

## Comprehensive turnkey electromobility solutions for cities



Let's take care of the environment. Print this document only if necessary.

# For a better life.

Because we want to contribute to building a better world

Sustainable mobility is an essential factor in the energy transition which is why at Irizar e-mobility we continue to be committed to turnkey electromobility solutions with the aim of offering sustainable, efficient, accessible, safe and connected public transport.



Zero emissions



Zero noise



Design



Efficient



Safe



Connected













## Irizar Group.

Irizar is a business group with an international presence whose business is focussed on the passenger transport, electromobility, electronics, electric motors and generators, connectivity and energy sectors.

The Irizar Group consists of seven companies (Irizar, Irizar e-mobility, Alconza, Datik, Hispacold, Masats and Jema) with production operations in 13 production plants in Spain, Morocco, Brazil, Mexico and South Africa in addition to their own R&D centre whose purpose is applied research and technological development of products and systems for the Group.

Founded in 1889, today, the Irizar Group is well-established with more than 3,500 employees, geographically and industrially diversified and continuously growing and firmly committed to the brand, technology and sustainability.

 *Irizar Group*

 *Corporate video*

# Leading the change transition.

## The first European electromobility plant

We have a new manufacturing plant of 18,000 m<sup>2</sup> designed exclusively for electromobility. An innovative and state of-the-art plant which is open to knowledge and talent that generates wealth and employment.

The construction uses innovative elements and cutting-edge solutions with a special emphasis on those concepts that define eco-sustainability. It includes a warehouse and domestic hot water heating system that works by using the surplus steam from a company located in the adjoining plot.

We generate all the energy consumed by this factory, making it Europe's first fully sustainable energy plant..



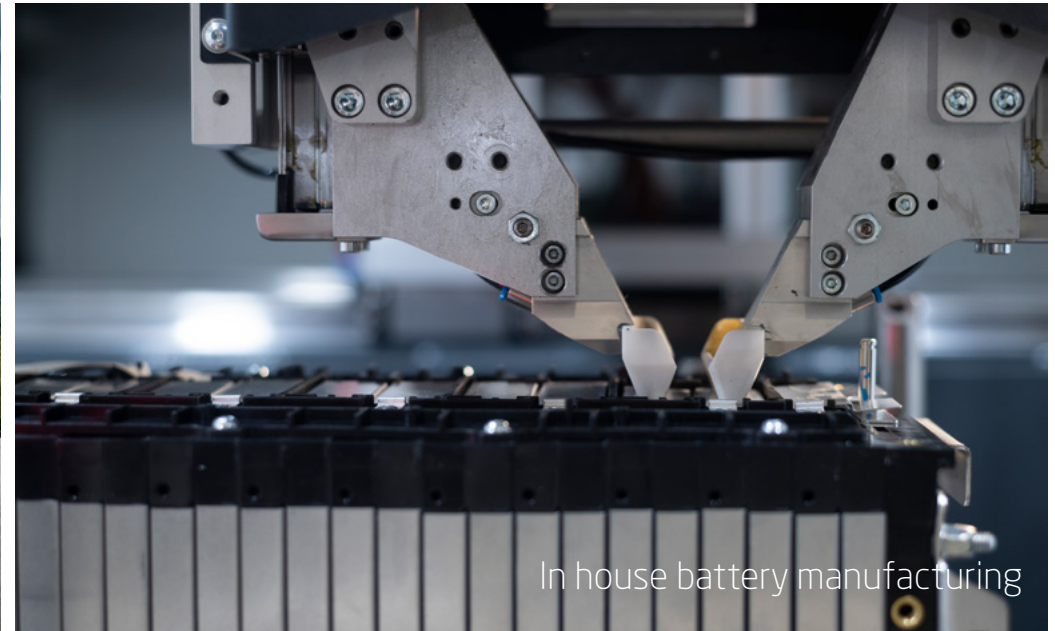
*Visit our virtual green energy factory*











*All this with Irizar Group technology*



# 100% customizable turnkey electromobility solutions.

At Irizar e-mobility, we offer comprehensive electromobility solutions for cities, both in terms of manufacturing zero emissions 100% electric vehicles, and in terms of manufacturing and installing the major infrastructure systems necessary for charging, traction, and energy storage, all with the application of the Group's completely European technology and with Irizar's warranty and service quality.

Our product range includes 10m and 12m city buses, which have been operating since 2014 in various European cities, 15m buses, articulated

buses, and other electric vehicles to service cities, as the Irizar ie truck, all zero-emission.

All with the clear objective of providing the operator with an additional advantage, by being the sole interlocutor in all phases of the project, including detailed advice, comprehensive vehicle care, and customized post-sale service, repair and maintenance (R&M).





***Irizar ie bus***



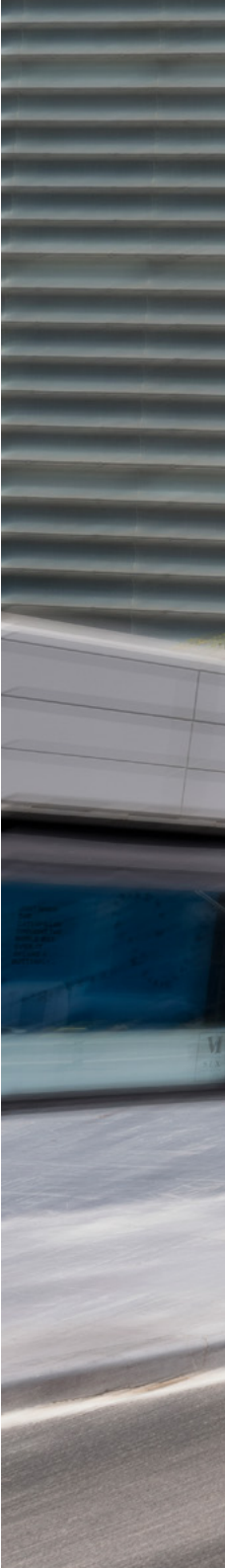
## Efficient and accessible.

In addition to an aesthetically pleasing design, the new generation of Irizar ie bus, available in 10, 12, 15 and 18 metre versions, incorporates innovations as well as new batteries. The space has been optimized and there is, therefore, more passenger capacity and greater modularity.

A new generation of more efficient batteries is combined with a regenerative braking system, which reduce consumption and offer greater vehicle range.

In Irizar ie bus, we offer up to 5 interoperable slow charging point positions using a combo 2 connector. We can perform the slow charging of the vehicle in 3 hours. We also offer the option of fast pantograph charging. The charging capacity can vary from 50 kW to 600 kW.

The new generation of Irizar ie bus can be approved as a Class 2 vehicle.













## Proven safety and a future design.

We were pioneers in complying with the ECE-R66/02 rollover safety regulations in electric vehicles. We now incorporate AVAS (Acoustic Vehicle Alerting System), an acoustic warning system that complies with requirement R138. And a new dashboard with quality materials that comply with fire safety regulation 118R annex 6, 7 and 8.

The new generation of Irizar ie bus enables the vehicle to be maintained more easily and more ergonomically.

The Irizar ie bus has been operating since 2014 in several European cities. The experience and data obtained in recent years demonstrate the reliability and safety of this vehicle.

We have worked meticulously on both the exterior and interior design of the bus, achieving a more attractive, efficient, reliable and safe vehicle.

The front of the vehicle, with a more striking and elegant look, adopts the aesthetic features of Irizar's products.

When it comes to the interior design, although the standard version has a more conventional specification, some of the Irizar ie tram options may be incorporated, including large windows, side lighting or screens above the windows, amongst others.







***Irizar ietram***





## A tram on the tarmac.

The Irizar ie tram is a 100% electric, zero-emission bus with the appearance of a tram that combines the large capacity, ease of access and internal configuration of a tram with the flexibility of a city bus. This model is developed in versions from 12m up to the 18m articulated version and with a maximum capacity of 145 people and with the possibility of overnight or pantograph charging.

The Irizar ie tram offers a clean, minimalist design and all its features correspond to specific functional aspects allowing it to create an identity and an image that are easily recognisable to its users. Accessibility, safety,

passenger flow and passenger comfort are the inspiration behind the interior design architecture, resulting in a bright, comfortable, spacious, pleasant and safe interior.

In the inter circulation area, a system with very low lateral inclinations has been designed to provide an open space towards the rear trailer. The system avoids the separation of the two passenger areas is translucent and is equipped with LED lighting.







T1 HAUTS DE BAYONNE

100%  
CONNECTAT

NOUVELLE  
LIGNE T2  
BAYONNE <-> TARNOS









## New design concept.

The sliding doors, up to a total of four, single-level low floor, arrangement of seats, design of the driving position and the interior layout with wide aisles, facilitate comfortable and effortless access.

Seat signage, areas reserved for wheelchairs and/or prams, audible stop request information, and installation of ticket validation devices also enhance the orderly flow of passengers.

For entertainment, Irizar enables the installation of a wide range of solutions: USB chargers, WiFi, Braille buttons, luggage racks, passenger information, interior vinyl, etc.

The innovative, inspiring design of the Irizar ie tram breaks with the classic transport codes and enhances the charm of the city by reflecting urban cultural diversity.

Care has been taken with the most minor details to achieve the aesthetics of the tram, for example, the hubcaps, as well as the wing mirrors, have been replaced by cameras that project their images onto two displays located in the interior of the vehicle on either side of the driver.



*Gallery*



*ie tram*



*BRT projects*

## Driving comfort.

We have designed the driving position prioritizing concepts of ergonomics, comfort, functionality, safety and service while complying with the EBSF (European Bus System for the Future - European project managed by UITP) and VDV.

We have taken into account access to controls, vibration protection, acoustic and microclimatic considerations to facilitate driving and reduce driver fatigue. The passenger compartment is equipped with a Zero Emissions climate control unit.

We also want to guarantee their safety, providing them with a clear view of the surroundings thanks to an optimized cab design, with comfortable and ergonomic access and a modular distribution (cabin door with safety window or cockpit).

For the design of the seats, the different driver body shapes have been taken into account. We also offer a wide range of customisation options including pioneering technologies that assist the driver in real time with the aim of reducing the vehicle's energy consumption while increasing its operating range.





## Ahead in autonomy.

In European markets, with a single 3-4 hour charge, the 10, 12 and 18 meter Irizar models offer a range of about 300 km at an average speed of 15-17 km/h, guaranteeing 20 hours of driving in dense urban and intercity traffic conditions. With a nominal capacity of 206 kW in our standard 12m solution, the onboard energy in the vehicle is up to 437 kWh.

For the other models, we conduct energy studies of the operator lines in order to determine how much energy the bus requires, with the objective of ensuring the maximum autonomy possible.

We provide storage systems capable of identifying and efficiently managing energy flows and peaks to guarantee optimum autonomy.

We have pantograph systems for fast charging during travel to ensure operation for the entire day.

We can also equip the vehicles with assisted driving systems so as to contribute to reducing the vehicle's energy consumption and thus increasing its autonomy.

The buses that are currently operating in different cities, along with the different tests being conducted by operators and urban transport authorities in various European cities, support these operating ranges.











## A comfortable and pleasant trip.

We have designed the passenger compartment taking into account traveller behaviour and interaction with the urban vehicle as well as different lifestyles and future trends. The arrangement of the seats, their high level of comfort and the integration of essential comfort and safety features mean that the idea of social cohesion can be approached.

- *An atmosphere free of acoustic emissions.*
- *A quiet vehicle, low noise level.*
- *A bright and spacious environment.*
- *Sliding electric doors to facilitate the exit and entry of passengers, thus reducing stop time in the station.*
- *An accessible vehicle: spaces for wheelchairs and prams.*
- *Fluid movement inside the vehicle.*
- *The "kneeling" function, with heights of between 250-270 mm, enables comfortable and effortless access to the bus.*
- *A wide range of entertainment solutions: USB chargers, WiFi, Braille buttons, luggage racks, passenger information, interior vinyl, etc.*

# Irizar energy storage and management.

## In house battery manufacturing

Our energy management and storage solutions, developed and manufactured in our Aduna plant (Guipúzcoa), are designed to cover the needs of today's European market and to offer the best solution for each of the operator's requirements.

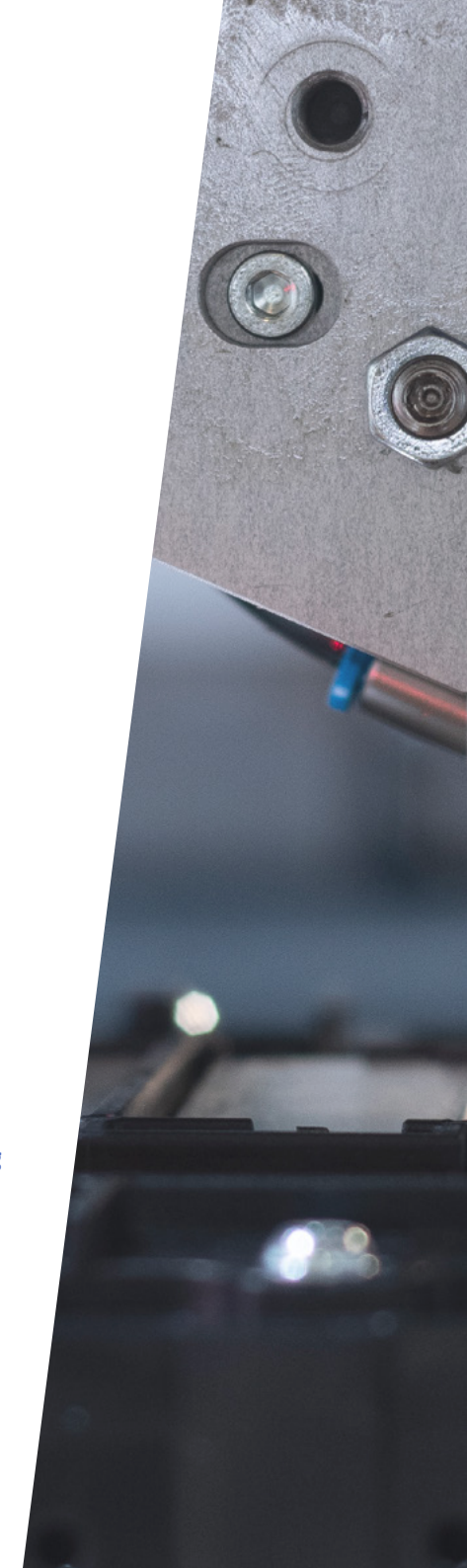
We offer different modular solutions, based on Lithium-ion technology:

- Slow charging (Energy Pack): Designed so that the vehicle can travel the maximum number of kilometres and complete the operation with a single daily charge. Its design enables us to find balance between vehicle range and number of people.

- Fast-charging (Nano Pack): The perfect coupling of vehicle range and charging capacity. Ideal for mixed operations, where the vehicles has sufficient battery life to operate during peak hours. The load can be both slow and fast.
- Ultra-fast charging (Power Pack): The solution for a 24/7 operation with charging of up to 600 kW.

	Slow charging (Energy Pack)	Fast-charging (Nano Pack)	Ultra-fast charging (Power Pack)
Loaded energy	345 - 640 kWh	240 - 420 kWh	90 - 150 kWh
Range per load	210 -320 km	145 - 210 km	55 - 75 km

*\*For vehicles travelling about 65,000km / year*







*R100.v2, R10.v5 and UN38.3*

# Our charging solutions are interoperable.

*We offer different charging options to respond to different customer requirements, both in terms of power limitations and space and operational restrictions.*

## **In-depot charging**

This is the easiest and most traditional, where a combo 2 connector is connected manually to the vehicle or automatically via a pantograph. It allows vehicles to be charged at lower power levels and is available from 50kW to 150 kW, in both outdoor and indoor models. This charging mode supports the batteries by ensuring proper operation as well as longer life.

## **Pantograph in depot**

With this solution, we offer the possibility of complete automation of slow in-depot charging through the commissioning of pantographs (both bottom up and top down) installed above the parking spaces, replacing the solution of power supply through manual connection by an operator. The automation of the contact allows instant charging of the vehicles. This alternative reduces the presence of cables on the floor and, therefore, improves the safety of the operators.

## **Smart charging system**

It is a customised solution that efficiently manages all charging conditions/restrictions in the depot. It identifies the different charging needs of the fleet in order to optimise the total power required. Our smart charging system solutions are multi-brand.

## **Opportunity Charging**

Recommended when the vehicle has a reduced range and needs to be charged during the journey and can be operational 24/7. Charging is carried out during the journey, as well as in the depot. The charging stations are located at strategic points throughout the cities, at the end or start of each line, in order to charge/supply several buses or lines. The power of the chargers varies between 450 kW and 600 kW.

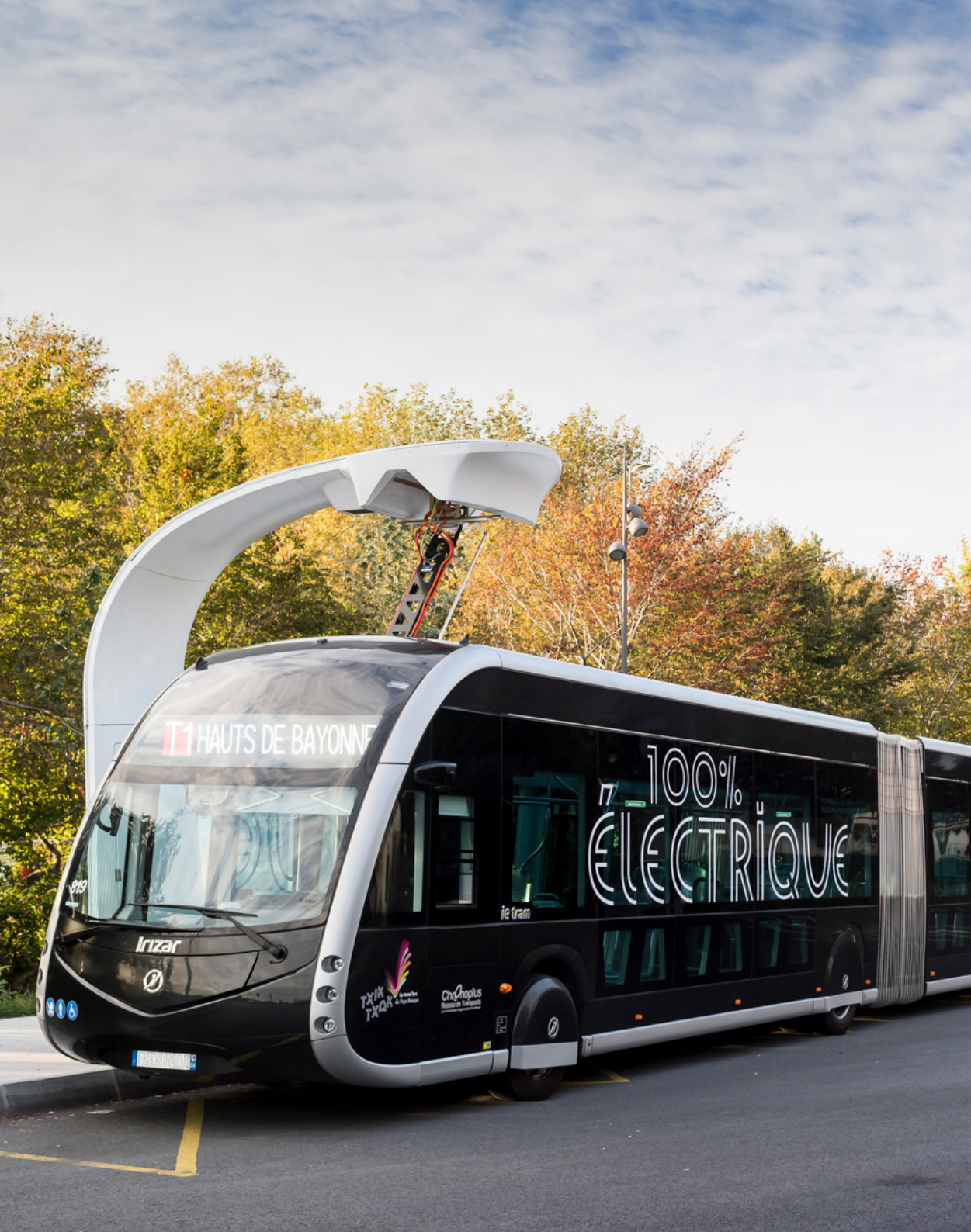
## ***Roof-mounted pantograph***

It is an articulated mechanism installed on the roof of the vehicle and a vault connected to the charger and placed on an adapted structure or pole. When the vehicle needs to charge the batteries, the pantograph arm extends and makes the appropriate connections. Its modern and minimalist design is designed to offer easy integration into the urban landscape.

## ***Inverted pantograph***

In this case the moving part of the pantograph is integrated into the loading infrastructure pole. The vehicle requires only one additional part for charging. The vehicle can be charged in just a few minutes.









for a better life

Irizar le bus

MOTOR ELECTRIC

Energy efficient technology  
for a better life

Irizar le bus

MOTOR ELECTRIC



# Always close to you.

We offer totally customized turnkey projects, designed and created to meet customer needs.

We carry out energy studies of the operator's lines that quantify the energy needed to load the bus to guarantee its autonomy. In addition, we design the necessary means and infrastructure and develop the charging stations, coordinating the civil works and offering fleet management systems in the cloud and financing packages.

At Irizar e-mobility, we have decided to establish an exclusive and highquality after-sales service in cities using our electromobility solutions, which offers personalised R&M packages and is managed by technical experts and locally hired employees, thus helping to create local wealth and jobs.

The service network is still in the process of expansion and it is currently possible to locate an approved Irizar warranty workshop in all places where its vehicles operate.

## Irizar does it for you

**Customized study** of the operator's service lines (data on operations, speed, climate, terrain).

*Proposal for optimising **service operations**.*

**Advice** on the **energy needed to embark**, optimization strategy.

*Advice on optimum parameters for power, charging **strategies**, charging **times** and battery **life**.*

**Civil works.**

**Implementation and start-up** of the system.

*Optimization of **end-of-life management**.*

**Integral monitoring and maintenance.**

**Incorporated systems update** to optimize the life of each vehicle, improving its assets' value.

## Irizar fleet management.

iPanel® is our information hub which offers added value for transport services operators. It helps to reduce costs, improve safety and increase transport service quality.

A secure, scalable, embeddable Cloud Computing solution that is constantly updated with the latest innovations.

Information is useful for running any business. For the management of fleets of electric vehicles, information is vital. Charging processes, real ranges and maintenance alerts help operators to take the right decisions.

In summary, it is the perfect management tool for achieving the highest fleet profitability.



# iPanel Cloud Platform

The perfect management tool for getting the highest fleet profitability



# Irizar ie bus distribution and technical data

## 10.62m



<b>Num. of doors</b>	2
<b>Wheelchair areas</b>	1
<b>Num. of seats</b>	28
<b>Num. of standing passengers*</b>	35
<b>Total num. of passengers : Maximum</b>	76



<b>Num. of doors</b>	2
<b>Wheelchair areas</b>	1
<b>Num. of seats</b>	26
<b>Num. of standing passengers*</b>	69
<b>Total num. of passengers : Maximum</b>	96

### Dimensions

Length (axles)	10.620 mm (2 axles)
Maximum height	3.300 mm
Width	2.550 mm
Wheelbase	4.415 mm
Rear overhang	2.805 mm / 3.400 mm
Interior height	2.400 mm
Height from ground	320 mm
Lead angle	7°
Departure angle	7,5°
Height on step:	
• Door 1	250 mm (320 mm without kneeling)
• Doors 2 and 3	270 mm (340 mm without kneeling)
Door width ie bus:	
• Door 1,3	1.100 mm
• Door 2	1.200 mm

### Powertrain

Manufacturer	Irizar Group
Type	Synchronous
Nominal power	206 kW
Nominal torque	1.500 Nm
Traction capacity even on 18% maximum slopes	

### Energy storage system\*

Battery technology	Lithium ion
Slow charging:	
• Max. installed power	437 kWh (depending on customer needs)
• Charging power	100 kW
• Charging time	3-4 h
Fast charging:	
• Max. installed power	395 kWh (depending on customer needs)
• Charging power	450 kW (pantograph) - 150 kW (Combo2)
• Charging time	5 min (pantograph) - 2h (Combo2)
Ultra-fast charging:	
• Installed power	90 kWh (depending on customer needs)
• Power	450 kW
• Charging time	5 minutes (pantograph)

\*This data may vary according to the legislation of each country.

Please enquire for other distribution possibilities.



### Air conditioning system

Driver - Hispacold Zero Emissions climate control system	(cooling: 2,6 kW, heat: 4,93 kW) - CUD electric
Passengers - Hispacold Zero Emissions climate control system	(cooling: 28 kW, heat: 32 kW)

### Passengers area and accessibility

Maximum No. passengers**	96
Low - floor	
One wheelchair area	
Four seats for PRM	
Electric ramp	
Two double doors	
Possibility of assembling cantilever seats at the front area	

### Safety and Regulation

Compliance with fire-resistance regulation 118R, annex 6,7 and 8
Compliance with ECE-R66/02 safety regulation
AVAS (Acoustic Vehicle Alerting System) integrated according to R138 regulation
Compliance with standard ITxPT
Driver are in accordance with: ISO16121, VDV234 and EBSF
Electromagnetic compatibility regulation 10R
Creepage and Hillholder function / EcoAssist: efficient assisted driving
Eco-mode: intelligent management of air conditioning once the vehicle is switched off

### Weight

Maximum front axle weight	8.200 Kg
Maximum rear axle weight	12.600 Kg

### Other

Aluminium lateral and roof structure	
Grating / floor Stainless steel	
Front divided into five parts for easy and economic interchange of external bodywork	
Acoustic insulation of ceiling and sides	
Turning diameter	17.665 mm
LED interior and exterior illumination	
Simple glazing	
Anti-graffiti materials	



\*\*No. of standees - Data varies depending on the MAM of each country and the number and type of batteries installed on the bus.

# Irizar ie bus distribution and technical data

## 12m



<b>Num. of doors</b>	2
<b>Wheelchair/pram areas</b>	2
<b>Num. of seats</b>	33
<b>Num. of standing passengers*</b>	47
<b>Total num. of passengers : Maximum</b>	80



<b>Num. of doors</b>	3
<b>Wheelchair areas</b>	1
<b>Num. of seats</b>	30
<b>Num. of standing passengers*</b>	49
<b>Total num. of passengers : Maximum</b>	80

### Dimensions

Length:	12.160 mm
Maximum height	3.300 mm
Width	2.550 mm
Wheelbase	5.955 mm
Rear overhang	2.805 mm / 3.400 mm
Interior height	2.400 mm
Height from ground	320 mm
Lead angle	7°
Departure angle	7.5°
Height on step:	
• Doors 1	250 mm (320 mm without kneeling)
• Door 2,3	270 mm (340 mm without kneeling)
Door width:	
• Door 1	1.100 mm
• Door 2	1.200 mm
• Door 3	1.100 mm

### Powertrain

Manufacturer	Irizar Group
Type:	Synchronous
Nominal power	206 kW
Nominal torque	1.500 Nm
Traction capacity even on 18% maximum slopes	

### Energy storage system\*

Battery technology	Lithium ion
Slow charging:	
• Max. installed power	437 kWh (depending on customer needs)
• Charging power	100 kW
• Charging time	3 h
Fast charging:	
• Max. installed power	395 kWh (depending on customer needs)
• Charging power	450 kW (pantograph) – 150 kW (Combo2)
• Charging time	5 min (pantograph) – 2h (Combo2)
Ultra-fast charging:	
• Installed power	90 kWh (depending on customer needs)
• Power	450 kW
• Charging time	5 minutes (pantograph)

\*This data may vary according to the legislation of each country.



### Air conditioning system

Driver - Hispacold Zero Emissions climate control system	(cold: 2,6 kW, heat: 4,93 kW) - CUD electric
Passengers - Hispacold Zero Emissions climate control system	(cold: 28 kW, heat: 32 kW)

### Passengers area and accessibility

Maximum No. passengers**	105
Low - floor	
One or two wheelchair/pram areas	
Four seats for PRM	
Manual ramp	
Two to three double doors	
Possibility of assembling cantilever seats	

### Safety and regulation

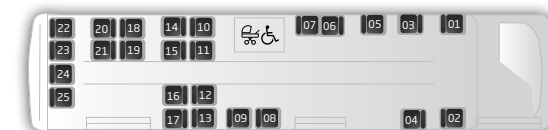
Compliance with fire-resistance regulation 118R, annex 6,7 and 8
Compliance with ECE-R66/02 safety regulation
AVAS (Acoustic Vehicle Alerting System) integrated according to R138 regulation
Compliance with standard ITxPT
Driver are in accordance with: ISO16121, VDV234 and EBSF
Electromagnetic compatibility regulation 10R
Creepage and Hillholder function / EcoAssist: efficient assisted driving
Eco-mode: intelligent management of air conditioning once the vehicle is switched off

### Weight

Maximum front axle weight	8.200 Kg.
Maximum rear axle weight	13.000 Kg.

### Other

Customizable internal illumination	
Charging possibilities: front, lateral or rear	
Wheel covers option	
Turning diameter	21.374 mm
Anti-graffiti materials	



	A	B
<b>Num. of doors</b>	2	3
<b>Wheelchair areas</b>	1	1
<b>Num. of seats</b>	27	25
<b>Num. of standing passengers*</b>	53	54
<b>Total num. of passengers : Maximum</b>	81	83

\*\*No. of standees - Data varies depending on the MAM of each country and the number and type of batteries installed on the bus.

# Irizar ie tram distribution and technical data

## 12m



	A	B
<b>Num. of doors</b>	3	3
<b>Wheelchair areas</b>	1	3
<b>Num. of seats</b>	28	21
<b>Num. of standing passengers*</b>	68	75
<b>Total num. of passengers : Maximum</b>	97	99

### Dimensions

Length	12.160 mm (2 axles)
Maximum height	3.400 mm
Width	2.550 mm
Wheelbase	5.955 mm
Rear overhang	2.805 mm / 3.400 mm
Interior height	2.400 mm
Height from ground	320 mm
Lead angle	7.1°
Departure angle	7.1°
Height on step:	
• Door 1	250 mm (320 mm without kneeling)
• Door 2,3	270 mm (340 mm without kneeling)
Door width ie tram:	
• Door 1	800 mm
• Door 2	1.200 mm
• Door 3	1.100 mm

### Powertrain

Manufacturer	Irizar Group
Type:	Synchronous
Nominal power	206 kW
Nominal torque	1.500 Nm
Traction capacity even on 18% maximum slopes	

### Energy storage system\*

Battery technology	Lithium ion
Slow charging:	
• Max. installed power	437 kWh (depending on customer needs)
• Charging power	100 kW
• Charging time	3-4 h
Fast charging:	
• Max. installed power	395 kWh (depending on customer needs)
• Charging power	450 kW (pantograph) – 150 kW (Combo2)
• Charging time	5 min (pantograph) – 2h (Combo2)
Ultra-fast charging:	
• Max. installed power	90 kWh (depending on customer needs)
• Charging power	450 kW
• Charging time	5 minutes (pantograph)

\*This data may vary according to the legislation of each country.





### Air conditioning system

Driver - Hispacold Zero Emissions climate control system	(cold: 3.5 kW, heat: 13 kW) - CUD water
Passengers - Hispacold Zero Emissions climate control system	(cold: 28 kW, heat: 32 kW)

### Passengers area and accessibility

Maximum No. passengers**	105
Low - floor	
One or two wheelchair areas	
Four seats for PRM	
Electric ramp for people with disabilities	
Two to three double doors	
Possibility of assembling cantilever seats at the front area	

### Safety and regulation

Compliance with fire-resistance regulation 118R, annex 6,7 and 8
Compliance with ECE-R66/02 safety regulation
AVAS (Acoustic Vehicle Alerting System) integrated according to R138 regulation
Compliance with standard ITxPT
Driver are in accordance with: ISO16121, VDV234 and EBSF
Electromagnetic compatibility regulation 10R
Creepage and Hillholder function / EcoAssist: efficient assisted driving
Eco-mode: intelligent management of air conditioning once the vehicle is switched off

### Weight

Maximum front axle weight	8.200 Kg.
Maximum rear axle weight	13.000 Kg.

### Other

Aluminium lateral and roof structure	
Grating / floor Stainless steel	
Front divided into five parts for easy and economic interchange of external bodywork	
Acoustic insulation of ceiling and sides	
Turning diameter	21.374 mm
LED interior and exterior illumination	
Anti-graffiti materials	

\*\*No. of standees - Data varies depending on the MAM of each country and the number and type of batteries installed on the bus.

# Irizar ie bus distribution and technical data

## 15m



	A	B
<b>Num. of doors</b>	2	2
<b>Wheelchair areas</b>	1	1
<b>Num. of seats</b>	60	56
<b>Num. of standing passengers*</b>	45	49

### Dimensions

Length	14.830 mm (3 axles)
Maximum height	3.300 mm
Width	2.550 mm
Wheelbase 1	7.115 mm
Wheelbase 2	1.655 mm
Rear overhang	2.805 mm / 3.400 mm
Interior height	2.400 mm
Height from ground	320 mm
Lead angle	7°
Departure angle	7.5°
Height on step:	
• Door 1	250 mm (320 mm without kneeling)
• Door 2	270 mm (340 mm without kneeling)
Door width ie bus:	
• Option1: Door 1 double	1.100 mm
• Option 2: Door 2 single	800 mm
• Door 2 double	1.200 mm
• Door 3	1.100 mm

### Powertrain

Manufacturer	Irizar Group
Type	Synchronous
Nominal power	240 kW
Nominal torque	2.300 Nm
Traction capacity even on 18% maximum slopes	

### Energy storage system\*

Battery technology	Lithium ion
Slow charging:	
• Max. installed power	515 kWh (depending on customer needs)
• Charging power	150 kW
• Charging time	4 h
Fast charging:	
• Max. installed power	475 kWh (depending on customer needs)
• Charging power	500 kW (pantograph) - 200 kW (Combo2)
• Charging time	5 min (pantograph) - 2h (Combo2)
Ultra-fast charging:	
• Max. installed power	150 kWh (depending on customer needs)
• Charging power	600 kW
• Charging time	5 minutes (pantograph)



### Air conditioning system

Driver - Hispacold Zero Emissions climate control system	(cooling: 2,6 kW, heat: 4,93 kW) - CUD electric
Passengers - Hispacold Zero Emissions climate control system	(cooling: 28 kW, heat: 32 kW)

### Passengers area and accessibility\*\*

Maximum No. passengers**	105
Low - floor	
Low -entry	
A wheelchair area	
Four seats for PRM	
Electric ramp for people with disabilities	
Two to three double or single doors	
Possibility of assembling cantilever seats at the front area	

### Safety and regulation

Compliance with fire-resistance regulation 118R, annex 6,7 and 8
Compliance with ECE-R66/02 safety regulation
AVAS (Acoustic Vehicle Alerting System) integrated according to R138 regulation
Compliance with standard ITxPT
Driver are in accordance with: ISO16121, VDV234 and EBSF
Electromagnetic compatibility regulation 10R
Creepage and Hillholder function / EcoAssist: efficient assisted driving
Eco-mode: intelligent management of air conditioning once the vehicle is switched of

### Weight

Maximum front axle weight	8.200 Kg.
Maximum Tandem axle weight	19.000 Kg.

### Other

Aluminium lateral and roof structure	
Grating / floor Stainless steel	
Front divided into five parts for easy and economic interchange of external bodywork	
Acoustic insulation of ceiling and sides	
Turning diameter	24.200 mm



<b>Num. of doors</b>	3
<b>Wheelchair areas</b>	1
<b>Num. of seats</b>	47
<b>Num. of standing passengers*</b>	58

\*\*No. of standees - Data varies depending on the MAM of each country and the number and type of batteries installed on the bus.

# Irizar ie bus distribution and technical data

## 18m



	A	B
<b>Num. of doors</b>	4	4
<b>Wheelchair areas</b>	3	2
<b>Num. of seats</b>	32	39
<b>Num. of standing passengers*</b>	119	116

### Dimensions

Length (axles)	18.730 mm (3 axles)
Maximum height	3.300 mm
Width	2.550 mm
Wheelbase 1	5.980 mm
Wheelbase 2	6.540 mm
Rear overhang	2.805 mm / 3.400 mm
Interior height	2.400 mm
Height from ground	320 mm
Lead angle	7°
Departure angle	7.5°
Height on step:	
• Door 1	250 mm (320 mm without kneeling)
• Doors 2,3,4	270 mm (340 mm without kneeling)
Door width ie bus:	
• Doors 1,4	1.100 mm
• Doors 2, 3	1.200 mm

### Powertrain

Manufacturer	Irizar Group
Type	Synchronous
Nominal power	240 kW
Nominal torque	2.300 Nm
Traction capacity even on 18% maximum slopes	

### Energy storage system\*

Battery technology	Lithium ion
Slow charging:	
• Max. installed power	460 kWh (depending on customer needs)
• Charging power	150 kW
• Charging time	4 h
Fast charging:	
• Max. installed power	590 kWh (depending on customer needs)
• Charging power	500 kW (pantograph) - 200 kW (Combo2)
• Charging time	5 min (pantograph) - 2h (Combo2)
Ultra-fast charging:	
• Max. installed power	180 kWh (depending on customer needs)
• Charging power	600 kW
• Charging time	5 minutes (pantograph)

\*This data may vary according to the legislation of each country.

Please enquire for other distribution possibilities.



### Air conditioning system

Driver - Hispacold Zero Emissions climate control system	(cooling: 2,6 kW, heat: 4,93 kW) - CUD electric
Passengers - Hispacold Zero Emissions climate control system	(cooling: 56 kW, heat: 64 kW)

### Passengers area and accessibility

Maximum No. of passengers**	145
Low – floor	
One or two wheelchair / pram areas	
Four seats for PRM	
Up to four doors available (single or double)	
Electric ramp for people with disabilities	
Possibility of assembling cantilever seats at the front area and after the articulation	

### Safety and regulation

Compliance with fire-resistance regulation 118R, annex 6,7 and 8
Compliance with ECE-R66/02 safety regulation
AVAS (Acoustic Vehicle Alerting System) integrated according to R138 regulation
Compliance with standard ITxPT
Driver are in accordance with: ISO16121, VDV234 and EBSF
Electromagnetic compatibility regulation 10R
Creepage and Hillholder function / EcoAssist: efficient assisted driving
Eco-mode: intelligent management of air conditioning once the vehicle is switched of

### Weight

Maximum weight on front axle	8.200 Kg
Maximum weight on axle	10.000 Kg
Maximum weight on axle	13.000 Kg

### Other

Aluminium lateral and roof structure	
Grating (Edging?) / floor: Stainless steel	
Front divided into five parts for easy and economic interchange of external bodywork	
Acoustic insulation of ceiling and sides	
Turning diameter	23.780 mm
LED interior and exterior illumination	



<b>Num. of doors</b>	3
<b>Wheelchair areas</b>	2
<b>Num. of seats</b>	52
<b>Num. of standing passengers*</b>	48

\*\*No. of standees - Data varies depending on the MAM of each country and the number and type of batteries installed on the bus.

# Irizar ie tram distribution and technical data

## 18m



	A	B
<b>Num. of doors</b>	4	4
<b>Wheelchair areas</b>	3	2
<b>Num. of seats</b>	32	39
<b>Num. of standing passengers*</b>	119	116

### Dimensions

Length (axles)	18.730 mm (3 axles)
Maximum height	3.400 mm
Width	2.550 mm
Wheelbase 1	5.980 mm
Wheelbase 2	6.540 mm
Rear overhang	2.805 mm / 3.400 mm
Interior height	2.400 mm
Height from ground	320 mm
Lead angle	7.1°
Departure angle	7.1°
Height on step:	
• Door 1	250 mm (320 mm without kneeling)
• Doors 2,3,4	270 mm (340 mm without kneeling)
Door width ie tram:	
• Door 1	800 mm
• Doors 2, 3	1.200 mm
• Door 4	1.000 mm

### Powertrain

Manufacturer	Irizar Group
Type	Synchronous
Nominal power	240 kW
Nominal torque	2.300 Nm
Traction capacity even on 18% maximum slopes	

### Energy storage system\*

Battery technology	Lithium ion
In-depot charging:	
• Max. installed power	640 kWh (depending on customer needs)
• Charging power	150 kW
• Charging time	4 h
Fast charging:	
• Max. installed power	590 kWh (depending on customer needs)
• Charging power	500 kW (pantograph) - 200 kW (Combo2)
• Charging time	5 min (pantograph) - 2h (Combo2)
Ultra-fast charging:	
• Max. installed power	180 kWh (depending on customer needs)
• Charging power	600 kW
• Charging time	5 minutes (pantograph)

\*This data may vary according to the legislation of each country.

Please enquire for other distribution possibilities.





### Air conditioning system

Driver - Hispacold Zero Emissions climate control system	(cooling: 3.5 kW, heat: 13 kW) - CUD water
Passengers - Hispacold Zero Emissions climate control system	(cooling: 56 kW, heat: 64 kW)

### Passengers area and accessibility

Maximum No. of passengers**	145
Low – floor	
One or two wheelchair / pram areas	
Four seats for PRM	
Up to four doors available (single or double)	
Electric ramp for people with disabilities	
Possibility of assembling cantilever seats at the front area and after the articulation	

### Safety and regulation

Compliance with fire-resistance regulation 118R, annex 6,7 and 8
Compliance with ECE-R66/02 safety regulation
AVAS (Acoustic Vehicle Alerting System) integrated according to R138 regulation
Compliance with standard ITxPT
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Electromagnetic compatibility regulation 10R
Creepage and Hillholder function / EcoAssist: efficient assisted driving
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### Weight

Maximum weight on front axle	8.200 Kg
Maximum weight on axle	10.000 Kg
Maximum weight on axle	13.000 Kg

### Other

Aluminium lateral and roof structure	
Grating (Edging?) / floor: Stainless steel	
Front divided into five parts for easy and economic interchange of external bodywork	
Acoustic insulation of ceiling and sides	
Turning diameter	23.780 mm
LED interior and exterior illumination	
Simple glazing	
Anti-graffiti materials	

#foraBetterLife

electric

Erribera Industria Gunea 1  
20150 ADUNA  
Gipuzkoa Spain  
+34 943 84 78 47  
[www.irizar-emobility.com](http://www.irizar-emobility.com)

