FuelPositive Files Patent for Green Aqueous Ammonia Production Module and Provides Update on First Farm-Ready System

written by Raj Shah | March 21, 2024

March 21, 2024 (Source) – **Highlights:**

- Provisional patent filed on new Green Aqueous Ammonia add-on module systems: the “FP300A” and “FP1500A”
- Benefits of Green Aqueous Ammonia
- Factory Acceptance Testing of FuelPositive’s Green Anhydrous Ammonia system occurring in early April
- On track with April 15th target delivery

FuelPositive Corporation, a leading Green Ammonia Company (TSX.V: NHHH) (OTCQB: NHHHF) (the “Company” or “FuelPositive”) is pleased to announce that it has filed a provisional patent for its new Green Aqueous Ammonia add-on module systems: the FP300A and FP1500A.

Once fully commercialized, this system could enable farmers to independently produce Green Aqueous Ammonia fertilizer on location at a significantly lower cost and with much lower GHGs than existing methods.

This groundbreaking integrated module provides farmers with a method for producing aqueous ammonia of adjustable nitrogen concentration from their FuelPositive on-farm system. The

modular and safe design integrates seamlessly with their FP300 and FP1500 systems, offering flexibility in production volume and nitrogen concentration without compromising efficiency.

Ammonia is a key component in various fertilizers and industrial applications. While anhydrous ammonia (NH3) is widely used it is limited in specific circumstances, such as controlled environment agriculture. This is primarily due to safety protocols and transportation challenges. Lower nitrogen content aqueous ammonia is a preferred alternative in such scenarios.

Currently, the production of aqueous ammonia requires expansive facilities that yield significant quantities of the solution. Due to their scale, these facilities demand substantial water supplies and energy inputs, often relying on fossil fuels. Additionally, aqueous ammonia must be transported to and stored near its intended application site. This large-scale, centralized production method hinders easy adjustments to the nitrogen concentration of the produced aqueous ammonia fertilizer.

In contrast, FuelPositive’s new module can produce Green Aqueous Ammonia on-site and adjust the concentration of the output fertilizer on demand, thus, allowing farmers to customize the nitrogen content of their fertilizers as needed.

By introducing its new add-on module, FuelPositive dramatically expands its market reach, empowering more farmers to transition towards green and independent fertilizer solutions.

The FP300 or FP1500 can now be upgraded to FP300A or FP1500A systems, thereby transforming Green Anhydrous Ammonia into Green Aqueous Ammonia Fertilizer.

Some highlights of the add-on module:

- Dual function: can produce both Green Anhydrous Ammonia and Green Aqueous Ammonia Fertilizers
- Farmers can choose their own Green Aqueous Ammonia concentrations from 5% to 30%.
- Farmers can choose Fertilizer PH balance.
- The FP300A and FP1500A modules utilize the same heating and cooling systems as the FP300 and FP1500, ensuring a streamlined and efficient process.
- Green Aqueous Ammonia requires fewer storage and handling safeguards than Green Anhydrous Ammonia, making it more accessible to a broader range of agricultural applications.

“We anticipate having the first Green Aqueous Ammonia module pilot ready this fall, and I’m thrilled that we can provide more smart fertilizer options to farmers and other customers.” Nelson Leite, FuelPositive’s Chief Technology Officer and Board Director, explains. “This technology milestone marks a new phase in FuelPositive’s evolution and sets a new standard in the agricultural market, making affordable Green Aqueous Ammonia accessible to more farmers.”

“FuelPositive is leading the transformation of traditional and heavily polluting chemical industries into environmentally sustainable solutions, particularly in fertilizers. In response to farmers’ diverse needs, we’ve expanded our containerized Green Anhydrous Ammonia system to include a Green Aqueous Ammonia module. This need prompted our engineering team to design a unit that not only produces environmentally friendly and safe Green Aqueous Ammonia but also meets rigorous industry standards.” Hamza Aldaghstany, FuelPositive’s Senior Mechanical Engineer, added, “Moreover, our system can produce Green Aqueous Ammonia at concentrations tailored to various agricultural settings, including fields, greenhouses, and diverse crop types.

As FuelPositive lead mechanical engineer, I’m proud to be part of this innovative technology, offering farmers worldwide cost-effective access to environmentally friendly Green Anhydrous and Green Aqueous Ammonia.”

“Our novel technological development in Green Aqueous Ammonia production, alongside our Green Anhydrous Ammonia system, overcomes numerous obstacles in the agricultural sector. These include safety concerns, challenges related to unsuitable climates for fertilizing, high transportation costs and emissions, and limited accessibility to high-quality nitrogen fertilizers,” Francisco Mora, FuelPositive’s Chemical Engineering lead, stated.

Nelson Leite concludes, “We continuously seek technological advancements with our team of brilliant minds dedicated to inventing and constructing game-changing solutions. The Green Aqueous Ammonia add-on module is just one of numerous innovations in progress at FuelPositive’s Research and Development facility in Waterloo, Ontario.”

FP300 System Readiness Update:

FuelPositive is pleased to provide an update on its progress toward system readiness and delivery.

The Company is delighted to report that its team has been working toward its April 15th target date and remains on track with its previously announced timelines.

The FP300 system is undergoing thorough preparation for shipping and on-farm commissioning.

FuelPositive’s commitment to farmers is unwavering, and is dedicated to ensuring a smooth, safe, and successful delivery of the world’s first containerized Green Anhydrous Ammonia system

in Sperling, Manitoba.

The Company is preparing to welcome our farmer-partner, Curtis Hiebert and his team for their Factory Acceptance Testing (FAT) and training early in April, with other interested farmers scheduled to visit within the same timeframe.

“I’m excited to finalize our system readiness on time to meet our deadlines and to install our first pilot system in Manitoba this April,” said Nelson Leite, FuelPositive’s Chief Technology Officer and Board Director.

“It is very exciting to know we are this close to having the pilot FP300 system landed on the farm and to start the next phase in the evolution of FuelPositive. The team has dedicated many hours to get to this point, and the hard work is paying off. Well done to every member of the team!” continued Martin Cina, FuelPositive’s Co-Lead of Project Completion.

“The team is making tremendous progress on our FP300 system as we approach the upcoming FAT. It’s fantastic to see the whole team’s hard work pay off as the system enters the final stages of completion before shipping,” concluded Janusz McNeil, FuelPositive’s Co-Lead of Project Completion. “We’re very proud of what we have been able to achieve to date and are very excited about our future!”

Farm readiness update:

The dedication and diligence of the Hieberts in preparing the farm site underscore their commitment to the success of our collaboration.

With the support of Manitoba Hydro, the Hieberts are completing the necessary electrical upgrades to power FuelPositive’s FP300 system and enable a future transition move up to the FP1500

system. This collaboration highlights FuelPositive's commitment to working closely with local stakeholders and ensuring the smooth implementation of the first on-farm FuelPositive installation.

Throughout this process, every effort has been made to minimize delays and optimize the site. FuelPositive is confident that with the collective efforts of its team and partners, the Hieberts will apply Green Anhydrous Ammonia to their fields for the first time during their next planned applications, later this fall.

"We are eagerly anticipating the arrival of the first FuelPositive Green Anhydrous Ammonia system, and we'll be travelling to see it up and running in Waterloo in early April for the Factory Acceptance Testing and training," said Curtis Hiebert, FuelPositive's First Demonstration partner and multi-generation Manitoba Farmer. "Our team at home is actively prepping our farm to be ready for the system's arrival. We are excited to receive it and have it operational on our farm."

"In Manitoba, we've been embraced wholeheartedly, meeting with farmers and stakeholders eager to join us on our mission to transform Canadian and global agriculture," concluded Ian Clifford, FuelPositive's Chief Executive Officer and Board Chair. "I am currently traveling throughout Manitoba to meet with farmers and other potential local partners. We are looking forward our first system delivery and what it means for the future of our dynamic and ambitious enterprise."

About FuelPositive Corporation

FuelPositive is a Canadian technology company dedicated to delivering commercially feasible and sustainable clean technology solutions that follow a circular approach, ensuring the entire lifecycle of our products is environmentally

friendly. This includes an on-farm/onsite, containerized Green Ammonia (NH3) production system that effectively eliminates carbon emissions during the production process.

By focusing on technologies that are clean, sustainable, economically advantageous and realizable, the Company aims to help mitigate climate change, addressing unsustainable agricultural practices through innovative technology and practical solutions that can be implemented now. The FuelPositive on-farm/onsite, containerized Green Ammonia production system is designed to produce pure, anhydrous ammonia for multiple applications, including fertilizer for farming, fuel for grain drying and internal combustion engines, a practical alternative for fuel cells and a solution for grid storage. Green Ammonia is also considered a key enabler of the hydrogen economy.

FuelPositive systems are designed to provide for Green Ammonia production on-farm/onsite, where and when needed. This eliminates wildly fluctuating supply chains and offers end-users clean fertilizer, energy and Green Ammonia supply security while eliminating carbon emissions from the production process. The first customers will be farmers. Farmers use 80% of the traditional grey ammonia produced today as fertilizer.

See sales details here: https://fuelpositive.com/sales/.

FuelPositive Corporation is based in Waterloo (Canada) and trades on the TSX Venture Exchange under the symbol NHHH and in the USA on the OTCQB under the symbol NHHHF.

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statements.

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