

HUAYOU COBALT

Pioneering a Globally Closed-Loop Total Solution for Battery Materials

To Become the Global Leader in the Li-ion Battery Material Industry

Global High-Technology Company

Founded in 2002

Headquarter in Tongxiang, China

Listed in Shanghai & LME Stock

The 1st listed company in Cobalt Industry

Market, Huayou Nickel brand was successfully registered on the London

Metal Exchange (LMEsword code: HUAYNI)

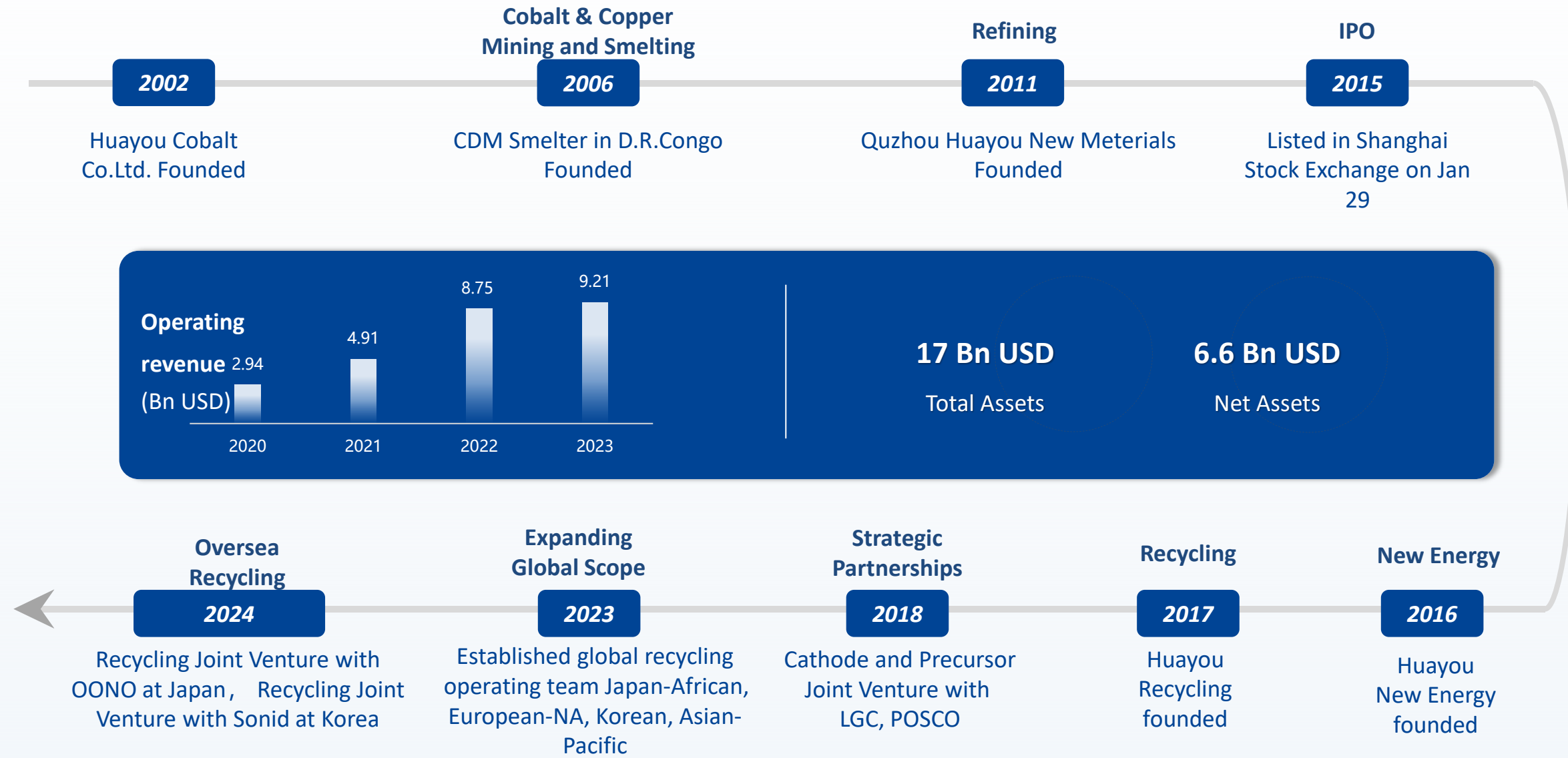
Vertically integrated industrial chain

Closed Loop Total Solution (Resource-PCAM-CAM-Recycle)

Global Manufacturing Bases

Expanding production locations in abroad, Kick off new Materials manufacturing bases in Hungary(EU), Morocco(Africa) and South Korea(Asia)







Huayou Resource

- $\text{Co}(\text{OH})_2$: 25,000 t (Co)
- Cu: 100,000 t (Cu)
- Li: 50,000 t (LCE)

Huayou Indonesia Ni.

- MHP: 245,000 t (Ni)
- 24,500 t (Co)
- Nickel Matte: 90,000 t (Ni) (4.5wt)

Huayou New Material

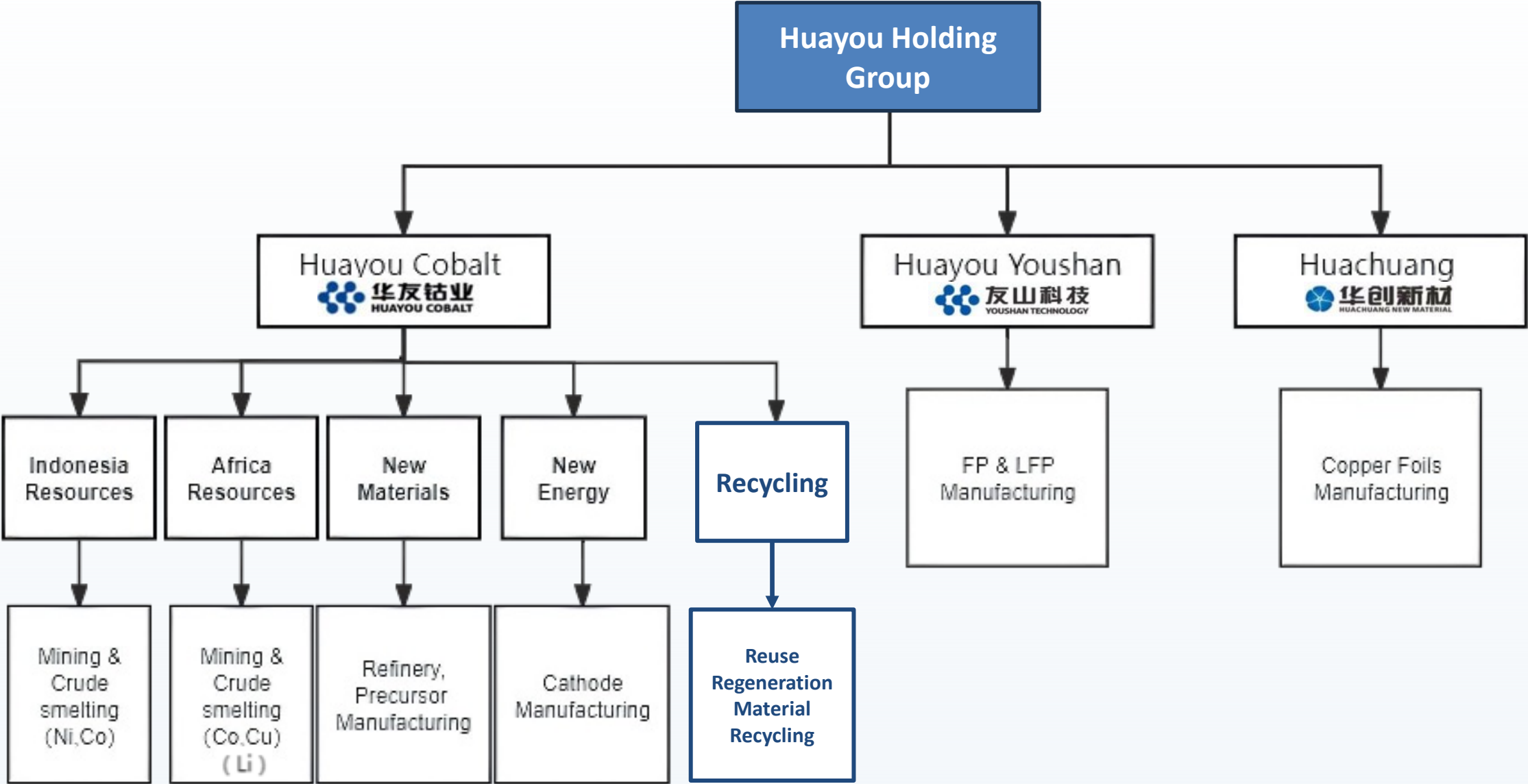
- Co Products: 50,000 t
- Co_3O_4 : 30,000 t
- NCM PCAM: 545,000 t

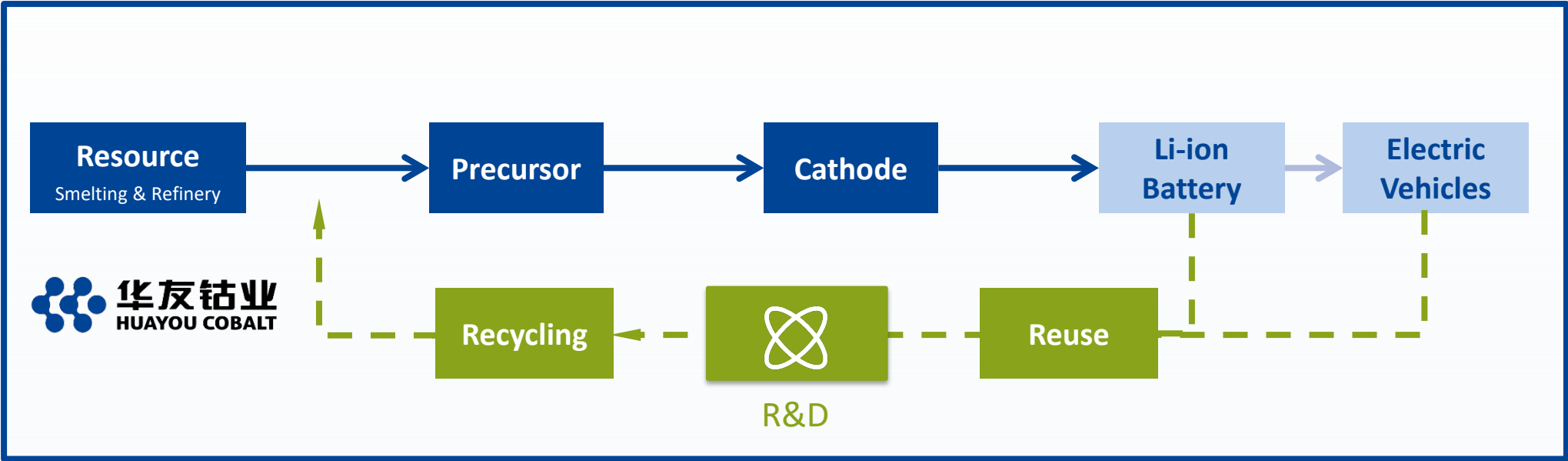
Huayou New Energy (B&M)

- NCM CAM : 300,000 t
- LCO : 20,000 t

Huayou Recycling/Reuse

- Waste Battery Recycle: 65,000 t
- Metal Recovery:
Ni+Co(Metal): 12,000 t
Li₂Co₃ : 10,000 t
- Reuse : 2Gwh EOL Battery





Products & Services

Huayou Holding Group

Resource		Precursor	Cathode	Recycling
Cobalt	Lithium	NCM Precursor	NCM Cathode	Reuse
Nickel	Copper	FePO ₄	LFP	Material Recovery
HPAL & RKEF		Co ₃ O ₄	LiCoO ₂	

Key Achievements and Global Leadership

No. 1 in Li-ion Battery Ternary Materials

No. 1 in Cobalt New Materials

Supply Guarantee in Nickel, Cobalt, Lithium

People

50,000+
Employees

We are the trusted global supplier of battery materials!





Huayou Recycling Strength _Closed-loop Value Chain Total Solution

From mining to PCAM, CAM, reuse, and recycling



Automatic Dismantling and Pretreatment

Chemistry:

- NCM, LFP, LCO, NCA ...

Highlights:

- Fully automatic
- Top security in the industry
- **98.5%** black mass extraction



Hydrometallurgy (NCM/LFP)



Highlights:

- Li extraction rate can reach **95%**
- Co, Ni extraction rate over **98.5%**
- Large-scale production
- **Battery-grade** products

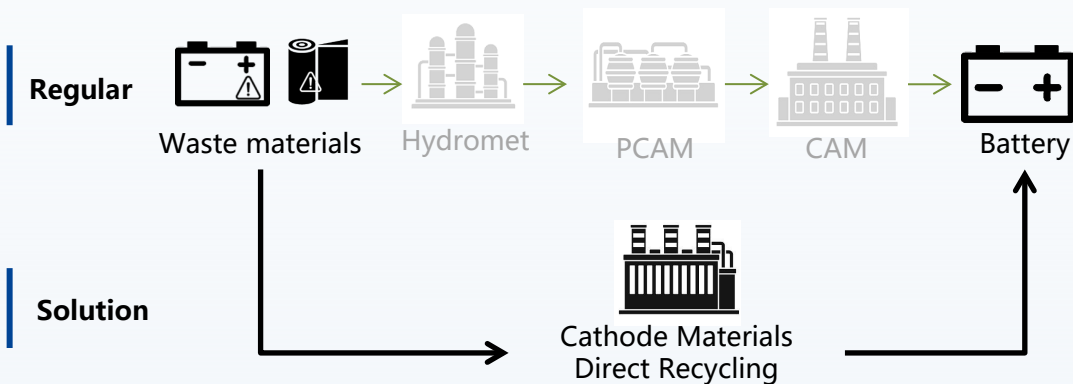
Reuse

Highlights:

- Testing time is less than **15s**
- Testing accuracy over **95%**
- **Customized solutions** for diverse application scenarios



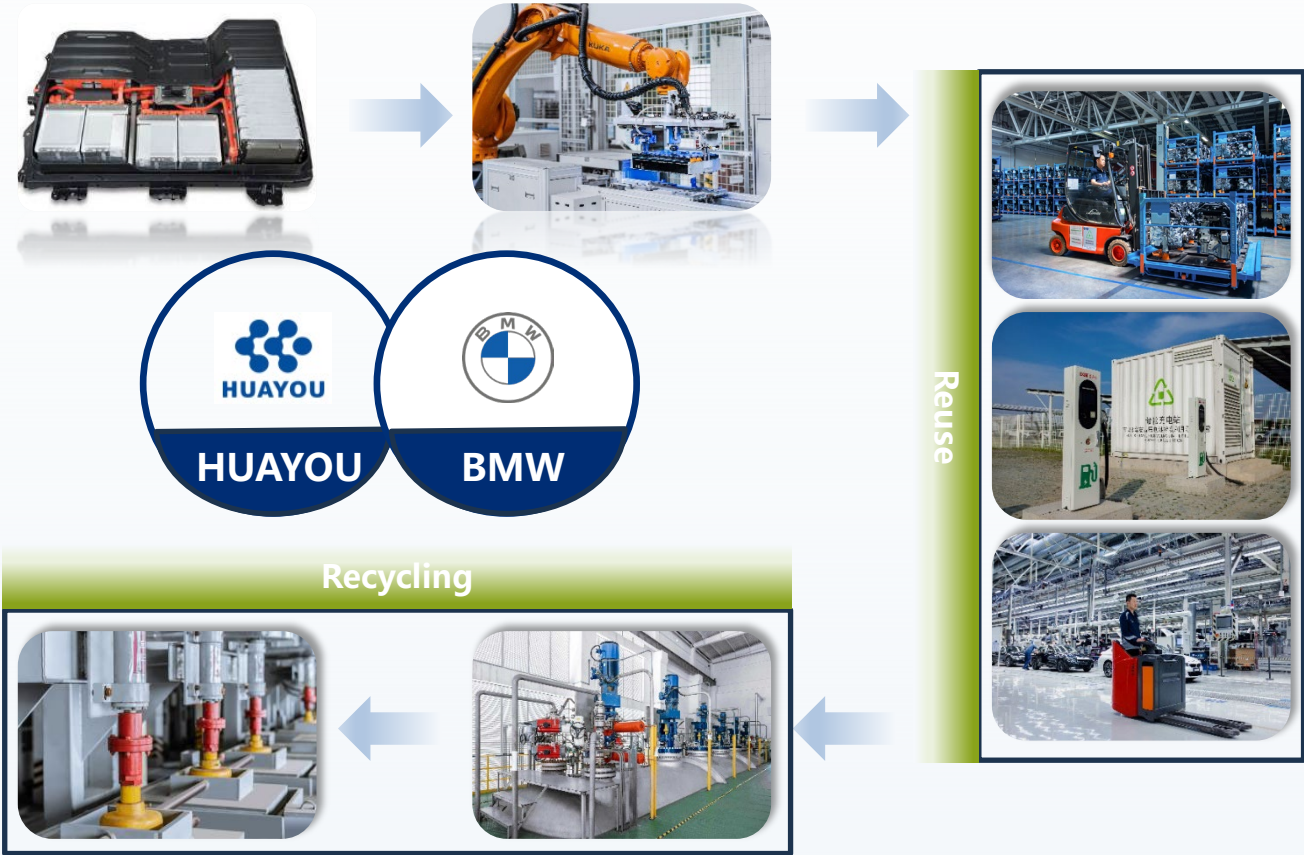
Direct Recycling



- Highlights:
- Processes reduced by **2/3**
 - Costs reduced by **10%-20%**
 - CO2 emissions reduced by **>40%**



2023 Milestone
i3, iX3 & i7 powered by recycled materials





T H A N K Y O U F O R Y O U R A T T E N T I O N !