



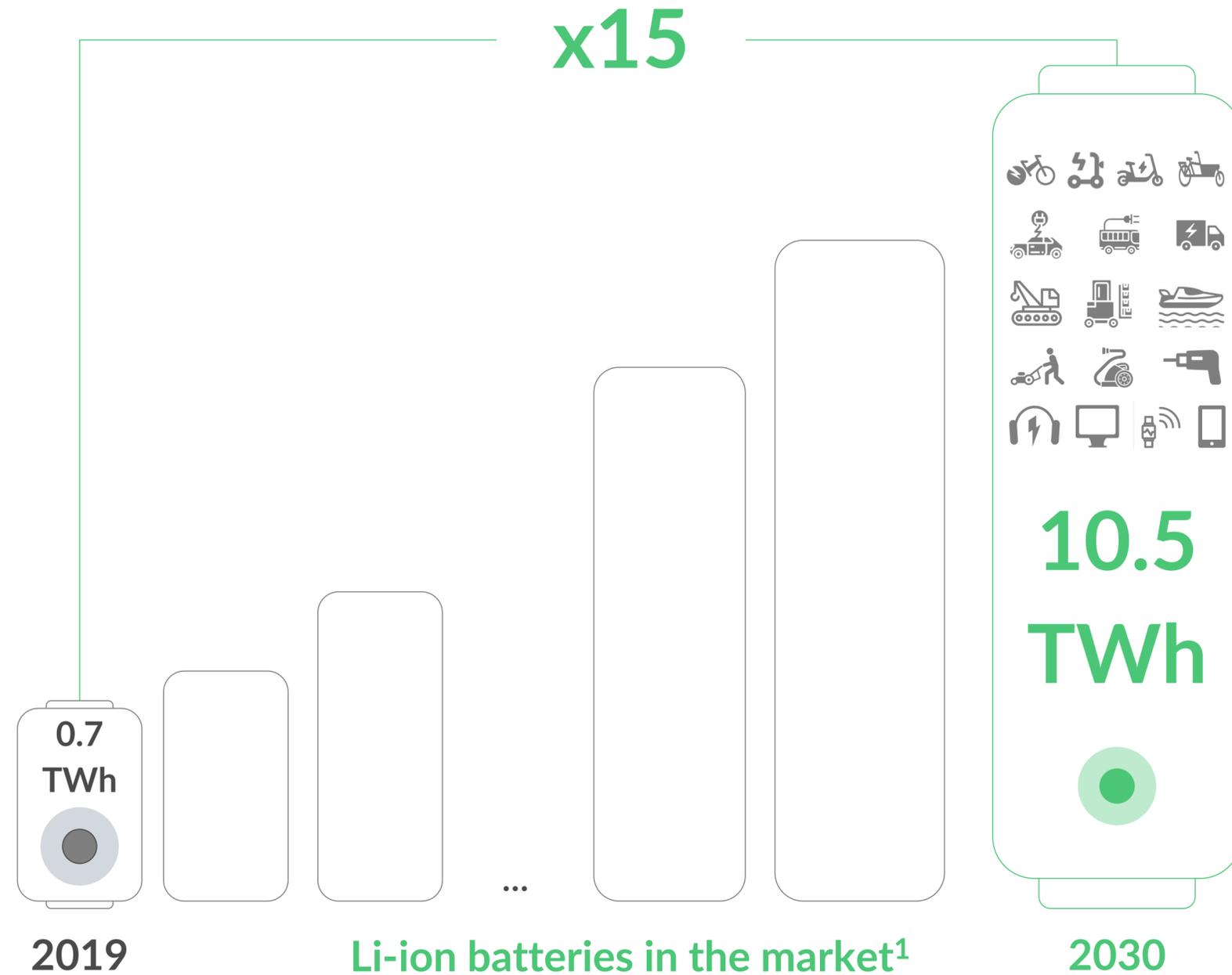
# Circu Li-ion

AUTOMATED BATTERY & CELL UPCYCLING

Fighting the climate crisis by maximising the value of each Li-ion cell.

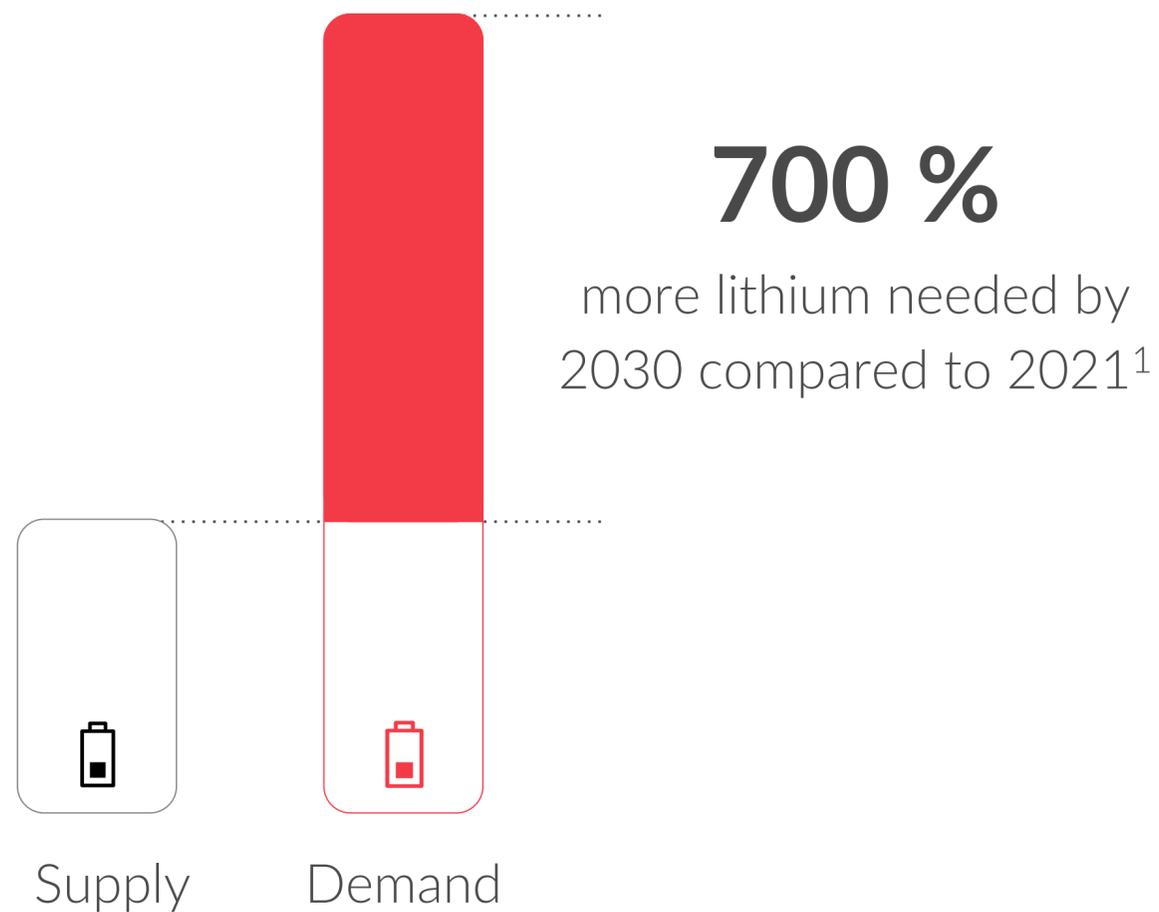
PROBLEM

# Our economy is being electrified



# However, supply is scarce & battery production hazardous

## Limited supply



## Socio-environmental challenges

### CO2 emissions

during battery production: up to 16t CO2/EV battery<sup>2</sup>



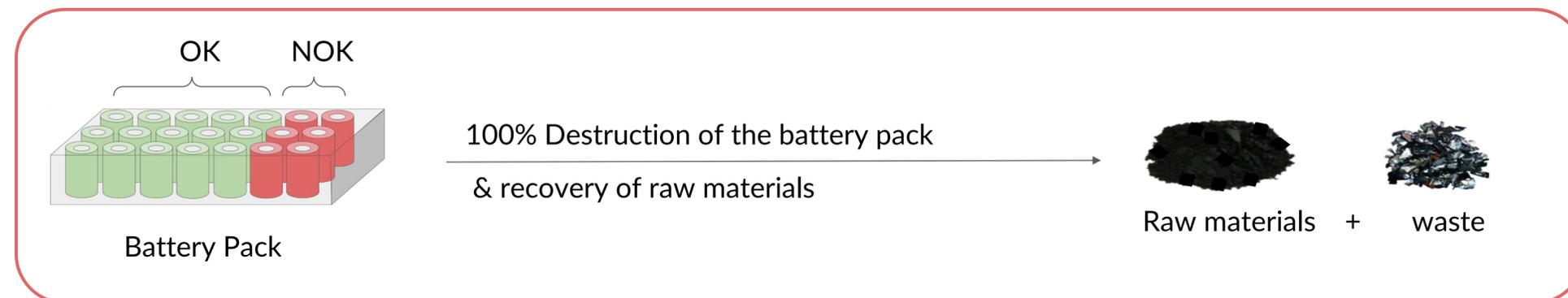
**Mining of raw materials:**  
pollution & human rights abuses<sup>3</sup>

1) McKinsey (2022); <https://www.mckinsey.com/industries/metals-and-mining/our-insights/lithium-mining-how-new-production-technologies-could-fuel-the-global-ev-revolution>.  
2) Climate MIT Portal (2022). <https://climate.mit.edu/ask-mit/how-much-co2-emitted-manufacturing-batteries>

3) Bloomberg (2022); <https://www.bloomberg.com/news/features/2022-05-25/lithium-the-hunt-for-the-wonder-metal-fueling-evs>

# Today's recycling industry is not ready to cope with the problem

## Existing recycling process

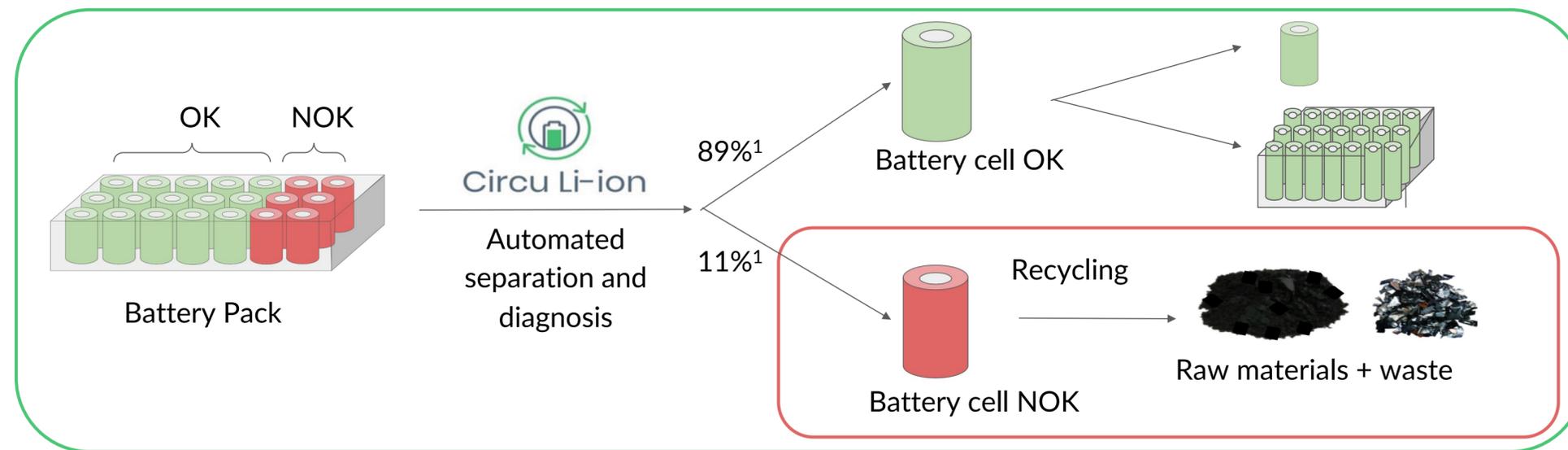


## Impact

- 👎 Low % of raw materials recovered
- 👎 Very energy intensive
- 👎 Destruction of intact resources

# From waste to revenue, saving >30% operating cost of batteries

## Circu Li-ion Upcycling process



## Impact

- 👍 Up to 90% cell upcycling<sup>1</sup>
- 👍 80% less CO2 emissions<sup>2</sup>
- 👍 High % of recycled materials
- 👍 Energy efficient process
- 👍 Less chemicals, less waste

# Beyond hardware, we are a digital upcycler

Scalable software



### Battery library

Continuous addition of battery types



### Diagnostic software

RUL (Remaining useful life) of every cell



### Cell data collection

Creating the largest used cell database



an automated hardware foundation



Module 1  
Pre-diagnostic



Module 2  
Opening system



Module 3  
Cell extraction

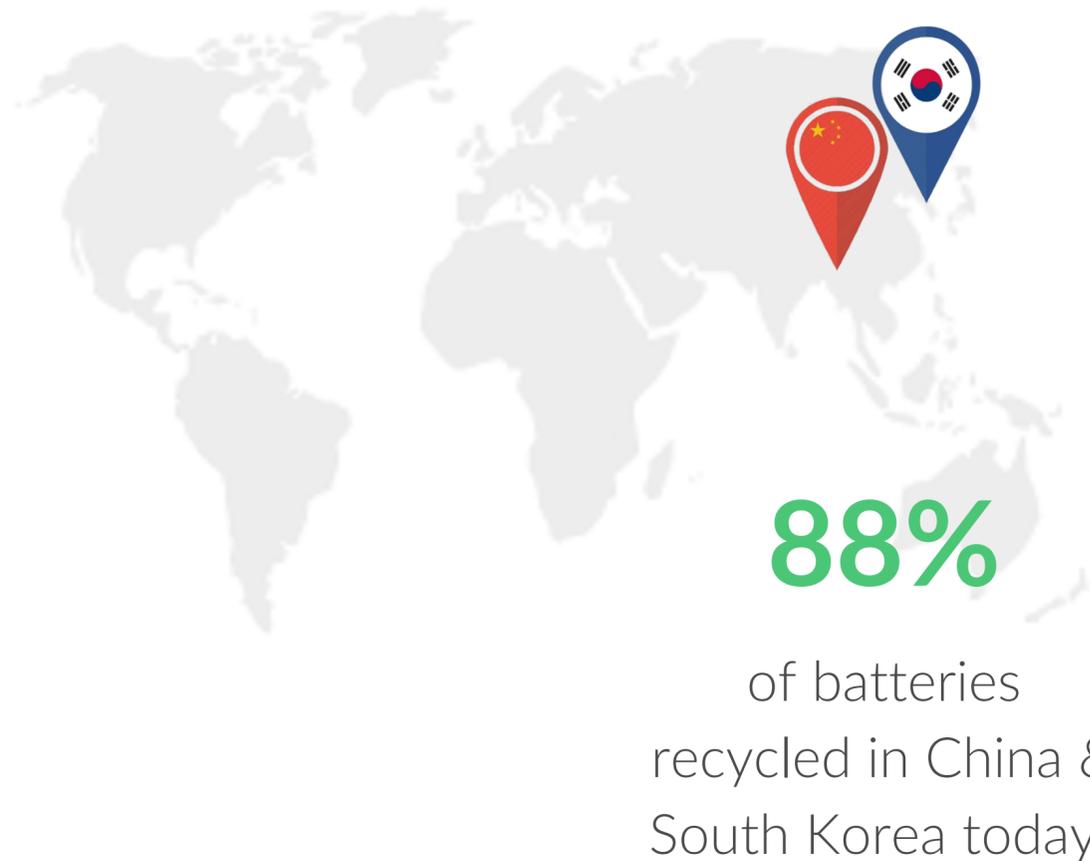


Module 4  
Cell diagnostic



# Battery upcycling technology is crucial for Europe

## Economic opportunity in Europe



## Regulatory frameworks create urgency to act

-  **European Battery Pass:** ethical & sustainable sourcing<sup>2</sup>
-  **Green Logistics:** recycling quotas of raw materials<sup>3</sup>
-  **Normed batteries**<sup>3</sup>
-  **Supply chain transparency law** in the EU<sup>4</sup>
-  **Corporate Social Reporting Directive (CSRD)** non-financial reporting standards in the EU

# Upcycling pays off

## Unit economics per battery



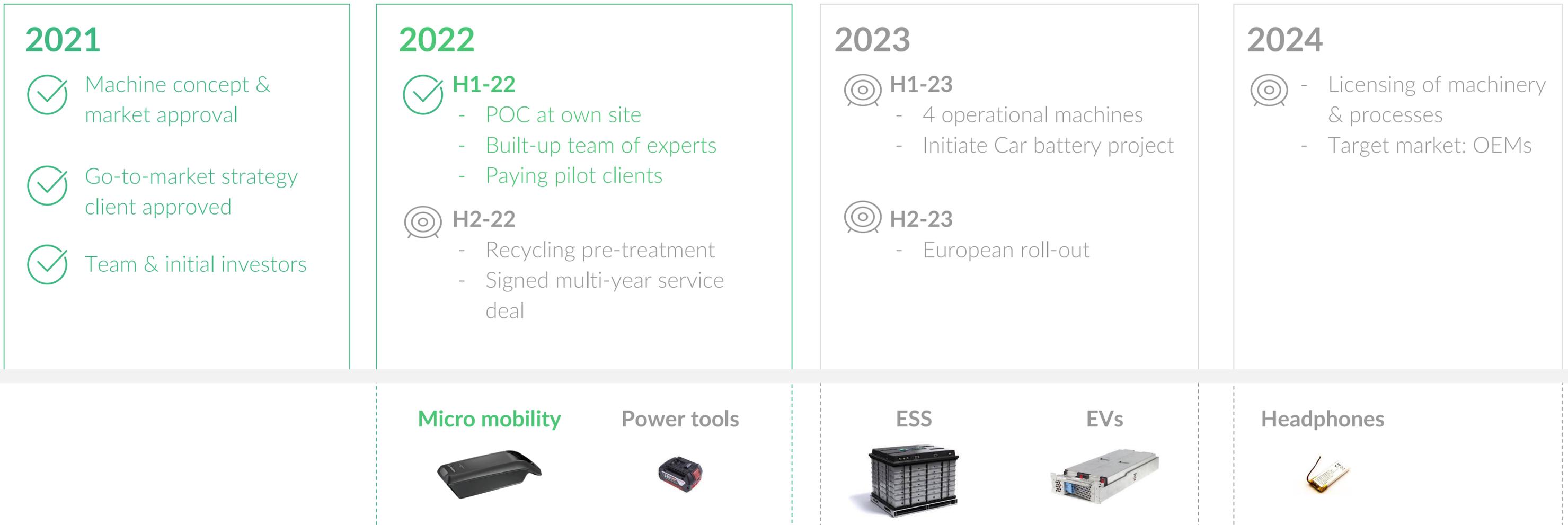
**Operating margin** per battery pack:  
**78%**

## Paying customers



**+4 undisclosed clients**

# How we become the leading battery upcycling provider



# Let's discuss details!

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