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Freddie Lab Shines In Milestone Clean Energy Test



March 27, 2024  
Mike Landry

**Nu:ionic Technologies (Canada), Inc.** says it has achieved the commercialization threshold for its industrial microwave technology for producing hydrogen, after a continuous 48-hour demo run.~

"We have successfully piloted this reactor," CEO **Jan Boshoff** said as he was about to fly from his **Tulsa, Oklahoma** office to the company's **Fredericton** lab to begin meeting with business interests.

"The reactor is an exact representation of the commercial reactor that we will be offering the customers, but it is in our own backyard, in a simulated lab environment."

Boshoff said the test run took years to happen, with construction of the reactor beginning at the end of 2022.

The clean energy technology – Nu:ionic's **Microwave Catalytic Reformer** – doesn't burn natural gas or massive amounts of electricity to produce hydrogen. Instead, Nu:ionic's reactor uses microwave technology to reform various feedstocks, including biogas, natural gas or renewable ammonia, into hydrogen.

Boshoff incorporated Nu:ionic in 2016, after spending 13 years with **South African** petrochemical company **Sasol**, with company president **Jim Tranquilla**, a microwave tech expert who leads research and development from Fredericton, and **Maine**-based entrepreneur and commercial banker **Greg Caswell**, who sits on the board.

Other board members are **Timothy Haig**, **Michal Stivala** and **Karlis Vasarais**.

With the test complete, Boshoff said the company is shifting into growth mode.

Over the next six months the company anticipates doubling its seven-member Fredericton team and becoming a 24/7 operation, he added, saying that hiring has already started.

The company announced last week the hiring of a senior VP of operations, **Ben Kennedy**, from **SNC-Lavalin Group Inc.** Kennedy will lead the Fredericton lab.

Boshoff said he'll be working with management at the lab to determine the "long slew of next tests" as the company works toward a "fully integrated" demonstration unit.

Nu:ionic said Tuesday the demo unit is slated for a customer in **Alberta**.

Boshoff declined to disclose the customer, but said it was a "consortium of partners," and the device will be used to create hydrogen from natural gas, which will be used to drive a large natural gas turbine that otherwise would emit carbon dioxide.

Boshoff said the Western demo will be a smaller scale of what the company is working on with **Liberty Utilities** (see 2023-08-30).

Nu:ionic signed an MOU with Liberty last year to use its technology to reduce the carbon footprint of Liberty's natural gas stock.

"That's where our niche is – the smaller-scale, distributed production of hydrogen. These systems are very compact."

Although the two immediate applications for Nu:ionic's technology are with natural gas, Boshoff said it's also a "low-cost" option for converting green ammonia into hydrogen.

Nu:ionic has received nearly \$900,000 in a partial grant from **Atlantic Canada Opportunities Agency**, and funds from **Opportunities New Brunswick**, the **New Brunswick Innovation Fund** and the **Natural Gas Innovation Fund**.

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