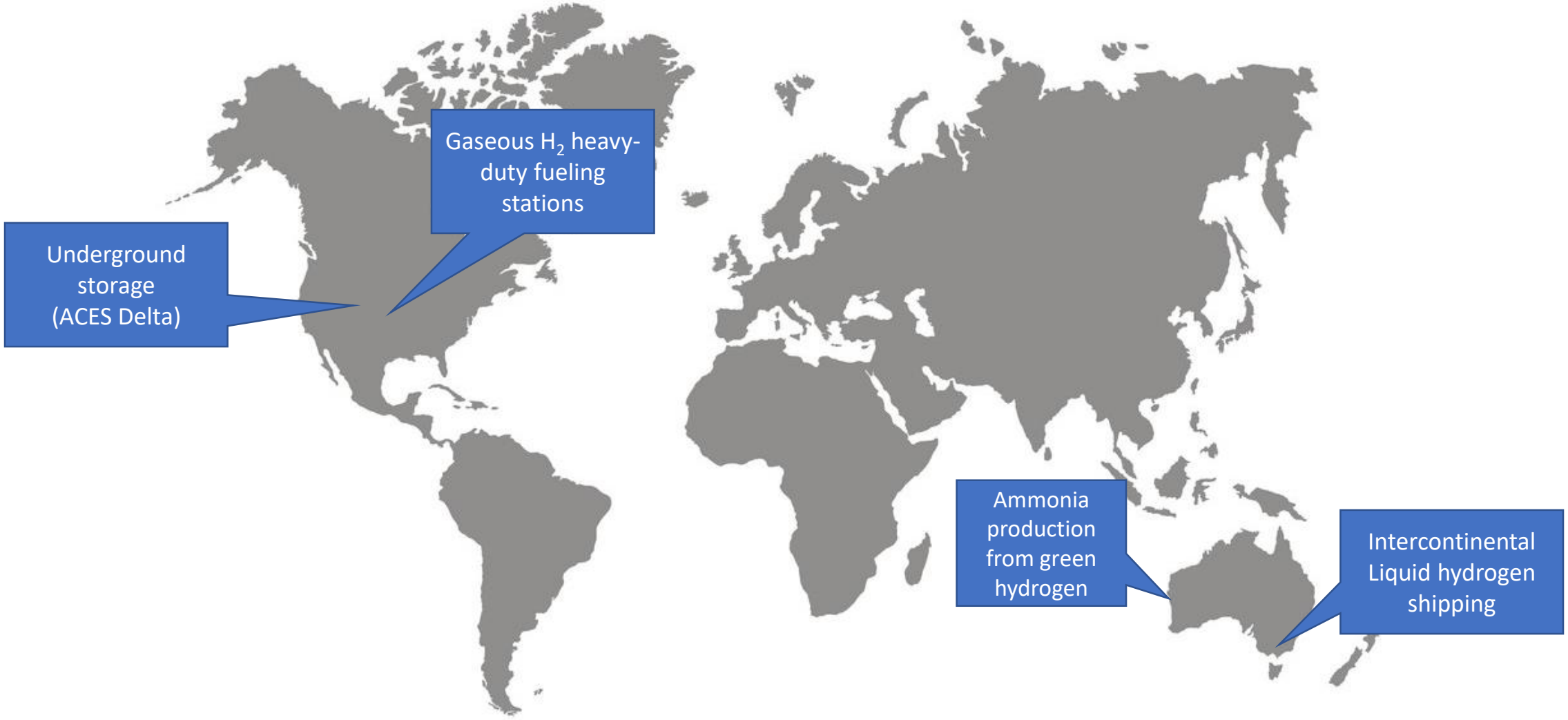
- Identify research & innovation priorities
- Establish knowledge exchange

Countries put forward case studies

- explain what they chose and why

Contributes to the 2nd action of the Clean Hydrogen Mission: Assessment of global case studies

Some draft global case studies & exemplars



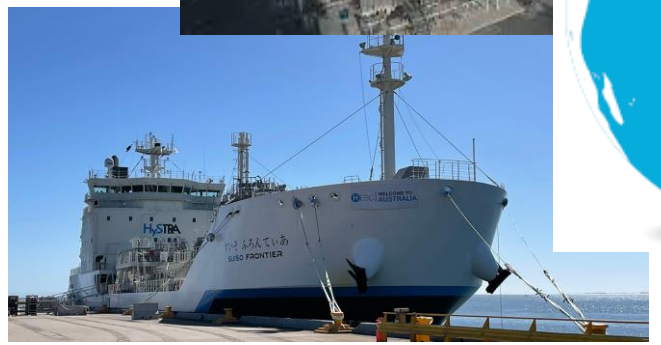
The world-first Hydrogen Energy Supply Chain project

Demonstrate shipping of liquid hydrogen from Australia to Japan.

Status: The pilot phase of the project completed.
January 2022, 2.6 tonnes of liquid hydrogen transported from the Port of Hastings to the Port of Kobe on the Susiso Frontier.
The ship has a hydrogen capacity of 88 tonnes of liquid hydrogen.

The decision of the commercialisation phase will be made soon.

More information:
https://www.hydrogenenergysupplychain.com/
Contact: info@hydrogenenergysupplychain.com



Why we chose this example:

- HESC has a first-mover advantage with potential to be the first commercially viable clean hydrogen project with export in Australia.
- Liquid hydrogen has advantages over other H_2 carriers during large scale and long distance transportation.

Yuri renewable hydrogen to ammonia project

A 10 MW electrolyser will produce up to 640 tonnes of H_2 yr^{-1} which will be used to produce 3630 tones of ammonia yr^{-1}

Location: Pilbara, Western Australia
Status: under construction
Commercial operations date – Q4 2024

More information:
https://arena.gov.au/projects/yuri-renewable-hydrogen-to-ammonia-project/
Contact: carlos.trench@engie.com

Why we chose this example:
Australia is looking to be an exporter of clean hydrogen. Ammonia is promising liquid carrier for intercontinental transport. This project will demonstrate this approach in Australia. Operational data will inform future hydrogen projects

ENGIE

YARA

Knowledge grows

H_2 Carriers – H_2 Storage and Transport

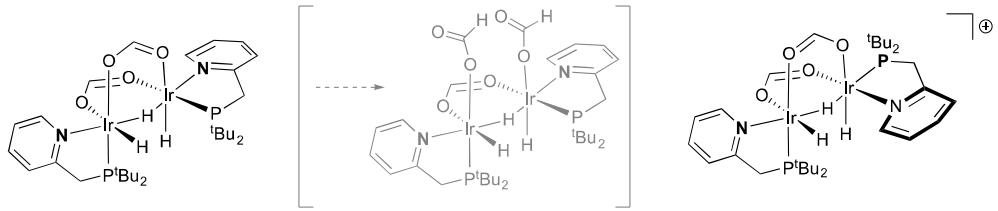
Hydrogen Release from Concentrated Media with Reusable Catalysts – ST216

Objectives:

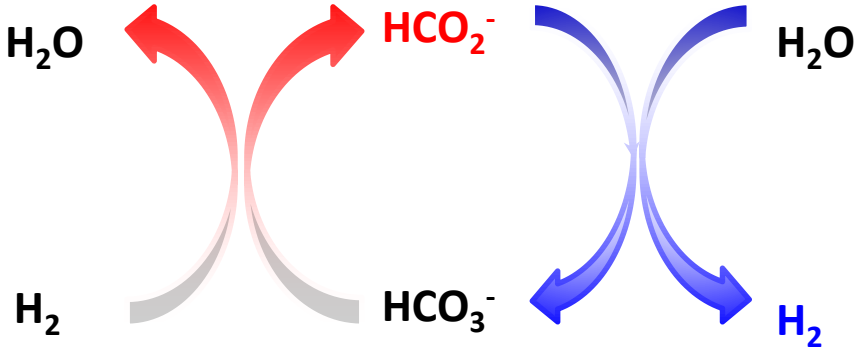
- Demonstrate on-demand H_2 evolution from formic acid and formic acid blends using a prototype continuous operation reactor
- Demonstrate homogeneous catalyst can meet target flow rate of 300 kg H_2/hr in a continuous flow reactor

Recent Accomplishments:

- Demonstrated 160 L/hr peak flow at ~155 bar
- Demonstrated CO and CO_2 scrubbing (< ~5 ppm) at ambient pressure
- Demonstrated 5.3 wt.% from a MeOH/formic acid blend
- Developing a mechanistic understanding of the catalytic dehydrogenation reaction



formic acid dehydrogenation



Developing an overall understanding of H_2 Carriers for H_2 storage & transport – ST204

Objectives:

- Identify use cases expected to benefit from H_2 carriers
- Identify key physiochemical properties to fulfill application needs
- Evaluate select H_2 carrier systems to meet application requirements

Recent Accomplishments:

- Demonstrated >10 cycles in a formate/bicarbonate system
  - H_2 release at isobaric and isochoric (< 80 °C) conditions
  - H_2 uptake at < 35 bar and < 50 °C

We want to fill the map with case-studies ☺

Contact trevor.rapson@csiro.au

Mission Innovation Offroad Working Group

Working Group – global participation from >40 organizations – 130+ active members – monthly Group & Team meetings

Action Plan includes TCO Analysis, a Global Project Database, Data Collection, Safety Codes & Standards, Hydrogen Infrastructure, Target Setting

Fuel Cells / Powertrain Team – Identified thermal management and air filtration as the major technical tasks requiring solutions. Monthly meetings target creation of a knowledge base for industry's use to facilitate technology evolution.

Hydrogen Task Team – Created liquid hydrogen nozzle interface reference design specification for mine haul trucks. Reviewed mobile fueler capability needs. Now developing @scale hydrogen infrastructure conceptual requirements.

Hydrogen Safety Team – Developing representative specifications for onboard hydrogen leak sensors for use evaluating and identifying appropriate sensors for offroad mine haul trucks. Reviewing support facility & infrastructure sensor needs.

Date / Location	Topics / Presenting Organization
January	Safety Challenges for Off Road Applications / U.S. DOE - Sandia National Lab
February	Fuel Cell Power Thermal Management for Off Road Applications / Cummins
March	Refueling Processes for HD and Off Road Refueling / U.S. DOE - National Renewable Energy Lab
April	Ammonia as an H2 Carrier for Agriculture / U.S. ARPA-E
May	HICE for Off Road Vehicle Applications / Cummins
June	Fuel cell power challenges for Off Road Applications / Ballard
July	Cryo-compression: High-Density Storage / Verne Hydrogen
August	Total Cost of Ownership Pit Mine Truck / U.S. DOE - Argonne National Lab
September	Global Forum – Pittsburgh, PA
October	Off Road End Uses – California Programs / California Energy Commission & Air Resources Board
November	H2 for Agricultural Vehicles / John Deere
December	Mobile Refueling Systems / Chart Industries

MISSION INNOVATION

NET-ZERO INDUSTRIES
MISSION

NZIM Global Knowledge Exchange

Canada's Proposal

NZI Global Knowledge Exchange

NET-ZERO INDUSTRIES MISSION

Action long title: Mission Innovation Net Zero Industry Global Knowledge Exchange				**Lead country / organization:** Canada / Natural Resources Canada				
Assigned to Pillar: 1. Technology Demonstrations (Stakeholder and Knowledge Management)								
Short name of participating NZIM members/cooperation partners:	*TBD*							
Estimated Action Start Date: 02/23				**Estimated Action End Date:** 03/25				
THIS PROPOSAL HAS BEEN APPROVED BY SENIOR MANAGEMENT IN NRCAN								

NZIM Global Knowledge Exchange

NET-ZERO INDUSTRIES MISSION

Objectives:

- Identify and prioritize key knowledge and information needs to accelerate the demonstration and deployment of industrial decarbonization technologies.
- **Assess level of knowledge and comfort of industry partners with IP, open science and data principles, etc.**
- **Provide insights to challenge the perspectives of representative industry stakeholders on issues surrounding Intellectual Property (IP), knowledge sharing, and commercial advantage.**
- **Agree on the forms of knowledge, information, and data that can be shared for mutual benefit, while ensuring commercially sensitive data/information is protected.**
- Participate in knowledge exchange activities with Mission Members and global industry counterparts.
- Showcase leading industrial decarbonization technologies and innovators on a global stage.
- Elevate the Environmental, Social and Governance (ESG) profile of participating industry partners.

NZIM Global Knowledge Exchange

NET-ZERO INDUSTRIES MISSION

Description of Work:
Participating member countries will invite industry partners to participate in the Global Knowledge Exchange, whereby participants would engage with Mission members and partners to advance the objectives identified above.

Participants will receive no additional funding, but will benefit from the learnings of global counterparts, gain international exposure and recognition, and enhance their ESG profile through multilateral collaboration to advance action on climate change.

Rationale:
To achieve global climate goals, **innovation cycles for pre-commercial clean energy technologies must be quicker than has been achieved historically**: from first prototype to market needs to be 20% faster on average than the quickest energy tech developments of the past, and around 40% faster than was the case for solar Photovoltaic.

An acceleration of the magnitude required is ambitious but possible, requiring technologies that are not yet available on the market to be demonstrated quickly at scale in multiple configurations and in various regional contexts. This highlights the critical need for international collaboration and underscores that sharing of knowledge and lessons learned from demonstration projects must be expanded.

NZIM Global Knowledge Exchange

NET-ZERO INDUSTRIES MISSION

Milestones & Deliverables

Early planning (now – Spring 2023)

1. Socialize proposal with NZI Mission co-leads (Australia and Austria) and members (January 16)
2. **Recruit NZI Missions members, clarify roles** (February – March)
3. **Clarify parameters of the initiative** (April – May)

Project Launch and Implementation

1. **Recruit Industry Participants** (summer / fall 2023)
    - Potential activities include hosting webinars to explain the project, it's objectives and commitment required
2. **Introduction to the Global Knowledge Exchange** [Webinar] (fall 2023)
    - What we aim to do and why
    - Presentation on the value of greater knowledge sharing, challenging status quo
    - Assess level of knowledge and comfort with IP, open science and data principles
3. **Active workshops** (winter 2023/24)
    - Identify and prioritize key knowledge and information needs to accelerate the demonstration and deployment of industrial decarbonization technologies.
    - Agree on the forms of knowledge, information, and data that can be shared for mutual benefit

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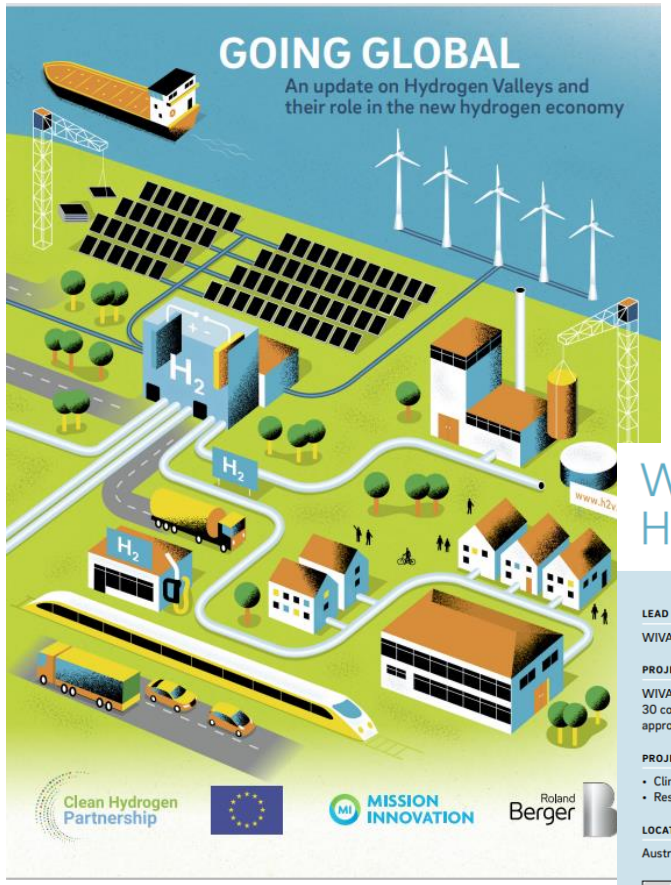
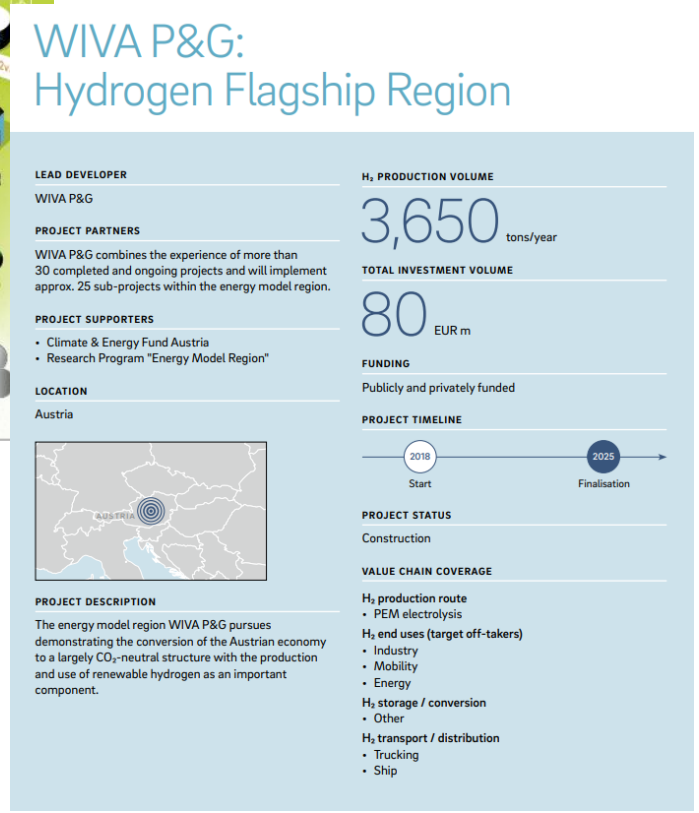
Pillar 2: Demonstration

- **Sprints:**

1. Identification of 100 Clean Hydrogen Regions: Enhancing the ambition to identifying 100 Clean Hydrogen Valleys, through partnerships and linkages

2. Hydrogen Exchange: Support of non-MI countries to develop Hydrogen Valleys





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https://h2v.eu/join-us
or send an email to: H2V@clean-hydrogen.europa.eu!

5 Join the platform!

The relaunched Hydrogen Valleys Platform intends to feature new, recently emerged Hydrogen Valley projects from around the world. As such, the project consortium has continued to contact potential project additions to evaluate their compatibility with the Hydrogen Valley definition and the platform's goals.

We encourage and invite all other projects at project development stage from around the world to reach out to join the platform. We firmly believe that by participating in the further development of the Hydrogen Valleys Platform, project developers will play a significant role in promoting the emergence of other hydrogen projects, and thereby facilitating the global clean energy transition as such. Above that, these projects will join an exclusive group of other leading hydrogen projects who can actively collaborate and exchange best practices.

If you are interested, please get in touch regarding your Hydrogen Valley via https://h2v.eu/join-us or send an email to H2V@clean-hydrogen.europa.eu!

In a next step, our team will evaluate the fit of the project regarding the Hydrogen Valley definition, which includes a comprehensive survey on project fundamentals, technologies deployed, project development overall, financial aspects as well as hurdles and key success factors. Afterwards, the project will be featured on the platform and joins the circle of successful peers from around the world. Furthermore, all Hydrogen Valleys on the platform will receive an H2.0 Valley Certificate. They are thus recognised and certified by Mission Innovation and the Clean Hydrogen Joint Undertaking as a global Hydrogen Valley flagship.

We are very much looking forward to hearing from you!

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CETPartnership

TRI 3: Enabling Climate Neutrality with Storage Technologies, Renewable Fuels and CCU/CCS

Call Module: TRI3 Hydrogen and renewable fuels

Call module 3.2: Hydrogen and renewable fuels

- The objective of the call module is to facilitate the development and adoption of technologies for **effective production, transport, storage and end-use** of hydrogen and renewable fuels, including security of **supply** and **safety** aspects
- The ambition of the call module is to **accelerate the time to market** for hydrogen and renewable fuel technologies. This will require industrial involvement in research and innovation activities.
- Important for a net-zero energy system is the cost-effective provision of **hydrogen from various sources**, thermo-, photo- and electrochemical solar fuels, as well as the supply of advanced **biofuels** from sustainable biomass.

Co-funded by the European Union

In short: Hydrogen and Renewable fuels

TRI 3: Enabling Climate Neutrality with Storage Technologies, Renewable Fuels and CCU/CCS

Call Module: TRI3 Hydrogen and renewable fuels

Focus on **cost- and energy efficient technologies** for:

- **Hydrogen**
- **Renewable Fuels**

- Support projects aiming to **TRL5 or above**
- **Industry-involvement requirered and crosscutting issues must be addressed**
- The Call Module aims to support projects with an expected requested grant (but not limited to) in the range of **1 to 5 MEUR.**

CETPartnership

Joint Call 2023

If you wish to join for the 2023 call:

- Send us/me an email and indicate you interest in which TRI and indicative budget
  TRI3@CETPartnership.eu ; **Ragnhild Rønneberg** rr@forskningsradet.no
- We will add you to the mailing list accordingly
- You will be invited to the meetings for that particular TRI

- You will be invited to provide inputs:
  - to the call text for 2023 (based on the outcomes from the 2022-call)
  - specify your priorities / national requirements
  - leverage your funds with other funding partners
  - nomination of experts

- Immediate access to a standard information package and knowledge developed in CETP

- Appear as CETP-funder in the 2023 call !

Planning

- 17 February – MI Off-road Hydrogen Powered Fuel Cells WG - Taie, Zachary zachary.taie@ee.doe.gov - virtual
- 17 March – MI CHM **Workshop on Hydrogen Detection Technologies for Safety – Tokyo Japan –physical** (alongside World Smart Energy Week" will be held in the same week, March 15-17, in Tokyo) 河野 祐子 Yuko Kono <kono-yuko@meti.go.jp>
- 9 March – Plenary meeting – member updates ???