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Wyoming ITC Announces Partnership on Large-Scale Pilot Project

Membrane Technology and Research will list the ITC as their preferred testing site on their U.S. DOE Phase II funding application

Cheyenne, WY – Today the Wyoming Integrated Test Center (ITC) announced a collaboration with Membrane Technology and Research, Inc. (MTR), supporting their Phase II application of the Fossil Fuel Large-Scale Pilots funding opportunity announcement (FOA) announced in August 2017.

MTR was selected as one of nine Phase I grant recipients (DE-FE0031587) and with the ultimate goal of obtaining one of two approximately $50 million grants to design, construct, and operate a large-scale pilot demonstrating transformational coal technologies. If awarded a Phase III grant, MTR would design, build, and operate a 200-tonne CO_2/day large pilot capture system at the ITC.

“The ITC is one of only a handful of facilities in the world that allows for testing carbon management technologies at this scale and with flue gas directly from an operating power plant that can host a project of this size,” said Jason Begger, Executive Director of the Wyoming Infrastructure Authority, the managing entity for the ITC. “At 200 tonnes per day, this project would be 100 times the size of the XPRIZE projects and would demonstrate the technology at a scale large enough to provide confidence to utilities interested in building a commercial version. We are excited to work with MTR and to provide them with the space and resources to test and perfect their innovative technology.”

“The ITC is uniquely equipped to support such a large pilot system. The core infrastructure is already in place and the test facility is backed by a very capable and motived project team. Even better, it is located in Wyoming, a State with strong support for CCUS and home to many CO_2 utilization activities.” said Richard Baker, Principal Scientist at MTR, and the Principal Investigator for the current Phase I project. He continues, “We see this as an excellent fit and we look forward to collaborating with the ITC team in this project as we move forward together.”

MTR has successfully tested their technology at the National Carbon Capture Center (NCCC) at a smaller scale. The ITC started a two-year partnership agreement with NCCC in June 2018, providing access to NCCC technical expertise and relationships with researchers ready to scale-up their technologies.

MTR's Phase II application will be considered in early 2019, with Phase III awards tentatively scheduled to be announced in Summer 2020. If MTR advances to the third and final phase of the process, they would have up to five years to design, build and operate the project.

The ITC currently has several other tenants slated to test their carbon capture, utilization, and sequestration technologies at the facility. Five teams competing for the NRG COSIA Carbon XPRIZE will be completing their research onsite through 2020. Additionally, in April 2018 it was announced that Kawasaki Heavy Industries, Ltd. (KHI) will test their solid sorbent capture technology at the ITC.

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About the ITC
The ITC is a public-private partnership designed to foster the next generation of energy technology. The ITC provides space for researchers to test Carbon Capture, Utilization and Sequestration (CCUS) technologies using actual coal-based flue gas from the Dry Fork Station near Gillette.

In 2014, with the support and encouragement of Governor Matt Mead, the Wyoming State Legislature allocated $15 million in funding for the design, construction and operation of an integrated test center to study the capture, sequestration and management of carbon emissions from a Wyoming coal-based power plant. An additional $5 million commitment from private industry was required under the appropriation, which has since been secured from the Tri-State Generation and Transmission Association in addition to $1 million from the National Rural Electric Cooperative Association. Basin Electric Power Cooperative is providing additional in-kind contributions including engineering and construction management services at the Dry Fork Station host site, which is jointly owned by Basin Electric and the Wyoming Municipal Power Agency.

The ITC is one of a handful of such facilities around the world and only the second one in the United States. While many carbon capture technologies are being developed and studied in laboratory settings, the ITC will be one of the few research and testing facilities at an operating coal-fired powered plant. The ITC allows for real world testing at an active power plant and alleviates typical concerns over being able to transfer technology from a lab to a plant.

About MTR
MTR is a world leader in the development and production of membrane-based separation systems for the petrochemical, natural gas and refining industries. Over the past 30 years, MTR has brought numerous pioneering membrane solutions to market including VaporSep® systems for recovery of olefins in polyolefin production and FuelSep® units for conditioning fuel gas in shale gas operations. Today, more than 300 MTR membrane systems are installed worldwide.

Working with the U.S. Department of Energy (DOE), MTR has developed novel CO_2 capture process based on the Polaris™ class of membranes. This technology has progressed through small pilot testing at the National Carbon Capture Center (NCCC) where first generation Polaris modules accumulated ~11,000 hours of operation on coal-derived flue gas. MTR's capture process offers a variety of advantages including a modular and compact design, simple operation, and it is well suited for retrofit application.

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