

**HYDROGEN BREAKTHROUGH: PRIORITY INTERNATIONAL ACTIONS FOR 2023**

1. This document outlines the Priority International Actions for 2023 under the Hydrogen Breakthrough, in response to the recommendations in the [Breakthrough Agenda Report 2022](#) from the IEA, IRENA and UN High Level Action Champions. These priority actions have been developed collaboratively by country signatories to the Hydrogen Breakthrough and leading initiatives. They seek to build on the range of important wider work underway and planned across the international landscape, 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 commit to prioritise our international efforts to deliver on specific priority international actions and projects as listed below.
3. Progress on these actions in 2023 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 UK, USA (with further co-convenors likely to be agreed), reviewed at the Clean Energy Ministerial and Mission Innovation Ministerials and reported on at COP28 alongside an updated set of Priority International Actions for Hydrogen in 2024.
4. In order to implement the Breakthrough Agenda commitment agreed by 45 World Leaders at COP26, set out below are the Priority International Actions that individual countries and governments will collaborate to take forwards:

Priority International Action	How this will be taken forward	Coordinating initiative(s)	Collaborating governments
<p><b><i>Breakthrough Agenda Report Recommendation:</i></b> Governments and companies should agree a comprehensive portfolio of international standards and associated certification schemes for renewable and low carbon hydrogen, addressing emissions accounting, safety, and operational issues, including leakage. This should be supported by a programme that provides a clear direction and sufficient resources to relevant technical bodies. This will be vital for supporting a series of other actions, most notably high-quality demand commitments and trade agreements.</p>			
<p><b>H1. Standards &amp; Certification:</b> Accelerate and expand a coordinated programme of work to develop a comprehensive portfolio of international renewable and low carbon hydrogen</p>	<p>By mandating and providing active support to leading initiatives to plan, resource and deliver a comprehensive collaborative programme.  The programme will be scoped and coordinated by the IPHE, working in consultation with other key hydrogen</p>	<p>International Partnership for Hydrogen and Fuel Cells in the Economy (IPHE)</p>	<p>Australia Cambodia Canada European Commission Finland France</p>

<p>standards and to facilitate associated certification schemes. The programme should be fully resourced and underway by COP28 with progress reported annually at subsequent COP summits.</p>	<p>initiatives and in collaboration with relevant standards institutes, with specific technical workstreams, analysis and broad country and stakeholder engagement supported by IEA’s Hydrogen TCP and IRENA. The programme should include standards for a range of topics including emissions accounting, safety, and operational issues and should pull together and connect existing work, addressing gaps and resource needs.</p>	<p>International Energy Agency (IEA)’s Hydrogen TCP  International Renewable Energy Agency (IRENA)’s Collaborative Framework on Green Hydrogen</p>	<p>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 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.</p>	<p>By joining and working through one or more leading initiative in this field to encourage coalitions of leading countries &amp; 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.</p> <p>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.</p>	<p>First Movers Coalition  Clean Energy Ministerial Hydrogen Initiative  Mission Innovation Clean Hydrogen Mission</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>Breakthrough Agenda Report Recommendation:</b> 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 principles to guide a deeper and more rapid sharing of knowledge from these demonstrators, including a commitment to share the lessons learned from all publicly funded projects. Doing so will help overcome technology availability barriers and accelerate the pace of deployment in multiple regions in parallel.</p>			
<p><b>H3. Research &amp; Innovation:</b> 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.</p>	<p>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.</p>	<p>Mission Innovation Clean Hydrogen Mission</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>Breakthrough Agenda Report Recommendation:</b> Donor governments and multilateral development banks should make increased levels of concessional finance available for well-targeted, catalytic uses that can mobilise large-scale private investment in hydrogen production, distribution and end-use projects in developing countries. This should be supported by a process in which countries work with donors and lending institutions to identify viable projects that are being delayed by high costs of capital, and to assess obstacles to investment, and by technical assistance programs to assist governments with policy design. This will provide much-needed support for the first-wave of low carbon and renewable hydrogen projects, ensuring that a wider set of countries can deploy the technologies required.</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</p>	<p>By engaging in the work of relevant institutions, such as UNIDO and the World Bank, to build a partnership of key initiatives and institutions, that can review the current international assistance offer for clean hydrogen</p>	<p>A partnership of donor countries and active financing institutions including</p>	<p>Australia Azerbaijan Cambodia Canada</p>

<p>increased concessional finance and related support mechanisms that address obstacles to investment, with the goal of mobilising private investment at scale in emerging and developing economies. A broad coordinated portfolio of support mechanisms to be communicated by COP28.</p>	<p>projects and, working through existing initiatives and forums, establish appropriate mechanisms to coordinate, mobilise and facilitate access to concessional finance and related support.</p>	<p>the World Bank &amp; the United Nations Industrial Development Organization (UNIDO)</p>	<p>European Commission Finland Germany Guinea Bissau Ireland Netherlands 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 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>Breakthrough Agenda project team in close partnership with and in support of key 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>