

14.09.2022

Vianode

Building industrial leadership in advanced battery materials

Pareto Securities' 29th Annual Energy conference
Stian Madshus, General Manager



Vianode

About the company

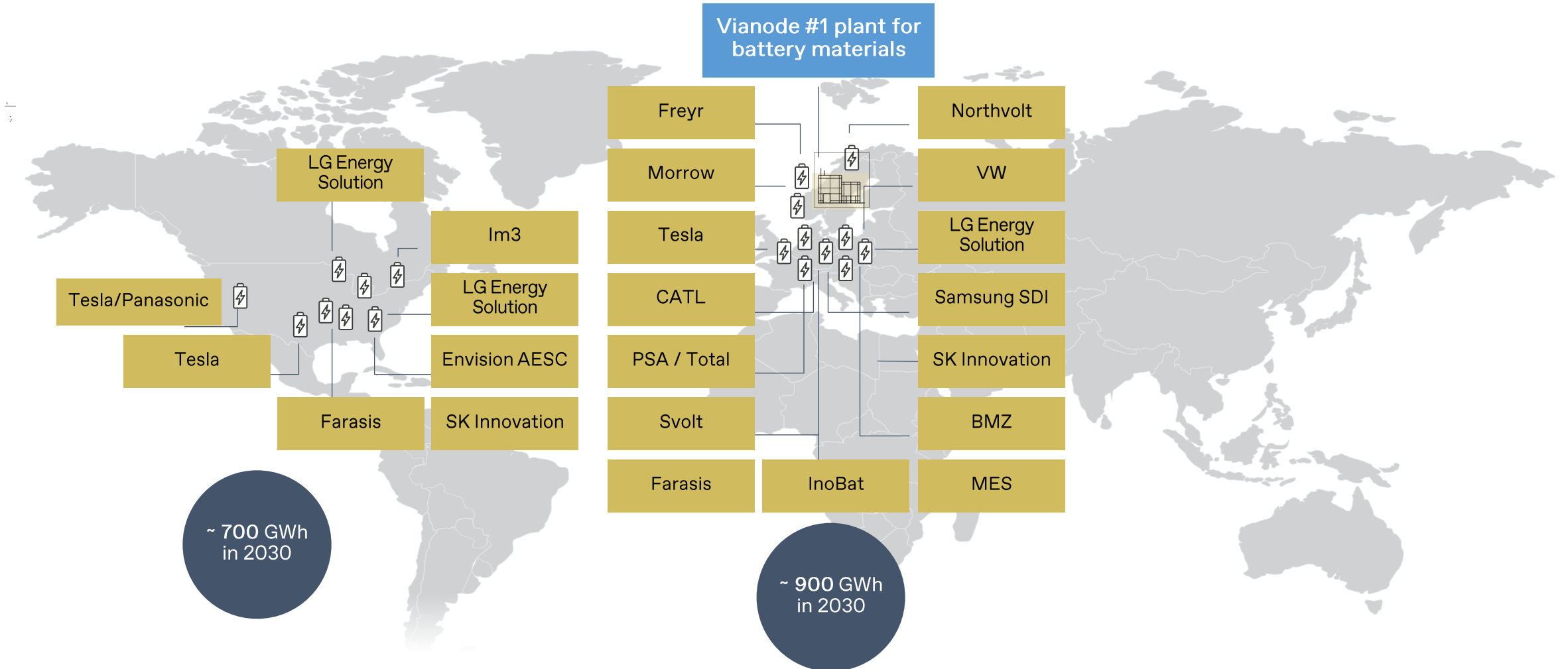
- Founded in 2021, but built upon technological advancements and decades of industrial experience
- Headquartered in Oslo, Norway, pilot production in Kristiansand.
- 60 employees by September 2022 – growing towards 300 by 2026
- Operational with industrial pilot for more than 1 year – now scaling up to full industrial production
- Backed by Elkem, Hydro and Altor with NOK 2 billion initial capitalisation



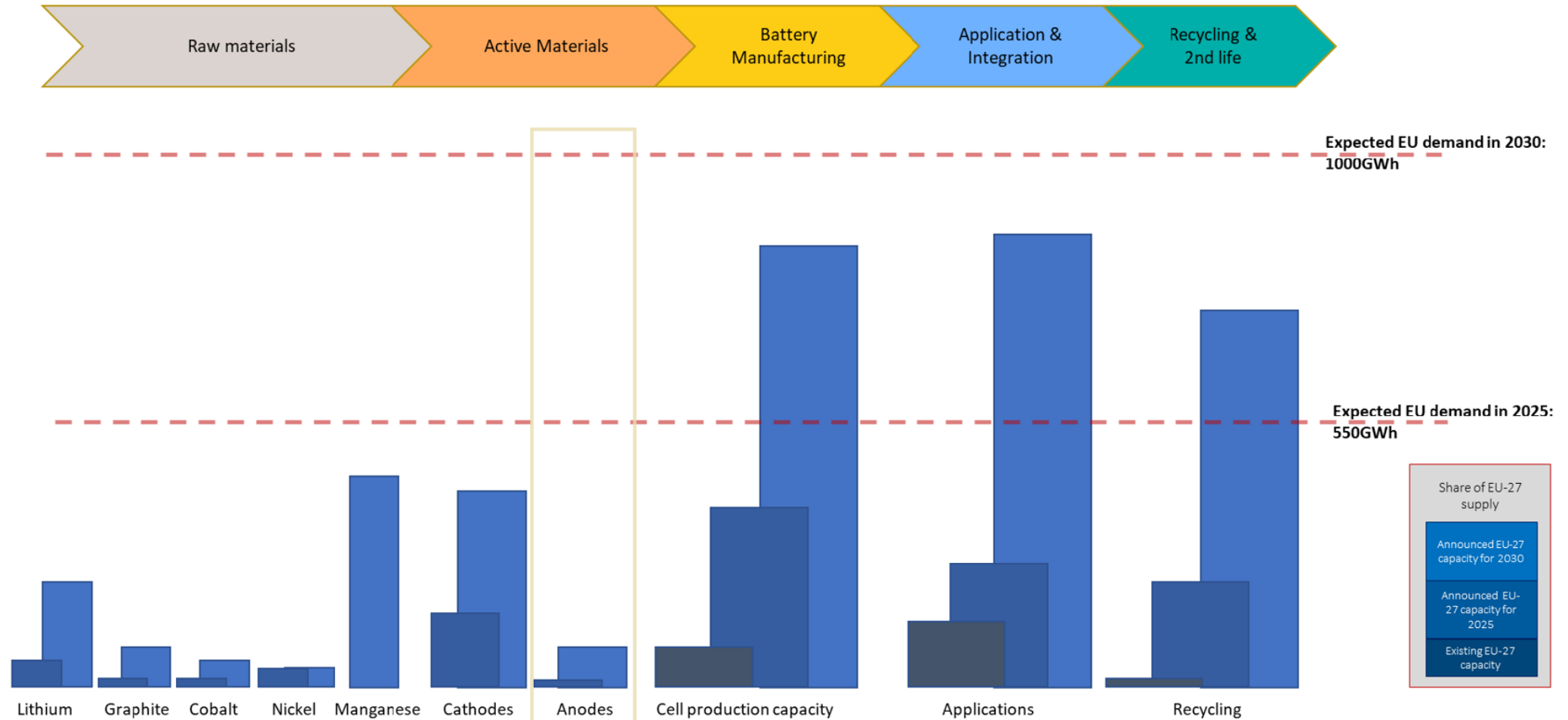
Our market: More cell production in Europe & North America

...but not sufficient ramp-up of battery materials production.

EU proposed regulation on sustainable batteries is a clear push for increased traceability, lower CO₂ footprint, more recycling



Significant graphite shortfall in Europe towards 2030



Automakers increasingly focused on a sustainable value chain



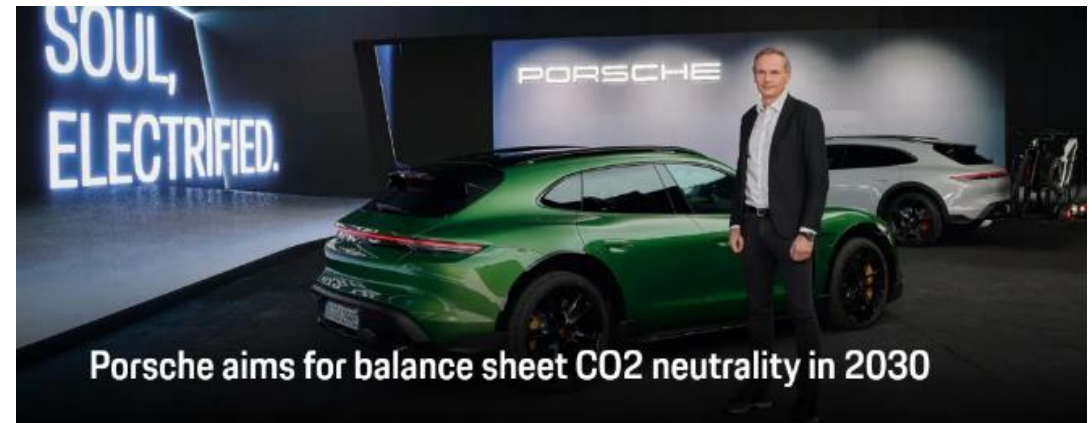
Tesla takes part in deal to take over controversial nickel mine in New Caledonia

Fred Lambert - Mar 5th 2021 6:11 am ET | @fredlambert



COAL | ELECTRIC POWER | METALS — 11 Sep 2020 | 13:18 UTC — New York

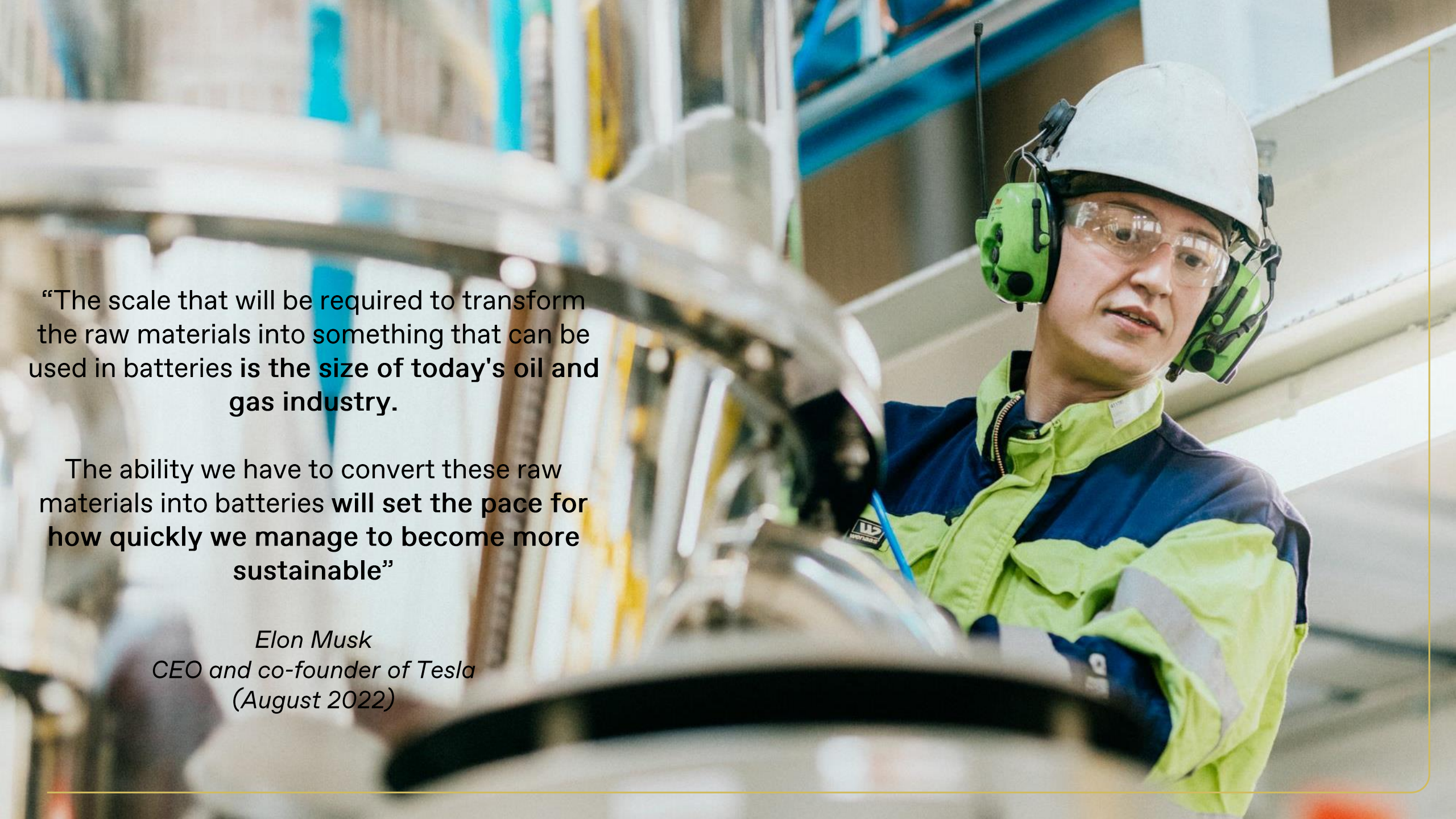
VW aims to increase battery supply chain transparency



Porsche aims for balance sheet CO2 neutrality in 2030

“We don’t want to compensate, we want to avoid. We don’t want to buy CO2 certificates from other companies, we don’t want to cause any emissions ourselves. Wherever energy cannot be saved, we use electricity from renewable sources”

Oliver Blume, chairman of the executive board of Porsche AG

A photograph of Elon Musk in a factory setting. He is wearing a white hard hat, safety glasses, and a high-visibility yellow and blue work jacket. He is looking towards the camera with a slight smile. The background shows industrial machinery and metal structures.

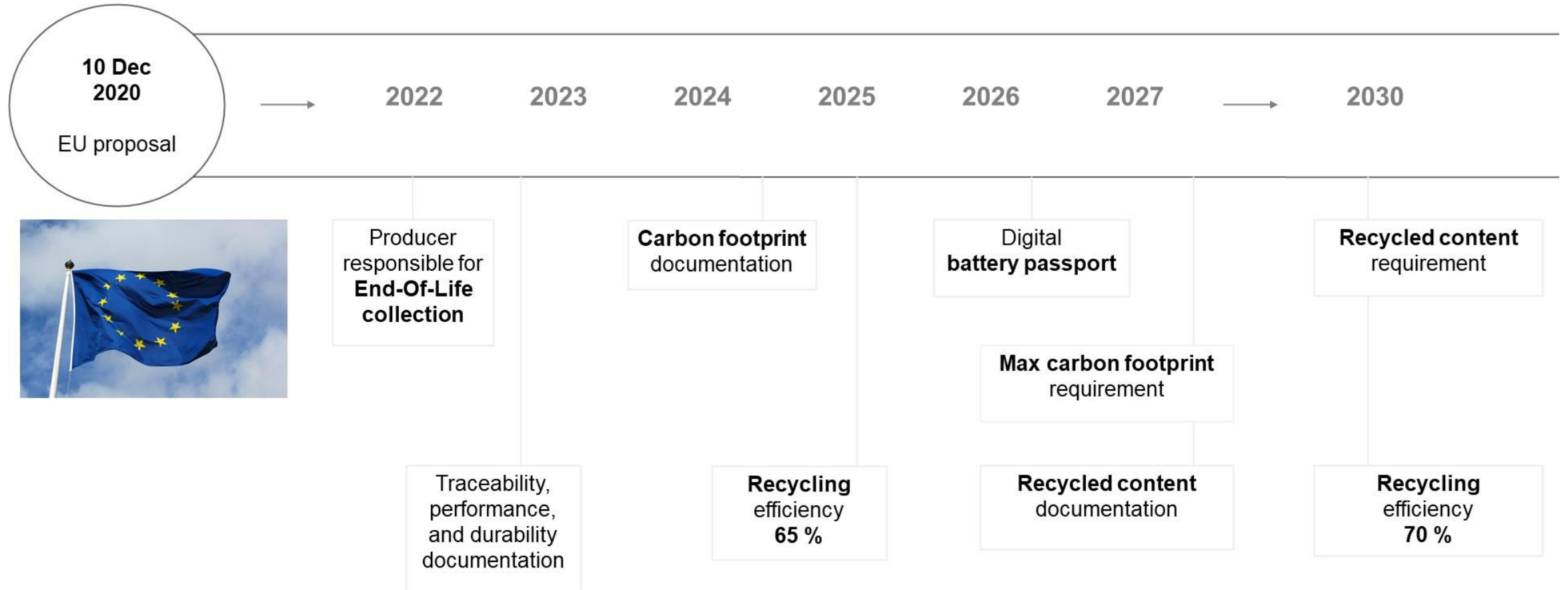
“The scale that will be required to transform the raw materials into something that can be used in batteries is the **size of today's oil and gas industry.**

The ability we have to convert these raw materials into batteries **will set the pace for how quickly we manage to become more sustainable”**

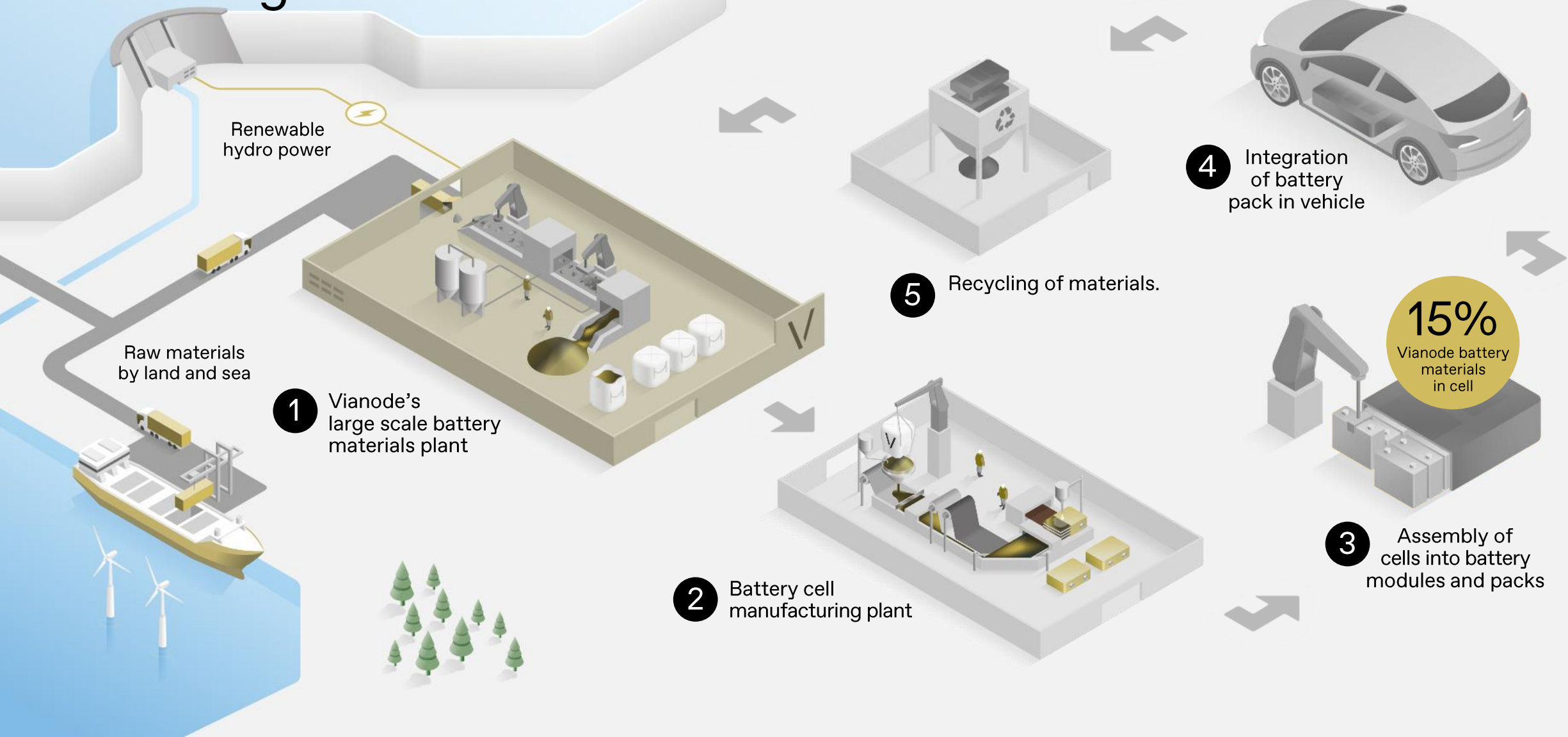
*Elon Musk
CEO and co-founder of Tesla
(August 2022)*

EU proposed regulations on sustainable batteries

Clear push for increased traceability, lower CO2 footprint, more recycling

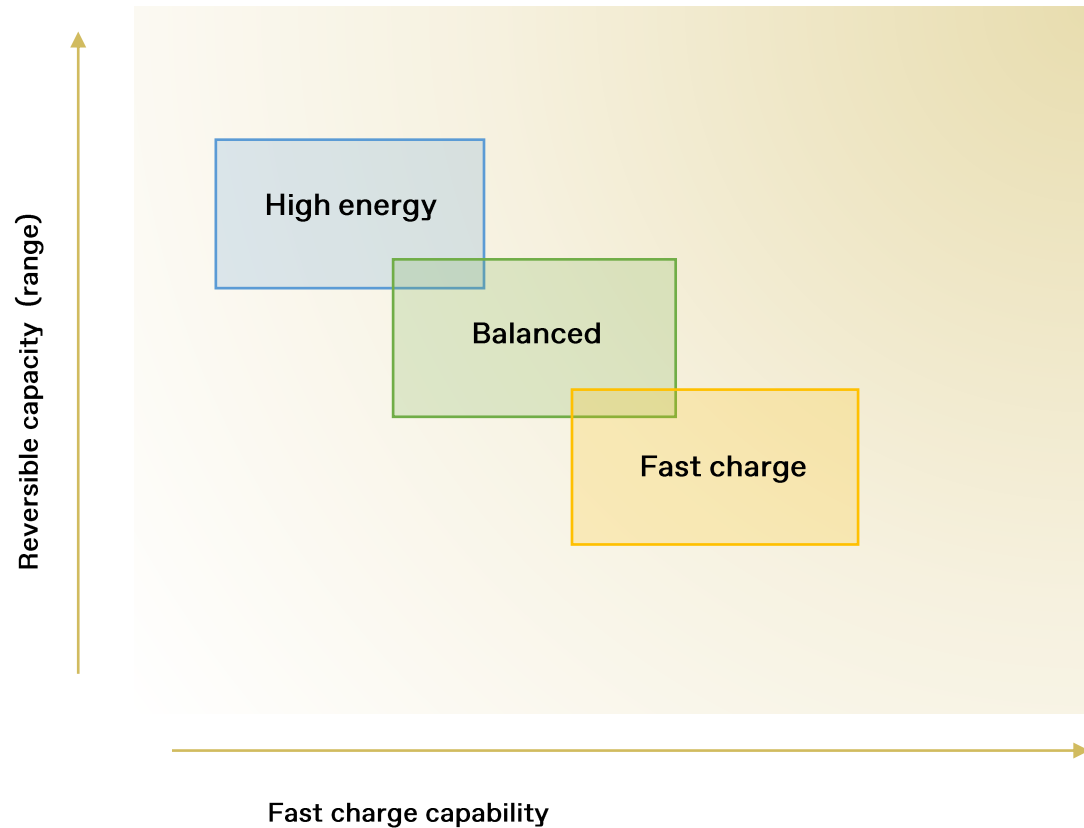


Our materials enable better & greener batteries



Vianode improves properties in batteries...

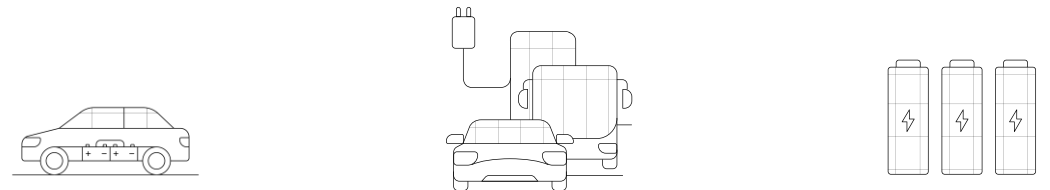
Main product families



Key characteristics

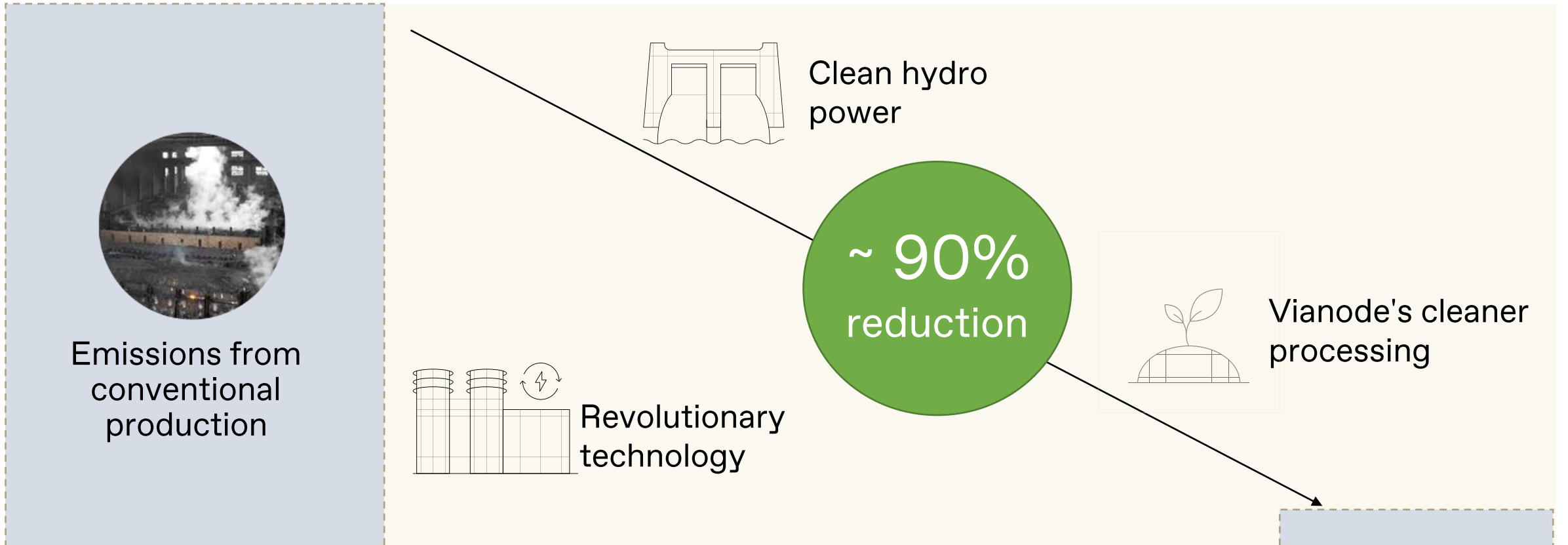
- ✓ Increased range
- ✓ Faster charging
- ✓ Long service life and recyclable
- ✓ Increased safety

Vianode offers a wide range of materials for Li-ion batteries within EV and ESS



...and enables near zero emissions

Emission reduction compared to the production process in today's market ¹



¹ Indirect CO2 emissions based on data from www.nve.no and www.iea.org

Vianode

Significant external interest in the company



June 2022: Elkem CEO in meeting with EU Commission Vice President



May 2022: Pilot plant visit from foreign ministers of Germany and Norway



February 2022: Vianode management in meeting with EU VP Frans Timmermans



November 2021: Pilot plant visit from Norwegian Minister of Trade and Industry

- February 2022: Research project on sustainable batteries receives NOK 100 million grant from Norwegian government
- December 2021: Vianode winner of special award, Norway's smartest industrial company 2021

From pilot production to industrial scale



	Description	Status	Capacity
Pilot	<ul style="list-style-type: none"> All process steps Small size industrial equipment Located at Kristiansand (Norway) 	In operation	5 tonnes per year ✓
Industrial pilot	<ul style="list-style-type: none"> All process steps Industrial environment New R&D center Located at Kristiansand (Norway) 	In operation	Up to 200 tonnes per year ✓
Vianode Site 1 (Phase 1)	<ul style="list-style-type: none"> Full scale production lines Located at Herøya (Norway) 	Operational from late 2023	~2,000 tonnes per year
Vianode Site 1 (Phase 2)	<ul style="list-style-type: none"> Modular design for rapid expansion based upon phase 1 	Operational from late 2025	~60,000 tonnes per year
Vianode site 2			To be decided

Vianode

Our ambitions

Building industrial leadership in advanced battery materials



- Become a leading company in battery materials w/significant market share
- Provide battery materials to 2 million EVs per year by 2030
- Enable a domestic European supply chain with Nordic business standards

Develop advanced battery materials with unique performance characteristics



- Increased range
- Faster charging
- Long service life and recyclable
- Increased safety

Produce the world's most sustainable anode graphite with a minimal carbon footprint



- Reduce emissions with ~90% compared to conventional production
- Industry leader on recycling of materials



Vianode site 1 – with full scale production lines from 2023.
Modular design for rapid expansion towards 2025.



Planning for additional sites by 2030 and beyond

Vianode