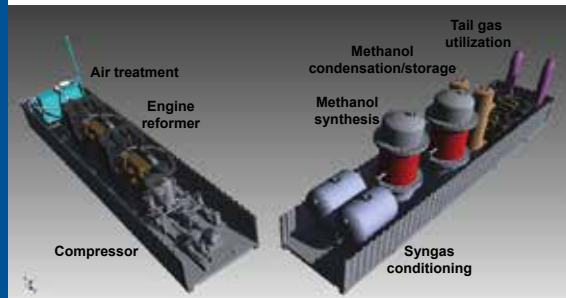


Compact, Inexpensive Micro-Reformers for Distributed GTL

Project Term:
July 2014 through March 2016

Award:
\$3,500,000



Critical Need

There is an abundance of dispersed natural gas sources in the United States. Many sources are either too expensive for delivery to market or too small to be used effectively. Additionally gas associated with oil production often cannot be brought to market economically and is being flared. Viable small-scale gas conversion would have a beneficial economic and environmental impact by utilizing these stranded or wasted natural resources.

Project Innovation and Advantages

RTI International, the Massachusetts Institute of Technology (MIT) and Columbia University have partnered to demonstrate the feasibility of utilizing an internal combustion engine as a syngas generator in conjunction with methanol production. Utilizing mass produced internal combustion engines and gas conversion technology exemplifies the substitutions of economies of scale that are prevalent in the chemical process industry with economies of mass production, further advancing the notion of viable distributed fuels or chemicals production. The team has developed and is currently testing a engine based syngas generation system that can convert 50,000 scfd of natural gas to syngas. The tests include conversion of the syngas to methanol. This technology will enable an economic distribution of small-scale conversion of natural gas across many platforms.

Impact

The small scale engine reformer technology can enable an economically competitive, efficient use of distributed and stranded natural gas, as well as, biogas.

- Increasing the utility of geographically isolated natural gas reserves, further reducing U.S. dependence on foreign oil
- Leading to significantly reduced greenhouse gas emissions related to flaring
- Small unit size allows for centralized or distributed right-in-time deployment
- Low CAPEX and fast replacement times result in reduced business risk
- Syngas can be converted into various other value added products such as methanol, ammonia, DME, or FT liquids

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Partner Organization:
Columbia University
Massachusetts Institute of Technology



RTI International is an independent, nonprofit research institute dedicated to improving the human condition. Clients rely on us to answer questions that demand an objective and multidisciplinary approach—one that integrates expertise across the social and laboratory sciences, engineering, and international development. We believe in the promise of science, and we are inspired every day to deliver on that promise for the good of people, communities, and businesses around the world.

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Dr. Markus Lesemann
Senior Director of Business
Development
+1 919.541.6246
mlesemann@rti.org

RTI International
3040 E. Cornwallis Road
PO Box 12194
Research Triangle Park, NC
27709-2194 USA

www.rti.org/energy