

# Carbon Capture, Utilization and Storage Policy Statement

## Our Position

Carbon capture, utilization and storage (CCUS) will be a critical component of the emerging lower carbon energy system.

- CCUS is a proven suite of technologies that has been employed safely and effectively for approximately 50 years.
- CCUS plays a critical role in meeting the goals of the United Nations Paris Climate Agreement to hold global average temperature increase to well below 2°C above preindustrial levels, and efforts that pursue limiting temperature increase even further to 1.5°C.
- For CCUS to gain scale and deliver climate-change mitigation objectives of 2.35 billion metric tons of CO<sub>2</sub> abatement by 2040<sup>1</sup>, significant additional policy support and technology advances are necessary and critical for it to be cost competitive when paired with energy technologies.
- CCUS is an important option for decarbonizing hard-to-abate industrial sectors and reduce emissions from existing energy and industrial investments including iron and steel, cement, fertilizer, pulp and paper, refining, petrochemicals and natural gas processing and liquefaction.
- CCUS is key to decarbonizing the production of hydrogen from methane reforming and to the development of the hydrogen economy that is likely to play a significant role in the world's transition to a sustainable energy future.
- CCUS is the only technology with the potential to remove CO<sub>2</sub> from the atmosphere at scale through Direct Air Capture (DAC) and Bioenergy with Carbon Capture and Storage (BECCS).
- Carbon capture can provide CO<sub>2</sub> as a feedstock for a range of value-producing utilization options including enhanced resource (oil) recovery, materials, synthetic fuels, and chemicals.
- Realizing this full potential of CCUS requires significant financial incentives to support the CCUS business case and the regulatory and legal frameworks necessary for deployment. An effective CCUS policy environment will provide certainty and transparency for investors, project developers and the broader CCUS stakeholder community.

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<sup>1</sup> IEA Sustainable Development Scenario, 2019

- Social acceptance of CCUS is a key challenge for policy support. Stakeholder concerns over the security of geological storage and that the technology is solely to continue the use of fossil-fuels have been key challenges to overcome, and further stakeholder education and engagement is needed.

## CCUS Policy Principles

The following principles provide the foundation for a sustainable commercial global market for CCUS:

- Material Financial Incentives – For the foreseeable future, commercial deployment of CCUS requires direct, material financial incentives following the path of other nascent low-carbon technologies. Depending on national/sub-national preferences and circumstances, such policies could include a range of direct measures such as tax credits, contract for difference (CFD) policies, loan guarantees, government cost-sharing grants, and/or state enterprise ownership, as well as broad market-based mechanisms such as a price on carbon. As an example, the U.S. National Petroleum Council CCUS Study<sup>2</sup> identified that financial incentives of \$680B would be required over the next 25 years to achieve CCUS deployment at scale in the U.S. This requires additional incentives far beyond the current IRS Section 45Q tax credit.
- Stable Legal and Regulatory Framework – A well-characterized, reasonable legal and regulatory framework that clarifies developer access to pore-space, and operators' obligations and risks during operation and closure is necessary to reduce investor uncertainty and ensure timely and efficient project development and permitting.
- Government Assumption of Long-term Liability – Uncapped long-term liability for CO<sub>2</sub> storage sites creates a potentially significant barrier to private sector investment in CCUS. Governments can accelerate deployment by assuming full liability of CO<sub>2</sub> storage sites where operators have successfully followed site development, operating and closure requirements and that have completed a reasonable statutory period of post-closure site monitoring.
- Collaborative Funding for CCUS RD&D – To achieve needed technology breakthroughs and reduce the cost of CCUS, governments should work in collaboration with the private sector to fund research, development and deployment of emerging CCUS technologies and of projects in potential new markets. As an example, the US National Petroleum Council CCUS Study identified that the U.S. Department of

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<sup>2</sup> U.S. National Petroleum Council CCUS Study "Meeting the Dual Challenge: A Roadmap to At-Scale Deployment of Carbon Capture Use & Storage" 2019

Energy budget for CCUS will need to increase by ten-fold to \$10B over the next decade to help fund needed development.

- Expanded Markets for Products that Utilize CO<sub>2</sub> as a Feedstock – Policymakers should seek to encourage the use of products that utilize captured anthropogenic CO<sub>2</sub> as feedstock and can verify their net reduction of CO<sub>2</sub> from the use of the end-product through lifecycle analysis of emissions. Preferential purchasing, green labelling, public awareness campaigns, grants and loans are among the mechanisms that governments can employ to support the growth of low-carbon product markets.

## Our Actions

Baker Hughes supports the growth of a global market for CCUS deployment and will play an active role in developing the policies aimed at establishing the market and support technology required to achieve economic CCUS. We will engage with external stakeholders, associations and customers in support of establishing a CCUS market and the policies to support it. The Company will use the outlined CCUS policy principles in conjunction with other business considerations to guide the evaluation of and advocacy for specific CCUS policy provisions to support the company's Energy Transition strategy.