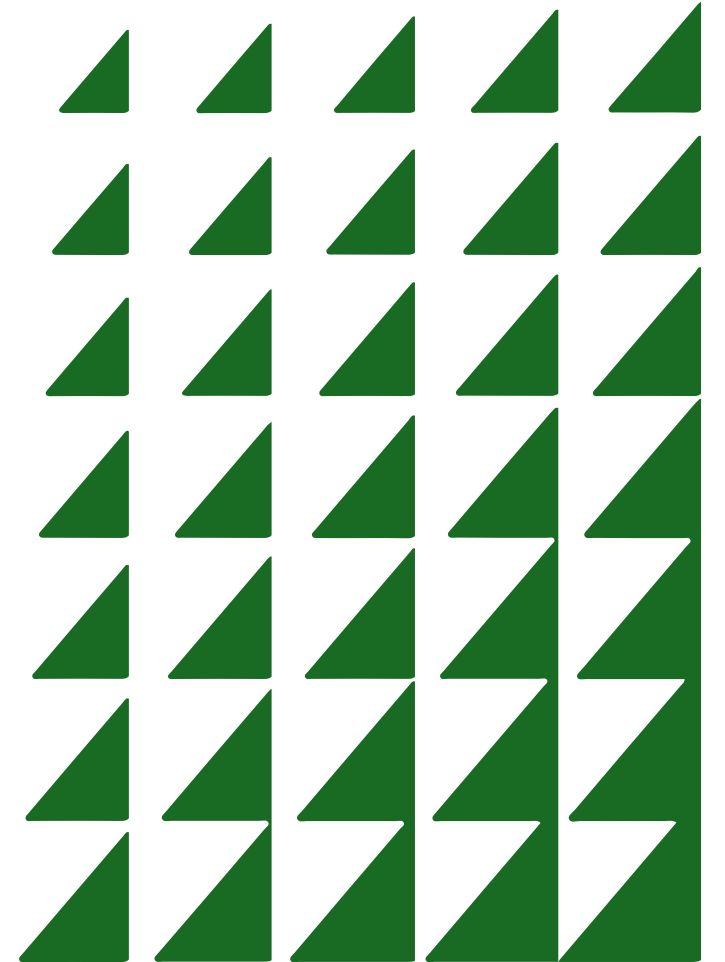


**MOMENTUM**  
TECHNOLOGIES

The future of metals recovery, without hydrometallurgy

**NAATBatt 2025**



# Problem: Traditional processes are costly and lack flexibility

Traditional Hydrometallurgy Plant



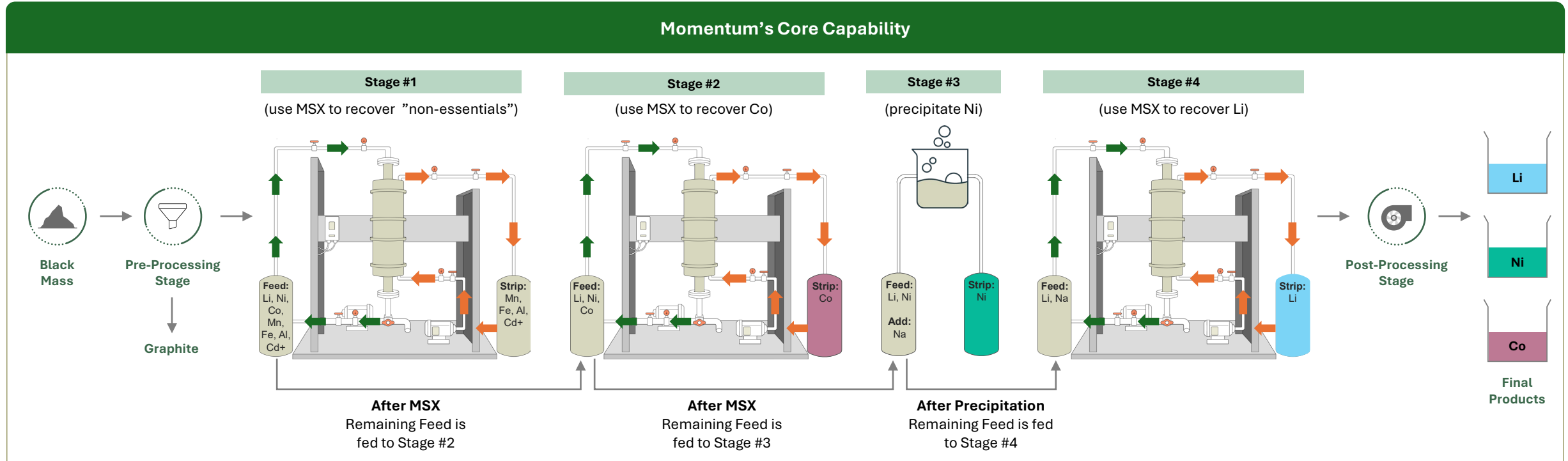
While pyrometallurgy is a proven and established method for recovering certain metals, its **energy intensity, loss of key materials,** and **release of gases** make it less suitable for battery recycling in a world moving toward sustainable and efficient resource management

Traditional Pyromet Plant



While traditional hydrometallurgy is also proven, it is burdened by **high capital costs, extensive chemical usage, numerous process steps,** and **high energy usage during crystallization,** that create economic and environmental challenges that hinder its ability to scale

# Solution: MSX battery recycling flowsheet



## MTI Advantage – MSX Process



Flexibility to process large variety of feedstocks



Lower reagents and energy requirements



Low cost as no crystallization required for post processing



Plant size is modular and highly scalable



Continuous nonequilibrium process enables continuous extraction



Tighter control over process kinetics

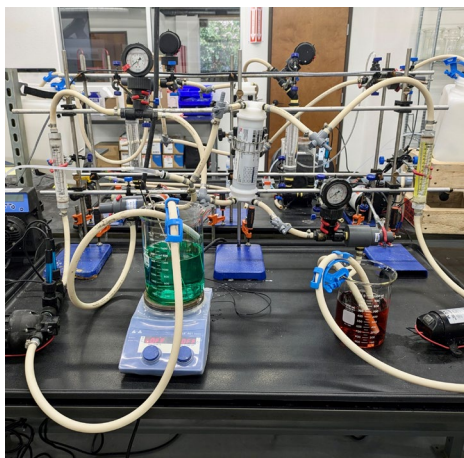
# Technology proven at multiple scales = Highly Scalable

Simplicity and efficacy of proprietary MSX technology demonstrated across scale

Proven

Next Step

● 2021



**LAB SCALE**

**95-96%**

Products Purity

**8+**

Black mass suppliers  
successfully processed

● 2022



**PILOT UNIT**

**98+%**

Products Purity

Scale-up

**20-80x**

● 2024



**DEMONSTRATION UNIT**

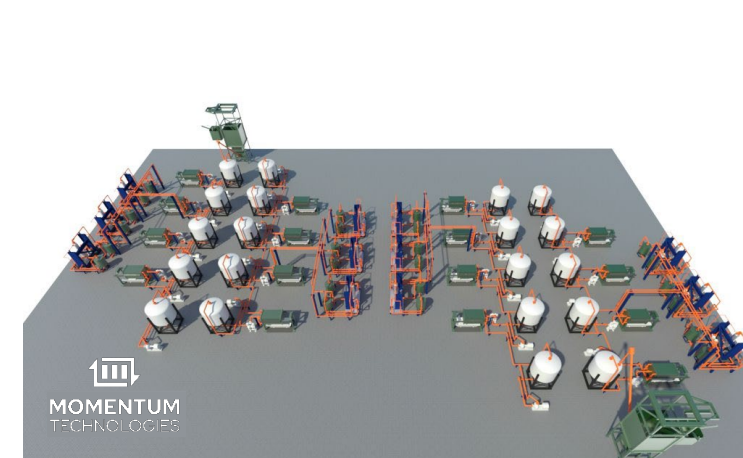
**98-99.5+%**

Products Purity

**200 Tons**

per year, 20x Scale-up of pilot

● 2025 – 2026



**COMMERCIAL PLANT (Ohio)**

**2,000**

TPY processing facility

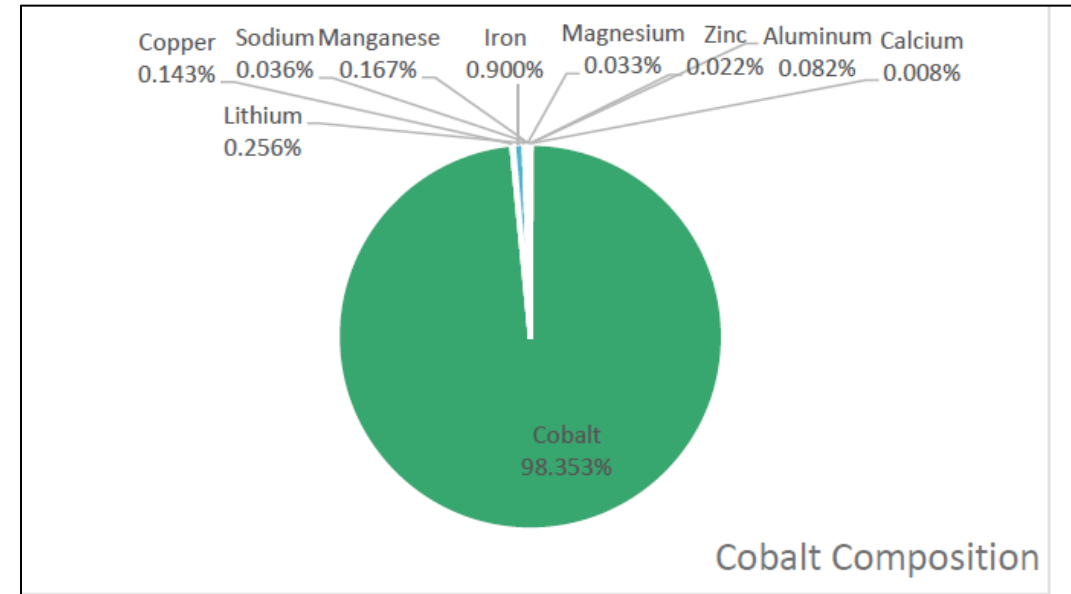
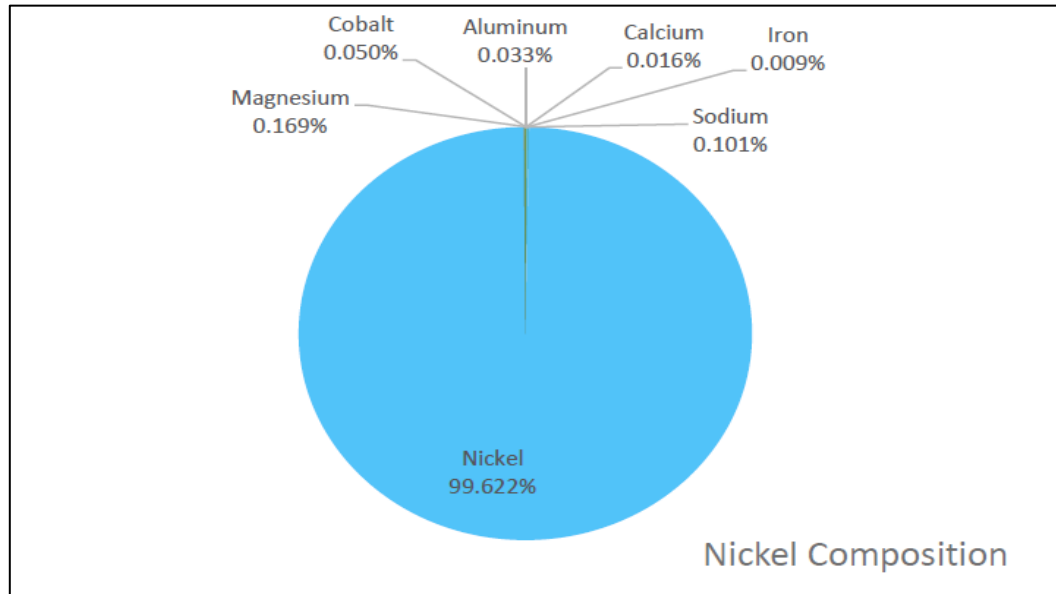
Scale-up

**8-12x** of Demo Unit

Battery and Industrial Grade

**Li, Co, and Ni**

# Producing High Grade Product From New Demo Plant via Black Mass



# Li and Na separation via MSX

<b>Li purity (wt.%) in strip</b>	<b>Li recovery (%)</b>
>99.9	97.95

## Reasons customers come to us:

- Solvent Extraction (SX) is too expensive
- Need to process complex feedstocks
- Need to enhance product purities
- Need to upgrade MHP
- Easier Permitting & Compliance
- Enables On-Site Processing
- Differentiates from Competitors

We want to work with you!

**Thank you!**