

Bosch Rexroth Forum

Unlock the future: Now. Next. Beyond.

5 - 6 December 2023 | Quality Hotel Arlanda XPO, Sweden

A modern industrial building with a white facade and blue accents, including window frames and roof sections. Three white flags with the Stena Recycling logo and name are flying on tall poles in the foreground. A white van with 'URT' and 'www.urt-recycling.com' is parked on the left. Blue recycling bins are also visible. The sky is clear and blue.

STENA RECYCLING GROUP
BATTERY END OF LIFE SERVICES

AGENDA



Company introduction



Transition and legislation



Stena services for end-of-life li-ion batteries

COMPANY PROFILE | Stena Sphere



98.000

TOTAL REVENUE, MSEK



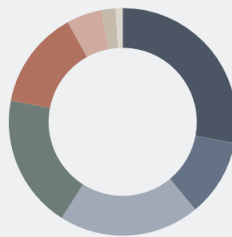
ACTIVITIES ALL
OVER THE WORLD



141

VESSELS INCLUDING
NEWBUILDINGS

19 000 EMPLOYEES



- Ferry operations, 28%
- Stena shipping, 11%
- External shipping, 20%
- Stena Metall, 19%
- Adactum, 14%
- Offshore drilling, 5%
- Real estate, 2%
- Finance, 1%



201

WIND TURBINES



29,700

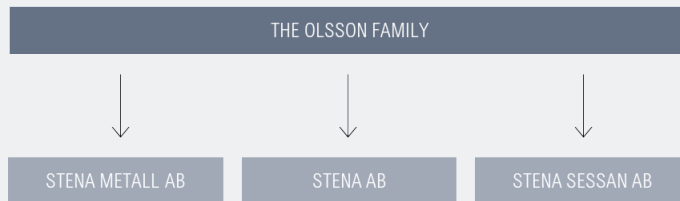
RESIDENTIAL AND
COMMERCIAL UNITS



6,000,000

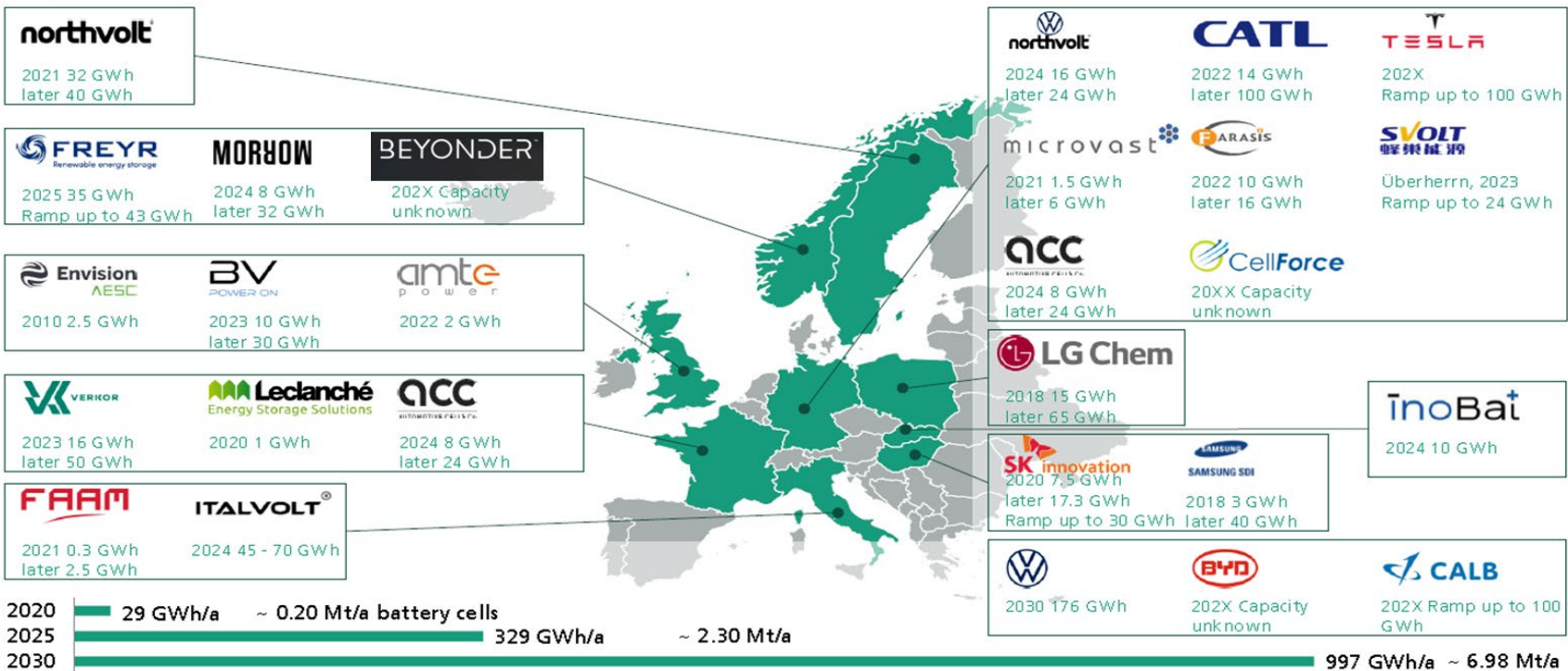
TONNES
WASTE RECYCLED

OWNERSHIP STRUCTURE



August 2021: 1.000 GWh/a announced

with reference to Roland Zenn 2020



Battery production as of October 2022

Published by:
BATTERY-NEWS.DE



NW: 125 GWh + X



2028, Mo i Rana
Up to 83 GWh

MORROW

2024, Agder
Up to 32 GWh
BEYONDER
2024, Rogaland
10 GWh

SE: 110 GWh + X

northvolt



2025, Skelleftea, Gothenburg & Borlänge
110 GWh + X

LV: X GWh

Anodox

Energy Systems
202X, Riga
X GWh

DE: 521,1 GWh + X

CALB

202X, Germany
20 GWh



2020, Willstät
Up to 2,5 GWh
CELLFORCE
2024, Tübingen
0,1 GWh + X

SVOLT

2023, Überherrn
24 GWh
202X, Lauchhammer
16 GWh

NCC

2030, Kaiserslautern
Up to 40 GWh

northvolt

2026, Heide
Up to 60 GWh



2024, Döbeln
Up to 5 GWh
PowerCo
2026, Salzgitter
Up to 40 GWh

CATL

2025, Erfurt
Up to 100 GWh

TESLA

202X, Grünheide
Up to 200 GWh

VARTA

2026, Ellwangen
Up to 3 GWh

EAS

202X, Nordhausen
0,5 GWh



2026, Flintbek
10 GWh

EU: 252 GWh + X

2026, Kaliningrad 12 GWh
InoBat **202X, Europe**, X GWh
PowerCo **2030, Europe** 120 GWh
ProLogium **20XX, Europe** 120 GWh

NL: 1 GWh + X



2023, Europe
1 GWh + X

GB: 145 GWh + X

BRITISHVOLT

2023, Blyth
Up to 40 GWh + X

Envision AESC
2030, Sunderland
Up to 35 GWh



2025, Coventry
Up to 60 GWh

amte
2023, GB
10 GWh + X

FR: 121,5 GWh



2030, Dunkirk
Up to 50 GWh

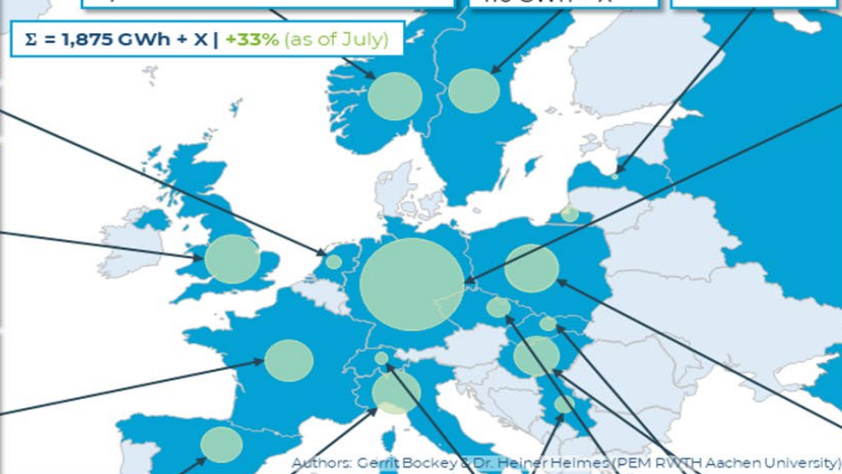
Envision AESC
2029, Douai
Up to 30 GWh

ES: 100 GWh + X

Envision AESC
2025, Naval Moral de la Mata
Up to 30 GWh
BASQUEVOLT
2027, Spain
10 GWh

Phi4tech
2027, Noblejas
20 GWh

$\Sigma = 1,875 \text{ GWh} + X \mid +33\% \text{ (as of July)}$



Authors: Gerrit Bockey & Dr. Helner Helmes (PEM RWTH Aachen University)

PL: 115 GWh



2025, Wroclaw
Up to 115 GWh

IT: 118 GWh

NCC

202X, Termoli
40 GWh

ITALVOLT

2024, Italy
Up to 70 GWh

FRAM

2024, Terevola
Up to 8 GWh

CH: 7,6 GWh



2024, Frauenfeld
7,6 GWh

SB: 16 GWh



2029, Subotica
16 GWh

SK: 10 GWh



2020, Bratislava
10 GWh

CZ: 15 GWh + X



20XX, Horní Suchá
Up to 15 GWh

HU: 217,3 GWh

CATL

2025, Debrecen
Up to 100 GWh

SAMSUNG

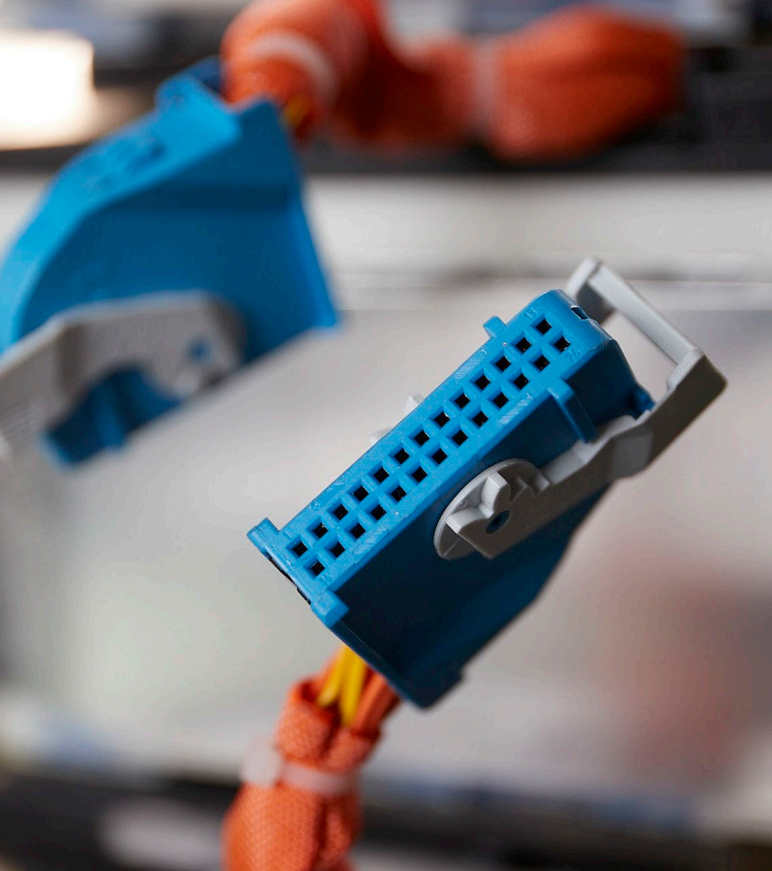
2021, Göd
Up to 40 GWh

EVE

202X, TBD
Up to X GWh



2028, Komárom & Ivanca
Up to 77,3 GWh



LEGISLATIVE AMBITION SIGNATURE MATERIALS



70% 6%



95% 12%

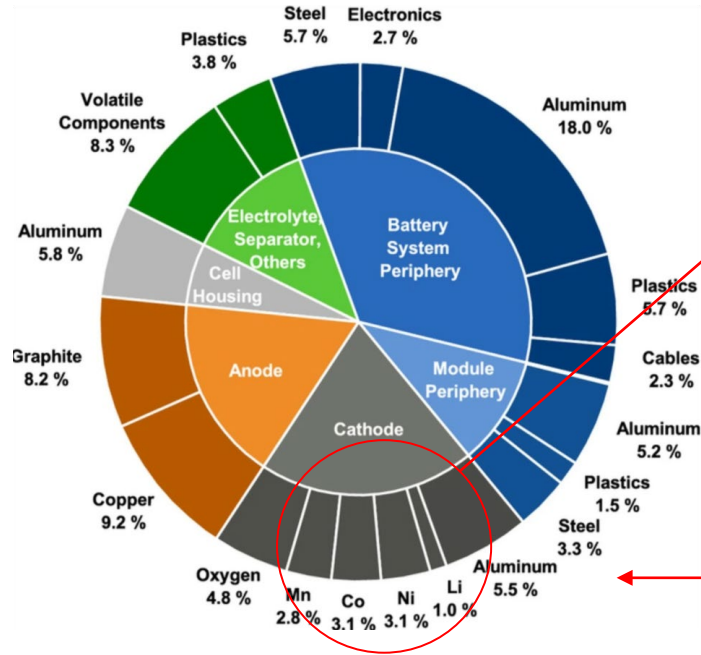


95% 6%



Dynamic, not static legislation

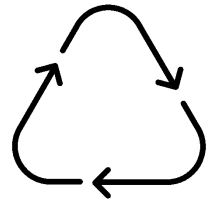
LEGISLATIVE



3 Li 70%
Lithium

27 Co 95%
Cobalt

28 Ni 95%
Nickel



• Demands of recycled content in new batteries

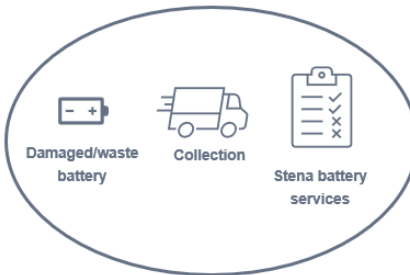
27 Co 16%
28 Ni 6%
3 Li 6%



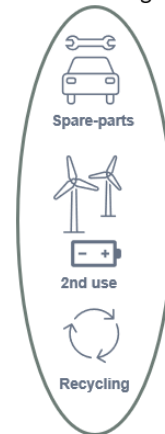


VALUE PROPOSITION

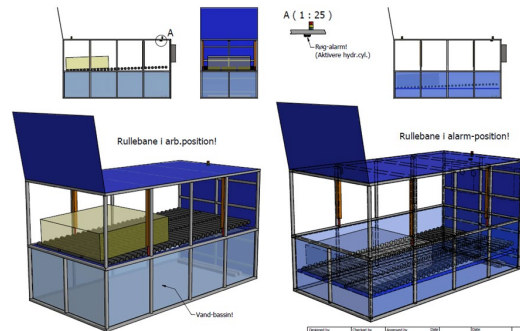
1. Service Provision



2. Product management



BATTERY CENTERS

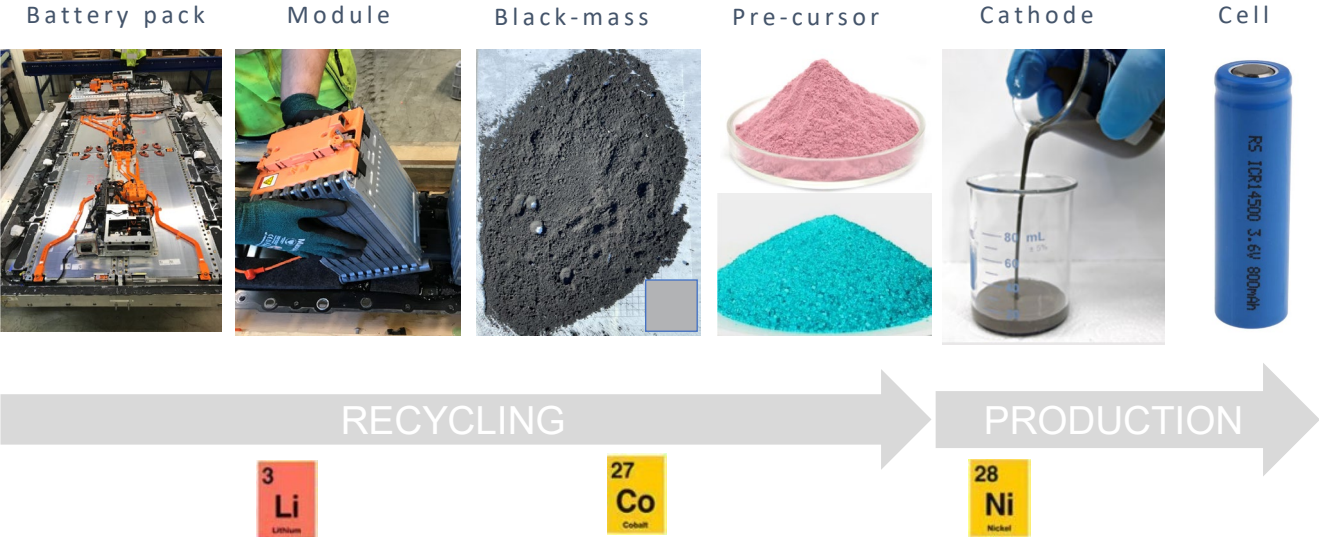


| | | | | |
|-------------|------------|---|-------|------------|
| Prosjekt/ty | Bestilt av | Opprørt av | Skala | Dato |
| 01 | | | | 23.09.2023 |
| | | STENA Recycling A/S Brandkontainer Blatnr. | | |
| | | 1 / 7 | | |

BATTERY RECYCLING CENTER



LITHIUM ION BATTERY RECYCLING VALUE CHAIN



A close-up, low-angle shot of a metal grate, likely from a stove or oven. The grate is composed of a grid of rectangular openings, with a circular opening on the left side. The metal has a dark, slightly worn appearance. The text "IT STARTS HERE." is overlaid in the center of the image in a white, sans-serif font.

IT STARTS HERE.

