

**HYDROGEN BREAKTHROUGH: PRIORITY INTERNATIONAL ACTIONS FOR 2024**

1. This document outlines the Priority International Actions for 2024 under the Hydrogen Breakthrough, in response to the recommendations in the [Breakthrough Agenda Report 2023](#) from the International Energy Agency (IEA), International Renewable Energy Agency (IRENA) and UN High Level Action Champions (UN HLAC). These priority actions have been developed collaboratively by countries participating in the Hydrogen Breakthrough and leading initiatives. They seek to build on the range of important wider work underway and planned across the international landscape, including as part of the international response to the Global Stocktake and in support of the mitigation work programme, by strengthening international collaboration in specific areas where in doing so we can accelerate progress towards our shared Hydrogen Breakthrough Goal to make:

*‘Affordable renewable and low carbon hydrogen globally available by 2030’*

2. Noting that each country will have its own national pathway to decarbonise key sectors and approach to competing for future clean technology market opportunities, and with full recognition of the many excellent wider international activities and partnerships already underway, we intend to prioritise our international efforts to advance specific priority international actions and projects as listed below.
3. Progress on these actions in 2024 will be tracked through the next Breakthrough Agenda report from the IEA, IRENA and UN HLAC, discussed through the Hydrogen Breakthrough dialogues co-led by the United Kingdom, United States, and India (with further co-convenors potentially to be agreed), reviewed at the Clean Energy Ministerial (CEM) and Mission Innovation Ministerial (MI) in the context of the CEM-MI-Breakthrough Agenda Partnership Arrangement, and reported on at COP29 alongside an updated set of Priority International Actions for Hydrogen in 2025.
4. In order to implement the Breakthrough Agenda launched by 45 World Leaders at COP26, and now backed by [47] governments, set out below are the Priority International Actions being taken forward by individual countries and governments as appropriate to their national priorities:

Priority International Action	How this will be taken forward	Coordinating initiative(s)	Collaborating governments <i>(to be confirmed)</i>
<p><b><i>Breakthrough Agenda Report Recommendation:</i></b> Governments and industries should provide financial and human resources for the development and implementation of a comprehensive portfolio of national and international standards, based on a well-articulated plan that defines resource needs. Governments should also work towards the adoption of a common methodology to calculate the carbon footprint of the hydrogen value chain to facilitate mutual recognition and interoperability of certification systems. Governments, especially those of developing countries, should anticipate building technical capacity of their national systems to verify compliance with international hydrogen standards.</p>			
<p><b>H1. Standards &amp; Certification:</b> Accelerate and fully resource the implementation of a coordinated</p>	<p>By supporting and securing resources for the International Partnership for Hydrogen and Fuel Cells in the Economy (IPHE), in partnership with relevant</p>	<p><i>Coordinated by:</i></p>	<p>Australia Cambodia Canada</p>

<p>programme of work to develop a comprehensive portfolio of international renewable and low carbon hydrogen standards and to facilitate associated certification schemes. The multi-year programme should submit annual progress report at subsequent COP summits.</p>	<p>initiatives, to coordinate activity, to implement an agreed multi-year global programme to develop and secure agreement to international standards, certification and related processes, including:</p> <ul style="list-style-type: none"> <li>• emissions accounting;</li> <li>• safety;</li> <li>• operational issues; and</li> <li>• mutual and cross-border recognition of certification schemes.</li> </ul>	<p>International Partnership for Hydrogen and Fuel Cells in the Economy (IPHE)</p> <p><i>Partners:</i></p> <p>International Energy Agency (IEA)'s Hydrogen TCP</p> <p>International Renewable Energy Agency (IRENA)'s Collaborative Framework on Green Hydrogen</p> <p>United Nations Industrial Development Organization (UNIDO)</p>	<p>European Commission Finland France Germany Guinea Bissau Ireland Italy Japan Netherlands Norway Panama Spain Sweden United Kingdom United States</p>
<p><b><i>Breakthrough Agenda Report Recommendation:</i></b> Governments and companies should coordinate internationally to increase commitments for the use of low-carbon and renewable hydrogen in sectors where hydrogen is currently used, supported by specific policies and purchase agreements, to collectively send a strong demand signal and mobilise investment in production. In new priority application sectors, countries should share learning to accelerate early deployment. This should be done in a manner that ensures a level playing field in international trade.</p>			
<p><b>H2. Demand Creation &amp; Management:</b> Strengthen demand for renewable and low carbon hydrogen by coordinating the agreement and announcement of packages of firm and</p>	<p>By joining and working through one or more leading initiative in this field to encourage coalitions of leading countries &amp; companies to:</p>	<p><i>Coordinated by:</i></p> <p>Clean Energy Ministerial Hydrogen</p>	<p>Australia Cambodia Canada European Commission Finland Germany</p>

<p>sustained public and private commitments for the large-scale use of renewable and low carbon hydrogen that displaces fossil fuel use in a wide range of applications and takes into account the need for just transitions. Aggregated commitments to be announced by COP29 and updated at subsequent COP summits.</p>	<ul style="list-style-type: none"> <li>• make increased and firm commitments to renewable and/or low carbon hydrogen use in end-use applications;</li> <li>• to address key enabling conditions, including to mitigate financial risks and develop international standards and certification (utilising work under H1. on Standards &amp; Certification, H3. on Research &amp; Innovation, and H4. on Finance &amp; Investment);</li> <li>• to aggregate and communicate those commitments widely (linked to H5. on Landscape Coordination); and</li> <li>• to address enabling conditions for connecting clean hydrogen supply and demand, including financing mechanisms and cross-border trade forums.</li> </ul> <p>This work will be coordinated by those initiatives active in supporting the use of renewable and low carbon hydrogen to displace fossil fuel use.</p>	<p>Initiative &amp; Rocky Mountain Institute</p> <p><i>Partners:</i></p> <p>First Movers Coalition</p> <p>World Economic Forum's Accelerating Clean Hydrogen Initiative</p> <p>Clean Energy Ministerial Hydrogen Initiative</p> <p>International Hydrogen Trade Forum (Secretariat: United Nations Industrial Organization)</p> <p>Mission Innovation Clean Hydrogen Mission</p> <p>H2 Global</p>	<p>Guinea Bissau Ireland Italy Japan Kenya Netherlands Norway Panama Spain Sweden United Kingdom United States</p>
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**Breakthrough Agenda Report Recommendation:** Governments and companies should work together to dramatically increase the number and geographical distribution of hydrogen demonstration projects and to ensure that these appropriately cover each of hydrogen's high-value end-use sectors, including maritime shipping, heavy industry, and long-duration energy storage. Governments and the private sector should agree on minimum reporting principles to guide a deeper and more rapid sharing of knowledge among these demonstration projects and with the broader stakeholder community, including a commitment to share the lessons learned from all publicly funded demonstration projects.

<p><b>H3. Research &amp; Innovation:</b> Drive a significant increase in the number and geographical distribution of new, innovative hydrogen research and demonstration 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 COP29.</p>	<p>By joining and/or increasing support for and engagement with the Mission Innovation Clean Hydrogen Mission’s goals and the work of IEA’s Hydrogen and Fuel Cells TCPs to deliver a wider portfolio of Hydrogen Valleys, supported by expanded R&amp;D programmes and strengthened sharing of learning from those projects.</p>	<p><i>Coordinated by:</i> Mission Innovation Clean Hydrogen Mission</p> <p><i>Partners:</i> IEA’s Hydrogen and Fuel Cells TCPs</p>	<p>Australia Cambodia Canada European Commission Finland Germany Guinea Bissau Ireland Italy Japan Kenya Netherlands Norway Panama Spain Sweden United Kingdom United States</p>
<p><b><i>Breakthrough Agenda Report Recommendation:</i></b> Governments, MDBs and relevant technical partners should work to identify viable projects that are being delayed by high costs of capital and other obstacles to investment, then identify best practices to help unlock their progress. This should be supported by appropriate technical assistance programs, particularly in developing countries, to assist governments with policy design for the further scale-up of projects.</p>			
<p><b>H4. Finance &amp; Investment:</b> Enhance the overall public offer of international assistance for clean hydrogen projects, by coordinating and facilitating access to increased finance and support mechanisms that address obstacles to investment, with the goal of mobilising private investment at scale in emerging and developing economies. Targeted support for ‘lighthouse projects’ in</p>	<p>By collaborating with relevant institutions, and drawing on the insights gained in 2023 from World Bank’s and UNIDO’s reviews of barriers to investment and current international assistance, to strengthen support for clean hydrogen projects in EMDEs. In particular:</p> <ul style="list-style-type: none"> <li>to deliver a transition platform that coordinates, mobilises and facilitates access to finance and related support, helping help to connect</li> </ul>	<p><i>Coordinated by:</i> [tbd – World Bank &amp; the United Nations Industrial Development Organisation (UNIDO)]</p> <p><i>Partners:</i></p>	<p>Australia Azerbaijan Cambodia Canada European Commission Finland Germany Guinea Bissau Ireland Netherlands</p>

<p>EMDEs and a coordinated transition platform that facilitates access to support mechanisms is to be delivered on a pilot basis by COP29.</p>	<p>emerging and developing economies with bespoke support mechanisms; and,</p> <ul style="list-style-type: none"> <li>to identify a priority portfolio of the most viable ‘lighthouse’ projects that are being delayed by obstacles to investment and developing methods of best practice to support targeted and tailored assistance to overcome those obstacles.</li> </ul>	<p>Donor countries Hydrogen for Development (H4D)</p>	<p>Panama Spain Sweden United Kingdom United States</p>
<p><b>H5. Landscape Coordination:</b> Enhance the coordination and transparency of international collaboration on clean hydrogen.</p>	<p>By piloting a Hydrogen Breakthrough Facilitator role, hosted by [IPHE (tbc)], whose responsibilities – under the direction of the Hydrogen Breakthrough co-lead countries and supported by the Breakthrough Agenda Secretariat – would be to work with leading initiatives under the Hydrogen Breakthrough to facilitate sharing of information and light touch coordination of activities where useful. As well as by utilising the Breakthrough Agenda annual cycle to embed in the international landscape a light touch process for regularly reviewing and updating a detailed map of the landscape of international initiatives and their hydrogen workstreams and to broker a shared understanding of respective roles and plans, to identify gaps and overlaps, develop options and broker support for delivery.</p>	<p><i>Coordinated by:</i> Breakthrough Agenda Secretariat, Hydrogen Breakthrough co-leads &amp; [IPHE (tbc)]</p> <p><i>Partners:</i> All leading international hydrogen initiatives</p>	<p>Australia Azerbaijan Cambodia Canada European Commission Finland Germany Guinea Bissau Ireland Japan Netherlands Norway Panama Spain Sweden United Arab Emirates United Kingdom United States</p>