Investor Presentation

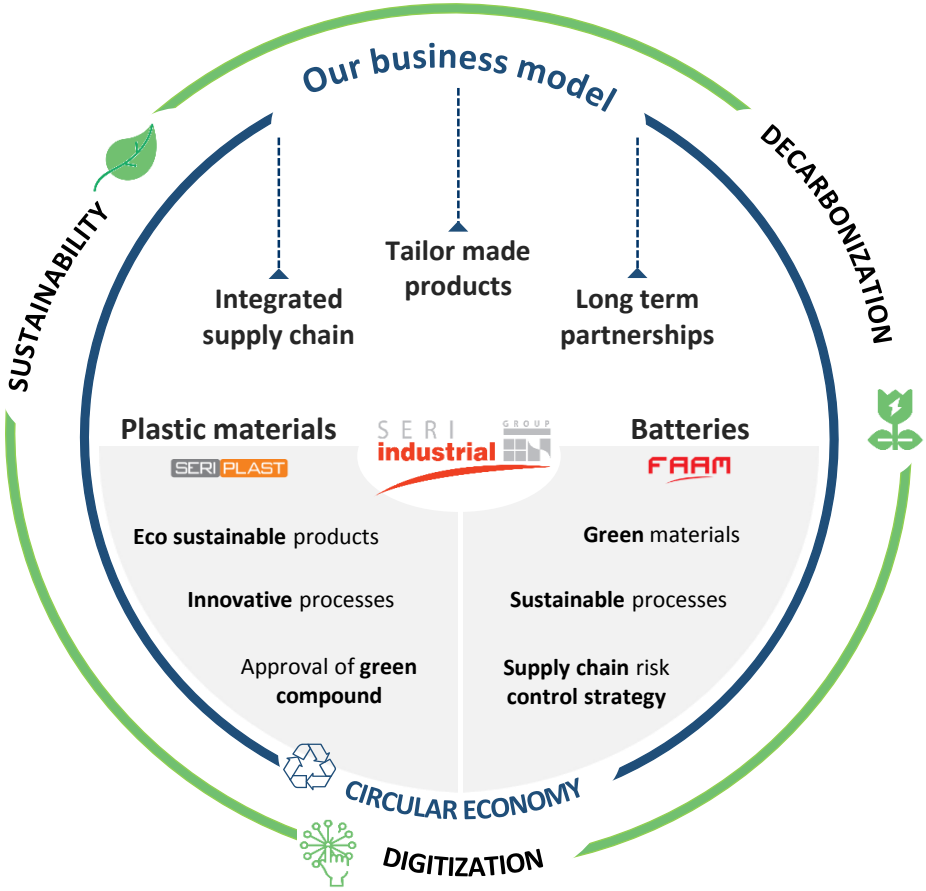
Frankfurt 09 February 2023

SERI industrial GROUP

Mission

Mission

A new way of thinking the economy, with **sustainable processes and products** and supporting the **transition** of the paradigm from a linear model (take, transform and throw) to a full **circular economy model**



Seri Industrial is pursuing strategic goals ***to accelerate the energy and ecological transition*** *in line with the Paris Agreement and recent European and Italian initiatives*

Market forecast

Li-Ion Battery Market

+ 30%

CAGR$_{2022-2030}$

The global Li-ion battery market is **estimated to grow to about 4,700 GWh by 2030**[1]. More specifically, the global market for **ESS applications**, a segment of particular importance to the Group, **grows by +30% CAGR 2022-2030** in terms of volume[2].

Lead acid Battery Market

+2,4%

CAGR$_{2021-2030}$

The global market is estimated to reach **$47 billion by 2030**, for volumes of 494 GWh, of which about **$18 billion** is related to **ESS, UPS, Telecom, Forklift, Other Motive** - the Group's core segments - Power tools, E-Bikes and other applications[3].

Automotive Plastics Market

+11%

CAGR$_{2021-2027}$

The **global plastic compounds market** is estimated to reach $104.09 billion by 2028 [4]. The increase will mainly be driven by the growing use of **PP compounds in the automotive industry**. Specifically, the plastics market in this industry is estimated to grow by 11% CAGR 2021-2027 [5].

Sustainable Packaging Market

+7%

CAGR$_{2021-2028}$

The **global sustainable packaging market** is a fast-growing segment, with **turnover of $451.7 billion by 2028**, up from around $267.5 billion in 2020. The **European market** is expected to be the most dominant with a **turnover growth of $157.6 billion** by 2028 [6].

Plastic Pipes Market

+6,5% CAGR$_{2022-2028}$

The **global plastic pipes market** is estimated to reach $83 billion in 2028 [7].

[1] Battery 2030: Resilient, sustainable, and circular (www.mckinsey.com)
[2] Battery 2030: Resilient, sustainable, and circular
[3] The Rechargeable Battery Market and Main Trends 2020-2030 – Threats, challenges and opportunities", Avicenne Energy, June 2022
[4] *Global Plastic Compounding Market Outlook 2022*, Valuates Reports, January 2022
[5] *Global Automotive Plastics Market Report 2021-2027*, Global Market Insights, February 2022
[6] *Green Packaging Market by Type, Application and Regional Analysis: Global Opportunity Analysis and Industry Forecast, 2021-2028*, Research Dive, April 2022
7 *Global Plastic Pipes Market Growth, Share, Size, Trends and Forecast (2022-2028)*, ReAnIn, June 2022

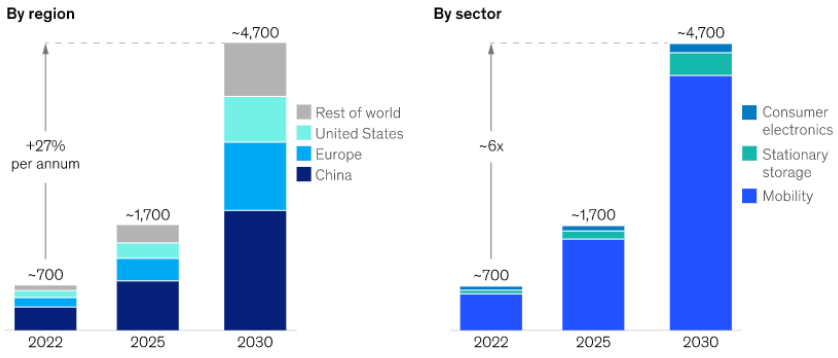
Market forecast – Batteries

Global demand for batteries is increasing, driven largely by the imperative to **reduce climate change** through electrification of mobility and the broader energy transition

Global Li-ion batteries cell demand
GWh, base case

Global demand for Li-ion batteries is expected to increase

from about 700 GWh in 2022 to around 4.7 TWh by 2030



[1]Including passenger cars, commercial vehicles, two-to-three wheelers, off-highway vehicles, and aviation.
Source: McKinsey Battery Insights Demand Model

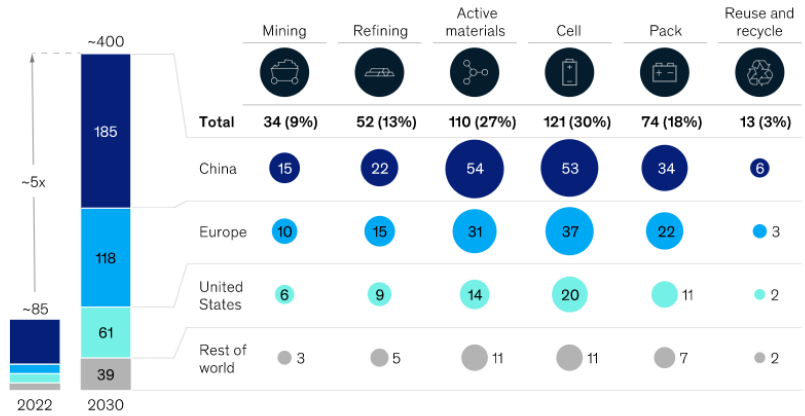
McKinsey & Company

Battery energy storage systems (BESS) will have a CAGR of 30 percent, and the GWh required to power these applications in 2030 will be comparable to the GWh needed for all applications today

Revenues
base case 2030, $ billion

In line with the surging demand for Li-ion batteries across industries, **revenues along the entire value chain will increase**

from about $85 billion in 2022 to over $400 billion in 2030



Source: McKinsey Battery Insights, 2022

McKinsey & Company

Companies in the EU and US are among those that have announced plans for new mining, refining, and cell production projects to help meet demand. Many European and US companies are also exploring new business models for the recycling segment

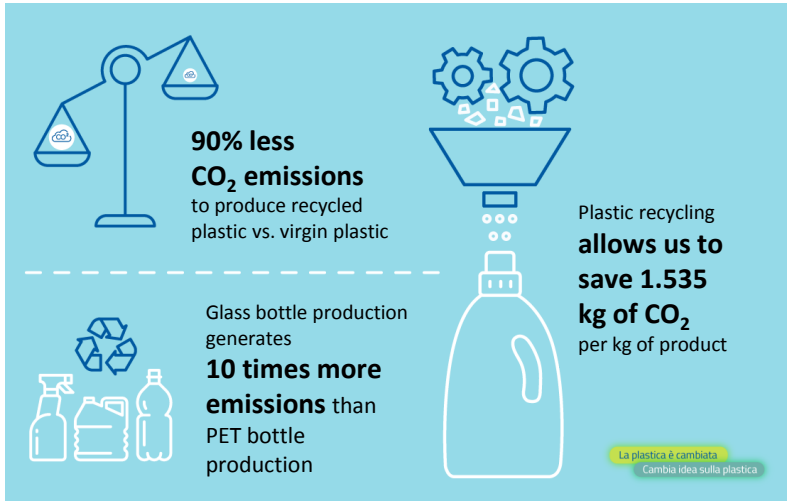
Market forecast – Plastics Consumer demand

Many European initiatives and associations such as the **European Plastics Pact and the Circular Plastic Alliance**, bring together several actors from the industry, academics, and public authorities, to **accelerate the transition towards Circular Economy**. This is made possible by considering the whole plastic value chain, and notably by aiming at boosting the recycled plastic EU market.

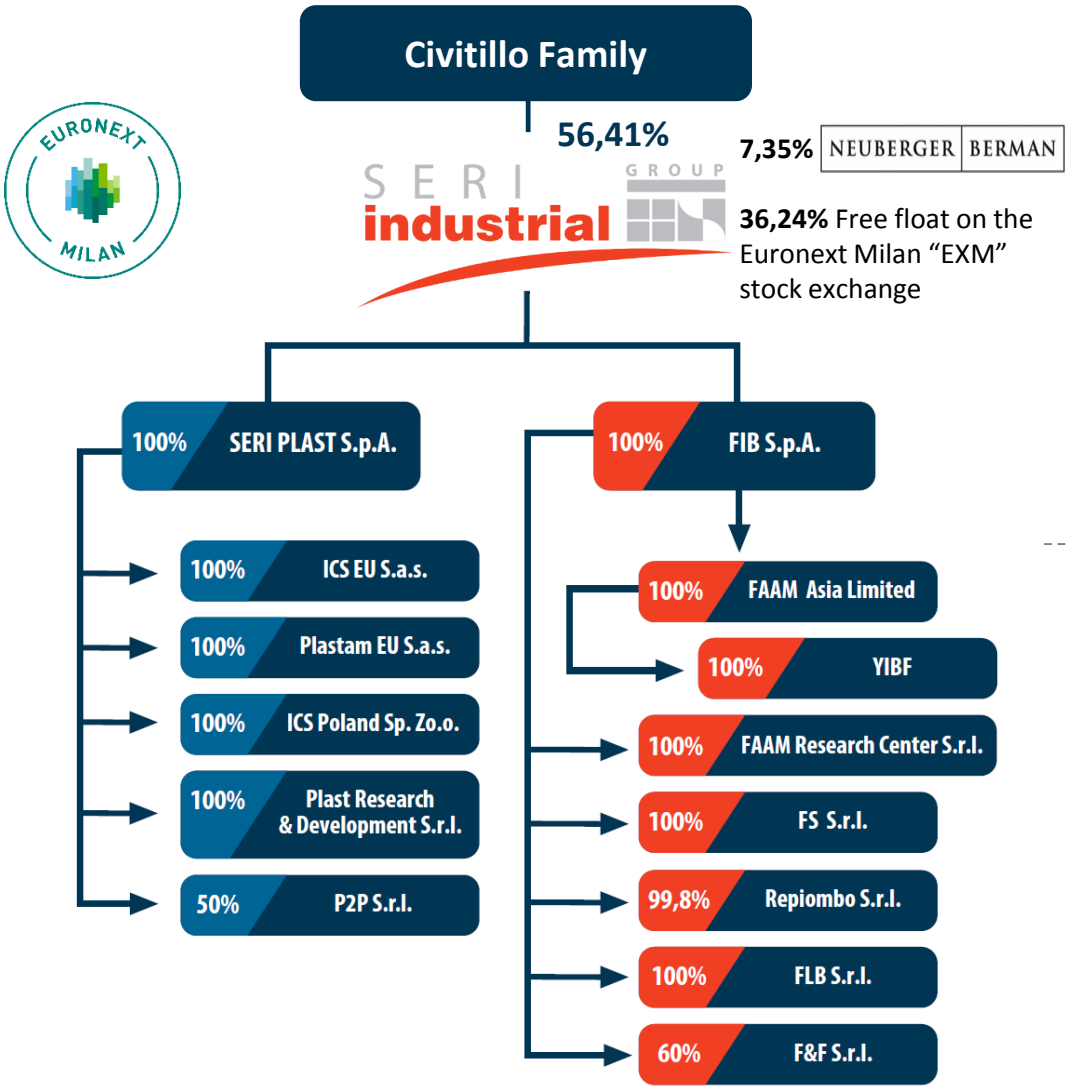
From linear economy model …

- **Resource intake *(Take)***
- **Consumption *(Make)***
- **Disposal *(Dispose)***

… to circular economy



Group Structure



SBU	ACTIVITY
SERI PLAST	**Plastic Materials** ▪ Production of special compounds for the moulding of boxes and lids for batteries ▪ Production of special compounds for the automotive and packaging ▪ Production of special compounds for the moulding and extrusion of pipes and fittings for the thermo-hydro sanitary market
FIB	**Batteries** ▪ Production and recycling of lead-acid and li-ion batteries for motive power, storage, starter and special applications ▪ Design and construction of plants for the recycling of exhausted batteries

Milestones

1999: Seri creation as engineering company

Milestones

2001-2012 — From scratch to Early days

General contractor activities for the construction of plants for the recovery of end-of-life batteries

Start up of PP compounds production for moulding applications (mainly battery boxes and lids)

Acquisition of Plastam and ICS (moulding of plastic components for batteries)

Atlante Private Equity Fund (now managed by NB) invests in Seri

2013-2016 — M&A – fuelled growth

Acquisition of FAAM (lead and li-on battery production)

Acquisition of Exide Technologies in France and Spain (moulding)

Acquisition of Lithops (R&D of li-on cells)

Acquisition of Repiombo (production of lead from end-of-life batteries)

2017-2018 — Teverola 1

Reconversion program of the Teverola complex formerly owned by Whirlpool (Teverola 1 investment)

Listing on the stock exchange

Start up of investments for Teverola 1

2019-2021 — New project

Approval of the IPCEI project by the European Commission (Teverola 2)

Start up of activities in Poland (Boxes) and acquisition of Coes business (Pipes&Fit.)

Start up of production in Teverola 1

JV and Offtake Agreement with Unilever

2022-2026 — … next

Full speed of Teverola 1 in 2022

Start up of investments for Teverola 2 Gigafactory

Start up of investments for P2P project

From 800 to more than 1500 employees

Expected Revenues in 2025-2026 equal to about 2.2 Billion €, including P2P project and Teverola 1&2

Footprint

PRODUCT RANGE & CIRCULAR ECONOMY

Recycling

PLANT DIVISION repiombo

Plants and smelter

Plastic materials

SERI PLAST POLYPROPYLENE COMPOUNDS

Compounds → Moulding of plastic components

Batteries

FAAM

Lead-acid batteries | Lithium batteries

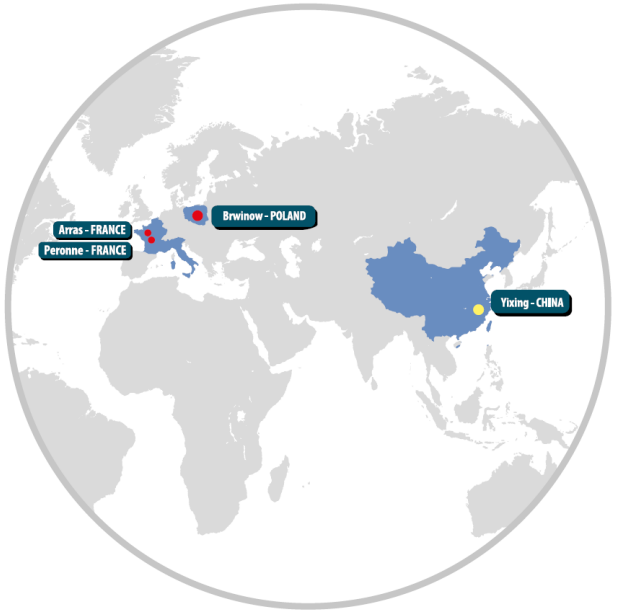
16 Production sites* **800 People****

Plastic Materials

Canonica d'Adda (BG)	73 FTE
Pioltello (MI)	98 FTE
Gubbio (PG)	46 FTE
Alife (CE)	17 FTE
Arras (France)	17 FTE
Peronne (France)	40 FTE
Brwinow (Poland)	25 FTE

Batteries

Monte Sant'Angelo (FG)	75 FTE
Monterubbiano (FM)	63 FTE
Teverola 1 (CE)	112 FTE
Yixing (China)	53 FTE
Calitri (AV)	8 FTE
Alife (CE)	13 FTE



* including 4 after-sales branches

**including FTEs in the HQ (San Potito Sannitico office), Board members of the Group's companies, and external staff

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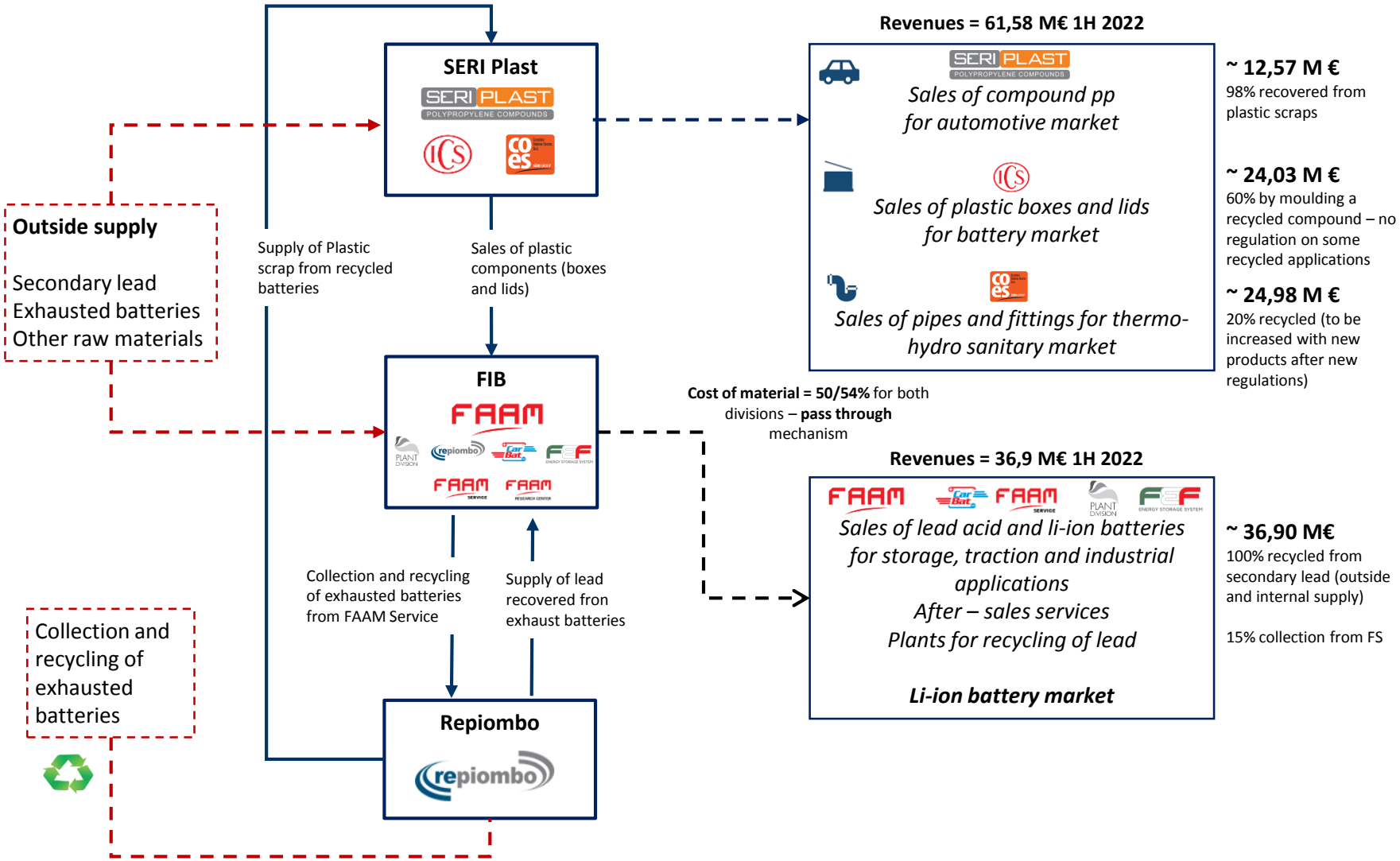
Our effort for the energetic transition

Circular Economy



intercompany *Outside supply* *Sales third parties*

Vertical integration in the Lithium

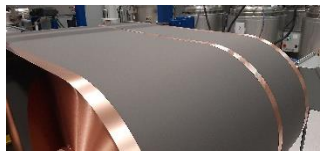
The goal is to replicate the successful vertical integration achieved in the lead-acid/plastic

LITHIUM SEGMENT

ACTIVE MATERIAL PRODUCTION (LFP) → **CELL AND MODULES PRODUCTION** → **PRODUCTION AND SALE OF MODULES, BATTERY PACKS AND INTEGRATED STORAGE SYSTEMS** → **RECYCLING OF END OF LIFE BATTERIES AND RECOVERY OF ACTIVE MATERIAL**

New active materials based on sustainable cathodes and anodes* to produce high performing lithium-ion electrodes

New development for ASSB (with polymeric electrolyte membrane)**



High scale production of cells and modules, with related integration in the battery pack with own BMS (battery management system)

Recovery of metals* through hydrometallurgical process and repurposing of end-of-life batteries**

* Mainly LMFP on cathode and Si/C on anode

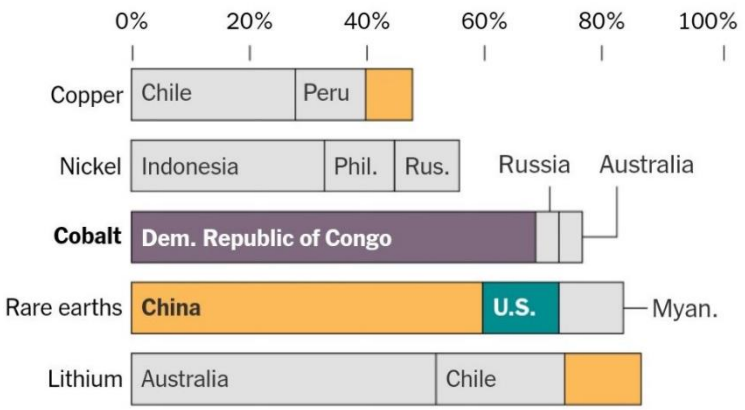
** All solid state batteries

*** Target metals are Co, Ni, Mn, Al, Li, Cu, Fe

Why Cobalt agnostic?

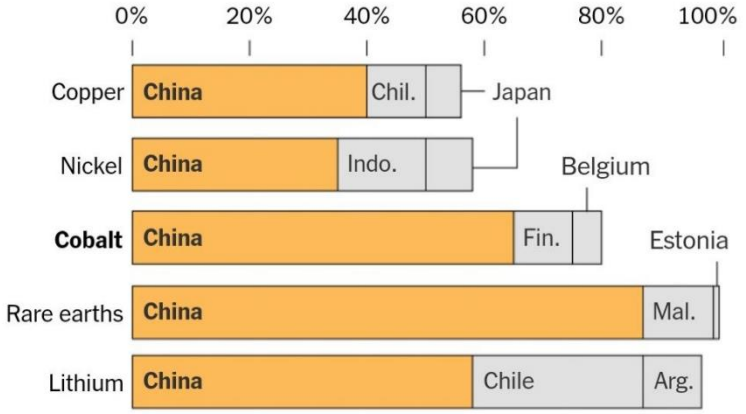
Where Clean Energy Metals are produced*

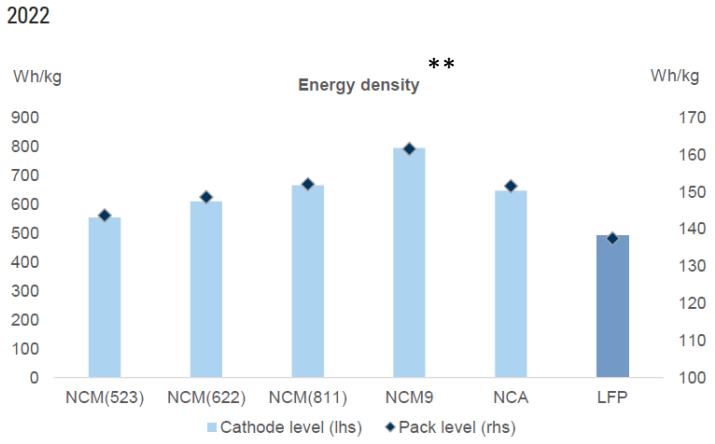
The production of key mineral resources is highly concentrated today. Chart show top three producers.



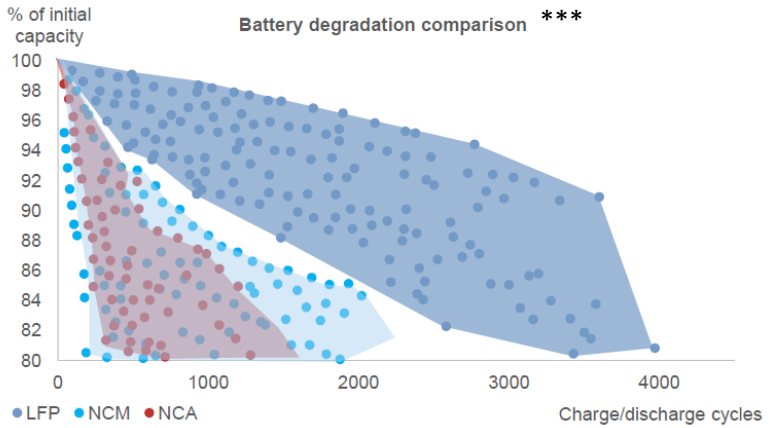
And where they are processed*

China dominates the refining and processing of key metals.





LFP has a lower energy density than NMC...



...but degrades at a much lower speed

*Source: International Agency – By The New York Times

**Source: Company data, Wood Mackenzie, SNE Research, Goldman Sachs Global Investment Research

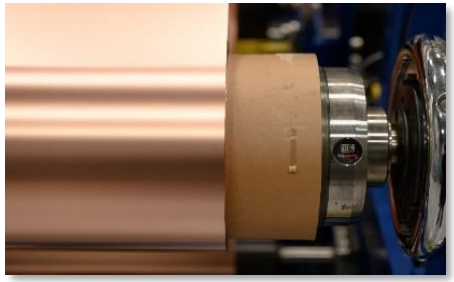
***Source: Pregel et al. (2020)

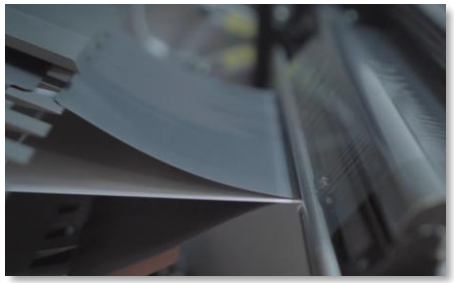
Why Water-based?

Already in **Teverola 1** we have adapted the electrode production to **water-based formulations** – using only water as a main solvent both for the cathode and anode, eliminating the necessity for solvent treatment

Main advantages

- **No NMP emissions**
- **Reduction of energy** required and consequent **CO_2 footprint reduction**
- Increasing of the **safety**
- **Differentiation of the product**
- **Easier recycling**
- **Regulatory anticipation** (what will happen when all the Gigafactories in EU will start mass production with NMP-based li-on cells?)





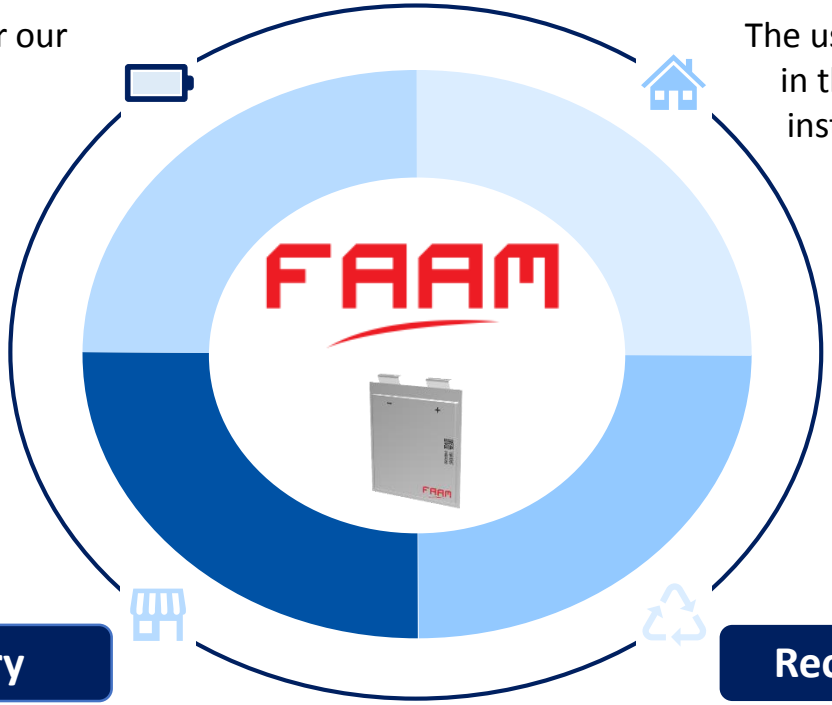
Our 4 pillars vision on lithium batteries

1 **LFP**

The use of LFP as CAM for our soft pouch

2 **Water-based**

The use of water-based solution in the electrode production instead of organic solvents



4 **Customized battery**

An integrated approach with the in-house development of the BMS and converters (for storage solutions)

3 **Recycling at end-of-life**

Recovery of active materials through a clean hydro-process

Lithium cluster and new projects

Teverola Plant – present and future

TEVEROLA 1 - present

Capacity: 330 MWh

Technology: LFP soft pouch (50Ah) – high energy density applications with integrated BMS

70 M€ of realized Capex

Applications: Motive Power, ESS, Public transport, Naval and Defense

265.000 sqm of complex area (82.000 indoor)

TEVEROLA 2 (IPCEI)

Project timesheet: 2021 – 2027

Industrial Deployment: 2021 -2024

R&D: 2021 - 2027

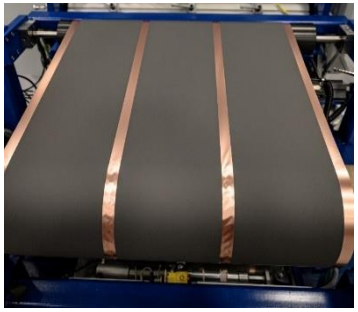
Capacity: 8/8,5 GWh

Technology: Gen 3b and 4 (solid state)

505 M€ of investments (Capex for 358.55 M€ and Opex for 147.29 M€, funded by grants)

50 ton/day of battery treatment in the **recycling pilot line**

Applications: Motive Power, Storage, Automotive, Public Transport, Naval and Defense





Teverola 1 pipeline

Pipeline of customers at full operation

ESS (Energy Storage Systems) – 91%	
Residential	40%
Utilities	28%
Industrial	20%
Grid Support	17%
Other - 9%	
Forklift	51%
Heavy duty	48%
Marine	1%

Application mix can be subject to change

* Defense applications (submarines and tanks not included

IPCEI Project

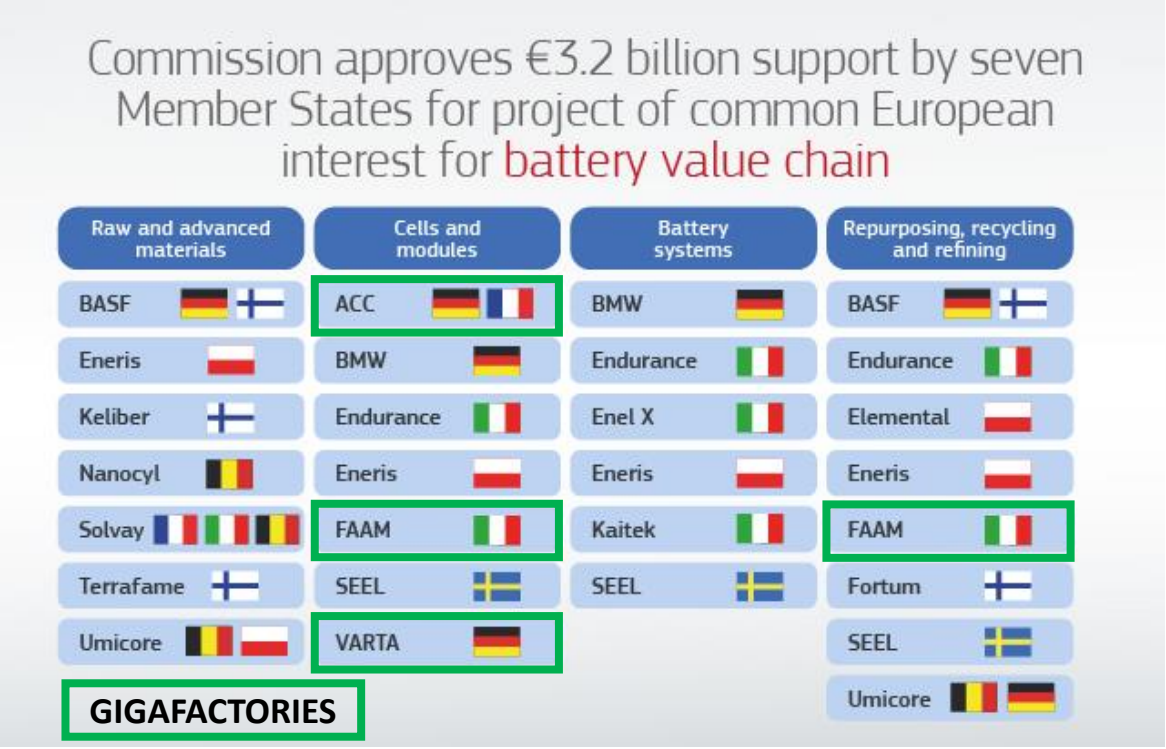
Key Highlights

FAAM project has been approved for the production of **beyond the state-of-the-art li-ion cells** and **recycling of end-life li-ion batteries**

IPCEI BATTERIES

FAAM

European Commission



- Member States: Belgium, Finland, France, Germany, Italy, Poland and Sweden
- Integrated project comprising 4 workstreams, covering the battery value chain
- 17 undertakings (some active in more than one Member State) will receive State aid
- Cumulated maximum State aid: EUR 3.2 billion

A EUROPEAN BATTERY VALUE CHAIN

More info at: www.ipcei-batteries.eu

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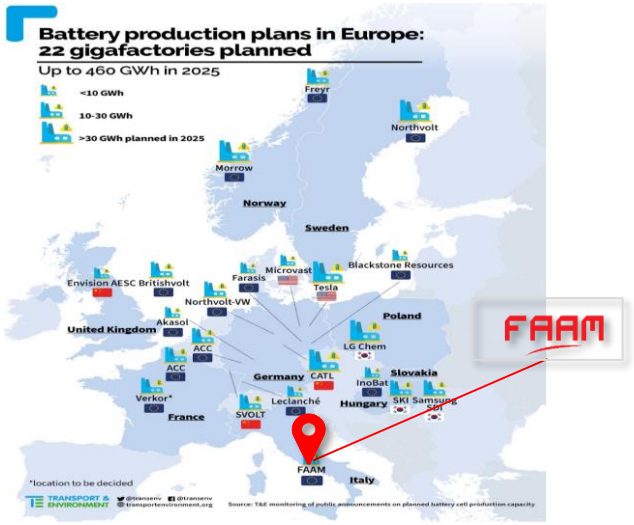
Teverola 2 Project

IMPORTANT PROJECTS OF COMMON EUROPEAN INTEREST

December 2019	**Authorization Decision** from the European Commission
April 2021	**Inter-ministerial Decree** defining the general criteria for the operation of the IPCEI Fund
July 2021	Activation Decree enabling the ICPEI Fund in support of the **IPCEI Batteries 1**
October 2021	Submission of the **application for the grant**
March 2022	**Concession decree** in favour of FIB amounting **€ 417,046,521.84**



A Mediterranean Gigafactory

FAAM

265.000 sqm total (82.000 sqm indoor)

Teverola will become the **first technological cluster** to produce lithium batteries in Italy and among the first in Europe, with an **estimated production of about 8/8,5 Gwh/year**

Building ready – no issue in the construction

Next steps

- Disbursement of grants to be made within the first semester of each year – first request may be arranged as a 20% advancement of the total amounts
- Activation of a specific revolving credit facility to be opened by a pool of banks – to advance the amounts of the grant
- Signing of the contract with the suppliers of equipment & machinery – talks are currently underway

Innovation on plastic materials

JV and Off-take agreement with Unilever (1/2)

PACKAGING2POLYMER
SUSTAINABLE PLASTIC COMPANY

Timeline P2P

- **March 2021** — Signing of a **joint venture agreement** with Unilever Europe B.V.
- **May 2021** — Establishment of a **50/50 Newco** between Seri Plast and Unilever, called **P2P** S.r.l.
- **October 2021** — P2P has signed a **contract for the supply of the Site's products** from P2P to Unilever
- **June 2022** — Funding application submitted to **Invitalia**
- **End of 2022** — Completion of the activities for the removal of the old plants
- **H2 2024*** — Start **mass production** of recycled plastic raw materials

Off-take Agreement

Term of the Agreement 5 years, renewable for a further 5 years, making a total of **10 years**

Unilever's commitment to purchase at least **65 k tons/year** of recycled plastic raw materials

Unilever expected revenues **€ 110 mln/year****, € 1,1 billion in 10 years

About € 109 million expected CAPEX between production investment and R&D investment to be funded by subsidized loan of euro 43,7 million and non repayable grants for euro 38,4 million

* The time period may be extended by a further 6 months.
**Based on actual prices of raw materials and on the pricing formula.

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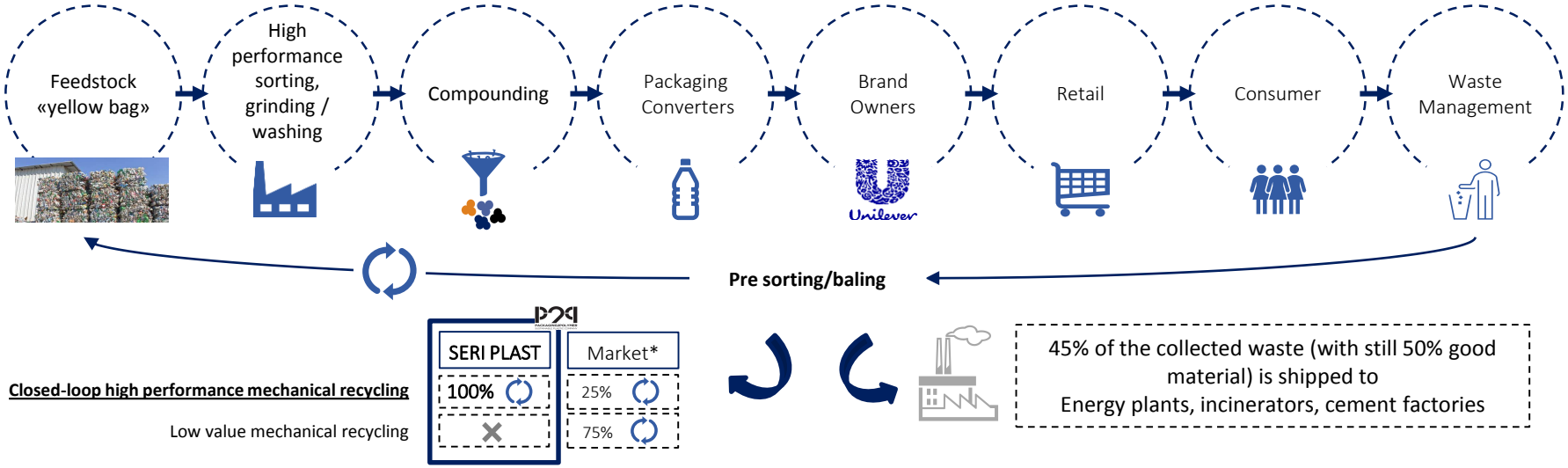
JV and Off-take agreement with Unilever (2/2)

PACKAGING2POLYMER
SUSTAINABLE PLASTIC COMPANY

POZZILLI PROJECT



Mechanical recycling 130k ton/y capacity

- Advanced presorting process.
- Grinding/washing/decontamination (food grade targeting on PET/HDPE/PP) – 4 lines
- Compounding/colouring – 5 lines
- Odour removal – 2 lines

Products

- rPP, rHDPE, rLDPE, rLLDPE, rPET
- Food Grade rPET

Technologies ready to produce also HDPE and PP food grades - when EU regulations will be ready to accept polymers from mechanical recycling into food packaging.

*Bain & Company, 2019

% of the recycling production

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Seri Plast & P2P Procurement strategy

Source of plastic waste

PACKAGING2POLYMER
SUSTAINABLE PLASTIC COMPANY

180k ton
of plastic waste to be treated

Feedstock
(input)

Mixed rigid plastic providers

Mixed rigid plastics from MSW (Municipal Solid Waste)
Here there is the main innovation

Consortiums

Pre-sorted plastic packaging waste
Italian and European collectors

CORPet BOTTLE TO BOTTLE

CORE PLA

«Own» collection infrastructure

Unilever

As a next step, in line with the business model in the battery business, it could be an opportunity exploiting Unilever channels

*And other consortiums

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The Business Plan

SERI Industrial has approved an update of the Consolidated 2022-2026 Business Plan on 22 June 2022

Key Highlights of the Business plan

- **The business AS IS** (lead-acid batteries and plastic material) is included in the growth with a forecast based on commercial contracts and relationships with customers
- **Teverola 1** – the forecasts are confirming that the global lithium battery demand is linked to the installed (or announced) production capacity with a production deficit in Europe
- **Teverola 1** – battery assembly activities have started; **first purchase orders** filled starting, in a market environment, global and FIB's reference always very positive.

IPCEI Project – Teverola 2

- **Production capacity of about 8GWh/year** - at fully operations
- The average selling price of the battery pack is € 200/kWh, with an expected turnover at fully operation of about euro 1,5/1,6 billions
- Mass production at full capacity is expected in 2025-2026

Unilever Agreement – Key ratios

- Maximum production capacity of 130k ton/year with Unilever already committed to but the 50%
- Minimum guaranteed turnover of approximately Euro **110 million per year** (based on current raw material trend) only through the off taker signed with Unilever (for the 50% of production). Sales to be started in 2025 at full operations

Appendix – Business units

SERI PLAST
POLYPROPYLENE COMPOUNDS
PLAST RESEARCH & DEVELOPMENT S.R.L.

ICS

coes Gresintex Dalmine Resine Sirci SERI GROUP

SERI PLAST

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Towards the transition

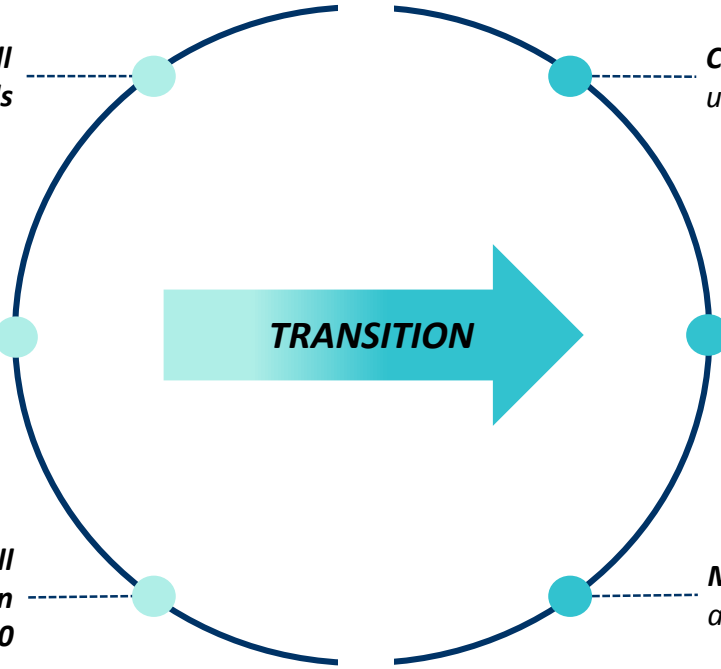
DID YOU KNOW IT?

WHAT ARE THE REACTIONS?

By 2025 solid waste generation will increase by 70% compared to 2010 levels

32% of all plastic packaging made ends up in nature every year

Continuing current practices there will be more plastic than fish in the ocean by 2050



***Consumer demand** for responsible plastic use options*

***Legislative** push for new plastic waste strategies*

***Market** pull from large brand owners and beverage companies*

Source: Wrap, Ellen McArthur Foundation, World Bank

A growing regulatory pressure

		Description	Target & measures
2018 CIRCULAR ECONOMY PACKAGE	**Waste Framework Directive**	▪ Rules on how waste should be managed in the EU. It provides general principles for doing so, such as the Waste Hierarchy, Polluter Pays Principle and Extended Producer Responsibility.	▪ A common EU target for recycling 60% of municipal waste by 2030 ▪ A common EU target for recycling 70% of all packaging waste by 2030 ▪ A common EU target for recycling 55% of all plastics by 2030 ▪ A binding landfill target to reduce landfill to maximum of 10% of municipal waste by 2030 ▪ Minimum requirements are established for extended producer responsibility schemes ▪ Simplified and improved definitions and harmonized calculation methods for recycling rates ▪ Concrete measures to promote reuse and stimulate industrial symbiosis ▪ Economic incentives for producers to put greener products on the market and support recovery and recycling schemes
	Packaging and Packaging Waste Directive	▪ Rules on the production, marketing, use, recycling and refilling of containers of liquids for human consumption and on the disposal of used containers; ▪ 2015 revision includes lightweight plastic carrier bags.	
	Waste Electrical and Electronic Equipment (WEEE) Directive	▪ Collection, recycling and recovery targets for all types of electrical goods ▪ 10 categories: Large household appliances, Small household appliances, IT and telco equipment, Consumer equipment, Lighting equipment, Electrical and electronic tools, Toys, Leisure and sports equipment, Medical devices, Monitoring and control instruments, Automatic dispensers	
	Landfill Directive	▪ The objective of the Directive is to prevent or reduce as far as possible negative effects on the environment from the landfilling of waste ▪ In particular: impact on surface water, groundwater, soil, air, and on human health by introducing stringent technical requirements for waste and landfills.	
	End of Life Vehicle (ELV) Directive	▪ Aims at reduction of waste arising from end-of-life vehicles ▪ The scope of the directive is limited to passenger cars and light commercial vehicles	

Source: European Commission

Recovery of plastic scrap and production of compounds

Footprint & Operations

SERI PLAST
POLYPROPYLENE COMPOUNDS

Alife, Caserta, Italy

Alife: 6.000 sm (indoor);
20.000 sm (outdoor)

Employees: 17 FTE

Background

In the Alife plant, Seri Plast is producing special plastic compounds from primary polymers and from the recycling of scraps (mainly exhausted batteries but also post consumer packaing at end of life). Compounds are mainly produced for battery manufacturers (Serilene product) and for Automotive (Serifill). New applications are going to be introduced for packaging applications (also through P2P initiative). The company has developed various innovative "recipes" homologated by main carmakers

Market: EMEA – end market on worldwide base

Main Clients: Tier-1 suppliers in automotive industry; brand owners

Main drivers

- Development of solutions for the recovery of mixed plastics from end-of-life packaging
- Consolidation in the Automotive market through new homologations of "green compounds"
- Organo Sheet R&D activity

Circular economy

The raw material comes, for the most part, from the waste plastic recovered from exhausted batteries (partially from virgin material).

After cleaning the pollutants and grinding the waste material, it is treated with additives and extruded.

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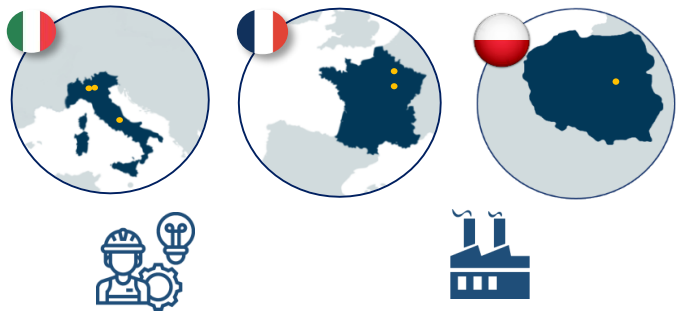
Moulding of plastic material

Footprint & Operations



Canonica d'Adda: 24.000 sm (indoor), 41.000 sm (outdoor) **Employees** : 73 FTE

Peronne: 9.000 sm (indoor), 60.000 sm (outdoor) **Employees**: 40 FTE

Arras: 15.000 sm (indoor), 60.000 sm (outdoor) **Employees** : 17 FTE

Brwinow: 6.000 sm; **Employees**: 25 FTE

Piolltello: 22.000 sm (indoor), 80.000 sm (outdoor) **Employees:** 98 FTE

Gubbio: 19.000 sm (indoor), 50.000 sm (outdoor) **Employees**: 46 FTE

Background

Through **ICS and COES/GDS brands,** the company is a leader in the **molding of plastic material market**.

The company operates through two business units:

Plastic components (boxes, lids and accessories) for automotive, industrial and storage battery manufacturers;

Plastic pipes and fittings for thermo-sanitary market (Naval, infrastructure and building applications).

Market: Global

Main clients:

- **Battery market**: Exide Technologies, other international customers, FIB as intercompany
- **Pipes and fittings:** retail market at national and international level, Fincantieri for shipping applications

Key highlights

More than 1000 molds owned by the Company and homologated by final customers

COES product portfolio is highly integrated

Synergies in using the compound based on recycled raw materials

Plants located close to the main clients

Main drivers

- Increase the boxes and lids market share in Central/Eastern Europe thanks to the new plant in Poland – new plants in Europe coming soon
- Increase of recycled plastics applications in both business units
- Ecobonus in Italy as a new opportunity for Pipes and Fittings sector

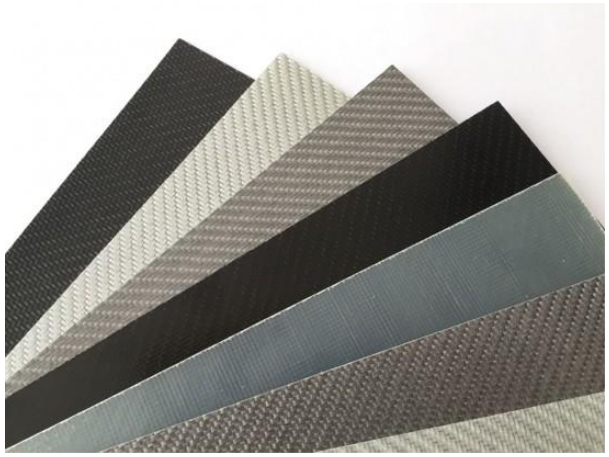
Fabrics and Organo Sheet production

Tools and materials

Canonica Plant: fiber glass/kevlar/carbon fabrics manufacturing

Teverola Plant: organo sheet line – laminated sheets with continuous glass, carbon, aramid or hybrid fibers

3 FTE

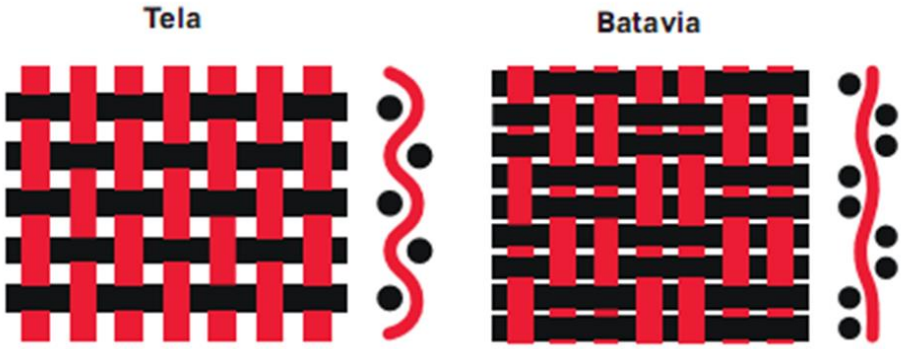


Product

The organo-sheet product is an innovative solution for the **Metal Replacement**

- Semi-finished sheets, the material is impregnated and consolidated
- Semifinished sheets – can be thermoformed and over injected
- Thickness of the sheet from 0,5 mm to 3 mm
- Fabrics with fiber orientation 0/90 degrees, bioriented fabrics
- Fabrics or strip with 0-degree fiber orientation, one-way
- Isotropic non-woven fabrics made from randomly arranged fibers called mat

Most used fabrics



Media Coverage

teleborsa

Cerca notizie, titoli o ISIN

Azioni Milano A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

NOTIZIE | QUOTAZIONI | RUBRICHE | AGENDA | VIDEO | ANALISI TECNICA | STRU

Home Page / Notizie / Seri Industrial, controllata P2P sigla contratto con Unilever

Seri Industrial, controllata P2P sigla contratto con Unilever

Durata 5 anni, rinnovabile per ulteriori 5 anni

commenta altre news

Finanza - 29 ottobre 2021 - 16.43

(Teleborsa) - P2P, controllata di **Seri Industrial**, ha sottoscritto con **Unilever** un **Framework Offtake Agreement**, in esecuzione di quanto convenuto con la sottoscrizione della Joint Venture del 22 marzo 2021, che **prevede**: l'impegno di Unilever ad acquistare almeno 65 mila tonnellate/anno di materie prime plastiche riciclate (i "Prodotti") ad un prezzo già convenuto, con un pricing formula indicizzato all'andamento delle materie prime; tale impegno minimo garantisce la saturazione del 50% della capacità produttiva massima teorica che si intende installare, pari a 130 mila tonnellate/anno; l'avvio della produzione di massa entro 24 mesi, estendibile di ulteriori 6 mesi, su richiesta della Società, dalla data trasferimento di proprietà, in favore della Società e senza alcun onere, dello stabilimento di Pozzilli (il "Sito"); una durata dell'**Accordo di 5 anni, a partire dall'avvio della produzione di massa, rinnovabile per ulteriori 5 anni**, e dunque per complessivi 10 anni, se saranno soddisfatte le seguenti condizioni: (i) esecuzione del piano di reimpiego del personale di Unilever attualmente operativo nel Sito; (ii) conferma della capacità della Società di fornire i Prodotti in termini qualitativi e quantitativi; (iii) mantenimento di un pricing formula indicizzato all'andamento delle

Unilever Global Change location | Search site

Our company | News | Brands | Planet & Society | Suppliers | Careers | Investors

Home ▸ All news stories ▸ Building a new future for the factory floor

Building a new future for the factory floor

Published: 14/04/2021 Average read time: 8 minutes

In 2020, our homecare factory in Pozzilli, Italy was set for closure. Now it is destined for sustainable success as a state-of-the-art plastic recycling centre based on a zero-waste, no redundancies ambition.

Polimerica

Attualità e notizie dal mondo della plastica

HOT TOPIC | Speciale K2022 | direttiva imballaggi | Ecomondo | CCNL gomma plastica | Piovan | plastics tax | Benvic | TMP | PEF

HOME | FINANZA E MERCATI | TECNOLOGIE | MATERIE PRIME | AMBIENTE | RICERCA E FORMAZIONE | APPUNTAMENTI | VIDEO | BLOG

In questa sezione: Riciclo • Bioplastiche • Legislazione

In Prima Pagina

Nuovo impianto ACEA per la selezione di rifiuti plastici | CSPC sceglie nuovamente Spherizone | I costruttori di macchine si rivolgono a Urso

Chiesto finanziamento per la riconversione di Pozzilli

Procede il progetto per la creazione nel sito di Unilever di un impianto per il riciclo di plastiche miste provenienti dalla raccolta differenziata di imballaggi post-consumo.

28 giugno 2022 08:31

Seri Industrial ha aggiornato il **piano industriale 2022-2026**, che contempla anche la riconversione del sito **Unilever** di **Pozzilli** (IS) al **riciclo** di materie **plastiche eterogenee** da imballaggi post-consumo, in base a un

The project is fully in line with the continous progress to a Circular Economy model in line with the european Green deal and with the goal of reducing products' carbon footprint

See also: www.unilever.com

SERI industrial GROUP

What others brand owner doing

Other potential costumers

LUSH Coca-Cola STELLANTIS

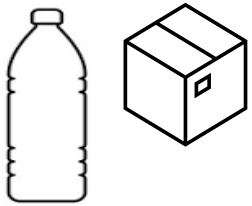
Unilever

By 2025:

- ***100% re-usable/recyclable/compostable*** *plastics*
- ***Halving*** *amount of* ***used virgin*** *plastics*
- *Increase amount of* ***post-consumer*** *recycled* ***plastics*** *to 25% of total*

100 %

recovered



Henkel

Henkel Tweet: *Did you know that using #RecycledPlastic emits 90% less #CO2 in comparison to the production of new plastic* ***?*** *Facing the challenge of #PlasticWaste, we are committed to use plastic responsibly within a #CircularEconomy!* ♻

Nestlé

Nestlè Tweet*: To reduce single-use packaging, we're offering cat litter in a refillable jug!* ♻ *Tidy Cats LightWeight Free&Clean cat litter is available via @LoopStore_US. When finished with the litter, packaging is collected, cleaned and reused.*

S.PELLEGRINO

San Pellegrino web site: *All packaging materials used are 100% recyclable. The Group is increasing the use of recycled plastic in its bottles with the aim of using, on average, at least 50% recycled PET by 2025. The company has been working on lightening packaging for some time and was the first in Italy to make bottles from 100% recycled plastic. For 2030, it has set itself an even more ambitious goal: to collect as many bottles as it produces.*

SUSTAINABLE DEVELOPMENT GOALS

PEPSICO

PepsiCo Tweet*: We're accelerating our efforts on sustainable packaging to build a world where plastic never becomes waste. Today, we announced that we'll be using 100% rPET in our beverage bottles - by the end of 2021 in Germany & in Great Britain by the end of 2022*

P&G Procter & Gamble

PROCTER&GAMBLE web site - D.Taylor - Executive Chairman of the Board: *We've asked ourselves, 'what if our brands could have a positive impact on the environment by promoting responsible supply and consumption – reducing, renewing and recycling water, energy and waste just by consuming our products?' It would be good for consumers, good for the planet and it would drive growth for P&G.".*

Ferrarelle

Ferrarelle web site*: #sostenibilidavvero*
Our bottles contain plastic that is entirely recycled by us. We take 20k tonnes of plastic out of the environment every year, far more than we produce. We are the only ones to have an entire range made from 100% recycled PET plastic. Every bottle you find in the supermarket has AT LEAST 50% R-PET.

H&M

H&M*: H&M Group signatory of the New Plastics Economy Global Commitment. "Our business to become 100% circular and renewable".*

SERI industrial GROUP

Actors

P2P

SERI INDUSTRIAL S.P.A.

Company **listed on the EXM market of Borsa Italiana** (ISIN: SERI IM)

Seri Industrial's **mission is to accelerate the energy transition to sustainability and decarbonisation**

SERI PLAST S.P.A.

Company, owned 100% by Seri Industrial S.p.A., **active in the processing and production of plastic materials** for the (i) battery market, (ii) automotive and (iii) sanitary hydrothermal, civil and naval shipbuilding

UNILEVER

International company operating in the Food & Refreshment, Home Care, Beauty & Personal Care markets **reaching over 190 countries** with more than 400 brands. With more than 149,000 employees worldwide, driven by a **global purpose: to make sustainability a habit**.

MANAGEMENT TEAM

VITTORIO CIVITILLO
CEO in Seri Industrial S.p.A.
CEO in Seri Plast S.p.A.

ANDREA CIVITILLO
Executive director in Seri Industrial S.p.A.
CEO in Seri Plast S.p.A.

PAOLO DI GIOVANNI
Managing Director in Unilever Manufacturing Italy

FAAM

PLANT DIVISION

repiombo

FAAM SERVICE

FAAM RESEARCH CENTER

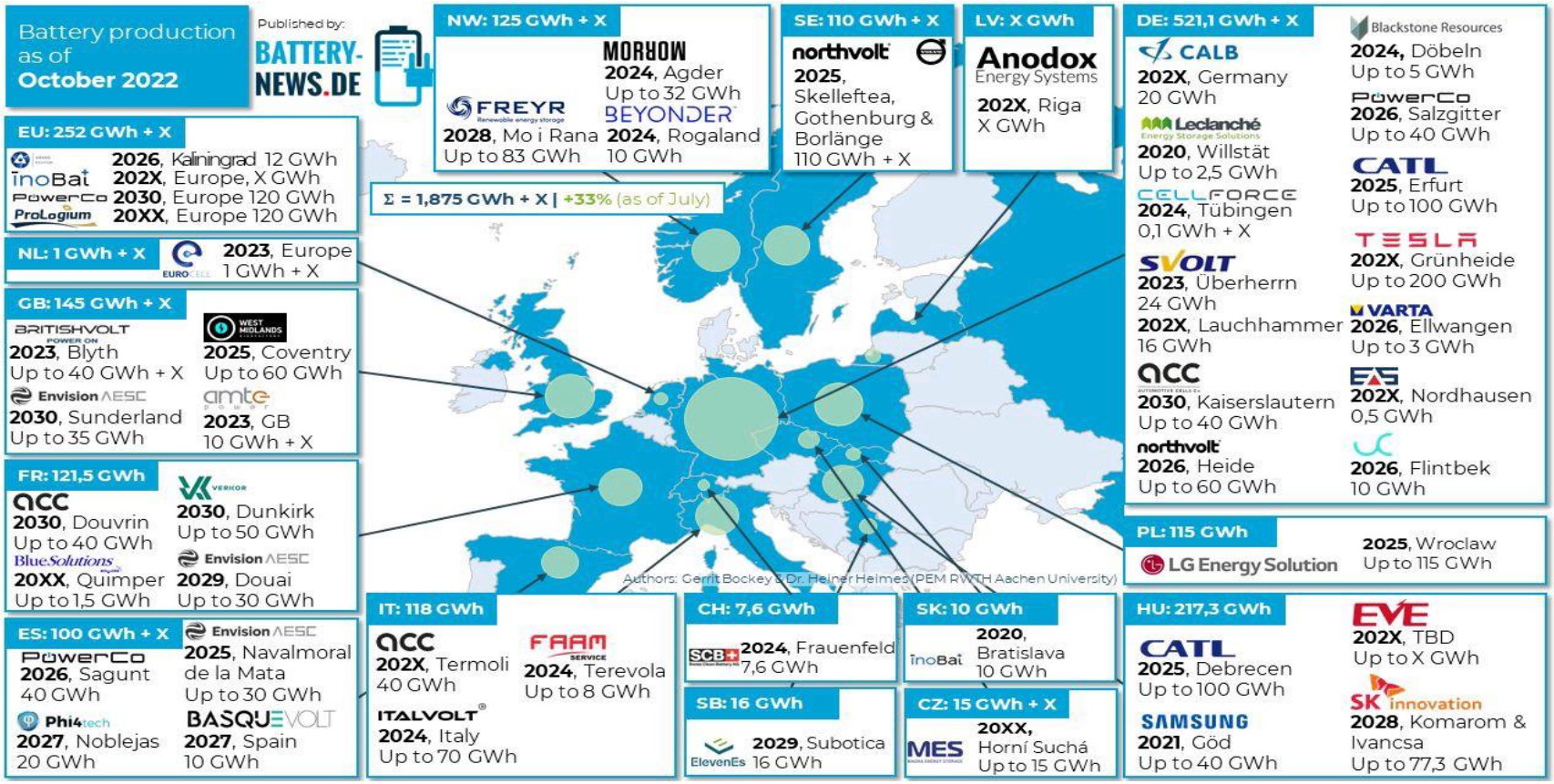
Car Bat

FAAM

SERI industrial GROUP

Towards the transition (1/2)

The **European Union** is aiming for 100% of new vehicle (passenger, buses, commercial) sales to be fully electric by 2035. To enhance this enormous transition lot of energy renewable is needed to supply clean energy, and the battery is the only way to stabilize the production of energy from renewables. This fast transformation will require >9TWh in **lithium-ion battery (LiB)** production to address a >$900bn cumulative battery TAM by 2035, on estimates. There are several announcements by European-led 'gigafactories' **(>1.5TWh in capacity)** that could become operational in Europe by 2030.



Source: *Battery-news.de*

Towards the transition (2/2)

Cell maker announcements				
Battery Producer	**Location**	**Capacity**	**Customers**	**SOP**
FREYR	Norway	29GWh	Honeywell, Nidec, Powin	2024
FREYR/Koch	USA	35GWh	Honeywell, Nidec, Powin	2025
ElevenEs	Serbia	TBD	TBD	2024
ONE	USA	25GWh	TBD	2024
CATL	Germany	35GWh	Mercedes, BMW	TBD
CATL	Hungary	100GWh	Mercedes, BMW	TBD
Gotion	USA	24GWh	VW	TBD
LG Energy Solutions	USA	5GWh	ESS	2023
ABF	USA	3GWh	TBD	TBD
FAAM	Italy	8GWh	ESS	TBD

Source: The Goldman Sachs Group, Inc., Global Investment Research, The Future of Batteries

The production of minerals such as **lithium, cobalt and graphite will increase enormously** due to the growing demand for clean energy technologies such as **batteries**, wind turbines, solar panels or electric vehicles.

The growing demand for clean energy technologies such as batteries, wind turbines, solar panels or electric vehicles, the production of minerals such as **lithium, cobalt and graphite is expected to be enormous**.

Battery Metals in the Green Transition

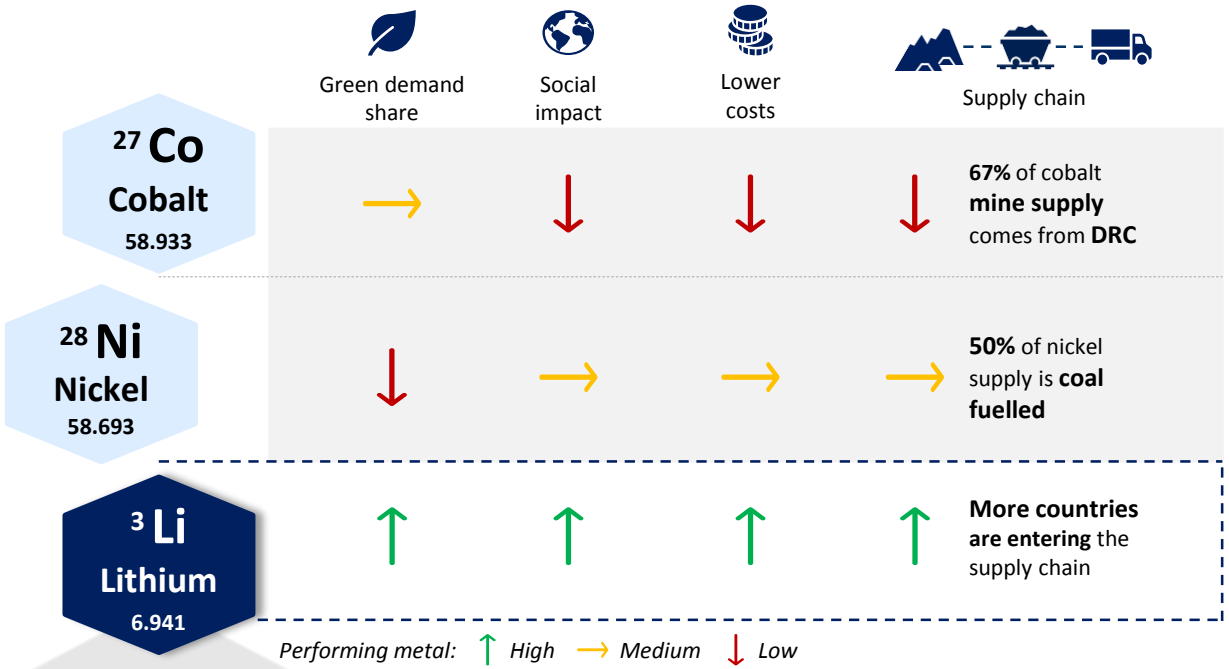
Key Trends

2022
2% **Cobalt** in deficit
2% **Nickel** in deficit
1% **Lithium** in surplus

2023
0% **Cobalt** in deficit
0% **Nickel** in deficit
8% **Lithium** in surplus

2030
32% **Cobalt** in deficit
22% **Nickel** in deficit
13% **Lithium** in surplus

Even as recycling supply accounts for 18% of cobalt, 15% of lithium & 7% of nickel demand by 2030



Lithium-Iron-Phosphate
LFP Active Material

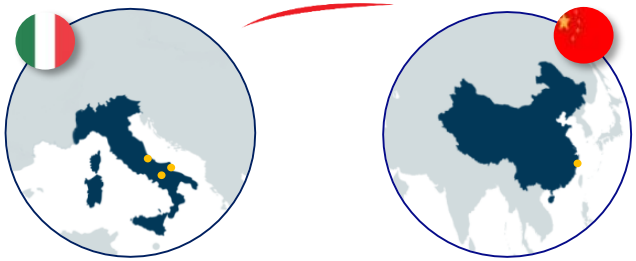
Smooth supply chain, higher safety, cost competitiveness and an increased attention to social responsibility **will increase LFP market share, in EVs and ESS applications**.

Seri Industrial Group has chosen to focus on LFP active material, developing a **'water-based' production process** with the aim of achieving a **green footprint**, reducing atmospheric emissions, increasing safety and flexibility in the battery recycling process.

Source: *«Battery Metals Watch: The end of the beginning», Goldman Sachs, May 2022*

Batteries

Footprint & Operations



Monterubbiano: 7.500 sm (indoor), 7.000 sm (outdoor); **Employees:** 63 FTE

Monte Sant'Angelo: 8.000 sm (indoor), 6.000 sm (outdoor); **Employees** : 75 FTE

Yixing: 9.000 sm (indoor), 4.000 sm (outdoor); **Employees** : 53 FTE

Teverola 1: 38.000 sm (indoor), 112.000 sm (outdoor);**Employees:** 112 FTE

Background

FAAM is specialized in the design, production and sale of **highly efficient lead acid** and **Li-ion batteries (including cell production)** for Motive Power, Storage, Starter and specialty applications. The main goal is to guarantee customized solution with high performances.

The product portfolio includes: **(i)** traction batteries for Aftermarket and OE customers; **(ii)** storage batteries for UPS, Telco, energy producers, both for AM and OE; **(iii)** starter batteries (automotive, heavy duty, motorcycles and specialties) for the Aftermarket; **(iv)** li-ion batteries for storage (domestic and BESS), industrial traction (forklifts, material handling, ground movement machines, agricultural, and light traction), military, automotive (commercial vehicles and public transport), and naval

Market: Global
Main clients: the main market is the Motive Power/heavy duty (OEM and aftermarket), stationary, naval, military and starter.

Main drivers

- Full speed of Teverola 1 in 2022
- Circular economy replication in the lithium (active material production and recycling)
- Increase of cell's performances currently produced in Teverola 1
- Teverola 2 Gigafactory start up of production
- Increase OEM customers for the lead-acid battery business as a cross selling opportunity with the lithium

After sales and R&D

After sales services

FAAM Service: service company providing after sales assistance throughout national/European level (and also collection of end of life batteries)
Brand **CARBAT:** B2C network supplying starter batteries to end users CARBAT is also an "on time" battery replacement provider to end users. **European coverage through distributors mainly in Benelux, France, Poland, Iberia, Nordics, UK , Maghreb, and Greece**

Employees: 36 FTE

FAAM CUSTOMER SERVICE

FAAM Research Center

FAAM Research Center:
Teverola is the cluster and competence center for all the R&D activities
In Monterubbiano there is a laboratory on lead-acid batteries and electronic components for lithium batteries (BMS and packs)

Some **innovative projects**:

- **FAR SEAS Project**, in collaboration with the Italian Navy (Marina Militare Italiana) for the development of a Li-ion battery technology (including a specific Battery Management System) for submarines
- **Military Vehicles Li-ion Battery Project**, in partnership with the Italian Ministry of Defense for the application of lithium technology on military vehicles
- **Public transport bus revamping**, based on the previous experience in the city of Turin together with GTT (public transport company) buses. FAAM operates a conversion of the old vehicles (equipped with lead-acid batteries), fueled with diesel, into a 100% electric vehicle using lithium batteries
- **Specific storage (ESS Large System),** for the mass production of large storage systems, from 30 kWh up to 5 MWh
- **New chemistries for lithium-ion cells,** analysis on the performance for all the new materials scaled on the Turin labs and recovery of materials from recycling

29 Engineers in electrochemical, mechanical, electronic, and electrical engineering.
For Teverola 2 (IPCEI) expected more 120 R&D managers and technicians
High level cooperation with a Chinese university (Changchun University) for cell development

Plants and Smelter

Footprint & Operations

Alife, Caserta, Italy

Calitri, Avellino, Italy

Alife: 3.000 mq (indoor), 10.000 mq (outdoor);
Employees: 13 FTE

Calitri: 8.000 mq (indoor), 20.000 mq (outdoor);
Employees : 8 FTE

Future projects

- New Innovative projects in the recovery of Slag Heaps
- R&D projects on lithium-ion battery recycling

Calitri plant: strenghts

- FIB will reduce the material cost (lead cost)
- The plant will face an important reduction of the atmospheric emissions

Background

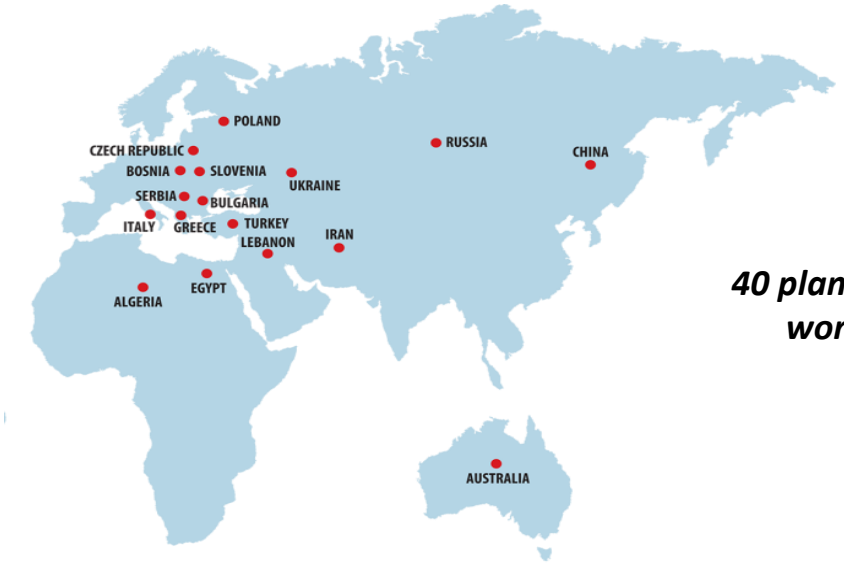
FIB is also focused in the design and construction of innovative plants for the recycling of batteries and in the recovery of lead from exhausted batteries (smelter activity for the production of secondary lead).
The production of secondary lead allows the upstream integration along the battery supply chain

The plant design activity has carried out a unique know-how on sustainable recycling of industrial scraps

Market: global

Main clients: other smelters and battery manufacturers; captive for FAAM

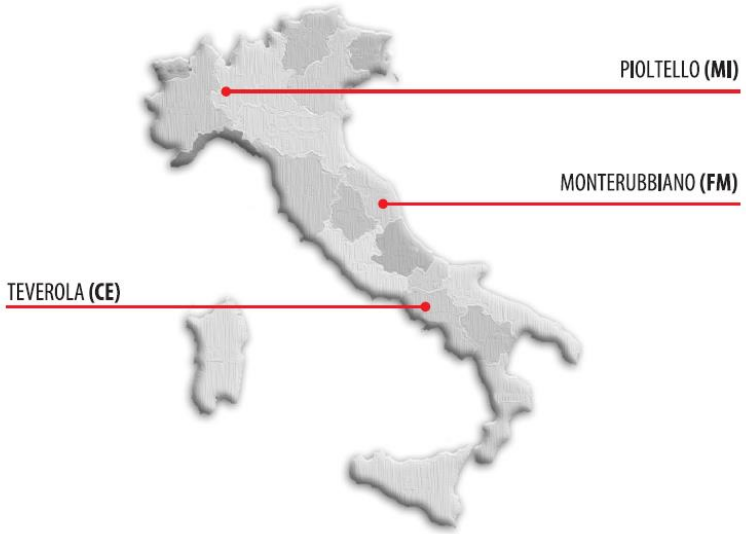
TRACK RECORD PLANT ACTIVITY – ALIFE PLANT



40 plants realized worldwide

R&D

The mission of SERI is to be a key actor in the transition to sustainability and decarbonization, through a continous R&D activity to meet Circular Economy and Sustainable goals at European and global level



PLAST RESEARCH & DEVELOPMENT S.R.L.

Plast Research & Development

Main goals & projects

Innovation of plastic products (PP compound)

Focus on specialties in the plastic pipes market

Organo sheet

FAAM RESEARCH CENTER

FAAM Research Center

Main goals & projects

Full involvement of the R&D team in development of the Teverola 2 lithium cell production plant

New energy efficiency projects of lead-acid batteries

Li-ion batteries recycling projects

New chemistries

The other main goal is to realize tailor made products, based on customer specifications through a continous R&D activity together with main stakeholders (clients, institutions, suppliers, universities and academic centres)

SERI industrial GROUP

Lithium battery manufacturing process in Teverola

Materials | **Electrode production** | **Cell assembly** | **Cell formation** | **Modules assembly** | **Batteries assembly**

Mixing — *Dry room* — *HT room* — *Grey room*

- Lithium-Iron-Phosphate
- Graphite
- Water
- Aluminum (collector)
- Copper (collector)

Slurry

Coating

Slitting

Notching

Lamination

Stacking of electrodes

Formation

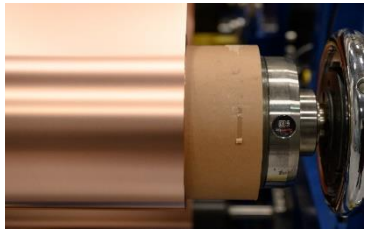
Charge and discharge of modules

Battery packs and BMS

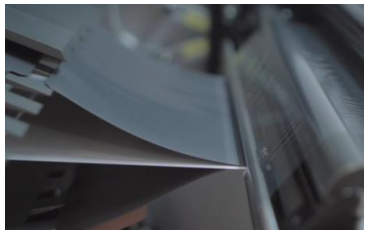
Electrodes production is based on a green and innovative <u>water-based solution process</u>

Aluminium

Copper



Coating



Soft pouch

Cathode (+)

Anode (-)

Module

BMS

Storage System

Battery pack

Energy Storage – Market segmentation

ENERGY STORAGE SYSTEM

APPLICATION DESCRIPTION

RE/POWER INTEGRATION

- Energy Storage Systems (ESSs) can help in mitigating potential grid concerns and integrate renewable energy resources without affecting grid reliability.
  - New and existing plants
  - Both AC or DC coupled
- ESS to manage peaks and make flat generation from traditional power plant

GRID SUPPORTS

- ESSs to provide services to the TSO*, such as:
  - frequency regulation: maintain the balance of supply and demand and hence the frequency of power
  - voltage compensation: reactive power to the transmission system in similar ways to a capacitor
  - investment deferral: ESS used to meet increase capacity in Transmission & Distribution

COMMERCIAL & INDUSTRIAL

- ESSs to provide benefits to the end users
  - Peak Shaving
  - Demand charge management
  - back-up power
- and utilities
  - meet capacity requirements
  - provide demand response

SERI industrial GROUP

Energy Storage – Market segmentation

ENERGY STORAGE SYSTEM

APPLICATION DESCRIPTION

MINIGRIDS

- Involve small-scale electricity generation and associated ESSs which serves a limited number of consumers via a distribution grid that can operate in isolation from national electricity transmission networks

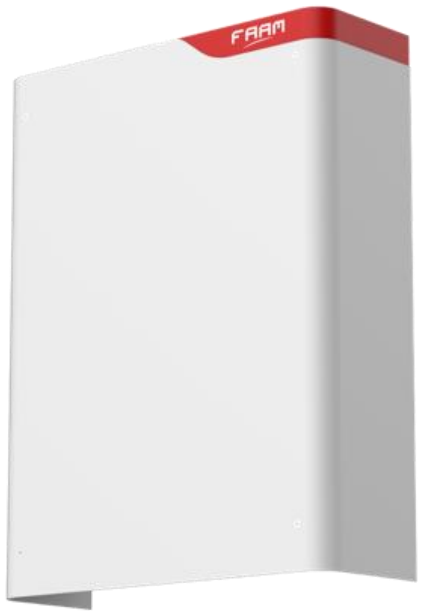
RECHARGE

- ESSs to provide support for the deployment of electric vehicle charging stations to overcome the limits of network infrastructure.
  - Personal/Fleet Cars
  - Depot (Busses)
  - Port (Boats)

OFF-GRID INDUSTRIAL

- Micro-scale energy generation with associated ESS to provide reliable power supply to strategic monitoring and metering plants.

LiHOME



RELIABLE PERFORMANCE

LiHome provides reliability for your home with its industry leading longevity.

COMPACT SIZE

Allows you to place it anywhere you want, both indoors and outdoors.

EXPANDABLE

LiHome can be increased at your need.

SAFETY

The safety of Lihome is proven in ESS markets by FAAM tests.

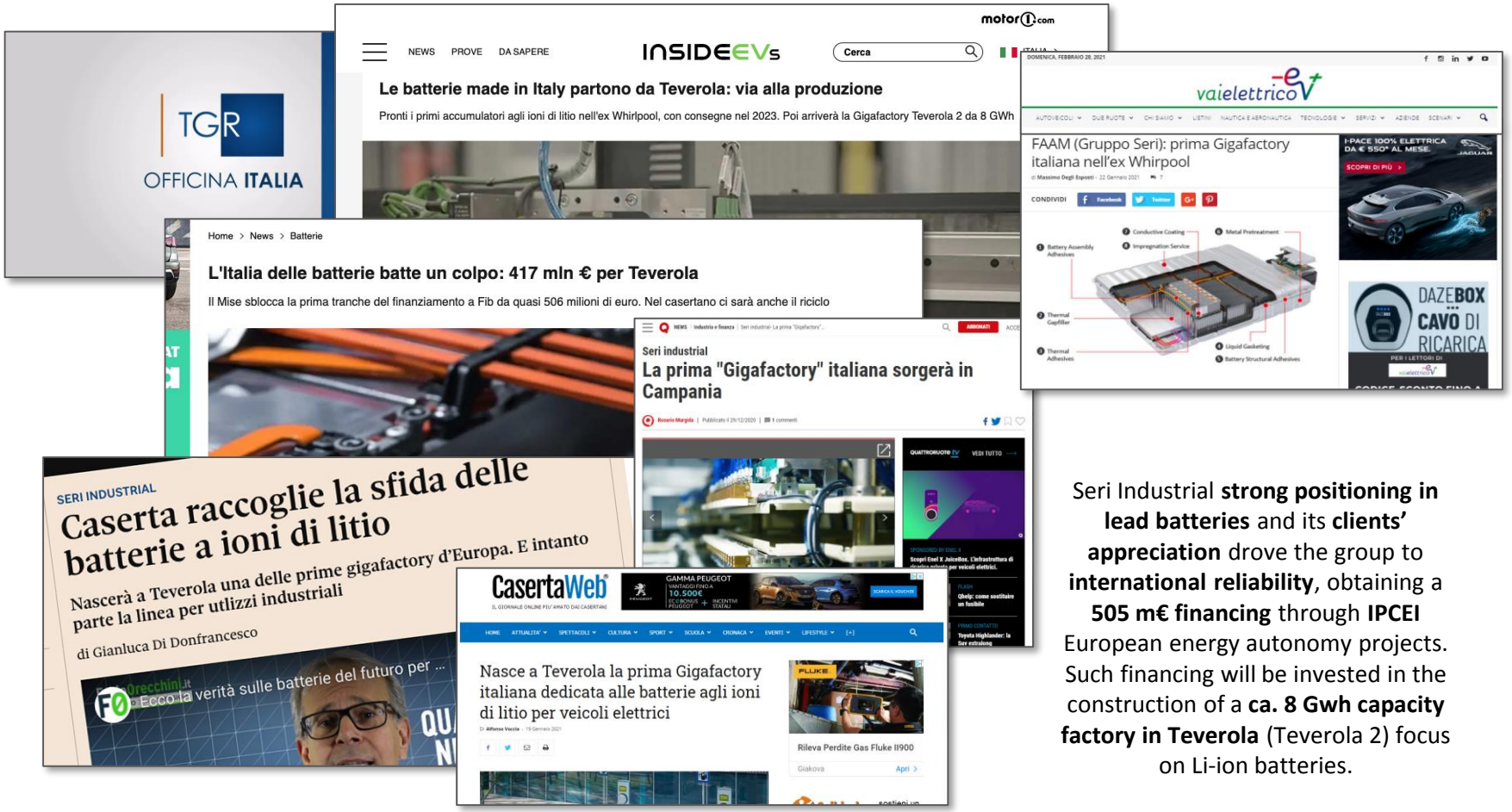
LiHOME Features

Features

- Overvoltage
- Undervoltage
- Overtemperature
- RS-485 communication
- Wi-Fi communication by a proprietary App on both IOS or Android (at request)
- CAN Bus 2.0 communication for the BMS
- Pre-charging system
- High number of cycles (> 4000 cycles)
- Energy saving (efficiency > 98%)
- High energy density and power
- Zero emissions

Media Coverage

SERI's experiences in lead batteries gave it a competitive advantage into being the player most qualified to build the first li-ion gigafactory in Italy.

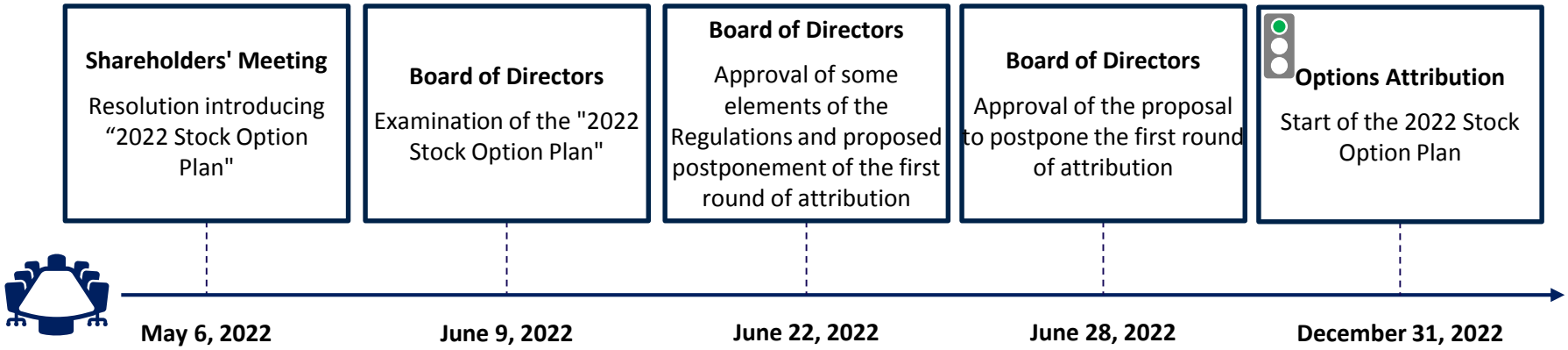


Seri Industrial **strong positioning in lead batteries** and its **clients' appreciation** drove the group to **international reliability**, obtaining a **505 m€ financing** through **IPCEI** European energy autonomy projects. Such financing will be invested in the construction of a **ca. 8 Gwh capacity factory in Teverola** (Teverola 2) focus on Li-ion batteries.

Source: Ilsole24ore, Insideevs, Rainews, Quattroruote, VaiElettrico, CasertaWeb

Other events

2022 Stock Option Plan



2022 Stock Option Regulations

- **2 Option Attribution Cycles**, by:
  - December 31, 2022[1]
  - June 30, 2024
- **Vesting Period**: 5 Years
- **Exercise Period**: 2 years from Vesting Period
- **5 Exercise Windows for each Attribution Cycle**
- Performance Targets:
  - **TSR** *(Total Shareholder Return)*[2]
  - **ESG** *(Environmental, Social and Governance)*

ESG TARGETS

PLASTIC RECYCLYNG

Use in the production cycle of a certain (and growing) percentage of recycled material in relation to total raw materials

BATTERIES

Development of technologies to facilitate the recycling of spent lithium batteries in line with circular economy policies

[1] *As amended to the remuneration policy approved by the Board of Directors on June 28, 2022.*

[2] *Indicator that measures the total return of a stock as the sum of the components of capital gains and reinvested dividends.*

Exercise Warrant Uno Seri 2017-2022

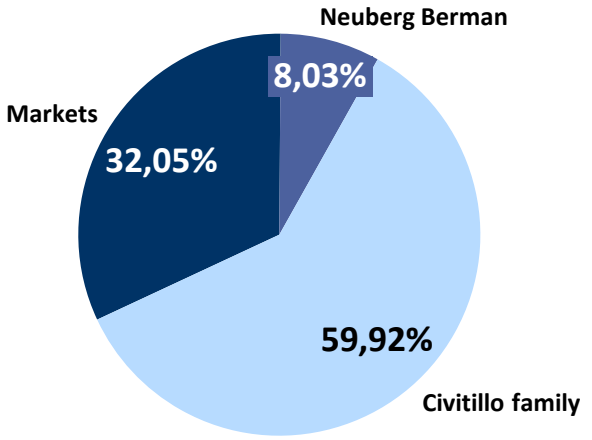
As of December 31,2022, the twentieth and **last financial Period of Warrant Uno Seri 2017-2022 is ended**

The cash-in from the last period is **EUR 23 M**

The share capital is equal to EUR 106.5 M
(vs EUR 97.3 M before the last period of conversion)

Ordinary Shares 59.3 M
(vs 49.4 M before the last period of conversion).

Pre-warrant exercise shareholder structure



Post warrant exercise shareholder structure