

Nickel Powder, Reimagined: A Breakthrough in Sustainable Manufacturing

A new study confirms Continuum Powders' atomization processes cuts GHG emissions by up to 98.7%

Pioneering Sustainable Powder Production at Industrial Scale

Continuum's closed-loop platform turns scrap into high-performance powders—enabling circularity, reducing emissions, and meeting the world's toughest material standards.

Key Findings:

An independent Life Cycle Assessment (LCA) conducted by Oregon State University's Industrial Sustainability Laboratory evaluated the environmental impact of nickel (Ni) powder production using Continuum Powders' proprietary Melt-to-Powder (M2P) atomization technology.

The study compared three powder production scenarios:

- 1 Conventional**
Uses conventional gas atomization with 100% virgin nickel
- 2 Hybrid**
Employs Continuum Powders' novel plasma arc atomization technology with internal and external recycled nickel
- 3 Continuum M2P Process**
Uses Continuum's plasma arc atomization technology, 100% recycled nickel, sourced locally, and carbon offsets for electricity and argon consumption

Each scenario was analyzed on a cradle-to-gate basis for 100 kg of nickel powder output using SimaPro LCA software and the TRACI method to assess global warming potential (GWP), measured in kg CO₂ eq.



98.7% Reduction in GHG Emissions

Compared to traditional virgin nickel powder production, Continuum’s 100% recycled method with electricity and argon carbon offsets (Scenario 3) reduces carbon footprint by nearly 100%.



Energy and Emissions Efficiency

Scenario 3 minimized GHG by incorporating green electricity and locally sourced scrap, showing the impact of localized, low-energy production methods.



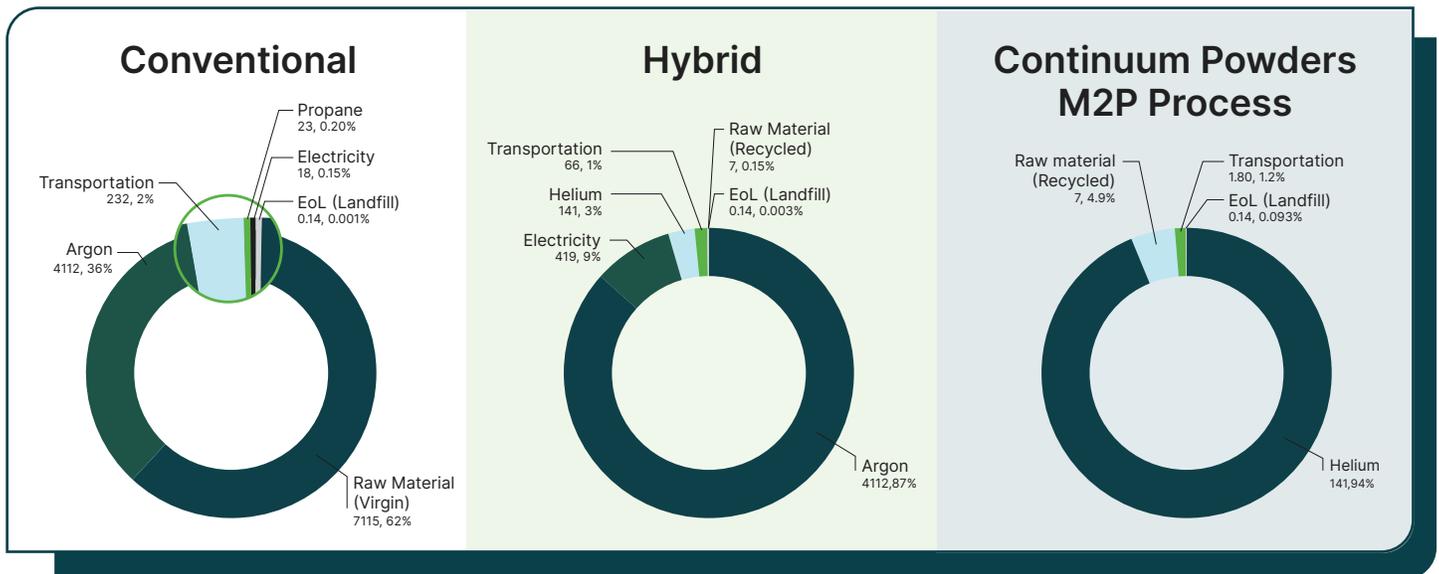
Circular Economy in Action

Continuum’s process uses 100% scrap feedstock—no virgin metal—demonstrating a practical path to circular manufacturing.



Industry Implications

This breakthrough supports major decarbonization goals in sectors like aerospace, defense, and energy—where high-performance powders are critical.



Drivers of GWP for Conventional (left), Hybrid 2 (middle), and Continuum Powders M2P Process (right).

Why It Matters:

Nickel is a critical mineral with essential uses in advanced manufacturing. Traditional production methods are energy and emissions intensive, contributing heavily to industrial carbon output. Continuum’s technology offers a proven path to sustainable powder production at scale.

About Continuum Powders:

Continuum Powders is pioneering the future of sustainable metal powder production. Our Greyhound M2P platform transforms scrap into high-quality powders with nearly zero carbon impact—supporting a circular supply chain while meeting the highest industry standards.



Unlock the Power of Circular Manufacturing
Nickel Powders from Continuum!

Contact us today for more details or a demo:

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