# All-in-one logistics solution for a leader in electric mobility

Wallbox, a benchmark for electric vehicle charging solutions, automates management and storage in its Barcelona manufacturing plant.

Country: **Spain** | Sector: **automotive & spare parts**



wallbox

## CHALLENGES

- Store **thousands of electric chargers** in a small space, automate internal goods transport, and connect logistics with production.

- Cope with increased activity and be prepared to **double its charger production rate** in the coming years.

- Simultaneously control the **traceability** of raw materials and finished products.

## SOLUTIONS

- **Miniload system (AS/RS for boxes)**.
- **Easy WMS warehouse management system**.
- **Multi Carrier Shipping Software**.
- **Pallet racking**.

## BENEFITS

- Capacity to automatically store **43,700 boxes** containing chargers and components sent from the production lines.

- Fulfilment and shipment of more than **6,000 electric chargers** a day.

- Integration of Easy WMS with ERP and MES software for combined management of **4,000 SKUs** of raw materials and finished products.

Wallbox is a technology company committed to transforming energy consumption. The organisation develops advanced energy management and electric vehicle charging solutions that redefine the relationship between users and the electricity grid. Wallbox goes beyond electric chargers: it empowers users to control their energy consumption, save money and live more sustainably. Listed on the New York Stock Exchange (NYSE), the business offers a wide range of charging and energy management solutions for home and public use in over 100 countries.

» **Founded: 2015**
» **No. of employees: 1,000+**
» **International presence: Europa, Asia, and the Americas**
» **Production centres: Spain and the US**

Founded in 2015, Wallbox has become a global leader in charging and energy management solutions for electric vehicles (EVs). The company's 11,220 m² production plant in Barcelona's Zona Franca industrial complex serves as the nerve centre of its logistics operations. Every day, the business manufactures 1,300 chargers, which it markets in the European, Latin American and Asian markets.

With two production centres in Spain and the US, respectively, Wallbox stands out for operating within a supply chain that integrates logistics and manufacturing processes. At its Barcelona plant, the storage areas for raw materials and finished goods are perfectly synced with the production lines, which operate continuously.
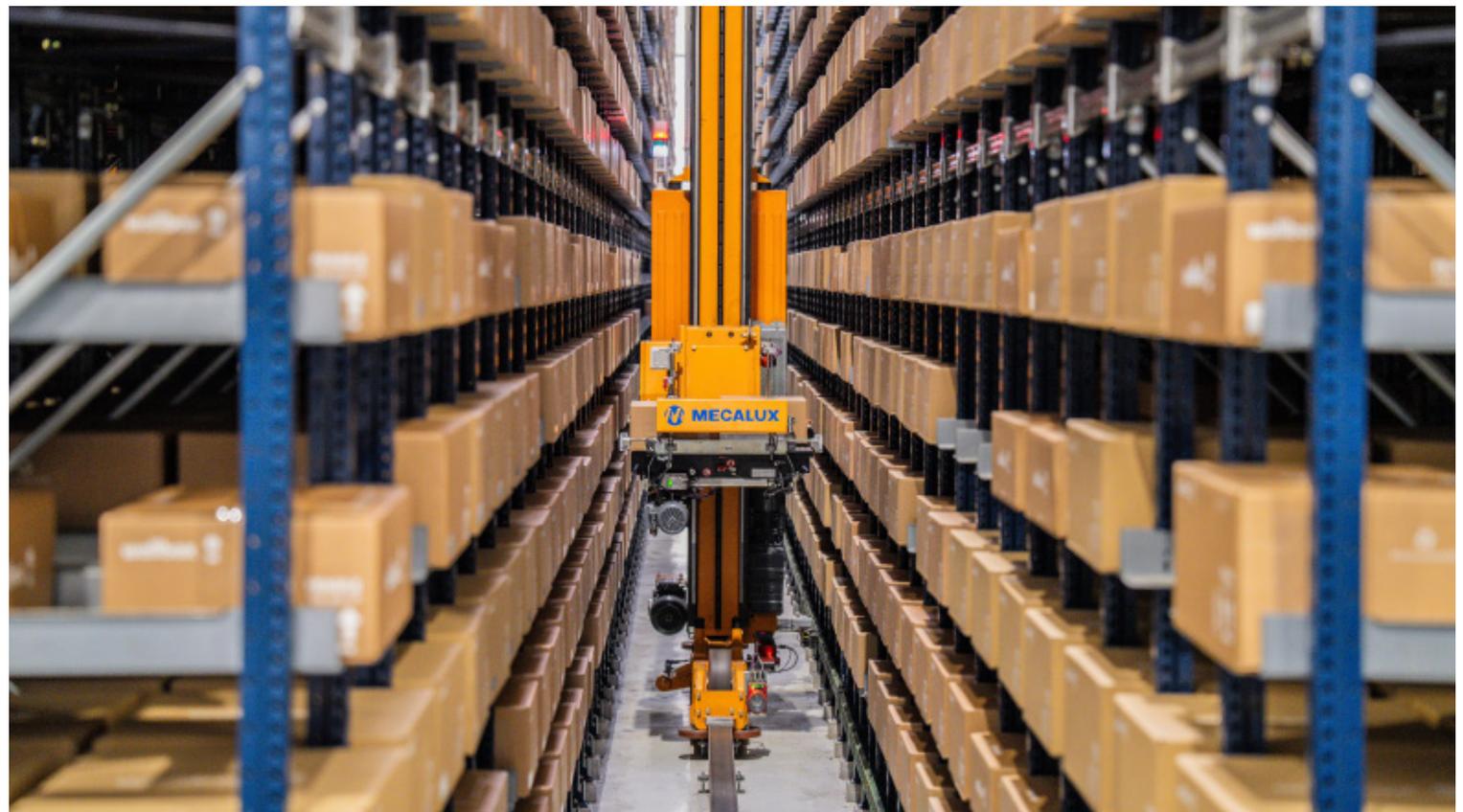
Logistics is a key link in Wallbox's supply chain. Logistics Director David Padillo says: "The charger market is extremely volatile, with many demand peaks. So we need to
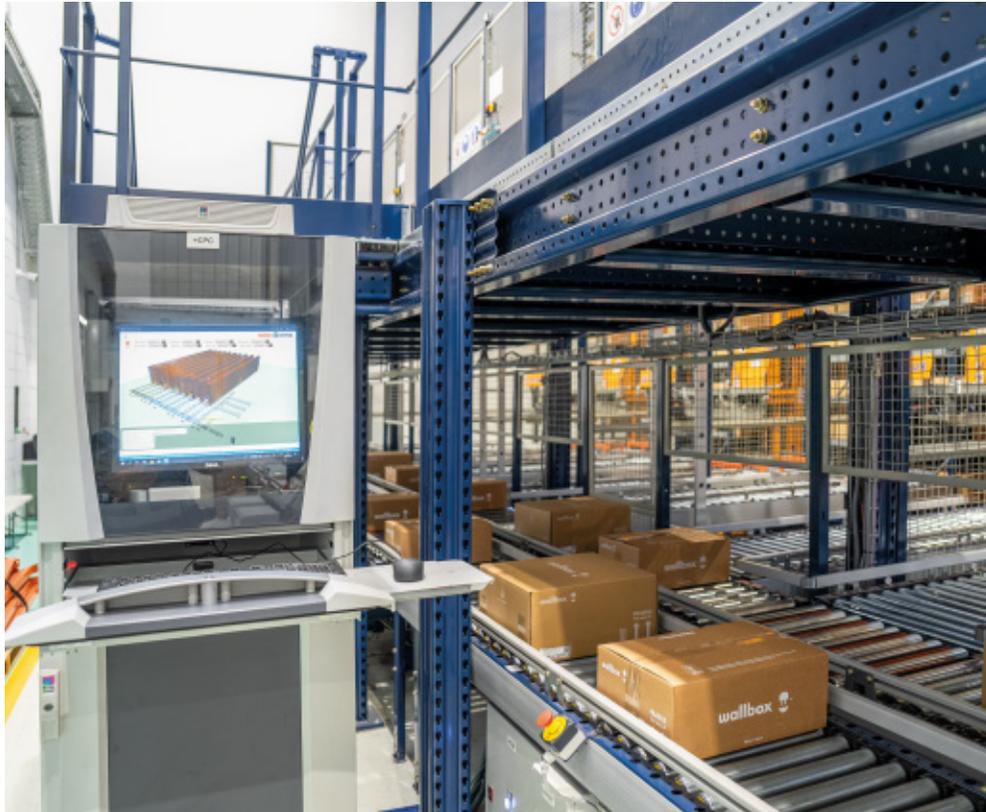
be flexible enough to adapt to changes. To face such a demanding work pace, we have to organise our goods in line with the FIFO method and optimise storage space to house as many products as possible."

Mecalux has equipped the Wallbox plant with an integrated solution: pallet racking to accommodate raw materials and an automated storage and retrieval system (AS/RS) for assembled chargers sent from the manufacturing zone. Mecalux's Easy WMS warehouse management system supervises all operations and syncs the storage areas with the production lines. The WMS has been implemented in the software-as-a-service

(SaaS) model. The system employs cloud computing technology, enabling the company to control all facility operations from any device and location with internet access. Its high-performance cloud-based server infrastructure adjusts to the volume of business operations, fostering flexibility and scalability. Padillo says: "Easy WMS has provided us with traceability, speed and safety in housing and shipping our EV chargers."

Padillo is clear about why Wallbox chose Mecalux as its storage system supplier: "Mecalux is a one-stop shop for all your storage solutions. It offers AS/RS, warehouse management software, pallet racking, and

**Wallbox has optimised its supply chain by digitally syncing logistics with production at its Barcelona plant**

very flexible: it lets us work with full pallets and, at the same time, pick the boxes on each pallet," says Padillo.

Integrating manufacturing with logistics operations was one of the biggest challenges of this project. To do this, Mecalux connected Easy WMS to Wallbox's ERP software and its manufacturing execution system (MES) to guarantee just-in-time (JIT) supply to the production lines.

Digitally syncing logistics with production and managing both storage systems with Easy WMS has given Wallbox additional advantages, such as complete stock visibility and real-time inventory control. The Mecalux software knows the status and exact locations of the 4,000 available SKUs of both raw materials and finished products.

### Storage system with components for JIT supply

Production line supply begins when the MES sends Easy WMS manufacturing orders, which include the raw materials that will go into making the chargers. The logistics software ensures that operators can locate items in the component storage system and send the exact quantities to production at the right time. With this JIT working system, Wallbox has reduced its inventory levels and now demonstrates greater responsiveness to unforeseen changes in manufacturing processes. Likewise, by interfacing with the MES, Easy WMS can manage the item master and bill of materials required in the production of electric chargers.

"The pallet racking mainly stores materials for manufacturing chargers, accessories and large chargers used in public spaces," says Padillo. The racks stand 9 m tall and provide total storage capacity for 3,600 pallets. This system — noted for its versatility and strength — is an optimal solution in facilities requiring storage of palletised products with a wide array of SKUs.

Wallbox opted for pallet racking because it offers direct access to goods, greatly streamlining product management and order picking.

In the storage system for components, the Mecalux software applies advanced algorithms to facilitate the putaway strategy. This takes into account the item type, SKU, size and demand level. Operators simply read the barcode on each pallet received with their RF scanners, and Easy WMS records the merchandise in the database and decides where to store it.

### AS/RS for finished goods

"We decided to automate operations to improve picking throughput, optimise available space to increase capacity, and gain total traceability of stock," says Padillo.

The miniload system stands 10 m tall and has five aisles spanning 55 m long. In each aisle, a stacker crane for boxes inserts and removes goods from their locations. Equipped with telescopic forks, the stacker crane simultaneously transports two cardboard boxes containing chargers. This solution enables the shipment of 6,000 chargers a day. "The AS/RS houses EV chargers and different accessories," says Padillo.

In addition to agile movements, one characteristic of this miniload system that most interested Wallbox was its ability to leverage the available surface area to accommodate a larger number of goods. In just 770 m², it stores nearly 43,700 boxes. Mecalux's Easy WMS software in the SaaS model orchestrates operations and the movements of boxes in the AS/RS. It arranges product inflows/outflows and organises order picking. The WMS strictly controls the boxes thanks to its permanent two-way connection with Wallbox's ERP system. For every product that arrives at the miniload AS/RS, the Mecalux software receives an advance shipping notice (ASN) from the ERP system.

maintenance and development services." Mecalux designed Wallbox's storage systems and logistics operations considering the business's growth prospects. The company expects the plant to double its charger production rate in the coming years.

### Logistics integrated with production

Wallbox's Barcelona plant has two storage areas: one with manual pallet racking for raw materials and another with an AS/RS for finished goods. The production zone sits between the two. "The Easy WMS software acts as a bridge between storage and manufacturing. It's a robust program that eliminates human errors and boosts efficiency in sending materials to production. The software is
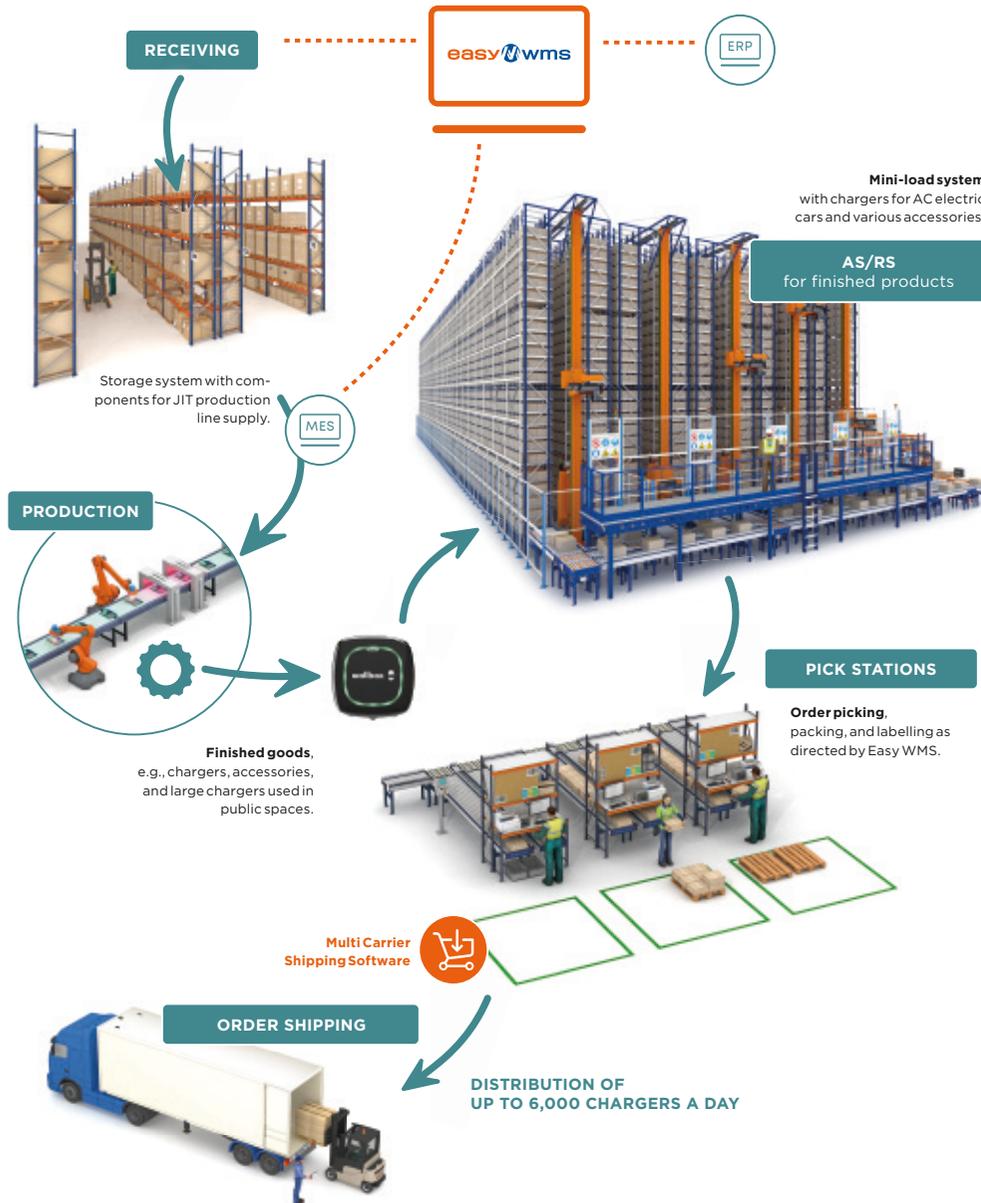
> "We chose Mecalux as a storage solution provider because it's a one-stop shop for all your needs. It offers AS/RS, warehouse management software, pallet racking, and maintenance and development services."

**David Padillo**
Logistics Director, Wallbox

## DIGITAL MANAGEMENT OF PRODUCTION AND STORAGE

The integration of Easy WMS with ERP and MES software enables the combined management of 4,000 SKUs from the raw material and finished product storage systems, the organisation of goods inflows and outflows, and effective order picking at the Wallbox plant.

RECEIVING

easy wms

ERP

MES

**Mini-load system** with chargers for AC electric cars and various accessories.

**AS/RS** for finished products

Storage system with components for JIT production line supply.

PRODUCTION

PICK STATIONS

**Order picking**, packing, and labelling as directed by Easy WMS.

**Finished goods**, e.g., chargers, accessories, and large chargers used in public spaces.

Multi Carrier Shipping Software

ORDER SHIPPING

**DISTRIBUTION OF UP TO 6,000 CHARGERS A DAY**

Based on this message, Easy WMS uses a set of rules and algorithms to assign a location to each item according to its attributes and turnover rate.

Wallbox has total traceability of all SKUs stored in its manual and automated storage systems. It knows the location of its products in real time and can precisely track all goods movements through the Easy WMS software. Mecalux set up three workstations at Wallbox's AS/RS, where operators perform picking via the goods-to-person strategy. Positioned at their stations, these workers receive products directly from the automated transport systems. As directed by Easy WMS, stacker cranes and conveyors work in unison to move boxes to the pick stations.

### Order picking, packing and shipping

At the workstations, operators follow instructions from the WMS software to verify, package and label orders prior to shipping. Wallbox's priority is to facilitate the work of its operators. Therefore, all equipment and materials required to carry out tasks are carefully arranged at each pick station.

To simplify and streamline order packaging and labelling, Wallbox installed Multi Carrier Shipping Software. This advanced Easy WMS functionality effectively organises order

distribution processes. It ensures that goods are shipped at the right time and as per the instructions of Wallbox's transport agencies. The software interfaces with delivery companies with two basic objectives: to inform carriers of the merchandise they will collect and to generate and print the corresponding labels and packing lists. The labels include the shipment tracking number so that customers can check the location of their orders at any time.

### Future-ready logistics

Wallbox is an innovative business, in terms of both its products and its logistics and manufacturing processes. It has always embraced the latest technological advances to continuously enhance its operations. With Mecalux's automated solutions and the cloud-based management of Easy WMS, the company benefits from an interconnected supply chain.

Wallbox's Barcelona facility not only meets the organisation's current needs but is also prepared to keep pace with its growth. The company anticipates a twofold increase in the plant's charger production rate in the years to come. In moving into Industry 4.0, Wallbox aims to control its processes more rigorously and meet growing EV demand, contributing to a more sustainable future.