FGC
Ferrocarrils
de la Generalitat
de Catalunya

II Jornada Hispano-Alemana sobre el Sector Ferroviario

18 abril 2024

Generalitat
de Catalunya

1.
Our origins

Ferrocarrils de la Generalitat de Catalunya was founded in 1979

As a public company associated to the **Ministry of Territory** of the Generalitat de Catalunya (Catalan Government), its functions are as follows:

- Operate railway services and manage the infrastructures.
- Manage tourist trains and mountain resorts.

More than 40 years at the service of citizens

... committed to **territorial balance**, sustainable mobility and combating climate change,

... benchmark in **efficiency**, **competitiveness**, **leadership** and excellence,

... leader in **punctuality, reliability and availability of trains** during peak hours.

FGC is a mobility and tourist services firm that operates with maximum efficiency and effectiveness, putting users at the center, promoting talent and generating value for society.

2.
Our services

FGC Territorial presence in Catalonia

Current services

16 Railway lines
2 Rack railways
6 Mountain resorts
3 Funicular railways
57 Lifts
1 Cable car
1 Cable railway
16 Chairlifts
7 Tourist trains
3 Freight lines
1 Astronomic park

Future services

2 Regional lines *(Lleida-Cervera; Cervera-Manresa)*

1 Fast connection with Barcelona airport

1 Tramway *(Camp de Tarragona tramway)*

1 New network interconnection *(connecting the Vallès and Llobregat lines)*

FGC **expands its presence throughout the country** to bring its model of sustainable, effective and quality mobility.

Rolling stock for the passengers' transport

TU 112

- 22 units
- 500 passengers
- Barcelona-Vallès line

TU 113

- 19 units
- 528 passengers
- Barcelona-Vallès line

TU 114

- 5 units
- 397 passengers
- Barcelona-Vallès line

TU 213

- 42 units
- 323 passengers
- Llobregat-Anoia line

TU FGC 331

- 3 units
- 201 passengers
- Lleida-la Pobla line

TU 115

- 15 units
- 578 passengers
- Barcelona-Vallès line

The **15 TU 115** entered service in 2022, allowing to **increase frequencies** on the B-V line and reaching maximum capacity.

A continuous investment to continue providing a **timely, reliable and resilient service** to our lines.

Rolling stock for freight

Hopper 62.000

- 72 units
- Potash

Articulated car transporter

- 7 units
- Autometro

Locomotive 257

- 5 units
- Potash and Autometro

Locomotive s/353

- 4 units
- Cargometro

Flatcars

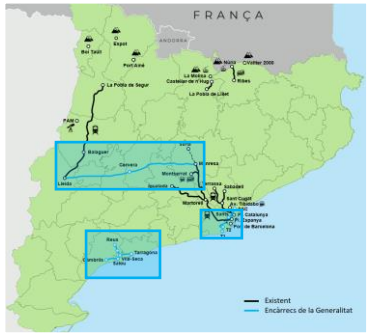
- 18 units
- Cargometro

In 2023 FGC put into service **5 new locomotives** dual electric and diesel (series 257).

FGC is also **preparing the acquisition of new hopper units** to be used for the transport of potash.

FGC strengthens its role as a **logistical partner** of companies rooted in the territory by contributing to the **sustainability** of its chains.

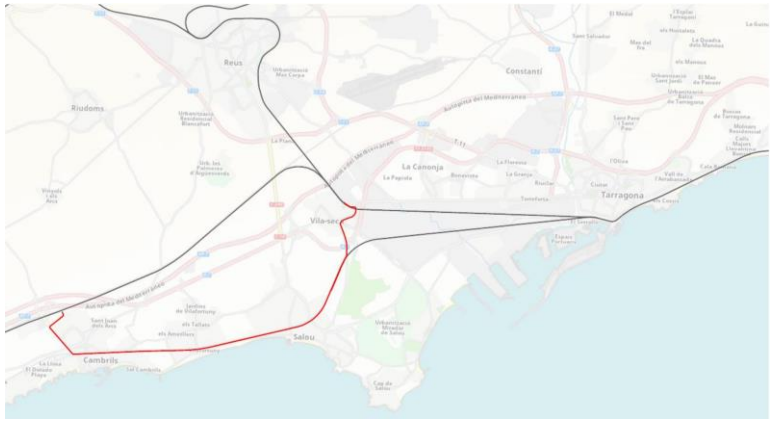
Ongoing railway projects (1/2)



Rapid connection to the airport

Lleida-Manresa services

Camp de Tarragona tramway

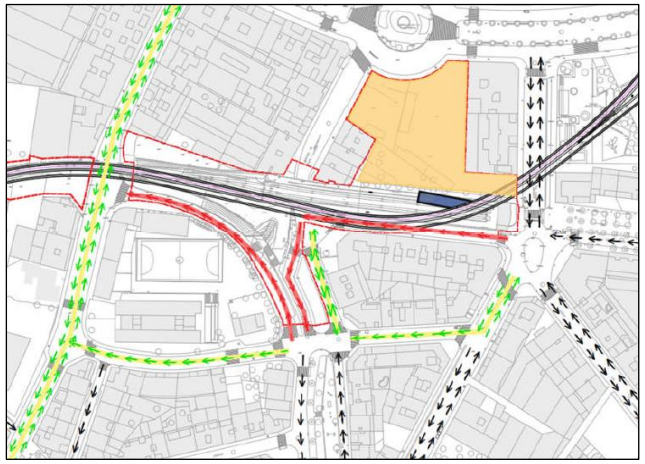


Ferrocarrils **looks to the future** boosting projects that will contribute to a **more connected, competitive and sustainable** territory.

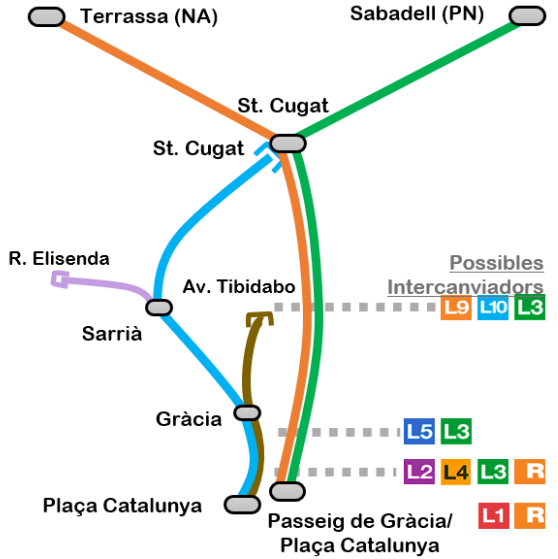
Ongoing railway projects (2/2)

Connection of the B-V and the L-A lines

Urban integrations in Igualada and Manresa



The new Vallès Tunnel



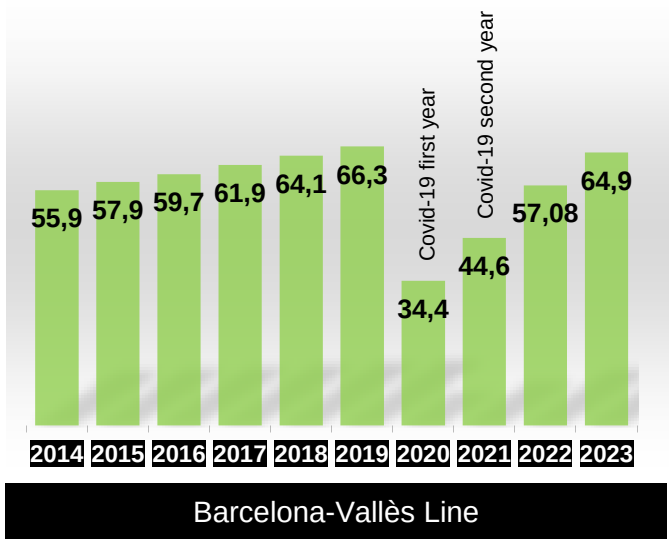
Ferrocarrils **looks to the future** boosting projects that will contribute to a **more connected, competitive and sustainable** territory.

3.
Main figures

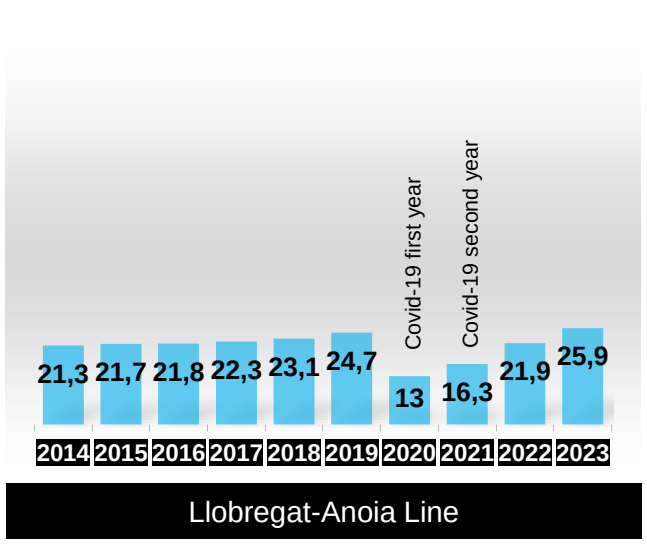
Passengers on the Metropolitan Lines

- **32 trains** at peak hour/direction
- Vallvidrera Funicular: 196 trips a day

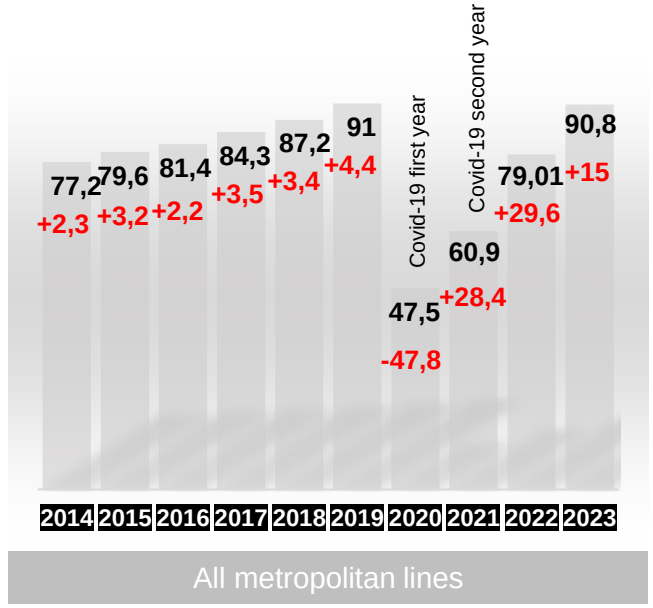
- **15 trains** at peak hour/direction



Barcelona-Vallès Line



Llobregat-Anoia Line



All metropolitan lines

In 2023 the Metropolitan Lines reached **90,8 million trips** practically recovering pre-pandemic demand levels

4.
FGC as a reference

Our services

Our will is to remain **leaders in service quality** in rail traffic in Catalonia

ISC (customer satisfaction index)

The CSI indicator allows FGC to know the evolution of the **client's perception** of the actions the company takes on providing the service. It is measured by means of direct public surveys.

	2018	2019	2020	2021	2022	2023
LMT	76,9	76,63	73,94	77,09	77,8	79
LPS	81,2	85	78,5	79	79,8	82

Punctuality

Punctuality is one of the Ferrocarrils **brand values**. FGC counts as a punctual train one that arrives at its destination on time or with a maximum delay of 3 minutes.

	2018	2019	2020	2021	2022	2023
LMT	99,49	99,48	99,61	99,51	98,94	99,4
LPS	99,1	99	99,47	99,26	99,41	99,4

ICQ (quality control index)

The ICQ indicator allows FGC to objectively control the **degree of real service** compliance with respect to the scheduled service. It is measured by the daily assessment of service breaches (delays, stopped lifts or escalator stairs, etc).

	2018	2019	2020	2021	2022	2023
LMT	98,91	98,79	99,11	98,98	99,17	99,3
LPS	99,66	99,39	99,81	99,65	99,6	99,8

Accessibility and station management plan

FGC is leader in accessibility. **100% of the stations are adapted to the mobility disabled**.

Since 1997 FGC offers a **fully automated model** of station management (ticket sale, access control, exit control, customer service) and we are evolving towards **4.0 stations**, devised as digital spaces and hubs for mobility services.

Digital company

FGC has developed its **Digital Strategy**, which is fully aligned with its long-term Agenda and focuses on four axes:

1. **Client:** to create a customised, quality experience for travellers and visitors.
2. **Operation:** to be efficient in internal operation to ensure flexibility, resilience and adaptability to change.
3. **Environment:** to consolidate the digitalization of FGC's infrastructures and assets to improve energy efficiency and achieve greater predictability of service, security and customised information.
4. **Company:** to adopt disruption and sustainability as company values.

Key elements:

Digital mobility services

Advanced maintenance and operations

Leading company

Digitalizing Tourism and Mountain

Digital company: innovation

FGC is committed to **technology and innovation** to improve efficiency and sustainability.

- The company participates in diverse **R+D+I** projects.
- FGC keeps commercial, institutional and research connections at an international level to guarantee state-of-the-art information, ensuring the technical upgrade of the company.

Geotrain System

It allows us to always know the location of each train, its destination, its stops, its punctuality, its schedules and its capacity.

5G Technology

FGC leads one of the first 5G rail laboratories in the world, between the stations of Pl. Espanya and Europa | Fira. The 5G commercial network is installed not just at the stations but also in the tunnel connecting 4 stops.

Google StreetView

FGC stations are visitable in 360º virtual reality, and accessible to internet users worldwide.

Open data

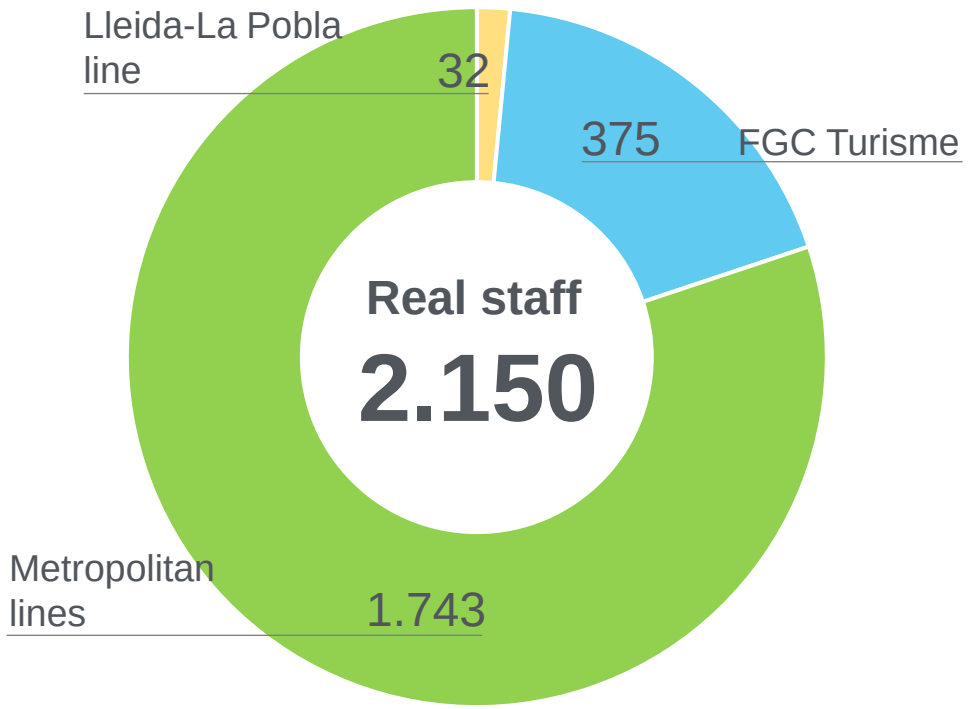
Creating an open data portal makes it easier for third parties to query and reuse public data to foster interoperability between operators and public bodies, stimulate innovation and generate wealth, as well as transparency and citizen information.

Technology at the user's service

Online tickets sales, updated information queries through the FGC app, touchscreens at the stations, connection points inside the trains for mobile devices and tablets, and many other services that certify an intelligent railway management.

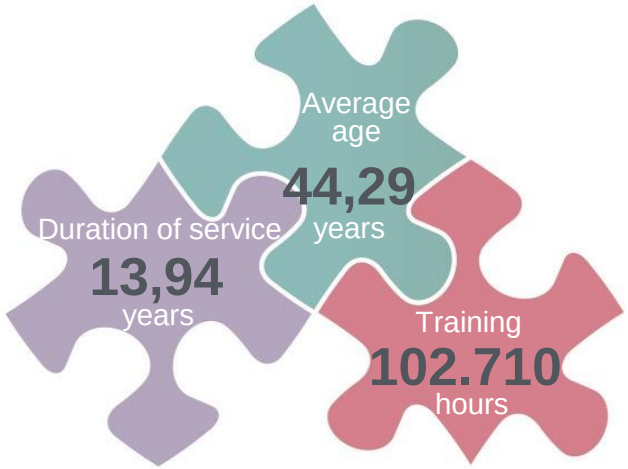
5. Business and organization

Main staffing figures



We are **a great team**, made up of professionals with a common objective: **to provide the best service** and move towards sustainable mobility

Staff



Between 2016 and 2023:

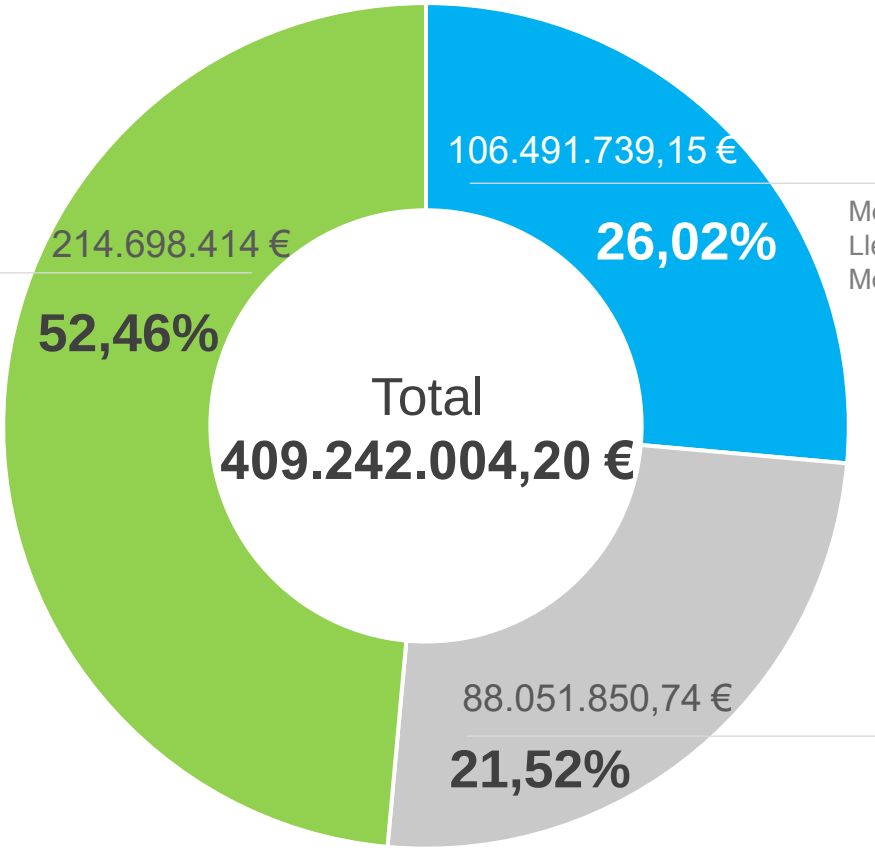
32,5% Women

67,5% Men

Increase in women 50%

Increase in men 14%

Source of funds



2023 Budget

Coverage rates

The **rate of coverage** is the indicator that shows how much revenues cover operating costs.

Metropolitan Lines

55,17%

Lleida-la Pobla Line

23,51%

Vall de de Núria

85,19%

Montserrat Rack Railway and Funiculars

197,40%

Tren del Ciment

96,48%

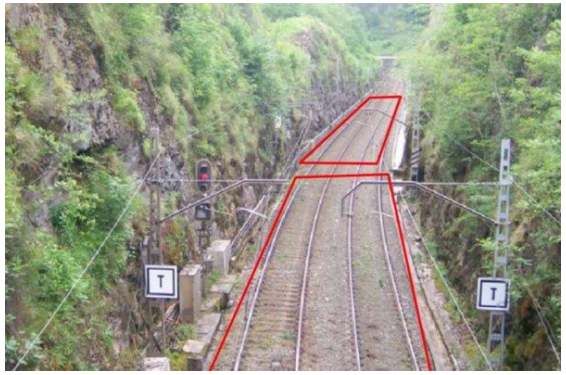
2023 Reality (pending audit review)

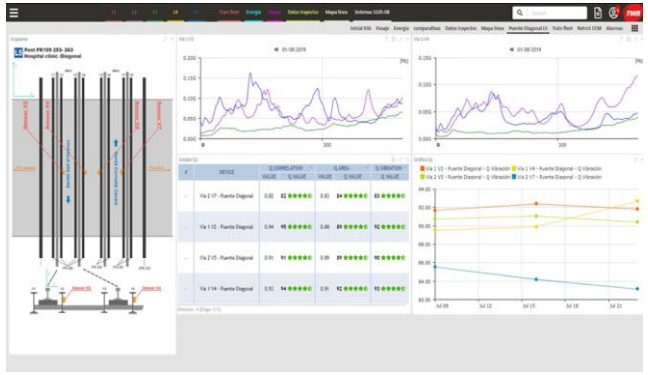
6.
Smart Infrastructure & Stations 4.0

Smart infrastructure ? Station 4.0 ? What does it mean ?

In general, we can consider that the railway infrastructure is noticeably more intelligent than most others. Most modern railways have systems that allow identifying the position of trains as well as interacting with them so that if a safety condition is violated the system self-protects

Probably when we talk about smart infrastructure we are thinking about concepts such as intrusion detection, status diagnosis, train - ground information bidirectional transmission, …





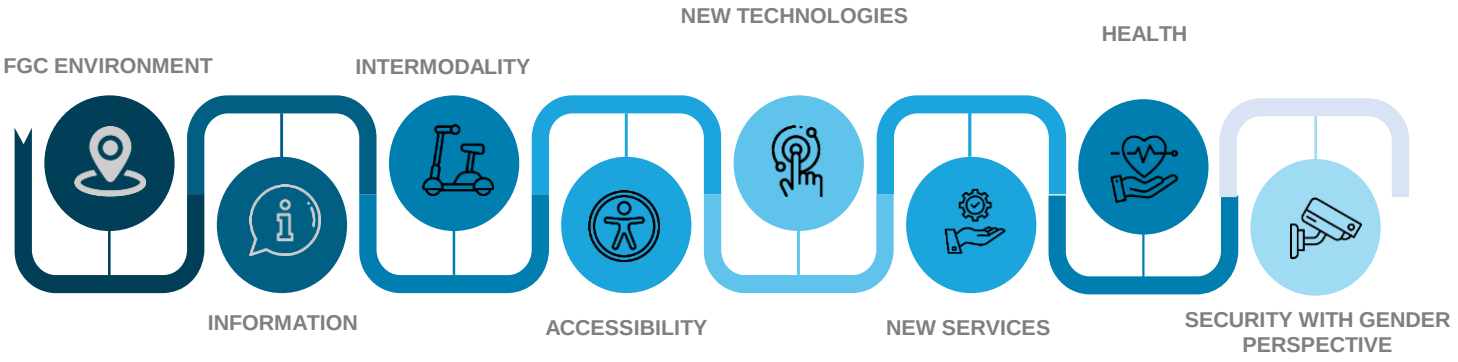
4.0 refers to the Fourth Industrial Revolution.

In essence, the Fourth Industrial Revolution is the trend towards automation and data exchange in manufacturing technologies and processes which include cyber-physical systems (CPS), IoT, industrial internet of things, cloud computing, cognitive computing, and artificial intelligence. The machines cannot replace the deep expertise but they tend to be more efficient than humans in performing repetitive functions, and the combination of machine learning and computational power allows machines to carry out highly complicated tasks.

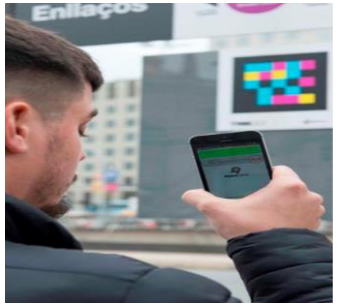
The Fourth Industrial Revolution has been defined as technological developments in cyber-physical systems such as high capacity connectivity; new human-machine interaction modes such as touch interfaces and virtual reality systems; and improvements in transferring digital instructions to the physical world including robotics and 3D printing (additive manufacturing); the Internet of Things (IoT); "big data" and cloud computing; artificial intelligence-based systems; improvements to and uptake of Off-Grid / Stand-Alone Renewable Energy Systems: solar, wind, wave, hydroelectric and the electric batteries (lithium-ion renewable energy storage systems (ESS) and EV).

FGC's Theoretical model

Key issues included in the model



Sub-projects

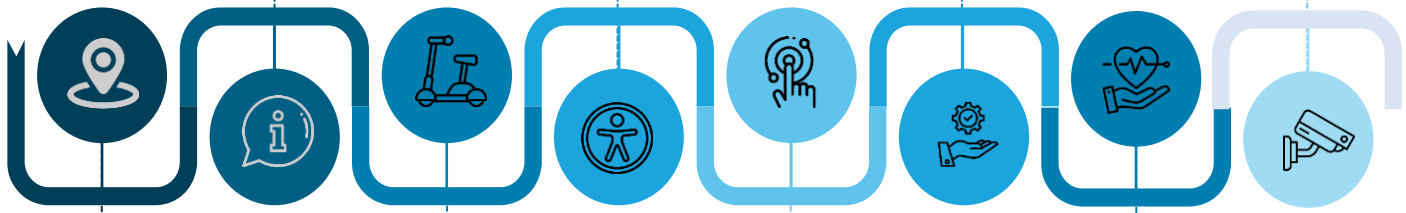


- Dynamic information totems
- Public address monitoring systems for stations and trains
- Integrator of customer information systems
- Dynamic panels for access information

- Accessibility curved stations
- Blind routing aid pavement
- Voice guidance system

- E-commerce package dispensers from new operators
- Contactless payment

- Adaptation of the new information and emergency points



- Exterior Model
- Lighting review
- New physical customer service point
- Recycling bins

- P&R
- Secure parking for bicycles
- Decarbonization of last mile buses

- Artificial intelligence applied to CTTV for the management of fraudulent behavior
- Artificial intelligence applied to physical security
- Paperless production / digital worker

- Healthy motivational messages
- Hygiene points
- Waiting areas with electric device chargers / self-generation

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Thank you!

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