

MISSION INNOVATION

Accelerating the Clean Energy Revolution

Carbon Capture Innovation Challenge – Progress Summary

Issue

The science and technologies supporting carbon capture, utilization, and storage (CCUS) have greatly advanced over the last two decades. CCUS research and development (R&D) portfolios have grown, international collaboration has expanded, and CCUS projects in the power and industrial sectors continue to come online, with 17 large scale projects currently operating and additional projects nearing completion. Yet, opportunities remain for reducing costs, improving performance, assessing global storage capacity, creating better business and regulatory models, and discovering new uses for carbon dioxide (CO₂).

Objective

The objective of the Carbon Capture Innovation Challenge is to advance CCUS technology development with the goal of reduced costs and improved performance.

This Challenge will seek to identify and prioritize breakthrough technologies, and recommend R&D pathways and collaboration mechanisms. It aims to build an improved, shared understanding of knowledge gaps, opportunities and technological progress. Further, it aims to promote opportunities to researchers, innovators, and potential investors, as well as strengthen and expand collaboration between key partners (government to government, researcher to researcher, public-private collaboration, etc.).

Organization

The Carbon Capture Innovation Challenge is co-led by the United States and Saudi Arabia.

Other participating countries include: Australia, Canada, China, the European Commission, Denmark, Finland, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, the Netherlands, Norway, Sweden, the United Arab Emirates, and the United Kingdom.

Approach

Mission Innovation membership comprises countries that also support the Carbon Sequestration Leadership Forum (CSLF) and are members of, or participants in, International Energy Agency (IEA) implementing programmes. Policy and deployment activities are coordinated through the CSLF, and analytical activities are advanced through the IEA and other organizations. This presents a unique and meaningful space where Mission Innovation can coordinate breakthrough CCUS technologies. As such, to maximize efforts, work conducted under this Challenge will be directed towards early stage breakthrough CCUS technologies.

Progress

The Carbon Capture Innovation Challenge is currently planning to host an experts' workshop, focused on early stage breakthrough CCUS technologies, on September 25-29, 2017 in Houston, Texas. The workshop will convene international CCUS experts from a variety of academic and industry perspectives to discuss breakthrough opportunities and international R&D synergies in carbon capture, carbon storage, and CO₂ utilization. Further work to coordinate R&D programmes, share information and best practices, and engage with international policy and technical groups will add to the body of knowledge on CCUS technology development and bolster all international platforms.

Upon completion of the workshop, a report will be published outlining the suggestions from all members and aiding in the identification of future areas of international collaboration on CCUS technology R&D.

Next Steps

Beyond the workshop, the Carbon Capture Innovation Challenge aims to coordinate and align international R&D programmes to best utilize and direct funding for CCUS. This role will be heavily coordinated with other international efforts, including the policy and technical deployment efforts of the CSLF, potential work under the Clean Energy Ministerial, and the analysis and modeling capabilities within the International Energy Agency and other relevant bodies.

In the medium-term, the Carbon Capture Innovation Challenge will explore ways to engage private sector interests, in collaboration with the Mission Innovation Business and Investor Engagement sub-group.

In the longer term, this Challenge intends to establish a standing platform for communications, information sharing, and building collaborations on R&D on breakthrough and innovative CCUS technologies.