

# INAUGURATION OF THE ACC GIGAFACTORY AT BILLY-BERCLAU DOUVRIN



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**ACC**  
AUTOMOTIVE CELLS CO



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## 1. A WORD FROM YANN VINCENT, CEO OF ACC

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*Today, batteries represent around 40% of the total cost of an electric vehicle and are mostly made in Asia.*

*Three years ago, ACC was founded with the aim of revolutionising the battery industry to develop high-performance electric motor vehicle transport that is accessible and decarbonised for all Europeans.*

*This key new European player in the battery sector is a response to multiple challenges: controlling the production chain, returning to true industrial sovereignty for electric mobility and reducing batteries' environmental impact by significantly shortening shipping distances. ACC is also making a tangible contribution towards energy transition goals and helping to consolidate the European automotive industry in the face of global competition.*

*Through the new Billy-Berclau Gigafactory (the first in France), we are proud to be fulfilling our ambition of becoming one of the European leaders in innovative and low-carbon battery production.*

*The first block will be operational by the end of 2023, with a ramp-up scheduled to complete by late 2024. The construction of this unprecedented site in the heart of Hauts-de-France represents the first stage of a colossal project. ACC's German and Italian gigafactories will begin production in 2025 and 2026. And, by 2030, 2.5 million battery modules will be leaving our 3 gigafactories each year.*

*Supported by over 7 billion euros of investment, the ACC project is now a reality, accelerating our transition to sustainable and sovereign mobility that generates thousands of local jobs.*

**Yann Vincent, CEO**

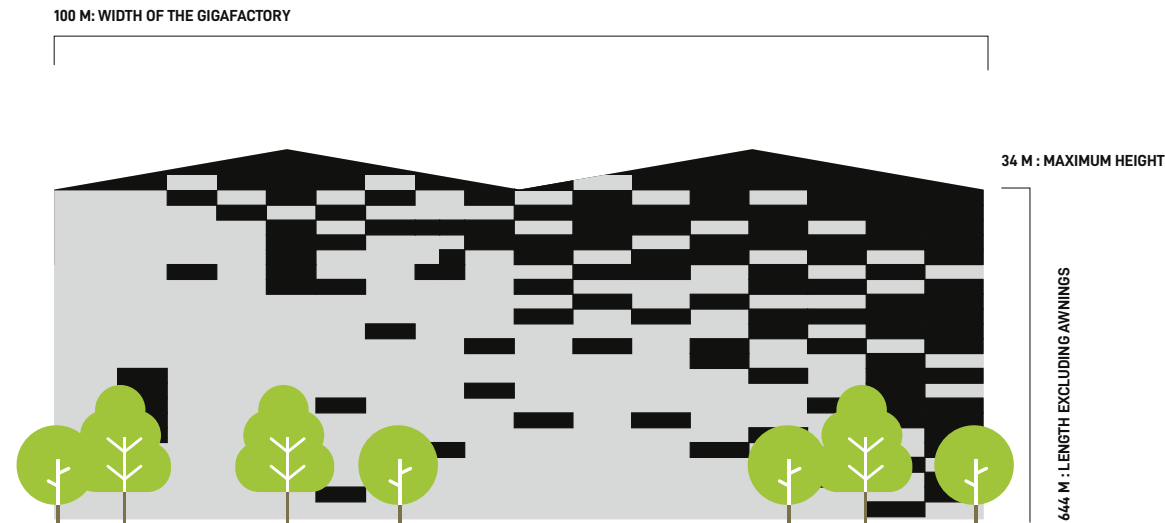
A handwritten signature in dark ink, appearing to read 'Y. Vincent', written in a cursive style.

## 2. THE BILLY-BERCLAU DOUVRIN GIGAFACTORY

WITH THE FIRST FRENCH GIGAFACTORY, THE AUTOMOTIVE SECTOR IS ENTERING INTO ITS FOURTH INDUSTRIAL REVOLUTION.

The Billy-Berclau Douvrin Gigafactory will produce lithium-ion battery cells and modules using a combination of radically new processes and proven materials extensively tested at our R&D center in Bruges and our pilot plant in Nersac (Nouvelle-Aquitaine).

The scale of production is, however, uncommon and allows the manufacture of products with the best ratio between stored energy, battery weight and cost.

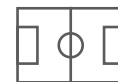


### ENTER THE GIGAFACTORY

ACC's European flagship, with more than 60,000 m<sup>2</sup> of workshop space for the first of its three production blocks, whose production capacity will reach 40 GWh by 2030, the Billy-Berclau site is an exceptional industrial tool:

- Each of the 3 blocks will have a production capacity of 13.4 GWh.
- Brimming with high technology and innovation, the site boasts 20,000 m<sup>2</sup> of Dry rooms.
- The site was built in a record time of 17 months, at a cost of nearly 800 million euros.

### FOR THE BLOCK 1



x8

A building surface equal to 8 football fields.



350...

350 columns, 300 beams and 1500 concrete panels installed



900

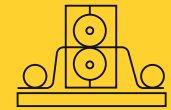
900 workers present on the site



10

10 months for the building to be closed and covered - the standard being 18 months. 7 months to equip it with machinery and start production.

### KEY FIGURES FOR THE BILLY-BERCLAU GIGAFACTORY: LOOKING TOWARDS 2030



3 production blocks



Production capacity of 13,4 GWh per block: a total of 40 GWh



A site of 34 hectares



Full order book for 2024-2028



Almost 180,000 m<sup>2</sup> of factory floor



About 2,000 employees

### 3. WHAT WE WILL BE PRODUCING IN THE GIGAFACTORY

#### A NEW GENERATION OF SUSTAINABLE AND EFFICIENT BATTERIES

At ACC, we are developing a new generation of sustainable and efficient batteries. These are fast-charging, safe and affordable batteries that will open our eyes to new ways of considering electric vehicles.

We are drawing on Saft's 100-plus years of experience in producing high-technology batteries and the expertise of Stellantis and Mercedes in mass-producing quality vehicles.

With the technology and structure in place, we have solid foundations on which to build as we focus on innovation in readiness to develop increasingly effective products.

By 2030, we will be manufacturing over 2 million lithium-ion batteries a year. This is the equivalent of 120 GWh of energy to make the world go round!

#### FOR THE BLOCK 1



20,000

20,000 M<sup>2</sup> of dry rooms.



16

16 mixers of 1,600 litres each.



5

5 coating lines (3 Cathodes and 2 Anodes) of 90 m each - each coating line containing 10 to 12 ovens, and operating at a speed of 80 meters/min



56,000

**Production capacity of the Block 1**  
56,000 cells per day = 2.4 million modules per year. This is the equivalent of 200,000 to 300,000 cars per year, depending on the type of vehicle and the battery capacity.

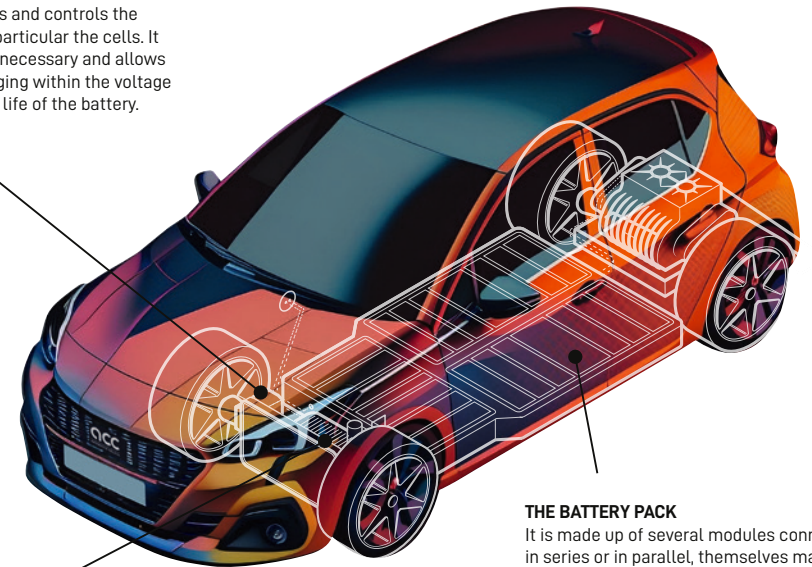
Thanks to its extraordinary production capacity and level of performance, the Billy-Berclau Gigafactory's order book is full for the next 4 years.

#### CELL, MODULE OR BATTERY PACK: WHAT IS THE DIFFERENCE?

ACC designs and produces cells and module subsections that store energy. These active elements are then assembled into battery packs by vehicle manufacturers to power your car.

#### THE BATTERY MANAGEMENT SYSTEM (BMS)

continuously monitors and controls the entire battery and in particular the cells. It balances them when necessary and allows charging and discharging within the voltage limits to optimise the life of the battery.



#### THE ACCESSORY BATTERY

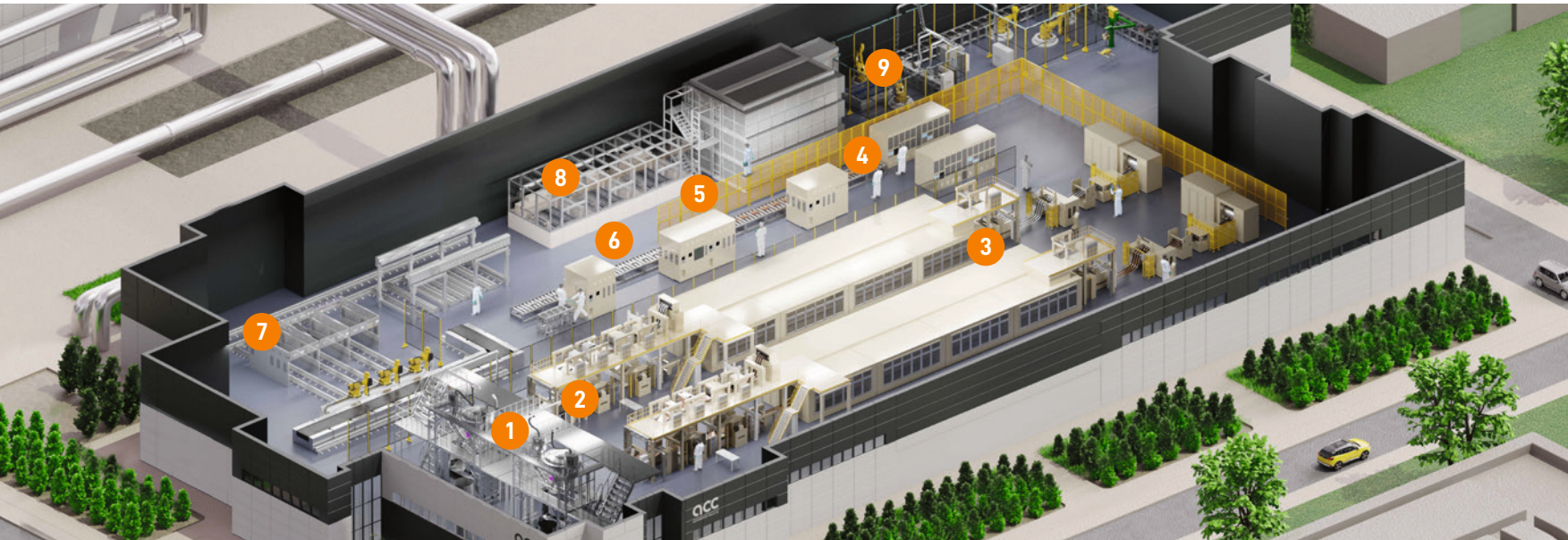
This 12 V battery is used to power the car's accessories (infotainment, GPS, windows, radio, electrical sensors).

#### THE BATTERY PACK

It is made up of several modules connected in series or in parallel, themselves made up of several cells. These batteries store and redistribute electricity according to the driver's action on the accelerator and brake pedals.



## 4 THE STAGES OF BATTERY MANUFACTURING



1

### SLURRY MIXING

The products used to prepare the slurries (active material powders, additives and solvents) are fed into dedicated mixers for the manufacture of ink – either for the positive electrodes (cathodes) or for the negative electrodes (anodes).

2

### COATING

The ink is applied to an aluminum foil for the cathode, and a copper foil for the anode. The coated foil is continuously transferred to a dryer to evaporate the solvents and/or water, before being wound onto a substrate. The two faces of the foil are continuously coated in turn.

3

### CALENDERING

The copper or aluminum foil coating on each sides is compressed by rotating rollers. The rollers generate an accurately-defined line pressure on the strips, ensuring a precise thickness and porosity.

4

### LASER NOTCHING & SLITTING OF TABS

The strip coils are notched on their edge in order to cut out the ears of each electrode. The strip is slit on its axis to the desired width.

5

### STACKING

The separated electrode sheets are stacked in a repeating pattern of anode, separator, cathode, separator, etc. The technology used by ACC is referred to as Z-folding. The anode and cathode sheets are inserted alternately from the left and right into the Z-shaped fold separator. The separator is in the form of an endless tape and is cut off after the stacking process. The cell stack is then fixed with adhesive tape.

6

### LASER AND ULTRASONIC WELDING AND CELL ASSEMBLY

The stacks then enter an automatic line where they are assembled and soldered to copper or aluminum connectors, and then to the cell cover. The resulting welded stack is then inserted into a prismatic can and the cover is welded tightly around its entire periphery.

7

### BAKING AND FILLING

The cell undergoes a drying cycle to remove the last traces of moisture and then the electrolyte is inserted into the cell.

8

### ELECTRICAL FORMATION

The cells are set in specific trays to be activated for the first time. This process includes several steps of charge and discharge at different current levels and temperatures.

9

### MODULE ASSEMBLY

Like "Russian dolls", the cells —having passed all validation phases— are assembled into a module and connected to each other. The product is now complete. Once delivered to our customer —a car manufacturer— it will be mounted on an electric vehicle.

## 5. A FACTORY BUILT TO BE EASY ON THE PLANET

OUR GIGAFACTORY IN BILLY-BERCLAU DOUVIRIN BENEFITS FROM THE LATEST STANDARDS IN SAFETY AND ENVIRONMENTAL MANAGEMENT.

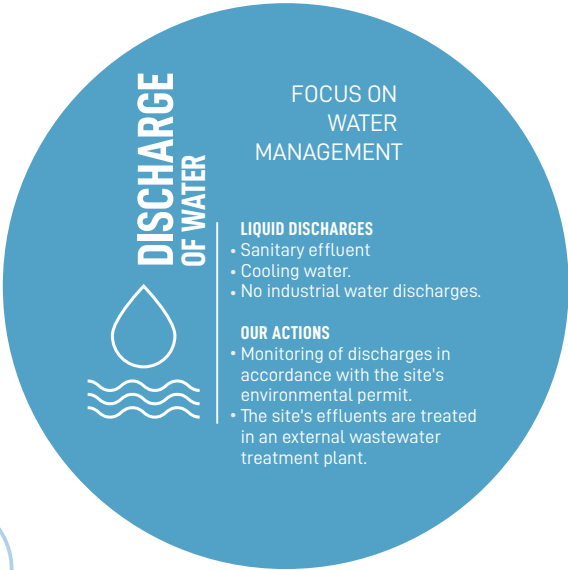
### WATER MANAGEMENT

**The site will use little water**, with amounts estimated at 230,000 m<sup>3</sup>/year: 90% for industrial processes and 20,000 m<sup>3</sup> for drinking water. In contrast, the **industrial water consumption of a vehicle-manufacturing plant is 5 to 10 times higher** than that predicted for ACC's factory in Billy-Berclau Douvrin.

**No industrial water will be discharged** from the manufacturing process into water systems outside the site. No direct contact will be made with nature or people.

**Industrial water from the chemical process will be processed by a liquid waste management mechanism** and sent to a partner that **recycles this water**, particularly by recovering any solvent.

Wastewater from sinks, showers, toilets, restaurants and canteens used by staff will be collected by the SIZIAF sewage network and taken to the organic treatment plant in the north of the business park.



### ELECTRICITY CONSUMPTION

Producing battery cells and modules on a large scale requires energy. Thus, our electricity consumption for the first block will be 362 GWh / year (installed capacity of 59MW). This is equivalent to the installed power of about twenty wind turbines.

### THE GIGAFACTORY, A SITE WITH SEVESO CLASSIFICATION

The site is in the process of gaining ISO 14001 and ISO 5001 certifications, which prove that a business takes environmental and energy concerns seriously.

The gigafactory is being built on an existing industrial site to protect green and agricultural areas. Its environmental impact has been rigorously assessed.



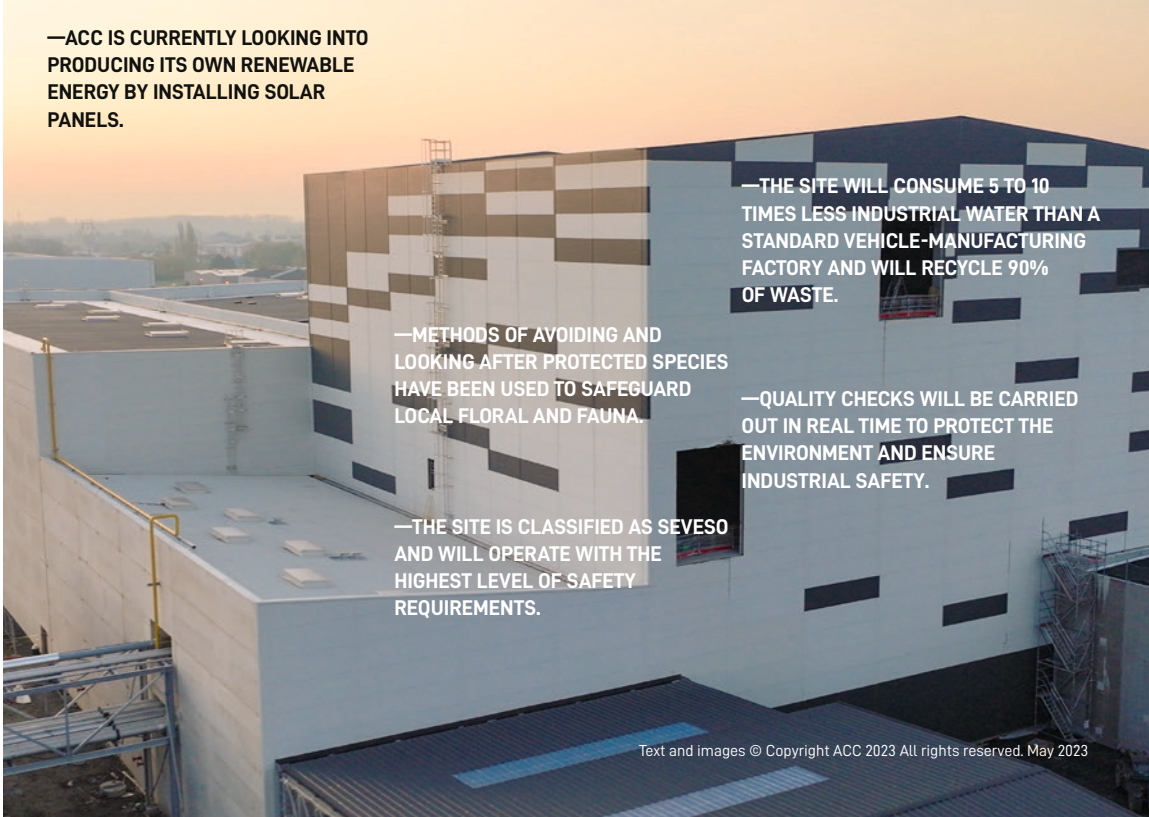
—ACC IS CURRENTLY LOOKING INTO PRODUCING ITS OWN RENEWABLE ENERGY BY INSTALLING SOLAR PANELS.

—THE SITE WILL CONSUME 5 TO 10 TIMES LESS INDUSTRIAL WATER THAN A STANDARD VEHICLE-MANUFACTURING FACTORY AND WILL RECYCLE 90% OF WASTE.

—METHODS OF AVOIDING AND LOOKING AFTER PROTECTED SPECIES HAVE BEEN USED TO SAFEGUARD LOCAL FLORAL AND FAUNA.

—QUALITY CHECKS WILL BE CARRIED OUT IN REAL TIME TO PROTECT THE ENVIRONMENT AND ENSURE INDUSTRIAL SAFETY.

—THE SITE IS CLASSIFIED AS SEVESO AND WILL OPERATE WITH THE HIGHEST LEVEL OF SAFETY REQUIREMENTS.



## 6. THE GIGAFACTORY: AN EMPLOYMENT-BOOSTER FOR THE HAUTS-DE-FRANCE REGION

### AN AMBITIOUS RECRUITMENT PLAN

**ACC'S DEVELOPMENT IN THE HAUTS-DE-FRANCE IS CREATING INCREASED DEMAND FOR LOCAL, QUALIFIED AND AVAILABLE WORKERS WHO WILL CONTRIBUTE TO THE SUCCESS OF THE WHOLE REGION: 2,000 DIRECT JOBS ARE TO BE CREATED BY 2030.**

Around 250 staff have already been recruited for the Billy-Berclau Douvrin site. In 2023, at least 200 more will need to be recruited. There will be plenty of opportunities available including roles like plant operator, maintenance and quality professionals, forklift driver, and industrialisation technician.

ACC's recruitment plans for the Billy-Berclau battery-production gigafactory will continue over the next 24 months, with 620 staff to be in position by the end of 2024 and 1,200 by late 2025. Over the subsequent years, other roles will be available so the site can reach its full operational capacity from 2030 with 2,000 staff.

- 800 positions are scheduled for recruitment in 2024 and 2025.
- Over 60 former employees from the Stellantis Douvrin site have already joined the ACC team.
- Around 50 qualified graduates will be recruited in 2023, followed by over 120 in 2024 and 2025.
- Around 20 staff on work/study placements (engineers, technicians and plant operators) will join the team in 2023 and over 100 will begin work in the autumns of 2024 and 2025.



### OUR RECRUITMENT AND TRAINING PARTNERS



To ensure the various recruitment plans bear fruit, the ACC team is being supported by local partners (Direction du développement économique de la Communauté d'agglomération Béthune-Bruay Artois-Lys Romane, Pôle Emploi, Mission locale, Région Hauts-de-France, etc.) and being given operational support by recruitment specialists.

**80-MILLION EUROS OF PUBLIC SUPPORT IS PLANNED FOR 2023 UNDER THE REGIONAL TRAINING PLAN TO TRAIN 6600 PEOPLE: 70% MORE THAN IN 2022 IN THE INDUSTRY AND ELECTROMOBILITY SECTORS.**



## 7. ABOUT ACC

CREATED IN 2020...

...on the initiative of Stellantis and TotalEnergies (via its subsidiary Saft) and joined by Mercedes-Benz in 2022, ACC (Automotive Cells Company) is a high-technology business seeing the strongest growth in the global automotive sector.

Strongly supported by France, Germany and the European Union, ACC is helping to accelerate the ecological transition for transport which currently accounts for the top and second sources of greenhouse gas emissions in France and the world.

Our battery modules are designed and prototyped at our R&D site in Bruges before being produced and tested at our pilot plant in Nersac, Nouvelle-Aquitaine. In this location, we are refining our manufacturing processes on a pilot production line to be replicated on a large scale at our gigafactories.

We are developing technologies and chemical processes that are quicker and more profitable for manufacturing electric-vehicle batteries. Once assembled, the cells' performance, life and safety are tested.

They meet the highest standards on the market, with a significantly reduced charge time, an extended lifespan and increased reliability and safety. They are also eco-designed and have a reduced carbon footprint, with the goal of achieving carbon neutrality by 2030.

## ACC'S KEY NUMBERS

7.3 BILLION EUROS OF INVESTMENT,  
OF WHICH 1,283 BILLION IS PUBLIC FUNDS

846 million euros from France,  
with 20% from the Nouvelle Aquitaine et Hauts-de-France regions:

- 690 million from BPI France.
- 80 million euros from the Hauts-de-France region.
- 35 million euros from the Nouvelle-Aquitaine region.
- 20 million from the Syndicat Intercommunal de la Zone Industrielle Artois-Flandres (SIZIAF).
- 12 million euros from the Communauté d'Agglomération de Béthune-Bruay Artois Lys Romane.
- 9 million euros from the Lens-Liévin Agglomeration Community.
- 437 million euros from the German authorities.

A production capacity target of 120 GWh thanks to our 3 gigafactories from 2030.

2.5 million batteries produced each year by 2030.

1,000 recruitments already made since the creation of ACC,  
i.e. 1 to 2 recruitments per day.

## THIS PROJECT IS JOINTLY SUPPORTED BY



## 8. ACC'S REPRESENTATIVES



**Yann Vincent**  
CEO

Yann Vincent has a degree from École Centrale Paris (1980) and an MBA from INSEAD (1989).

In 1982, he joined the Renault Group, where he was Factory Manager, Programme Manager, Group Quality Director and Renault's Director in Russia (AvtoVAZ).

In 2009, Yann joined Alstom Transport, where he was Operational Performance Director and a member of the executive committee.

Five years later, in June 2014, he became Industrial and Logistics Director of the PSA Group, in which role he continued until August 2020. On 3 September 2020, Yann Vincent became ACC's CEO.

**Matthieu Hubert**  
Secretary General

A graduate of IEP Lille, Matthieu Hubert started his career as Chief of Staff to Nicole Notat, the Secretary-General of the CFDT union.

He joined Renault in 2003, working first as Company Spokesman, then as Crisis Communications Manager, and then as Communications Director for the Quality department.

He became ACC's Secretary General in 2021.

**Frédéric Przybylski, Billy-Berclau**  
Gigafactory Director

An engineer with degrees from ENSICAEN and IAE Caen, Frédéric Przybylski gained a wealth of industrial experience at PSA Peugeot Citroën.

He joined ACC in 2021 as Industrial Director for the Billy-Berclau gigafactory project.

## 9. OUR CO-SHAREHOLDERS



Saft est une filiale à 100% de :



**Saft** specialises in cutting-edge batteries for industry, offering everything from design and development to production, plus bespoke creations and service provision. For over 100 years, Saft has provided batteries and systems with longer and longer lifespans for critical applications including security, emergency power supplies and propulsion. Its innovative, safe and reliable technology offers high performance on land, at sea, in the air and in space. Saft powers industry and smart cities, but also provides emergency power in the most remote and inhospitable environments from the Arctic Circle to the Sahara Desert. Saft is 100% owned by TotalEnergies, a major energy player that produces and sells energy worldwide in all forms: oil and biofuels, natural gas and green gases, renewable energies and electricity.



**Stellantis** is one of the world's leading automakers and a mobility provider. Its storied and iconic brands embody the passion of their visionary founders and today's customers in their innovative products and services, including Abarth, Alfa Romeo, Chrysler, Citroën, Dodge, DS Automobiles, Fiat, Jeep®, Lancia, Maserati, Opel, Peugeot, Ram, Vauxhall, Free2move and Leasys. Powered by its diversity, it leads the way the world moves – aspiring to become the greatest sustainable mobility tech company, not the biggest, while creating added value for all stakeholders as well as the communities in which it operates.



**Mercedes-Benz** brings together the global activities of Mercedes-Benz Cars and Mercedes-Benz Vans, and has more than 170,000 staff around the world. The company focuses on the development, production and sale of private vehicles, vans and associated automotive services. It also aspires to become a leader in electric mobility and embedded software. Mercedes-Benz AG is one of the biggest international luxury car manufacturers. Across its 2 branches, Mercedes-Benz AG is constantly extending its global production network, with 35 production sites on 4 continents, while equipping itself to meet the challenges posed by electric mobility. The company is also developing its battery-production network across 3 continents.