Energy Innovation Forum 2025

In support of Canada’s G7 2025 Presidency

International Energy Agency

What technologies need dedicated support to diversify and add value to battery mineral supplies?

International Energy Agency

Speakers

Ryan Melsert
CEO, American Battery Technology Company

Megan O'Connor
CEO, Nth Cycle

Nobuto Nakanishi
Director, Policy and External Relations, Panasonic Energy

Morgan Bazilian
Professor, Payne Institute, Colorado School of Mines

Moderator

Inga Petersen
Executive Director, Global Battery Alliance

Speaker

Ryan Melsert
CEO, American Battery Technology Company

What technologies need dedicated support to diversify and add value to battery mineral supplies?

IEA Energy Innovation Forum 2025
Toronto, Canada
October 29, 2025

Ryan Melsert, CEO & CTO
American Battery Technology Company

Diversification of Battery Mineral Supplies

ABTC AMERICAN BATTERY TECHNOLOGY COMPANY
Nasdaq: ABAT

What technologies need dedicated support to diversify and add value to battery mineral supplies?

Primary Mineral Supplies

- Permitting and Regulatory hurdles
- Conventional vs Unconventional Resources
  - First-of-a-Kind (FOAK) development and scale-up
- Concentrator-Conversion model vs Co-Location
  - Impact of Export and/or Import Costs
  - Onsite vs centralized utilities

Recycled Mineral Supplies

- Consortia/Alliances amongst stakeholders
- Scope of manufactured products
  - Concentrates, intermediates, technical grade, battery grade, etc.
- Market Pricing
  - Premium for recycled vs virgin
  - Premium for domestically-sourced vs imported

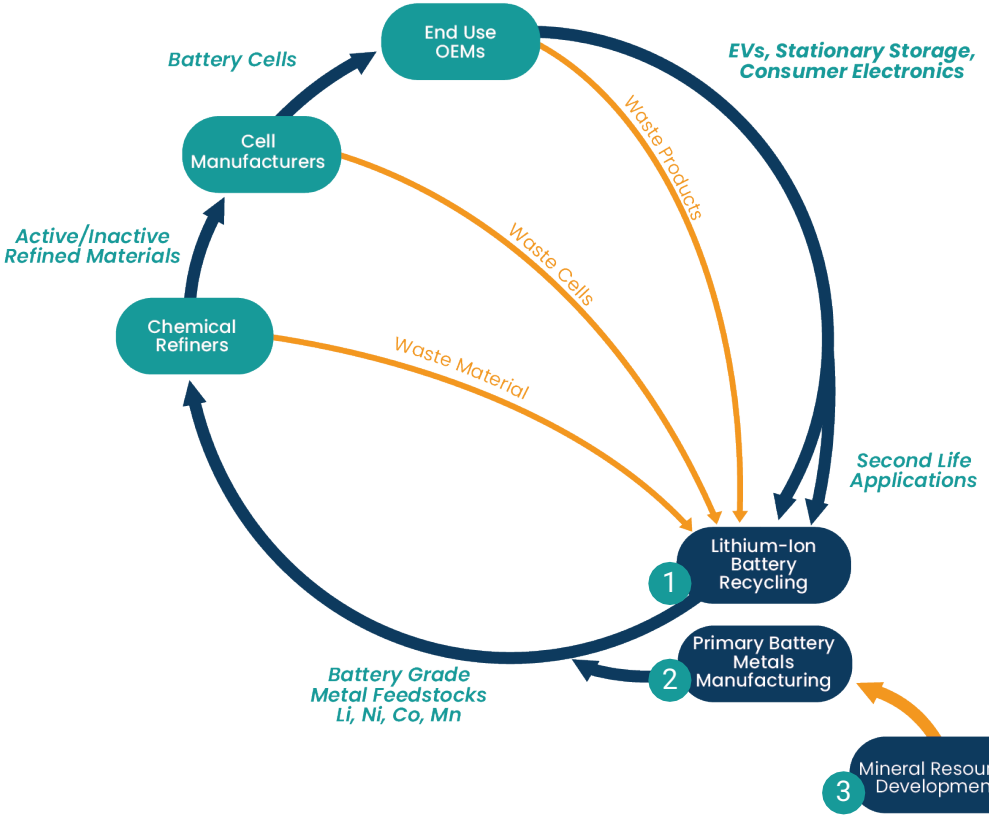
ABTC Critical Battery Mineral Manufacturing Businesses

ABTC AMERICAN BATTERY TECHNOLOGY COMPANY
Nasdaq: ABAT

1. A robust and **cost-competitive battery recycling industry** can ***close-the-loop*** and make a meaningful impact on near-term domestic supply

2. However, recycling alone cannot meet growing demand, therefore **domestic manufacturing of primary battery metals** needs to be ramped rapidly to ***fill-the-loop*** with low-cost and low environmental impact material

3. In addition to manufacturing primary battery metals, **domestic mineral resources need to be developed** in order to supply the primary feed for these facilities



Speaker

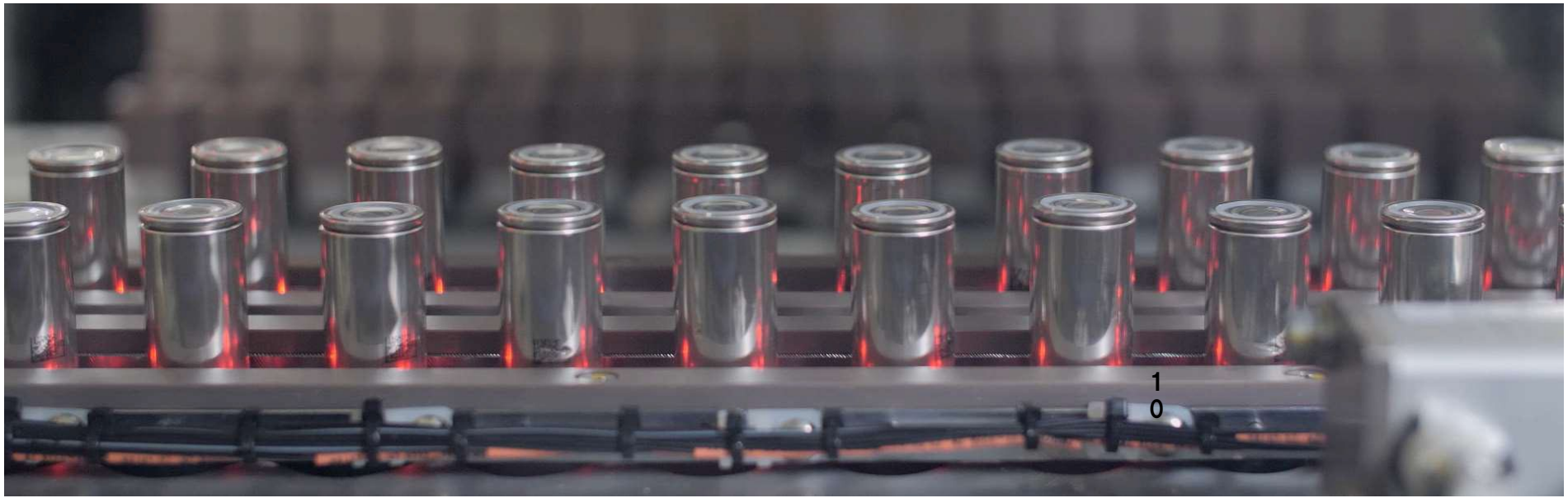
Megan O’Connor
Co-Founder and CEO
Nth Cycle

Speaker

Nobuto Nakanishi
Director, Policy and External Relations, Panasonic Energy

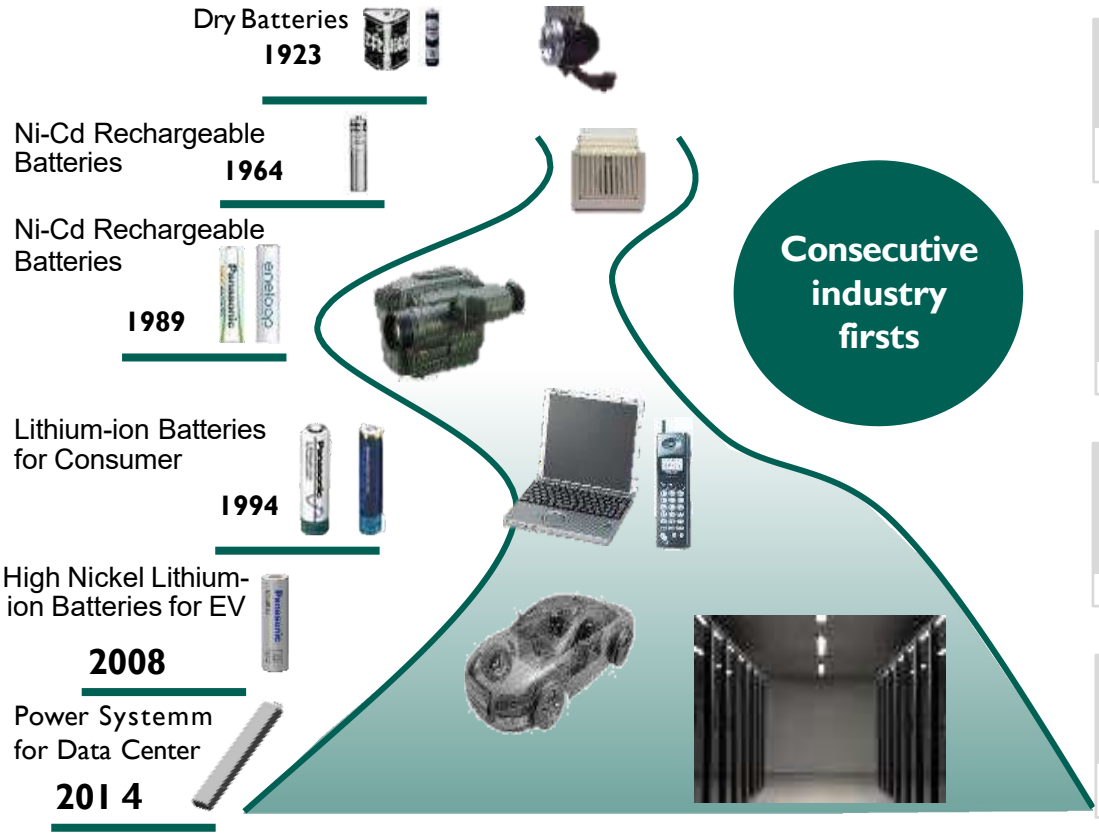
Lithium-ion Battery

Building a geopolitically resilient and cost-competitive supply chain.



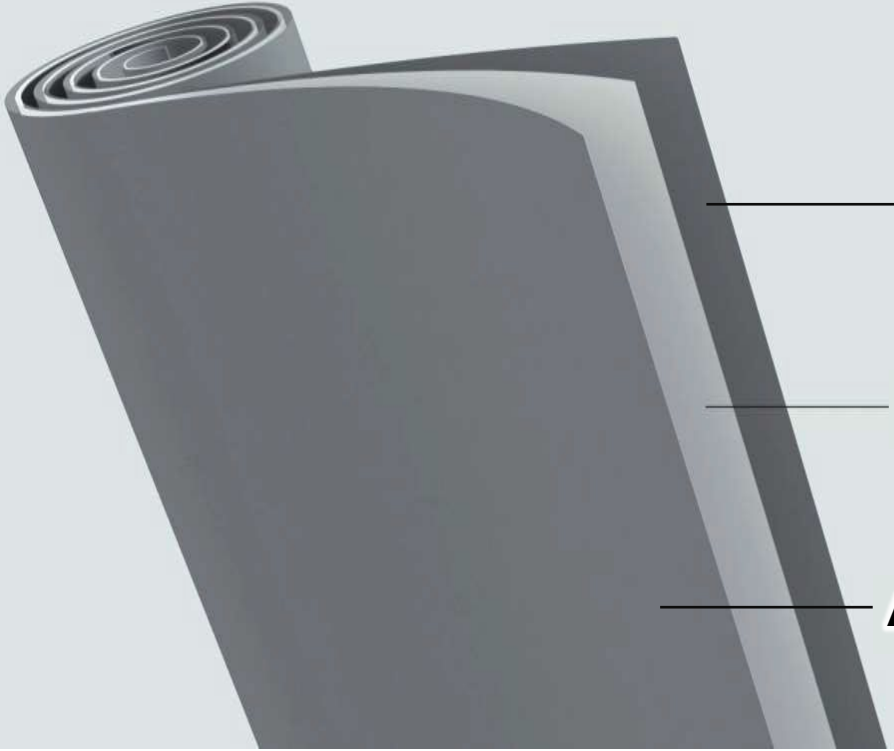
29 Oct 2025

History and Strengths



R&D	Number of patents held **10,937**
Experience (EV battery)	Since 2008 **17 years**
Production (EV battery)	Cumulative total **17bn Cells**
Reliability	EV battery related **No Recall**

Battery Mineral



Cathode
- Nickel 
- Lithium 
- Cobalt 

Separator

Anode
- Natural Graphite 
- Synthetic Graphite

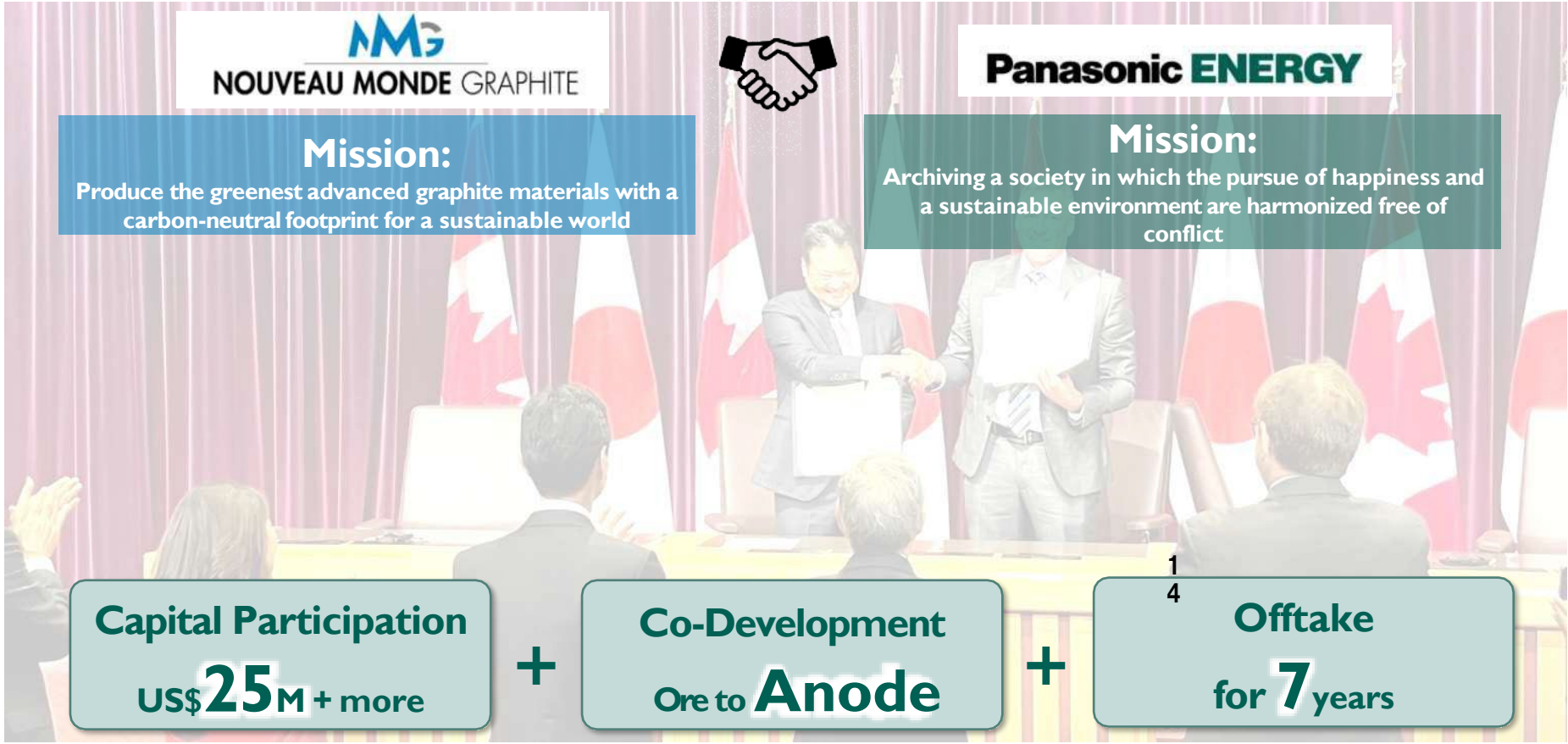
Required Volume of CAM (Cathode Active Material)

Nevada alone,
CAM 200ton/day
= approx. 10 containers/day

Currently almost from Asia

- **Long logistic lead time** (45days)
- **High logistic cost**
- **High carbon footprint**
- **Unfavorable cashflow** (inventory)

Anode



NOUVEAU MONDE GRAPHITE

Mission:
Produce the greenest advanced graphite materials with a carbon-neutral footprint for a sustainable world

Panasonic ENERGY

Mission:
Archiving a society in which the pursue of happiness and a sustainable environment are harmonized free of conflict

Capital Participation
US$25M + more

+

Co-Development
Ore to Anode

+

Offtake
for 7 years

Ore to AAM (Active Anode Material)

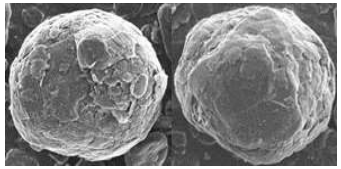
Manufacturing Process of Graphite for Battery

Concentration

Flake graphite

Spheronization

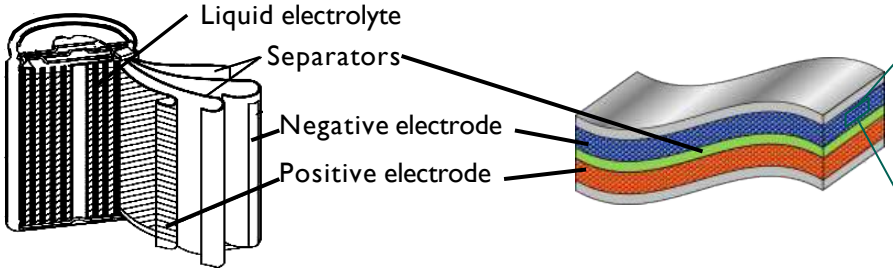
Purification



Graphite particle
(same scale as pollen)

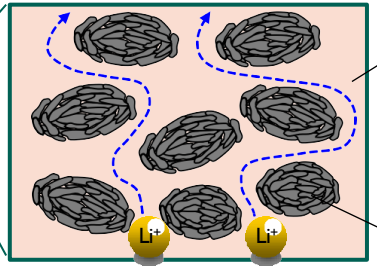
Effect of spheroidized graphite particles

Cylindrical Battery Cell

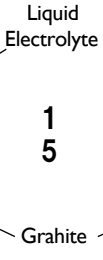


Poor Performance

Low Sphericity
→ Long Conduction Path

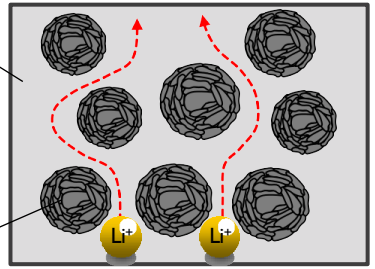


Impede the conduction of lithium-ions



High Performance

High Sphericity
→ Short Conduction Path



Increase the lithium-ions conduction speed

Cost Reduction of CAM through Process Innovation


Ore


Refining


Precursor


CAM

Ore

Acids, sulfuric acid, etc.

Wastewater

Nickel sulfate
Cobalt sulfate

Neutralization

Sodium hydroxide (Caustic soda)

Sodium sulfate

Wastewater

Precursor

Baking

Lithium hydroxide

Wastewater

CAM

Room for innovation

Laterite

MHP
Mixed Hydroxide Precipitate

Sulfide

Matte

Directly produce


Precursor

1
6


CAM

Panasonic ENERGY

Energy that changes the future.

Speaker

Morgan Bazilian
Professor, Payne Institute,
Colorado School of Mines

Energy Innovation Forum 2025

In support of Canada’s G7 2025 Presidency

International Energy Agency