



ReLition

End-of-life Lithium-ion Battery Recycling

Simpler, greener, better.

THE TEAM



Fabiano Gabili

Chemical Engineer
Process design

Pietro Giustacori

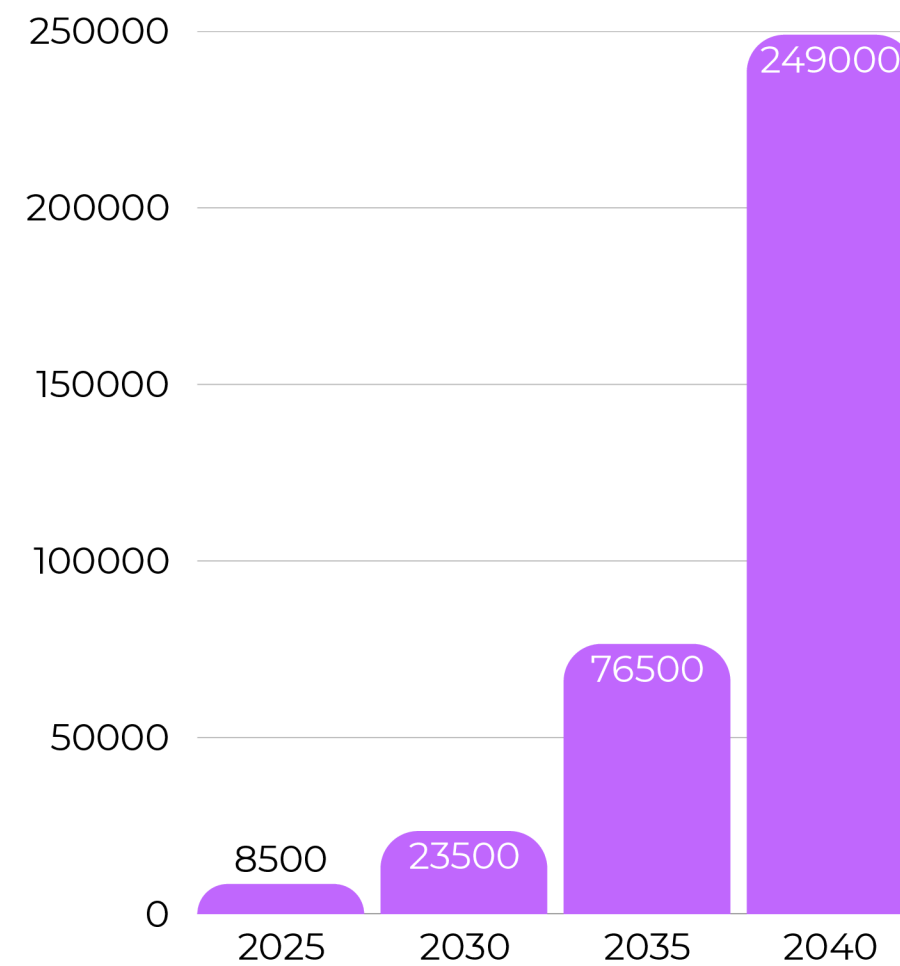
PhD candidate in Chemical and
Materials Engineering
Process intensification expert

Flavio Francalanci

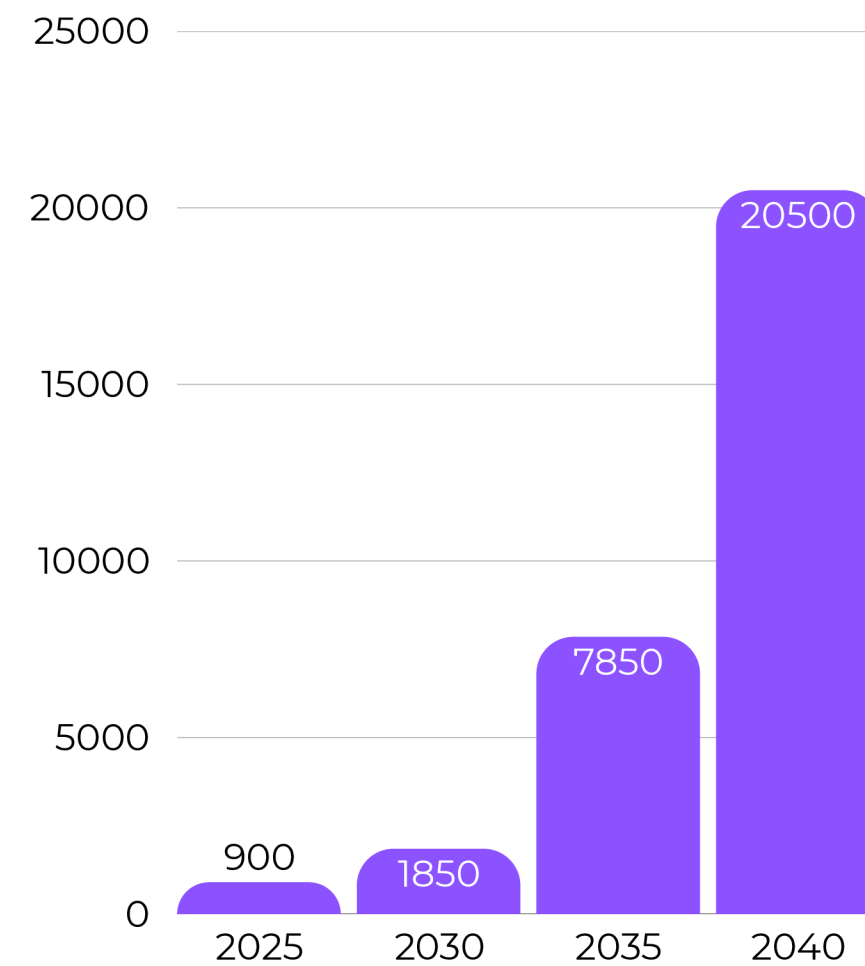
PhD candidate in Chemical
and Materials Engineering
Industrial process expert

CONTEXT

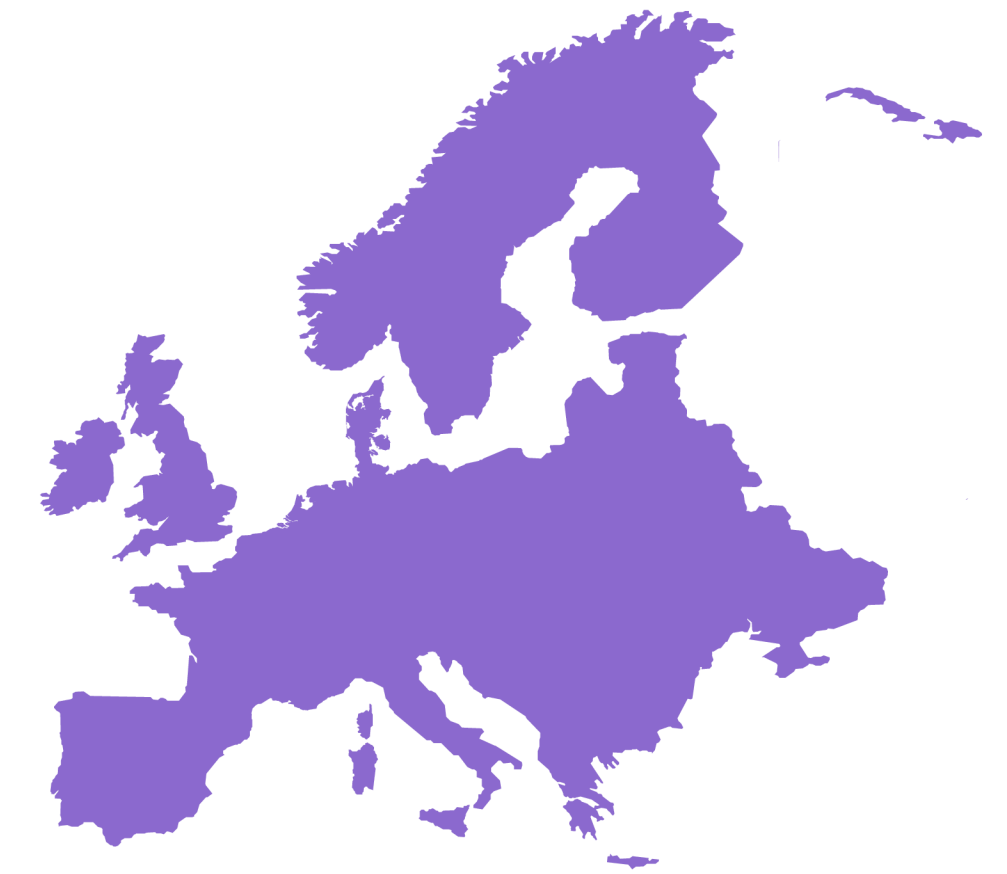
Global Li-ion battery cell demand [Kton/y]



End-of-life batteries from usage worldwide [Kton/y]



Europe accounts for ~22%



PAINS



**Environmental impact:
Only 10% are being recycled worldwide**



**Europe's dependency on other countries for critical minerals
used in LIBs**



**EU Battery Regulation:
recycled content required from 2031**



**Extended responsibility of LIB
manufacturers**

THE NEED FOR A NEW RECYCLING METHOD

PYROMETALLURGY



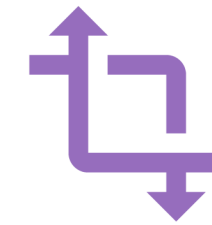
- ✗ Energy-intensive
- ✗ Toxic gasses emission
- ✗ Additional treatments

HYDROMETALLURGY



- ✗ Complex multy-step process
- ✗ Wastwater generation
- ✗ Toxic gasses emission

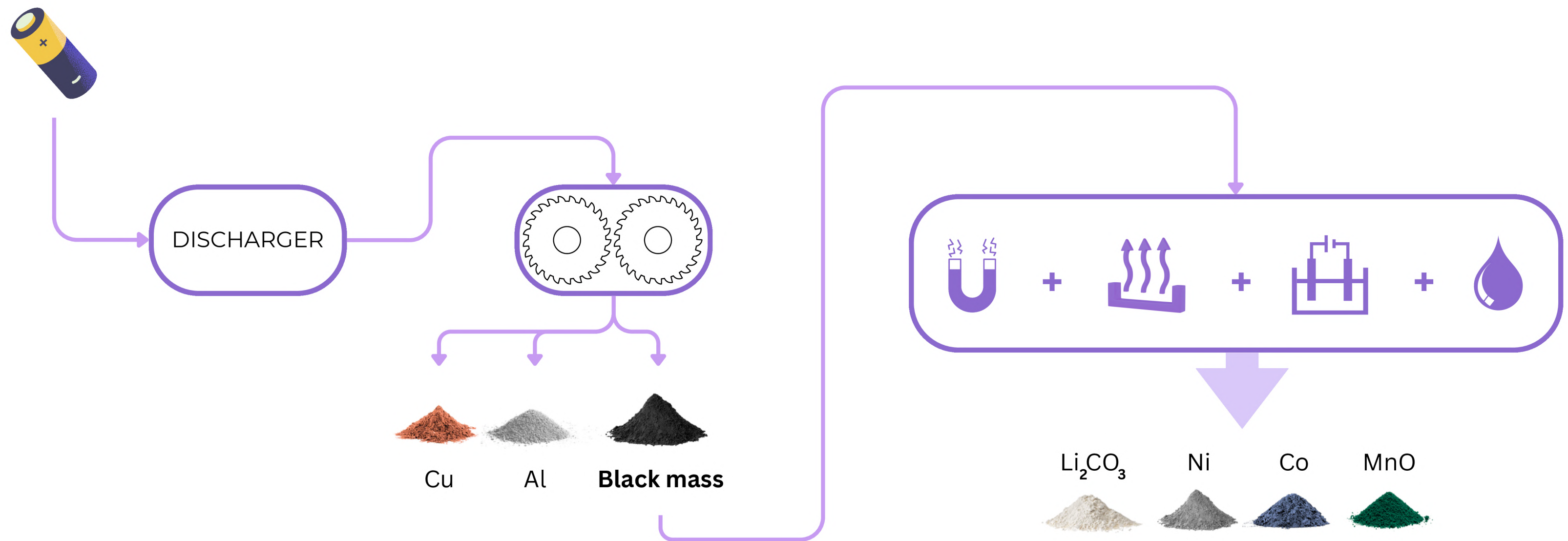
DIRECT RECYCLING



- ✗ Lab-scale applications only
- ✗ No flexibility in composition
- ✗ Difficult automatization

SOLUTION

A NEW RECYCLING PROCESS



P.O.C.

LCO

LMO



LFP

NMC



No extreme high temperature

No hazardous chemicals

Lower complexity

Lower emissions

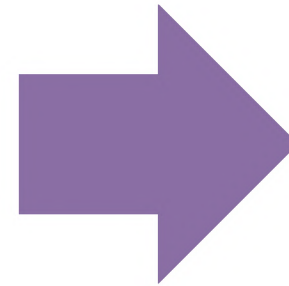
Lower operational costs



INVESTMENT

P.O.C.

€ 65.000



**P.O.C.
NMC & LFP**

Equipments

Personnel

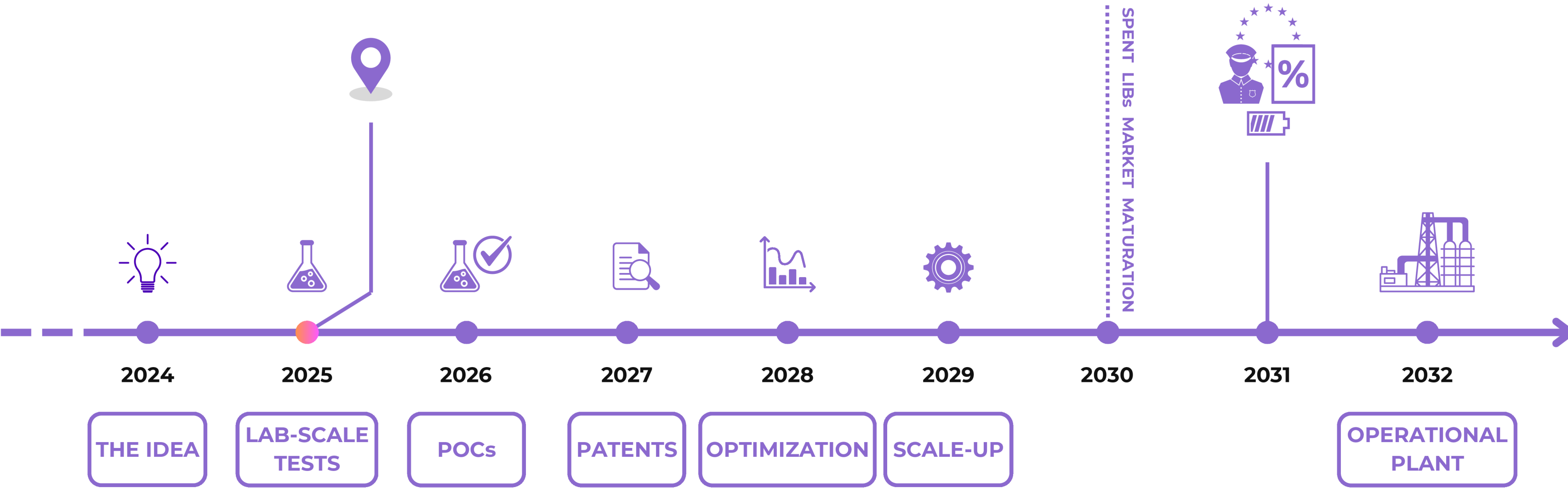
Raw materials

€ 15.000



Patent

ROADMAP



THANK YOU

www.relition.com

