

This abstract will be presented during LNG2023 conference on 10-13 July in Vancouver, Canada among many other innovative projects, ideas and outlooks. LNG2023 will provide a unique platform for the global LNG industry and key stakeholders to discuss, debate, and showcase the latest industry developments and opportunities.



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### HYDROGEN VIA DECARBONIZING NATURAL GAS WITH METHANE PYROLYSIS

Natural gas is abundant, affordable, and enmeshed in today's infrastructure, but it is a major contributor of greenhouse gas emissions globally.

We introduce a new solution to decarbonize natural gas use, by converting gas to clean hydrogen without CO<sub>2</sub> emissions at the point of use. Our technology splits natural gas into hydrogen and solid carbon using novel scalable methane pyrolysis. Customers and partners for this technology include major USA gas utilities, biogas energy plants, as well as multinational industrial manufacturing companies.

Onsite hydrogen generation from this process avoids several major limitations currently impeding use of hydrogen. First, producing hydrogen at the location of consumption eliminates the need – and associated costs and time delays – for transportation, distribution, and storage infrastructure. Second, producing hydrogen from natural gas – the lowest cost fuel available on a per energy basis – means the hydrogen itself is low-cost and readily available. Third, producing solid carbon instead of CO<sub>2</sub> means that the high cost and complexity of post-combustion CO<sub>2</sub> capture, transport, and sequestration is avoided. Last, distributed hydrogen production negates the immense cost of making the existing gas grid compatible with pure hydrogen. Thus, this approach sidesteps the challenge of overhauling millions of miles of gas grid, and empowers end-users to adopt low carbon intensity solutions without waiting for infrastructure overhauls.

To view the full conference agenda, visit <https://www.lng2023.org/lng-programme-overview>