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NEWS RELEASE

Monday, October 28, 2019

Renewable natural gas start-up company completes key milestone converting Alberta forest residues into pipeline-quality gas

Edmonton, Alberta, Canada – An innovative clean energy start-up company, G4 Insights Inc., has successfully demonstrated in a field trial that forestry industry residues can be turned into renewable natural gas (RNG). Their RNG technology demonstration project has been supported by a federal-provincial-industry partnership with the common goal of clean energy distribution into homes, businesses and industry connected to the natural gas infrastructure system.

The federal-provincial-industry consortium includes Natural Resources Canada (NRCan), the Natural Gas Innovation Fund (NGIF), Alberta Innovates (AI), ATCO and FPInnovations, who have collectively invested a total of \$2.8 million in grants and in-kind, for the testing and demonstration of G4 Insights' PyroCatalytic Hydrogenation (PCH) technology.

This technology, when commercialized, will convert forestry biomass into RNG that can be added to the existing natural gas distribution system and used interchangeably by customers without any equipment modifications.

The G4 demonstration unit in Edmonton, Alberta, now operating for six months, has tested a range of biomass materials and has collected technical and financial data to determine optimal performance of the unit. For the first time in Alberta, the RNG produced during that period was tested and injected into the natural gas distribution grid owned and operated by industry partner ATCO, the demonstration project host where the unit is located.

Renewable natural gas produced from sustainably managed forest residue can emit up to 85 per cent fewer greenhouse gas (GHG) emissions than traditional fuels. Forest residue, which includes every part of the tree, can be converted into solid, liquid or gaseous biofuels such as RNG. It can then be used as an alternative energy source to fuel transportation or in industrial processes. The G4 technology can also be used to convert agricultural crop wastes into RNG.



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By investing in the development of clean technology for the production of RNG, there is an opportunity to diversify Canada's energy mix, reduce GHG emissions, improve industrial efficiency and create new economic opportunities for Canadian companies in both rural and urban communities.

Quotes:

"We are excited to be working with NGIF and its members as well as with NRCan, Alberta Innovates and FPInnovations to demonstrate and test our PyroCatalytic Hydrogenation technology. This project demonstrated how RNG can be produced on a distributed basis in forestry regions and delivered effectively and affordably to end users through existing natural gas pipelines."

Edson Ng, Principal, G4 Insights Inc.

"The availability of new, proven, commercially available RNG is key to bringing clean energy into Canadian homes, business and industry connected to the natural gas infrastructure system. NGIF is excited to see the progress of G4 Insights and continues to support their technology demonstration, a milestone win on the path to commercialization."

John Adams, Managing Director, Natural Gas Innovation Fund

"CGA and its members believe investments in RNG technologies are necessary to propel a thriving Canadian renewable gas market, helping to meet Canada's environmental objectives. I am excited to see how this project can help to stimulate the Canadian RNG market to put Canada on track to help meet an aspirational target set by the natural gas delivery industry of 10 per cent RNG content by 2030."

Timothy M. Egan, President and CEO, Canadian Gas Association

"Alberta Innovates advances the use of Alberta's abundant, renewable biomass resources for development of new bioproducts, including bioenergy. By investing in technologies such as this, we can add value to the forestry and agricultural sectors and expand the bioeconomy, bringing economic and environmental benefits to Alberta and Canada."

Laura Kilcrease, CEO, Alberta Innovates

"ATCO is excited to host and sponsor G4 in Edmonton. Renewable natural gas (RNG) from wood waste is a largely untapped renewable resource that Canadians can use to heat and power their homes and businesses using a carbon-neutral fuel. ATCO is supportive of RNG



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as a technology and is hopeful that their support will help accelerate the adoption of RNG in Alberta and commercialization of the G4 technology.”

Graeme Feltham, Vice President, Customer Experience & Innovation, ATCO

“FPInnovations is proud to be part of this outstanding project, which demonstrates the Canadian forest sector’s potential to collaborate with local technology providers to generate clean energy from low-value biomass. This is a great example of a fruitful collaboration between strong research partners, and we look forward to pursuing our contribution to such exciting projects.”

Stéphane Renou, President and CEO, FPInnovations

Associated Links

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Quick Facts About Renewable Natural Gas (RNG)

- RNG is natural gas produced from organic waste from farms, forests, landfills and water treatment plants.
- The waste gas is captured, cleaned and injected in the natural gas pipeline infrastructure to be delivered and used in the same way and with the same equipment/appliances as natural gas by homes, businesses, institutions, industry, and transportation fleets.
- Harnessing even 10 per cent of Canada’s RNG potential would generate enough clean energy to heat one million Canadian homes for a year.
- 85 per cent fewer GHG emissions are produced from RNG using forest residue compared to conventional natural gas.

About G4 Insights Inc.

G4 Insights Inc. is a Vancouver-based company developing and commercializing a proprietary PyroCatalytic Hydrogenation (PCH) process to produce renewable natural gas.



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PCH is a low temperature thermochemical process that enables large scale, economic production of RNG from biomass. The RNG can be produced on a distributed basis in forestry regions and delivered to end users through existing natural gas pipelines.

About the Natural Gas Innovation Fund

NGIF was created by the Canadian Gas Association to support the funding of cleantech innovation in natural gas. NGIF fills a technology development gap in the sector and invests in innovation led by cleantech start-ups and small and medium-sized enterprises enabling natural gas solutions for current and emerging challenges facing Canada's energy system.

About Alberta Innovates

Alberta Innovates invests in research, innovation and entrepreneurship to drive provincial economic growth and diversity. We provide technical expertise, entrepreneurial advice and support, opportunities for partnerships and funding to advance the best ideas. We support a broad range of research and innovation activity – from discovery to use. Collaboration is at the heart of what we do, bringing together bright minds and great ideas.

About ATCO

With approximately 6,000 employees and assets of \$23 billion, ATCO is a diversified global holding corporation with investments in Structures & Logistics (workforce housing, innovative modular facilities, construction, site support services, and logistics and operations management), Energy Infrastructure (electricity generation, transmission and distribution; natural gas transmission, distribution and infrastructure development; energy storage and industrial water solutions; and electricity and natural gas retail sales), Transportation (ports and transportation logistics) and Commercial Real Estate.

About FPInnovations

FPInnovations is a not-for-profit world leader that specializes in the creation of scientific solutions in support of the Canadian forest sector's global competitiveness and responds to the priority needs of its industry members and government partners. It is ideally positioned to perform research, innovate, and deliver state-of-the-art solutions for every area of the sector's value chain, from forest operations to consumer and industrial products. Its R&D laboratories are located in Québec City, Montréal, and Vancouver, and it has technology transfer offices across Canada.



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Media Information:

Annik Aubry

Director, Communications and Social Media

Canadian Gas Association

[613-748-0057](tel:613-748-0057) ext. 325

aaubry@cga.ca

and

Julia Necheff

Senior Business Partner, Strategic Communications Initiatives

Alberta Innovates

[780.450.5047](tel:780.450.5047) (o)

[780.918.1625](tel:780.918.1625) (c)