PIONEERING **SUSTAINABLE GREEN ENERGY METALS PRODUCTION** THROUGH UNWAVERING INNOVATION

TRINITAN GREEN ENERGY METALS

Established in 2020, **Trinitan Green Energy Metals (TGEM)** represents over 50 years of combined expertise in energy solutions and is at the forefront of sustainable **Class 1 nickel** processing services. With a strong focus on efficiency, sustainability, and social responsibility, TGEM is committed to delivering high-quality products while making a positive impact on global customers.

Class 1 Nickel – Mixed Hydroxide Precipitate (MHP)

Mixed Hydroxide Precipitate (MHP) is a critical intermediate product in the Class 1 nickel supply chain. Produced through hydrometallurgical processing, MHP typically contains 30%–40% nickel content and is vital for EV battery manufacturing. It is then further processed into nickel sulfate, a precursor material. **Utilizing its proprietary STAL Technology, TGEM produces MHP with an industry-leading nickel content of over 50%, while adhering to the most environmentally-friendly production practices in the industry.**

TGEM's Proprietary Innovative Technology – STAL Technology

Step Temperature Acid Leach (STAL) Technology

- Hydrometallurgical process yields Class 1 nickel in the form of MHP.
- Invented and developed as proprietary technology for 16 years (since 2007).
- Validated by independent technology evaluators (ESDM, BPPT, JGC Japan).
- Patents registered in five strategic countries: Indonesia, Japan, Canada, the Philippines, and New Caledonia.
- Commercialized production of MHP began in Q3 2023.
- Advanced R&D capability to unlock future midstream products.

STAL TECHNOLOGY

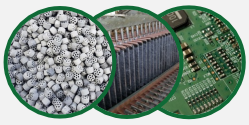
Primary Source

Mining

Lateritic Ore (Limonite to Saprolite)

Secondary Source

Processed Industrial Waste



Spent Catalyst, Electroplating Industry Waste and Electronic Parts Waste

Battery Recycling

Rejected Batteries, End-of-Life Batteries

TGEM's STAL MHP Production Facilities – **Go STAL**

Go STAL

Established in 2021, the Bogor-based STAL MHP Production Facilities began **commercial operations in Q3 2023** and **completed its ramp-up to an annual production capacity of 3,200 tons of MHP by the end of Q3 2024**. Shipments have already been made to several countries, including Korea and Japan.

TGEM's STAL Technology Key Advantages

Modular
Faster ramp-up time and suitable for a variety of mining profiles.

Feedstock Flexibility
Ability to process a variety of feedstocks

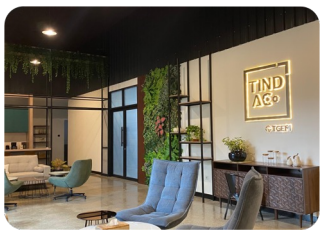
Zero Waste
100% of residues converted into valuable by-products

Effective
Up to 95% nickel and cobalt recovery (yield).

Efficient
Significantly reduced net acid consumption from initial usage

Closed-Loop Ecosystem
Creating a sustainable & ESG-compliant outcome

TGEM's R&D Center – TINDAC





TIND AC — Trinitan Industrial Development & Assessment Center

TINDAC (Trinitan Industrial Development and Assessment Center), TGEM's R&D Center, began as a pilot plant established in 2019 and started operations in 2020. TINDAC plays a key role in **advancing innovations for industrial commercialization** by ensuring that new innovations are practical, scalable, and aligned with technical, industrial, and commercial requirements.

TGEM's Pillars of Sustainability

0 ZERO WASTE

TGEM's Zero Waste initiative eliminates the need for long-term residue management and provides an environmentally-friendly alternative by **converting residues into valuable by-products.**

TGEM's Projects Highlights

STAL One Ecopark
Fully Integrated Ecosystem

Capacity of **2,750 tpa** nickel output, equivalent to **~12,000 tpa MHP**

In Development with plan COD by Q4 2027

IGNITE Ecopark
TGEM's Scaled Ecopark

Capacity of **~50,000 tpa** nickel output, scalable to 100,000+ tpa nickel output, equivalent to **200,000 – 400,000 tpa MHP**

In Development

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