

NYSP2I Evaluates the Greenhouse Gas Impact of ReNuble's Vegetative Food Waste



Re-Nuble, Inc.

As part of the Clean Energy Business Incubator Program (CEBIP) at Stony Brook University, Re-Nuble Inc. (Re-Nuble) converts food waste into fertilizer that returns to the farm for 100% closed loop agriculture. Their core technology, an "on-site nutrient delivery system" consisting of a patent-pending delivery device and proprietary (3-2-1) fertilizer formulation, enables soilless farming to yield organic produce in a recirculating system.

Challenge

Re-Nuble believes that Bagged Organics 3-2-1 has the potential to significantly reduce the greenhouse gas (GHG) emissions associated with the production of their product as compared to conventional fertilizer methods.

Solutions

Re-Nuble requested assistance from the New York State Pollution Prevention Institute (NYSP2I) to estimate the GHG emissions associated with the production of their product. NYSP2I conducted a high-level comparative analysis of the GHG impact for Re-Nuble's Bagged Organics 3-2-1 technology as compared to a conventional fertilizer (mineral salts). The analysis considered the impacts associated with the raw material extraction, transportation, and manufacturing

Life Cycle phases considered in analysis:

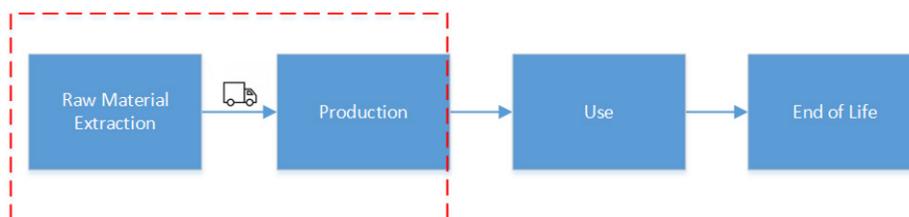


Figure 1: Life Cycle phases considered in the high level comparative analysis. The red-dashed box indicates the phases considered in the analysis.

Challenge

- Re-Nuble wants to determine the greenhouse gas (GHG) impact of the production of their Bagged Organics 3-2-1 fertilizer.

Solution

- NYSP2I conducted a high level comparative analysis of the potential GHG impact of the production of Re-Nuble's Bagged Organics 3-2-1 vs. a conventional fertilizer (mineral salts).

Results

- The high level comparative analysis suggests that at similar production volumes, Re-Nuble's Bagged Organic 3-2-1 fertilizer has the potential to reduce GHG emissions by approximately 6,000 MT per year, completely displacing the GHG impact of the conventional fertilizer.

Testimonial

"The NYSP2I team was incredibly thorough and intentional with the planning involved in this assessment. They went above and beyond to ensure that our team understood the basis for their calculations as well as any additional clarifying information that we had requested. This has enabled us to share our GHG assessment results with our customers, investors, and community stakeholders with full confidence, showcasing how our operation impacts everyone. Their work was also done in a timely manner and communication remained consistent and clear all throughout."

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phases of both technologies as shown in Figure 1.

Results

The high level comparative analysis suggests:

- Re-Nuble's organic fertilizer has an estimated net GHG benefit due to removing food waste from landfill.
- When considering anticipated production volumes, Bagged Organics 3-2-1 fertilizer has the potential to reduce GHG emissions by approximately 6,000 MTCO₂e per year, or by over 100% as compared to the conventional fertilizer.

Note: The estimated GHG emission impacts are based on information and claims provided to NYSP2I by Re-Nuble. It should be noted that this high level analysis resulted in estimates and considered solely the raw material extraction and production phases of a product life cycle. The use and end-of-life phases were not considered as part of this analysis. Moving forward, Re-Nuble may consider a more comprehensive life cycle assessment to validate GHG and other environmental impacts.