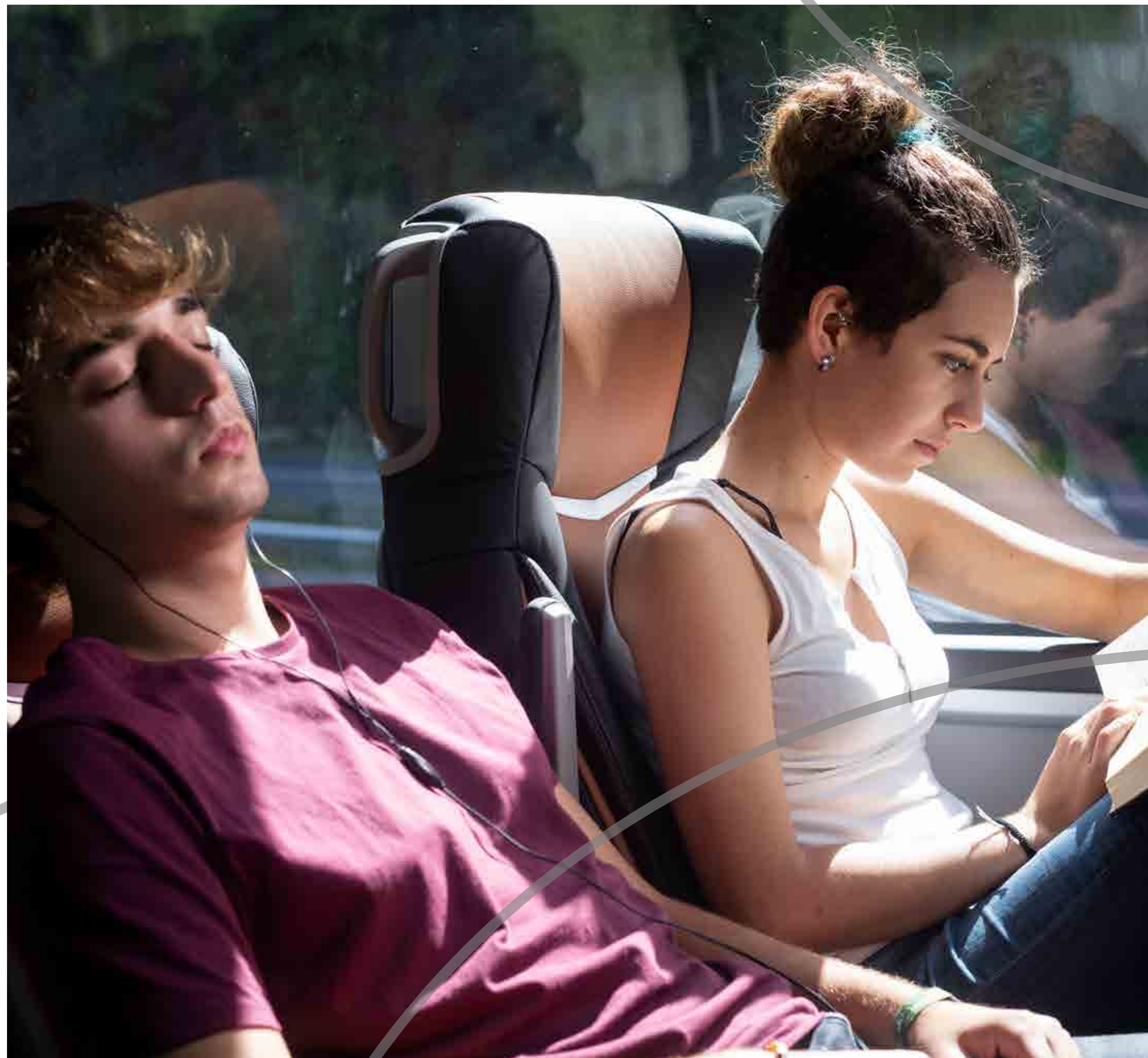



Sustainability Report 2022







APOYAMOS
AL PACTO MUNDIAL

Esta es nuestra **Comunicación sobre el Progreso** en la aplicación de los principios del **Pacto Mundial de las Naciones Unidas**.

Agradecemos cualquier comentario sobre su contenido.

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LETTER OF ENGAGEMENT FROM THE IRIZAR GROUP CEO

1

FOR A BETTER LIFE

Imanol Rego
CEO of the Irizar Group



The Irizar Group has an international presence. They focus their business activities in the passenger transport, electromobility, electronics, electric motors and generators, connectivity and energy industries. All the companies in our Group base our strategy for the future on three main priorities: Brand, Technology and Sustainability. **The Group provides technology and innovation for a better life and solutions to the new challenges of the energy transition.**

Most of the Irizar Group's turnover, despite its growing diversification, is fundamentally based on the manufacture and sale of coaches, buses and components. The pandemic brought mobility to an abrupt stop, especially medium and long distance passenger transport. We were among the ones affected by the drastic fall in activity in the sector. From billing 766 million Euros in 2019, record sales for the Irizar Group, we dropped to 400 million a year later. The journey through the desert has drug out for three fiscal years. We started to see the light at the end of the tunnel in 2022 (we billed 637 million), and we expect to return to pre-pandemic levels in 2023.

Even though **we managed to turn the corner on one of the most critical periods of our history**, and despite the resurgence of demand for coaches, 2022 was a hard year for Irizar. Just when it seemed like the Covid-19 and supply chain problems of the previous year were starting to be resolved, the war in Ukraine, rising prices, the scarcity of components and changes in monetary policy created a complex panorama that affects individual people in the first place, but also companies as well. Because of that, **our convictions are clear. We have to be aware of the enormous responsibility we have and rethink how to multiply our positive impact on business, people and the planet.**

At Irizar we also call Sustainability Sustainable Competitiveness, to make clear our conviction that Competitiveness is not possible without Sustainability, or vice versa. **The best evidence of our real commitment to sustainable competitiveness is having practically maintained employment, even during the hardest times with the severe drops in sales the Irizar Group went through.** Both during the economic crisis of 2009 and the one from 2020 to 2022, we protected the jobs of the people who make up the Irizar Group. And we reinforced communication and training with the goal of continuing to prepare ourselves for new challenges in the future. We understand that economic development and job creation are fundamental to our commitment to Sustainability, even in the greatest difficulties.

Since September 2022 when I took on the responsibilities of CEO of the Irizar Group, we find ourselves in a situation of greater optimism being as the symptoms of recovery have increased, we are taking advantage of opportunities to reinvent ourselves in these times of uncertainty and **we are returning to the path of growth. We are proud of the strength with which everyone who is part of Irizar has acted, showing commitment, flexibility and resilience**, always providing the greatest added value with the right technology, the value of a solid brand, agility and adaptability, closeness to clients, and collaboration with clients and strategic allies.

We have no doubt that the future will include collective public transport as a fundamental solution for achieving sustainability, which is the major alternative for substantially reducing emissions and a fundamental solution for the sustainability of the planet.

Since we started building horse drawn carriages in 1889 we have seen several revolutions. We are now reinventing ourselves to be **global leaders in smart and sustainable mobility** (urban as well as medium and long distance), **which is comparable to when we built our first mechanically powered vehicle in 1928**. It is not an incremental improvement. It is integral innovation with a transversal goal that is especially aligned with our high priority sustainable development goals.

We are facing a paradigm change in mobility that reinforces our commitment to innovation, which is part of our DNA, and in that way we are focusing on sustainability from an integral point of view. And we are focusing on the entire life cycle of our vehicles, from development, extracting the raw materials and their production and use, up to the end of their useful lives. That is why **we keep making sustainability an integral part of our strategy and operations. We seek solutions with high technological content that let our clients, who without a doubt guide the goals we set, operate in a more efficient and sustainable way.**

With the European goals of reducing polluting emissions by 55% in 2030 and to reach net zero emissions in 2050 on the horizon, **we want to be part of the solution.** We want to contribute to greater sustainability. Our strategy is to reduce the impact of our vehicles, eliminate GHG (greenhouse gas) emissions and noise emissions, improve information for users and increase passenger safety. **We intend to do all of that with a high degree of connectivity and artificial intelligence, including driverless vehicles. Passenger transport will be free of emissions, but a combination of technologies will coexist for a while longer.** At Irizar we have gone from only making medium and long range diesel coaches to having a wide range of technological

solutions with alternative drive systems and fuels: Zero-emissions electric buses and coaches and hydrogen, hybrid, diesel, biodiesel, HVO and natural biofuel (CNG and LNG) coaches. We can thus span all the segments of the market, from long distance to urban.

In addition to working on lowering the fuel consumption and GHG emissions of our vehicles through drive technologies and alternative fuels, we also constantly innovate in aerodynamics and coachwork weight. A magnificent example is the **Irizar i6S Efficient, the most efficient coach in our history** that we launched in 2022. It has a 13% reduction in consumption and emissions, a weight reduction of up to 950 kg and an improvement in the aerodynamic coefficient of 30%. It won the Sustainable Bus Award in the Coach category in 2022.

We are convinced that our efforts towards sustainability inspire **trust** in our stakeholders and create a **competitive advantage**, even in times of change and uncertainty, at the same time that they let us take on the challenges we face as humanity and the planet. The chance to make a real impact and reinvent ourselves, creating value to help meet the **ten principles of the Global Compact** (for human rights, labour standards, the environment and anti-corruption), **and the Sustainable Development Goals (SDGs) of the 2030 Agenda of the United Nations**, is immense in the three dimensions of sustainability: Economic-governance, social and environmental. To those ends, once again, we reaffirm our **firm commitment** to those principles and the United Nations SDGs. Respectively, they both help us focus **HOW to operate in a sustainable way, WHAT to do and WHY.**

For all those reasons, but also just because it's the right thing to do, at Irizar **sustainability is one of our highest priorities.** We are excited to be able to contribute our grain of sand to the construction of a bet-

ter and more sustainable world and a better life ("For a better life"), and to do so in the good company of all our stakeholders and society as a whole. I invite you to read on about how we're turning our convictions into a reality. The primary initiatives and progress in the sustainability activities we've been undertaking are presented transparently below.

Thank you to everyone who is making it possible!



Imanol Rego, CEO of the Irizar Group

IRIZAR AND SUSTAINABLE COMPETITIVENESS

2

Contributing to the SDGs and goals of the UN 2030 Agenda:

Cross cutting SDGs



- 8.1. Maintaining economic growth
- 8.2. Raising productivity through diversification, technology and innovation.
- 8.5. Achieving full employment and decent work
- 8.7. Eradication of slavery, trafficking and child labour
- 8.8. Protection of labour rights and safe work



- 9.2. Promotion of inclusive and sustainable industry
- 9.4. Infrastructure modernization, clean technology
- 9.5. Increase in scientific research, technological capacity
- 9.B. Developing domestic technology and research in developing countries



- 11.2. Providing access to public transport
- 11.6. Reduction of environmental impact in cities.



- 12.2. Achieving the efficient use of natural resources
- 12.4. Managing chemical waste and products
- 12.5. Prevention, reduction, recycling and reuse of waste
- 12.6. Adoption of sustainable practices in businesses
- 12.8. Ensuring education for Sustainable Development
- 12.B. Achieving sustainable tourism



- 13.1. Strengthening resilience and adaptation
- 13.3. Improving environmental education and awareness

Cross-cutting SDGs



- 5.1. Ending discrimination
- 5.5. Ensuring the full participation of women and equal opportunities in leadership



- 16.2. Eradication of child abuse, exploitation, trafficking and child exploitation
- 16.5. Reducing corruption and bribery
- 16.7. Promoting citizen participation
- 16.10. Access to information and fundamental freedoms
- 16.11. Promotion and application of laws and policies (HR)



IRIZAR AND SUSTAINABLE COMPETITIVENESS

2

2.1. About us

- Irizar S.Coop. and its business Group.
- Strategic thoughts: Mission, Vision and Commitments
- Brand, Technology and Sustainability

2.2. Our Sustainable Competitiveness

2.2.1. Proud of Our Real Commitment to Sustainable Competitiveness

2.2.2. Sustainability as a Strategic Priority

2.2.3. Our Global Reference Frameworks.

- The 10 Principles of the United Nations Global Compact
- The United Nations 2030 Agenda and 17 SDGs

2.2.4. We are a Responsible Organisation.

- We include Sustainability in our strategy and management
- We are moving Forward in Transparency, Good Governance

and Integrity.

- We make strategic alliances and partnerships with the Global Compact to promote sustainability
- We contribute to raising awareness about sustainability throughout society

2.3. Commitment to the Principles of the Global Compact

2.4. Committed to the SDGs of the UN's 2030 Agenda

- Including the SDGs into our 2030 Irizar Agenda
- Relationship between the SDGs and the chapters of this report

2.1. About us

Although this Sustainability Report has been produced by Irizar S. Coop., we believe that it is important to have the Group’s perspective: to better understand its content, and because there are shared values, strategies and management models.

Irizar S.Coop. and Its Business Group

One Group, six business areas



Founded in
1889



1 R&D Centre



7 leading companies
in their sector and
22 companies of their own



2921 people



13 production centres
worldwide



€637 M (2022)

The Irizar Group is a leader in the bus and coach sector with an international presence in the passenger transport, electromobility, electronics, electric motor and generator, connectivity and energy industries.



Passenger transport



Electronics



Motors and generators



Electromobility



Energy



Connectivity

The Irizar Group is comprised of seven brands that have production operations in 13 plants spread across Spain, Morocco, Brazil, Mexico and South Africa. In addition, it has its own R&D centre, which looks at the applied research process and technological development of its own products and systems in the long-term.

Founded in 1889, today, Irizar is a well-established Group made up of more than 2921 people in 2022, with a commercial presence in more than 90 countries on the five continents. It is geographically and industrially diversified, continuously growing and firmly committed to the brand, technology and sustainability.

With 637 million Euros of billing in 2022, they are overcoming the previous bad years due to the effects of Covid-19, but they still have not reached the 766 million Euros of 2019, a historic year. They have a commercial presence on the five continents and more than 22 companies of their own.

At the beginning of section 2.2 “Our Sustainable Competitiveness”, you can see the evolution of the sales and employment of the Irizar Group from 2005 to 2022. 2020 and 2021 will go down in history as the Covid-19 years, a parenthesis that signified a change in the trend of the rising line of productive and economic activity.

Most of the Irizar Group’s turnover, despite its growing diversification, is fundamentally based on the manufacture and sale of buses, coaches and components.

Irizar, S. Coop (Irizar) is the parent company of the conglomerate and its headquarters are located in Ormaiztegui (Gipuzkoa, Spain), where Creatio, the Group’s Research and Development Centre, is also located.



Irizar Group One Group, seven major brands



Irizar Brasil

In 1998, Irizar Brasil was created, in the town of Botucatu, with the objective of breaking into the Latin American market. Positioned in the luxury coach segment with the Irizar i6 and i6S models, Irizar Brasil is established as a project with a strong commitment to exports. From Brazil, the Group serves the markets of South America, Central America, Africa, and Oceania.

Irizar Maroc

In 1996, the company Irizar Maghreb was established in Morocco. In 2002, the Irizar Century model was launched, and in 2008, a new plant was opened in Skhirat, with a production capacity of 1,000 coaches per year. In 2013, it began manufacturing buses for Europe. Following the launch of the Irizar i6 in 2014, and the Irizar i6S in 2017, Irizar Morocco is consolidated as one of the most expansive projects at international level, being market leader in the luxury coach segment.

Irizar Mexico

Irizar Mexico was founded in the city of Querétaro in 1999. It serves the high-end market with the Irizar i5, i6, i6S, and i8 models and is the supplier of choice for the largest road transport and passenger companies. Its market share has grown and now stands at 66%.

Irizar Southern Africa

Irizar Southern Africa was created in 2004 in the city of Centurion (Pretoria). The plant serves the markets of South Africa, as well as neighbouring countries such as Namibia, Zimbabwe, Botswana, Zambia, Malawi, and Mozambique, among others. It covers the luxury coach segment with the Irizar i6 and i6S.



Masats

Accessibility systems for public transport vehicles.

Creatio

Irizar Group's Research and Development Centre which was created in order to enhance the Group's applied research and technological development capabilities both for its own-brand products and for the main coachwork components.

Branch Offices

Irizar Benelux

Created in 2018, it offers sales and after-sales service for integral electric buses and coaches throughout Benelux.

Irizar Asia Pacific

Since 2006, Irizar has been present in Oceania, based in Melbourne, offering services to New Zealand and Australia.

Datik México

The Datik branch in Mexico responds to the huge demand of the Mexican market, offering a close sales and after-sales service adapted to Mexican customers.

Irizar

Wide range of biodiesel, natural gas (CNG and LNG) hybrid and conventional integral buses and coaches

Irizar e-mobility

Integral electromobility solutions for cities. 100% zero emissions, electric vehicles, charging systems, electric traction, energy management and storage.

Datik

Integral fleet management IoT connected systems. ADAS (Advanced Driver Assistance System) solutions. Autonomous vehicles

Alconza

Engines and generators for the marine, hydroelectric and industrial sectors

Jema

Power electronics applied to network and transport quality. Power supplies for Big Science. Renewable energy, storage and Smart grids Electronics for coaches.

Hispacold

Climate control systems for buses, coaches and rail vehicles.

Jema USA

Based in California, it offers customised services in the photovoltaic, storage, and advanced services sectors. Additionally, it has references throughout the US in each of these sectors.

Hispacold Mexico

Founded in 2002, it is dedicated to the manufacture and supply of air conditioning systems for buses and coaches.

Irizar UK

Founded in 2011, it distributes the full range of integral vehicles in the UK market.

Irizar France

Founded in 2011, Irizar Autocars offers sales and after-sales service to the French market with the full range of Irizar integral, electric, and hybrid vehicles.

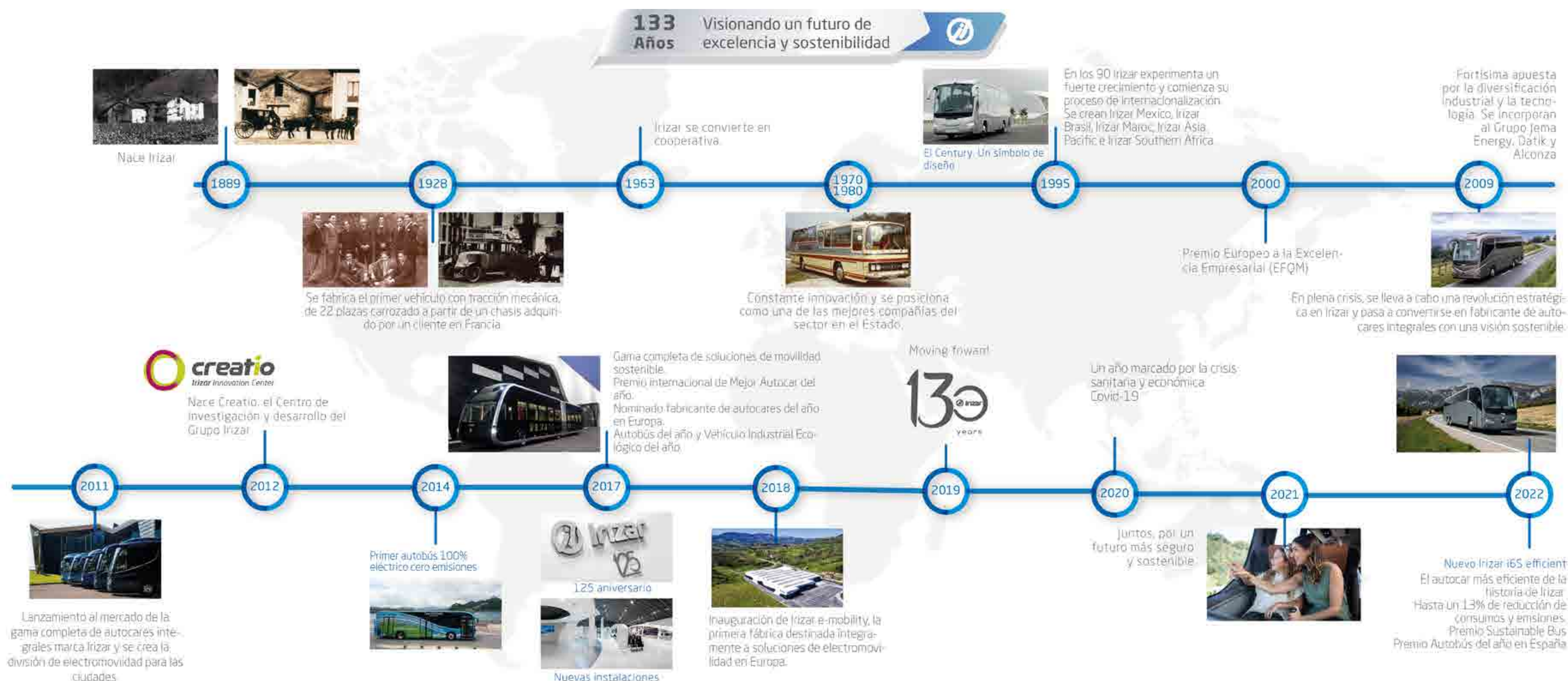
Irizar USA

Created in 2016 and based in Las Vegas, it covers the US market with the Irizar i6 model.

Irizar Italia

Created in 1993 and based in Rimini, it offers service and a complete after-sales network throughout Italy.

Some milestones in our history



Strategic Thoughts: Mission, vision and commitments

Our Strategic Thoughts are the fundamental principles that guide both the strategic decisions and the organisational culture of the Group. They are revised periodically and defined and shared by everybody in the organisation. In that process, aspects of the economic and social environment, the sector, market and competitors, technological evolutions in mobility and digitalisation, as well as the ESG needs and expectations of the internal and external stakeholders are taken into account.

Specific meetings are held for everybody at Irizar to reinforce knowledge of the strategic thoughts. Likewise, annual assemblies are held in all the companies of the Irizar Group where the most important issue dealt with is strategy (including sustainability).

More details of the strategic analysis process and participation of the people at Irizar S. Coop. can be seen in section 4.2.3 "Participation in management and economic results" in chapter 4, about people.

The next major revision of Irizar's strategic thoughts, after being postponed because of the pandemic since 2020, is expected to be done in 2023. **Sustainability will be one of the key issues in accordance with our strategic lines and commitment to sustainability mobility.**

Our strategic thoughts are extensive. We are only presenting our mission, vision and commitments here.

Mission

Our mission is to continuously strengthen our business project and brand in order to grow and generate wealth and employment in our environment.

It is key to achieve a high degree of customer satisfaction by establishing a close relationship with them and offering them the guarantee of a sound project in which they can trust.

The flexibility to adapt to the needs of our customers by providing them with the products and services they need is a strategic factor that differentiates us from our competitors and enables us to earn their loyalty.

What's more, we strive to maximise satisfaction among Irizar Group employees, our external partners, and for society as a whole.

We work and will continue working in Irizar S. Coop's cooperative framework and in a framework of communication and participation in the management and results of the other group companies.

Vision

Our vision is to provide buses and coaches with a marked difference in safety, reliability, comfort and profitability for our customers, passengers and to society and set the standard in service, design, innovation, technology and Sustainability.

To also be a benchmark in providing value to customers in the group's other businesses.

Commitments

Every day we strive for a position of leadership that reflects itself in profit for our customers. We work as a team with personnel who are committed to the customer and to the Group's strategy. We promote efficiency, communication, participation, self-management and managerial excellence.

We create environments where everybody who is part of our projects can give their best according to their talent, abilities and aspirations. This is key to our future success.

It is fundamental to achieve a high degree of customer satisfaction by establishing a close relationship with them and offering them the guarantee of a sound project in which they can trust.

The flexibility to adapt to the needs of our customers by providing them with the products and services they require is a strategic factor that sets us apart from our competitors and enables us to earn their loyalty.

What's more, we strive to maximise satisfaction among Irizar Group employees, our external partners, and for society as a whole.

We work and will continue working in Irizar S. Coop's cooperative framework and in a framework of communication and participation in the management and results of the other group companies.

Brand, Technology, and Sustainability

Brand, Technology, and Sustainability are the three main building blocks on which the Irizar Group's future strategy is based. An inspirational framework that shows us the way to the future and defines our commitment to remain one of the world leaders in the sectors in which we are present.

Although we will deal with it in detail in chapter "3. Customers, Passengers and Citizens", and "5. External Partners, Supply Chain and Alliances", we'll briefly summarise what we understand by **brand and technology**.

- Our strategic lines include the development of Irizar brand and technology products and a clear commitment to increasing our technological capacity and industrial diversification.
- We offer customers and society high added value by providing cutting edge products and services created and developed through contributions from the entire group and aimed at the premium segment. We provide turnkey solutions for sustainable, efficient, intelligent, accessible, safe and connected public transport. Design and innovation are part of Irizar's DNA.
- We have become an important leader in coaches and buses and we have established ourself in markets where we are currently present.
- We continue developing and deploying a wide range of more and more sustainable products and technological solutions to suit all needs. We have a wide range of solutions that include zero-emissions urban buses and trucks and hybrid, diesel, biodiesel, HVO, biofuel and natural gas (CNG and LNG) coaches. It is a wide range of options that spans all segments of the market, including urban buses, medium and long distance suburban coaches for regular and discretionary and premium services in either a wholly Irizar branded version or in a combination of

bodywork with chassis available on the market.

- It is an offer that we continuously keep expanding with several mobility projects under way with electric vehicles that have hydrogen fuel cells or that use new renewable fuels.
- Creatio, the Irizar Group Research and Development Centre, enhances the Group's capacity for applied research and technological development for its products and systems. It combines the synergies and technological capabilities of the Group's companies and is the result of the Irizar Group's key strategy of ongoing commitment to industrial innovation.
- Innovation is one of the hallmarks of our corporate identity. It is part of our culture and extends to management, product, and service levels, as well as Sustainability, technology, and image. We encourage innovation and creativity not only in what we do, but also in how we do it. Accordingly, we are constantly progressing, at Group level and in each of the Group's individual organisations. We are not only increasingly more agile, flexible, and adaptable but better able to anticipate future challenges while adding value to our brand and stakeholders.

Sustainability will be discussed in depth from here on in the entire Report and, apart from being a strategic priority and part of our mission, as we will see, it influences the focus and management of the other two.

Our starting point is the definition of sustainability for Irizar that we made ours, with the ones used by the European Commission and World Economic Forum as a reference.



SOSTENIBILIDAD ¿Qué es?



Referencias:

Comisión Europea: Estrategia renovada de la UE para 2011-2014 sobre la responsabilidad social de las empresas

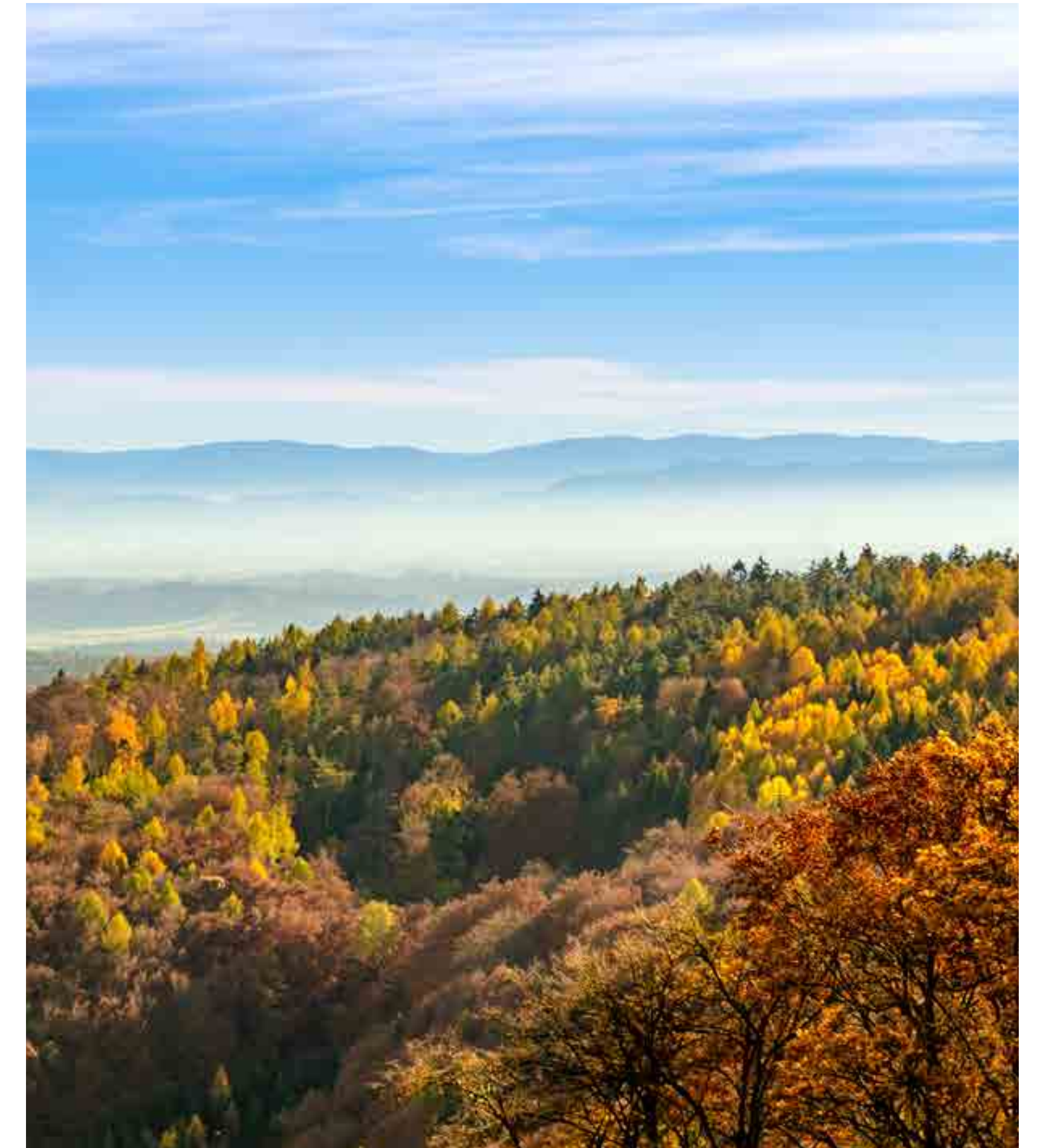
World Economic Forum: Manifiesto de Davos 2020: El propósito universal de las empresas en la Cuarta Revolución Industrial

El propósito o responsabilidad de las empresas es **colaborar con todos los grupos de interés** (stakeholders) en la creación de valor compartido y sostenible a **largo plazo**, **integrando tres dimensiones: económica (y de gobernanza), social y medioambiental**.

El **respeto de la legislación y normativa aplicable** es un **requisito previo** al cumplimiento de dicha responsabilidad.

Para asumir plenamente su responsabilidad con la **sostenibilidad**, las empresas deben aplicar, **en estrecha colaboración con los grupos de interés** (propietarios, personas, clientes/pasajeros/ciudadanos, proveedores y colaboradores externos, sociedad y medio ambiente), un **proceso destinado a integrar** las preocupaciones sociales, medioambientales y éticas, el respeto de los derechos humanos (en todos los eslabones de la cadena de suministro) y las preocupaciones de los consumidores **en sus operaciones empresariales y su estrategia básica**, a fin de:

- maximizar la creación de valor compartido para: sus propietarios, las demás partes interesadas y la sociedad en sentido amplio;
- identificar, prevenir y atenuar sus posibles consecuencias adversas y riesgos.



2.2. Our Sustainable Competitiveness

At Irizar we also call Sustainability Sustainable Competitiveness, to make clear our conviction that Competitiveness is not possible without Sustainability, or vice versa. We are convinced that in the long-term companies can no longer choose between profitability or Sustainability, there is no profitability without Sustainability.

For a number of years, sustainability has been one of the three key priorities of our Group's future strategy, and it drives us forward and commits us to working **by contributing to the construction of a better World for everyone**. All within a culture and business approach of integrity that is governed by Ethical Principles.

For years this commitment has been part of the culture of the people who make up the Irizar Group and of the projects and decisions that are addressed by the different companies of the Irizar Group. Our actions seek to promote it and integrate it into our strategy and operations in all the Group's production plants and companies at international level.

Sustainability is required as an important competitiveness factor for sustainable growth and an essential competitiveness advantage for the future of Irizar.

Our future success depends on us going beyond the search for economic profitability and compliance with applicable legislation (local, regional, national, foreign, and international laws) and internal regulations. All within a culture and business approach of integrity that is governed by Ethical Principles. We strive to create a true culture of sustainability (economic-governance, social, and environmental), integrated at the Group level in the daily management of all the organisations that comprise it and in our relationships with all stakeholders (people, customers, passengers, citizens, external partners, the environment, and society in general).

We are convinced that our sustainable action inspires confidence in both leaders and stakeholders and generates a competitive advantage in times of change and uncertainty. At the same time, it allows us to address the governance, social and environmental challenges faced by humanity and the planet, at the same we contribute to the economic stability of the market.

In addition to the individual progress and initiatives in sustainability for each Group company, the focus and long-term trajectory of continuous progress at Irizar S. Coop serves as a reference and facilitates strategic progress in the future at the same time that it motivates the implementation of sustainable actions by the rest of the companies in the Group and between them.



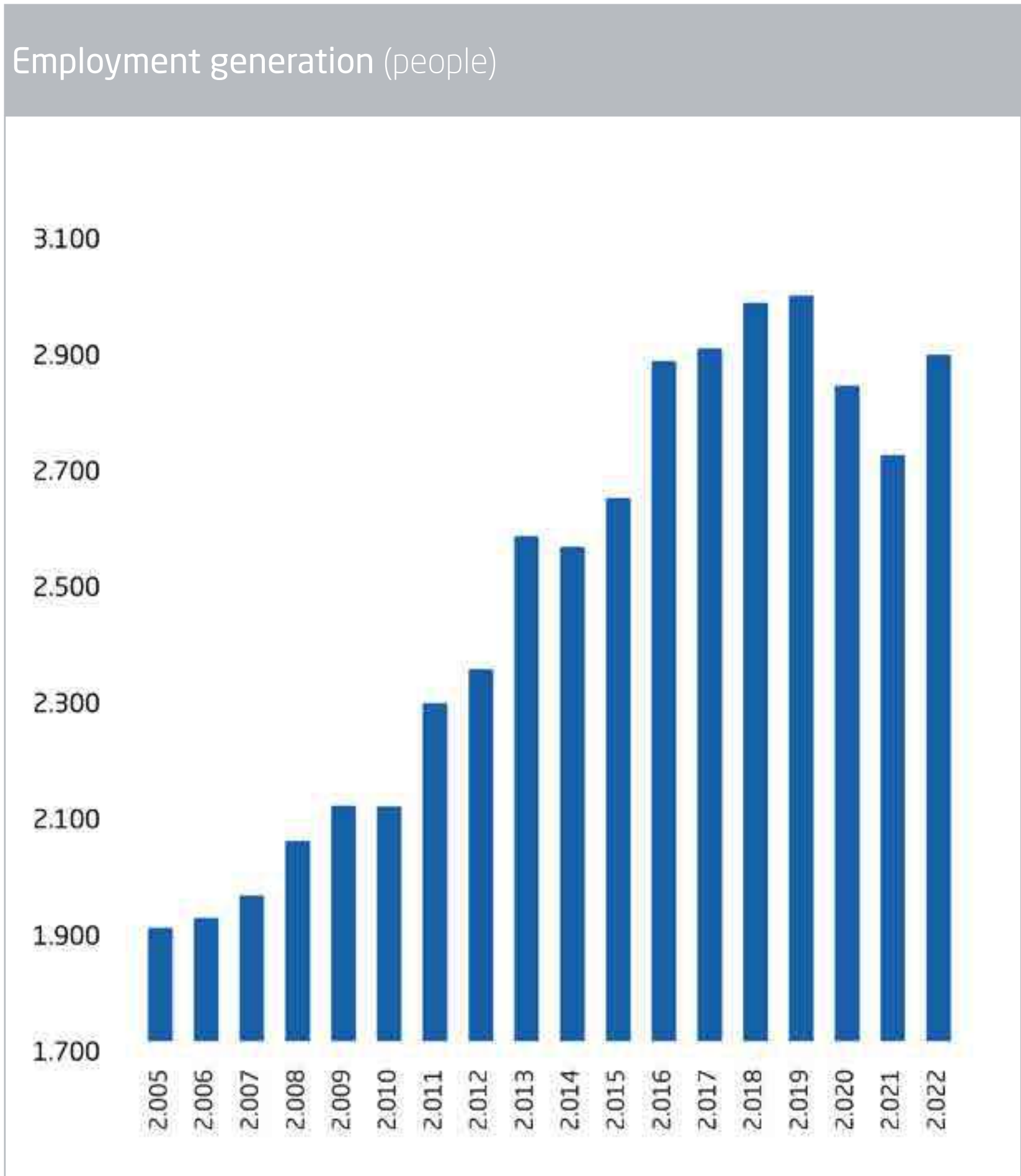
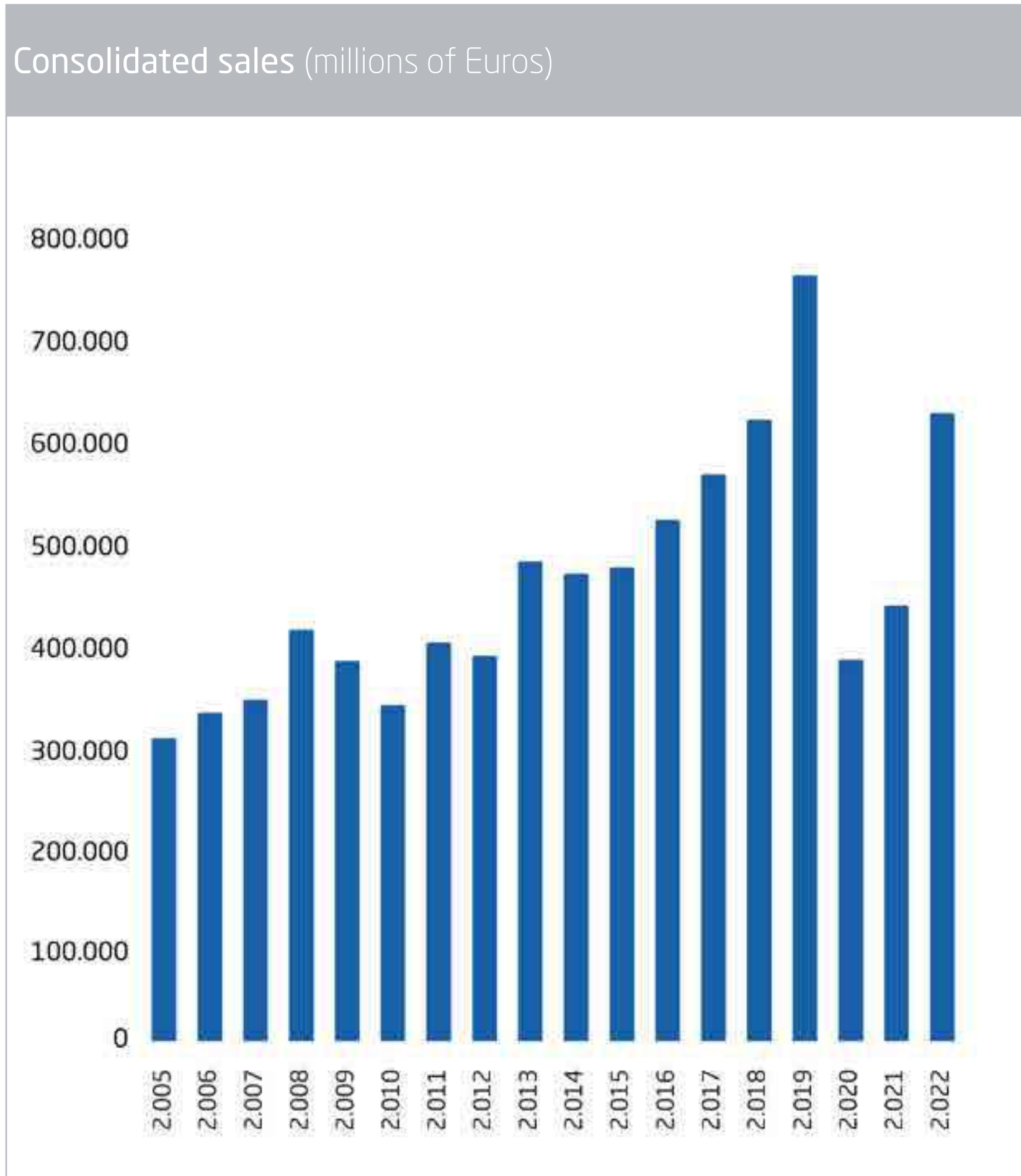
2.2.1. Proud of Our Real Commitment To Sustainable Competitiveness

We are proud of how we handled the difficulties caused by Covid-19 as a group, thanks to the hard work and commitment of everybody who is a part of the Irizar Group. Our goal is to keep being an attractive Group for talent by creating high quality jobs with a company culture and behaviour that has integrity and is guided by ethical principles.

We understand that economic development and job creation are fundamental in our commitment to Sustainability, even in the greatest difficulties. The following graph is the best **evidence of our real commitment to Sustainable Competitiveness** (economic/governance, social and environmental) and reflects consistency with our Mission. It shows the coherence with our mission and our commitment to make a positive impact on the 2030 Agenda (especially on **SDG 8 - Decent work and economic growth**).

Despite the crisis and drop in sales of the Irizar Group in 2009 we maintained employment. And in 2020 and 2021, despite the severe impact of Covid-19 on our business, the decrease in employment was not very significant. We used the opportunity to reinforce communication and training so we could keep preparing for new future challenges. Fortunately, in 2022 our business and the jobs destroyed in the worst years of the pandemic are starting to recover.

Evolution of sales and employment at the Irizar Group



The transportation industry went through significant changes and faced significant challenges with the Covid-19 pandemic, because it caused a decrease in bus and coach manufacturing that affected us deeply. Tight restrictions on public transport and general mobility to control the spread of





the virus hit this sector hard, especially medium- and long-distance passenger transport, as well as international tourism.

The economic recovery after the pandemic and the return to normality in the public transport sector made it possible for us to recover demand after 2022, nevertheless we are facing other scenarios we did not expect.

The geopolitical context with the war in Ukraine and price inflation due to the increase in energy costs are also a challenge for managing our manufacturing margins. Nevertheless, despite those challenges, in 2022 we were able to maintain our market position and exceed the goals set in the budget. Insofar as factories, we implemented several measures to improve the efficiency of our production processes and lower costs. That made it possible for us to offer our clients more competitive prices without sacrificing the quality of our products.

In this scenario, at Irizar we keep reinforcing three strategic lines for the future: Brand, Technology and Sustainability. In addition, it was a year of opportunities and progress in strategic positioning where **we have kept reaffirming our focus on sustainable mobility as the guide for our future growth.**

Our “For a better Life” resolution is still inspirational, and it shows the spirit of those of us who make up the Irizar Group.

At the Irizar Group we are going back to our goals with fortitude, innovating and returning to the path of sustainable growth.

2.2.2. Sustainability as a Strategic Priority

We keep focusing our efforts so Irizar can become a global **leader in sustainable mobility** for urban and medium and long distance transport, which is why we keep integrating sustainability as an indispensable value for the future into our strategic plans. At the same time we keep searching for solutions with a high technological content that lets our clients, who without a doubt guide the goals we set for ourself, operate their services in a more efficient and sustainable way.

As you will see in detail in the chapter about “Clients, Passengers and Citizens”, the **main global trends** (decarbonisation, urbanisation and digitalisation), have a radical impact on the **transportation ecosystem** which is being transformed deeply and more quickly than initially expected. The concept of sustainable, intelligent, connected, safe and shared mobility is based on 3 key points:

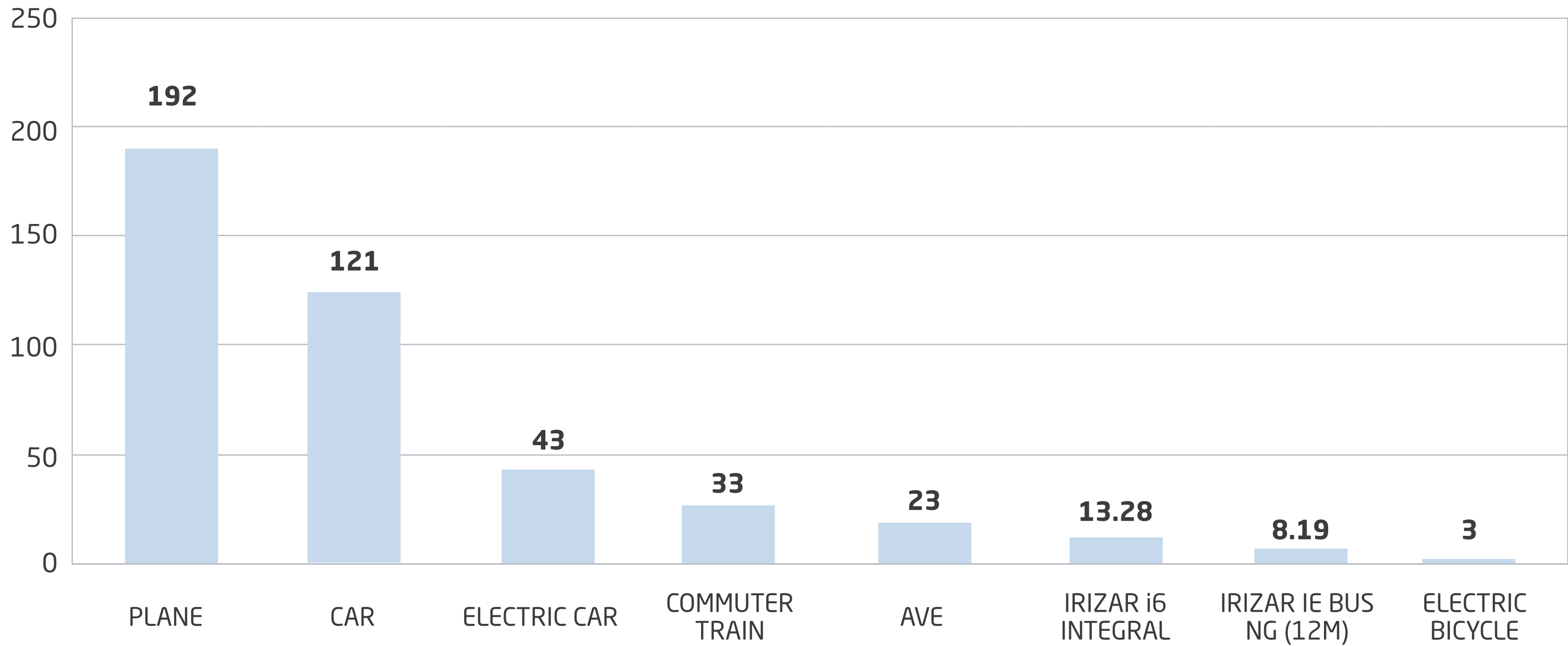
- **Decarbonisation** Reducing emissions, electrification, alternative fuels and hydrogen as an energy vector
- **Safety**-- Driverless vehicles and
- **Connectivity** -- Big Data

We have no doubt that the future will include **collective public transport as a fundamental solution for achieving sustainability**, which is **the major alternative for substantially reducing emissions because**

- o A bus can transport as many people as 50 cars.



- o Buses are the most used form of public transport in the world and the one with greatest capillarity.
- o It has been shown that cars are only used 5% of the time and that must be optimised.
- o According to a study by the IDAE (Institute for Energy Diversification and Savings) and the emissions of our vehicles, the comparison of the carbon footprint between buses and coaches and other means of transport is very advantageous (g CO₂ per km passenger transport^(*)ed).



■ g CO₂/p km

(*) for electric modes the CO₂ emissions associated with generating the **electricity consumed during use** are taken into account even though at the point of use no polluting emissions or CO₂ are generated.
In addition, they generate a significantly lower acoustic **impact than** their thermal equivalents.

Since [1889](#) when we started manufacturing [horse-drawn carriages](#) we have seen several [revolutions](#). We are now [reinventing ourselves in terms of sustainable and intelligent mobility](#), which is comparable to when in [1928](#) we manufactured our [first mechanically powered vehicle](#). It is not exactly an incremental improvement. It is [integral innovation](#) with a transversal goal especially aligned with 4 of our high priority SDGs.

SDG 9 – Industry, innovation and infrastructure

SDG 11 – Sustainable cities and communities

SDG 12 – Responsible production and consumption

SDG 13 – Climate action

We are facing a paradigm shift in mobility that reinforces our commitment to [INNOVATION](#), which is part of the DNA of the Group, and focus is put on SUSTAINABILITY from an integral point of view.

Innovation is the only path for contributing to society with mobility products and solutions that can improve our lives (**“For a better Life”**).

Lowering the impact of our vehicles, eliminating GHG (greenhouse gas) emissions and noise pollution, improving information for our users, and improving passenger safety are our priorities. We judge these to be the foundations on which to build all our Sustainability actions that society demands of us. And that is where we want to be. We are continuing to innovate, because innovation is in our DNA, and we stay close to our customers, adapting to their new circumstances. Accordingly, we’re focusing on the entire life cycle of our vehicles, from their development, starting with extracting the raw materials, to production and use, up to the end of their life.

Along these lines, we are continuing to collaborate with our stakeholders in the [generation of shared and sustainable long-term value](#), by including the three dimensions of sustainability into our company culture: **economic/governance, social and environmental**.

- Customers, passengers, citizens
- People (workers and cooperative members).
- External partners, Supply Chain and Alliances.
- The Environment
- Society in general

It is a process aimed at **including your concerns into our strategy and operations**: social, environmental and ethical in regards to human rights (in every link of our supply chain), in order to:

- Maximize the **creation of shared value** for all the aforementioned stakeholders;
- Identify, prevent and mitigate their possible adverse consequences and risks.

We know [Sustainability is the strongest force for change in our generation](#). It is the future, not just for the well-being of humanity and the planet, but also for the economic stability of the market. Our success depends on going far beyond seeking economic profitability, complying with applicable laws (local, autonomous community, national, foreign and international laws) and internal regulations. All within a **culture and business approach of integrity that is governed by Ethical Principles**.

[Our firm commitment to sustainability](#) is led by the **CEO**, with the goal of making progress towards more sustainable business models. Furthermore, we understand that sustainability management should not wait. We must make progress to **achieve it transversally**, not secondarily, and it must be led by the rest of the members of the **Management**

Team to expand throughout the global management of the company into all the departments, areas and people involved. It means not just showing leadership inside the company but extending it to the **value chain** and, to the extent possible, throughout the industry and the entire **organisational ecosystem**.

We are convinced that **our sustainable action inspires confidence** in both leaders and stakeholders and **generates a competitive advantage** in times of change and uncertainty and, at the same time, allows us to address the economic, social and environmental challenges faced by humanity and the planet.

In the following chapters (from 3 to 7) we’ll see in detail how we generate value for each one of our stakeholders.

2.2.3. Our Global Reference Frameworks

Our sustainable business model is inspired by the greatest voluntary worldwide examples of corporate sustainability: The 10 principles of the United Nations Global Compact and the 17 sustainable development goals (SDGs) of the United Nations 2030 Agenda. Respectively, they both help us focus on **HOW to operate in a sustainable way, WHAT to do and WHY**.

The United Nations Global Compact promotes implementing 10 universally accepted principles in the areas of human rights, labour standards, the environment and the fight against corruption in the business activities and strategies of organisations. With more than 17,000 participants in more than 160 developed and developing countries that represent almost every sector and size.

At Irizar S. Coop. we have been **adherents of the United Nations Global Compact since 2013**. Consequently, every year we draft a **sustainability report** where we renew our firm commitment to make progress in implementing the 10 principles and contributing to the Sustainable Development Goals, at the same time we state the main initiatives and progress in the activities we have been doing with our stakeholders.



This report shows our transparency and we publish it in different internal and external media. On one hand, on the United Nations website: <https://www.unglobalcompact.org/what-is-gc/participants/19510-IRIZAR-S-COOP->, and, on the other hand, on our own website (in several languages): <https://www.irizar.com/es/irizar/memorias>

The 10 Principles of the United Nations Global Compact

The 10 Principles of the Global Compact are the essential values since the birth of this United Nations initiative in 2000. Basing businesses on those principles means more than mere standards compliance.



These 10 Principles are the reference framework for **HOW** to make progress in acting responsibly. They undoubtedly mark the way for us to manage risks better and avoid any negative impacts in the four main focus areas, with the aim of ensuring that our operations are conducted in a way that benefits both economies and societies worldwide.

The 10 Principles of the Global Compact are based on several Declarations by the United Nations and they have universal approval. They are articulated in four main areas:

- **Human Rights:** Principles 1 and 2 **They are derived from the Universal Declaration of Human Rights**
- **Labour Standards:** Principles 3, 4, 5 and 6 are inspired by the ILO's Declaration on Fundamental Principles and Rights at Work.
- **The Environment:** Principles 7, 8 and 9 are based on the Rio Declaration on Environment and Development.
- **Anti-Corruption:** Principle 10, the last to be incorporated, is based on the United Nations Convention Against Corruption

For more information about the 10 principles see: <https://www.unglobalcompact.org/what-is-gc/mission/principles>.

Although reflecting our commitment to the 10 Principles is the main objective of this Report, in section "2.3. Committed to the Principles of the Global Compact" we provide a table showing the chapters / sections of this Sustainability Report with the areas and principles.

The United Nations 2030 Agenda and 17 SDGs

In 2015, the Member States of the United Nations General Assembly approved the **2030 Agenda on Sustainable Development, consisting of 17 Sustainable Development Goals (SDGs)** and different targets, to “eradicate poverty, protect the planet and ensure prosperity”. It encompasses all three dimensions of Sustainability: economic/governance, social and environmental. Its goal is to make the world a more sustainable and prosperous place. The United Nations assigns a leading role to companies in its implementation. A new way to improve everyone’s life, without leaving anyone behind.

Five years later, the UN, in its Annual Report on the status of the SDGs, confirmed that progress had been made, but not fast enough to meet the targets on time. Covid-19 increased inequalities in the world and made the need to apply the 2030 Agenda to make a sustainable and inclusive recovery possible even more patent.

In the coming years the goals will stimulate action in **five spheres that are critically important for humanity and the planet.**

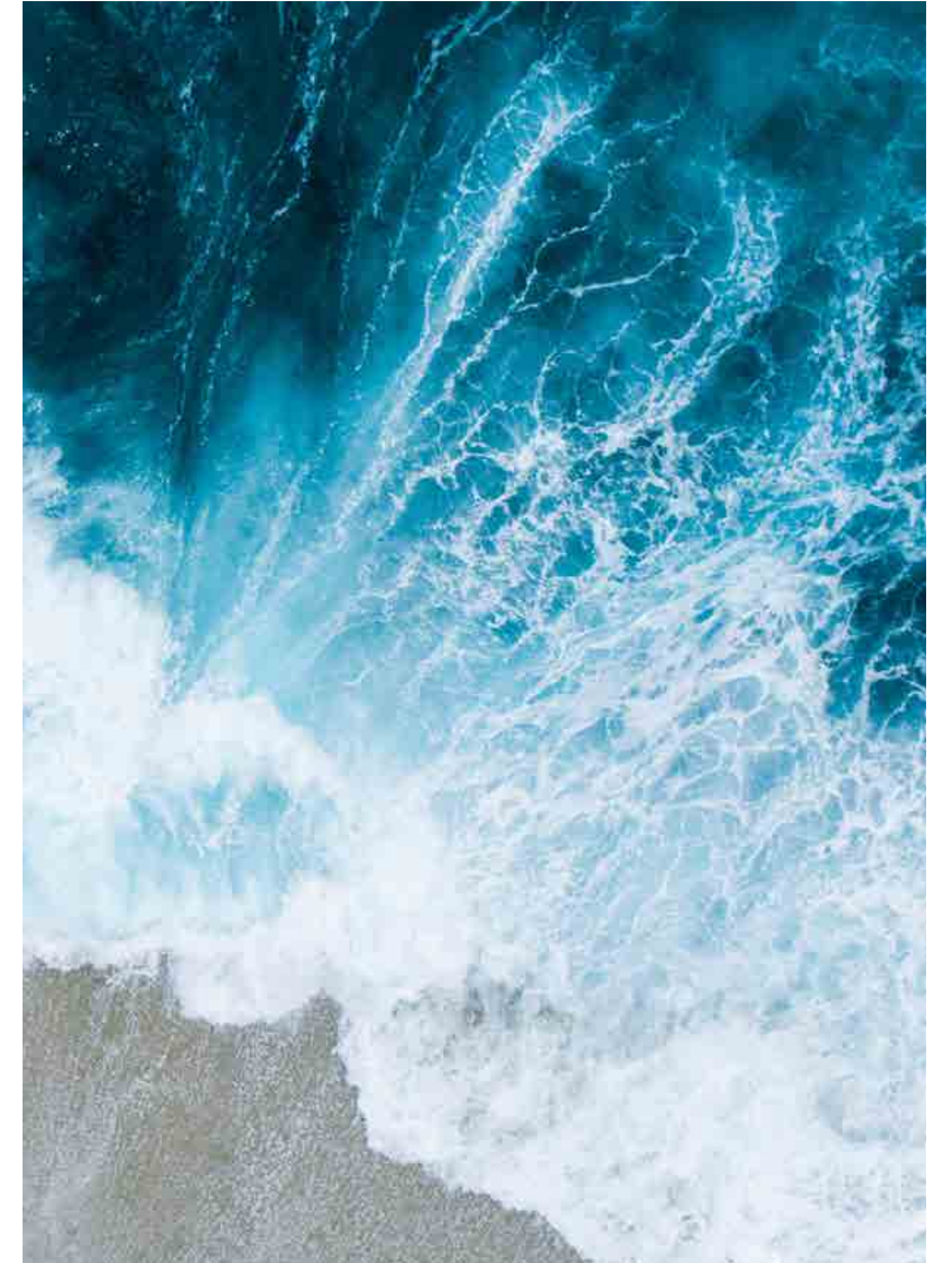
- **PEOPLE:** End poverty and hunger in all their forms and guarantee dignity and equality
- **PEACE:** Promote peace, justice and inclusive societies.
- **ALLIANCES:** Implement the Agenda through a strong global partnership
- **PLANET:** Protect our planet’s natural resources and the climate for future generations.
- **PROSPERITY:** Ensure prosperous and satisfying lives in harmony with nature.

The 2030 Agenda involves **17 Sustainable Development goals** and 169 targets to be met in 2030. The SDGs focus on us creating positive impacts, contributing to sustainable development and finding business opportunities.

Now is the time **we need to move from economic value to shared value** and align the success of the company with the success of the community. It’s not philanthropy, but rather business intelligence because there won’t be prosperous businesses without prosperous environments. That spirit of shared value is, in fact, what the **2030 Agenda (the United Nations plan for humanity) propagates.** The UN gives companies a leading role in sustainable development because they believe that, as motors of the economy, companies have their hands on the lever to bring about systemic change through rethinking products and services or reorienting business, among other things. **The 2030 Agenda is currently the framework for business sustainability.**

When its term expires, of which there are only eight years left, sustainable management that provides business benefits will continue. It’s entirely extendible into the future.

The SDGs are the reference framework for **WHAT** to do (roadmap) and **WHY** we do it. They make us to think that doing what we are already doing is not enough, rather we need to also change **HOW** we do things. **We need to transform, not just rebuild what was not working.**



Further information on the SDGs: <https://sdgs.un.org/es/goals>

Our progress in our commitment to the SDGs is set out in Section “2.4 Committed to the SDGs of the UN 2030 Agenda”. In addition, the SDGs and goals related with the content are specified at the beginning of every chapter about an interest group, as well as the KPIs for measuring our impact and contribution to the 2030 Agenda and principles of the Global Compact.



OBJETIVOS DE DESARROLLO SOSTENIBLE



2.2.4. We Are a Responsible Organisation

Sustainability strategy and performance include corporate responsibility (which affects everyone and everything), and responsibility with each stakeholder (which is included in detail in the rest of the chapters of this Report).

We Include Sustainability in Our Strategy and Management

ETHICS is the basis of sustainability. It will be possible if our business culture is guided by **shared ethical principles**: Principles that emanate from our group mission, vision and commitments and that are present in decision making and that are the backbone of **making our sustainable competitiveness possible**.

- **Sustainability is present in strategic decision-making and day-to-day management** in line with the 10 principles of the Global Compact (see the previous and following sections and the rest of the chapters).
- In 2018, we began our approach to the United Nations' 2030 Agenda and recognized the timeliness of the Sustainable Development Goals (SDGs).
- Since 2020 **we have been making progress in including them** in our strategy and operations to **contribute to achieving the SDGs** as

a roadmap to drive prosperity for people and the planet. **We prioritise and are starting to work on 8 SDGs and goals** that have an exceptional impact on our business activities and extensive value chain. You can see more details about our commitment to the SDGs in section 2.4 and at the beginning of all the following chapters.

- At the **annual assemblies**, where everybody at Irizar S. Coop. participates, sustainability is always addressed within the global strategy and progress of the company (its dynamics can be seen in detail in chapter 4 about people). For example:
 - Sustainability is an essential key **competitiveness factor** of the Irizar Group.
 - In 2020 the new version of the **code of ethics** was presented for approval by all the members.
 - Our **high priority and transversal SDGs** from the 2030 Agenda were presented in 2020.
 - In 2020, 2021 and 2022 **sustainability was set forth as the axis around which the rest of** Irizar's strategies would revolve, especially for **sustainable mobility**.
- We continue to make clear progress in **training and raising the awareness of people about sustainability**. In 2021 we can highlight the training in **sustainability and SDGs/2030 Agenda** that was started by the **Management Team**. The involvement and leadership of the Management Team is fundamental for making progress towards putting sustainability in practice transversally not just secondarily. Training in it will subsequently be promoted and it will also be spread to leaders and the rest of the people in the organisation. The commitment is important for achieving the goals set for the future.
- As we explain later in the chapter about "4. We create value for our

people", we do in depth revisions of the **strategic thoughts** every three or four years where DAFO analyses are done taking into account economic-governance, social and environmental issues. That is done to set priorities and define actions with the goal of making the strategy be aligned with the expectations of all the stakeholders and thus guarantee their needs, sustainable growth for the company and creating value, wealth and employment, as our mission states.

The Irizar Group is exposed to risks that are directly related to the productive or commercial activities of its divisions or that result from external influences. These are risks that may prevent the Group, or any of its business areas, from achieving its objectives. At times, the risks translate into opportunities that must also be identified and exploited. Therefore, in the Irizar Group and all its business areas, risk and opportunity analysis is immersed in the culture, strategy, and management of each of the teams and processes. It is automatically integrated into strategic plans and decision-making to prevent illegal practices or those outside our framework of ethical action.

As we noted above, in the next major revision of Irizar's strategic thoughts, expected in 2023, sustainability will have a fundamental role in accordance with its future strategic lines.

- We remain committed to **dialogue with all of our stakeholders**. It helps us to listen to their concerns and needs and identify future trends to build trust and therefore increasingly consolidate our relationship with them. At the same time, it is an ideal way of transparently showing and exchanging our assessments and our fields of action as well as the challenges we face in our management of sustainable growth. The debates are held in periodic meetings and using various channels of communication.

Our stakeholders include: workers, cooperative members, clients/passengers/citizens, suppliers/external collaborators, the environment and institutions and society as a whole.

- **Priorities for Sustainability:** We evaluate our ESG priorities periodically depending on their importance for our business and stakeholders and how they impact on the business model and the opposite. In short, we determine our priorities using a **materiality analysis** (done using various sources of information), to ensure that our sustainable strategy is aligned with the expectations and to facilitate a greater impact on all of them.

The results of the priorities for sustainability done in early 2021 and late 2022 have been deeply taken into account in this report.

Our Prioritising Procedures:

- o **Analysis:** We review the latest opinions about sustainability issues for frameworks and good practices for (fundamentally the United Nations Global Compact), relevant non-gubernatorial organisations, industry bodies and academia.
- o We analyse requests from our clients regarding sustainability and new priorities. For example, as part of proposals or supplier compliance reviews.
- o **Benchmarking:** We learn from other organisations through get togethers where we exchange experiences as well as through consulting information about recent and emerging ESG questions among our peers, competitors and other international organisations.
- o **External Consultations:** We gather opinions from the primary stakeholders, including ecosystem partners, NGOs, academics, etc. about the proposed sustainability priorities and to be able

to classify them in terms of importance.

- o **Internal Consultations:** In a process led by the CEO and facilitated by the Sustainable Competitiveness Manager, we work directly with the Management Team (and other relevant people and teams) to identify potential changes in our ESG priorities. A process of listening to people at Irizar was done between 2020 and 21 to understand what they were most concerned about. It was done using interviews and questionnaires as described in chapter “4 We create value for our People”.
- In December 2022 we decided **to drive our progress in human rights forward** to prepare ourselves for the future European sustainability due diligence directive for companies to respect human rights and the environment in global supply chains.

To those ends we joined the **Business & Human Rights Accelerator programme of the United Nations Global Compact** that is designed to give companies the tools and knowledge they need to create a continuous due diligence process for human rights and make sure they are respected. We hope to learn during the programme’s six months of training in 2023 so we can subsequently move from commitment to action, knowing how to prioritise in terms of human and labour rights.

The Director of People and the Sustainable Competitiveness manager will participate in the training programme, which has the backing of top management, as Irizar representatives.

In collaboration with the other corporate governance bodies, the top management keeps providing encouragement and being vigilant so the **commitment and sustainable actions**, beyond people who work at Irizar, are **extended among the rest of the stakeholders** (clients,

suppliers, external collaborators, government, etc.).

We are moving Forward in Transparency, Good Governance and Integrity.

We keep making progress in **transparency, good governance and integrity**. Therefore, we rely on our open culture and our firm conviction that only business activities that respect corporate ethics and sustainability constitute the only possible foundation for achieving sustained business success beyond compliance with internal regulations and applicable legislation (local, regional, national, foreign, and international).

Throughout this chapter, we address in particular our common tools to facilitate our **Good Governance**.

- Along those lines, in 2017 we created an initial draft of the ethical code which is still being developed and subsequently put into practice. The improved version of our **code of ethics**, created by the Governing Council alongside the Management Team, was approved by all the worker-members in a General Assembly in 2020. The new code of ethics was a new version of our ethical principles and guidelines for behaviour. It is the roadmap for everyday behaviour based on fundamental principles (human rights, labour standards, the environment and the fight against corruption).

In parallel, the **Ethics and Compliance Committee** was created to analyse all the communications they receive in a reasonable period of time.

- In 2023 we plan to start the **improvement of the ethics and compliance system** (common cooperative values, code of ethics, crime prevention system, channels of communication, channels for reporting infractions, communicating incidents and actions), and the **system for protecting personal data and guaranteeing digital rights**. The goal is to take into account the evolution of patterns of sustainability, legal modifications or new risks that were not previously considered.

Any improvement to the corporate and ethical values will be common for all the people in the companies of the Group.

- In section “4.5.1 Gender Equality”, in chapter 4 About People, you can see details about the **improved equality plan** and in the **sexual and the gender based harassment in the workplace protocol**.

Transparency contributes to improving our credibility, reputation and brand, which increases the confidence our stakeholders have in us. To

those ends, we’re making public all the information you need to know more about Irizar.

As we will see in the following chapters, we have multiple channels of communication with stakeholders, including our **Sustainability Reports** discussed in the previous section “2.2.2. Our global reference frameworks”.

We make strategic alliances and partnerships with the Global Compact to drive sustainability

In addition to all the agreements and alliances that we will address in subsequent chapters of the Sustainability Report, we can highlight our double link with the **United Nations Global Compact**: worldwide and Spanish.



At Irizar S.Coop, since 2013 we have been firmly committed to the **United Nations Global Compact**, the largest voluntary initiative for Corporate Sustainability in the world. We use it as a frame of reference for all our strategic advancement in sustainability and it strengthens our deep commitment to transparency through our annual sustainability report and communication on progress (COP).

Since 2018, we have been partners of the **Global Compact Network Spain** (multi-stakeholder association that acts as a focal point for the United Nations Global Compact in Spain). Proactive participation enables us to show a greater commitment to sustainability, interact with the main agents of change (not only at the Spanish level but also internationally), generate shared values between the company and its environment, learn and share best practices, and strengthen relationships with stakeholders.

A. Annual Sustainability Report and Communication on Progress (COP)

The **communication on progress (COP)** is an obligatory annual public statement by companies that participate in the UN Global Compact for their stakeholders. It has the following goals:

- Promote accountability for company sustainability performance to help maintain the integrity of the UN Global Compact initiative
- Promote continuous learning and contribute to boosting performance in company sustainability
- Improve stakeholder access to information about the implementation of the ten principles by participating companies and their contribution to achieving the sustainable development goals (SDGs)

Until 2022 our **sustainability report** was the COP we presented to the Global Compact.

New Communication on Progress Policy (COP) in force in 2023:

The communication on progress is the primary mechanism for participating companies to show the progress they have made on the ten principles of the United Nations Global Compact and the sustainable development goals (SDGs). The updates to the communication on progress made in 2022 that all participating companies must apply in 2023 are in harmony with [the mission of the United Nations Global Compact to “create a global movement of sustainable companies and organisations to create the world we want”](#). More than 15,000 companies from more than 160 countries have committed to showing the progress we have made on a new online platform that has the resource and orientation needed to help identify gaps and set goals to improve sustainability performance year-on-year.

The enhanced communication on progress requires online presentation (on the United Nations Global Compact website) of:

- a **statement by the general director** that expresses continuous support for the United Nations Global Compact and
- filling out an online questionnaire** about the companies’ activi-

ties related with the ten principles and the SDGs.

- In addition to those requirements, our 2022 sustainability report includes our **2022 sustainability report**.

All of that is available at:

<https://unglobalcompact.org/what-is-gc/participants/19510-IRIZAR-S-COOP->

The enhanced communication on progress questionnaire shows the progress made in the areas of [governance, human rights, labour standards, the environment and the fight against corruption](#). We hope the normalised questionnaire lets the participating companies:

- build credibility and brand value by showing our commitment to business sustainability, the ten principles and the SDGs;
- measure and show our progress in a coherent and harmonised way;
- receive information, learn and continuously improve performance;
- compare the progress of equivalent companies through access to one of the biggest free public sources of data about business sustainability in the world.

B. Irizar interacts with other organisations and actors (Spanish and international)

As a member of the Spanish Global Compact Network, Irizar S. Coop. interacts with other organisations and actors (Spanish and international), for the purpose of creating shared value and strengthening relationships with stakeholders. They participate in various activities, like training sessions, work sessions organised by the Global Compact and the Spanish government, open-doors days at Irizar to share experiences with companies, education centres and universities and SDG benchmarking to learn from other companies, among other

things.

- For 2018, we can highlight our participation in a work session organised by the Spanish Global Compact Network and the **Spanish government** with the goal of:
 - Articulating and elevating the experience of the business sector insofar as the future action plan and national strategy for contributing to the 2030 Agenda and the sustainability of the Spanish government
 - Specify the role of companies in sustainable development and help the Spanish government prepare its evaluation as a country for the high level policy forum of the ECOSOC held in July at the United Nations



- In 2019, we celebrated 15 years of leadership in Sustainability with the Spanish Global Compact Network, as it is the local network with the most signatories to the UN Global Compact and is a world benchmark, which is notable for its operability and strength. An event was held where we can highlight the participation of Cristina Gallach, High Commissioner for the 2030 Agenda of the **Spanish government**, with whom Irizar had the privilege of exchanging opinions about the 2030 Agenda and the need for alliances between the public and private sectors in order to achieve the SDGs.

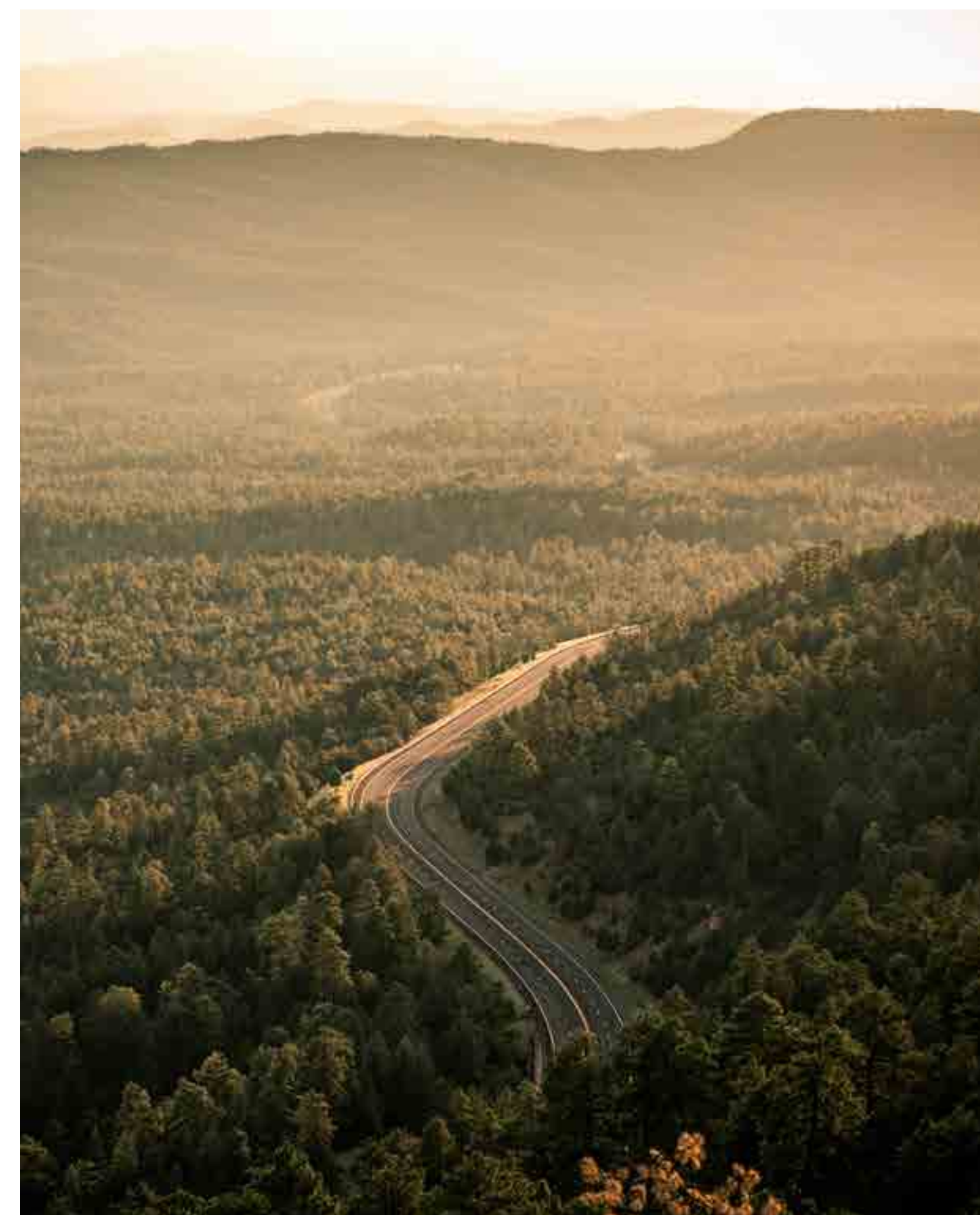


- In 2020 and 2021 all the sessions had to be held remotely.

- For six months in 2021 we participated in the **SDG Ambition** accelerator programme from the United Nations Global Compact. It was a **training** programme to help us set ambitious SDG (sustainable development goal) goals and integrate them into our organisation. You can see more details in section "2.4. Committed to the SDGs of the UN 2030 Agenda".
- In December 2022 we decided **to drive our progress in human rights forward** and prepare ourselves for the future European sustainability due diligence directive for companies to respect human rights and the environment in global supply chains. To those ends, as we anticipated, we joined the **Business & Human Rights Accelerator programme of the United Nations Global Compact**, which we will participate in in the first quarter of 2023.

C. Irizar collaborates with United Nations publications and declarations

- In 2020, the CEO of the Irizar Group (along with 1000 business leaders from more than 100 countries) made their support for the United Nations and multilateralism visible and even signed an ambitious **"declaration in favour of renewed global cooperation"** as part of the commemoration of the **75th anniversary of the UN**. The declaration maintains its relevance given the state of the world in 2021. The updated list of signatories is on the United Nations website.
https://ungc-communications-assets.s3.amazonaws.com/docs/publications/UN75_UnitingBusinessStatement.pdf





United Nations
Global Compact | **20**
years
Uniting business for a better world

UN75
2020 AND BEYOND | **SHAPING
OUR
FUTURE
TOGETHER**

UNITED IN THE BUSINESS OF A BETTER WORLD

A Statement from Business Leaders for Renewed Global Cooperation

The 75th anniversary of the United Nations comes at a time of **unprecedented disruption and global transformation**, serving as a stark reminder that international cooperation must be mobilized across borders, sectors and generations to adapt to changing circumstances. This message emerged loud and clear from the hundreds of thousands of people who participated in global dialogues initiated by the UN this year.

In the face of the COVID-19 pandemic and converging crises — including climate change, economic uncertainty, social inequality and rising disinformation — **public and private institutions** need to show they are accountable, ethical, inclusive and transparent. This is the only way to strengthen public trust and achieve a more sustainable future for all.

Over time, the **UN has sought to unite stakeholders everywhere** to tackle the world's greatest challenges. Yet our multilateral system is being threatened by those who want to go it alone rather than work together.

We, the business peoples, recognize that **peace, justice and strong institutions** are beneficial to the long-term viability of our organizations and are foundational for upholding the Ten Principles of the UN Global Compact and achieving the Sustainable Development Goals (SDGs).

In the spirit of renewed global cooperation, we commit to:

- Demonstrate ethical leadership and good governance through values-based strategies, policies, operations and relationships when engaging with all stakeholders
- Invest in addressing systemic inequalities and injustices through inclusive, participatory and representative decision-making at all levels of our business
- Partner with the UN, Government and civil society to strengthen access to justice, ensure accountability and transparency, provide legal certainty, promote equality and respect human rights

In making that commitment, we also call on Governments to:

- Protect human rights, ensure peace and security, and uphold the rule of law so that businesses, individuals and societies can flourish
- Create an enabling environment to serve the interests of people and planet, prosperity and purpose, through strengthened international cooperation and national legal frameworks
- Enhance multilateralism and global governance to combat corruption, build resilience and achieve the SDGs

Now is our opportunity to learn from our collective experiences to **realign behind the mission of the UN** and steer our world onto a more equitable, inclusive and sustainable path. We are in this together — and we are united in the business of a better world.



- In 2022, the Spanish UN Global Compact remarked in their interesting interactive publication “**SDG Year 7: Innovation to achieve the 2030 Agenda**”, presented in September 2022 to celebrate the 7th anniversary of the 2030 Agenda, on Irizar’s sustainable and intelligent mobility with one of **our videos**.

It was gratifying to be one of three organisations chosen in all of Spain in the sector and be able to talk about **our experience in innovation** to contribute to making the SDGs of the 2030 Agenda a reality, which are not add-ons, rather they are our business.



They help us focus what we do so we can be a global actor in sustainable mobility, because for Irizar it is a transversal goal especially aligned with four of our high priority SDGs:

SDG 9 - Industry, innovation and infrastructure

SDG 11 - Sustainable cities and communities

SDG 12 - Responsible production and consumption

SDG 13 - Climate action

All of that can also be seen in chapter 3 about clients, passengers and citizens.

Don't miss our video!

<https://www.youtube.com/watch?v=2xRpjESqSpM>



To see the complete publication: <https://bit.ly/pactomundialorg>

C. Irizar publicises and supports the SDGs in Global Compact campaigns

In 2022 Irizar was once again part of the **#apoyamoslosODS campaign promoted by the UN Spain Global Compact**. With the intention to publicly reinforce the value of their commitment and raise awareness among their stakeholders, Irizar joined the campaign to work on publicising those United Nations goals. Out its own commitment to the SDGs, the goal is to act as a spokesperson and obtain a multiplier effect to raise awareness and work on the goals with communications material published through our channels.



We publicised the campaign on our website, where you can see all the details: <https://www.irizar.com/irizar-se-suma-otro-ano-mas-a-la-campana-apoyamoslosods-promovida-por-el-pacto-mundial-de-la-onu-espana/>, and on social networks with short messages.

We contribute to raising awareness about sustainability throughout society

Beyond the dynamic collaboration with the Global Compact, we lead or participate in various actions and forums to contribute to awareness raising and education for our stakeholders and society as a whole. To the dynamics shown here with a global vision of sustainability, we can also add others that are more related with people from Irizar, clients, suppliers or the environment, which are shown in later chapters.

A. Mainly since 2018 and in different ways, we contribute to awareness raising and training for our stakeholders and all of society:



- We proactively add our grain of sand to the **Agenda Euskadi Basque Country2030** promoted by the **Basque government** for the Basque contribution to the 2030 Agenda.
- Since 2018, aside from the pandemic stoppage, we share our experience in sustainability:
 - a. In **open-doors events at Irizar** (with companies, education centres and universities),
 - b. through **benchmarking** in sustainability and SDGs to learn and share with other companies,
 - c. we participate in various **external forums** related with sustainability in university and business settings. Among them we can highlight the event we participated in as speakers at “Responsible business and strategic CSR management”, held at the Deusto Business School. We talked about what the step from seeing social responsibility as philanthropy to sustainable competitiveness was like at Irizar and seeing responsible business as the way to coherently integrate sustainable development into our entire management system.

B. Since 2021, the sustainable competitiveness manager at Irizar was invited to participate every month in the **Ethics Applied to Management Seminar** at the university of Deusto, where alongside academics and managers from other organisations issues that, from their experience, are tackled that are key to integrating ethics into companies. The seminar is dynamised by the **DIRECTICA learning community**, which coordinates the transfer team of the Centre for Applied Ethics on which people in management roles participate on in a personal capacity.

With the understanding that ethics is the basis of sustainability, it is a privilege to be able to learn from experts and people from different

organisations and share points of view. The focus of the Centre of Applied Ethics of the university of Deusto is notable: no relativism or dogmatism, eclectic, concepts and organisational culture.



In November 2022 the **Diréctica Conference II** was held with an external audience in the auditorium of the university of Deusto (Bilbao). Begoña Román Maestre, philosopher and expert in organisational ethics, helped us understand the challenges presented to companies by the current crisis and the possible approaches to analysing their responses to them ethically. The Irizar sustainable competitiveness manager also participated as a speaker and facilitated dialogue with the attendees of the event.

C. Our involvement in education is especially relevant. In 2022 we started giving **dynamic conferences about our focus on sustainable competitiveness** with:

- **The University of Deusto:** Final year students in business administration and management alongside double majors in law and computer science
- **Luzern HochSchule:** Professionals studying in Switzerland who take the opportunity of their exchange trip with Escuelas de Negocios de Europa In that case, they are accompanied by the university of Deusto to our facilities.



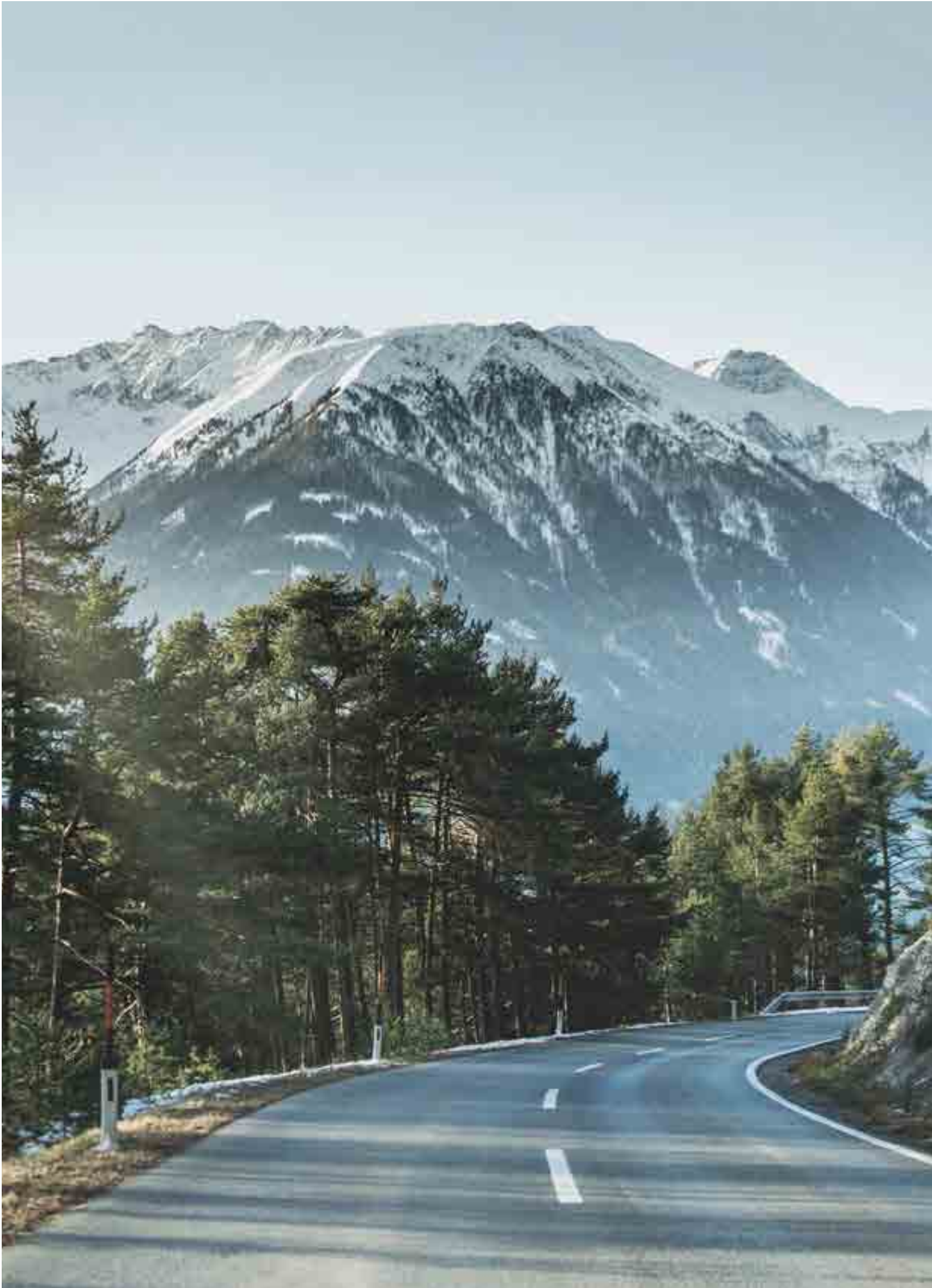
Everything starts by sending them a SUSTAINABILITY DOSSIER (it is a summary of concepts and trends that is valuable for understanding the current situation and future trends of sustainability) along with a **CHALLENGE** that they have to do in groups and give a response in the meeting. **How can I CREATE MY OWN SUSTAINABLE COMPANY?**

2.3. Commitment to the Principles of the Global Compact

Although in this 2022 Sustainability Report we can reflect Irizar’s commitment to each Principle of the United Nations Global Compact in more sections, this table shows the relationship with those where it is most relevant.



AREA	PRINCIPLE	RESPONSIBLE WITH
	Principle 1 Businesses should support and respect the protection of internationally proclaimed fundamental human rights within their sphere of influence	2. Irizar and Sustainable Competitiveness 4 We create value for our people. 7. We create value for Society.
	Principle 2 Businesses should ensure that their companies are not complicit in human rights abuses	5. Irizar and Sustainable Competitiveness 3. We generate value for our clients, passengers and for citizens 6. We generate value for our external collaborators, supply chain and alliances.
	Principle 3 Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining	4 We generate value for our people – Company board, regulations for internal arrangements and collective agreements 5. We generate value for our external collaborators, supply chain and alliances – Sustainability requirements for our suppliers
	Principle 4 Businesses should support the elimination of all forms of forced or compulsory labour	4 Irizar and Sustainable Competitiveness 5. We create value for our People - People. Key actors in sustainable competitiveness – Commitment to high quality employment 6. We generate value for our external collaborators, supply chain and alliances – Sustainability requirements for our suppliers
	Principle 5 Businesses should support the abolition of child labour	4 Irizar and Sustainable Competitiveness 5. We create value for our People - People. Key actors in sustainable competitiveness – Commitment to high quality employment 6. We generate value for our external collaborators, supply chain and alliances – Sustainability requirements for our suppliers
	Principle 6 Businesses should support the abolition of child labour	4 Irizar and Sustainable Competitiveness 5. We create value for our People - People. Key actors in sustainable competitiveness - Gender equality, diversity and social inclusion 6. We generate value for our external collaborators, supply chain and alliances – Sustainability requirements for our suppliers



AREA	PRINCIPLE	RESPONSIBLE WITH
	Principle 7 Businesses should maintain a preventive approach to environmental challenges	2. Irizar and Sustainable Competitiveness 3. We generate value for our clients, passengers and for citizens – Race to Zero – Decarbonisation: in internal combustion vehicles with hybridisation, zero-emissions electromobility and green hydrogen as an energy vector. 5. We generate value for our external collaborators, supply chain and alliances – Decarbonisation: in internal combustion vehicles with hybridisation, zero-emissions electromobility and green hydrogen 6. We create value for the Environment
	Principle 8 Businesses should undertake initiatives to promote greater environmental responsibility	2. Irizar and Sustainable Competitiveness 3. We generate value for our clients, passengers and for citizens – Decarbonisation: in internal combustion vehicles with hybridisation, zero-emissions electromobility and green hydrogen 5. We generate value for our external collaborators, supply chain and alliances – Sustainability requirements for our suppliers 6. We create value for the Environment
	Principle 9 Businesses should encourage the development and dissemination of environmentally friendly technologies	3. We generate value for our clients, passengers and for citizens – Reducing emissions, electrification and alternative energy sources 6. We create value for the Environment
	Principle 10 Businesses should work against corruption in all its forms, including extortion and bribery	2. Sustainable Competitiveness - Our sustainable competitiveness. 4. We create value for our People - People. Key actors in sustainable competitiveness - Communication, transparency and participation 5. We generate value for our external collaborators, supply chain and alliances – Sustainability requirements for our suppliers

2.4. Committed to the SDGs of the UN's 2030 Agenda

Summarizing what we have already addressed earlier in this chapter regarding our Commitment to the SDGs of the 2030 Agenda:

In 2018 **we began our approach to the United Nations 2030 Agenda** and we made our **commitment to contributing to the SDGs public**.

In 2020 **we made progress in incorporating our contribution to achieving the SDGs, which are the roadmap for driving prosperity for people and the planet**, into our strategy and management.

- 1. Even though our goal is to contribute to achieving the 17 SDGs, upon analysing our strategy for generating value for our stakeholders, we believe that Irizar, because of the nature of our business and extensive value chain, **can have a greater capacity for influencing the SDGs**, which is explained below.
- 2. At the 2020 summer assembly (where we dealt with global strategy and company progress and that was open to everybody at Irizar A. Coop.), the **CEO presented the 7 sustainable development goals (SDGs) of the 2030 Agenda** that have been chosen by Irizar as **high priority and transversal**.

PRIORITY SDGs

We make a direct impact through our operations



Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all people equally.



Build resilient infrastructures, promote inclusive and sustainable industrialisation and drive innovation



Make cities and human settlements inclusive, safe, resilient and sustainable.



Guarantee sustainable consumption and production patterns.



Adopt urgent measures to combat climate change and its effects

Priority SDGs

These are the foundations of our commitment (with Ethics, Law and Human Rights), cutting across all internal areas and all stakeholder groups.



Achieve gender equality and empower all women and girls.



Promote just, peaceful and inclusive societies.



OBJETIVOS DE DESARROLLO SOSTENIBLE

Irizar apoya los Objetivos de Desarrollo Sostenible

SDG GOALS TO BE ADDRESSED

PRIORITY SDGs				
<div><div>8</div><div>TRABAJO DECENTE Y CRECIMIENTO ECONÓMICO</div><div></div></div>	<div><div>9</div><div>INDUSTRIA, INNOVACIÓN E INFRAESTRUCTURA</div><div></div></div>	<div><div>11</div><div>CIDADES Y COMUNIDADES SOSTENIBLES</div><div></div></div>	<div><div>12</div><div>PRODUCCIÓN Y CONSUMO RESPONSABLES</div><div></div></div>	<div><div>13</div><div>ACCIÓN POR EL CLIMA</div><div></div></div>
<div>8.1.</div> <div>Maintaining economic growth</div>	<div>9.2.</div> <div>Promotion of inclusive and sustainable industry</div>	<div>11.2.</div> <div>Providing access to public transport</div>	<div>12.2.</div> <div>Achieving the efficient use of natural resources</div>	<div>13.1.</div> <div>Strengthening resilience and adaptation</div>
<div>8.2.</div> <div>Raising productivity through diversification, technology and innovation</div>	<div>9.4.</div> <div>Infrastructure modernization, clean technology</div>	<div>11.6.</div> <div>Reduction of environmental impact in cities.</div>	<div>12.4.</div> <div>Managing chemical waste and products</div>	<div>13.3.</div> <div>Improving environmental education and awareness</div>
<div>8.5.</div> <div>Achieving full employment and decent work</div>	<div>9.5.</div> <div>Increase in scientific research, technological capacity</div>		<div>12.5.</div> <div>Prevention, reduction, recycling and reuse of waste</div>	
<div>8.7.</div> <div>Eradication of slavery, trafficking and child labour</div>	<div>9.8.</div> <div>Development of national technology and research in developing countries.</div>		<div>12.6.</div> <div>Adoption of sustainable practices in businesses</div>	
<div>8.8.</div> <div>Protection of labour rights and safe work</div>			<div>12.8.</div> <div>Ensuring education for Sustainable Development</div>	
			<div>12.B.</div> <div>Achieving sustainable tourism</div>	
TRANSVERSAL SDGs				
<div><div>5</div><div>IGUALDAD DE GÉNERO</div><div></div></div>	<div><div>16</div><div>PAZ, JUSTICIA E INSTITUCIONES SÓLIDAS</div><div></div></div>			
<div>5.1.</div> <div>Ending discrimination</div>	<div>16.2.</div> <div>Eradication of child abuse, exploitation, trafficking and exploitation.</div>			
<div>5.5.</div> <div>Ensure the full participation of women and equal leadership opportunities</div>	<div>16.5.</div> <div>Reducing corruption and bribery</div>			
	<div>16.7.</div> <div>Promoting citizen participation</div>			
	<div>16.10.</div> <div>Access to information and fundamental freedoms</div>			
	<div>16.11.</div> <div>Promotion and application of laws and policies (HR)</div>			

The 7 **priority and cross-cutting SDGs** are those that, due to their importance and impact, we are going to pursue with the greatest ambition to work on Irizar's commitment to achieving the 2030 Agenda. To those ends, we chose **26 goals** for each one in order to set the most ambitious **goals** and indicators possible aligned with the 2030 Agenda and make progress towards achieving them.

The SDGs are interrelated, so when we take action on the priority and transversal SDGs we also make an impact on the rest, which we call **secondary SDGs**, in an indirect way through our operations (to a greater or lesser extent), or because their essence is contained in other SDGs that have already been dealt with.

In 2021, as we explained in “2.2.4 We are a responsible organisation”, we can highlight the **training in sustainability and SDGs/2030 Agenda** started by the Management Team.

For six months in 2021 we participated in the **SDG Ambition accelerator programme from the United Nations Global Compact**, as we mentioned in section “2.2.3. We are a responsible organisation”, alongside more than 700 international companies. It was a pioneering **training** programme with a new methodology to help us set ambitious SDGs (sustainable development goals) and integrate them into the centre of our strategy and operations and measure our progress, so we can definitively contribute to the prosperity of people and the planet.

In addition to Irizar representatives participating in the SDG Ambition programme, the **CEO of the Irizar Group** reaffirmed our commitment as a high level “**ambassador**” in monitoring our progress.

Further information on SDG Ambition can be found at: <https://unglobalcompact.org/news/4593-09-21-2020>. And in the dossier created by the Spanish Global Compact Network: <https://www.pactomundial.org/biblioteca/sdg-ambition-resultados-i-edicion/>

Including the SDGs into our 2030 Irizar Agenda

In the first quarter of 2021 we did an exhaustive analysis of possible indicators we could use to make progress in **integrating the SDGs into our 2030 IRIZAR AGENDA**. It is a **BASE document** in table format to facilitate setting SDG GOALS and high priority + transversal goals, including possible indicators, data up to now and goals/commitments. It facilitates understanding the scope of every SDG better and focusing the groundwork they require better, because the 2030 Agenda is an action plan that favours people, the planet, prosperity, peace and collective work. In addition to contributions by the sustainability manager, the draft of the table includes contributions by the CEO, Environment and External Communications.

It’s centred on our high priority (8, 9, 11, 12 and 13) and transversal (5 and 16) SDGs, including their relationship with the PRINCIPLES of the Global Compact and an inventory of possible qualitative or quantitative contributions/INDICATORS for each GOAL decided on:

- Some indicators will only be for tracking progress.
- However, the ones we deem to be the most relevant/indispensable should have realistic but ambitious GOALS based on what are called “SMART goals” (specific, measurable, achievable, relevant and time-related).
- And with a time limit: DATE and taking the baseline of the commitment into account (a point or period in time from which measurements are made).
- There are also columns for data from the most recent years that are used to help see the progress and set goals.

The SDG indicators and goals are not an annual management plan and, even though we can **set annual goals**, the **idea is to set long-term milestones** and intermediate goals/deadlines to show our commitment to the 2030 Agenda.

At the end of 2021, with the active involvement of the CEO, we defined **priority actions to start our contribution to the high priority and transversal SDGs**. It would be started after 2022: setting related goals, indicators, objectives and deployment with various managers and teams from the affected areas: CEO, Product Development (innovation and engineering), the Environment, Purchasing and relationships with Suppliers, Production, People-HR and other entities in the cooperative, etc.



In late 2022, led by the CEO and facilitated by the sustainability manager, Irizar S. Coop. took an important step in their progress in integrating sustainability and the SDGs of the 2030 Agenda into their business strategy. With the conviction that greater involvement of management is the way to make things happen in sustainability, the entire Management Team started participating in setting 24 KPIs for measuring our impact and to set specific medium-term goals starting in 2023 to contribute to the 2030 Agenda and the principles of the Global Compact.

Our commitment can be encapsulated in INDICATORS (priority KPIs) for measuring IMPACT, many of which have realistic but ambitious GOALS centred on our 7 priority and transversal SDGs, as well as the principles of the Global Compact.

They are grouped into 6 IMPACT AREAS:






- A. CLIMATE
- B. RESOURCES
- C. TRUST AND INTEGRITY
- D. EQUALITY
- E. DECENT WORK
- F. EXTENDING SUSTAINABLE DEVELOPMENT

We show all of them here, however in later chapters we will take another look at the KPIs that are most relevant with each stakeholder.












PRINCIPLES OF THE GLOBAL COMPACT	SDGs	KPI	INDICATOR	2019	2020	2021	2022	OBJECTIVE	DATE OBJECTIVE
A. CLIMATE									
 DERECHOS HUMANOS		1. Increase the sustainability of the vehicles sold (lower GHG emissions) <i>hydrogen, 100% electric, hybrid, LNG/CNG, low fossil fuel consumption (16s efficient and i4 lightened)</i>	% UNITS sold of MORE SUSTAINABLE vehicles /total yearly sales			34.3 %	42.6 %	50 %	2026
		2. Promote R&D to make progress in mobility Sustainable and Intelligent <ul style="list-style-type: none">Decarbonisation,Safety -- Driverless vehicles andConnectivity - Big Data	% R&D for vehicles that are MORE SUSTAINABLE AND INTELLIGENT / TOTAL R&D				100 %	60 - 70%	Average period 2023-30
		3. Reduce TOTAL GHG emissions Includes: Scope 1 and 2: CATEGORY 1: Direct GHG emissions and removals CATEGORY 2: Indirect GHG emissions caused by imported energy Scope 3: CATEGORY 3: Indirect GHG emissions caused by transport CATEGORY 4: Indirect GHG emissions caused by products Irizar uses CATEGORY 5: Indirect GHG emissions associated with the organisation's use of products	tCO ₂ eq			1,713,290 ISO14064-1:2019	Carbon footprints are verified one year later	-5 %	2022 - Annual
		4 Origin of electricity from renewable energy sources	% consumption of renewable electricity /total electricity consumption		0 %	52 %	100 %	100 %	2022-27 maintain

BASE YEAR: year data in blue, if shown in GOAL later

PRINCIPLES OF THE GLOBAL COMPACT	SDGs	KPI	INDICATOR	2019	2020	2021	2022	OBJECTIVE	DATE OBJECTIVE
B. RESOURCES									
 		5. Eco-innovation Models with an Environmental Product Declaration (EPD)	Name of models with EPD	i4 Integral				I6 Efficient I3 Hydrogen 100% future	2023 2025
		6. Recyclability and recoverability rate of vehicles at the end of their useful life (only for models that have an EPD)	% weight recylcable material / total weight (Tm) % weight recoverable material / total weight (Tm)	96.03 % 98.26 % I4 integral				85-100% 85-100%	2023 eff 2025 hid 2023 eff 2025 hid
		7. Waste assessed (using reuse, recovery and recycling processes) <i>Sum of waste bound for waste manager and bound for our IZIR brand</i>	% weight assessed waste / Total waste generated (Tm)		53 %	60 %	63 %	65 %	2023
		8. Improving electrical energy efficiency in our centres	<u>Kwh</u> consumed / working days / units billed <u>tCO₂</u> / working days / units billed			46.63 0.0126	26.1 0	39.55 (5% in 4 years) 1% annual 0	2025 2026-7 2022-27 maintain











BASE YEAR: year data in blue if shown in GOAL later

PRINCIPLES OF THE GLOBAL COMPACT	SDGs	KPI	INDICATOR	2019	2020	2021	2022	OBJECTIVE	DATE OBJECTIVE
C. TRUST AND INTEGRITY									
 DERECHOS HUMANOS  ESTÁNDARES LABORALES  MEDIO AMBIENTE  ANTICORRUPCIÓN		9. Level of confidence of people at Irizar to report unethical behaviour	Average % value Survey / Total workforce (0-100%)					60 % 80 % Base year: 2024	2024 2030
		10. Train/raise awareness of people at Irizar CULTURE ethics and legal compliance: <ul style="list-style-type: none">Code of ethics, ethics and compliance systemCrime prevention system	% people trained / Total % people trained / Total people in high risk areas					100 % 100 %	2025 2025
		<ul style="list-style-type: none">System for protecting personal data and guaranteeing digital rights	% people trained / Total					100 %	2025
		<ul style="list-style-type: none">New hires trained in the code of ethics and ethics and compliance system	% people trained / Total new hires					100 % Base year: 2024	2025
		11. Training people from companies from the Irizar Group in ethics and legal compliance: <ul style="list-style-type: none">a. Branch officesb. Other coach companies in the Groupc. Rest of Group companies	% companies trained / Total a. b. c.					100 % Set priorities and deadlines by type Base year: 2024	2026




BASE YEAR: year data in [blue](#) if shown in GOAL later

PRINCIPLES OF THE GLOBAL COMPACT	SDGs	KPI	INDICATOR	2019	2020	2021	2022	OBJECTIVE	DATE OBJECTIVE
C. TRUST AND INTEGRITY (cont.)									
 DERECHOS HUMANOS ESTÁNDARES LABORALES MEDIO AMBIENTE ANTICORRUPCIÓN		12. Making progress towards a supply chain Manager with SUPPLIERS committed to sustainability Strategic suppliers (A + B) with a SUSTAINABLE CONTRACT	No. suppliers % ACCUM. A+B	17 13.6 %	34 27.4 %	39 31.5 %	41 33.9 %	Specify priorities after Business & Human Rights Accelerator and EU due diligence directive TRAINING	
		a. New suppliers with SUSTAINABLE CONTRACTS b. A+ B strategic suppliers c. Suppliers with the most risk of infringement <ul style="list-style-type: none">o in HR (to be specified)o environmental (to be specified)						a. 100% c. 100% Base year: 2023	2024 --- 2026---
		13. Evaluate/monitor our SUPPLIERS with higher sustainability priority <ul style="list-style-type: none">• Questionnaires ANALYSED from environmentally vulnerable suppliers	NO. suppliers evaluated ACCUM. % vulnerable suppliers evaluated		13 48 %	16 59 %	18 83 %	Specify priorities after Business & Human Rights Accelerator and EU due diligence directive TRAINING	
		Suppliers with the highest risk of infringement: <ul style="list-style-type: none">• in HR• environmental						Base year: 2024	
		14. Making progress towards a supply chain Manager with a commitment to sustainability from other external involved parties: <ul style="list-style-type: none">a. distributorsb. commercial partnersc. clients...	% companies trained / Total a. b. c.					100 % Set priorities and deadlines by type Base year: 2024	2026

BASE YEAR: year data in blue if shown in GOAL later

PRINCIPLES OF THE GLOBAL COMPACT	SDGs	KPI	INDICATOR	2019	2020	2021	2022	OBJECTIVE	DATE OBJECTIVE
D. EQUALITY									
 DERECHOS HUMANOS		15. Increase gender diversity in:							
		a. hiring	% women	26.32 %	17.07 %	22.22 %	9.52 %	10-20%	2030
		b. the Management Team (group 1+2)	% women	0 %	0 %	0 %	0 %	20%	2030
		c. Management area/ middle management (group 4+5+6)	% women	--	---	21.00 %	21.00 %	20-30%	2030
 ESTÁNDARES LABORALES		d. Governing council	% women	0 %	11.11 %	22.22 %	22.22 %	20%	2030
		16. Reduce the wage gap between women and men	% salary ratio women / salary ratio men					99-100%	2026
		Group 1 + 2 (CEO + Management Team)		0 %	0 %	0 %	0 %		
		Group 3 (management)				89 %	70 %		
 ESTÁNDARES LABORALES		Group 4 (technicians)				90 %	96 %		
		Group 5 (administrators)				87 %	129 %		
		Group 6 (direct personnel)				91 %	85 %		
		17. Train/raise awareness of people at Irizar about Gender equality	% people / Total workforce					100 %	2023 - biannual
 ESTÁNDARES LABORALES		Gender Equality Plan							
		Harassment Protocol, etc.							
 ESTÁNDARES LABORALES		• New hires trained in gender equality	% people trained / Total new hires					100 %	2023 - biannual
								Base year: 2023	

BASE YEAR: year data in blue if shown in GOAL later

PRINCIPLES OF THE GLOBAL COMPACT	SDGs	KPI	INDICATOR	2019	2020	2021	2022	OBJECTIVE	DATE OBJECTIVE
E. DECENT WORK									
 The International Labour Organisation (ILO) defines decent work as: “productive work for men and women under conditions of freedom, equity, safety and human dignity”.		18. Providing a safe and healthy work environment a. Reduce the frequency rate of accidents b. Reduce the incident rate of accidents	No. accidents/hours worked No. accidents / No. people	48.33 76.78	34.37 48.93	50.22 81.83	50.57 81.76	40 - 50 70 - 80	annual annual
		19. Worker partners Differential factor compared to NON-cooperatives	% members / AVERAGE total workforce	87.78 %	90.03 %	97.82 %	93.93 %	Always above 80%	annual
		20. Pay ALL our workers at least a living wage Global Compact definition of a living wage: https://bit.ly/3r57Wq6	% salary / living wage Compared with the <u>metal collective bargaining agreement</u> for the most common positions: - engineer or university graduate (MOI) and - product technician (MOD)			100 % +9 % collective bargaining agreement in both cases	100 % +10 % collective bargaining agreement in both cases	100 % goal review, study calculation method in depth with Global Compact 2023-24	2023 - ... 2024 - ...
		21. Increase the people’s level of commitment (Includes: Expectations, commitment and feeling)	Average % value Survey / Total workforce (0-100%)					60 % 80 % Base year: 2024	2024 2030

BASE YEAR: year data in blue if shown in GOAL later

PRINCIPLES OF THE GLOBAL COMPACT	SDGs	KPI	INDICATOR	2019	2020	2021	2022	OBJECTIVE	DATE OBJECTIVE
F. EXTENDING SUSTAINABLE DEVELOPMENT									
 DERECHOS HUMANOS ESTÁNDARES LABORALES MEDIO AMBIENTE ANTICORRUPCIÓN	 	22. Train/raise awareness of people at Irizar in sustainability: <ul style="list-style-type: none">- <u>BASIC</u>: Definition, 10 principles and SDGs- Human and labour rights- The environment, etc. Prioritising: <ul style="list-style-type: none">• Management Team• Managers of: areas, processes or relevant teams• Governing Council• Other indirect staff• Rest of people at Irizar<ul style="list-style-type: none">• New hires	% people with BASIC training / Total workforce No. people with more specific training % people with BASIC training / total new hires			8 ED		100 % No. people to prioritise as applicable 100 % Base year: 2023	2025 Since 2024 Since 2024 - Annual
		23. Contribution to improvement in the sustainability of other external people and organisations (public and private). Outside of Irizar S. Coop. Sharing our knowledge of and experience with sustainability in forums and training and awareness raising activities: <ul style="list-style-type: none">• High priority stakeholders Clients, suppliers, distributors, etc.• Group coach companies• Other Group companies• Students, external organisations and other people in the social environment	no. actions / year	8	12	25	43	Minimum 20 actions / year	annual
		24. Social Commitment with Cooperation and Development Activities Includes: NGOs and associations that do work to benefit education, health and gender equality and to eradicate poverty, hunger and inequalities	% € Development cooperation activities / € total designated for not-for-profit activities	55 %	50 %	42 %	56 %	50 % minimum	annual

BASE YEAR: year data in blue if shown in GOAL later

The goal of making sustainability a strategic pillar at Irizar is to **inculcate responsible behaviour** at all levels of the organisation and ensure that the SDGs are progressively integrated into all areas of the company.











These commitments are what will allow us to achieve a greater positive impact on all our stakeholders.

Relationship Between the SDGs and the Chapters of this Report

The following table shows how the SDGs relate (to a greater or lesser extent) to the chapters of this report.



We create value for:						
SDGs	Sustainable Competitiveness	Customers, passengers and citizens,	People	External partners, supply chain, and alliances	Environment	Society
PRIORITY						
						
						
						
						
						
CROSS-CUTTING						
						
						

We create value for:						
SDGs	Sustainable Competitiveness	Customers, passengers and citizens,	People	External partners, supply chain, and alliances	Environment	Society
SECONDARY						
						
						
						
	Addressed in SDG 8, 12 and 13					
	Addressed in SDG 12					
	Addressed in SDG 13					
	Addressed in SDG 8 and 16					
						
						
	Addressed in Priority SDG					

WE GENERATE VALUE FOR OUR CLIENTS, PASSENGERS AND FOR CITIZENS

3

Contributing to the SDGs and goals of the
UN 2030 Agenda:

Priority SDGs



- 8.1. Maintaining economic growth
- 8.2. Raising productivity through diversification, technology and innovation.



- 9.2. Promotion of inclusive and sustainable industry
- 9.4. Infrastructure modernization, clean technology
- 9.5. Increase in scientific research, technological capacity.



- 11.2. Providing access to public transport
- 11.6. Reduction of environmental impact in cities.



- 12.6. Adoption of sustainable practices in businesses
- 12.8. Ensuring education for Sustainable Development
- 12.B. Achieving sustainable tourism



- 13.1. Strengthening resilience and adaptation
- 13.3. Improving environmental education and awareness

Cross-cutting SDGs



- 16.5. Reducing corruption and bribery
- 16.10. Access to information and fundamental freedoms



WE GENERATE VALUE FOR OUR CLIENTS, PASSENGERS AND FOR CITIZENS

3

3.1. A Key Actor in Intelligent and Sustainable Mobility

- Global forces that are revolutionising sustainable transport.
- Sustainable transport technologies
- Our vision of intelligent and sustainable mobility
- Commitment to clients, passengers and citizens, integrating the 2030 Agenda SDGs
- Innovation, it's in our DNA.
 - CAPITAL for SPERT (PERTE) CEV project
 - Irizar in "SDG Year 7 Innovation for achieving the 2030 Agenda"
- Race to Zero
- European leader in eco-innovation

3.2. The customer, at the Heart of our Strategy

- Irizar customer-oriented
- Supporting them from start to finish
- Their opinion and expectations are fundamental.
 - Clients are the key factor in our future projects
 - The customer, integrated in internal processes.
 - Always informed
 - Quality and After Sales Forums. Satisfaction surveys
 - Driver training
- Premium coaches where everything is possible.
- Meeting us at international fairs

3.3. Decarbonisation in Combustion Vehicles

- 3.3.1. The Irizar 7 efficient: the most efficient coach in Irizar's history
 - The Irizar i6S Efficient Wins the Sustainable Bus Award.
- 3.3.2. Irizar i4 lightened: efficient, sustainable and profitable
- 3.3.3. Irizar brand integral coaches.
- 3.3.4. Natural gas (CNG and LNG) coaches.

3.4. Decarbonisation with Hybridisation

- 3.4.1. Irizar Brand Hybrid Coaches.
- 3.4.2. Hybrid Coaches on Chassis

3.5. Decarbonisation: Electromobility at the Irizar Group, Zero-Emissions

- 3.5.1. Integral electromobility solutions
- 3.5.2. Range of electric vehicles
- 3.5.3. Irizar batteries
- 3.5.4. Second life and recycling of batteries
- 3.5.5. Careful management of resources.
- 3.5.6. Charging infrastructures

3.6. Decarbonisation: Green Hydrogen as an Energy Vector

- 3.6.1. Long distance electric coaches with green hydrogen fuel
- 3.6.2. Electric trucks with green hydrogen batteries

3.7. Safety and Driverless Vehicles

- 3.7.1. Passenger safety comes first
 - Active Safety
 - Passive Safety
 - Rescue safety
 - Solutions for preventing the spread of viruses on public transport
 - New Driving Assistance Systems.
- 3.7.2. Cybersecurity
 - Connected Intelligent Vehicle (CIV)
 - UN cybersecurity regulations for vehicles 155 and 156
 - CIBERBUS project
- 3.7.3. Towards driverless vehicles
 - Previous advancements
 - DIGIZITY
 - SHOW
 - INPERCEPT

3.8. Connectivity - Big Data

- 3.8.1. Fleet manager
- 3.8.2. Maintenance

3.1. A Key Actor in Intelligent and Sustainable Mobility



Buses and coaches play a crucial role in achieving the sustainability goals of the European Green Deal, and in the efficient transition towards decarbonisation and climate neutrality by 2050. **The bus is the means of transport that generates the least greenhouse gas emissions compared to other modes of transport:** 3.7 times less than an aeroplane, 5.5 times less than a car and 13% less than a train. In terms of CO₂ emissions, the bus generates fewer emissions per passenger/kilometre than any other mode of land transport, except rail. In fact, figures from the European Environment Agency show that almost all CO₂ emissions associated with road transport are not produced by bus transport.

Sustainable mobility has become one of the transport priorities of the future, a motto that we make our own and that is an element of the strategic decisions that we are adopting in the Irizar Group.

Today, after 133 years, we understand our ability to respond and adapt successfully to different challenges, by making a continuous effort to position ourselves at the forefront and improve the experience, safety and sustainability of public transport and by offering a customised service and quality. We also understand our flexibility in meeting the needs of our customers and our commitment to remaining closer than ever to everyone, to offer the best of ourselves.

The main global trends have a radical impact on the transport ecosystem that will be fundamentally transformed in the coming years. We believe that this change will be deeper and will happen faster than previously thought in the sector.

ECOSYSTEM OF FUTURE TRANSPORT

GLOBAL FORCES	TRANSPORT TECHNOLOGIES
<ul style="list-style-type: none">• Sustainability / Decarbonisation• Urbanisation• Digitization	<ul style="list-style-type: none">• Reducing emissions, electrification, alternative fuels and hydrogen• Driverless vehicles• Connectivity

At Irizar we aspire to be a benchmark in the change towards a sustainable transport system. We rely on our financial strength and experience in mobility, which makes it easier to continue following the path of innovation, contributing our knowledge in the development of new technologies, solutions and services that guarantee a more sustainable future in economic, social and environmental terms.

The following is an in-depth review of the strengths and technologies of the transport ecosystem that we are approaching. In the following sections we explain how we are facing the three major trends in the sector at Irizar.

Global forces that are revolutionising sustainable transport

A climate crisis, urban population growth, and technological disruption - three of the global forces shaping a sustainable transportation revolution. We live in a period of unprecedented change. **The turmoil caused by Covid-19 is just one example of the many challenges facing the world, from** growing social inequality to the threat of climate change. The political landscape is equally volatile. Meanwhile, global initiatives such as the European Commission's Green Deal are accelerating the transition to a sustainable low-carbon economy.

Decarbonisation

The escalating climate crisis is a major threat to the ecosystem and society of our planet. The transport sector is one of the world's highest energy consumers and it contributes 23% of energy-related green-

house gas emissions and 18% of all anthropogenic emissions in the world economy. To achieve the goal of the Paris Agreement and avoid catastrophic increases in global temperatures, radical action is required from both government and business to decarbonize the transportation sector.

The *European Green Deal* places the energy and green transition at the heart of political action. The objectives of the programme include achieving a CO₂ emissions free EU in 2050 and the development of clean, reliable and affordable energy. To achieve this, it establishes a wide package of measures that enable, among other things, advances in transport sustainability. Currently, transport consumes a third of all final energy in the EU, with most coming from oil. Accordingly, it is responsible for a quarter of greenhouse gas emissions. The objective is, therefore, to reduce the emissions from road transport, trains, boats and aeroplanes by promoting the use of cleaner, more efficient and healthy public and private transport.

At the same time, the world must guarantee that this transition is managed in a way that benefits all of society so that no one is left behind, in line with the UN 2030 Agenda for sustainable development to which Irizar is committed.

As public awareness increases and carbon legislation and policies evolve, demand from transport service providers and users for cleaner and fossil-free forms of transport grows. And it will grow more and more because, while **not everything is urgent, taking care of our planet is.**

Urbanisation

The world is experiencing the largest wave of urban growth in history, and 2.5 billion people are expected to live in cities by 2050.

This population growth is far outpacing the growth of public transport services. As cities grow and become more populated, so does the pressure on urban transport infrastructure, thus increasing the risk of air pollution and other major health and environmental impacts, such as traffic noise and an increased risk of traffic accidents. There is also the risk that access to transport services will become more limited, disproportionately affecting people from vulnerable groups.

The challenges of urbanisation demand resilient transportation infrastructure and solutions that keep people and goods moving, and ensure that the cities of the future are healthy, safe, inclusive, and liveable.

Digitization

We are living through the fourth industrial revolution, an era of radical and disruptive technological change, in which digital trends such as the Internet of Things, robotics, virtual reality and artificial intelligence are transforming the way we live and work.

Digitization is impacting business models within the transport sector, so that products, production processes and supply chains have to be more interconnected. Emerging technologies drive innovation and create new opportunities and risks, such as challenges to personal integrity, cybersecurity and ethical dilemmas throughout the value chain.

Sustainable transport technologies

These global forces are creating an **urgent need for sustainable transport:** clean, safe, efficient, inclusive and resilient.

Likewise, they are shaping the tools and technologies that the transportation industry is using to respond to this demand. There are new technologies that, together, are accelerating the shift towards a sustainable transportation system that is electrified, uses alternative fuels and hydrogen as an energy vector, and is autonomous and connected.

Electrified

Electrification is essential in a sustainable and decarbonized transportation system. Electric vehicles run cleanly and quietly, with zero particulate and NOx (nitrogen oxides) emissions and a very low total carbon footprint (electricity from fossil-free energy sources). Battery technology is improving rapidly and other solutions, such as fuel cell technology, are being developed.

While electrification has significant benefits for our climate and air quality, it also brings new sustainability challenges. It puts increasing pressure on the battery raw material supply chain, creating environmental and human rights risks. To be truly sustainable, these risks must be managed carefully.

The mass adoption of electric vehicles depends on an infrastructure with widely available charging solutions. Those of us in the transport industry must play an active role in developing that infrastructure and work in association with infrastructure suppliers, electricity producers and governments.

Renewable fuels

Sustainable transport depends on sustainable energy. While electrification is playing an important role in meeting this need, several studies show that renewable fuels are key to decarbonizing in the here and now, at the pace required to meet the goals of the Paris Agreement.

Renewable fuels such as biofuel, biodiesel and HVO (Hydrotreated Vegetable Oils = diesel from hydrotreated vegetable oils that eliminate the emission of sulphides), in combination with energy efficient combustion propulsion systems, or used in conjunction with electricity in hybrid propulsion systems, can reduce a vehicle's total well-to-wheel carbon emissions by up to 90%, compared to fossil diesel.

Because biofuels (and agricultural waste) can come from organic material, they also back circular models of energy storage.

Rapidly increasing the use of renewable fuels is key to achieving the carbon reductions we need to see in the short term. As almost all vehicles on the road today can already run on renewable fuels, the potential reduction in emissions is enormous, and it also provides the profitability of sustainable solutions for transport providers.

Hydrogen as an energy vector

In regards to heavy urban transport (where our buses are), clear electrification using batteries is expected. In intercity and long distance transport (where our coaches are positioned), hydrogen is expected to become a strong competitor with the technologies mentioned above.

Hydrogen was identified as a potential solution for a clean fuel for the future decades ago. Previous attempts were thwarted by abundant oil reserves, low fossil fuel prices, and the advancement of battery-powered light electric vehicles, which, among other issues, dampened expectations of hydrogen deployment.

We are experiencing a transition towards an era of sustainable energy gases, and it is expected that during the second half of the 21st century their consumption will exceed both coal and oil and, by the end of the 21st century, energy gases - methane and hydrogen - will have consolidated, like coal at its peak, more than 75% of the world energy market.

Among the sectors where hydrogen has a higher potential for use is mobility (as an alternative to electric batteries). The main advantages of hydrogen are low emissions, driverless vehicles and recharging speed, as well as efficiency and maintenance costs.

Generally speaking, to date we have used energy very inefficiently, especially in the transport sector. Today's internal combustion vehicles only use 20-25% of the total energy consumed for mobility - the rest is dissipated as heat. The efficiency of internal combustion engines can be increased up to 30% with hybrid technology, but to exceed this threshold, alternative technologies must be chosen. In hydrogen fuel cell vehicles, this efficiency is around 30-35% from generation to consumption.

Two of the important points for using hydrogen as a relevant agent in the energy transition will be transforming the production model to use processes based on renewable energy that create what is called **"green hydrogen"** and **"blue hydrogen"**.

The hydrogen market is still being defined today, with different players in its value chain. At Irizar we are already actors in it.



Driverless

The rapid evolution of artificial intelligence and other technologies has paved the way for driverless transportation. Automation has great potential to transform mobility.

Safety is also an important factor. Likewise, highly automated vehicles could revolutionize public transport services, by reducing congestion, improving access to mobility and making our cities safer and more liveable.

This change is already taking place. Vehicles with high levels of automation are already being tested and, at the same time, automated buses are operating in urban or suburban settings in several European cities.

Connected

Digitization is bringing tremendous growth in vehicle connectivity, with vehicles continually producing and sharing data. Connectivity can be a key enabler for driverless transportation, allowing vehicles to communicate with each other and with the surrounding road infrastructure, making transportation smarter and more efficient.

Connectivity also brings significant benefits to transportation logistics, with real-time data allowing users and manufacturers to track how vehicles are being used and operated with much greater precision, enabling more efficient flows. Connectivity also enables maintenance times to be optimized, maximizing uptime, reducing fuel consumption and improving overall efficiency.

Our Vision of Intelligent and Sustainable Mobility

The mobility of the future will be different from what we see today. Technology at the service of public needs and sustainability goals will undoubtedly bring about disruptive changes, some of which can predicted while others are yet to be discovered.

Our current vision sees the mobility of the future as sustainable, safe, smart and connected, with the presence of vehicles powered by different energy sources, increasingly efficient and with different levels of range and services that will improve people's experience.

At the Irizar Group we aim to become a key player in facing these challenges, putting our capacity and technology at the service of society, forging alliances (suppliers, network of local technology centres, institutions, universities, training schools, etc.) and seeking out partners.

We are committed to mass public mobility, to reducing the level of polluting emissions, connecting means of transport for better fleet management, improving information to users and introducing new technological developments to enhance the safety and experience of passengers.

In this context, technology is key and our Group positioning strategy is to **promote innovation and the creation of our own high technology** in strategic sectors with the aim of providing pioneering solutions so that we can anticipate successfully future challenges and positively im-

pact on wealth creation and employment and the development of society and the economy.

All of that will demand **high flexibility and capacity for adaptation**. Our current and future development hinge on the following keys:

Sustainable Mobility

Change is coming in urban environments towards smart cities that are more liveable and sustainable and where mobility and transport play a crucial role.

In the markets we operate in we're working with our clients and other partners to make collective passenger transport a sustainable reality. **Irizar has become an important reference in coaches and buses and has established itself in markets where it is currently present.**

Passenger transport will be emission-free, but for a while there will be a combination of transitional technologies, ranging from electric powered, or propulsion by natural gas or hydrogen. The latter, alternative and green source of energy is mostly for long distance vehicles.

In this sense, Irizar is continuing to make progress in offering alternatives that reaffirm our commitment to sustainability that began years ago. We have a **wide range** of solutions that include zero-emissions urban buses and trucks and hybrid, diesel, biodiesel, HVO, biofuel and natural gas (CNG and LNG) coaches. An extensive range of options covering all market segments, urban and suburban buses and medium- and long-distance coaches for both regular and discretionary services and Premium. Furthermore, we have several mobility projects under way with electric vehicles that have hydrogen fuel cells.

This coach manufacturing strategy does not prevent us from continuing to work closely with chassis manufacturers, with whom we have common interests, and with whom we continue to increase our presence in both European markets and in the rest of the World.

Another of the great challenges of the future is the generation of clean, inexhaustible energy, without radioactive waste or the use of non-renewable fuels. At the Irizar Group, we're positioned in three business areas: nuclear fusion, renewable energies and energy storage and management, which is indispensable for reaching the zero-emission goals.



Shared and Collective Mobility

There are studies that assert that in 2050 we will have a fleet of 4.1 million heavy vehicles in Europe (truck + bus). Almost the same as in 2018. Likewise, we estimate that we will have diverse drive technologies in buses and coaches:

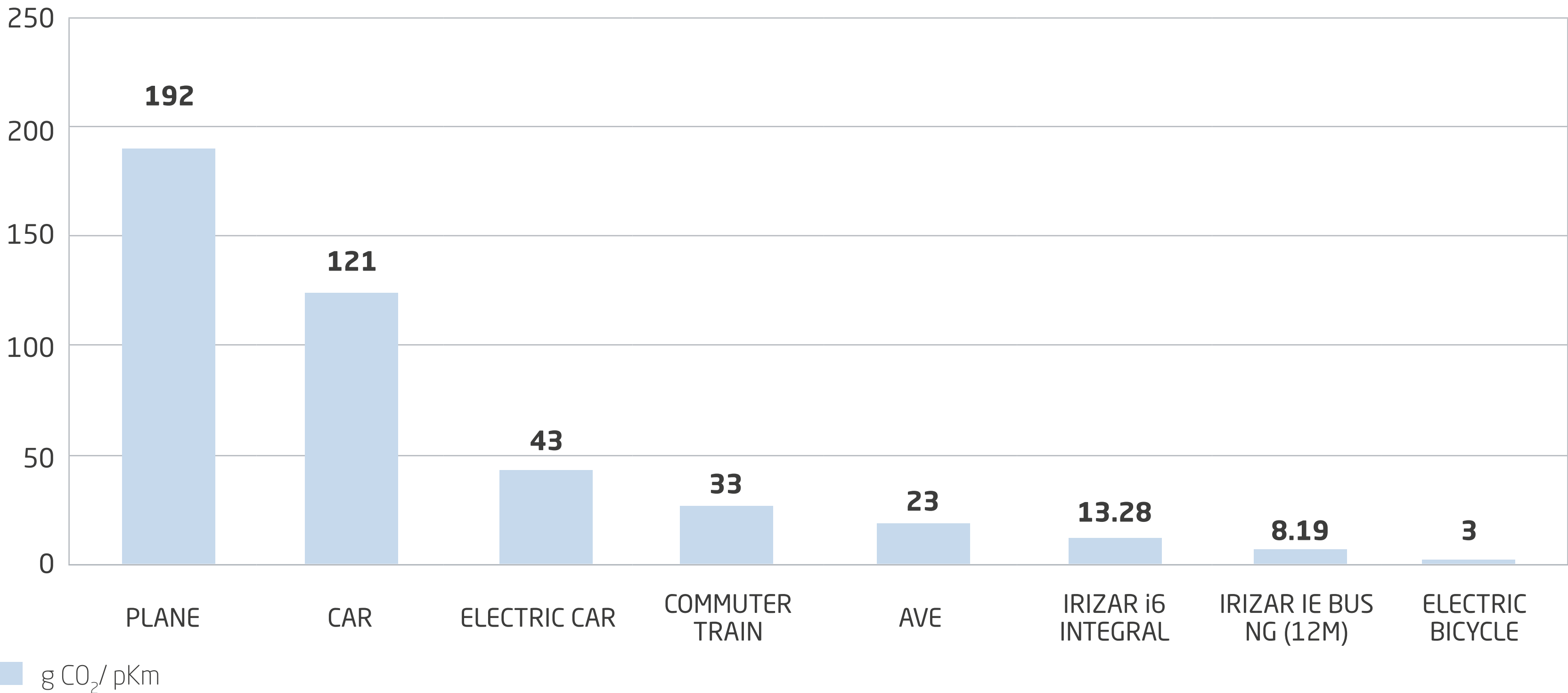
- Medium and long distance:
 - o Diesel: at least 25% (with 30% hybrid)
 - o Electric: 35%
 - o Hydrogen (hydrogen and electric engine with a hydrogen fuel cell): 40%
- Urban: primarily electric

Promoting the use of public transport and researching and improving alternative fuels are the main challenges that we chose to prioritise some time ago. **Public transport is a fundamental economic sector**, both for the contribution of the wealth and employment it generates, and for its dynamic nature in society, facilitating the mobility required by daily life. It has a beneficial impact on the health system, due to better air quality and reduced noise emissions.

Collective public transport is the major alternative for substantially reducing emissions, because:

- A bus can transport as many people as 50 cars.
- Buses are the most used form of public transport in the world and the one with greatest capillarity.
- It has been shown that cars are only used 5% of the time and that must be optimised.
- According to a study by the **IDAE (Institute for Energy Diversification and Savings)** and the emissions of our vehicles, the comparison

of the carbon footprint between buses and coaches and other means of transport is very advantageous (g CO₂ per km passenger transported).



(*) for electric modes the CO₂ emissions associated with generating the **electricity consumed during use** are taken into account even though at the point of use no polluting emissions or CO₂ are generated. In addition, they generate a significantly lower acoustic **impact** than their thermal equivalents.

Because of that, at Irizar we do not rule out the fleet of buses and coaches in Europe increasing by 2050.

Commitment to Clients, Passengers and Citizens: Integrating the 2030 Agenda SDGs







As we put forward in chapter 2 about Irizar and **sustainable competitiveness**, in 2022 we took a big step in our commitment to the 2030 Agenda SDGs by measuring our impact on priority KPIs. Consequently, we've decided to prioritise our sustainable value contribution to our clients, passengers and citizens in:

A. CLIMATE: three KPIs for: - Increase the sustainability of the vehicles sold - Boost R&D for low GHG emissions products and - Reduce scope 3 category 5 indirect GHG emissions associated with the use of our vehicles by clients (the latter can be seen in detail in the chapter about the environment).

















B. RESOURCES: two KPIs for: Eco-innovation (models with an environmental product declaration - EPD) and recyclability and recoverability rates for those vehicles at the end of their useful lives

F. EXTENDING SUSTAINABLE DEVELOPMENT: We've defined a KPI with our commitment to contributing to improvement in external (public and private) people and organisations, extending the "oil stain" of sustainability beyond our organisation to our stakeholders. Sharing our knowledge and experience with sustainability in various forums, as well as through sustainability and awareness raising activities, at the same time that we encourage our clients to buy more sustainable vehicles.



PRINCIPLES OF THE GLOBAL COMPACT	SDGs	KPI	INDICATOR	2019	2020	2021	2022	OBJECTIVE	DATE OBJECTIVE
A. CLIMATE									
 DERECHOS HUMANOS		1. Increase the sustainability of the vehicles sold (lower GHG emissions) <i>hydrogen, 100% electric, hybrid, LNG/CNG, low fossil fuel consumption (16s efficient and i4 lightened)</i>	% UNITS sold of MORE SUSTAINABLE vehicles /total yearly sales			34.3 %	42.6 %	50 %	2026
		2. Promote R&D to make progress in mobility Sustainable and Intelligent <ul style="list-style-type: none">• Decarbonisation,• Safety -- Driverless vehicles and• Connectivity - Big Data	% R&D for vehicles that are MORE SUSTAINABLE AND INTELLIGENT / TOTAL R&D				100 %	60 - 70%	Average period 2023-30
	  ESTÁNDARES LABORALES	3. Reduce TOTAL GHG emissions Includes: Scope 1 and 2: CATEGORY 1: Direct GHG emissions and removals CATEGORY 2: Indirect GHG emissions caused by imported energy Scope 3: CATEGORY 3: Indirect GHG emissions caused by transport CATEGORY 4: Indirect GHG emissions caused by products Irizar uses CATEGORY 5: Indirect GHG emissions associated with the organisation's use of products	tCO ₂ eq			1,713,290 ISO14064-1:2019	Carbon footprints are verified one year later	-5 %	2022 - Annual
 MEDIO AMBIENTE									

BASE YEAR: year data in blue if shown in GOAL later

PRINCIPLES OF THE GLOBAL COMPACT	SDGs	KPI	INDICATOR	2019	2020	2021	2022	OBJECTIVE	DATE OBJECTIVE
B. RESOURCES									
 ESTÁNDARES LABORALES  MEDIO AMBIENTE	  	5. Eco-innovation Models with an Environmental Product Declaration (EPD)	Name of models with an EPD	i4 Integral				I6 Efficient I3 Hydrogen 100% future	2023 2025
		6. Recyclability and recoverability rate of vehicles at the end of their useful life (only for models that have an EPD)	% weight recylcable material / total weight (Tm) % weight recoverable material / total weight (Tm)	96.03 % 98.26 % I4 integral				85-100% 85-100%	2023 eff 2025 hid 2023 eff 2025 hid
F. EXTENDING SUSTAINABLE DEVELOPMENT									
 DERECHOS HUMANOS  ESTÁNDARES LABORALES  MEDIO AMBIENTE  ANTICORRUPCIÓN	       OBJETIVOS DE DESARROLLO SOSTENIBLE	23. Contribution to improvement in the sustainability of other external people and organisations (public and private). Outside of Irizar S. Coop. <u>Sharing our knowledge of and experience with sustainability in forums and training and awareness raising activities:</u> <ul style="list-style-type: none">• High priority stakeholders Clients, suppliers, distributors, etc.• Group coach companies• Other Group companies• Students, external organisations and other people in the social environment	no. actions / year	8	12	25	43	Minimum 20 actions / year	annual

BASE YEAR: year data in blue if shown in GOAL later

Innovation, It's in our DNA

That strategy based in developing new ideas, that entrepreneurial attitude backed with tool that made us more and more competitive, that boldness in taking on risks or the capacity to learn from mistakes were nothing other than manifestations of the innovative gene that, for the 133 years of Irizar Group history, have defined our brand, culture and identity.

For us innovation means investing in knowledge, talent and new products and services, new processes, new sustainable technologies and new developments. But it's also the key instrument that lets us make progress in our organisational culture and day to day management, and it makes us not only more agile, flexible and adaptable, but also more capable of overcoming future challenges in a way that will make us always be the preferred choice of our clients.

New times have definitely made us innovate, because the social-health and economic crisis made us provide short-term responses to protect, above all, the health and safety of people and their families and guarantee the sustainability of the business and creation on value in the medium and long-term. But it also offers us an opportunity to re-focus and redefine our strategic plans, putting our sights on the major challenges that the energy transformation and new sustainable and intelligent mobility bring us. And, in that scenario, innovation once again becomes key.

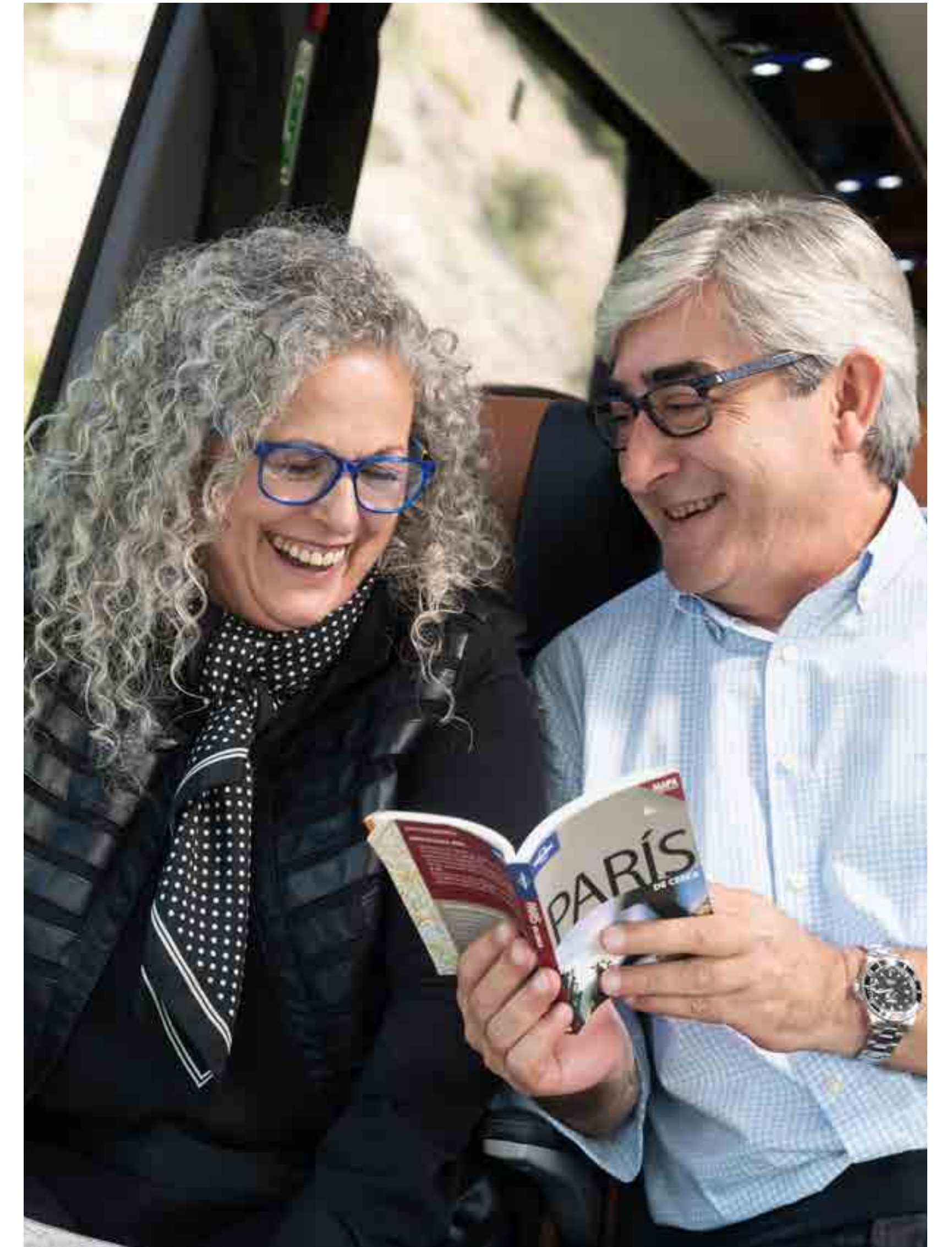
From our position at the centre of the energy and sustainability transition, two ideas should be made very clear. **People** are the linchpin on which our energy strategy hinges. And the **innovation** we advocate calls for **strengthening ties and creating a collaborative fabric** among suppliers, local technology centres, institutions, universities and

training schools that we can provide pioneering solutions that positively impact the development of society and the economy with.

In that context, the Irizar Group's strategy to drive innovation and create our own technology in future strategic sectors in which we can provide pioneering solutions that positively impact the creation of wealth and employment and develop an industrial fabric in the long-term takes on special importance. The well-known *Next Generation* funds are a major opportunity to bring European industry back into the technological vanguard.

One of the strategic decisions we've made in the Irizar Group has to do with the role buses and coaches play in achieving the sustainability goals of the European Green Deal and the efficient transition towards decarbonisation and climate neutrality by 2050. We strive to become a key player that provides solutions by putting our capacities and technology at the service of society and build alliances that ratify our commitment to the environment and people's health and well-being and create one of the best urban environments.

We are committed to mass public mobility, to reducing the level of polluting and noise emissions, connecting means of transport for better fleet management, improving information to users and introducing new technological developments to enhance the safety and experience of passengers.



In short, Irizar lives and breathes innovation, it's in the environment, it's in **our DNA**. It's vital to be **a global actor in sustainable mobility** and be one step ahead of the current and future needs of our stakeholders. And go beyond profitability and try to make a positive impact on people and the planet.

To those ends, we're focusing on **INTEGRAL INNOVATION**

- on **WHAT** we do (products, services),
- **HOW** we do it (management models, Global Compact focus, alliances, etc.) and
- **WHY** we do what we do (mission: create wealth and employment and commitment to stakeholders; long-term economic sustainability and ESG sustainability; with a positive impact on the 2030 Agenda). The 7 sustainable development goals we have prioritised are not extras, they are our business.

For Irizar, sustainable mobility is a transversal goal especially aligned with **4 priority SDGs**:

- **SDG 9** – Industry, innovation and infrastructure
- **SDG 11** – Sustainable cities and communities
- **SDG 12** – Responsible production and consumption and
- **SDG 13** – Climate action

Not innovating is only viable to survive in the short-term. To live to the medium-term it is necessary to innovate in a sustainable way.

Since 1889 when we started manufacturing horse drawn carriages we've seen several **revolutions**. We're now reinventing ourselves in terms of sustainable and intelligent mobility, which is comparable to when in 1928 we manufactured our first mechanically powered vehicle. It's not exactly an incremental improvement, it's total innovation.

Our primary **CHALLENGE** is to keep developing "traditional" projects alongside new ones focused on zero-emissions. That makes an **IMPACT** on all areas of the organisation. And it entails the **RISK/UNCERTAINTY** of how future technologies will evolve. In other words, it entails the **COMPLEXITY** of managing a future with a multitude of technological solutions that will involve making decisions without knowing whether the future will go in that direction, be it electric platforms, CNG/LNG, hydrogen fuel cells or something else.

It's not an obstacle, rather it's a **CHALLENGE** that will help us innovate faster. We'll innovate in the sustainability of our products, making the most of our collaborations/**ALLIANCES** with other relevant actors in our value chain.

Throughout our sustainability report, and especially in this chapter, we cover our main R&D projects, but the one we're going to discuss next deserves a special place in innovation.

CAPITAL for SPERT (PERTE) CEV project

The Irizar Group leads the **CAPITAL** (technological capacity building and industrial development of the bus value chain and associated infrastructure for decarbonizing the transport sector with zero-emissions solutions) **with economic assistance approved by the CEV SPERT (PERTE VEC)** (Strategic Project for Economic Recovery and Transformation for developing connected electric vehicles). We're part of an ALLIANCE with more than 21 domestic companies for promoting another sustainable leap. There are Spanish companies from up to 7 autonomous communities and 61% of the members are SMEs. Iberdrola is our energy partner.

The CAPITAL project is committed to the decarbonisation and sustainability of zero-emissions connected transport through creating 100% electric buses and electric industrial vehicles for different urban uses and also consider the use of hydrogen as a solution for collective mobility.

The project will be carried out from 2022 to 2025. It will make an investment of more than 63 million Euros in projects to achieve a more electrified Spain with the new generation of sustainable vehicles, covering the entire value chain of the vehicles with new designs and solutions and promoting collaborations for essential components.

In that way, the Irizar Group is maintaining their commitment to decarbonising the transport sector with zero-emissions solutions and making progress in providing alternatives that reaffirm the commitment to sustainability they started many years ago.

The project, which has had consulting and coordination services from Zabala Innovation during the development process, is made up of Irizar, Irizar e-mobility, Jema Energy, Masats, Datik Información Inteligente, Internacional Hispacold, Iberdrola, Fundacion Cidetec, Edai Technical Unit, Ekide, Sisteplant, Construcciones Mecanicas Jose Lazpiur, Cayata, EPow-erlabs, Polirrós, Falcon Electronica, Baleike, Mendiaraiz, Lis Data Solutions, Ingurumenaren Kideak Ingenieria and Owasys Advanced Wireless Devices.

In 2022 we worked on R&D+i for electric and connected vehicles: Both products and manufacturing processes, as well as digitalisation.

Among the sub-projects tackled we can highlight:

- A. Electric urban coach (BEV class II)
- B. Hydrogen truck (itruck hidrógeno)
- C. Long-distance hydrogen coach (i6S hidrógeno)
- D. A new generation of batteries, taking the evolution of technologies into account

Irizar in “SDG Year 7 Innovation for achieving the 2030 Agenda”

In 2022, the Spanish UN Global Compact highlighted their interesting publication titled “SDG Year 7. Innovation to achieve the 2030 Agenda”, presented in September 2022 to celebrate the 7th anniversary of the 2030 Agenda, on Irizar’s sustainable and intelligent mobility with one of **our videos**.

It was gratifying to be one of three organisations chosen in all of Spain in the sector and be able to talk about our **experience in innovation to contribute to making the SDGs of the 2030 Agenda a reality, which are not add-ons, rather they are our business**. They help us focus what we do so we can be a global actor in sustainable mobility, because as we said at the beginning of this section, for Irizar it is a transversal goal especially aligned with four of our high priority SDGs: SDG 9, SDG 11, SDG 12 and SDG 13.



To see the complete publication: <https://bit.ly/pactomundialorg>

Don't miss our video!

<https://www.youtube.com/watch?v=2xRpjESqSpM>



Race to zero

The impact that CO₂ emissions from transportation means have on global warming is a fact. Therefore, every day, we continue to focus all our efforts on advancing and investing in the creation of different technologies in order to offer pioneering solutions to the different mobility needs for the future worldwide. Reducing the impact of our vehicles and eliminating greenhouse gasses and noise emissions is our priority. All this in line with the Paris Agreement and the European Green Deal.

Fit for 55 - Goal 55: European climate legislation makes achieving the EU climate goal of reducing emissions in the EU by at least 55% from now to 2030 a legal obligation. The EU countries are working on new legislation to reach that goal and make the EU climate neutral from now

to 2050.

VECTO is the standard simulation tool developed by the European Commission. It will be required to use it for determining CO₂ emissions and fuel consumption in the **use phase of heavy vehicles** (trucks, buses and coaches). At Irizar we have collaborated since 2019 with the European Commission in the development of the VECTO pilot phase. We're making significant investments in a new generation of hybrid, diesel and renewable fuel vehicles to reduce the level of CO₂ emissions (fuel consumption) to stay a step ahead of future regulations that will come into force soon and be ready for the required certifications.

For trucks it is already under way and for coaches it will enter into force in 2024. AI vehicles registered in the EU must be fully homologated, including fuel consumption and CO₂ emissions that derive from a simulation of the main characteristics and components that affect emissions.

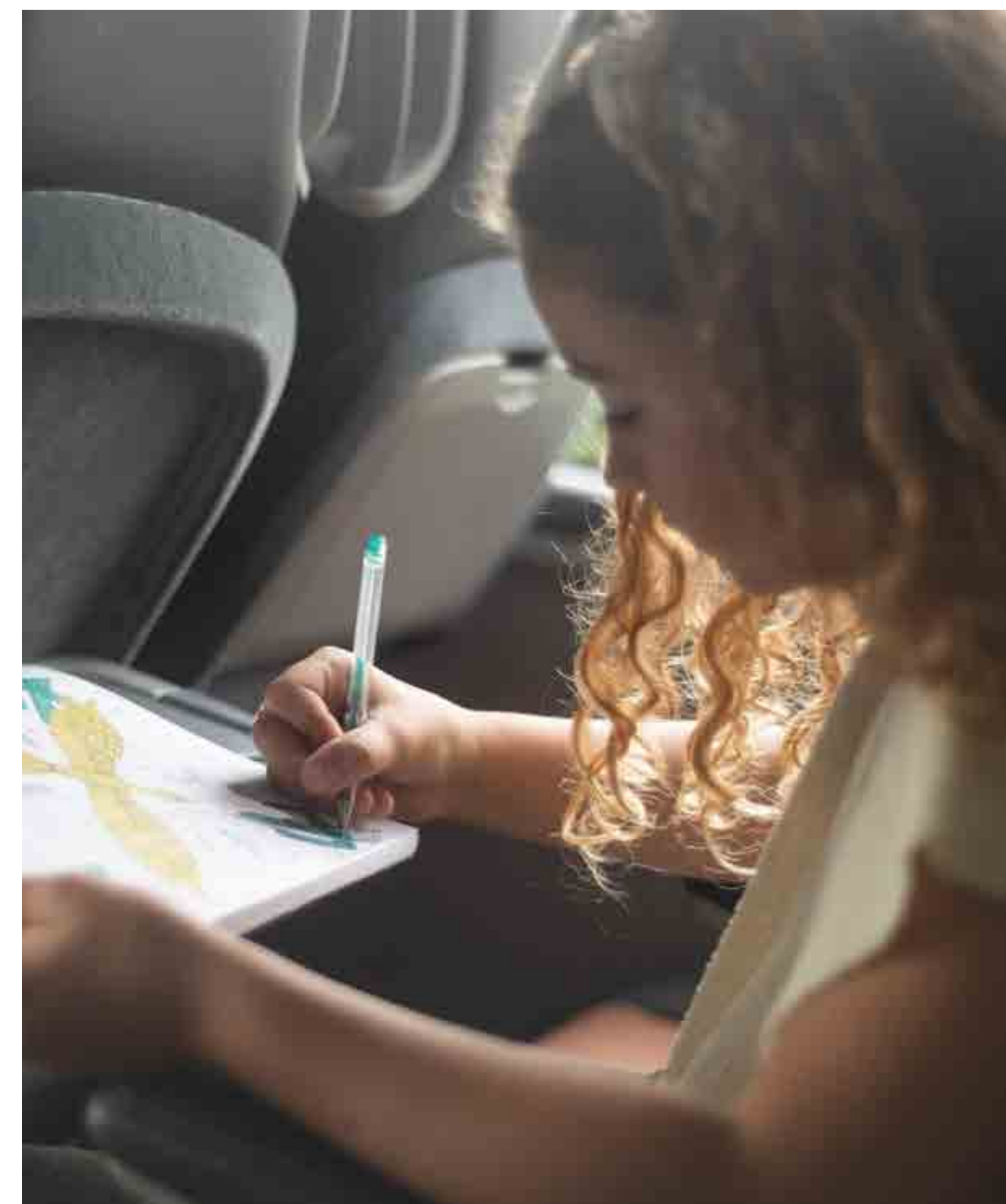
Road to Zero is the standard for EU emissions for auto-mobiles, vans, buses and lorries. The future "post Euro-6 / VI" standard gives the European Union the opportunity to eradicate pollution from road transport, regain technological and regulatory leadership, and align standards with its new "Zero Pollution Ambition" with zero emissions of net greenhouse gas by 2050.

European timetable for gradually eliminating polluting vehicles with internal combustion engines

Road map to zero pollution: A step-wise reduction of vehicle emission limits



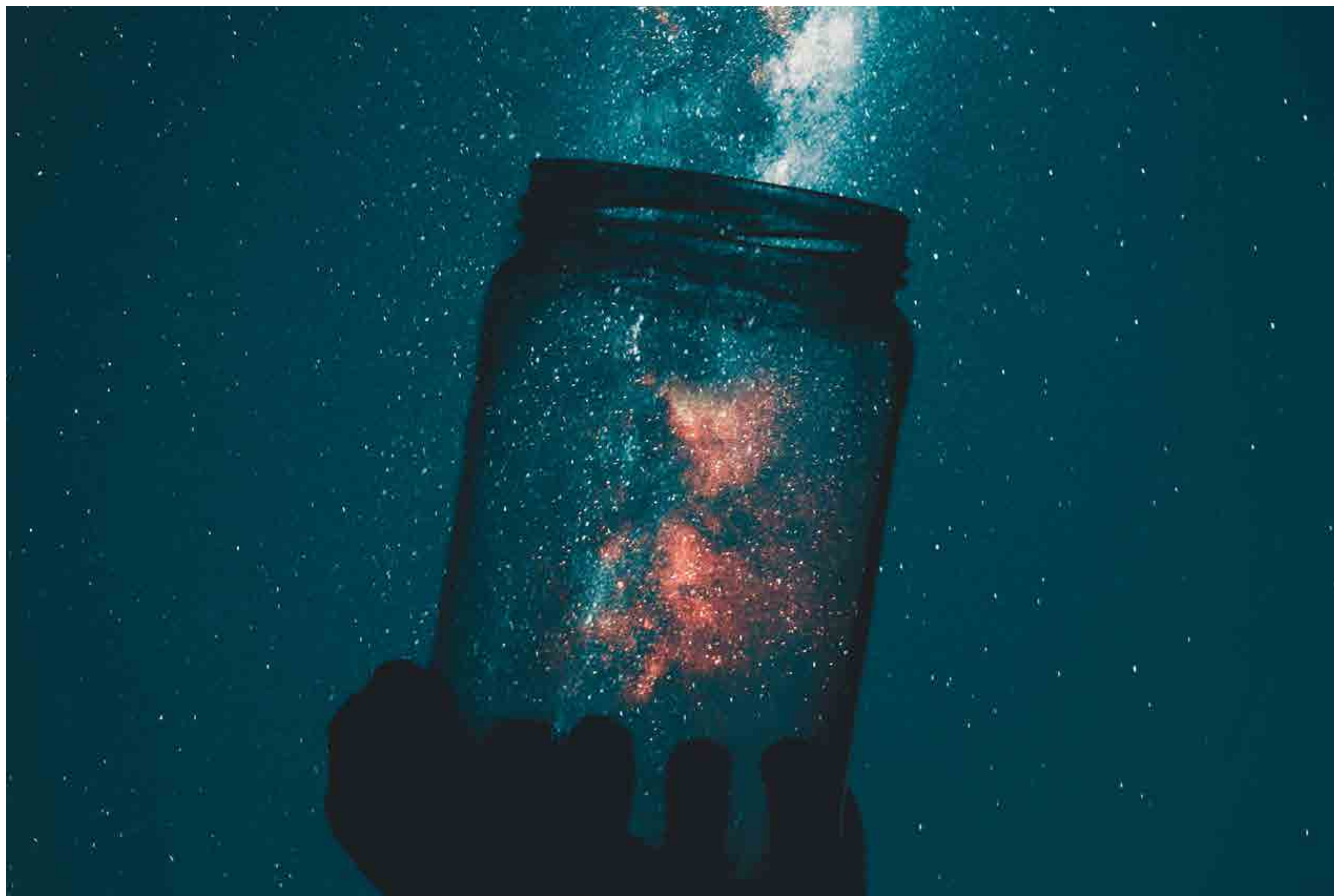
In this area, alongside large European brands Irizar participates in several domestic and European research and development **projects for a new generation of vehicles that pollute less**. The main lines of research are currently focused on aerodynamic improvements; reduction of weight; incorporation of new technologies and materials, HVAC systems; efficiency of the kinematic chain; and electrification, renewable fuels, control, and efficiency of all auxiliary components.



Irizar participates in the **LONGRUN project** that is centred on long-distance coaches and lorries. The innovations are developed in the areas of electric-hybrid drive, motors and after-treatment systems for alternative and renewable fuels, electric motors, smart auxiliary systems, generating and storing energy with a renewable origin and power electronics.



- It started in early 2020 within a consortium of 30 organisations from 13 European Union Countries for developing efficient and environmentally friendly long distance power train systems for heavy lorries and coaches.
- Irizar will provide a demonstration vehicle whose goal is to show the viability of different technologies and reduce diesel consumption and CO₂ emissions around 10% for long distance applications.
- This project is subsidised by the **Horizon 2020** (H2020) framework project of the European Union aimed at research and innovation. The primary mission of LONGRUN is to reduce CO₂ emissions in the heavy transport sector and contribute with tangible results to the EC review of CO₂ emissions standards. The test and validation phase for the emissions reduction of a prototype unit started in 2022.



As we mentioned previously, we currently offer a **COMPLETE RANGE OF integral, conventional, electric and hybrid VEHICLES**, always meeting the needs of each customer and we are continuing to invest in alternative technology for the future, such as hybrid technologies with electric autonomy and alternative combustion engines, like biodiesel, HVO, biofuel and natural gas (CNG and LNG).

An extensive range of options covering all market segments, urban and suburban buses and medium- and long-distance coaches for both regular and discretionary services and Premium.

We like future challenges, and because of that:

- We have several mobility projects under way with electric vehicles that use hydrogen fuel cells.
- We're already working on electrifying our intercity and long-distance (class II and III) coaches.
- And we're prepared for when synthetic fuels become a reality.

As you can see in detail in section "3.3. Decarbonising combustion vehicles", in addition to working on lowering the fuel consumption and GHG emissions of our vehicles through drive technologies and alternative fuels, we also **constantly innovate in aerodynamics and coachwork weight**.

Range of Irizar Vehicles

				LONG DISTANCE →							URBAN		
DRIVE TECHNOLOGY		INTEGRAL POSSIBILITY	i8	i6S	i6S efficient	i6	i4	i4 lightened	I3le	le tram	le bus	ie truck	
MORE GHG EMISSIONS	COMBUSTION	Diesel											
		Biodiesel											
		HVO (hydrotreated vegetable oil)											
		Natural Gas / Compresses Biofuel (CNG)											
		Natural Gas / Liquid Biofuel (LNG)											
↓	WITH HYBRIDISATION	Parallel integral hybrids											
		Hybrids on electric											
ZERO GHG EMISSIONS	CHASSIS	Electric zero-emissions											
		Electric with range extender (CNG)											
		Hydrogen with fuel cell (FUTURE)		(to be specified in the FUTURE)									

European Benchmark in Eco-innovation

At Irizar, we have spent years relentlessly advancing in research and development in new coach manufacturing technologies and new materials, to be **a European benchmark at the forefront of eco-innovation and eco-design** throughout the product's Life Cycle.

Ecological design implies the integration of environmental aspects from the very conception of the product in order to limit its impact on the environment. This integration, based on a global approach, must take into account all stages of the product life cycle and the mechanisms aimed at reducing its environmental impact, identifying technologies, ways to improve the choice of materials, and encouraging the use of clean materials.

Environmental Product Declaration (EPD) for the Irizar i4 integral coach

After more than four years applying life cycle analysis (LCA) methodologies and establishing Product Category Rules (PCR) to assess the environmental profile of combustion and hybrid and electric buses, in 2019 Irizar was awarded the **First Environmental Product Declaration (The International EDP System)**, which makes it the **first company in the sector worldwide** to achieve this certification in the environmental area.

Environmental Product Declarations (EPD) have been developed in accordance with ISO 14025 and they add a new dimension in the market, given that they enable information to be provided on the environmental performance or scope of products and services. They are created and registered in the context of the Type III Eco-Labeling Programme under

the International EPD System, based on the following reference standards. UNE-EN ISO 14040:2006 (Environmental management. Life cycle analysis. Principles and reference framework), UNE-EN ISO 14044:2006 (Environmental management. Life cycle analysis. Requirements and guidelines), UNE-EN ISO 14025: 201 (Environmental labels and declarations. Type III environmental declarations. Principles and procedures. and Product Category Rules for preparing Environmental Product Declarations for Public and private buses and coaches (PCR 2016-04).



CERTIFICATE EPD REGISTRATION

This document is to confirm that

IRIZAR, S.COOP.

has published an Environmental Product Declaration for

IRIZAR I4 INTEGRAL COACH

with registration number S-P-01571
in the International EPD® System.

The EPD has been developed in accordance with ISO 14025, the General Programme Instructions for the International EPD® System and the reference PCR 2016:04. Verification was performed by Tecnalia R&I Certificación, S.L.

This document is valid until 2024-05-17, or until the EPD is de-registered and no longer published at www.environdec.com.

Adam Lewrén
Secretariat of the International EPD® System
Gothenburg, Sweden, 2019-06-03

This Product Environmental Declarations project has been carried out on the **Irizar integral i4** model, at 13 metres in length, 55 seats, DAF MX 11 E6 diesel engine and ZF robotised seat.

In this sense, in addition to the carbon footprint of this coach, we have made a map of its constituent materials (which including, among others, the recyclability and impact on the CO₂ emissions of each one).

EPD declarations provide differentiating advantages to customers and markets as they scientifically and independently evaluate the coach in terms of impact throughout the life cycle, energy consumption of renewable fossil resources at each stage of the life cycle, and pollutant emissions or hazardous substances from manufacturing. It also evaluates the environmental benefits of the product and environmental management or eco-design systems in the organisation or the way to manage the end of life of the product. Furthermore, it contributes to establishing measures aimed at reducing CO₂ emissions and other pollutants of our products, based on the use of materials that are more respectful of the environment, weight reduction, and fuel consumption. Efficient and sustainable driving habits also result in the achievement of these objectives.

Environmental Product Declaration (EPD) for the ie bus NG electric bus

The life cycle analysis (LCA) of another one of our products, the 12m **ie bus NG electric bus**, was begun in 2020. Flagship product for the electromobility plant. Which was performed based on the following reference standards: UNE-EN ISO 14040:2006 (Environmental management. Life cycle analysis. Principles and reference framework) and UNE-EN ISO 14044: 2006 (Environmental management. Life cycle analysis. Require-

ments and regulations). In 2021, we kept working until we obtained the environmental product declaration (EPD) for the bus, which included calculating the main environmental impacts our product creates during its lifetime, as well as recyclability and recoverability rates for the bus when the end of its useful life arrives.

Our goal is to expand the EPDs to the rest of the Irizar Group's range of vehicles.

Energy 54Ah and Energy 65Ah LCA batteries

The slow charge Energy pack has been designed so the vehicle can travel the maximum number of kilometres and complete the operation with a single daily charge.

We've been applying life cycle analysis (LCA) methodologies to the **Energy 54Ah y Energy 65Ah** batteries since late 2022 so we can measure the environmental impacts associated with their entire life cycle and work on optimising them.

The LCA is done based on reference standards: ISO 14040:2006 (Environmental Management: Life cycle analysis. Principles and reference framework) and ISO 14044:2006 (Environmental Management: Life cycle analysis. Requirements and regulations). And it include the following phases:

- Definition of goals and scope.
- Life cycle inventory analysis.
- Evaluation of life cycle impact.
- Interpretation of the results



3.2. The customer, at the Heart of our Strategy

Irizar customer-oriented

We're a consolidated industrial project with enormous challenges ahead. The project is based in ethics, transparency and integrity. It's made up of people deeply committed to the clients and innovation is our badge of identity. Out of the conviction that the future will include providing sustainable solutions and our faith in personal talent, we're putting all our effort into **becoming the perfect partner to work alongside transport** operators in the future.

Public transport by road is, and will be, key to guaranteeing mobility services and meeting sustainability goals. Consequently, we continue to bet on public mobility, reducing the level of polluting and noise emissions, allowing the connectivity of means of transport for better fleet management, improving information to users and introducing new technological developments with the aim of increasing passenger safety. We judge this to be the foundation on which to build all the future projects that operators and society demand of us. We're positioned in all segments of passenger transport, including occasional transport and urban, medium and long distance inter-urban and premium transport. And we're leaders in the sustainable mobility sector.

Our commitment to providing high added value to its customers, passengers and citizens is clear in such important aspects as: design, customization, safety, operating cost, technology and sustainability.

Our main strategy is customer **satisfaction and loyalty**. Consequently, Irizar means, above all, closeness. We work alongside our clients from defining the product and service they need until the product end of life, providing the guarantee of a robust project they can trust. The flexibility to adapt to their needs and personalisation without limit are factors that set us apart to obtain loyalty. To create long-lasting and solid relationships with clients, a high priority is put on collaborating with partners in the long term and making relationships that are sustainable and beneficial for both sides.

The best examples of our flexibility for adapting to our clients' personalisation needs can be seen in the section titled **"Premium coaches where everything is possible"**. We can add the ones we did for football teams in 2022 to the list: Real Sociedad (Gipuzkoa), Eibar (Gipuzkoa), Morocco, etc.

But the **personalisations required by international tenders** are greater and greater. One that stands out is the more than 100 i4 diesel coaches we made for an Italian client in 2022 where each vehicle had more than 90 special options, many of which were being used for the first time. That has lead to new tenders that we will manufacture in 2023, also for Italy, with different drive systems: CNG, LNG, hybrid and diesel.

13% of the coaches manufactured in 2022 were new variations developed in the same year. And 13% of those developments were used for manufacturing a single vehicle.

The **impact of Covid-19** on companies in the sector is still enormous (vehicle registrations in the EU are below 60% pre-pandemic levels). We've tried to adapt to the new situation that entails a significant decrease in bus registrations, orders and, consequently, our pace of production. However, despite the difficulty, we are still investing in new technology projects and making sustainability an indispensable value for transport in present and future mobility. We remain committed to innovation projects that allow the development of new technologies that guarantee a future where public transport travel continues to be safe, efficient and free of emissions (pollutants and noise).

In 2022 we took the opportunity to be **with institutional entities to explain different alternatives for reducing emissions in the future to them**. We've been with transportation directors from several autonomous communities, directors of provincial institutions, regional and city governments and, at a national level, the Ministers of Industry and Transport. We've also contacted significant actors in mobility in the EU. We showed them the technologies available so they could learn about them and take them into account when they launch public tenders.

At **ASCABUS**, the Spanish Association of Bus and Coach Body Manufacturers (Asociación española de fabricantes de carrocerías de Autobuses y Autocares), which we're a member of, we shared:

- An analysis of the current fleet of coaches owned by the state,
- its evolution during the pandemic,
- the situation of all of its associates,
- the activities we've done with institutions to apply for direct and indirect aid for the sector, and
- medium and long-term perspectives.

Supporting Them from Start to Finish

At Irizar **we offer personalised solutions**, designed and created to offer the best service: financing, repair and maintenance contracts and pick-up of your used vehicle. We have a *help desk* in every European country and another central one that answers calls 24h a day 365 days a year. Customers can therefore enjoy close follow-up and advice that translate into optimization of vehicle reliability and availability.

The coaches have **remote diagnostic systems** to anticipate and plan management of spares and repairs. Likewise, they monitor the driving style of the vehicles, helping our clients to define good practice patterns for reducing fuel consumption and environmental pollution.

At Irizar, we understand that fuel is the major cost component for operators, so we make every effort to **reduce consumption and all TCO** (total cost of operation). The reputation of the Irizar brand makes the residual value of our vehicles among the highest in the market, which improves the TCO of the vehicles.

We maintain close direct contact with our clients through the **repair-maintenance and original spares programmes** that contribute to improving vehicle efficiency, reducing stoppages, lowering TCO and lengthening vehicle life cycles.

We launched a **website for second hand vehicles** in 2021 so the vehicles our clients want to renew can have a second use by being reused. We put used vehicles from all our distributors on the website, which helps give a second life to the vehicles.

As we already covered in detail in our 2020 and 2021 sustainability reports, **we faced the impact of Covid-19 together with our clients**, helping them with what they needed and developing significant innovations aimed at the reactivation and recovery of the sector.

Their Opinion and Expectations are Fundamental.

Clients are the key factor in our future projects

We have the involvement of passenger transport operators that integrate their vast experience and knowledge, as well as their needs and expectations, in our innovation projects, making them participants in the design and development of future solutions.

At the same time we maintain alliances for keeping regular clients, we work on increasing our client network by bringing in new clients.

We are also striving to involve ourselves with our customers to share opinions and experiences, and discuss their sustainability concerns (economic-governance, social, environmental) and their vision of the future. Our goal is to achieve a productive dialogue that benefits both parties.

The customer, integrated in internal processes

At Irizar, we have Customer Relationship Teams deployed all over the world and Customers Line Teams in the internal processes of the organisation. The objective of all this is to channel their needs to guarantee the development of products and services of the future.

The **customer relationship teams** maintain direct and close daily relationships with them, making them the main source of information and knowledge as regards their current and future needs. This knowledge flows and is shared throughout the organisation through different channels and processes.

The **dynamics of the Customer Line Team (ELC)** is one of the most important at Irizar. Each ELC is made up of all the teams of Irizar people involved in operations until they deliver each bus to the customer: customer relations, purchasing, supplies, product and process engineering, production, quality... All of them are responsible for complying with or improving the expectations of customers who, in turn, are naturally included in this process.

Except in 2020 and 2021 (because of the Covid-19 restrictions), we held quarterly meetings of the Customer Line Team (ELC) for decades until 2022. A quarterly review of daily activities in reference to the an-

nual goals, presented by members of the Management Team and other managers from different teams and operational areas, was done at the meetings. The CEO used the opportunity to spend time with everyone in the organisation and give them the chance to channel and express the concerns and issues that affect them as workers. All dissatisfactions, suggestions or proposals are collected so they can be analysed and action can be taken to resolve them.

As we described in detail in chapter 4 about “People”, after the organisational changes we went through at Irizar, since November 2022 the meetings have been renamed. They are now called “**Building the Irizar of today and tomorrow**”, with the goal of leading the re-dynamisation of the organisation to catalyse the development of the brand, technology and sustainability. They are also led by the CEO and other members of the Management Team participate actively, DRIVING the re-motivation of the organisation to bring about an improvement in the organisation’s performance and capabilities to take on new challenges (taking sustainability into account as well as technological evolutions in mobility and digitalisation), that are going to bring about very deep technological changes in products, services and the way of working. It is all focused on the present and future needs of clients, passengers and citizens, alongside the other stakeholders.

Always informed

We have a very close relationship with our customers. Through meetings, communication and marketing campaigns, we keep them constantly informed about our new products and services and also about the initiatives and results achieved in other sustainability issues.

Quality and after-sales forums Satisfaction Surveys

The **monthly quality forum** for product quality, is made up of the heads of the Senior Management of the organisation (CEO, General Director, Industrial Director, Director of Production, Commercial Directors, Purchasing Manager, Product Innovation Manager, Product and Process Engineering Managers, After Sales Manager, Quality Manager, and other Commercial Equipment and Industrial Department personnel). It’s an open forum, in which all Irizar people are invited to participate.

In addition to exhaustive monitoring of the quality and environmental objectives set out in the annual plans, a review of the corrective actions of the main incidents presented by customers in different markets is also carried out. The most significant incidents are transferred to the quality forum after being evaluated in the **after-sales forum**. The conclusions and decisions taken at these meetings are shared with the commercial teams, after-sales team and Quality Managers of the other Irizar Group external plants in a constant search to share learning and synergies.

There has been a **clear improvement** in product quality that we have gradually been observing in recent years and was reflected also in 2022.

- In the management of the communication channels / analysis of warranties of our technical services
- In the management of supplier guarantees, in their complaint, documentation, support processes and communication with the industrial area

Except during the pandemic period, we did previous **client surveys** and we’ll consider doing it in the future for continuous improvement: We want to check if we are meeting their expectations in terms of products and services and sustainability (ESG) and consequently improving those aspects that customers consider weaker and promoting the aspects they judge to be most important for the future.



Driver training

We have in-person **after-sales training** systems for drivers and repair/maintenance technicians for Irizar vehicles. The training is also complemented by online training on iService (the Irizar after-sales web platform).

We are still teaching all the **eco-driving courses** that our customers demand, examining the impact that optimal driving habits have on fuel consumption savings and, consequently, on environmental impact. Objective comparisons of fuel consumption analyses carried out on monitored vehicles show considerable reductions from efficient driving. These courses not only contribute to reductions in operating costs, but also help achieve safer and more efficient driving techniques. With the continuous technological advances that Irizar is implementing in its vehicles and its influence on the safety - comfort - efficiency of the vehicle, training is highly valued by the operating companies and their drivers.

In addition to training, since 2019 **“efficient driving manuals”** have been included in all coaches along with vehicle documentation.



Premium Coaches where Everything is Possible

For decades our flexibility and high capacity for personalisation and adapting to our clients' needs has made it possible for us to offer a large number of choices geared towards converting premium or high end vehicles into multi-use vehicles.

More and more, vehicles are designed that adapt to your space and purposes where everything is possible, like large living rooms, training and meeting rooms, kitchens, dining areas and leisure, entertainment and rest areas, mobile classrooms, exhibitions, massage spaces, health services, ambulances or mobile libraries. The possibilities are endless.

As you can see in detail in section “3.3. Decarbonisation in internal combustion vehicles”, a significant milestone in 2022 was putting the first units of **i6S Efficient long-distance vehicles with LBF (liquid biofuel)** into operation. The long-distance sector has not incorporated alternative energies at the same pace as they've been implemented in urban and suburban transport (hybrid, electric, etc.). The combination of the i6S Efficient with the gas power train can provide CO₂ reductions of up to 30% compared with a diesel vehicle with a non *Efficient chassis*.

Clients are looking for functionality and comfort because, in many cases, they spend a lot of time travelling and their coach becomes like a second home. For that reason, in addition to maximum safety, reliability, profitability, comfort, luxury and the latest technological advancements, at Irizar we devote a lot of internal and external resources to designing, developing and making the adaptations needed to meet the demands of a more and more demanding market.

The health sector once again places its trust in Irizar



In 2022 the Syddanmark Region **purchased an integral 14 m Irizar i8** bus designed specifically for blood donation in different Danish towns. The flexibility and high capacity for personalisation and adapting to the needs of our clients have made it possible for us to create the **Blodbus-sen bus**, which will be parked at the Odense public hospital at night and during the day it will travel to various locations in southern **Denmark** to promote and facilitate blood donation in the area.

The vehicle is divided into different areas: waiting area and place to be interviewed by the doctor, donation area, kitchen area and private area for the medical staff. The rear part of the vehicle has four seats for the medical team, as well as a lift for easy access to the vehicle. Top quality blood donor chairs were installed for the comfort of blood donors with all kinds of equipment needed to perform the blood donations. Hydraulic legs were installed to level the bus and ensure optimum working conditions for the health care workers.

For daily use, the bus is connected to the hospital electricity network or the municipal grid, and for added safety, the vehicle is equipped with a generator for use in the event of a power failure or faulty connection, allowing the medical staff to continue working as normal. Furthermore, with three operating modes, the vehicle perfectly adapts to the needs of each moment:

- **Donation mode:** The vehicle is connected to the electrical grid and all systems are available. In the event of a problem, the generator starts operating.
- **Driving mode:** The vehicle uses its normal standard system.
- **Night mode:** The vehicle is connected to the electrical grid, but this time with limited functions.

With the delivery of this Irizar i8 blood bus, Denmark joins the demand for this type of vehicle to be used in the health sector. In **Sweden**, for example, two ambulance vehicles equipped with all kinds of medical facilities are already in operation to transport patients to hospital.



An Irizar i6S Premium for the Kuwait Fire Force



The Kuwait Fire Force has a completely personalised Irizar i6S for their Ministry of the Interior and high ranking officials, who will use the vehicle on special occasions live national and international events. It is a 12.20 metre bus with a Mercedes chassis specially designed with unique decoration and seat distribution adapted to the needs of the Kuwait Fire Force that provides maximum comfort for users.

Among other unique features, the vehicle has wood furniture with Corian countertops, a galley with an additional refrigerator and coffee maker, a recessed lavatory and USB ports for all the seats. It also has several 220V universal outlets, footrests on some seats, extra-tinted windows and a maximum capacity Hispacold air conditioning system for temperatures above 50° C, in addition to an eCo3 air purification system for eliminating virus and bacteria. Furthermore, the configuration of the back of the vehicle is designed as a meeting room with a space that has seven seats and a central table to meet all the client's special needs.



Our limitless capacity for personalisation has resulted in this Irizar i6S Premium adapted to the requirements of the Kuwait Fire Force. It was possible thanks to the collaboration between AL Mulla Automobiles for Buying & Selling Cars Co., the general distributor for Mercedes-Benz in Kuwait, and Mohamed Abdul Mohsin Kharafi & Sons Co. with which Irizar keeps broadening their market in Arab countries.

Meeting Us at International Fairs

After two difficult pandemic years, Irizar went back to the industry fairs with the clear goal of tackling the new challenges of the future of mobility and with the firm goal of responding to the challenges of efficiency and sustainability that these times require of us.

Proof of that is our complete range of products that includes all the technologies present on the market: zero-emissions electric buses, diesel, biodiesel, natural gas (CNG and LNG), and biofuel and hybrid buses.

We can highlight the presentation of the Irizar i6S Efficient (the most efficient coach in the history of Irizar), which we already mentioned in the previous section and that we'll take a deeper look at in section "3.3. Decarbonisation in combustion vehicles". A 13% reduction in consumption, the 30% improvement in the aerodynamic coefficient and the weight reduction of up to 950 kg make the Irizar i6S Efficient a new generation sustainable vehicle designed for maximum efficiency.

United Motorcoach Association Expo 2022 - Long Beach (California) - February 2022



Like on previous occasions, Irizar USA attended the 2022 UMA Motorcoach Expo, which this time was held in Long Beach, California from February 23 to 26.

Irizar e-mobility at Go-Mobility by Mubil (Irún) April 2022



For the third consecutive time Irizar e-mobility participated in the third edition of the Go-Mobility by Mubil fair, which was held on 27 and 28 April at the Ficoba fair grounds in Irún. The event has become a leading opportunity to see the latest advances in sustainable transport.

The Irizar e-mobility stand was once again a meeting point and information point for all the latest in current electromobility solutions. And they presented their experiences and technological advances in sustainable and intelligent urban transport. There was a permanent magnet electric motor and a battery pack made with the group's technology at the

stand. A 12-metre long Irizar ie tram that visitors could test drive around a designated area was shown outside the fair grounds

Furthermore, during the fair Irizar e-mobility participated in a presentation about the present and future of sustainable transport with an exhibition about their electromobility solutions and European projects. The day before, in the framework of Go Mobility, the InMove Mobility Cluster by RailGroup was held where Irizar e-mobility had a speaker who participated with a talk about "zero emissions urban industrial vehicles".

Irizar e-mobility at the European Mobility Expo Paris - June 2022



Irizar e-mobility is maintaining their major strategic brand commitment and focus on bespoke projects in France, consolidating their top position in the French market since 2016. They presented their zero emissions mobility solutions and innovation and technological advances at the European Mobility Expo held in Paris on 7, 8 and 9 June.

They exhibited one of their flagship vehicles, the 12 m long Irizar ie tram. This cutting edge 100% electric vehicle offers passengers a silent, well-lit, safe and pleasant journey experience. Its key features include the design, with the aesthetic attributes of a tram, the hubcaps, the rearview mirrors that have been replaced by cameras that project their images on two screens inside the vehicle on either side of the driver, or the chrome perimeter ring, which runs round the body of the vehicle. The perimeter ring frames the large glass surface of the sides.

The specific vehicle had 22 seats, one driver's seat, two areas for wheelchairs/pushchairs and a capacity for up to 80 passengers. It is equipped with Irizar batteries offering 355 kWh of onboard energy, charged by slow charging in depots. It is owned by Orléans Métropole. The company signed a contract with Irizar e-mobility in April 2020 for the supply of 29 zero-emission Irizar ie tram buses. The agreement was part of Orleans Métropole's strategy for the energy conversion of its bus fleet to a fully electric public transport system. These buses have been operating on the streets of Orleans since 2022.

In the technology space, visitors will be able to see first-hand a permanent magnet electric motor as well as a battery pack, both using the Irizar Group's proprietary technology.

Irizar presented the Irizar i6S Efficient LBG at Person- trafik Stockholm - October 2022



For the third consecutive time Irizar e-mobility participated in the third edition of the Go-Mobility by Mubil fair, which was held on 27 and 28 April at the Ficoba fair grounds in Irún. The event has become a leading opportunity to see the latest advances in sustainable transport.

Insofar as the Irizar i6S Efficient, the first units of this new vehicle were delivered to some Swedish clients at the beginning of the year. They all expressed satisfaction with the improvements brought by the product, especially because the vehicle's fuel consumption is drastically reduced.

Furthermore, the Irizar Efficient LBG presented at the fair was the first unit produced by Irizar. It's one more step in achieving the goal of having a complete range of efficient vehicles. And it's a new milestone in the road to sustainable mobility. The first unit will travel around the whole

country in the coming months so all the interested operators can see and drive the new LBG Irizar i6S Efficient under real driving conditions.

Irizar presents the Irizar i6S Efficient at IBE Rimini, Italy - October 2022



Another year Irizar attended the IBE fair that is held in Rimini from October 12 to 14 to present the new Irizar i6S Efficient to the Italian market.

At the stand, Irizar exhibited three latest generation vehicles: an Irizar brand Irizar i6S Efficient, an Irizar i6S on a Scania chassis and a CNG Irizar i4, also on a Scania chassis. The presentation showed the three vehicles that focus on efficiency to the Italian market, making Irizar a leader in the sustainable mobility sector. In addition, the brand had an-

other integral Irizar i6S Efficient outside the fair grounds so those present could experience driving the most efficient coach in the history of Irizar.

Irizar presents the Irizar i6S Efficient at Autocar Expo Lyon, France - October 2022



Irizar attended the Autocar Expo that was held in Lyon from October 12 to 15 to present the new Irizar i6S Efficient to the French market.

They showed two latest generation vehicles: the new Irizar brand Irizar i6S Efficient and a CNG Irizar i4 on a Scania chassis. The presentation showed the two vehicles that focus on efficiency for the first time on the French market, making Irizar a leader in the sustainable mobility sector.

Irizar at the Next Mobility Exhibition Milan - October 2022



The Irizar Group presented their latest advancements and innovations in electromobility at the first edition of the Next Mobility Exhibition in Milan. Two vehicles could be seen at the stand: a 12.160 metre long Irizar ie tram and a 12.750 metre Irizar i3LE hybrid.

The Irizar ie tram stands out for being a cutting edge environmentally friendly vehicle. The ie tram being shown at the fair is equipped with latest generation 430 kWh Irizar batteries and it has a 240 kW traction motor.

The Irizar i3LE hybrid model is a Low Entry vehicle whose main characteristics are its functionality and accessibility. The unit being shown is a body on a Scania full-hybrid chassis with a diesel engine and another

130 kW electric motor between the diesel engine and the gearbox. The powerful electric motor integrated into the transmission provides a range up to 3 Km in electric mode and up to 30% fuel savings.

The destiny of these two silent and environmentally friendly buses is to become a key element in sustainable collective mobility, because they contribute to considerably reducing environmental impact and improving the quality of life for people.

Irizar presents the Irizar i6S Efficient at the Euro Bus Expo Birmingham - November 2022



Attendees to Euro Bus Expo 2022 had the chance to visit the first ie tram with right-hand drive which was acquired by London operator Go

Ahead. The bus is part of an order for 20 buses with charging infrastructure that will be used to electrify line 358 in south London, the first in the United Kingdom to have ultra-fast opportunity charging.

At the expo stand, Irizar showed four latest generation vehicles: the new Irizar i6S Efficient, an Irizar i8 and the Irizar ie tram electric bus. This was the first time Irizar showed these vehicles focused on efficiency in the British market, which puts us at the head of the sustainable mobility sector.

The British market already had the chance to discover the Irizar i6S Efficient at a travelling show held all summer. All the operators expressed their satisfaction with the improvements in the product, especially the vehicle's reduction in fuel consumption. When the exhibition ended, the i6S Efficient that was shown was registered as a demonstration coach so the operators present could try it out.

Likewise, Irizar showed the first lightweight Irizar i4 with 71 seats, which meets the public service vehicles accessibility regulations (PS-VAR). It is the first Irizar i8 without mirrors, it is 14 metres long and has a 50 seat capacity, and it is ready to become a vehicle suitable for Premier League sports transport in collaboration with Ellisons Travel of St Helens. The Irizar i8 keeps the combination of design, technology and sustainability, in addition to providing exceptional comfort for the driver, guide and passengers. Because it has the most advanced technology on the market, since its presentation it has been the vehicle chosen by sports giants and legends in the sector.

3.3. DECARBONISATION: in combustion vehicles

In this section, in addition to the options for contributing to decarbonising internal combustion vehicles that were already there in previous years and that we will address later (integral coaches and natural gas coaches), we are proud to highlight the **new generation of coaches that are efficient, sustainable and profitable.**

As we mentioned in section 3.1. "Race to Zero", in addition to working on lowering the fuel consumption and GHG emissions of our vehicles through using alternative fuel and drive technology, we also **innovate constantly in aerodynamics and chassis weights**, depending on the functionality the vehicle will have.

- On long distance coaches the proportion is: 70% aerodynamics and 30% weight
- On short distance or intercity coaches the proportion is: 40% aerodynamics and 60% weight, because it increases braking

The outcome of our innovations along those lines were released on the market in 2022: the Irizar i6S Efficient and the Irizar i4 lightened. Those innovations will extend to the rest of our range later.

3.3.1. The Irizar i6S Efficient: the most efficient coach in Irizar's history

In May 2022 Irizar presented a new generation of the Irizar i6S model that is more efficient, sustainable and profitable.

With the new Irizar i6S, **consumption and emissions have been reduced up to 13%**, weight is down to 950 kg and the aerodynamic coefficient is 30% lower. That makes it a latest generation vehicle designed to provide maximum efficiency to operators, the best experience to passengers and a commitment to sustainability.

Irizar is thus showing its firm commitment to its customers and society, to whom its products and services provide high added value whilst not ignoring fundamental elements like design, personalisation, safety, reliability and sustainability.



Aerodynamic coefficient improved by 30%

Excellent aerodynamic performance is the key to this new generation of coaches. Part of the front of the vehicle and roof has been modified. In addition, the curve of the windscreen and the rest of the front windows have been worked on to reduce air resistance to the minimum.

Furthermore, the Irizar i6S Efficient has the option to replace the **rear-view mirrors with digital vision cameras with the two-fold goal of providing wide-angle vision in any weather conditions and contributing to aerodynamic savings.** These modifications provide substantial improvements in the driver's direct and indirect field of vision, which increases the safety of the vehicle, especially in low visibility situations.

Weight reduction up to 950 kg

Another major challenge was reducing weight. The weight of every component was analysed and reduced. And the weight of the vehicle has been redistributed with the goal of improving weight distribution. High strength steel and lighter composite materials were used instead of traditional structural materials.

Thanks to those innovations we've been able to increase the space for passengers to improve ergonomics and comfort. We've also reduced noise and vibrations to the minimum. The cockpit has likewise been re-designed to be more comfortable and ergonomic and have a larger field of vision. The new line of Hispacold climate control devices is more compact, efficient and lighter. That lets us make the travelling experience in this new Irizar as comfortable as possible.

A smart coach

The i6S efficient is a very efficient coach that is connected, safe and designed for the sustainable transport of the future.

It has a new multiplexed architecture and communications protocol can give self-diagnosis services in real time. Irizar technology makes preventive maintenance and online monitoring for remote diagnostics possible.

With the connectivity systems developed by **Datik**, all the data and usage statistics for the vehicle are stored in the cloud to maximise profitability, optimise route planning and minimise maintenance costs.

The i6S efficient has the most advanced active safety systems for preventing accidents. Moreover, the vehicle has a reinforced structure that improves its response to torsion, flexing and head-on collisions, also improving its passive safety. We've increased and improved the driver's field of vision. In addition, the digital camera system gives a panoramic view in all conditions and situations, even at night or in the rain.

Having the electronics in the central console, the accessibility of the controls and the virtual dashboard let drivers interact with the vehicle and quickly obtain all the information they need and administer the entertainment and comfort system.

Exhaustive studies and aerodynamic tests

Like all Irizar buses and coaches, the i6S efficient has been developed using the most advanced technology in design, materials, components and production processes. Fatigue and durability testing was done on it

at one of the most prestigious research institutions in the world to ensure its reliability and quality.

Exhaustive aerodynamic studies and tests using simulators and measurements in real circuits have shown an exceptional 30% improvement in the aerodynamic coefficient and a reduction of up to 13% in consumption and emissions. Those demanding tests are proof of the solutions that make the i6S Efficient a market leader in consumption and sustainability.

Maximum adaptation

As always at Irizar, we adapt to the specific demands of each market and client. And we offer the possibility to personalise vehicles with end-less configurations for either right or left hand driving.

The i6S efficient is prepared for diesel, biodiesel, natural gas and biofuel, and it's designed to be adapted to future zero-emissions models. The versions adapted to each market will be presented in every country in 2022.

The Irizar i6S Efficient Wins the Sustainable Bus Award

As we explained in section “3.2. The customer, at the heart of our strategy”, at the exhibitions we participated in in 2022 the new Irizar i6S Efficient was **awarded the Sustainable Bus Award** in the “coach” category at a ceremony held in Milan during the NME-Next Mobility Exhibition fair.



The jury, made up of several members of the specialised European press, highlighted Irizar’s capacity for redesigning the i6S model, “achieving greater operating efficiency, which is essential for a sector whose reactivation is being affected by the price burdens caused by the energy crisis.” A 13% reduction in consumption, the 30% improvement in the aerodynamic coefficient and the weight reduction of up to 950 kg make

the Irizar i6S Efficient a new generation sustainable vehicle designed for maximum efficiency.

Imanol Rego, CEO of the Irizar Group, highlighted the importance of the prize, affirming that, “*It encourages us to keep going with technology and innovation and make the effort day in and day out to build a better world*”. Rego also stressed that, “*Irizar’s commitment to sustainability runs deep and, as such, defines the DNA of our brand*”.

The award is a recognition of the work done by the people at Irizar on what has been one of the largest innovation projects in recent years. It is a push towards our firm goal to tackle the new challenges we are facing today and make Irizar a key actor in the sustainable mobility of the future.

3.3.2. Irizar i4 lightened: efficient, sustainable and profitable

In February 2022 Irizar launched new generation of the Irizar i4 model coach that is more efficient, sustainable and profitable. The Irizar i4 is a versatile vehicle that is also a perfect intercity coach for school or company transport or discretionary use. The different versions of this vehicle (H, M, L) strike a perfect balance between accessibility and luggage compartment capacity, according to the needs of each operator.



The new generation Irizar i4 coach now offers significant new features that mainly focus on a major reduction in weight and optimal per axle load distribution. The result is a **lightened** vehicle with a weight reduction of up to 955 kg, depending on the configuration chosen.

It’s a **highly efficient, sustainable and profitable** coach that because of its structural redesign and the development of new technological solutions and innovative optimisations, provides significant **fuel savings** up to 5% and, consequently, improvements in the **reduction of CO₂ emissions**.

The implemented solutions include the use of high-strength steel and composite materials to replace traditional structural materials, as well as new seats, with weight optimisation and greater space between them,

thus enhancing passenger comfort and experience. The innovations implemented have made it possible to offer new seat distributions that provide versatility and maximum adaptation to client needs.

As important safety measures, a radar system can optionally be installed in the central part of the front. The Irizar front headlights with Full-LED option offer up to 30% more light capacity. The rest of the lighting elements are also LED technology.

This latest generation Irizar i4 is available with diesel, HVO and B100, hybrid and biofuel or natural gas (CNG or LNG) propulsion systems, depending on whether it is an exclusively Irizar model or a combination of chassis and bodywork. Thus, the Irizar i4 provides a wide range of configuration options and advanced safety systems as well as excellent ergonomics and accessibility for the driver. And it has become a highly efficient, sustainable, profitable and multipurpose vehicle that, without a doubt, fulfils metropolitan and inter-city service or school and company transport demands.



3.3.3. Irizar Brand Integral Coaches

The best representation of the Irizar brand are our integral buses and coaches. And we only supply engines that comply with Euro 6E emissions. Supplier tests of the power train in these vehicles show very competitive results in performance, efficiency and sustainability.

Creating integral coaches (diesel, biodiesel and HVO) is a substantial improvement that translates into:

- a 6% reduction in **fuel consumption** and **CO₂ emissions**
- **on-demand power** technology that reduces consumption more, increases the life of components and lengthens maintenance intervals
- improved manageability, distribution and **weight** reduction
- reduction of **noise** and vibration
- Lower **repair and maintenance** costs: Improved access to the engine compartment and long service intervals (without changing oil filters, etc.)
- Increased passenger capacity and **comfort**
- Maximum **comfort for the driver**
- **Smart technology** that makes **predictive driving** possible so driving can be adapted to the topography and condition of the road and the most intelligent gear changing strategy can be used.

And as a consequence of all this: it increases the residual value of the vehicles and improves the Total Operational Cost (TCO) by 5%.

Since April 2022 these coaches have EV02, which are new combustion *power trains* with updated components. That is translated into signifi-

cant **ADDITIONAL IMPROVEMENTS:**

1. A **weight** reduction of more than 100 kg
2. Improvements in the **drive axle**
3. Efficiency and a **reduction in fuel consumption and GHG emissions** of 0.5%

That contributes to improving the total operating costs (TCO) for our clients.

We're working on the new generation of GEN3 integral power trains that will contribute to improving efficiency, reducing fuel consumption and emissions, meeting the new safety regulations (GSR2) and the ADAS driving assistance system. That, in turn, will contribute to improving the total operating cost (TCO).



3.3.4. Natural Gas (CNG and LNG) Coaches

In 2020 Irizar, as a result of its effort to offer innovative and sustainable mobility solutions, incorporated compressed natural gas (CNG) and liquefied natural gas (LNG) into its range of renewable fuels.

The environmental benefits provided by the coaches with this technology include:

- **Reducing emissions of** CO₂ around 25%, NOx up to 60% and particles above 98%
- They have **better thermal performance** than diesel and **vibration and noise emissions are also minimised** between 4-5 dB
- Insofar as the operating cost (TCO), the reduction is estimated to be up to 35% depending on the difference between the cost of petrol and of diesel.
- The maintenance cost remains similar to that of a conventional diesel vehicle.

The vehicles have a range of up to 500 km in the CNG version and up to 1000 km for the ones with LNG technology. The driver has a gas control screen to comply with all safety protocols. This is used to detect leaks and monitor the start-up of the water additive aerosol fire extinguishing system. These vehicles comply with Regulation R/66.02 even with 700 kg of extra weight on the roof and with the thermal safety and mechanical safety protocols, in accordance with Regulation 110.

3.4. DECARBONISATION: with hybridisation

We remain committed to hybridisation for the Irizar brand and with other chassis. We're analysing expanding our range of hybrid vehicles in search of better performance:

- The capacity to drive in zero-emissions mode to anticipate the zero emissions zone needs of cities (SDG 11), and
- expand the hybrid range to long-distance vehicles

The Irizar brand

In 2016, we launched the Irizar hybrid line on the market, becoming the **first European company to launch an inter-urban class II hybrid coach**.

This is a parallel hybrid technology. Combines a propulsion engine with an electric motor that provides power or generates electricity. And, depending on the situation, the engines can act either individually or together to achieve optimum efficiency and performance. The use of biodiesel eliminates the emission of sulphides.

Today we have a full range of hybrid vehicles with Euro 6E internal combustion engines that are certified to run with fossil diesel, biodiesel and HVO. These coaches offer:

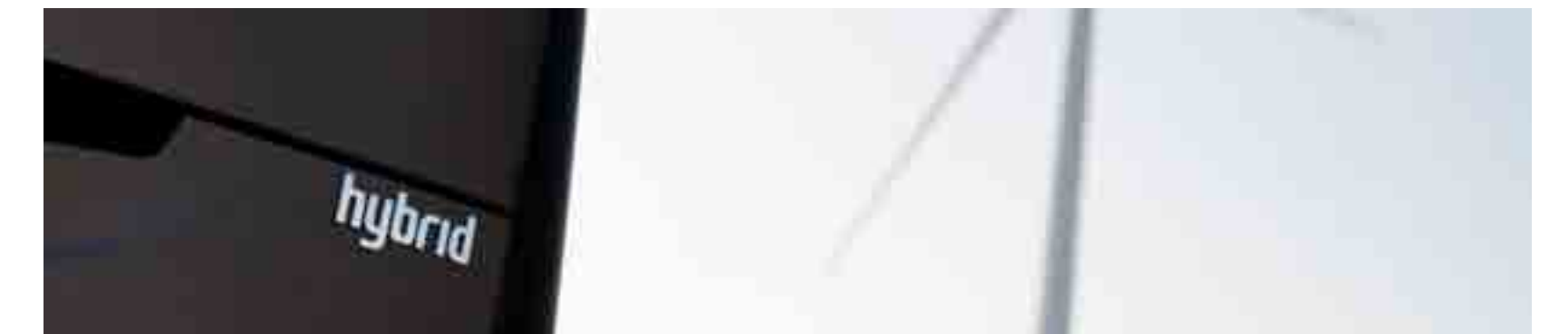
- A 30% **reduction in consumption** in comparison with a conventional diesel coach
- which lets our clients have significant **fuel savings** (7000 litres/year) and
- a proportional reduction in CO₂ emissions (up to 30%) Estimating a 25% fuel savings, it would be a **reduction in CO₂ emissions** equivalent to 304,000 kg during its useful life (70,000 km/year for 15 years).
- **Less noise** and a great driving capacity

All of that contributes to lowering the TCO.

Hybrid on chassis

We launched new hybrid vehicles onto the market in 2020 that were the fruit of our collaborative alliance with various chassis brands.

Thus, we are expanding the range of ecologically and economically sustainable solutions for our clients. They also reduce fuel consumption and CO₂ in comparison with equivalent Euro 6 diesel coaches, improving the TCO in accordance with the same percentages of improvement as the Irizar brand hybrids.



3.5. DECARBONISATION: Irizar Group electromobility, zero emissions

Irizar e-mobility: a leader in the sector

In 2011, we started our electromobility business line, under which, we combined the knowledge and experience of the entire Irizar Group. Our strategic commitment to innovation in sustainable mobility for the future and the transformation of cities. We intend to contribute to improving the quality of life and health of citizens with more efficient, clean and accessible transport and make urban environments more sustainable.

Irizar e-mobility's strategy, aligned with sustainability and the energy transition, has been fundamental for the company to increase their business activity 100% in 2022, which it has done with the clear goal of contributing to reactivating the public transport sector. Irizar e-mobility has become a leader in the sector because of the growing number of electric vehicles on the road in the major European cities, their humanness, and their innovative and technological DNA. Their electromobility solutions are expanding throughout Europe and are on the ground in new countries like Switzerland, Germany, Italy, Bulgaria, Liechtenstein, and others.

Irizar e-mobility is committed to turnkey electromobility solutions with the aim of offering sustainable, efficient, accessible, safe and connected public transport. Hence, its active commitment to the environment, the well-being and health of people and to the creation of better urban environments with a special emphasis on reducing emissions, noise pollution, and increasing efficiency, in low consumption that has an impact on lowering costs.

The challenges, now generating success in the implementation of electromobility solutions of the Irizar Group, serve as experience on this path towards sustainable and smart urban mobility for the future.

3.5.1. Integral Electromobility Solutions

At Irizar we provide personalised **integral electromobility solutions** for cities, both in regards to manufacturing zero-emissions vehicles and manufacturing and installing the main infrastructure systems needed for charging, drive systems and energy storage. All designed and manufactured using Group technology, with the Irizar guarantee and service quality.

We offer totally customized **turnkey** projects, designed and created to meet customer needs. The operator, therefore, has the differentiating benefit of having a single point of contact at every stage of the project, including after-sales service, maintenance, and custom repair, which also translates as optimised vehicle reliability and availability.

With our proprietary technology we can provide constant updates for the included systems with the goal of effectively meeting the challenge of maximising the useful life of every vehicle in order to optimise the value of your assets. There is an Irizar exclusive and high-quality after-sales service in all cities where electromobility solutions are installed, with customised R&M packages and managed by local technical experts and employees, thus helping to create local wealth and jobs.

We conduct advisory studies and energy studies of the operator lines and use the data yielded by these studies (operating data, speed, line characteristics, terrain, line etc.) to advise on the energy needed to embark on its optimization strategy, power parameters, solutions and charging times and battery life. We also provide the possibility to coordinate civil engineering projects.

The predictive and comprehensive maintenance of the main systems and components of the vehicle that directly impact life cycle costs, insofar as they optimise the performance and availability of the vehicle, and the residual value of the asset. We do so, in essence, by using monitoring tools that are capable of monitoring the vehicle (doors, batteries, air conditioning and heating, pantograph, power train...) and which provide bus availability and reliability statistics, optimise maintenance time and carry out real-time monitoring of the system.

3.5.2. Range of Electric Vehicles

Our product range includes 10, 12 and 18 metre city buses, which have been operating since 2014 in various European cities, as well as other electric vehicles for cities like the Irizar ie truck, all of which are zero-emissions.

Our buses are characterised by being exceptionally quiet and not generating emissions but also for their accessibility and modern and innovative aesthetic design.

The entire range of buses uses our latest generation batteries. The Irizar e-mobility battery portfolio provides an optimal solution for both slow charging and ultra-fast opportunity charging operations.

We can provide up to four positions for interoperable charging points using a combo 2 hose, in addition to a charging solution using an inverted pantograph or one mounted on the roof.



The Irizar ie tram - A tram on the tarmac



- Available in 12 and 18 metres
- Up to 300 km range
- Engine power: up to 320 kW

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.

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.

Irizar ie bus -- Designed for the city



- Available in 10, 12 and 18 metres
- Up to 300 km range
- Engine power: up to 320 kW

The bus's meticulous design inside and out makes a more attractive, reliable and safe vehicle.

The front end, with a more pronounced and elegant touch, is increasingly similar to the aesthetic features of Irizar 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, among others.

18 m Articulated Bus – **Eliminates 120 tons of CO₂ from the atmosphere every year**

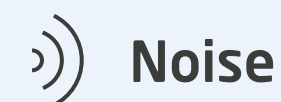


Emissions

The electric buses have an estimated carbon footprint of **8.45 gr CO₂ eq/km.p. (kilometre travelled and passenger)**. Compared to a conventional combustion bus, emission of around 800 tons of CO₂ is prevented during its entire useful life.

This figure is the difference between the emissions associated with the electricity consumption of batteries and burning fossil fuels.

86% reduction in the carbon footprint compared to a conventional diesel bus.



Noise

The electric technology makes the noise of the combustion engine disappear, which means there are no exterior sound emissions to annoy pedestrians when the bus is stopped and starting (0 dBA). When driving, **noise emission is reduced by 20%**.

A study conducted in Sweden in 2014 by the Swedish company Koucky & Partners A.B and entitled “Quieter buses socio-economic effects” concludes that **replacing 240 conventional buses by electric buses reduces noise pollution by 1.3 dBA, which translates into an annual socio-economic saving of €52,650 per kilometre, with a reduction in costs of 27%**.

Irizar ie truck - powerful versatility



The global vision of the electrification of cities and the search for synergies with freight infrastructures together with the technological capability created in the Group has allowed us to extend our range of products to industrial vehicles for cities.

The Irizar ie truck is a 100% electrical truck which responds to different market needs and enables it to move around cities and urban environments without atmospheric or acoustic pollution. The result is a cleaner city and more sustainable environment for citizens. It will initially be used for collecting municipal waste, however it is highly versatile and can have multiple uses: last mile delivery, dry food, refrigeration, crane, dump truck, etc.

The currently existing versions include **zero-emissions** lorries or ones with a **range extender** for using outside the city if more range is needed.

The Irizar ieTruck is not a conventional truck: Its aesthetics, which break with the aesthetic concepts of the current trucks, recalls the Irizar brand’s product lines. The main attributes of this product, designed to operate in urban environments, are its smooth and innovative aesthetic design, operator safety and ergonomics, technology and flexibility for adaptation to market needs.

Mass production started in 2021, and in 2022 we made the first deliveries of vehicles produced for urban waste collection in various European cities. In 2022, the European sales network for the lorry was also strengthened in countries such as France, Germany, Switzerland, Austria and Spain.

We’re very happy with its behaviour, because in conversations we have had in several cities the drivers have expressed their satisfaction with the lorry because of:

- The ergonomics, driver’s seat and cabin
- The ease of driving and manoeuvrability
- Accessibility
- Its silence, without the noise of other drive systems

Until 2022 it was manufactured at our Ormaiztegi facilities. But, in late 2022 preparation was started of new, larger facilities that have capacity for 60 lorries a year, so manufacturing can be started there in 2023.

The ie truck has significant R&D activity associated with several projects we participate in, such as:

1. The **CAPITAL** project of the **SPERT (PERTE) CEV** led by the **Irizar Group** (see "Innovation, it's in our DNA" in section 3.1)
2. The **global e-WASTE** project, financed by the SPRI, that we participated in recently with a consortium with other companies and research centres to improve mobility in cities. That project ended in 2022 and was focused on providing cities with a novel environmentally sustainable waste collection service based in research into new electromobility techniques. The outcome of that project was a new hybrid lorry that uses intelligent algorithms to ensure its 100% electric operation in urban centres. New batteries for the ie truck have been developed in parallel. In addition, it has facilitated the acquisition of the knowledge needed to deploy charging points for heavy industrial vehicles domestically and internationally.
3. The **NextETruck** European project that we participate in as part of a consortium of 18 organisations, among which are several companies from the Irizar Group (Datik, Jema and Irizar) The project, started in 2022, has the goal of: Reducing consumption, increasing range and increasing battery recharging power in order to decrease charging times for future electric lorries

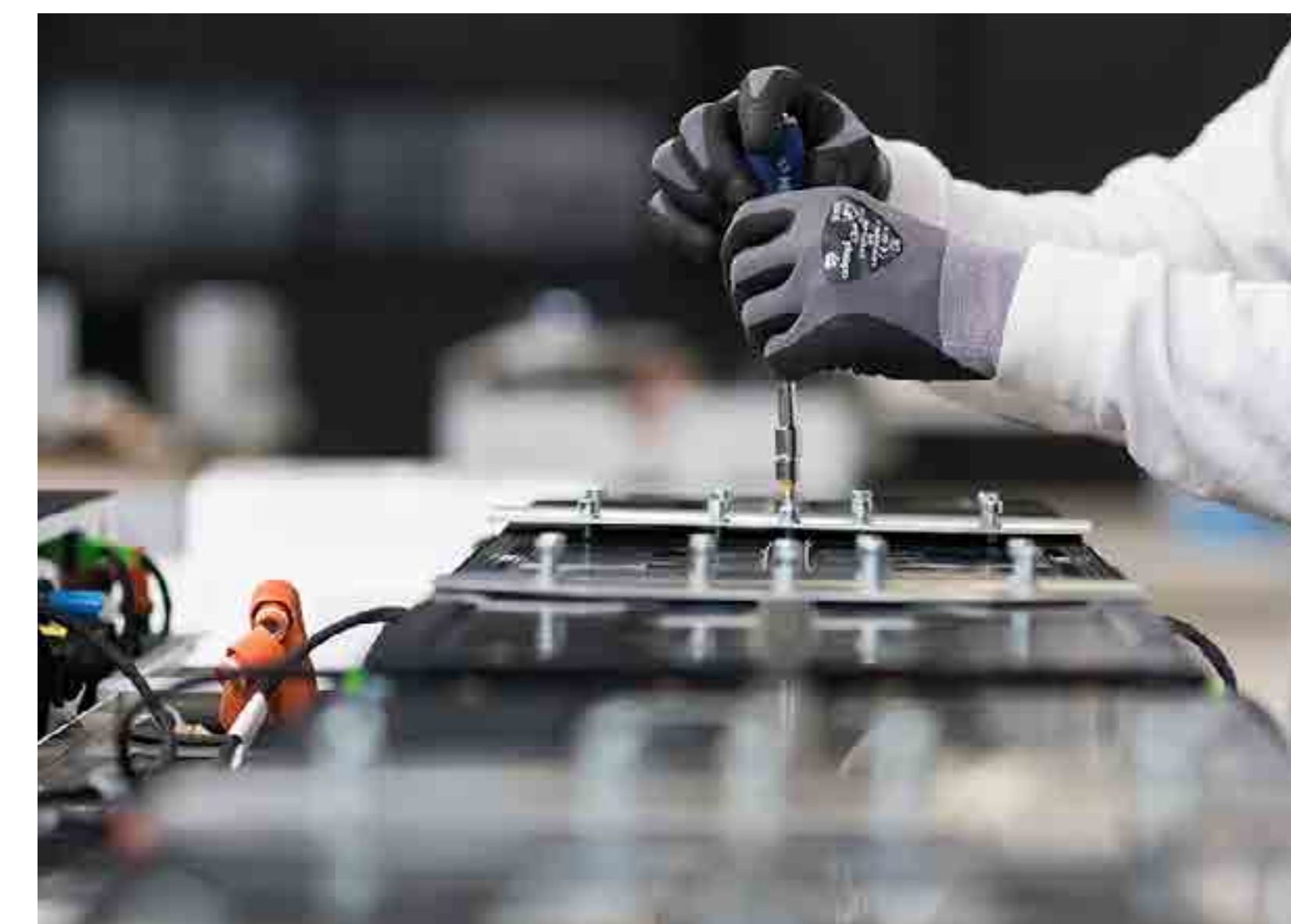
The IMPACT the project seeks is to:

- Build concepts adapted to regional medium freight transport with at least a 10% increase in energy efficiency in comparison with reference electric vehicles from the highest range currently available
- Develop new fleet management and charging infrastructure tools to achieve the total electrification of zero-emissions electric vehicle operation, while safeguarding energy efficiency
- Prepare demonstrations of fast-charging concepts and infrastructures
- Provide new business models to increase acceptance by end users and promote adoption of the project's solutions in the market
- Contribute to climate goals, especially for local air quality



3.5.3. Irizar Batteries

Batteries are **the cornerstone of an electric vehicle**. The range, price, recharging speed and useful life of the vehicle depend on them.



Our energy management and storage solutions, developed and manufactured in our Aduna, Gipuzkoa plant are designed to cover the needs of today's European market and to offer the best solution for all 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 a balance between vehicle range and number of people.
- **Rapid charging (Nano Pack)**
The perfect coupling of vehicle range and charging capacity. Ideal for mixed operations, where the vehicle has sufficient battery life to operate during peak hours. The load can be both slow and fast.
- **Ultra-fast charging or opportunity charging (power pack)**
The solution for a 24/7 operation with charging of up to 600 kW.

In 2022 we worked on expanding the products we put on the market with multiple kinds of batteries with the goal of giving clients a total solution adapted to the operations they are going to do with the vehicles.

3.5.4. Second Life and Recycling of Batteries

The Irizar battery pack is a **highly recyclable** product. All of its components are treated through a controlled process and the possibility of using it in other types of applications is evaluated. At the same time, Irizar is constantly searching and researching increasingly efficient products with the least environmental impact.

We provide a **second life to batteries** under a partnering **agreement with Ibil** that lets the batteries we install in our electric buses be reused as energy storage devices after their useful life in the buses is over. And the power electronics used for the same purpose can also be reused in the charging infrastructures Ibil is developing.

Irizar e-mobility, in collaboration with the Cidetec Technology Centre, participates in projects related to the analysis of the second life of batteries, which are used in urban electric buses. It is estimated that these batteries will reach their end of life at an approximate SoH (State of Health) of 80%. They must then be replaced and repurposed for other uses with less demanding electrical specifications, such as stationary applications including electrical storage for photovoltaic systems or electric vehicle charging systems. In parallel, the issue of recycling is also being addressed in collaborations with several European companies, to ensure final treatment of each component, controlling each process for safety and environmental aspects.

For urban electric buses, the service life of batteries can reach up to 10-15 years, depending on daily loads and the high powers to which they

are subjected. After this time, the batteries must be replaced so that the vehicle maintains its original functionality. The end of that first life, however, does not mean that a battery loses all its charging capacity. So, far from disposing of it, in order to further its environmental and circular economy commitment, sustainable reuse in stationary storage applications is needed to stabilize energy demand when charging electric vehicles with high power levels.

Along those lines, Irizar provides a second life to batteries under a **partnering agreement with Ibil** that lets the batteries we install in our electric buses be reused after their useful life in the buses is over as energy storage devices. And the power electronics used for the same purpose can also be reused in the charging infrastructures Ibil is developing and deploying at Repsol service stations, among other places.



The first charging station for electric vehicles with second life batteries from Irizar e-mobility



The charging station for electric vehicles that uses energy storage based in recycled batteries from Irizar e-mobility entered into operation in 2021. This charging point for electric vehicles is the first one that uses energy storage based in second life batteries and it has been developed by **Repsol and Ibil**. The charging point was installed in a Repsol service station on the N-I road where it goes through the city of Tolosa in Gipuzkoa.

One of the first results of that collaboration has been installing and commissioning the first 50 kW charging station for electric vehicles with an energy storage system based in second life batteries from Irizar e-mobility. Ingeteam, Cidetec and Gureak also collaborated on the project. The latter company employs people with disabilities from Gipuzkoa and they carried out the entire industrial assembly of the storage module. The project also had support from the Basque government and the Provincial Government of Gipuzkoa through the Hazitek and Smart Mo-

bility Industry R&D programmes, respectively.

This technological and industrial development simplifies and facilitates the installation of 50 kW charging points in locations that do not have enough electrical power or where the cost of investment in the grid makes other alternatives unviable.

These are the main advantages this project provides:

- It makes it possible to install quick charging points (50 kW) in places where it would otherwise not be feasible because of a lack of sufficient electrical power or where, even if it is viable, the technical difficulties of connecting to the grid would require an excessive increase in investment.
- The power of the grid needed to provide services is reduced by 70%. A 50 kW quick charging point can thus be put into operation using only a 15 kW grid connection.
- It can be installed almost anywhere because of the small footprint of the storage module, which is less than a square metre.
- Infrastructure operating costs can be lowered significantly, by up to 50% primarily due to needing a lower power service.
- It provides a second life to electric bus batteries and promotes sustainability and the circular economy.

The technical difficulties of installations in places where installing electric charging points is ideal in terms of mobility, like service stations, can be overcome with an innovative solution that provides autonomy and efficiency to the charging system and it also integrates with local distributed generation and self-consumption. Installing this charging station is another step forwards in Irizar e-mobility's commitment to the **circular economy**.

3.5.5. Careful Management of Resources

In addition to manufacturing zero-emissions electric vehicles for their use phase, our focus is also on reducing CO₂ emissions and other pollutants throughout the life cycle of our electric vehicles. We focus our efforts on optimising the efficiency of three key aspects that contribute to the bus's global environmental impact: the drive system and batteries, the raw materials used and the management of all the components to the end of its useful life. The components used comply with the European Union **REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals)** regulation, which addresses the production and use of chemical substances and their possible impacts on both human health and the environment.

We have also modified our method of manufacturing buses, prioritizing the ability for components to be removed and recycled, changing the traditional weld system with a new method based on modular screw-in of the aluminium structure, with vehicle recyclability and recoverability rates greater than 90% in accordance with standard ISO 22628 "**Road vehicles Recyclability and recoverability calculation method**". Recyclability rates of the components and materials comprising the ie bus model is 98.92%, according to the results of an analysis carried out through **iHobe** (Basque Government Environmental Management Partnership).

3.5.6. Charging Infrastructures

Our charging solutions are interoperable. They adhere to the interoperability standards set forth in ISO 15118, DIN70121, OCPP 1.6 CE mark, EMC 61000-6-2, 61000-6-4, IEC 61851, IEC 61000.

We offer a range of smart charging options to provide solutions to the different conditioning factors clients face in terms of power limits, as well as space and operating restrictions.

- **In-depot charging.** Available from 50 kW to 150 kW in *outdoor* and *indoor* models Up to three vehicles can be charged simultaneously with these chargers
- **Pantograph in depot** With this solution, we're making it possible to completely automate slow charging in garages by using pantographs. This alternative reduces the presence of cables on the floor and, therefore, improves the safety of the operators.
- **Smart charging system.** This is a custom solution that efficiently manages all the charging conditions/restrictions in the depot. It identifies the different charging needs of a fleet to optimise the total power required.
- **Opportunity charging.** Recommended when the vehicle has a reduced range and needs to charge during journeys and can be operational 24/7. The power of the chargers varies between 450 kW and 600 kW for both pantographs mounted on the roof and inverted pantographs.

In conjunction with Jema (an Irizar Group company), Irizar participates in the **ASSURED project (smart and fast charging infrastructure for large vehicles)**. This project addresses "the integration of electric commercial vehicles into the fast-charging infrastructure" of the Green Vehicle work programme. A consortium of 40 participants from 12 EU member countries will carry out the work. The overarching objective of ASSURED is to analyse the needs of cities, operators and end users in order to derive the characteristics and requirements of the new generation of heavy-duty electric vehicles (like buses), medium-duty trucks and light vehicles to operate in urban areas. In this way, we can obtain better cost improvements, develop the new generation of high voltage modular charging systems for electric vehicles and develop innovative charging management strategies.

Thanks to the ASSURED project we've already made it possible to charge electric vehicles using the inverted pantograph we mentioned previously.



3.6. DECARBONISATION: Green hydrogen as an energy vector

3.6.1. Long Distance Electric Coaches with Green Hydrogen Fuel Cells

Because Innovation is in our DNA, we continue **developing new generations of coaches** with cutting-edge technical solutions to provide maximum energy efficiency and performance, allowing operators to reduce fuel costs and CO₂ emissions. Other attributes such as the safety, availability and reliability of the vehicle, as well as comfort, accessibility and connectivity for passengers are also important.

In this context, in addition to keeping **promoting and strengthening the electromobility division, we're continuing our long distance electric coach project based in green hydrogen fuel cells** that:

- Guarantee zero carbon dioxide (CO₂) emissions
- Have a minimum range of 500 km
- Refuel in a maximum of 10 min
- The forecast increase in weight must not compromise the attributes

of a combustion engine vehicle (number of passengers and storage capacity).

These projects are strategic priorities for Irizar, which is firmly committed to becoming a benchmark in sustainable mobility and promoting the energy transition and decarbonisation to achieve a climate-neutral society.

It's not common for Class II and Class III coaches powered by fuel cells to be on the market. Consequently, having a prototype for this kind of vehicle would be a competitive advantage for providing long distance zero-emissions vehicles.

Strategically, the Irizar Group is committed to battery and fuel cell technologies in order to achieve zero emissions. The customer will be able to choose between the battery or fuel cell technology that best meets their needs. The Irizar Group's short-term technological *road map* includes the development and manufacture of coaches, especially vehicles that travel long distances between refuelling stops, propelled by hydrogen fuel cells and will gradually extend this technology to the rest of the range of Irizar Group vehicles (buses and trucks for urban applications).

We successfully ran a hydrogen battery on a test bench in 2022. We expect to manufacture the first prototype of this coach (hydrogen i6S Efficient) in 2023 and run validations and tests. All of that is part of the CoachH2 project that is subsidised by the Basque government.

The COACH2 project: "Solutions for decarbonising long-distance passenger road transport using a fuel cell drive system" has been financed by the SPRI of the HAZITEK 2021 programme.

The goal is to lead the long-distance zero-emissions coach market with research projects that will determine the drive, storage and structure solutions for the vehicle. That will let the business group be able to manufacture a new long-distance coach with a hydrogen fuel cell drive system.



We share our advancements in the hydrogen powered coach development project in the framework of the **Basque Hydrogen Corridor (BH2C)**, which is included in chapter 5. Alliances and others in Europe.

To a lesser degree, we are also making progress with the hydrogen coach in the **CAPITAL project of the SPERT (PERTE) CEV led by the Irizar Group** (see "Innovation, it's in our DNA" in section 3.1).

We also participate in the **HYSTORENEW project** for exploring green hydrogen opportunities related with energy storage using hydrogen for the purpose of facilitating decarbonisation and integrating renewable

technologies. The project was started in 2022 and was driven by the Centre for Industrial Technological Development (CDTI) in the framework of the CIEN projects.

Our goal is to develop the **i4 hydrogen coach** in collaboration with companies, SMEs and research centres.

3.6.2. Electric Trucks with Green Hydrogen Fuel Cell Batteries

We started the **H2TRUCK project** for urban hydrogen vehicles in 2022.



3.7. Safety and Driverless Vehicles

3.7.1. Passenger Safety Comes First

Avoiding problems on the road is a strategic demand for Irizar vehicles. From the design phase, we invest adequately in technology and innovation to be leaders in this field and to guarantee the highest levels of safety for both the driver and passengers. <https://bit.ly/sistemas-seguridad-irizar>



All Irizar brand models meet **passive safety** standards and have the most modern **active safety** systems to ensure stability and minimise risk in unforeseen circumstances.

In addition, they have the most advanced active safety technologies on the market to help, warn and assist drivers and avoid risk situations. Highlights include stability control (ESP), adaptive and predictive cruise control (ACC + PCC), advanced emergency braking systems (AEBS), involuntary lane change (LDW), detection and monitoring of tire pressure (TPTMS), full LED headlights, driver fatigue detector (DFT) and optional *predictive shifting* (PS), as well as video surveillance for image recording and as an anti-theft device. On the electric and hybrid buses we can highlight the AVAS (Acoustic Vehicle Alerting System), which is an acoustic warning system that alerts pedestrians and cyclists that a vehicle running in electric mode is nearby.

These active safety technologies also include the possibility of remote download of driver and vehicle cards and audible alerts for pedestrians in the case of silent buses and coaches.

In the most extreme situations where it is not possible to predict the behaviour of other drivers, it is reassuring to know that the structure of the coaches has been designed to withstand roll-overs and head-on collisions, optimising weight distribution.

MagicEye is a technologically advanced assistance system developed by Datik, an Irizar Group company, which uses artificial vision technology to help minimise the risk of distraction and collision by detecting and anticipating situations, which helps improve driving reliability. The system includes:

- DFW: Driver fatigue and distraction warning
- FCW: Forward Collision Warning
- SDW: Sign detection warning

We do **awareness raising campaigns at schools** so young people can learn better safety habits. And we provide ongoing **training to fire departments and civil protection groups** to instruct them about the best way to stabilise coaches and components with risk, so they're able to intervene with the agility necessary to best perform extraction manoeuvres.

For all Development projects we are adopting the ISO 26262 Functional Safety standards, which are the most demanding standards required for solutions involved assisted driving and higher levels of automated driving. We are also developing the technical solutions that the GSR (General Safety Regulation) will require, thus anticipating this European regulation that will be mandatory in the near future.

Active Safety

All our vehicles are equipped with the most advanced active safety technologies on the market in order to help, warn and assist drivers and avoid risky situations. We also offer the possibility of training on best driving practices in order to minimise distractions and contribute to safer, more efficient and more reliable driving.

Continuous developments and new **active safety systems**, specially designed in order to avoid critical situations, make driving safer and safer.

- Magic Eye
- TPMS: Tyre Temperature and Pressure Monitoring System
- ABS: Anti-lock Braking System
- ASR: Anti-Slip Regulation - Traction control system
- EBD: Electronic Brakeforce Distribution
- EBS: Electronically-controlled Braking System
- ESC: Electronic Stability Control
- Roll and stability tests
- ECAS: Electronically Controlled Air Suspension
- ACC: Adaptive Cruise Control
- AEBS: Advanced Emergency Braking System
- EBA: Extended emergency brake assist EBA
- Downhill speed control.
- Hill start assist

Drivers come first: Because driver safety, comfort and ergonomics are important.

- In the new generation of Irizar coaches, driver comfort has been improved through the adaptability the steering wheel and seat, optimised visibility in the rearview mirrors and the ability to regulate air conditioning vents independently.
- In short, these features are a way to pamper drivers, making their jobs easier and creating a sense of well-being that gets passed on to improved safety for all passengers.
- The dashboard area is especially ergonomic and has been designed to maximise driver satisfaction. The instruments and navigation screens are placed strategically to ensure easy reading, and the placement of all controls is based in ergonomic principles so they are easy and intuitive to use.

tive to use.

- Handling for all systems has been radically improved through the use of a joystick, quick access buttons to menus and a colour touch screen. The modern functionality of the HMI (optional on the Irizar i8) is especially notable. It has a central console with a simple quick access menu (cameras, GPS, media, telephone, climate control, etc.) that integrates all the electronic systems.
- The eCo3 air ionizer from Hispacold (Irizar Group) purifies air and minimises driver fatigue

Additional equipment options We also offer a wide range of equipment for the safety of passengers on their trips such as:

- Sensitive doors and luggage compartment covers to prevent automatic opening and closing.
- Breathalyser ignition interlock device.
- Closed circuit camera system for detection of incidents.
- Central footboard camera

Flame-retardant Materials Flame-retardant materials are used when manufacturing our coaches. Our coaches are equipped with automatic fire detection and extinguishing systems in the engine area and with smoke detectors in the W.C.

Always the Best Lighting We use the most advanced lighting technologies in order to maximise the visual field and quality both by day and at night and under any climatic situation. Thanks to these systems, we are able to improve visibility and reduce drivers' eye strain, helping them to react quickly in dangerous situations.

- LED lighting technology (light emitting diodes). Longer life and lower consumption.
- Automatic light and rain sensor.

- LED daytime running lights with automatic ignition.
- Turn signal. This feature is activated when the vehicle is travelling at speeds below 40 km/h. The headlights illuminate the areas on both sides of the coach.
 - Forwards: side corresponding to the steering wheel.
 - Reverse: the opposite side to the steering wheel (the "sweep" zone).
- High performance Bi-Xenon lighting for dipped and main beams. The projector lenses lead to a greater extent and area of dispersion and can therefore illuminate a wider area of the road.
- Headlight regulation and automatic washing system.

Passive Safety

Our priority is to minimise the **consequences for those persons involved in an unavoidable accident**. This is the objective of passive safety. To this end:

- We design the structure of our coaches taking into account resistance to roll-over, front-on collisions and crushing of the passenger compartment.
- Irizar coaches have complied with the R66/66.02 regulations on the roll-over resistance of the structure since before they came into force in 2010.
- In addition to two-point belts, customers may opt for comfortable three-point seat belts, adjustable in height for all ages, and Isofix.
- We comply with European standards for PRM (persons with reduced mobility) in terms of elevator systems and wheelchair anchoring systems.

We develop **seats** with the comfort and safety of passengers, even the smallest ones, in mind. Irizar seats are designed to provide safety and comfort to passengers. They undergo stringent resistance testing to reduce injuries and ensure that the minimum residual space is maintained. They comply with the most stringent new regulations, R.14 in Europe, 20G in the USA and ADR80 in Australia.

Rescue safety (post-collision)

We also offer ongoing training to **fire departments** for the purpose of teaching them the best way to stabilise coaches and their risk components so that they can perform the best possible extrication techniques.

Solutions for preventing the spread of viruses on public transport

Since 2020, the Irizar Group has accelerated their capacity for innovation with the goal of contributing to reactivating the public transport sector and promoting safe and sustainable collective mobility. It is not for nothing that we provide solutions developed for buses and coaches to meet the safety and hygiene measures to prevent the spread of the Covid-19 virus on public transport. Among the solutions we can highlight:

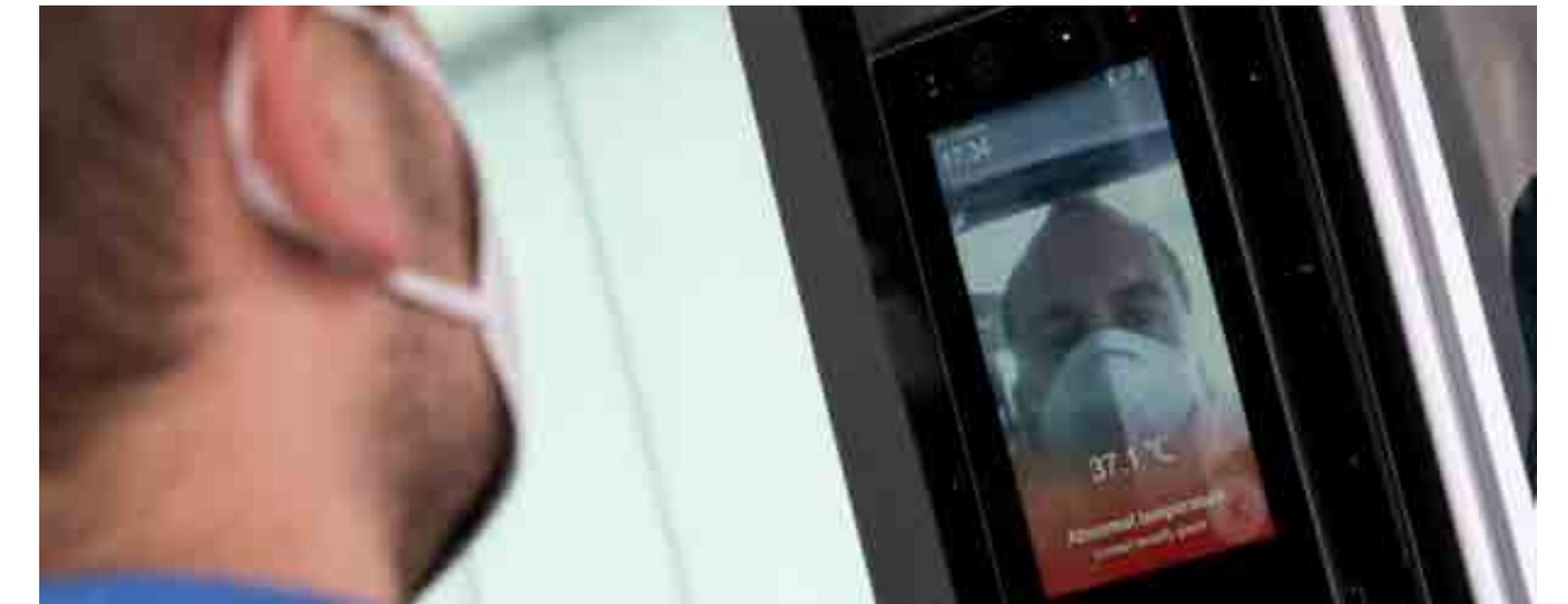
1. Smart camera for access control
2. Automatic vehicle disinfection without passengers on board
3. Separation screens in the cockpit and dividing panels in passenger seats
4. Eco3 air purifier

They will remain available as long as the clients and circumstances require them. More details about all of them can be seen in our 2020 and 2021 sustainability reports.

The Eco3 air purifier deserves to be pointed out because it already existed before the pandemic and our clients are still asking for it frequently. The eCo3 air purifier is a device that drastically reduces fungus, bacteria, viruses, volatile organic compounds, allergens, etc. and removes bad odours. It works by generating negative ions and ozone in the appropriate proportions, increases the concentration of oxygen, thus eliminating odours, maintains healthy levels and prevents the interior air of the vehicle from becoming dirty. It is installed in the return of the climate control system of any new or currently in use bus or coach regardless of the manufacturer. The turbines in the device are what distributes the ozone through the interior of the vehicle to contribute to disinfection. In contrast to other cleaning and disinfection systems, eCo3 is designed to do its job with passengers on board and when the vehicle is moving. This solution has been widely tested on the market and its efficiency has been endorsed by SGS, a global leader in inspection, verification, testing and certification.

Hispacold Climate Control Systems On the other hand, it should be noted that using climate control systems from Hispacold (an Irizar Group company) installed on the buses and coaches also contributes to preventing the transmission of infections through bio-aerosols, since they have air renewal systems that guarantee full interior air renewal every three to six minutes. The renewal can be increased if the renewal gates are kept fully open. With open nozzles there is a vertical air flow from top to bottom at a speed that makes cross contagion between passengers difficult and with closed nozzles, the design of the nozzles gener-

ates a “bubble” or “bell” effect around the passenger that creates a barrier to bio-aerosols generated around it.



New driving assistance systems

In line with their strategy of alliances, Irizar **reached a collaboration agreement with Mobileye from the Intel Group**. Mobileye is a global leader in developing advanced digital functionalities aimed at tackling different degrees of automation. The objective of the agreement is to improve the safety, efficiency and connectivity (5G) of the Irizar Group buses and coaches.

One of those functionalities is the accident prevention system that identifies potentially dangerous situations and gives visual and acoustic signals to help the driver avoid or mitigate a collision. It acts like a “third eye that is constantly watching the road in front of the vehicle”.

This intelligent system warns of an impending frontal collision with a vehicle, including motorcycles, pedestrians and cyclists, both on the road and in the city, up to 2.7 seconds before it occurs. It helps maintain the correct safety distance with the vehicle in front and activates audible and visual warnings if the distance becomes unsafe. It activates visual and acoustic warnings up to 2 seconds before an involuntary departure from the driving lane. It recognizes traffic signals and speed limit signs and is able to switch from high-beam to low-beam lights automatically so as not to dazzle other road users.

As a result of this agreement, all Irizar integral vehicles will be equipped with these systems starting October 2019.

3.7.2. Cybersecurity

Connected Intelligent Vehicle (CIV)

Those of us in vehicle manufacturing are in a long-distance race in the use of technologies developing bona fide computers on wheels that we know as **Connected Intelligent Vehicles (CIV)** and advanced autonomous cars. By **2030** there are expected to be **700 million** connected vehicles on the road around the world. Likewise, self-driving vehicles, which have more complex software, will increase, with a forecast of 90 million driverless vehicles that same year.

There is no doubt about the **enormous advantages** the **technology** is obtaining **for vehicle occupant safety** thanks to the numerous as-

sisted driving systems (**ADAS**) that are being developed.

Among the advantages of the new connected intelligent vehicles (CIV), we can highlight:

- Autonomous driving
- Remote diagnosis
- Remote maintenance operations and driving assistance
- OTA (over the air) updates
- Communication between the vehicle and its surroundings (V2X)
- Fleet management

To be able to incorporate all those innovations, **vehicles** have to be more and more **complex from a technological point of view**. In fact, it has been calculated that the software for a modern mid-range vehicle has around **100 million lines of code**, which is a lot more than an F-35 fighter plane, with 24 million lines of code, the Windows Vista operating system with 50 million, or even all the software used at Facebook with 62 million lines of code. It is precisely **that high degree of reliance on computers that could make the vehicles vulnerable** to becoming a **target of hackers or cybercriminals**.

Along those lines, according to data provided by the Spanish company Eurocybcar which is specialised in analysing the cybersecurity of vehicles, **since 2012 four hundred attacks on models from more than 46 carmakers around the world have been documented**. The attacks compromised the privacy of the people who travelled on board the vehicles and they even put their lives at risk.

UN cybersecurity regulations for Vehicles 155 and 156

On the other hand, we are aware that the United Nations has issued the first international regulation that regulates the cybersecurity of vehicles (UN 155) and aerial software updates for vehicles (UN 156).

Irizar, as an **OEM** located in one of the 57 countries that are signers of the 1958 agreement, and that wants to sell its vehicles in that market, is **affected by regulations 155 and 156 by the UN**.



Regulations 155 and 156 require manufacturers of original equipment to obtain CSMS (cybersecurity management system) and SUMS (software update management system) certifications along with “vehicle type” homologations for every type of vehicle they want to sell on the market.

With the goal of obtaining the CSMS, SUMS and “vehicle type” homologations, at Irizar we are preparing to meet a series of cybersecurity re-

quirements. To those ends, an analysis of cybersecurity maturity and the current position in regards to those requirements in the organisation has been done, this document has been drafted where the deficiencies and opportunities for improvement of the operational model that will shape the future operational model are laid out.

The approach to this analysis used a study of the various requirements of the ISO/SAE 21434 standard that deals with the cybersecurity perspective (R155) during the entire life cycle of vehicles, from general cybersecurity management to the phases after development and distributed activities.

CIBERBUS project

To take on these potential threats, in 2022 the IRIZAR Group started the **CIBERBUS** project whose **general goal is to minimise the risks of cyberattacks in the internal manufacturing processes** of the business group and in their products (**buses, coaches and lorries**), and to develop various **tools** for that purpose that make it possible **to minimise the possibilities of experiencing a cyberattack as well as how to mitigate one in case it happened**.

The CIBERBUS project, titled “Developing tools for manufacturing new ranges of cybersecure buses and coaches”, has been financed by the SPRI in the HAZITEK 2022 programme.



To reach that general goal we have set the following **technical goals**:

- Define the **specifications of the cybersecurity tools that will be developed**, identifying the **primary security risks and associated impacts**, and the tools and procedures to be used Using those requirements a **plan will be drawn up for the detailed design of the cybersecurity framework** and a **roadmap** will be made for implementing and developing the various tools.
- **Design and develop the tools for the operationally cybersecure framework** for vehicles and manufacturing processes Along those lines, two items will be developed:
 - An automotive cybersecurity management system for the entire organisation (**CSMS**)
 - **Cybersecurity systems to be implemented in all ranges of vehicles**
- **Validate the cybersecurity system tools** and define and execute a testing plan

Within this project, in 2022 we had the consulting services of **ACCENTURE** as an expert in cybersecurity systems geared towards the automotive industry. And we did the first two phases:



1. Analysis of the cybersecurity status in regards to the standards UN 155 and UN 152

Given the scope of the regulations, practically every area of Irizar S.Coop. and Irizar e-mobility were affected and they participated in the cybersecurity status study for both processes and vehicles.

Due to the deep dependency on third-parties that currently exists, some of the providers of software and hardware elements, like Jema, Datik, ZF and ACTIA (the first two are part of the Irizar Group) also participated in the study.

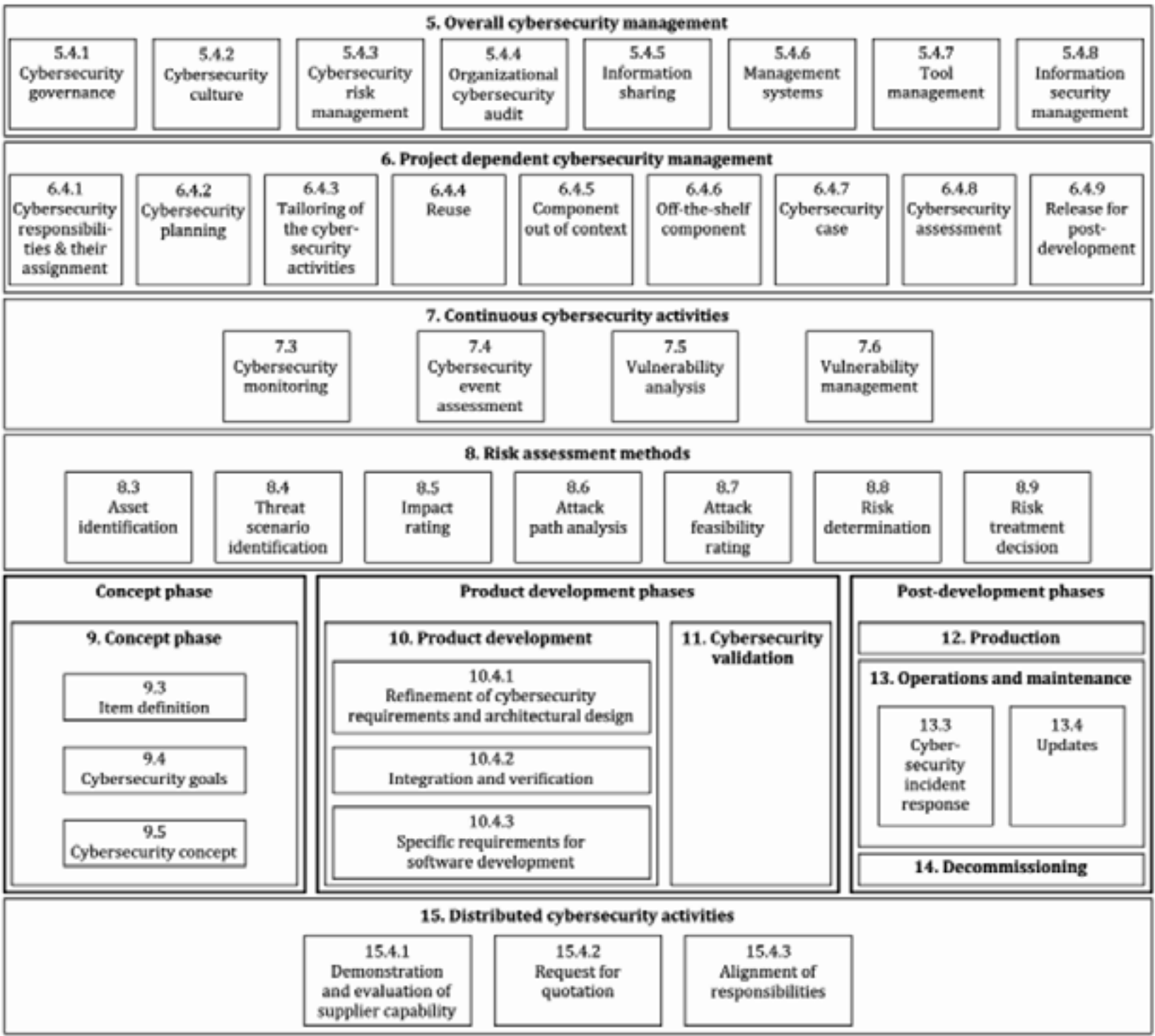
As mentioned above, the approach to the standards (UN 155 and UN 156) was done using the ISO/SAE 21434 standard as a reference. To those ends, the cybersecurity status was analysed based on the clauses of the aforementioned standard.

2. Cybersecurity Roadmap (CSMC - VAT)

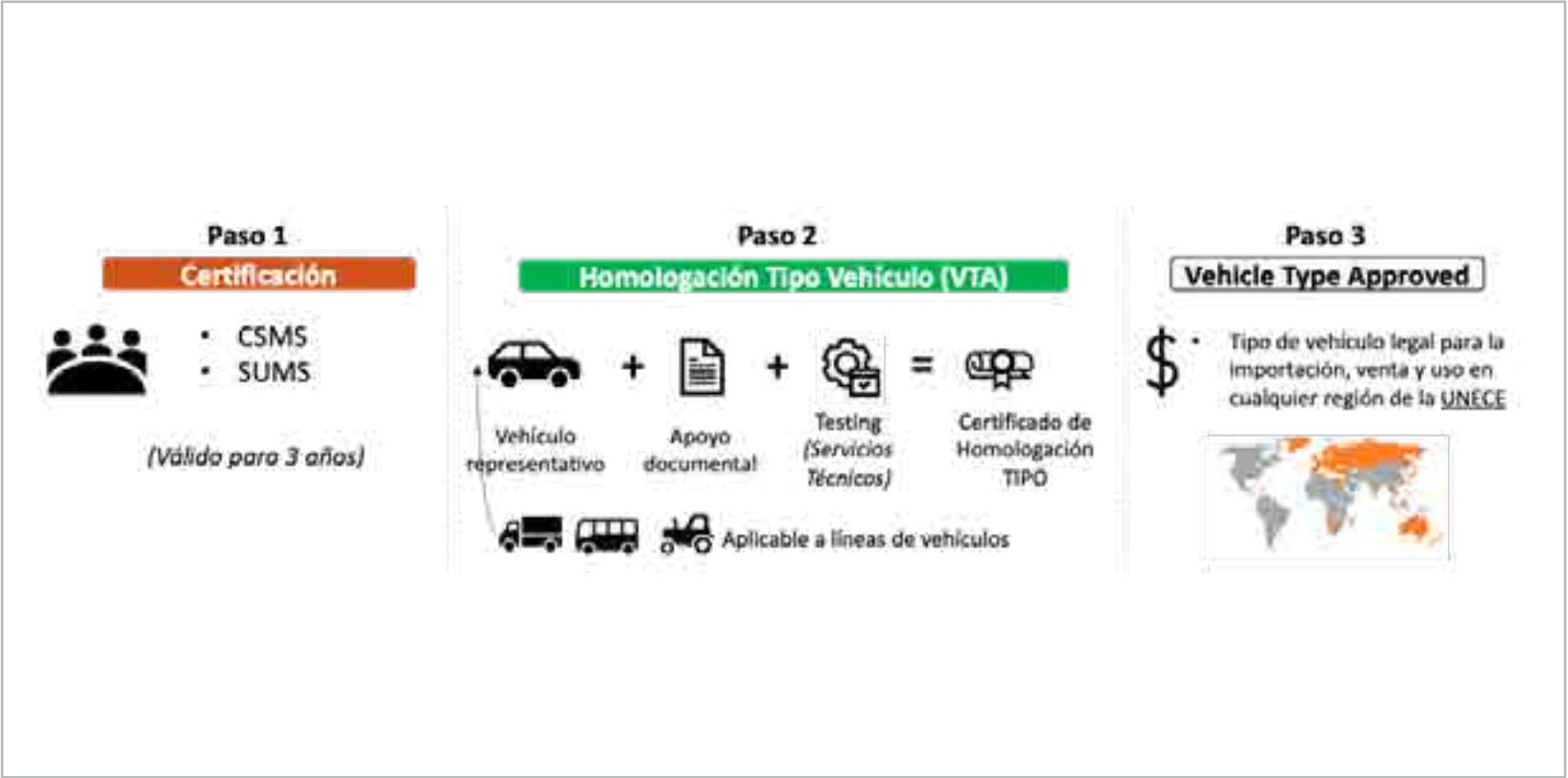
With goal of obtaining the following in 2024:

- **CSMS certification** “Cybersecurity Management System” Cybersecurity management systems based on an approximation of risk, where organisational processes, responsibilities and governance are defined to handle risks associated with cybernetic threats to vehicles and protect them from cyberattack

- **SUMS certification:** Software update management system; and
- **VTA homologation** Vehicle type homologation



In 2022, a series of activities were defined that were organised like a **roadmap** so the distance that separates Irizar S.Coop and Irizar e-mobility from the cybersecurity requirements in UN 155 and 156 can be covered in an ordered and prioritised way. All those activities that we will start doing in 2023 will affect both the



design and manufacturing process of our vehicles, with the goal of guaranteeing that NOBODY who is not authorised can remotely access the electric-electronic power train or bodywork systems. Likewise, they will be extended to the entire after-sales network, to prevent repair shops from making updates to vehicles that are not guaranteed by the manufacturer.



3.7.3. Towards Autonomous Driving

Connectivity and digitalization will play a crucial role in the future of mobility. Autonomous vehicles and new and more efficient services will shape this future. At the international level, six levels (from 0 to 5) are defined to classify autonomous driving. This classification system describes the degree of automation of vehicles and the role the driver must have.

Automation levels - SAE (Society of Automotive Engineers)

LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
NO AUTOMATION	ASSISTED DRIVING	PARTIAL AUTOMATION	CONDITIONAL AUTOMATION	HIGH AUTOMATION	FULL AUTOMATION
Zero driverless; the driver performs all driving tasks.	The vehicle is operated by the driver, but some assisted driving functions may be included in the vehicle design.	The vehicle has combined automatic functions, such as acceleration and steering, but the driver must remain in control of the driving system and monitor the surroundings at all times.	The controller is a necessity, but it is not necessary to monitor the environment. The driver must be ready to take control of the vehicle and must remain alert at all times.	The vehicle is capable of performing all driving functions under certain conditions. The driver has optional control of the vehicle.	The vehicle is capable of performing all driving functions in all conditions. The driver has optional control of the vehicle.

The Irizar Group is working to introduce different levels of automation for both buses and coaches. Driverless vehicles will progressively become a reality, as the result of a process of gradual transfer of responsibilities from driver to vehicle, until what is known as the ‘Virtual Driver’ is achieved. The depth of the transformations that will be required for the Autonomous Driving at the level of Electrical Architecture, Topologies and Domain Structure is still uncertain, but requires gradual progress.

For zero-emission urban vehicles, the Group is currently actively participating in local and European projects with the objective of reaching level 5 of driverless operation. Among those projects we can highlight: **AutoMOST** and **AUTODRIVE**. A now we continue with the projects: **DIGIZITY**, **SHOW** and **INPERCEPT**

Work is also taking place on driverless medium and long-distance coaches, with investment in advanced driver assistance system (**ADAS**) projects. Some functions that have been developed are the recognition of traffic signals; intelligent headlight control; signal recording; detection of bicycles, animals and pedestrians; and lane change assistance, among the main ones.

Even though the main focus is autonomous driving, the context or justification of those projects is the implementation of the **MaaS** (mobility as a service) methodology. The idea is that those driverless vehicles can become an on-demand transport fleet such that users can arrange transportation services according to their needs in a totally flexible way.

Previous advancements

Our first zero-emissions driverless bus debuted in Malaga in 2021. It was the first high-capacity bus to be used in real service in Europe. It was part of the **AutoMOST** project, which won important European awards and the bus was also noted by the *World Economic Forum*. This project, which was a major challenge for the Irizar Group, was the first solid step towards the mobility of the future; sustainable, connected, safe and autonomous mobility.



- It was a 12-metre long 100% electric, zero-emissions Irizar ie bus. It was the outcome of a pioneering project, because it involved putting

a standard size vehicle on the road in real traffic situations in a city.

- The first autonomous Irizar bus is the outcome of the AutoMOST project financed by the CDTI through the CIEN programme. Avanza participated in the project as an operator alongside 11 partners, which included the Irizar Group through Irizar e-mobility and Datik. The Universidad Politécnica de Madrid, Insia, CEIT-IK4 and the Universidad de Vigo also participated in the project. It was a R&D+i pilot project that started five years ago and ended, as planned, in 2021.
- The project had two characteristics that made it a significant milestone, which were the capacity to transport passengers and interaction with vehicles, pedestrians and infrastructure under real traffic conditions.
- The *World Economic Forum* highlighted it as the first European autonomous bus on the road: the 100% electric one from Irizar. And in 2021 it published: “This electric bus drives itself around the Spanish city of Malaga”, <https://bit.ly/weforum-malaga>



- **AutoMOST was awarded the ITS Driverless and Connected Vehicle prize by ITS Spain.** The award recognised AutoMOST as the most important project in the country in the field of self-driving connected vehicles in 2021.
- In 2020 they won the **Industrial Development Award given by the IEEE-ITSS (Intelligent Transportation Systems Society).**
- AutoMOST will be an implementation of shared control systems (dual mode) in future autonomous passenger transport vehicles that makes it possible to operate services in a more flexible and efficient way in a context of smart and connected infrastructures.

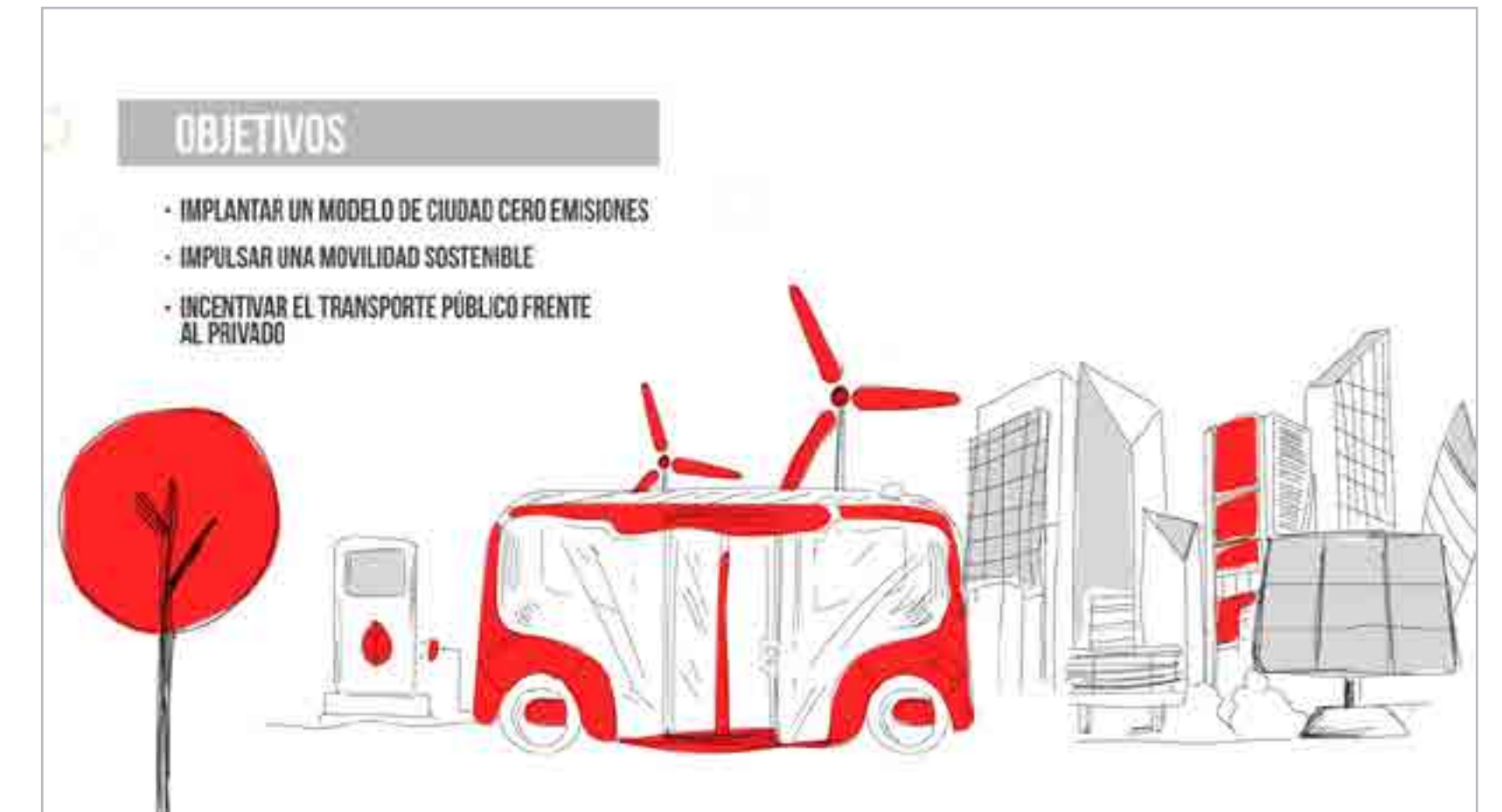
We have also participated in the **AUTODRIVE** project whose MAIN GOALS were to design of electronic components that are: (i) self-aware against failures (self-diagnosis), (ii) fail-safe, (iii) operational against failures (redundancy of HW and SW), and system architectures that allow the introduction of automated driving in all vehicle categories.

- The results of AUTODRIVE will significantly contribute to safer and more efficient mobility. The project will increase end-user acceptance and comfort by supporting driving in highly demanding situations, as well as in normal driving situations. The combination of both will reduce accidents especially in rural environments and under adverse weather conditions.
- AUTODRIVE will contribute to Vision Zero for Europe and increased efficiency. This will reinforce the leadership and increase the market positioning of all the AUTODRIVE consortium members.
- The project ended in 2020 and it has already been useful for Irizar and Irizar e-mobility to gain more knowledge about the critical challenges of autonomous driving and strengthen the relationship with our technological collaborators.

The lessons learned with AUTODRIVE made possible the design and work we have been doing on later projects.

DIGIZITY

We are still involved in various automated driving initiatives, like the ones that include the **DIGIZITY project**, which has a wider scope: Industrial research into innovative solutions for decarbonising, digitalising and automating urban transport with zero-emissions buses.



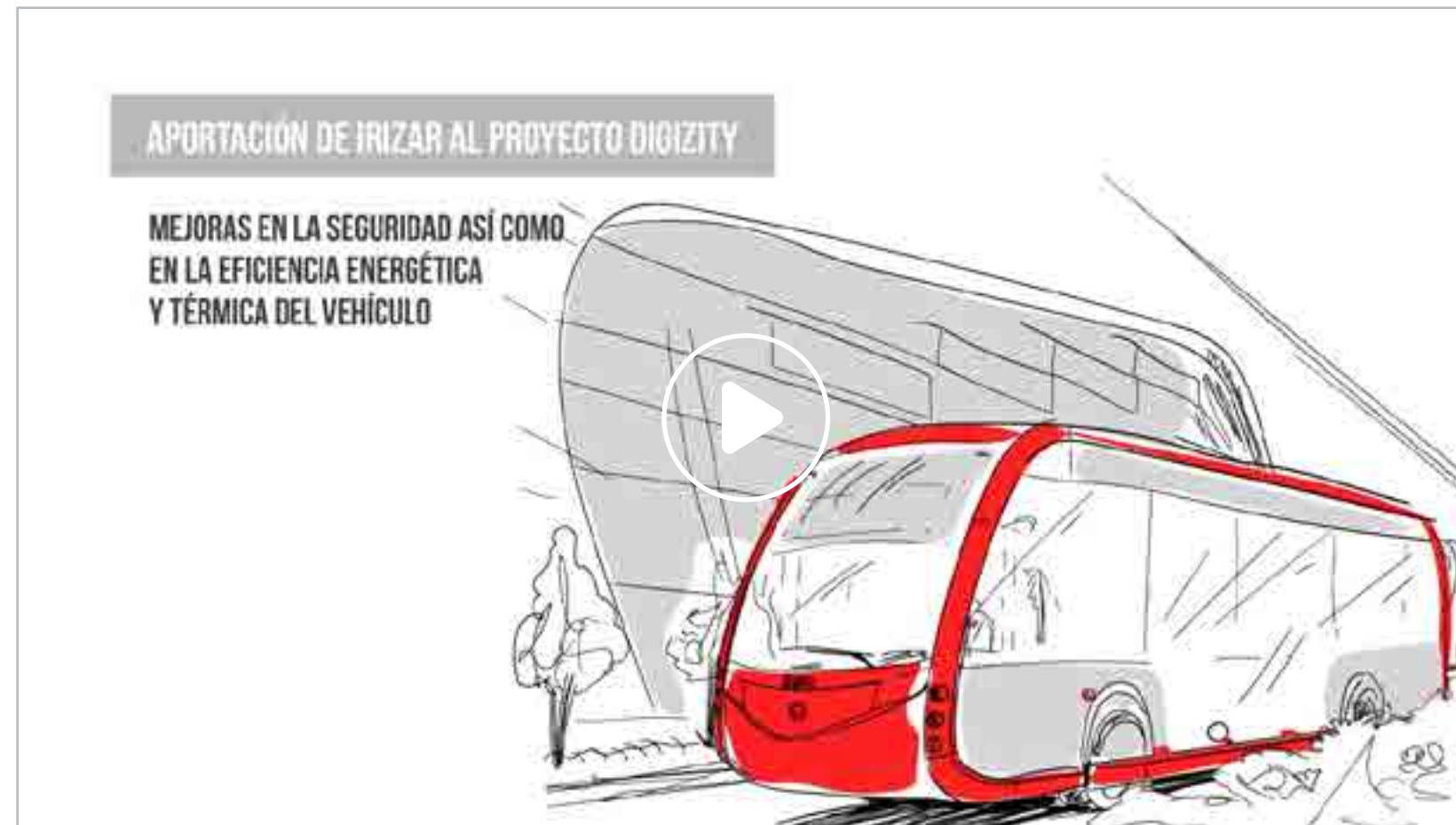
It is a project financed by the European Union – Next Generation EU through the 2021 Sustainable Automobiles Technology Programme tender and in the framework of the Recovery, Transformation and Resilience Plan of the central government plan for catalysing business innovation and leadership of the 2021-22023 National Plan for Scientific Research and Innovation backed by the Centre for Technical and Industrial Development (CDTI).

Nine members participate:

- Six companies AVANZA SPAIN, S.L. (a client of ours who leads the project), IDNEO TECHNOLOGIES, S.A., S.A. TELNET REDES INTELIGENTES, S.A., INTERNACIONAL HISPACOLD, S.A., IRIZAR, S.COOP. and JEMA ENERGY. The last three are part of the Irizar Group.
- Research bodies ITAINNOVA (Instituto Tecnológico de Aragón), Fundación TECNALIA Research & Innovation y CTAG (Centro Tecnológico de Automoción de Galicia)



It brings together manufacturers of buses, engines, components and on-board systems, telecommunications equipment and a large fleet operator.



Watch the video: <https://www.youtube.com/watch?v=pWjUyrS4Ly8>

In July 2022, Irizar and other representatives of the consortium had the opportunity to visit the ITAINNOVA (Instituto Tecnológico de Aragón) facilities. During the visit, a debate forum was set up about the solutions that were being worked on in the project and how to take the next step within the framework of the DIGIZITY project. It was a chance to realign interests between Avanza (operator) and Irizar (manufacturer).

In 2022, Irizar worked on updating one of their platforms, the 12 m ie tram, with the latest advances in safety, comfort and autonomous driving, within the framework of the DIGIZITY project.

We are expected to do PHASE 1 of validation in the first half of 2023 in the Exceptional Area of Zaragoza.



SHOW

We can also highlight our participation in the **SHOW project** (shared operation models with universal deployment) in which, coordinated by the **UITP (international association for public transport)**, we were part of a consortium of 70 members from 13 EU countries, with collaboration expected from 11 global organisations from Latin America, Asia and Oceania (US, South Korea, Australia, China, Japan and Singapore, among others). The technical and innovation director of the project is CETH/HIT (Hellenic institute of transport), and it has a planned duration of 2020 to 2024.

The global GOALS of the project are:

1. Identify and specify priority automated urban mobility scenarios that guarantee high acceptance among users, true user demand and profitability under realistic operating conditions
2. Identify new business opportunities, develop innovative business

models and products and services that are exploitable for sustainable fleet operations in urban and inter-city environments

3. Develop an open system architecture that is modular and inclusive and the tools necessary for it that make possible data gathering, analysis and meta-services between locations, between vehicles and between operators
4. Improve the functionalities needed for all kinds of vehicles: shuttles and capsules, buses and automobiles taking into account the local physical and digital infrastructure, the climate and traffic conditions, improving their energy efficiency and safeguarding the safety of vulnerable traffic participants using appropriate interfaces
5. Deploy demonstration fleets, infrastructure elements and connected services (DRT, MaaS, LaaS, etc.) to carry out and validate shared electric, personalised and continuous cooperative connected automated vehicle services (CCAV) for all travellers in real urban and peri-urban traffic in environments throughout Europe and through wide international collaboration at a global level
6. Evaluate the impact of cooperative and shared automated electric fleets in cities using a holistic impact evaluation
7. Transfer the results through testing alternative operating schemes and commercial models to replication sites throughout Europe and beyond
8. Support deployment of the automation of urban traffic through replication models, route mapping, training schemes and training for the future workforce, contributions for certification and standardisation activities and political recommendations



With this project at Irizar we are working on R&D to continue developing an autonomous and connected vehicle to develop technological solutions for the future. Focusing on:

- **Automated bus garages:** So the vehicles are able to do manoeuvres, like parking and going through car wash tunnels, in an automated way
- **Platooning:** A fully instrumented lead vehicle can guide a group of vehicles. Connectivity between vehicles is absolutely necessary for that.

In May 2022 we participated in an event (which kicked off the “pre-demo” tests) along with representatives of the city, the EMT and the demonstrator consortium of Madrid. A forum was set up at the event to debate autonomous driving and urban mobility in the future from several points of view: political, operational, social and technical, etc.

In 2022 we started the “pre-demo” tests at the EMT garages, where an Irizar vehicle provided circular service inside the garage autonomously, transporting drivers and technicians between key points. Watch video: <https://bit.ly/showdemo-madrid>

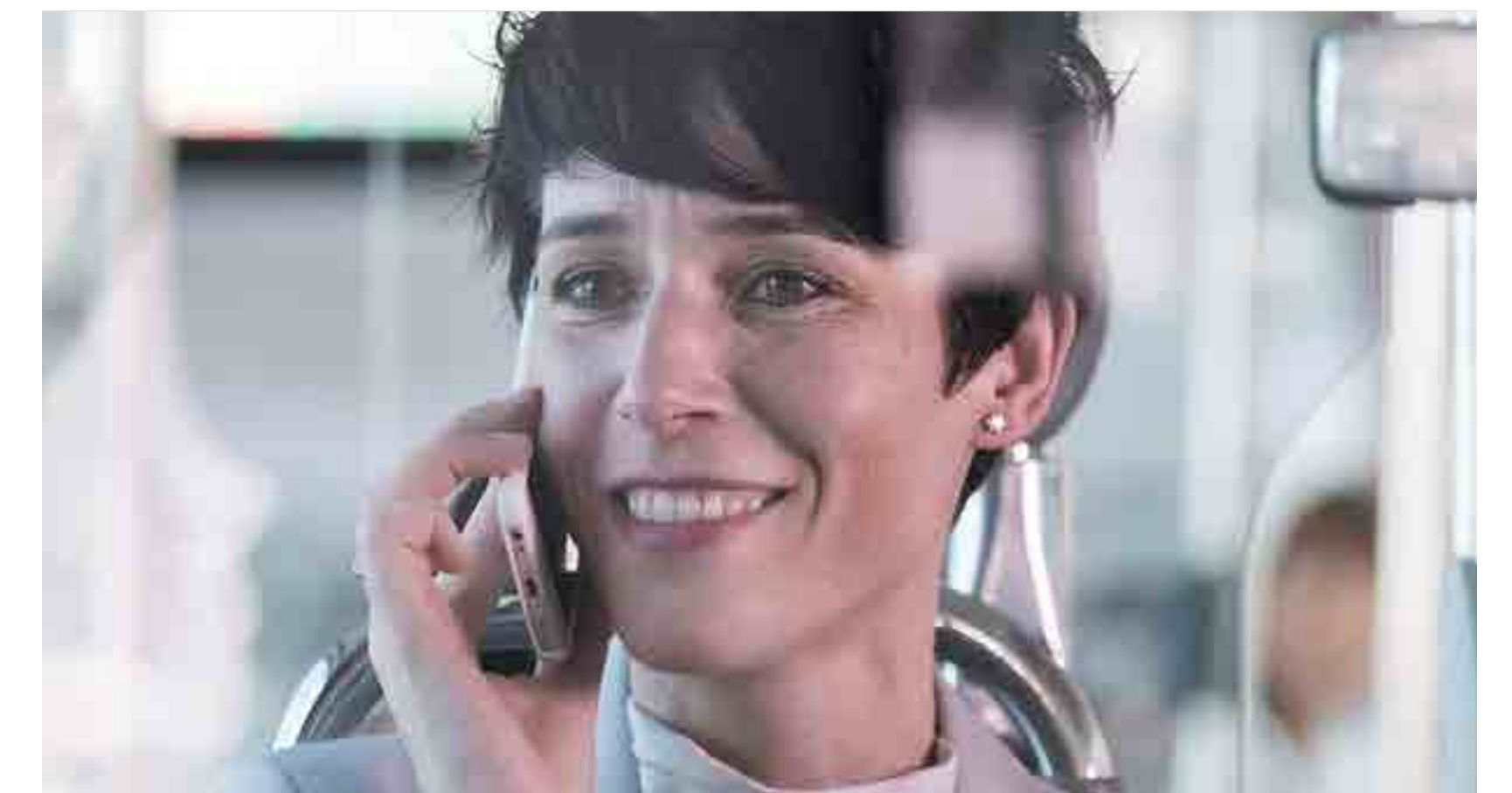
In October 2022, Madrid hosted the third Pan-European Workshop in the framework of the SHOW project where we could demonstrate the progress made by Irizar and the EMT for the entire project consortium as well as representatives of the European commission and representatives from other projects.

We expect to begin the DEMO phase in a real urban setting in the second half of 2023 in Madrid.

INPERCEPT

The project aims to guarantee safety and efficiency through detecting obstacles under adverse conditions. That is what **Datik** (an Irizar Group company) has been doing since 2021 with the INPERCEPT project (intelligent perception for connected and autonomous vehicles). Datik centres their plan in making progress in developing key enabling technologies that provide improved capacities for connected vehicles.

INPERCEPT is part of the PTAS tender, backed by the Ministry of Science and Innovation and subsidised by CDTI (Centre for Industrial Technological Development). Datik Intelligent Information is participating and leading the use case for fleet management, with which it expects to obtain advanced new systems that provide high added value. The project will last 26 months and it has a budget of more than 10.9 million Euros. The final demonstration will be done at the end of 2023.



3.8. Connectivity - Big Data

The Irizar Group offers intelligent driver assistance systems with a range of optional equipment to provide drivers and passengers an optimal form of mobility. Extensive experience in artificial intelligence and deep-learning enables Datik to offer fleet management, preventive and predictive maintenance. All of that is hosted on iPanel, our cloud service.

iPanel® is a system designed and intended for the owners of bus fleets, to help them resolve daily incidents quickly and to reduce maintenance and fuel costs. A system that alerts the driver about bad driving habits, informs the fleet manager about any relevant incident in real time and constantly analyses the behaviour of vehicles in terms of consumption and maintenance.

It is a perfect management tool to achieve the highest fleet profitability, as:

1. **It increases productivity.** The system provides control and reaction capacity valued by passengers and drivers. That capacity translates into guarantees and quality of service and that condition directly translates into an increase in production.
2. **It lowers fuel costs.** iPanel provides the ideal scenario for reaching savings goals: data analysis, classifications, periodic comparisons and control measures for manoeuvres that involve high fuel consumption.
3. **It monitors maintenance.** The data precision and mapping of active alarms in the fleet that only our iPanel can provide is an invaluable

able advantage for monitoring, prevention and proactively.



3.8.1. Fleet Manager

iPanel offers operators a context for fleet monitoring. The attached data on incidents, alerts, conditions and position of the entire fleet outline a scenario that guarantees a quality service.

- **Real-time monitoring:** Geo-localised fleet with detail real time information for making decisions that increase productivity
- **Reduction of consumption:** Advanced consumption analysis, aimed at improvements in driving and lowering costs Identification of the appropriate vehicle model for daily operations.
- **Incident management:** The fleet manager has all the information so they can act effectively through the incident manager.



3.8.2. Maintenance

It allows our clients to configure maintenance plans for their fleet. Vehicles are grouped together and assigned a specific plan of inspections and stops determined by time, mileage or technical suggestions. A fundamental tool for the management and availability of the fleet thanks also to the receipt of prior notifications.

However, fleet optimization begins with a **Preventive Maintenance Plan** that maximizes vehicle availability. To those ends, Irizar vehicles will have an optimum plan, a unique iPanel plan, loaded.

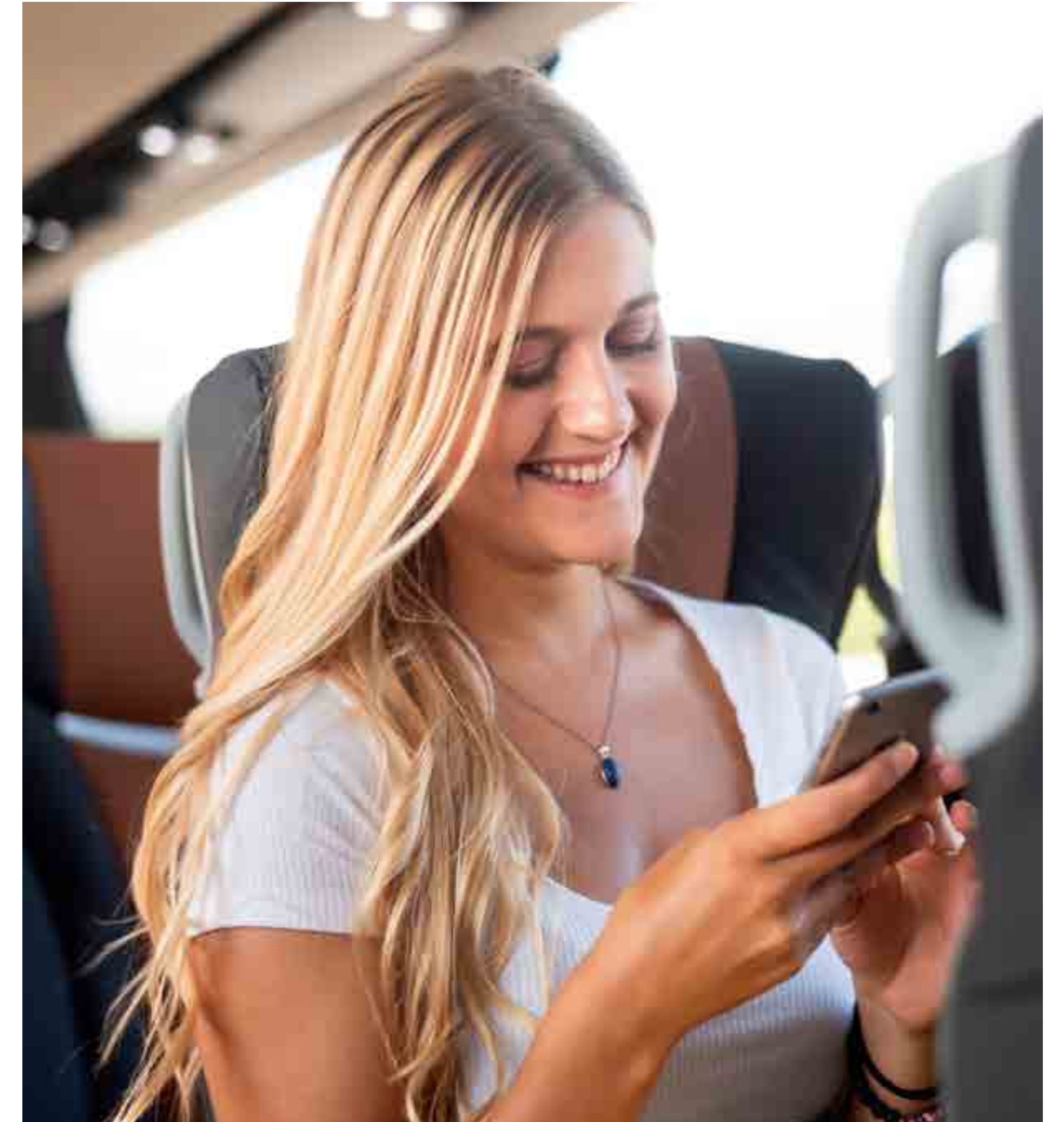
- **Maintenance plan design:** A plan is set up with the stops and interventions needed to guarantee fleet availability. The plan makes it possible to coordinate preventive and corrective stops and monitor all actions on the fleet.
- **Recording actions:** Actions can be specific shop actions that are done in each intervention. In each intervention, the user can delete or include actions from the plan depending on what has really been checked or repaired.

What happens if an alert is activated in a vehicle? iPanel receives the DTC (Diagnostic Trouble Codes) of the vehicles in real time. Depending on its type, the repair urgency is suggested together with the instructions for the actions in the workshop, to minimize the downtime required for the vehicle.

If more information is needed, remote telemetry download allows detailed analysis of alarms. This analysis makes it possible to diagnose the condition of the vehicle.

- **Active alerts (DTC):** Real-time reception of the alerts the driver sees on the dashboard View and classify active maintenance alerts registered on all the vehicles in the fleet
- **Troubleshooting:** Proposed specific corrective maintenance actions to accelerate the recovery of vehicle operating capacity. In the event of a stop, the client can optimise it by doing tasks from the next preventive maintenance intervention
- **Remote Black Box:** The incident manager can remotely download telemetry data with a precision of 1s. It is detailed information that helps understand the behaviour of the driver and vehicle.

Big Data applied to transport provides appropriate information at the right time. This means that the operator can evaluate the historical availability of each vehicle, together with the energy consumption reports. Thus, the fleet management process can be optimized by increasing productivity and achieving a more profitable business.



WE CREATE VALUE FOR OUR PEOPLE

4

Contributing to the SDGs and goals of the UN 2030 Agenda

Priority SDGs



- 8.1. Maintaining economic growth
- 8.2. Raising productivity through diversification, technology and innovation.
- 8.5. Achieving full employment and decent work
- 8.7. Eradication of slavery, trafficking and child labour
- 8.8. Protection of labour rights and safe work



- 12.6. Adoption of sustainable practices in businesses
- 12.8. Ensuring education for Sustainable Development

Cross-cutting SDGs



- 5.1. Ending discrimination
- 5.5. Ensuring the full participation of women and equal opportunities in leadership



- 16.2. Eradication of child abuse, exploitation, trafficking and child exploitation.
- 16.5. Reducing corruption and bribery
- 16.7. Promoting citizen participation
- 16.10. Access to information and fundamental freedoms
- 16.11. Promotion and application of laws and policies (HR)



WE CREATE VALUE FOR OUR PEOPLE

4

4.1. People: key actors in sustainable competitiveness

- Commitment to our people integrating the SDGs of the 2030 Agenda
- Social Innovation for Equal Opportunities.

4.2. Commitment to Quality Employment

4.2.1. Job creation and evolution of workforce

- Job creation
- Workforce distribution by gender, category and age.
- Quality of recruitment, remuneration and salary gap.
- Rotation, entries and exits (by sex and age) and dismissals.

4.2.2. Organisation of work and commitment to work-life balance

4.2.3. Participation in the management and economic results

- Participation in economic profits.
- Participation in management
- Participation in Strategic Thoughts.

4.2.4. Job creation

4.3. Communication, Transparency and Participation

4.3.1. Leadership and teamwork

4.3.2. Communication and transparency

- Forums at the highest level where all personnel participate.
- Company Board, Regulation of Internal Arrangements and Collective Agreement.
- Other communication channels

4.4. Strengthening Talent: Education and training

4.5. Gender Equality, Diversity and Social Inclusion

4.5.1. Gender equality

4.5.2. Diversity and social inclusion

4.6. Health and Safety

4.6.1. Occupational Hazard Prevention System

- Frequency and incident rates
- Incident rate and accidents at work with sick leave.

4.6.2. Ergonomics-Comfort Programs

- Regular activities and measures taken in recent years
- Future plans 2023

4.6.3. Other health and well-being services

4.7. Shared Leisure Activities

4.1. People: The key actors in sustainable competitiveness

The people are undoubtedly the key players in achieving sustainable medium and long-term results. **Having high levels of satisfaction and motivation for ALL Irizar personnel (member-workers and employees) is the way to achieve a culture of excellence, sustainable competitiveness and the future success of the Irizar Group.**

In accordance with this firm conviction, we work resolutely so that the people of Irizar want to contribute their talent to realizing both our Mission and our strategic challenges, as well as our dream of contributing to the construction of a Better and more Sustainable World.

We uphold an open and transparent culture with the firm conviction that business activities with respect for total integrity are the only basis possible for achieving sustainable success. We are convinced that **the main instrument for strengthening Integrity is an Organizational Culture based on shared ethical values and assumed by all the people in Irizar, as it constitutes the best element for preventing bad practice**, illegal or even criminal behaviours.

Therefore, **starting with the example of the CEO and the executive team, it is VITAL to continue promoting our real commitment to ALL people:**

- A. We offer attractive, fair working conditions (both in human rights and labour standards) with long-term perspectives. We can affirm that our philosophy for new hires to the Irizar Group is aimed at permanence and stability.
- B. We make long-term investments in talent. We work constantly to improve the quality and attractiveness of employment and to incorporate, develop, and retain qualified personnel.
- C. We promote continuous training for them and the development of their personal and professional lives, strengthening the abilities of every person out of the belief that everyone and their talent are paramount. Training, the capacity for adaptation and flexibility are keys for responding to changes, uncertain situations and new challenges in the future. Digitalisation and automation are undoubtedly new scenarios to which we must adapt.
- D. We promote trust, communication, leadership, participation, self-management and teamwork and provide a work environment where everybody can contribute something more to the business project in accordance with their possibilities and hopes. We understand that it is the way to encourage everybody to do the part of the process they are responsible for with responsibility, professionalism, ethics and rigour and, in short, have people who are committed to the project, mission, vision, keys and common values so we can achieve the goals that have been set.
- E. We stand for equality, non-discrimination, and respect for diversity.
- F. We facilitate co-responsibility and a good balance personal, family and professional life balance by making flexible working hours possible, reducing workdays and the possibility to take a leave of absence.
- G. We do that to preserve their long-term health and safety.
- H. We encourage everybody to actively contribute to environmental balance, working to minimise any impact derived from our business activities and to preserve the natural environment.

- I. We promote working against corruption of all forms, including extortion and bribery.
- J. Making participation a reality for the design of the Company's strategy for the future beyond mere performance in daily operations.
- K. We share business economic results, even with employees who are not members of the cooperative. We provide significant advantages and attractions that differentiate us from the other companies in the environments where the Irizar Group is present.

In 2022, we continued making a strong effort to be able to progressively overcome the complicated situation caused by the pandemic, both in terms of prevention and designing, developing and manufacturing new models in a short space of time. The progress achieved has only been possible because of the enormous effort and work done by the group of people who make up this project.

Our goal is to keep cultivating talent at the same time we create high quality jobs. Of course, we want to do that within a company culture and approach with integrity that is guided by ethical principles.



Commitment to our people integrating the SDGs of the 2030 Agenda

As we put forward in chapter 2 about Irizar and **sustainable competitiveness**, in 2022 we took a big step in our commitment to the 2030 Agenda SDGs by measuring our impact on priority KPIs. We have consequently decided to strengthen our creation of value for our people:

A. CLIMATE: A KPI for reducing scope 3 category 3 GHG emissions (caused by business trips and people from Irizar commuting to work). It can be seen in detail in the chapter about the environment.

C. TRUST AND INTEGRITY: two KPIs for making progress in trust and training/awareness raising for people in Irizar's ethics and legal compliance system. All of that is handled in more detail in chapter 2 about our sustainable competitiveness.

D. EQUALITY: three KPIs for making progress in gender equality by increasing gender diversity, especially in senior positions and new hires and reducing the salary gap and training people in equality. That is handled in chapter 2 about our sustainable competitiveness and section 4.5 of this chapter.

E. DECENT WORK: four KPIs for facilitating a safe and healthy work environment, encouraging workers to become member-cooperativists, paying fair wages to everyone and increasing people's commitment to the Irizar project.







F. EXTENDING SUSTAINABLE DEVELOPMENT: one priority KPI in training/awareness raising in sustainability for Irizar people. That is de-

scribed in detail in chapter 2 about Irizar and sustainable competitiveness, and it is also handled in section 4.4 of this chapter.










As we discussed in more detail in chapter 2 about our sustainable competitiveness, in 2023 Irizar will start its training period in the **Business & Human Rights Accelerator programme of the United Nations Global Compact** as a result of having decided in December 2022 to drive our progress in human rights and prepare for the future European due diligence directive for companies in terms of sustainability and respecting human rights and the environment in global supply chains.

We thought that that might also have a positive impact on the people at Irizar, even though it will fundamentally have an impact on making progress towards a supply chain that is more responsible with suppliers and other external collaborators.










PRINCIPLES OF THE GLOBAL COMPACT	SDGs	KPI	INDICATOR	2019	2020	2021	2022	OBJECTIVE	DATE OBJECTIVE
A. CLIMATE									
 DERECHOS HUMANOS		3. Reduce TOTAL GHG emissions Includes: Scope 1 and 2 CATEGORY 1: Direct GHG emissions and removals CATEGORY 2: Indirect GHG emissions caused by imported energy Scope 3 CATEGORY 3: Indirect GHG emissions caused by transport CATEGORY 4: Indirect GHG emissions caused by products Irizar uses CATEGORY 5: Indirect GHG emissions associated with the organisation's use of products	tCO ₂ eq			1,713,290	Carbon footprints are verified one year later	-5 %	2022 - Annual
 ESTÁNDARES LABORALES						ISO14064-1:2019			
 MEDIO AMBIENTE									






BASE YEAR: year data in blue if shown in GOAL later

PRINCIPLES OF THE GLOBAL COMPACT	SDGs	KPI	INDICATOR	2019	2020	2021	2022	OBJECTIVE	DATE OBJECTIVE
C. TRUST AND INTEGRITY									
 DERECHOS HUMANOS  ESTÁNDARES LABORALES  MEDIO AMBIENTE  ANTICORRUPCIÓN		9. Level of confidence of people at Irizar to report unethical behaviour	Average % value Survey / Total workforce (0-100%)					60 % 80 % Base year: 2024	2024 2030
		10. Train/raise awareness of people at Irizar CULTURE ethics and legal compliance: <ul style="list-style-type: none">Code of ethics, ethics and compliance systemCrime prevention system	% people trained / Total					100 %	2025
		<ul style="list-style-type: none">System for protecting personal data and guaranteeing digital rights	% people trained / Total people in high risk areas					100 %	2025
		<ul style="list-style-type: none">New hires trained in the code of ethics and ethics and compliance system	% people trained / Total new hires					100 % Base year: 2024	2025
		11. Training people from companies from the Irizar Group in ethics and legal compliance: <ul style="list-style-type: none">a. Branch officesb. Other coach companies in the Groupc. Rest of Group companies	% companies trained / Total <ul style="list-style-type: none">a.b.c.					100 % Set priorities and deadlines by type Base year: 2024	2026













BASE YEAR: year data in [blue](#) if shown in GOAL later

PRINCIPLES OF THE GLOBAL COMPACT	SDGs	KPI	INDICATOR	2019	2020	2021	2022	OBJECTIVE	DATE OBJECTIVE
D. EQUALITY									
 DERECHOS HUMANOS		15. Increase gender diversity in							
		a. hiring	% women	26.32 %	17.07 %	22.22 %	9.52 %	10-20%	2030
		b. the Management Team (group 1+2)	% women	0 %	0 %	0 %	0 %	20%	2030
		c. Management area/ middle management (group 4+5+6)	% women	--	---	21.00 %	21.00 %	20-30%	2030
 ESTÁNDARES LABORALES		d. Governing council	% women	0 %	11.11 %	22.22 %	22.22 %	20%	2030
		16. Reduce the wage gap between women and men	% salary ratio women / salary ratio men					99-100%	2026
		Group 1 + 2 (CEO + Management Team)		0 %	0 %	0 %	0 %		
		Group 3 (management)				89 %	70 %		
		Group 4 (technicians)				90 %	96 %		
		Group 5 (administrators)				87 %	129 %		
		Group 6 (direct personnel)				91 %	85 %		
		17. Train/raise awareness of people at Irizar in Gender equality Gender Equality Plan Harassment Protocol, etc.	% people / Total workforce					100 %	2023 - biannual
									
		• New hires trained in gender equality	% people trained / Total new hires					100 % Base year: 2023	2023 - biannual
									

BASE YEAR: year data in blue if shown in GOAL later

PRINCIPLES OF THE GLOBAL COMPACT	SDGs	KPI	INDICATOR	2019	2020	2021	2022	OBJECTIVE	DATE OBJECTIVE
E. DECENT WORK									
 The International Labour Organisation (ILO) defines decent work as: “productive work for men and women under conditions of freedom, equity, safety and human dignity”.		18. Providing a safe and healthy work environment							
		a. Reduce the frequency rate of accidents	No. accidents/hours worked	48.33	34.37	50.22	50.57	40 - 50	annual
		b. Reduce the incident rate of accidents	No. accidents / No. people	76.78	48.93	81.83	81.76	70 - 80	annual
		19. Worker partners Differential factor compared to NON-cooperatives	% members / AVERAGE total workforce	87.78 %	90.03 %	97.82 %	93.93 %	Always above 80%	annual
		20. Pay ALL our workers at least a living wage Global Compact definition of a living wage: https://bit.ly/3r57Wq6	% salary / living wage Compared with the metal collective bargaining agreement for the most common positions: - engineer or university graduate (MOI) and - product technician (MOD)			100 % +9 % collective bargaining agreement in both cases	100 % +10 % collective bargaining agreement in both cases	100 % goal review, study calculation method in depth with Global Compact 2023-24	2023 - ... 2024 - ...
		21. Increase the people’s level of commitment (Includes: Expectations, commitment and feeling)	Average % value Survey / Total workforce (0-100%)					60 % 80 % Base year: 2024	2024 2030

BASE YEAR: year data in blue if shown in GOAL later

PRINCIPLES OF THE GLOBAL COMPACT	SDGs	KPI	INDICATOR	2019	2020	2021	2022	OBJECTIVE	DATE OBJECTIVE
F. EXTENDING SUSTAINABLE DEVELOPMENT									
 DERECHOS HUMANOS  ESTÁNDARES LABORALES  MEDIO AMBIENTE  ANTICORRUPCIÓN	       	<p>23. Contribution to improvement in the sustainability of other external people and organisations (public and private).</p> <p>Outside of Irizar S. Coop.</p> <p><u>Sharing our knowledge of and experience with sustainability in forums and training and awareness raising activities:</u></p> <ul style="list-style-type: none">• High priority stakeholders Clients, suppliers, distributors, etc.• Group coach companies• Other Group companies• Students, external organisations and other people in the social environment	no. actions / year	8	12	25	43	Minimum 20 actions / year	annual

BASE YEAR: year data in blue if shown in GOAL later

Social Innovation for Equal Opportunities

In 2019, we started a Social Innovation Project for Equal Opportunities. The main objective of the project is to provide new answers to the challenges and questions that currently face from the social point of view, to promote projects that primarily benefit the people of Irizar and society in our surrounding environment at the same time.

We want to generate social innovation based on participation and, for that purpose, a diagnosis of the current situation was done and a community listening process was started. Within this process, various activities were organized, such as open discussion sessions, interviews and collective interpretation, surveys, among others. Primarily people from Irizar are participating in the listening process, but there are also some government representatives and social agents from Gipuzkoa.

Our primary goal is to keep promoting equal opportunities for people, focusing on managing

- A. **gender** (strengthening the equality plan)
- B. **diversity** (race, nationality, religion, sexual orientation, inter-generationality, other skills, etc.)
- C. **to work-life balance** and
- D. **social inclusion**

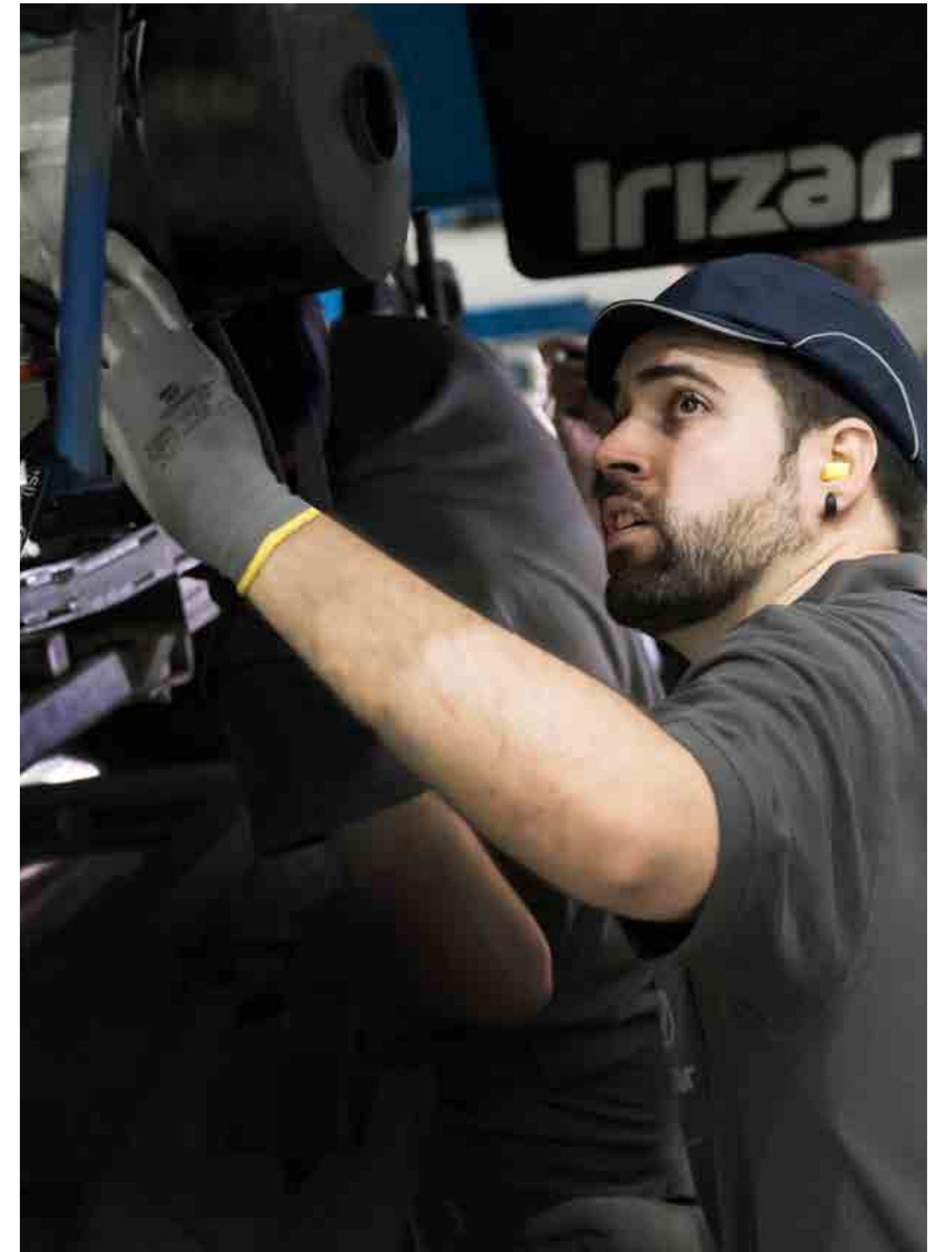
In short, we want to strengthen our social commitment to people and, mainly, people at Irizar. We work directly and indirectly on equal opportunities to contribute to:

- Reinforcing the sense of belonging of Irizar people.
- Achieving a position as a socially innovative company.
- Being attractive to talent.
- Consolidating Irizar's brand image in the social sphere
- Favouring social transformation
- Achieving Corporate Sustainability.
- Strengthening the dialogue with stakeholders

To promote this Project vigorously, **a multidisciplinary Social Innovation Team** was created in which, together with an external partner, people from the different bodies of the cooperative participate and the executive team, as well as other people from the organisation who are highly conscious of the project. This team is being enriched with new members interested in promoting the objectives derived from the different surveys that are being carried out.

In 2020, a listening exercise was conducted with interviews (50) and questionnaires (404 answered) to collect impressions on the four pillars defined in the Social Innovation Project, which are gender equality, work-life balance, diversity and social inclusion. The main conclusions were shared with everyone in the assembly held in December 2020, where the general lines of the project for 2021 were also shared.

The work from 2020 was used as the basis for the **diagnosis of gender equality** we did in 2021. Based on that diagnosis, and as we'll see in greater detail in section 4.5, in 2021 and 2022 we made progress with improving the equality plan and harassment protocol.



4.2. Commitment to Quality Employment

Irizar is a Cooperative Society. The main difference between a Limited Company and a Cooperative is that in the Limited Company the capital is in the hands of the shareholders, whether or not they work in it (sovereignty of capital), while in a Cooperative sovereignty resides in the work, as the members must work in it and are self-governing using the formula 1 member = 1 vote, regardless of the capital that member has in the Cooperative.

People who start working at Irizar do so as employees with employment contracts. And after several years of evaluating their professional performance, and if the evaluations are favourable, they become member-workers (cooperativists) and have the economic benefits of participation and employment security that that involves.



4.2.1. Job Creation and Evolution of Workforce

We understand that economic development and job creation are fundamental in the environments where we are present and to our commitment to Sustainability, even in the greatest difficulties. For that reason, as you can see in chapter “2 Sustainable Competitiveness”, **the graph showing the evolution of employment at the Irizar Group is the best evidence of our social contribution and the best indicator of our strategic commitment to sustainable competitiveness** (economic-governance, social and environmental), and it shows coherence with our mission. Despite the crisis and drop in sales of the Irizar Group in 2009 we maintained employment. And in 2020 and 2021, despite the severe impact of Covid-19 on our business, the decrease in employment was not very significant. Fortunately, in 2022 our business and the jobs destroyed in the worst years of the pandemic are starting to recover.

Job creation

	2015	2016	2017	2018	2019	2020	2021	2022
People	763	781	793	828	826	815	773	783

Creation of net employment

	2016	2017	2018	2019	2020	2021	2022
People	18	12	42	-2	-11	-42	10

The increase in the pace of production in 2022 brought hiring the people needed to meet it along with it. In addition, the optimistic foresight for the future has made it so the positions retired people have left in recent years are covered that, because of the circumstances, have not been covered yet. Those hires were concentrated late in the year, so the average job creation is dampened.

Workforce distribution by gender, category and age

Workforce distribution by gender and category

	MEN			WOMEN			TOTAL WORKFORCE		
	MOI	MOD	TOTAL	MOI	MOD	TOTAL	MOI	MOD	TOTAL
2018	162	602	764	44	20	64	206	622	828
2019	166	597	763	43	20	63	209	617	826
2020	171	584	754	42	19	61	213	602	815
2021	154	563	717	38	18	56	192	581	773
2022	151	571	722	43	17	60	194	589	783

Distribution by sex of the workforce: in 2022 7.66% were women and 92.33% were men, which are the same levels as 2021. While it is true that we continue to promote gender equality in new re-

cruitments, the vast majority of applications are from men, due to the type of industrial profile demanded. We hope that the Social Innovation project, discussed at the beginning of the chapter, will contribute to improving the ratios in this area.

Distribution by Professional Category: In 2022, 75.2% were MOD (with higher level training) and 24.77% were MOI (mainly with studies in engineering, business administration and management, or administration).

Average age of workforce

	2015	2016	2017	2018	2019	2020	2021	2022
People	39	39	38	39	40	40	41	40

Workforce distribution by age

	Under 30	Between 30 and 39	Between 40 and 49	Over 50	Total Average Age
2018	153	266	313	101	39
2019	134	258	341	93	40
2020	116	258	344	97	40
2021	81	253	340	99	41
2022	85	235	334	128	40

Age distribution: In recent years there has been a significant drop in the average age, due to a significant number of recruitments and the

departure of several workers of retirement age. Previously the average age was well over 40 years old.

Quality of recruitment, remuneration and salary gap

Distribution by contract type

	WORKER-MEMBERS			RECRUITED EMPLOYEES	TOTAL WORKFORCE		
	DURATION	PERMANENT	TOTAL	TEMPORARY	MEMBERS	EMPLOYEES	TOTAL
2019	157	569	726	100	726	100	826
2020	171	572	743	72	743	72	815
2021	141	564	705	68	705	68	773
2022	114	620	734	16	734	49	783

As shown by our indicators, we promote the incorporation of people to Irizar dedicated to permanence and stability. We prioritize the quality of recruitment, in such a way that 94% of Irizar workers are members of the cooperative compared to 6% of employees with an employment contract.

Some options for starting work at Irizar:

- We also offer **grants and scholarships** for different university majors and the option to do the **final university project** with us.
- In collaboration with local vocational training schools, we offer the students the opportunity to do their upper level **internships with us**. These are very important for students to be able to develop the skills they have acquired and so they can get first-hand experience of how a company works.

Job **profile diagrams** are tools that enable us to carry out periodic evaluations and monitor the performance and leadership of the personnel who join the entire Irizar Group. Evaluations are carried out for all personnel by team members where they are incorporated and by other personnel from different departments who are in direct contact with their duties and/or assignments.

These evaluations enable us to measure the development and evolution of personnel for their **definitive integration** into the Irizar Group.

All personnel enjoy fair labour conditions that are well above the average conditions in the area.

1. We compensate the work of personnel with the same principles in all countries where we are present. Salaries are determined based on qualifications and responsibilities. When establishing remuneration, we are not guided by gender or place of origin, but exclusively by the work and responsibility carried out, as well as by the surrounding conditions. The general our level of **remuneration is very competitive** and above the sectoral agreements of the local environment.
2. We offer **significant advantages and promotions** in areas related with banking, communications, insurance, travel, fuel, spending, etc., which are promoted and negotiated through the Company Board.
3. But what really makes the difference at Irizar is that, because it's a cooperative company, **the people** who work there **can become member-workers** and after a three-year period as a regular employee they become members for a specific time. They will stay in that situation for a maximum of four years and afterwards they can become a permanent member after passing the periodic evaluations (profesiograms) that have been specified.

We're aware that having member workers is a differentiating factor compared with NON cooperative companies that is really attractive to people and we're committed to paying all our workers a decent wage. As we saw in chapter 2 about Irizar and sustainable competitiveness, in section 4.1 of this chapter, in our contribution and impact on the 2030 Agenda SDGs, we have designated our commitment to keep building the number of members in regards to the total workforce and paying a de-

cent salary to everyone as **priority KPIs**.

Wage gap

We try to have everyone employed by Irizar be assigned a job with remuneration in line with their responsibilities, without any kind of differentiation based on gender. Nor is there discrimination in salary for other reasons, such as age, race, nationality, religion, disability, sexual orientation, union or political affiliation.

A deep analysis of the salary gap is one item being tackled during the equality plan review that is being done.

Wage gap

	INDIRECT LABOUR (MOI)			DIRECT LABOUR (MOD)			TOTAL WORKFORCE		
	MEN	WOMEN	AVERAGE MOI	MEN	WOMEN	AVERAGE MOD	MEN	WOMEN	AVERAGE WORKFORCE
2018	104.8 %	82.1 %	100 %	100.4 %	86.0 %	100 %	100.4 %	95.0 %	100 %
2019	104.0 %	82.5 %	100 %	100.3 %	91.1 %	100 %	100.2 %	96.8 %	100 %
2020	104.1 %	83.4 %	100 %	100.2 %	93.7 %	100 %	100.1 %	99.2 %	100 %
2021	103.0 %	87.6 %	100 %	100.1 %	96.2 %	100 %	99.6 %	104.6 %	100 %
2022	103.6 %	87.3 %	100 %	100.2 %	94.0 %	100 %	99.7 %	103.4 %	100 %

In 2022, the average total salary at Irizar for men was 99.7% of the average, while the average salary for women was 103.4% of the average. The majority of women are indirect employees (they do not work directly on the product), and because indirect salaries are above the average, it makes the average salary for women higher.

The previous table shows the deviations between men and women, differentiated by professional category and direct or indirect labour.

- A greater wage gap can be seen between men and women in indirect positions (MOI), -16% to be specific. This greater difference is created fundamentally because the majority of indirect positions with higher rates are occupied by men.
- In parallel, there is a greater wage gap between men and women in indirect jobs (MOI), 6%.

We are very aware that we have a wage gap we need to close and we are evaluating ways to improve it with the gender equality plan. And, as we saw in chapter 2 about Irizar and sustainable competitiveness, and in section 4.1 of this chapter, we have defined reducing the wage gap between men and women as a **priority KPI** in our contribution to and impact on the 2030 Agenda SDGs.



Rotation, entries and exits (by sex and age) and dismissals

Staff turnover rate

	2015	2016	2017	2018	2019	2020	2021	2022
People	48	1	6	35	-2	-11(*)	-8(*)	99

(*) Among other reasons, it is possible that the effect that Covid-19 has had on the economic performance of the company has influenced the decision by some people to leave the company.

Rotation rates are very low. The rate is always below the average of the countries in which Irizar operates. Undoubtedly this is further proof of the satisfaction and the motivation of our personnel. All this is mainly the result of:

1. Our firm commitment to developing capacity and talent to meet the challenges facing us with a long term vision by strengthening the R&D centre (Creatio) and creating new lines of business (electromobility, etc.), with the increase in demand and opening new markets, among other things.
2. People value the quality of recruitment prioritizing permanent contracts and the possibility of becoming a member of the cooperative.

The need to hire people to handle the increase in production has led to the number of hires being very high in 2022.

New recruitments by sex and age

	Under 30	Between 30 and 39	Between 40 and 49	Over 50	Total hires		
	Total	Total	Total	Total	Men	Women	Total
2018	50	19	0	0	64	5	69
2019	15	4	0	0	14	5	19
2020	30	8	3	0	34	7	41
2021	8	1	0	0	7	2	9
2022	101	24	0	1	114	12	126

Departures by sex and age

	Under 30	Between 30 and 39	Between 40 and 49	Over 50	Total hires		
	Total	Total	Total	Total	Men	Women	Total
2018	15	8	0	11	25	9	34
2019	8	2	2	9	16	5	21
2020	34	10	5	25	62	12	74
2021	2	1	9	5	16	1	17
2022	7	11	2	7	23	4	27

Dismissals by sex

	MEN	WOMEN	TOTAL DISMISSALS
2018	1	0	1
2019	1	0	1
2020(*)	3	3	6
2021	0	0	0
2022	0	0	0

(*) Given the exceptional situation in 2020 we had to terminate the annual temporary contracts of six people.

4.2.2. Organisation of Work and Commitment to Work-Life Balance

Since 1995, we promote a culture based on people's trust and schedule flexibility. We offer a **flexible schedule** where the main objective is the performance and fulfilment of the established objectives and not simply presence.

Irizar personnel have different alternatives to help find a **work-life balance** in addition to flexible hours within limits, **shortened work-days, unremunerated break periods, or other kinds of leave**. This means offering in many cases a flexibility that goes beyond what is legally established.

The pandemic has contributed to promoting remote work since 2020 for all jobs where it can be done. Furthermore, given the circumstances, the continuous work day was encouraged to limit and reduce physical contact.

Work-life balance is one of the target areas of the **social innovation** project that is under way. As we mentioned in the first section, in 2020 a diagnosis of the current situation was done.

Among the first conclusions regarding work-life balance, it is clear that there is room for improvement: *"In some sections there are no problems with work-life balance, but in others the working days are reduced to achieve the balance"*. For this reason, we must continue to make decisive progress in the approach and the work-life balance opportunities for Irizar people.

In November 2021, after analysing the surveys and interviews, new criteria was set for arriving at and leaving work that makes a healthy work-life balance easier to achieve.

- A. 60 minutes of flexibility for starting work, which allows leaving before the end of the work day
- B. The flexibility is increased to three hours if the person has or is a guardian of a child under 12.
- C. Continuous work days are allowed on Fridays and days before bank holidays.
- D. Employees can work remotely one day a week.

People with reduced hours

	MEN	WOMEN	TOTAL DISMISSALS
2018	15	9	24
2019	12	9	21
2020(*)	21	15	36
2021(*)	15	9	24
2022	14	11	25

(*) It is impossible to know how many reductions in working hours would not have occurred without Covid-19.

Of the total of the 24 workers on reduced working hours in 2022, 14 were women and 11 were men. It is returning to pre-pandemic levels.

In 2022, framed within the social innovation project, the study and analysis of the work-life balance measures at Irizar continued, as it did in other companies in the sector and/or leaders in the field, with the goal of continuing to make progress and to become leaders in work-life balance ourselves.



Work absenteeism

	Rate of missed days (TDP)	Absenteeism Rate (TAL)
2018	7.32	6.08
2019	7.10	5.72
2020	9.12	7.36
2020 without the effect of Covid-19	7.24	5.48
2020 Covid-19 effect	1.88	1.88
2021	10.03	8.03
2021 without the effect of Covid-19	8.38	6.70
2021 Covid-19 effect	1.65	2.33
2022	12.20	9.76

Absenteeism is reflected in the rate of days lost (number of days lost based on the total number of hours worked) and the rate of absenteeism (total hours of sick leave and the total hours of accident sick leave, each based on the total hours worked).

As you can see in the break-down of the indicators, without the effects of Covid-19 on sick leave we would have had an improvement in total absenteeism in 2020 and decreased a little in 2021. We kept practically the same TDP in 2020 and it went down in 2021. Both indicators increased in 2022.

With the goal of reducing them as much as possible:

- In late 2022, **monitoring absenteeism was strengthened as a group** by Dr. Personas, the medical team and the insurance provider (Lagun-Aro).
- As also described in detail in subsection “4.6.2. Comfort-economy programmes”, in 2023 we plan to create a **multidisciplinary team for improving ergonomics** with the participation of people in the areas of workplace risk prevention, physical therapy services, production and staff.

4.2.3. Participation in Management and Economic Results

Participation in economic profits

In addition to the participation in the profit of Irizar S.Coop. for cooperative members, at all the Irizar Group companies, regardless of their business name, all workers participate in management and economic profit.

Participation in management

The participation of all Irizar personnel in decision-making is constant through self-managed multifunctional teams, to address the strategy and daily operations of the management processes in which they are involved.

Participation in strategic thoughts

All personnel participate in the strategic analyses conducted periodically at Irizar, as well as in the annual assemblies, where strategy is the most important aspect. The **strategic thoughts** are reviewed every three or four years (taking into account aspects of the economic and social environment, the sector, market, competition, technological evolutions in mobility and digitalisation and the other internal and external stakeholders) and they are defined and shared by all the people in the organisation. Each year, a specific meeting is held with all the people of Irizar for which a full day is dedicated to reinforce the knowledge of these Strategic Thoughts.

The process of this analysis includes different working meetings where personnel from the management team, the Governing Council and direct and indirect personnel participate in the initial phase. And the playbook up to now includes covering aspects of external debate that influence Irizar’s activities, such as the macroeconomic situation and an analysis of the sector, market and competition.

Beyond the ideas of this first analysis, a series of reflections are carried out about Irizar’s internal situation as well as the SWOT (Strengths, Weaknesses, Opportunities and Threats) in order to arrive at general conclusions which, in turn, are transferred to all Irizar personnel, who have the opportunity to participate in the process by taking in suggestions and proposals which will subsequently result in actions to improve the competitive position.

A change in the CEO role of the Irizar Group in September 2022 has been bringing about a restructuring of the organisation and strategy in

the first few months. In depth reviews of our strategic thoughts will be included in the strategic reviews, with high participation by people at Irizar.

After the organisational changes we went through at Irizar, in 2022 meetings led by the CEO were held with all the work areas which dealt with **“Building the Irizar of today and tomorrow”** to reflect upon the situation the organisation finds itself in. At those meetings it once again became clear that sustainability has a fundamental role, in accordance with our strategic lines for the future and commitment to seeking sustainable mobility. More details about the meetings can be seen in subsection “4.3.2. Communication and transparency”.

The entire integration of sustainability into our strategy and operations is handled in more detail in chapter 2 about our sustainable competitiveness.



4.2.4. Job Creation

New hires

We establish cooperative relationships and maintain permanent contact with vocational training centres and universities in our local environments to facilitate access to employment for young people and to incorporate the best talent.

We establish cooperation relationships and we are in contact with the Universities in Basque Country (UPV, MU, Deusto, Tecnum, etc.) through their different Employment Forums. And we collaborate on the training and incorporation of students in the job market and teaching conferences and classes in advanced Master Degrees in accordance with the university curriculum. All this enables us, on the one hand, to attract the talent of young university students to our organisation, and, on the other, to transfer the characteristics of the profiles of our organisation to universities.

Because of the new health situation, in 2022 intense work along those lines was done again. We presented the Irizar Group to final year students of practically all the local universities and training schools This helps to carry out the initiatives detailed in the section dedicated to the quality of employment:

- Scholarships for different university programs.
- Option to carry out the final project.
- Possibility of internships for advanced training cycles.

Internal promotions

Whenever possible, at Irizar S. Coop., we open internal promotion processes to fill positions of greater responsibility. These are systematic and rigorous processes with a similar or greater level than the processes for new hires.

In 2022, fifteen people were promoted to cover the organisational needs created to take on the new business challenges.



4.3. Commitment to Quality Employment

4.3.1. Leadership and Teamwork

Starting from the CEO and the rest of the Executive Team and reaching all levels of management, it is VITAL to promote and display a commitment to all People based on trust, communication, leadership, involvement, self-management and teamwork. This priority of our management model is basic for the motivation of people.

Leadership makes it possible to create self-managed team work environments with people committed to the values, clients, strategy and excellence in management at Irizar. Leadership and teamwork are key to our future Sustainable Competitiveness.

4.3.2. Communication and Transparency

Communication and transparency are the cornerstones to ensure information and knowledge about the corporate strategy, the projects, objectives and the monitoring of the daily activity, flows and is shared by



all. We make the most important events, advances and achievements of the company public (economic-governance, social, and environmental), as well as the evolution of the sector and economic and socio-cultural activities.

But fundamentally, we believe that internal communication is the way to strengthen our corporate ethics and culture, and generate integration, satisfaction, motivation, and involvement of all personnel. This communication model makes it easier for us to have personnel who are increasingly committed to Sustainable Competitiveness, while having them share in the actions and decisions that affect them.

The structure and communication channels that contribute to guaranteeing the flow of information to/from all personnel, are active and subject to constant review, both in the operation of business processes and for strategic reflections (as detailed in the “Participation in Strategic Thoughts” section), taking into account the opinion of all representatives of the work teams that represent Irizar personnel, both directly and indirectly.

The continuous **two-way communication** dynamics are part of our management model based on **self-managed multifunctional teams** to address both Irizar’s strategy and daily operations.

Additionally, we have **complementary internal communication channels**, including:

Forums at the highest level where all personnel participate

These are the main mechanisms for communication, carried out directly by the CEO and the Management Team and where the most relevant information is posted for all Irizar personnel. The following is carried out annually:

- Two **Assemblies** where purely strategic issues and annual action plans and legal issues related with the cooperative are discussed. These assemblies are open to all the personnel of Irizar S.Coop, although only employee-members are able to vote. As we saw in the chapter about sustainable competitiveness, in the assemblies we always discuss **sustainability** within the global strategy and progress of the company.
For example:
 - **Sustainability** is an essential key competitiveness factor of the Irizar Group
 - The new version of the code of ethics was presented for **approval** by all the members in 2020.
 - In 2020, the **sustainable development goals (SDGs)** of the 2030 Agenda that we have chosen at Irizar as **high priority and transversal** for increasing our future commitment to them in a strategic and operational way were presented.
 - In 2020 and 2022 **sustainability was set forth as the axis** around which the rest of Irizar’s strategies would revolve, especially for **sustainable mobility**.

- **We have been holding meetings of the Customer Line Team (ELC)** for decades. A quarterly review of daily activities in reference to the annual goals, presented by members of the Management Team and other managers from different teams and operational areas, was done at the meetings. The CEO used the opportunity to spend time with everyone in the organisation and give them the chance to channel and express the concerns and issues that affect them as workers. All dissatisfactions, suggestions or proposals are collected so they can be analysed and action can be taken to resolve them.

The pandemic made evident, even more if it’s possible, the importance of communication and transparency in organisations. That situation did not prevent Irizar from holding several ELC meetings in 2020 and 2021 where new decisions made and the market and company situation were explained in detail.

- As we described in detail in section 4.2.3., since November 2022 the meetings have been renamed. They are now called **“Building the Irizar of today and tomorrow”**, with the goal of leading the re-dynamisation of the organisation to catalyse the development of the brand, technology and sustainability. They are also led by the CEO and other members of the Management Team participate actively, DRIVING the re-motivation of the organisation to bring about an improvement in the organisation’s performance and capabilities to take on new challenges (taking sustainability into account as well as technological evolutions in mobility and digitalisation), that are going to bring about very deep technological changes in products, services and the way of working.

Company Board, Regulation of Internal Arrangements and Collective Agreement

- The **Social Council** is the **internal representative body of the member-workers** for the issues that affect the employment relationship. Its functions are:
 - To inform, advise and consult the Governing Council in matters that affect the employment relationship
 - To inform its representatives and collect contributions and opinions from them, on job roles and issues
 - To record in the minutes issues relating to daily activity and the monthly economic position, but also decisions made at the Governing Council meetings, issues related to Health and Safety, the environment and social issues
 - To publish the **minutes of the Social Council meetings** every month so they are available to all workers

In addition, at Irizar **we extend the dynamics of the Social Council to temporary (non-member) employees** to both receive their contributions and consultation and to make the minutes available online.

- Questions concerning the labour arrangements of member-workers are regulated in the **Regulation of Internal Arrangements**. Irizar makes **extends those labour arrangements to non-member employees** in regards to:
 - Labour organisation
 - Work schedule (working hours, calendars, overtime, shifts, bank holidays, vacations, leaves of absence, etc.)
 - Professional classification (professional development, internal promotions, training, etc.)

- As we indicated previously, in the daily dynamics with the employees, the same criteria are followed as with members, even though they are administratively bound by the **national metal collective bargaining agreement**.

Other communication channels

- **Daily meetings of every ELC** (client line team): They were reactivated in 2022 after the stop caused by Covid-19. With the goal of resolving incidents on every production line, led by the Client Line Coordinator, a multidisciplinary group meets with representatives from production, quality, engineering, supplies and direct staff (MOD) from all areas of the line (framework, sheet work, painting, finish and electrical).
- **TV screens** installed in all break areas are used to complement and provide better news coverage and general information about industry news, economics, photography and videos about Irizar and people from it and their achievements, sustainability culture and strategy or visits to our facilities (by clients, institutions or the media), as well as collaborations and aid for culture, sports or NGOs, etc.
- **Information centres and electronic panels:** There are communication centres and electronic panels at access points and generally visible in the facilities that show issues relating to quality, internal communication, plant images, health and safety, sustainability and the environment.
- **Irinet:** Irizar's Intranet as a tool for compiling and centralizing all the information posted at Irizar. It also provides services that go beyond daily management, including cultural activities and dictionaries.
- **Direct emails:** Using direct emails lets us make all relevant information available to the entire collective. It's a tool that's growing in use.

More and more information is being sent through this channel.

The impossibility of using the usual communication tools in rest areas in 2020 and 2021 led to the search for new internal communication formulas with the aim of improving direct relationships with people and their integration. In addition to the meetings by video call and telephone, the relevant information was displayed through more direct channels with everyone individually. In 2022, especially with the return of the daily ELC meetings, we returned to pre-Covid normality.



4.4. Strengthening talent: Education and training

In order to undertake our ambitious strategic challenges for the brand, technology and sustainability, we are aware that we must respond to an increasingly high technological demand, the growing complexity of our activity, and our entire value chain (commercial, design and development, execution of products and services, etc.), forming alliances and working in collaboration with our stakeholders.

This growing need to adapt to changes and new challenges and to anticipate the future, demands more and more specialized training. Accordingly, Irizar works constantly in favour of **quality education to empower talent**.

Innovation is part of our DNA and organisational culture. We want to expand the limits of knowledge, discover new ways of creating truly differentiated and surprising products and services because we want to go a step further and because we should likewise respond to the training needs that arise from our strategic reflections (annual and medium/long-term) and the ideas and suggestions of our stakeholders.

We provide rigorous **multidisciplinary training plans** tailored to people with the particular aim of maintaining and improving their qualifications, profile, and versatility, understanding that all this undoubtedly leads to the benefit of increased knowledge of the quality of our products and services and the improvement of our sustainable competitiveness.

Most of this training is delivered internally. Internal training courses include:

- **Reception plan for new hires**, which includes educational training sessions to promote more effective integration in the company: knowledge of the Irizar culture and strategy, the Integrated Quality and Environment Systems, Safety and Occupational Health, and other internal policies and regulations.
- **Training in versatility of direct personnel**. This entails increasing theoretical and practical knowledge to handle working in other positions. It also facilitates the ability to respond to the personal preferences of each worker, to face new market demands, to improve the quality of our products and services and, to be able to act preventively as regards ergonomics by facilitating posture changes and other measures to enhance health and safety.
- **And the constant flow of people between production** plants in different countries and companies in the Irizar Group aids, drives and makes use of the synergies in activities and actions done in the strategic lines and work presented. The fundamental goal is to increase their knowledge and capacities and maintain constant training in the aspects or innovations and solutions that are incorporated at a product and service, management, image, sustainability or technological innovation level. 2020 and part of 2021 were marked by strict restrictions on mobility internationally, which prevented carrying out the movement of people between plants. Only in 2022 were there sporadic exchanges of people between plants.
- **Continuous training and certification** in critical manufacturing processes (welding, bonding, and painting) of direct personnel, with the collaboration of our integrated suppliers and/or specialised external companies.
- In 2021 we can highlight the training in prevention issues received by

everybody. Many hours were invested in general issues in addition to hours spent on issues specific to the post, including the **decatalogue for handling Covid-19**.

- In 2021 we can highlight the training received by everyone in **workplace risk prevention** issues. Many hours have been invested in general issues and role specific issues.



The internal training plans were complemented by continuous training programmed done by external staff. The intensity and content of the training has more variation and it's more closely linked to changes in strategic focus, new lines of products and services we're undertaking or new markets, etc. Their qualitative evolution is shown on the table below.

External training

	2013	2014	2015	2016	2017	2018	2019	2020 ^(*)	2021	2022
Hours dedicated to training	5779.	6551	4701	4546	4119	3122	3066	1075	12110	1114
No. of personnel	210	264	166	222	236	135	161	143	999	479

^(*) The usual face-to-face external training was restricted in 2020. It could only be done for one quarter.

In 2022, we can highlight the **voluntary training** given with a broad focus in both cases, but adapted to the different needs and concerns of direct staff (MOD) and indirect staff (MOI):

- A. **There was training for direct staff** in management that merged concepts about quality, conflict management, team management and leadership, communication, IT and Irizar product-process and new mobility trends. It was a four-month course given by Goierri Eskola, except the last concept, which was developed internally. It was very well received by the participants.
- B. **There was training for indirect staff** with the **specialisation in cooperative business management course**. It was organised by the Mondragon Unibertsitatea business school and KONFEKOOP (Confederation of Cooperatives of the Basque Country). In four months it included five personalised modules for management in cooperatives, with which the participants learned and enjoyed:
1. Economic-financial management
 2. Strategic management
 3. Marketing
 4. Management skills for cooperation
 5. Applied final project

This course still has practical continuity at Irizar, because several work teams that are working on improving specific aspects of management at Irizar have emerged out of the people who did the training, like digitalising management tools for production, the viability analysis for implementing a CRM (Customer Relationship Management) system, etc.



We plan to continue intensive training in 2023, but the scope will be improved and it will include aspects of sustainability (SDG, etc.).

We have also continued with **sustainability training**:

- **Online** given by the United Nations Global Compact or other organisations (2030 Agenda and SDG, Ethics and good governance, supply chain and decent work, ESG trends, Climate Change, etc.).
- In 2021 Irizar representatives received training in the **SDG Ambition** accelerator programme of the United Nations Global Compact, which more than 700 companies participated in internationally. It is a pioneering programme with a new methodology that helps us set ambitious SDGs (sustainable development goals) and integrate them into the centre of our strategy and operations to contribute to the prosperity of people and the planet.
- In 2021 we **trained the Management Team internally in sustainability and SDG/2030 Agenda**. Each manager will keep people from the following level of responsibility in the organisation in their area involved. Commitment and involvement by the top managers at Irizar is important for reaching the future goals that have been set.

Beyond professional training, we do **awareness raising and training initiatives in sustainability**. Among the awareness raising courses and campaigns we did in 2022, we continued with the dynamics of 2021. We can highlight:

- International **Women's Day**
- International Day for the **Elimination of Violence against Women**.
- The **SDG Speaker** campaign to raise awareness about the issue among our stakeholder groups.

2022 was, without a doubt, a year of opportunities. Like in 2021, we

continued reinforcing training, versatility, communication and flexibility for clients and the capacity for adapting to change.

As we saw in chapter 2 about Irizar and sustainable competitiveness and in section 4.1. of this chapter, in our contribution and impact on the SDGs of the 2030 Agenda we have defined three **priority KPIs for training/awareness raising for people at Irizar in ethics and compliance, gender equality and sustainability**.



4.5. Gender Equality, Diversity and Social Inclusion

Respect for diversity, gender equality, non-discrimination in employment, dialogue, professional development and knowledge sharing are our priorities, which is reflected in our Statutes and our Strategic Thoughts.

As regards diversity, our **statutes** include:

“The following will not be reasons for denying admission: political, trade union or religious ideologies, (as well as the race, language, sex or marital status of the candidate) unless these are explicitly opposed to cooperative principles and organisation and to the goals, commitments, values, and principles of Irizar,

Our **hiring** processes are non-discriminatory in terms of sex, age, race, nationality, religion, disability, sexual orientation, union or political affiliation.

We do not tolerate discrimination in **employment** for any reason: All personnel hired at Irizar are covered by the same conditions, including salaries, as long as they are filling positions with the same level of responsibility. This principle is included in the Statutes of the cooperative and in the Strategic Thoughts.

As we stated at the beginning of the chapter, in 2019 we started the **Social Innovation Project** for Equal Opportunities for people, focusing,

among other areas, on managing: **gender** (reinforcing the Equality Plan), **diversity** (Race, Nationality, Religion, Sexual Orientation, etc.) and **social inclusion**. Among the conclusions of the diagnosis (addressed in the first section of this chapter) the following are of note:

- **Gender:** “there is a limited presence of women in general and that is reflected in the management bodies of the cooperative”
- **Diversity** “there is no discrimination against LGBTI people or people with different socio-cultural backgrounds. But there are comments.”
- **Social inclusion:** “People with functional diversity can carry out their jobs without problems, but their presence is limited at Irizar.”

As already mentioned, the goal of the project is to continue making decisive progress in improving these aspects.

4.5.1. Gender Equality

In 2022, work continued on **updating the gender equality plan**.

- Because it is high priority, **work was done on the protocols against sexual harassment** and gender harassment in the workplace. It was approved by the top management of the organisation in 2022 and it was put into action by doing diverse specific training for people involved in the project so they can act as mediators for any need in that regard. And it is planned to be spread to the Irizar collective in 2023.
- The **improved equality plan** was approved by the top management of the organisation and the main ideas planned in the general assembly in late 2022 were presented to the entire collective.

In 2023, it is planned to keep promoting training in gender equality in the entire collective of people at Irizar, including the new equality plan

and harassment protocol.

We are also cooperating with training centres in the local environment to promote and facilitate increased incorporation of university and upper training cycle students into company internships. As our Strategic Thoughts and Statutes reflect, age is not a restriction for the incorporation of personnel at Irizar.

We are very aware of our potential for improvement in gender equality and, as we saw in chapter 2 about Irizar and sustainable competitiveness and section 4.1 of this chapter, we have defined three **priority KPIs related with gender equality** in our contribution to and impact on the SDGs of the 2030 Agenda:

17. Increase gender diversity, especially in roles with responsibility and for new hires
18. Reduce the wage gap between men and women
19. Train/raise awareness of people about gender equality



4.5.2. Diversity and Social Inclusion

As an **international group**, **diversity is part of our culture** and we understand that it is an enriching value. It enables greater knowledge of the needs and desires of our stakeholders around the world to consequently adapt our products and services to their needs.

- We have personnel from our team assigned to the different production plants around the world, who interact with the Irizar Group headquarters, with closer proximity to international customers. In this way, we have strengthened the Irizar brand worldwide and make foreign projects more competitive.
- In addition to the constant flow of group personnel between bus production plants in different countries for training and to benefit from synergies, as already discussed in the section titled “Reinforcing talent: education and training”, we try to benefit from synergies that arise through the experience of Irizar and the possibilities its presence in international markets with production plants presents to carry out implementations in the rest of the companies in the group in the countries where it is present. Hispacold and Masats emerged in that way, as did the ones by Jema in Brazil, Mexico and the USA.

All our facilities are equipped to facilitate accessibility of **people with disabilities**. Disability is another area that is not subject to any type of discrimination.

In a complementary way, our approach is to work with external collabo-

rators who host or hire people with disabilities (as we saw in the corresponding chapter).



4.6. Health and Safety

This last section of the chapter, on responsibility to our personnel, is undoubtedly very important.

In terms of hygiene and ergonomic-comfort measures, at Irizar, we are at maximum levels, above the legal requirements and other co-operatives and companies in the local sector.

In 2022, we continued making serious efforts to guarantee that people in the group have the best working conditions. We always have the clear goal of surpassing the minimums set by legal requirements and give people in the group the PPE they need for protection, health and safety.

4.6.1. Occupational Hazard Prevention System

The Irizar S. Coop. occupational risk prevention system (the same as in other companies in the Irizar Group) prioritises people’s safety before anything else and they dedicate the resources needed for it. It includes all measures for the prevention of accidents and illnesses related to daily work. Our basic accident prevention tool is a risk assessment of jobs and work processes.

The **strategic importance of safety and health for Irizar** is demonstrated by:

- it being given a high priority in all the **assemblies**. Data are provided both on the indicators and on the actions and investments made in the year to improve health.
- The dynamics, established more than 25 years ago, of monitoring by the **Health and Safety Committee** of all accidents, incidents, audit results (internal and external), inspections (safety and health, industrial safety of all facilities), and proposals for improvement that affect health.
 - The committee, led by the Health and Safety manager (who reports to the Management Team), does integral management of those sections monthly.
 - The members of the committee include:
 - * The CEO, Dr. Personas, Dr. Industrial, Dr. Producción
 - * the President of the Governing Council,
 - * risk prevention delegates who are member of the Social Council, and
 - * other members from different areas related with the issue of health and safety.
 - The committee is open to any person at Irizar who can transmit the message they wish to the delegate for their area or any member of the committee.
 - Its goal is to ensure that all guidelines are adhered to, in addition to legal occupational health and safety requirements. Monitoring results in these areas.
- **Inspections** are done periodically Likewise, internal **audits** are done continuously.

- **100% of all injuries**, accidents and incidents are analysed. Within this framework, actions have been initiated, and the necessary investments have also been made in 2022 **and safety has been improved**. In particular, risks that may involve serious consequences have been reduced.

Irizar's prevention service is a joint OSARTEN service (joint prevention service) where Irizar has preventive activities integrated in speciality areas of safety, hygiene, ergonomics, and psycho-sociology and an external prevention service with Quirón Prevención in the speciality area of preventive medicine.

The Health and Safety Team provides personnel **with essential safety plans, instructions, and procedures** focused on prevention and continuous improvement. These guidelines emphasise the obligation to act responsibly and likewise underline the fact that each person must actively participate in the measures. Personnel may access this information through various means, including computers available in all production areas.

Initiatives are also carried out to raise awareness among personnel regarding existing risks, with emphasis on the culture of work safety, training, workshops, communication campaigns, etc.

Irizar e-mobility also shows its commitment to the health and safety of people along the same lines, and in 2020 managed to obtain **ISO45001: 2018** certification. At Irizar S. Coop. we expect to get certified also in the future.

Frequency and severity rate

Frequency rate (number of accidents per hours worked)

2014	2015	2016	2017	2018	2019	2020	2021	2022
61.50	54.99	51.07	61.04	60.75	48.33	33.59	50.22	50.57

Severity index (number of days not worked due accidents at work based on the effective number of hours worked)

2014	2015	2016	2017	2018	2019	2020	2021	2022
1.32	0.93	0.83	1.24	1.08	1.00	1.75	1.09	1.04

The frequency rate (number of accidents per hours worked) stayed the same in regards to 2021.

The severity index (result of the number of ours lost for every thousand hours worked) has dropped to values more in line with values from the years prior to the pandemic. The sick leave times were shorter.

Incident rate and accidents at work with sick leave

Incident rates

Incidence rate (number of accidents per number of employees)

2014	2015	2016	2017	2018	2019	2020	2021	2022
96.88	90.82	75.47	89.33	97.99	76.78	49.08 ^(*)	81.83	81.76

Accidents with disability

	2014	2015	2016	2017	2018	2019	2020	2021	2022
Average Workers	754	786	778	791	836	826	815	789	893
TOTAL Accidents with Sick Leave	70	70	67	77	82	64	40^(*)	64	66
absences for accidents MEN						61	39 ^(*)	61	62
absences for accidents WOMEN						3	1 ^(*)	3	4

In 2022, the same as in 2021, fundamentally as a consequence of working more hours than in 2020 both the incident rate (number of accidents per number of employees) and accidents with sick leave in regards to 2020 increased and in 2021 they stayed the same, reaching pre-Covid levels.

After the exhaustive analysis we did in 2018, in which we identified an increase in the number of accidents among new hires in comparison with the previous year, a need for a **2019-20 Health and Safety Training Plan** was determined for all new hires. It's a training plan based in the metal agreement, which we started to plan in 2019 and was carried out in 2020 and 2021. It's not just for new hires, but it's been extended to all workers (temporary and members). During 2021, 80% of people did the training from the metal agreement about preventing risks in the workplace.

We reassessed the format of the training in 2022. And in 2023 we will continue with the new focus. It is our intention that, with this change, the more than evident involvement of everybody who has shown it up to now will continue.

We believe we must provide a work environment that is more and more healthy and safe. To those ends, as we saw in chapter about Irizar and sustainable competitiveness and section 4.1. of this chapter, we have designated providing a safe and healthy environment (reducing the frequency and incident rates for accidents) as a **priority KPI** in our contribution to and impact on the SDGs of the 2030 Agenda.



4.6.2. Ergonomics-Comfort Programs

Personal **ergonomics is an unwavering principle** when applying any innovation to products and/or productive processes, with the primary objective of adapting the job position to personnel. It is our responsibility to start working on these aspects during the conceptual stage. Irizar is a benchmark in ergonomics and comfort: We invest what is necessary in this field in order to prevent possible injuries. We have spent years focusing efforts on providing maximum ergonomics to all jobs with solutions, in many cases, designed and developed with the participation of the employees themselves.

The Irizar ergonomics program includes job rotations as a preventive measure, as required (physical disabilities, weakened health, ageing, etc.). We carry out continuous evaluations and job improvements that have resulted in investments in the implementation of different measures (weightless tools, handling trucks, external manufacturing, etc.) to reduce the handling of loads and repetitive movements. In recent years, investments have been made throughout the company to improve thermal comfort.

Regular activities and measures taken in recent years

Below is a summary of the measures implemented in recent years. Most of these are specifically designed with the participation of the Irizar

personnel with the aim of offering optimal conditions in terms of ergonomics and occupational health:

Occupational risk prevention management

- Start of the multi-year development project of the new OHP management programme and transfer of data from the current system to the new one.
- Application of corrective maintenance in the Intranet-iWeb.
- New project for registration and grouping of all climate control equipment in the existing industry files.

Ergonomics

- Work platforms for sheet metal roof shapers.
- Turners for the manufacture of roofs and roof duct handlers.
- Installation of lifts and adaptation of their regulation systems for postural improvement in structural welding and safety improvements.
- Aluminium shapers to reduce weight.
- Manual handlers for processes involving loads in sheet metal and assembly areas.
- Handling of front and side windows with weightless systems.
- Lifting systems using vehicle columns for ergonomic improvements.
- Handler for installation of seats inside vehicles.
- We've recently acquired several **exoskeletons** with the goal of including them into our production process in the plant where the final assembly of the integral coaches takes place. Ekso, Noonee and HeroWear This latest generation technology helps reduce the physical demands for people and contributes to preventing injuries and ergonomic risks from work.
- Work on the Omer elevator, to expand the gap between platforms for better accessibility.



Hygiene

- Investments in the manufacturing and roof assembly area aimed at thermal comfort by installing evaporative coolers.
- Storage of all APQ10 chemicals.
- Substitution of critical chemicals with non-hazardous chemicals.
- Implementation of motorised breathing equipment for all painting and framing processes with maximum protection.

- *Push* and *pull* suction equipment in critical areas with suspended suction equipment for work on vehicles.
- Heavy-duty suction equipment for sanding tasks.
- Automation improvements in cabins to minimise hygiene exposure.
- Status control for filters by automatic notification (4.0).
- Localised suction for dust exposure.
- New air conditioning control system in the production plant and offices on the ground floor.
- Plant evaporators in the sheet metal area.
- Nederman suction plate installation improvements.
- Automation of paint booths to optimize resources: SAT, Parts Cabin and all structure painting booths.
- Facilities to improve thermal comfort with evaporating plates.
- Control substitution and improvements in the suction of the reinforcement area in the plant.

Safety

- Installation of collective protections for cabin maintenance.
- Adaptation of facilities to new regulations and subsequent industry review of fire protection measures.
- Fire-fighting equipment (sprinklers) cabin painted structure finished.
- Paint booth lifting platforms Placement of a chain entrapment detector at the outlet of the reducer (prototype P2A).
- Improvements in the acoustic signalling of fire protection equipment.

Installations

The facilities have also undergone significant improvements to reach the highest levels of ergonomics, thermal comfort, hygiene and health of personnel:

- All facilities have been air-conditioned for all jobs, with improvements to prevent currents in certain work areas for optimum temperatures and working conditions for Irizar personnel in both winter and summer.
- The lighting system has been replaced with adjustable LED technology with the aim of increasing the lumens in work areas.
- It has been equipped with general suction systems for environmental hygienic improvement.
- Installation of glue booths for all work with exposure to glue.
- Improvements to hygiene conditions in the painting section by providing all workers with protective equipment that reduces exposure to chemical agents to inappreciable levels.
- Purchase and installation of defibrillators in all areas and facilities of the Irizar headquarters.

Clothing and equipment

All clothing and equipment used is compliant with the specific UNE Regulations. People participate directly in the selection and improvement of the clothing and PPE. The distribution of the latter is done using dispensing machines that are in permanent communication with the supplier, which makes an unlimited PPE ordering system with complete traceability possible.

Digital transformation or industry 4.0

We are continuing with the steps started in 2018 towards digital transformation, or industry 4.0, with the incorporation of:

- Team and critical process communications to areas involved with them, paint booths for painting structures, SAT, parts, retouching, Paint-2 (production lines A, B and C).

Future plans 2023

As we said at the beginning, we consider Irizar to be a benchmark in hygiene and ergonomics-comfort measures, and we hope to continue in this line, with the involvement of all workers. Likewise, among the **goals planned for 2023** for improving working conditions and facilities, we can highlight:

- As mentioned in subsection “4.2.2. Organisation of work and commitment to work-life balance”, the creation of a **multidisciplinary team for improving ergonomics** with the participation of people in the areas of workplace risk prevention, physical therapy services, production and staff
- The implementation of a new ergonomics software application
- Continuous development of a business continuity plan in collaboration with the insurer
- Monitoring with the training of the metal collective bargaining agreement and new people who are hired at Irizar
- Creating new drive technologies: ie truck, hydrogen coach, etc.
- More ergonomic improvements in prior areas, SAT, etc.
- Progress in automation

4.6.3. Other Health and Well-Being Services

- **Medical care for people** (occupational and emergency) Irizar provides all its people with integral medical care and services. In the facilities, we have a medical service, which has the necessary means to carry out measures for the prevention of general health problems, such as occupational illnesses, maintenance of occupational health, and diagnosis and treatment of acute illnesses related to injuries and accidents.

Periodic medical check-ups are carried out with the health monitoring service according to the protocols established as a form of health prevention.

- **Physiotherapy service.** We also have a daily physical therapy service in the facilities as a preventive measure for postural and ageing problems.
- Additionally, people who are members of Irizar have **personal health and dental insurance** with leading Spanish companies that have excellent coverage. As an additional service, it offers the option of providing medical and dental coverage to direct family members under absolutely advantageous conditions.

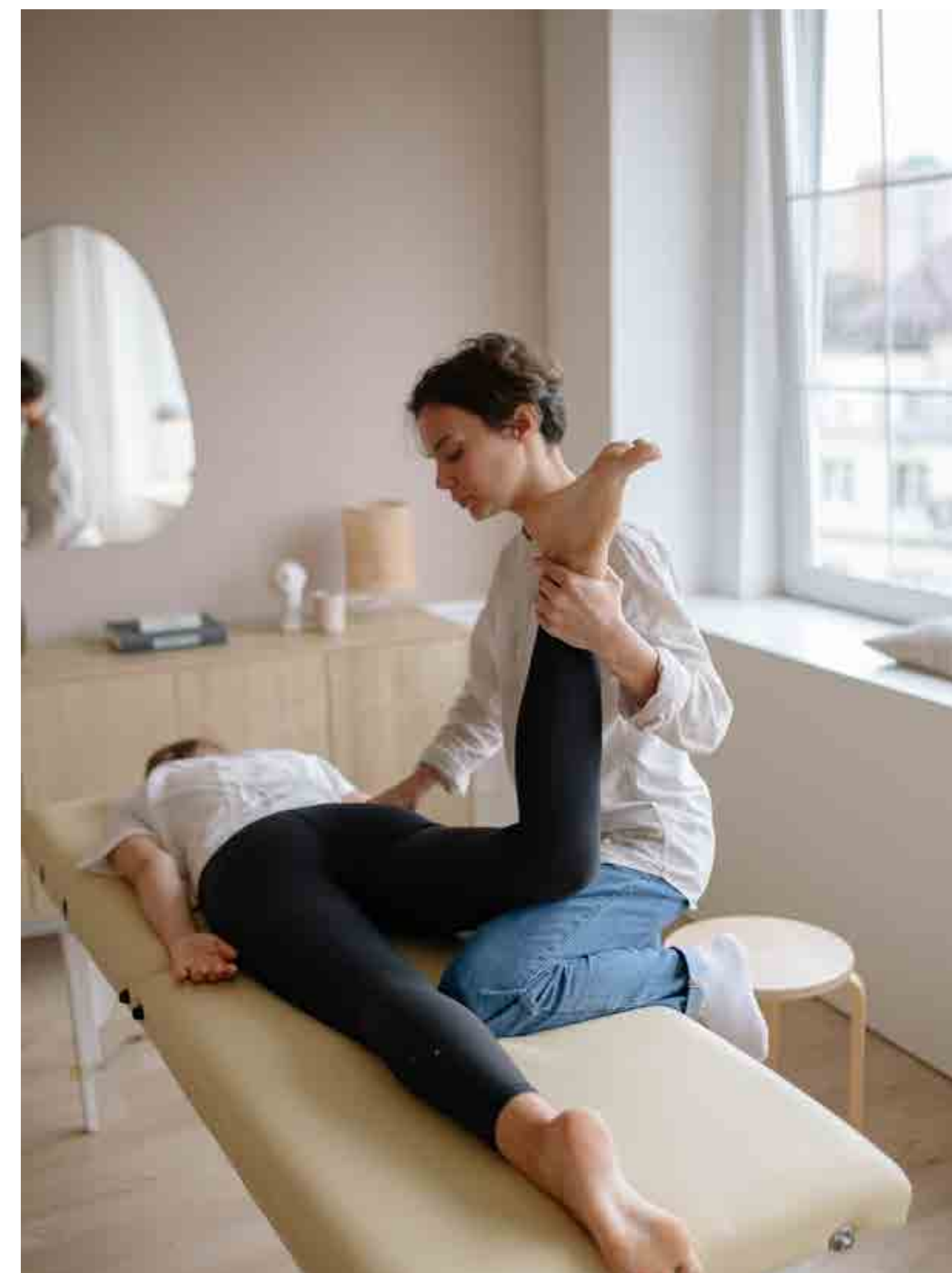
Irizar also has integral personal medical insurance for all contract employees with more than one year of seniority until they become members.

- Periodically, Irizar engages in a continuous task of promoting **healthy lifestyle habits** through campaigns and counselling. The aim is to convey healthy values and help improve health, both personally and at work.
- **Dining area.** Irizar has its own food service, offering all personnel the possibility of eating a high-quality healthy diet, including fresh products from local farmhouses and establishments. Continual improvements are made to the menu and cooking methods in the company dining area (reduced salt, oil, fried dishes, etc.). This has been extremely popular and the number of guests served in the dining area has increased significantly.

Good eating habits are also promoted through TV screens in the dining area. We can highlight the promotion of salad consumption after setting up a salad bar in the company dining area as a complementary option to the daily menu.

- **Physical activity** is also encouraged, sponsoring people participating: representing Irizar in Enpresen Lasterketa (business race in Donostia) or in other sporting events (Zegama Aizkorri, Ehun Milak, etc.).

For a large part of 2022 it was possible to fully enjoy the services for the break area, dining area and physical activity.



4.7. Shared Leisure Activities

Irizar encourages recreational activities outside the workplace for workers, to facilitate closeness to their families and enhance their sense of belonging.

As an example, those that took place in 2019: Photography competition, Korrika (a march held in Euskadi in support of the native language, Euskera), and the Exit to Ondarre (a hamlet for learning about the rural way of life that we have very close).

Also, we have taken the opportunity for new activities, coinciding with the **first months of the pandemic in 2020**, to be **united with families**:

- A drawing contest with the theme “Irizar and buses” with awards in three categories (up to 8, 9 to 13 and 14 to 18)
- A contest to create an Irizar logo aimed at families of all companies in the Irizar Group, which had three awards

In **2021**, promoted by the Basque language group at Irizar S. Coop. (Euskara Taldea) a **summer video contest was held that was expanded to other Irizar Group coach production companies** (Mexico, Brazil, South Africa and Morocco). The goal was to bring attention to the language of every place, so everyone could send a video in Euskara, their native language, or the language they use wherever they are.

In **2022**, organised by the Basque language group at Irizar S. Coop. (Euskara Taldea):

- **We had a summer photograph contest**



- We recorded and sent in-house some **videos about people at Irizar**. There were brief interviews where they talked about their hobbies, like cooking, bertsos, singing, etc.
- We organised a gymkhana of questions **with a prize** (a basket of Er-rigora products)



- We participated in the 2022 Korrika and carried the baton for the kilometre in front of Irizar.
- We had a Basque language day where a **mouse pad with the circular economy IZIR brand** was given out, which is described in detail in the “Environment” chapter.



WE CREATE VALUE FOR OUR EXTERNAL PARTNERS, SUPPLY CHAIN, AND ALLIANCES

Contributing to the SDGs and the UN 2030 Agenda

5

Priority SDGs



- 8.1. Maintaining economic growth
- 8.2. Raising productivity through diversification, technology and innovation.
- 8.5. Achieving full employment and decent work
- 8.7. Eradication of slavery, trafficking and child labour
- 8.8. Protection of labour rights and safe work



- 9.2. Promotion of inclusive and sustainable industry
- 9.4. Infrastructure modernization, clean technology
- 9.5. Increase in scientific research, technological capacity.



- 11.2. Providing access to public transport
- 11.6. Reduction of environmental impact in cities.



- 12.6. Adoption of sustainable practices in businesses
- 12.8. Ensuring education for Sustainable Development
- 12.B. Achieving sustainable tourism



- 13.1. Strengthening resilience and adaptation
- 13.3. Improving environmental education and awareness

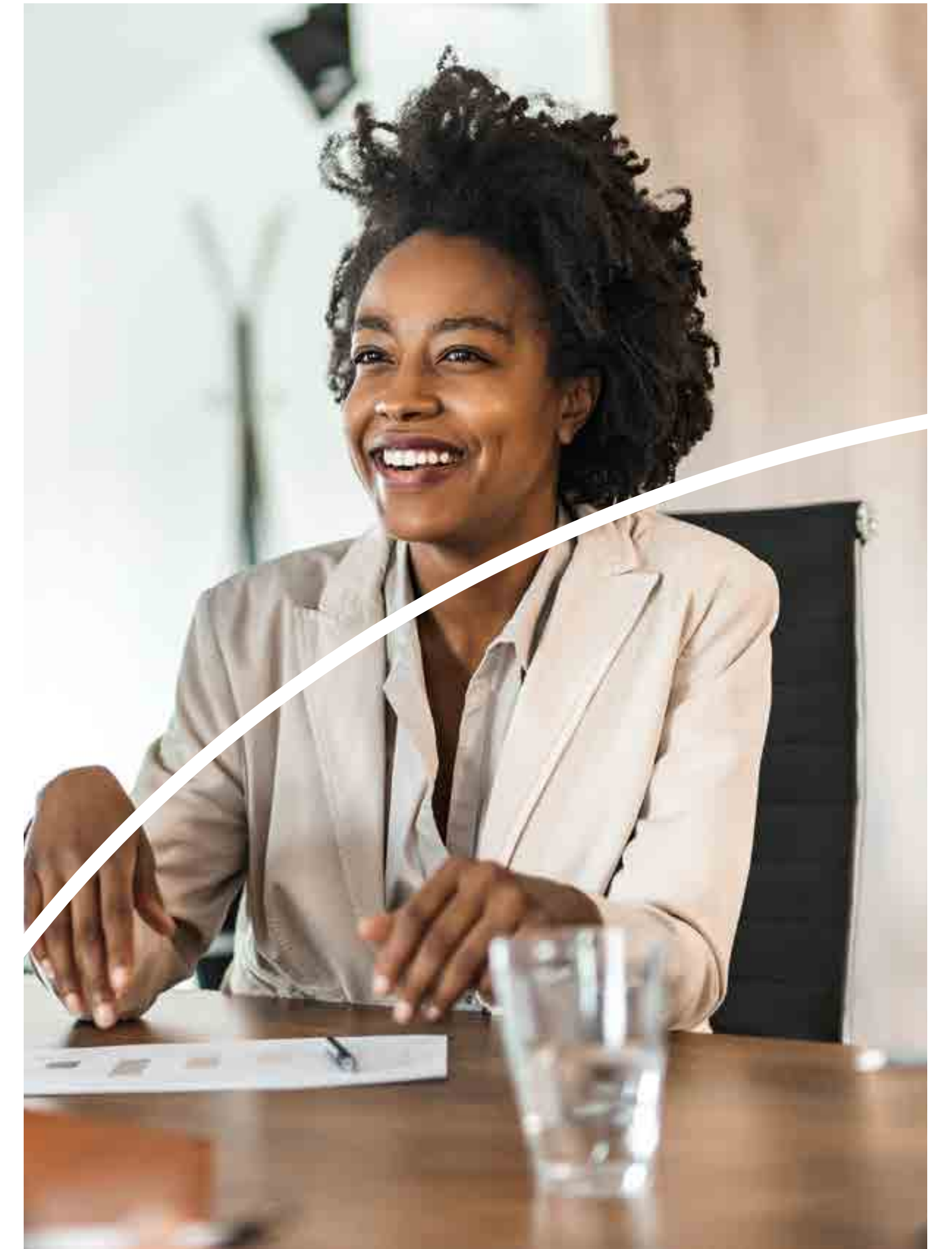
Cross-cutting SDGs



- 5.1. Ending discrimination
- 5.5. Ensuring the full participation of women and equal opportunities in leadership



- 16.2. Eradication of child abuse, exploitation, trafficking and child exploitation
- 16.5. Reducing corruption and bribery
- 16.10. Access to information and fundamental freedoms
- 16.11. Promotion and application of laws and policies (HR)



WE CREATE VALUE FOR OUR EXTERNAL PARTNERS, SUPPLY CHAIN, AND ALLIANCES

5

5.1. Our Value Chain

- Commitment to a sustainable value chain integrated with the 2030 Agenda SDGs

5.2. Distribution, Sales and After-sales network

5.3. Sustainable Supply Chain

- Sustainability requirements for our suppliers.
- Supplying cells for batteries and complete battery packs
- Questionnaires about behaviour and environmental improvements for suppliers

5.4. Purchases Committed to the Social Surroundings

5.5. Logistics Optimisation at the Group Level

5.6. More Agreements and Strategic Alliances

- R&D - Future projects
- Basque Hydrogen Corridor: BH2C
- UITP (International Union of Public Transport).
- Alliances and collaboration with the environment.
- AERCE (Association of purchasing, contracting and supply professionals).

5.1. Our Value Chain



As we saw in the chapter on “Sustainable Competitiveness” our entire value chain is focused on creating value for our customers and other stakeholders, raising awareness and encouraging everyone to share our commitment to sustainability, to increase the positive impact that together we can have on people and the Planet.

Consistent with our business strategy, our alliances with different outside collaborators play an important role in sustainable competitiveness at Irizar.

In addition to the different types of collaboration that we establish with external partners, supply chain and alliances that we discuss in this chapter, we also discuss special relationships and alliances with partners in the rest of the chapters of this Report:

- **“Sustainable Competitiveness”:** United Nations Global Compact
- **“Clients, passengers and citizens”:** Clients, the European Commission, consortiums, hauler’s associations and agreements with other European organisations and research centres with whom we share technological innovation projects, collaboration agreements with other companies for the development of joint products or functionalities or to give a second life to batteries
- **“People”:** We make agreements with universities and training centres.
- **“The Environment”:** Foundations and organisations we collaborate with for the circular economy of production production and participation on the public-private initiative for the largest solar park in the Basque Country
- **“Society”:** We make a record of our collaboration and sponsorship agreements with not-for-profit activities and organisations and the social environment both domestically and abroad.

Our aim is to continue innovating, and to address new challenges by strengthening ties and looking for collaborators with the aim of staying at the global forefront, establishing relationships and alliances with them based on Sustainable Competitiveness (Economic-Governance, Social and Environmental). We promote pioneering alternative energy projects in new fields with collaborators focused on innovation and seeking new business models that promote the collective transport of people.

To those ends, in addition to our sustainability actions internally, with clients and with society in general, our goal is to raise the **ambition of our commitment to guarantee a SUSTAINABLE SUPPLY CHAIN** that includes suppliers and sales and distribution companies, and service shops.

Commitment to a sustainable value chain integrated with the 2030 Agenda SDGs

As we put forward in chapter 2 about Irizar and **sustainable competitiveness**, in 2022 we took a big step in our commitment to the 2030 Agenda SDGs by measuring our impact on priority KPIs. We consequently decided to prioritise our contribution to our sustainable value chain in:







A. CLIMATE: Reduction of scope 3 category 3 emissions (caused by upstream and downstream transport by suppliers and clients), and category 4 emissions (caused by products and products that come from suppliers that Irizar uses). You can see it more detail in the chapter about the environment.

C. TRUST AND INTEGRITY: Three KPIs to make progress towards a responsible supply chain, one of them with a reviewable goal and the rest of them will be specified later as we make progress in **2023** on improving our ethics and compliance system and the outcome of our training period in the Business & Human Rights Accelerator of the United Nations Global Compact stemming from Irizar's decision in December 2022 to use the programme to promote progress in human rights and prepare for the future European due diligence for companies for sustainability and the environment in global supply chains All of that is handled in more detail in chapter 2 about our sustainable competitiveness.

F. EXTENDING SUSTAINABLE DEVELOPMENT: We've defined a KPI with our commitment to contributing to improvement in other

(public and private) people and organisations to contribute to extending the “oil stain” of sustainability beyond our organisation to our stakeholders and beyond. Sharing our knowledge and experience with sustainability in diverse forums, awareness raising activities and training















PRINCIPLES OF THE GLOBAL COMPACT	SDGs	KPI	INDICATOR	2019	2020	2021	2022	OBJECTIVE	DATE OBJECTIVE
A. CLIMATE									
 DERECHOS HUMANOS		3. Reduce TOTAL GHG emissions Includes: Scope 1 and 2 CATEGORY 1: Direct GHG emissions and removals CATEGORY 2: Indirect GHG emissions caused by imported energy Scope 3 CATEGORY 3: Indirect GHG emissions caused by transport CATEGORY 4: Indirect GHG emissions caused by products Irizar uses CATEGORY 5: Indirect GHG emissions associated with the organisation's use of products	tCO ₂ eq			1,713,290	Carbon footprints are verified one year later	-5 %	2022 - Annual
 ESTÁNDARES LABORALES						ISO14064-1:2019			
 MEDIO AMBIENTE									

BASE YEAR: year data in blue if shown in GOAL later

PRINCIPLES OF THE GLOBAL COMPACT	SDGs	KPI	INDICATOR	2019	2020	2021	2022	OBJECTIVE	DATE OBJECTIVE
C. TRUST AND INTEGRITY (cont.)									
 DERECHOS HUMANOS ESTÁNDARES LABORALES MEDIO AMBIENTE ANTICORRUPCIÓN		12. Making progress towards a supply chain Manager with SUPPLIERS committed to sustainability Strategic suppliers (A + B) with a SUSTAINABLE CONTRACT	No. suppliers % ACCUM. A+B	17 13.6 %	34 27.4 %	39 31.5 %	41 33.9 %	Specify priorities after Business & Human Rights Accelerator and EU due diligence directive TRAINING	
		a. New suppliers with SUSTAINABLE CONTRACTS b. A+ B strategic suppliers c. Suppliers with the most risk of infringement <ul style="list-style-type: none">o in HR (to be specified)o environmental (to be specified)						a. 100% c. 100% Base year: 2023	2024 --- 2026---
		13. Evaluate/monitor our SUPPLIERS with higher sustainability priority <ul style="list-style-type: none">Questionnaires ANALYSED from environmentally vulnerable suppliers	NO. suppliers evaluated ACCUM. % vulnerable suppliers evaluated		13 48 %	16 59 %	18 83 %	Specify priorities after Business & Human Rights Accelerator and EU due diligence directive TRAINING	
		Suppliers with the highest risk of infringement: <ul style="list-style-type: none">in HRenvironmental						Base year: 2024	
		14. Making progress towards a supply chain Manager with a commitment to sustainability from other external involved parties a. distributors b. commercial partners c. clients...	% companies trained / Total a. b. c.					100 % Set priorities and deadlines by type Base year: 2024	2026

BASE YEAR: year data in blue if shown in GOAL later

PRINCIPLES OF THE GLOBAL COMPACT	SDGs	KPI	INDICATOR	2019	2020	2021	2022	OBJECTIVE	DATE OBJECTIVE
F. EXTENDING SUSTAINABLE DEVELOPMENT									
 DERECHOS HUMANOS		<p>23. Contribution to improvement in the sustainability of other external people and organisations (public and private). Outside of Irizar S. Coop.</p> <p><u>Sharing our knowledge of and experience with sustainability in forums and training and awareness raising activities</u></p> <ul style="list-style-type: none">• High priority stakeholders Clients, suppliers, distributors, etc.• Group coach companies• Other Group companies• Students, external organisations and other people in the social environment	no. actions / year	8	12	25	43	Minimum 20 actions / year	annual
 ESTÁNDARES LABORALES									
 MEDIO AMBIENTE									
 ANTICORRUPCIÓN									
									
									
									
									

BASE YEAR: year data in blue if shown in GOAL later

5.2. Distribution, Sales and After- sales Network

As we saw in chapter 3 “We create value for our clients, passengers and citizens”, we stay close to our clients through the entire value chain and we integrate them into our internal processes.

We have **our own sales and after-sales teams**. And we’re continuously expanding our sales, distribution and after-sales network around the world through **collaborations and alliances with distributors and commercial partners** who let us provide service and distribution close to clients in the more than 90 countries around the world where we have a presence. You can see our broad network at <https://www.irizar.com/mapa/>

In December 2022 Irizar decided to drive our progress in human rights forward and prepare ourselves for the future European sustainability **due diligence directive for companies to respect human rights and the environment in global supply chains**. With the progress planned in 2023, by learning in the Business & Human Rights Accelerator programme of the United Nations Global Compact, we expect to add our distributors to the responsible value chain in the near future, basing our commercial relationships on the **principles of the UN Global Compact** (human and labour rights, the environment and anti-corruption).

In 2022 Irizar kept strengthening their presence in several markets and restarted commercial and distribution activities in markets like Norway

in collaboration with Scania. At the same time, 2022 was a year with clear growth in markets like Germany and Sweden. The development and expansion of the market for new technologies, like gas or hybrids, has gained ground in France and Italy and are providing reductions in consumption around 20% and reductions in CO₂ emissions near 30%.

In Europe, which is the area of greatest influence of Irizar S.Coop., we are present in every country and, where we do not have our own network, we have commercial alliances with partners based on trust, ethics and the search for sustainable shared competitiveness. In the EU alone, the after-sales network has a coverage greater than 300 of their own and outsourced garages with mobile units operational 24h. The logistics network for spares distributes orders to the vast majority of Europe in 24h, which guarantees that vehicles can get back on the road quickly.

We regularly run **training courses** to keep technicians from our **extensive network of after-sales garages** abreast of innovations that are being incorporated into each model of coach so that their performance in terms of safety or repair and maintenance work is of the highest quality.

We have an online technical training system called **itraining** for training and repairing vehicles. This platform is intended for Irizar dealers and distributors and offers the possibility of carrying out online tests and training, along with the option to make contact with other dealers via forums. In the last two years, new interactive content has been included that uses training courses for new systems/models that Irizar has launched on the market and that lets us transmit knowledge to the repair technicians for our vehicles with greater speed and efficiency. The tool has been judged very highly for training our repair technicians.

For the purpose of providing our clients with the most complete service possible, at Irizar we have boosted the repair and maintenance services and contracts for spares for our clients. We are implementing an exclusive after-sales and guarantee service in cities with **electromobility and hybrid** solutions. Management is done in an integral and centralised way by expert technicians and people hired locally, which contributes to local wealth generation and employment. At the same time, there are collaborations with local educational organisations to provide opportunities for people finishing their studies to join an advanced technological sector like electromobility.

We continue developing monitoring and remote-diagnosis solutions for Irizar vehicles **with the iPanel platform, which makes it possible to remotely monitor alarms and incidents that are seen on a vehicle’s display panel**. The iPanel is also designed to carry out preventive maintenance plans so vehicle down time can be minimised. It is discussed in detail in the sections titled “Connectivity-Big Data” in chapter 3 about “Clients, passengers and citizens”.



5.3. Sustainable Supply Chain

Our suppliers and external partners are able to offer products and services that help us improve our brand and our competitive position, which makes them key links in our supply chain.

We enable a **high level of integration with suppliers while developing our products and processes** by mobilising and exchanging knowledge, specialisation, technology and resources. We encourage and promote setting up effective alliances by making the most of the various actors' experience and strategies. A noteworthy example of this is our alliances with key suppliers for integral coach components, without which the progress we have made in consolidating our strategic commitment to become manufacturers of complete coaches.

With the main suppliers, we establish what we call "logical management per coach", for which these **suppliers are integrated in the daily management** of Irizar: production planning, purchase orders, merchandise received, and continuous customer revisions regarding confirmed specifications and corresponding items by coach.

Our **alliances with suppliers** are extended to provide services for clients **during the life of their vehicle**, both covering the warranty for the elements and providing the after-sales service that is needed. That is why our suppliers are present in our sales and after-sales network.

Supply Chain Sustainability is the management of economic / governance, social and environmental impacts, throughout the life cycle of our coaches, buses and services. The objective of Supply Chain Sustainability is the long-term creation, protection and cultivation of: the environment, social and economic value for all stakeholders with which we participate in bringing products and services to the market.

We are working for a sustainable management of the supply chain which allows us to:

- Increase the **trust with our stakeholder groups** with Irizar as a sustainable and responsible partner, improving our **brand reputation and image**

At Irizar, we promote and back responsible processes for acquiring services and raw materials at the same that we're committed to reducing social, ethical and environmental risks in the supply chain.

In general, and before any agreement is signed, we assess whether **new** suppliers must undergo analyses and certification to assess their sustainability performance. The objective is simply to guarantee that, in addition to complying with the law, **our suppliers and, in turn, their suppliers** are governed by our standards of sustainability in the supply chain, based on the **principles of the UN Global Compact** (human and labour rights, environment and anti-corruption).

In addition to establishing lasting **relationships with suppliers** that are competitive based on the parameters of a classic business relationship (quality, cost, service and innovation), we are committed to reducing social, ethical and environmental risks in the supply chain. We strive to work closely with suppliers and partners for compliance with our sustainability principles and also in their businesses. For us, it is essential

that our suppliers and business partners have the same sustainability standards that we have established for ourselves. For that reason we are gradually extending the purchase contract based on the **principles of the UN Global Compact** (human and labour rights, the environment and anti-corruption) to our **strategic suppliers**, even though we have had a stable relationship with them for many years.



In terms of product quality, for many years we have developed quality assurance tools, supplier audit systems, and deviation feedback. We organise regular meetings with the main suppliers to guarantee compliance with the established annual indicators, which we also use to expand the culture of Sustainability, ensuring transparency and increasing efficiency in the supply chain.

Despite the enormous problems in supply chains around the world and thanks to the high degree of integration and trust with our main suppliers, in 2021 and 2022 we were able **to meet the demands of our clients without undergoing any stoppages on our production lines**. It's during the hardest times when the solidity of alliances is most put to the test.

Sustainability requirements for our suppliers

Our sustainability standards have defined the requirements that our suppliers must meet, according to the **contractual agreements** signed. The most important requirements include the prevention of child labour, and unlawful employment, the establishment of ethical standards and anti-corruption policies, and commitment to environmental protection and selection of raw materials.

In addition to asking suppliers to present certifications of legal and regulatory compliance and a confidentiality agreement, the current contractual agreements we are offering to our strategic suppliers include

the following sustainability terms that suppliers must guarantee:

Human and labour rights

- Respect for the personal dignity, privacy and rights of each individual
- No one on their staff is subject to forced or compulsory labour
- They do not tolerate or use child labour
- They do not tolerate discrimination in employment for any reason: sex, age, race, national origin, religion, disability, sexual orientation, union or political affiliation
- They do not allow, practise or support acts of physical, verbal, sexual or psychological harassment, abuse or threats in the workplace
- They do not tolerate human trafficking
- Their workers enjoy decent conditions
- Fair wages and benefits are provided
- They support freedom of association and collective bargaining
- They provide safe and healthy work areas for all their employees and for work that may be done by other people or companies in different facilities
- They promote active policies in matters of health and safety, to ensure maximum protection against risks

Environment

- Prevention or at least minimising environmental risks and excessive resource consumption. This includes, among other things:
 - o energy efficiency of products or services
 - o reduction of GHG emissions
 - o criteria in the selection of materials
 - o prohibitions on specific substances
 - o recovery or reuse of containers or packaging
 - o recycling of delivered components
- Operating with an environmental management system certified under ISO 14001, EMAS or other similar standards (or proof that they are working towards such certification)

Anti-Corruption

- Fighting effectively against corruption in all its forms, including extortion and bribery
- Forms of corruption: Money laundering, financial manipulation, falsification of documents, fraud, payment of commissions or bribery, embezzlement, tax fraud, influence peddling, abuse of power, conflict of interest, obstruction of justice, etc.

We are driving our suppliers to meet these sustainability requirements. In order to ensure that they are implemented, the relevant processes shall be established jointly and monitoring shall be performed in regular meetings held with the Supplier.

As we discussed in the first section, our objective is to **raise the ambition of our Commitment to guaranteeing a SUSTAINABLE SUPPLY CHAIN**, starting by enhancing what we already do with Suppliers (mainly from the Purchasing and Industrial areas).

To this end, we will continue to establish priorities and define actions, aware that we still have a long way to go. The goals we set are focused on the establishment of a responsible, solid and rigorous management system to strengthen our involvement in sustainability issues linked to operations, products and services through the supply chain.

As we mentioned at the beginning of this chapter, and discussed more broadly in chapter 2 about “Irizar and **sustainable competitiveness**”, in December 2022 at Irizar we decided to drive progress in the issue of human rights and prepare ourselves for the future European due diligence directive **for companies regarding sustainability, respecting human rights and the environment in global supply chains**. Because of that, in 2023 we started a training period in the Business & Human Rights Accelerator programme of the United Nations Global Compact, which will contribute to making progress in the sustainability of our supply chain through our suppliers. And a reformulation of the criteria we are currently using for sustainable purchasing will possibly follow.

Supplying cells for batteries and complete battery packs

At the Irizar Group, depending on the battery technology we put on board the electric and hydrogen vehicles with our brand and technology, we either manufacture and develop our own batteries and acquire cells with different chemicals, or we purchase complete battery packs. As these are materials whose extraction poses a potential risk of human rights violations, we are in constant contact with suppliers to increase the level of transparency in the cell supply chain.

Our responsibility is to ensure that the components we receive from suppliers are manufactured under sustainability principles, thus counteracting social and environmental risks in the supply chain. We encourage compliance with that among our suppliers of cells and battery packs and monitor their progress and do audits (ourselves or with third-parties) of their mineral suppliers.



All our suppliers of the cells and battery packs we used on the vehicles we manufactured in 2022 have joined the RMI (Responsible Minerals Initiative), which is one of the most widely used and respected resources among companies from a variety of industries that deal with respon-

sible mineral purchasing problems (from areas affected by conflict and high risk areas) in their supply chains.

<http://www.responsiblemineralsinitiative.org/about/>

We monitor our suppliers, both in terms of their own progress and the progress of their mineral suppliers (with audits by them or third-parties). We ask our suppliers who work with sub-suppliers to guarantee the traceability of conflict minerals, at minimum to the foundry level, and to communicate those details using the CMRT (conflict minerals reporting template).

Our goal for the future is to continue redesigning battery development and manufacturing processes to make them more sustainable.



Questionnaires about behaviour and environmental improvements for suppliers

As we already mentioned, in 2021 we analysed environmental behaviour questionnaires from suppliers with the greatest environmental impact, who are suppliers of chemical products and energy resources. The indicators on the supplier questionnaire included:

Environmental commitment and management of the supplier
Suppliers with environmental certification
Suppliers with SDG contributions
Suppliers with CSR
Suppliers that indicate complete legal compliance
Suppliers that indicate knowledge of IRIZAR's environmental policy and commitments

Products supplied to Irizar
Products that include an environmental variable
Products that have some kind of ecological labelling
Suppliers that supply products in packaging with some kind of environmental criteria
Suppliers that consider the possibility that the containers/packaging for the products they supply may be returnable (reused)
Has measures implemented for reducing the environmental impacts related with the end of life of their products

Environmental aspects of supplier organisations
Energy consumption
Supplier organisations that consume energy from renewable sources
Supplier organisations that have specified actions/plans for lowering energy consumption
CO ₂ emissions
Supplier organisations that have done a carbon footprint calculation for their business activities
Supplier organisations that have verified their emissions
Supplier organisations that have specified actions/plans for reducing CO ₂ emissions
Supplier organisations that have specified actions/plans for offsetting CO ₂ emissions associated with their business activities
Waste management
Supplier organisations that have protocols for separating, labelling, storing and managing waste
Supplier organisations that indicate they have documentary registries that prove the dangerous waste they produce is managed properly
Supplier organisations that consider actions in their business to give a 2nd life to excess materials from their production
Supplier organisations that apply actions/plans for reducing, reusing and recycling their waste
Mobility
Supplier organisations that apply sustainable mobility plans for delivering their products
Supplier organisations that do a CO ₂ emissions calculation associated with transporting their products
Supplier organisations that apply some kind of sustainable mobility action/plan for transporting the products they supply to Irizar

- From the analysis of the results, we saw that:
- The suppliers are barely working on environmental issues. We have to raise awareness and keep encouraging progress
 - We needed to make a much simpler questionnaire with basic requirements for NON chemical suppliers.

In 2022 we continued gaining traction with **suppliers of chemical products, energy resources, and materials and services** to promote starting activities aimed at improving the environmental factor of the supply chain:

1.Electrical energy We renewed the electrical energy contract until 2027 and agreed that it must be from renewable sources You can see more details in chapter 6 about the environment



2. Suppliers of products and materials: We adapted the questionnaire for types of suppliers. But, given the extremely demanding situation of the market with rising prices for raw materials and problems with global supply chains, we decided to work on the questionnaire with waste management firms and other service providers.

3. Waste management providers We asked the two main providers to fill out the questionnaire. We plan to analyse them together in 2023.

4. Returning surplus materials to suppliers The suppliers with whom we keep analysing surplus material pick-up at Irizar are expanding, such that they can be diverted to the **IZIR** project (you can see more details in chapter 6. about the environment). That reduces dumping waste from the supply chain into landfills and facilitates sending surplus materials to suppliers for reuse.

5. Irizar contractors

- Because of the Covid-19 restrictions it was decided to prioritise getting the most out of the subcontractors who work at Irizar.
- In 2022 we gave environmental training to all the contractors **for painting booth maintenance and other auxiliary facilities** and also gave them a personalised best practices manual.
- In 2022, alternatives for minimising hazardous waste dumped in landfills with the greatest volume were analysed with the **hazardous waste management firm**. Plans for calculating the carbon footprint associated with transporting and managing hazardous waste have been made for 2023.

5.4. Purchases Committed to the Social Surroundings

We can highlight our deep commitment to our local area, because our **purchases from companies in the region** for services and materials has increased in recent years. In 2022, like in 2021, our purchases in the province of Gipuzkoa accounted for 17% of total purchases.

On the other hand, we have continued reducing **purchases from far-away countries**. For example, our purchases from China in 2021 and 2022 stayed below 2%.

As we already mentioned in the previous sustainability report, in 2020 and 2021 we were in close contact with our suppliers so we could work together on agreeing upon special conditions to handle the situation caused by Covid-19. We made 60 **collaboration agreements** that were possible thanks to the good relationships and integration we have with our suppliers and the shared long-term vision we have with them.

We have significant stable relationships with **suppliers who are social purpose organisations**.

- **KATEA:** An organisation aimed at work and social integration for disabled people in Gipuzkoa. In 2022 the drastic reduction due to our low volume that was caused by Covid-19 is being recovered from. And 38 people have already worked for Irizar S.Coop. in various activities.
- **KASLAN:** A foundation whose purpose is education, training and social-technical development for young people, with a preference for the Goierri regional territory. It provides metal pieces and sub-assemblies to Irizar.
- **GUREAK:** An organisation that manages work opportunities for disabled people in Gipuzkoa. They usually do assembly work for batteries and in 2022 they also started doing gardening work.
- **HAZLAN:** A social integration company that includes people in the Bidasoa region who have difficulties incorporating themselves into society into its business activities. They do sewing.



5.5. Logistics Optimisation at the Group Level

The Irizar Group, through its logistics area, is immersed in a project to adapt and reallocate routes with the main objective of optimising the resources dedicated to the transport of goods to improve efficiency and costs, as well as reduce environmental impact. In 2022 the analysis of the impact of all the **logistical movements of merchandise between Irizar group plants was maintained.**

As was done the preceding year, this year the analysis of the environmental impact of transport done by collaborators was expanded. The categorisation was maintained in the following way: maritime, air and land. In 2022, therefore, improvements were undertaken in all modes of transport, continuing with the continuous improvement in this optimisation that started five years ago.

In 2022, record levels of optimisation were achieved. New packaging techniques were used, and double floors were added to the most critical containers sent to the Mexico plant. Specifically, the average values this year are the following: 68.5% occupation for shipments to Irizar México and 49.2% for Irizar Brasil.

Summary of 2020 maritime transport results - Irizar Export to group companies

Mode of Transport	Number of Shipments	Gross weight (kg)	CO ₂ Emissions (kg)	Average Gross Weight (kg) per shipment	Average CO ₂ Emissions (kg) per shipment	Average CO ₂ Emissions per kg
Sea	198	2,489,568	522,005	12,574	2,636	0.21
Sum:	198	2,489,568	522,005	12,574	2,636	0.21

Summary of 2022 maritime transport results - Irizar Export to group companies

Mode of Transport	Number of Shipments	Gross weight (kg)	CO ₂ Emissions (kg)	Average Gross Weight (kg) per shipment	Average CO ₂ Emissions (kg) per shipment	Average CO ₂ Emissions per kg
Sea	74.00	767,342.00	20369.49	10,369.49	1481.55	0.14
Sum:	74.00	767,342.00	20369.49	10,369.49	1481.55	0.14

Since data began being recorded, there has been a 44% improvement in the average emissions per kg transported. That is primarily due to improvement actions insofar as occupation and optimisation actions for improving export to the group's plants.

In 2021 and 2022, the Irizar S.Coop. emissions values were also analysed for maritime, ground and air transport. With that data, we can generate a stable base of analysis from which we can evaluate our environmental impact and initiate improvement actions in consequence.

- CO₂ total emissions (kg)
- Average CO₂ emissions per kg

Irizar S.Coop. SUMMARY OF RESULTS FOR TRANSPORT 2021

Mode of Transport	Number of Shipments	Gross weight (kg)	Emission Air: CO ₂ e Well to Wheels2w/ Sea, Road: CO ₂ (kg) Total	Average Gross Weight (kg) per shipment	Average CO ₂ Emissions (kg) per shipment	Average CO ₂ Emissions per kg
Air	534.00	29,736.00	45,813.49	308.52	475.34	3.08
Road	23,771.00	18,505,382.00	1,361,030.49	17,146.23	9425.74	2.07
Sea	125.00	1,542,577.00	100,618.00	12,340.62	804.94	0.07
Sum:	24,430.00	20,077,695.00	1,507,461.00	29,795.37	10,706.02	5.22

Irizar S.Coop. SUMMARY OF RESULTS FOR TRANSPORT 2022

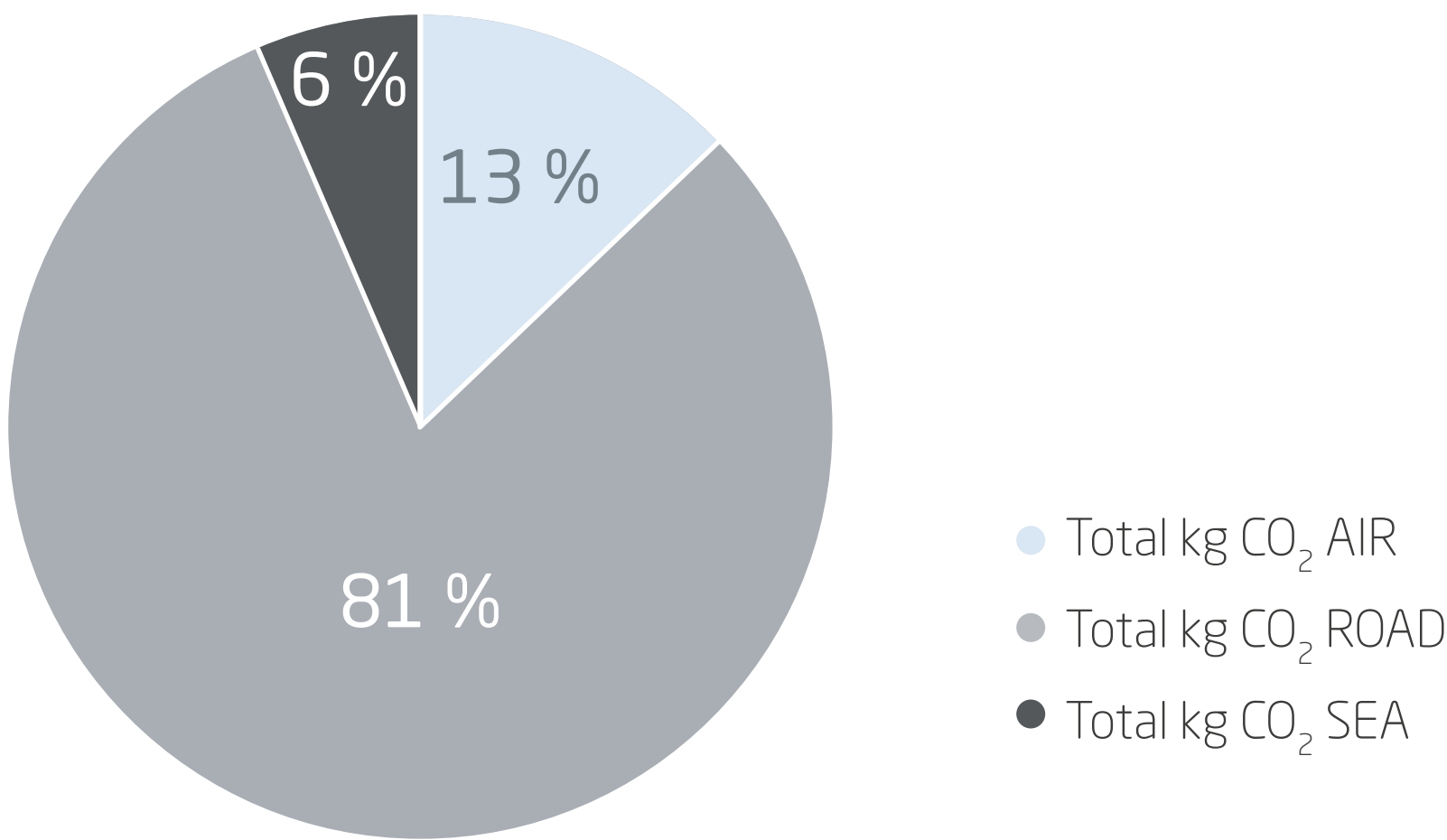
Mode of Transport	Number of Shipments	Gross weight (kg)	Emission Air: CO ₂ e Well to Wheels2w/ Sea, Road: CO ₂ (kg) Total	Average Gross Weight (kg) per shipment	Average CO ₂ Emissions (kg) per shipment	Average CO ₂ Emissions per kg
Air	1102.00	32,601.00	234,166.60	140.80	1011.30	14.37
Road	15,818.00	17,323,315.00	146,668.00	17,053.35	2064.13	1.77
Sea	74.00	767,342.00	109,635.00	10,369.49	1481.55	0.14
Sum:	16,994.00	18,123,258.00	1,810,469.00	27,563.64	4556.99	16.27

As can be seen in the evolution between 2021 and 2022, air shipments shot up due to the stress in the supply chain. The worldwide stress in supply caused goods to be shuffled around, primarily from road to air.

Insofar as ground shipping, the improvement comes from the complete shipments made, where the low volume shipments were reduced and every trip was optimised.

Lastly, the transit time for maritime routes increased enormously as a consequence of difficulties in ports. The final supply chains in every destination, as well as retentions, bottlenecks and back-sailing, have caused a situation never seen before in this mode of transport.

Emissions per mode of transport
Emissions (%)



With those figures, 90% of the impact of imports and exports of the freight transport of materials needed to produce coaches at Irizar S.Coop. has been covered, (including maritime freight exports to the Irizar Group plants in Mexico and Brazil).

This base table will be used in the future to obtain relevant data to establish improvement actions for reducing CO₂ emissions from logistics.

5.6. More Agreements and Strategic Alliances

At Irizar we want to play an active role in defending our industry and its high added value to promote the recovery of the economy and the generation of employment. We must continue to innovate, rethink globalization from the local point of view and face the major challenges that we find ourselves in by strengthening ties and looking for collaborators with the aim of staying at the global forefront.

In addition to all the agreements and alliances that we have already addressed, in this or other chapters of the Sustainability Report, we can also highlight:

R&D - Future projects

As we have already seen extensively in the chapter "Customers, Passengers and Citizens", we are actively engaged, together with large European brands, research and development centres in important European and national projects, in shaping the future of sustainable mobility in cities and public transport.



We have the **Creation R&D centre (Irizar Innovation Centre)** at our central headquarters that is focused on enhancing applied research and technological development capabilities in cooperation with different companies in the Irizar Group for products with its own brand as well as the main components for coaches. Projects led by CREATIO also have the collaboration of external partners.

In addition to these activities, within the Group, we collaborate with **external technology and research centres to complement our** knowledge and technology: CEIT, CIDETEC, CIKATEK, IDEKO, IDIADA, INSIA, IK4-AZTERLAN, IK4-LORTEK, LEARTIKER, TECNALIA, VICOMTECH, etc., continuously striving to strengthen the Group while improving competitiveness. This cooperative work contributes to the improvement of existing products, development of new products, and cutting-edge solutions in all the business areas in which we are present.

There are notable Framework Agreements for collaboration with technology centres:

- **CIDETEC:** in strategic projects on energy storage that enable the business development of the Irizar Group and
- **TECNALIA:** mainly on power electronics and electric power train projects.

Both agreements will strengthen Irizar's technological development and promote competitive market advantages.



TECNALIA is a top European technological research and development centre whose mission is to transform technology into GDP to improve people's quality of life by creating business opportunities for companies. It's part of the **BRTA (Basque Research and Technology Alliance)**. It is the first Spanish private organisation in contracting, participation and leadership in the **Horizon 2020** programme of the European Commission and the second in applications for European patents.

Irizar became a sponsor of TECNALIA in 2020, increasing the level of collaboration we had had with them for several years to make it a more strategic model based in trust, collaboration and a shared technological strategy. Tecnalia's primary areas of work are the digital transformation, advanced manufacturing, the energy transition, sustainable mobility, health and the urban ecosystem.



Irizar is present in the Basque Hydrogen Corridor: BH2C



In 2020 Irizar joined the initiative that will contribute to changing the economic and energy model to make progress towards decarbonising strategic sectors like energy, mobility, industry and services. It's a commitment to industry in the entire value chain of the hydrogen energy vector that was created in Euskadi by Petronor (Repsol Group) that will lead to an economic reactivation. The Basque government represented by Arantxa Tapia, councilperson for Economic Development, Sustainability and the Environment, considers it “**key to the sustainable development of the territory**”.

The presentation of the initiative took place in February 2021 in Bilbao with the signatures of **78 participating organisations**. The councilperson for Economic Development, Sustainability and the Environment, Arantxa Tapia, the Deputy General of Bizkaia Unai Rementeria, the Mayor of Bilbao Juan Mari Aburto, the president of the Bilbao Port Authority Ricardo Barkala, the president of Petronor Emiliano López Atxurra, and the project coordinator Jose Ignacio Zudaire, among many others, attended the event.

The Basque Hydrogen Corridor initiative has ambitious goals, including investments of 1300 million Euros between 2021-26, a period in which it is forecast that **1340 direct and 6700 induced employment jobs will be created**.

Irizar is a key participant in this initiative in the sustainable transport and mobility sector.

UITP (International Union of Public Transport)



Since 2020 we have also been members of the UITP (International Union of Public Transport), which is the International Association of Public Transport and a passionate advocate of sustainable urban mobil-

ity. Founded in 1885, with more than 135 years of history, **it is the only global network that brings together all stakeholders in public transport and all sustainable modes of transport.**

According to the UITP knowledge base, the bus is the most widely used mode of public transport in the world. With millions of daily trips, we know that there really is no sustainable mobility in our cities without getting on the bus. The bus has a long and rich history within the sector, and within the UITP. In the UITP, bus operators work within the relevant Committee on important issues such as maintenance, operation and development. The exchange and generation of knowledge for the entire sector is the main objective.

In Europe, UITP's main activity is to work closely with the institutions of the European Union, bringing together more than 450 urban, suburban and regional public transport operators and authorities from all member states. UITP represents the perspective of local passenger transport services using all sustainable road, rail and water modes.



Alliances and collaboration with the environment

It is worth mentioning that Irizar belongs to:



- **Innobasque, the Basque Innovation Agency** We partnered with Innobasque in 2020 to contribute to the Vision of “Positioning the Basque Country as a leading region in innovation”. That is the objective of Euskadi (the European region in which Irizar S.Coop. is located) for which Innobasque works with a long-term aspiration that it shares with the public and private agents that make up the Basque Innovation System.

Innobasque’s mission is “to promote, in collaboration with other agents, the development of innovation from its position as a singular agent of the Basque Network of Science, Technology and Innovation”. In its role as singular agent, it assists the Basque Government and the organisations of the system in the design, implementation and evaluation of policies related to science, technology and innovation.

The partner organisations are the true key players of the permanent innovation dynamic in the Basque Country. **We make local, national and international alliances and networks as a way to share experiences, provide services and gain influence and positioning at scale.** Because of their diversity and number, the member entities of

Innobasque are a good representation of the Basque Science, Technology and Innovation System, and they account for 62% of Basque R&D+i investment. Among Innobasque’s nearly 1000 members are entities associated with companies (51%), government (12%), education (11%), scientific-technological actors (9%), intermediaries (7%), social entities (6%) and associated people (5%). It’s notable that 91% of the Innobasque member companies are SMEs and 89% operate in strategic RIS3 sectors.

Irizar is also on the Innobasque board of directors and leads innovation strategies for the Basque Country.



- **Automotive Cluster of Euskadi - ACICAE** is the organisation whose mission is to dynamise the Base automotive sector and enable cooperation between Basque companies, so they can give a joint response to the major challenges presented by the sector. It is considered the first automotive cluster created in Europe. Since its inception in 1993, it has evolved rapidly and it has contributed to the growth in billing in the Basque automotive sector in the last twenty-five years. It’s made up of 300 companies that bill more than 20 billion and employ more than 120,000 people around the world, of which 40,000 are in the Basque Country.





- **Mobility and Logistics Cluster of Euskadi:** This is a private not-for-profit association. Its goal is to improve the competitiveness of its members, companies and agents in the Basque Country that work in the fields of logistics and supply chain, mobility, and infrastructures for both people and commodities. The 111 associated companies and organisations represent a turnover of 10,750 million Euros and 57,629 people around the world and allocate 356 million Euros for R&D+i.

At the petition of this cluster, in December 2022 Irizar participated with two speakers in the **2022 Basque Circular Summit**, led by the Basque government. You can see more details in the chapters about “Clients, passengers and citizens” and “The environment”.



- **Goierri Valley:** We are a magnet company of this alliance for the industrial transformation of the Goierri region of Gipuzkoa (where Irizar S. Coop. is located), through the real and active collaboration of the member companies, sharing knowledge and innovating to guarantee

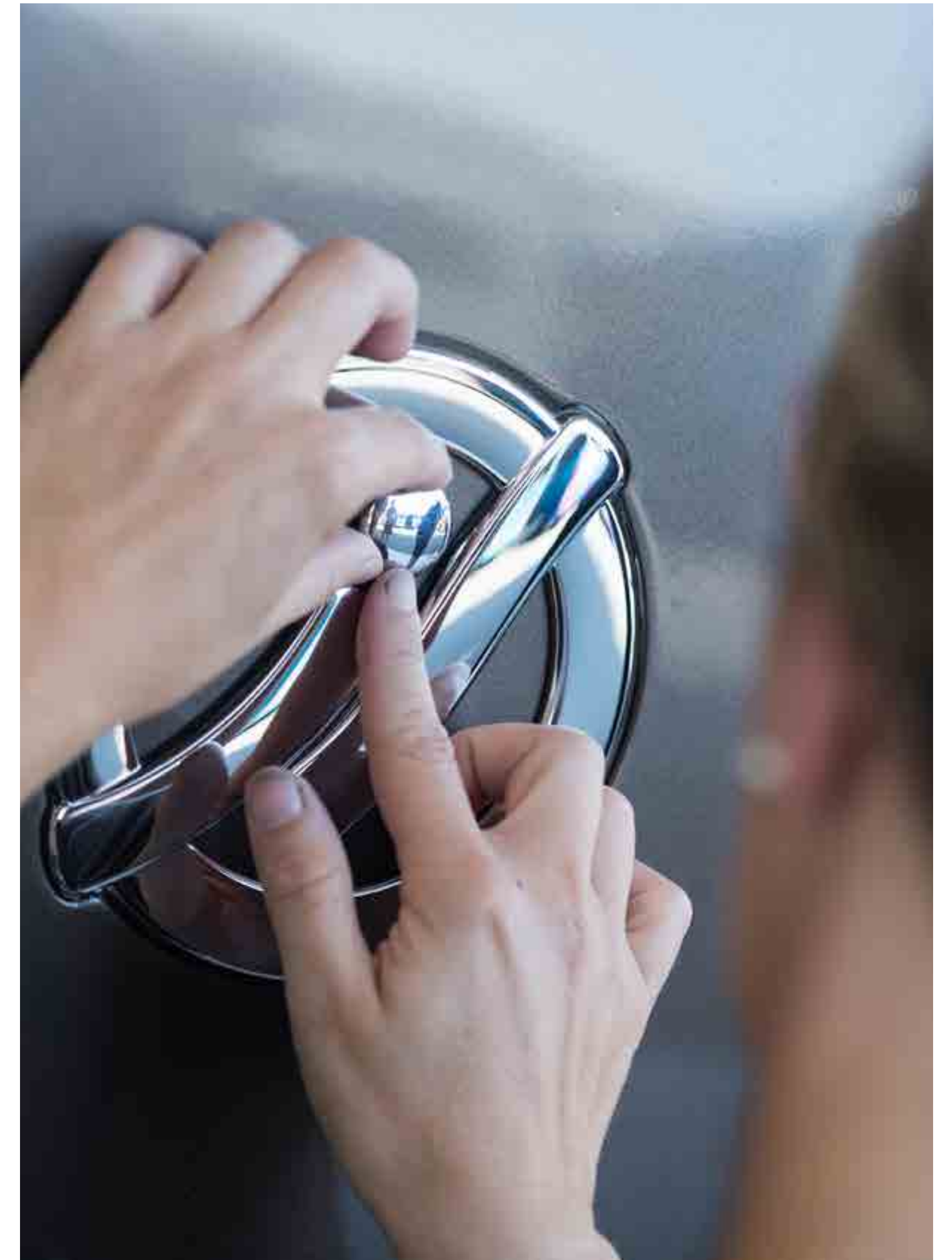
industrial competitiveness and future sustainability for our local area. The companies included in this alliance have joint sales of 4,100 million Euros and we dedicate 3% of sales to R+D+I, have production plants in 19 countries and employ 7,500 workers dedicated to the sectors of fittings, mobility, lifting, energy, electric motor, transport, machine tool, and other sectors.

You can see more details in the last chapter, about “Society”.

AERCE (Association of purchasing, contracting and supply professionals)



Given that purchasing management is a fundamental element to guarantee profitability and sustainable competitiveness, Irizar belongs to AERCE (Spanish Association of Purchasing, Contracting and Supply Professionals). **AERCE** is a professional association that brings together purchasing managers for medium and large companies, and whose purpose is the promotion, dissemination and training of techniques and the application of appropriate methodologies for proper and effective management of company purchasing, hiring and procurement.



WE CREATE VALUE FOR THE ENVIRONMENT

6

Contributing to the SDGs and goals of the UN 2030 Agenda

Priority SDGs



9.4. Infrastructure modernization, clean technology



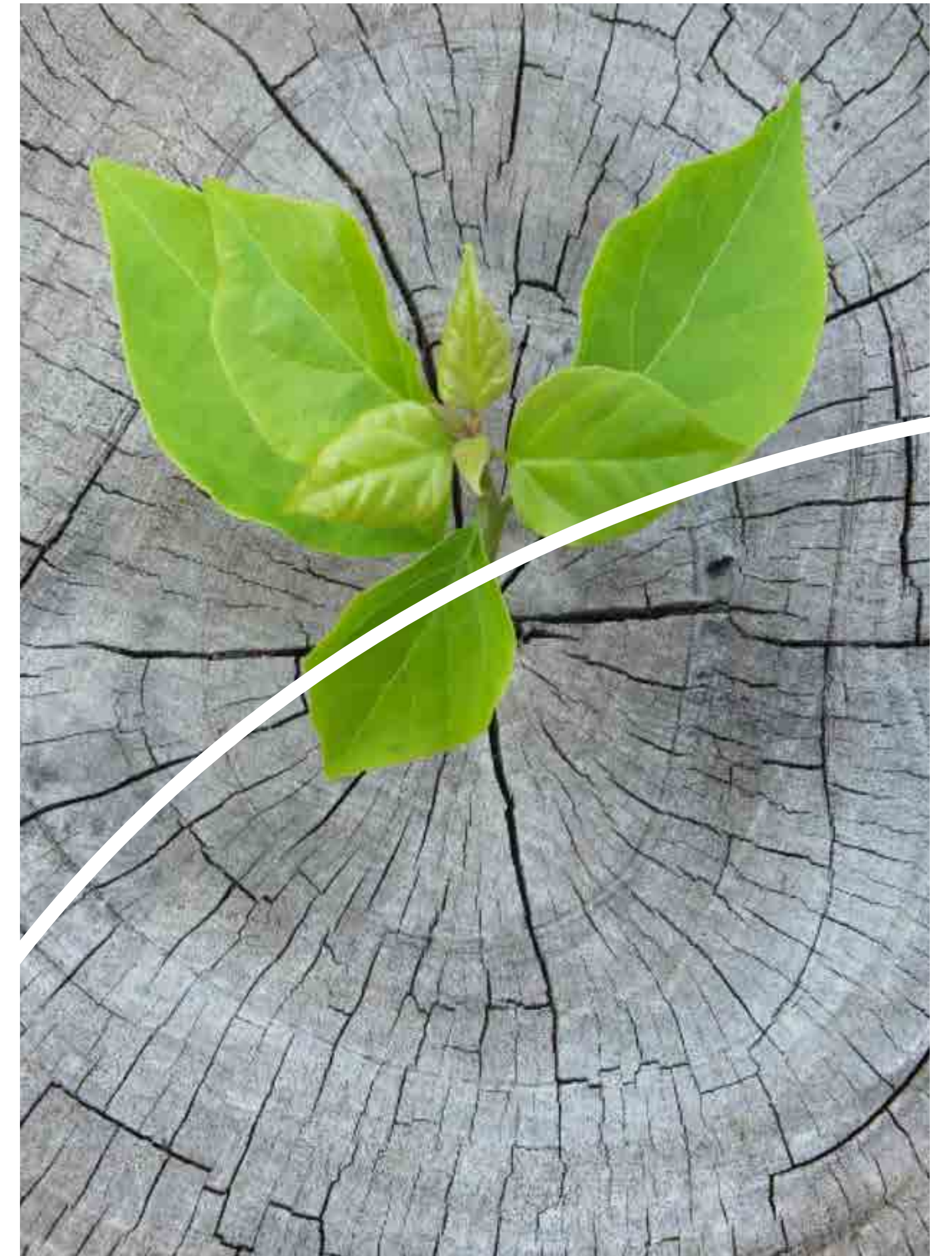
11.2. Providing access to public transport
11.6. Reduction of environmental impact in cities.



12.2. Achieving the efficient use of natural resources
12.4. Management of waste and chemicals
12.5. Prevention, reduction, recycling and reuse of waste
12.6. Adoption of sustainable practices in businesses
12.8. Ensuring education for Sustainable Development
12.B. Achieving sustainable tourism



13.1. Strengthening resilience and adaptation
13.3. Improving environmental education and awareness



WE CREATE VALUE FOR THE ENVIRONMENT

6

6.1. Environmental Framework and Priorities

- Commitment to the environment, integrated with the SDGs of the 2030 Agenda

6.2. Sustainable Products and Eco-innovation

6.3. Environmentally Responsible Production

6.3.1. Resource consumption efficiency

- Consumption of natural resources
- Consumption of chemical resources

6.3.2. We reduce the generation of waste and discharges

6.3.3. We minimise soil contamination

6.3.4. Committed to the circular economy

- Reuse
- Recycle
- Innovating in circular economy implementation methodology

6.4. Sustainable Supplier Management

6.5. Committed to the Struggle Against Climate Change

6.5.1. Air Quality and Maximum Energy Efficiency

- Energy efficiency of the activity
- Irizar S.Coop. carbon footprint
- Irizar e-mobility carbon footprint
- First electromobility factory with totally renewable energy in Europe

6.5.2. We promote the sustainable mobility of people

6.6. Contribution to Environmental Sustainability

6.6.1. We train and raise awareness among our personnel, customers and suppliers in the environment

6.6.2. Waste minimization campaigns

6.6.3. We participate in external environmental forums

6.1. Environmental Framework and Priorities

Our commitment to the environment dates back to 1998 when Irizar became the first European coach manufacturer to obtain **ISO 14001** certification. In 2000 we were the first major Spanish company to win the **European Quality Prize** (awarded by EFQM), whose evaluation also took into account environmental criteria (use and consumption of resources, conservation, emissions into the atmosphere, waste and recycling, recyclability of coaches, etc.).

The Irizar Group's electromobility division is, without a doubt, a clear exponent of our progress in this commitment. Irizar e-mobility likewise obtained ISO14001 certification in 2020, and is focusing its efforts on optimising consumption of raw materials and minimizing polluting substances and the impact of its vehicles on the environment.

That is why at Irizar we have evolved and increased our commitment to environmental protection and the achievement of more sustainable and efficient products and ways of working. Our continuous progress, as environmental pioneers, is reflected in this and in previous Sustainability Reports.

Among the most **significant principles of Irizar's environmental policy** are the progressive reduction of CO₂ emissions and contaminating substances, as well as the introduction of environmental criteria in the design of its products, encouraging a spirit of respect towards the envi-

ronment among its employees and partners.

We plan to improve our environmental policy in 2023 and validate the modifications in the AENOR audit.

Irizar environmental policy

- *The generation and use of more and more renewable energy in our plants.*
- *The incorporation of Best Available Technologies (BAT) in our manufacturing processes.*
- *The constant search for the best solutions for achieving the maximum reduction of VOC emissions. We can highlight our firm commitment to incorporating water-based paint into all our painting processes and recycling 100% of the solvents used in the painting process.*
- *Eco-efficiency and Eco-innovation: The implementation of measures for progressively reducing the environmental impact of the product.*
- *Responsible energy consumption and reduction of consumption, minimizing the emission of CO₂ into the atmosphere*
- *The promotion of the commitment of the people and deployment of the environmental management system in all the plants.*
- *Promotion, transparency and efficiency of resources throughout the supply chain, directly influencing suppliers.*
- *Support initiatives and campaigns with special emphasis on meeting the sustainability criteria in the extraction and processing of raw materials.*
- *Circular economy projects, focused on optimizing consumption and minimizing waste with landfill disposal, maximizing reuse or recycling.*



Commitment to the environment, integrated with the SDGs of the 2030 Agenda

As we put forward in chapter 2 about Irizar and **sustainable competitiveness**, in 2022 we took a big step in our commitment to the 2030 Agenda SDGs by measuring our impact on priority KPIs. We consequently decided to prioritise our sustainable value contribution to the environment.

We already dealt with environmental KPIs in three previous chapters:

- Commitment to clients, passengers and citizens: three about CLIMATE, two about RESOURCES and one EXTENDING SUSTAINABLE DEVELOPMENT
- Commitment to our people: one about CLIMATE and one EXTENDING SUSTAINABLE DEVELOPMENT
- Commitment to a sustainable value chain: one about CLIMATE and one EXTENDING SUSTAINABLE DEVELOPMENT












We will focus here on KPIs that have not been discussed before or groups that affect several stakeholder groups.

A. CLIMATE: KPIs for - Reducing total scope 1, 2 and 3 GHG emission – Electricity from renewable sources

B. RESOURCES: Two KPIs for: increasing waste reuse and improving energy efficiency in places where we carry out business activities.

F. EXTENDING SUSTAINABLE DEVELOPMENT: Like in previous chapters, support is also given to a KPI with our commitment to contributing to improvement in external (public and private) people and organisations.



PRINCIPLES OF THE GLOBAL COMPACT	SDGs	KPI	INDICATOR	2019	2020	2021	2022	OBJECTIVE	DATE OBJECTIVE
A. CLIMATE									
 DERECHOS HUMANOS  ESTÁNDARES LABORALES  MEDIO AMBIENTE	  	3. Reduce TOTAL GHG emissions Includes: Scope 1 and 2 CATEGORY 1: Direct GHG emissions and removals CATEGORY 2: Indirect GHG emissions caused by imported energy Scope 3 CATEGORY 3: Indirect GHG emissions caused by transport CATEGORY 4: Indirect GHG emissions caused by products Irizar uses CATEGORY 5: Indirect GHG emissions associated with the organisation's use of products	tCO ₂ eq			1,713,290 ISO14064-1:2019	Carbon footprints are verified one year later	-5 %	2022 - Annual
		4 Origin of electricity from renewable energy	% consumption of renewable electricity /total electricity consumption		0 %	52 %	100 %	100 %	2022-27 maintain
B. RESOURCES									
 ESTÁNDARES LABORALES  MEDIO AMBIENTE	  	7. Waste reused (using reuse, recovery and recycling processes) <i>Sum of waste bound for waste manager and bound for our IZIR brand</i>	% weight assessed waste / Total waste generated (Tm)		53 %	60 %	63 %	65 %	2023
		8. Improving electrical energy efficiency in our centres	<u>Kwh</u> consumed / working days / units billed <u>tCO₂</u> / working days / units billed			46.63 0.0126	26.1 0	39.55 (5% in 4 years) 1% annual 0	2025 2026-7 2022-27 maintain

BASE YEAR: year data in blue if shown in GOAL later

6.2. Sustainable Products and Eco-innovation

As shown in detail in chapter 3 about “Customers, Passengers and Citizens”, we develop and manufacture Premium products of our own brand and technology, with a holistic approach to protecting the environment. All our efforts are aimed at minimizing the emission of pollutants and noise and the impact of our vehicles on the environment. Among other aspects we address:

- Reduction of fuel consumption and TCO (total operating cost) for the customer, thus reducing environmental impact.
- We offer pioneering solutions to the different mobility needs of the future around the world. Reducing the impact of our vehicles and eliminating greenhouse gasses and noise emissions is our priority. All this in line with the Paris Agreement and the European Green Agreement.
- In 2017 Irizar created product category rules for the entire sector for drafting environmental product declarations.
- In 2019, we were the first company worldwide to obtain an Environmental Product Declaration (the international EPD system), which was an important step forward in our progress to be a European leader and to be at the forefront of eco-innovation and eco-design for the entire life cycle of the product. In 2021, we were the first manufacturer of electric buses to draft an Environmental Product Declaration (EPD), specifically for the ie bus NG.
- As we mentioned at the beginning of chapter 3. (about clients, pas-

sengers and citizens), since late 2022 at Irizar e-mobility we have used life cycle analysis (LCA) methodologies for the Energy 54Ah and Energy 65Ah batteries with the goal of measuring the environmental impacts associated with their entire life cycle and to work on optimising them.

- We share opinions and experiences and we have discussions with clients about their sustainability (economic-governance, social and environmental) concerns.
- We deliver eco-driving courses and efficient driving manuals for our customers.
- We recycle the batteries from our electric vehicles and give them a second life
- We manage resources carefully.
- Safety is a priority in all our developments.
- We give our clients all the environmental information about the coaches.



6.3. Environmentally Responsible Production

At Irizar not only do we think it is important to meet to the demand for more sustainable buses and coaches, we also think it is important to integrate sustainability principles into our own way of working. In this sense, we continue to focus on:

- Eco-design and **eco-innovation**, two approaches integrated into production
- Applying **circular economy principles at the design stage like optimising processes to minimise consumption** and trying to find a second life for waste and production surpluses
- Researching possible improvements for lowering the environmental impact associated with production through developing studies aimed at **knowledge of the environmental impact of facilities and processes**: reducing emissions, waste, competitive advantage, etc.

We measure the continuous progress of our environmental commitment by monitoring the **management indicators** for consuming materials and generating waste, etc. And we keep our end goal of optimising the use of resources, always trying to be efficient and reduce waste generation and dumping.

Since 2007, the **image project** has established criteria for order and cleanliness in our facilities, with continuous analysis and monitoring from day to day, with the aim of identifying operational improvement

measures, good practices and awareness. Our challenge is none other than from the involvement of all people to guarantee quality and optimization of work resources.

Another measure we put into practice in 2016 was centred on creating specific and detailed **best-practices manuals** for every work area, improving and optimising the processes or operations we deemed critical, which included the ones with the greatest environmental impact.

At Irizar, we keep making progress in the **circular economy** management model as a system for using resources where eco-design, optimisation, reduction, reuse and recycling comes first. All of that is geared towards **reducing the environmental impacts associated with production**. As we will see in more detail in section 6.3.4, the increase in demand for resources worldwide in the last century, due in part to the growth of the world population and emerging economies, has caused a large increase in the consumption of natural resources. This situation makes the current lifestyle, based basically on a linear economy, difficult to sustain. The circular economy proposes a paradigm shift in the use of resources and in relation to the environment: maintaining the life cycle of products and materials for as long as possible; reducing waste to a minimum; and reintroducing resources into the production cycle, creating value when goods reach the end of their service life.

6.3.1. Resource Consumption Efficiency

We pursue optimisation in selecting and reducing **materials in the value chain**. To those ends, we monitor the components used in each work station and adjust needs to the orders as much as possible and minimizing excess materials that may remain in the production line.

Among the main actions that we have implemented during the last decade are those that aim to reduce and optimize the consumption of products and materials used in the vehicle manufacturing process, mainly those that could have the greatest impact on the environment. For materials with the greatest impact, there are specific projects with actions that require detailed monitoring.

We carry out exhaustive management and monitoring of the consumption of natural resources and of the chemical products used.

Consumption of natural resources

Our management of energy **resources (gas and electricity)**, although here we deal with the evolution of consumption, will be addressed in more detail in section “6.5.1. Air Quality and Maximum Energy Efficiency”.

Consumption of Natural Resources (per coach produced)

	WATER (m3/coach produced)	ELECTRICAL ENERGY (kWh/coach produced)	NATURAL GAS (kWh/coach produced)
2013	9.29	6,292.81	9,090.48
2014	9.72	5,655.24	7,914.71
2015	10.68	5,240.75	8,201.92
2016	8.98	4,832.85	8,184.06
2017	9.60	4,810.74	8,207.32
2018	8.84	4,682.95	8,618.53
2019	9.87	4,698.32	8,341.00
2020^(*)	14.40	7,568.11	12,243.36
2021^(*)	12.81	8,749.70	14,415.75
2022^(*)	10.51	5,791.35	9,228.49

^(*) In 2020 and 2021, unlike previous years when the indicators only showed data from the main production plant (Lezeta), data are provided for all Irizar S.Coop production plants.

Absolute resource consumption (Lezeta)

	2017 (Lezeta plant)	2018 (Lezeta plant)	2019 (Lezeta plant)	2020	2021	2022
Water (m³)	12,716	12,084	13,270	8,351	5,845	9,528
Electrical Energy (kWh) (1200kw)	6,431,955	6,431,955	6,313,376	4,111,416	4,013,918	6,051,955
Natural gas (kWh)	10,866,469	11,781,650	11,218,650	6,420,233	6,511,621	9,643,770

Although in 2020 and 2021 the **absolute data on water and energy consumption (electricity and natural gas)** showed significant decreases compared with 2019 as a consequence of the decrease in the production rate, there was an increase to pre-pandemic levels in 2022.

- **Water consumption:** Water is a scarce good and at Irizar we are aware of it, so we implement measures geared towards reducing the use of it to preserve it. It is noteworthy that the production process at Irizar has low water consumption in comparison with other companies in other sectors. The reduction in consumption is due exclusively to the drop in production: less water for cleaning structures, lower sanitary water use (showers) and for cooking.

The main actions carried out for more sustainable water use can be divided into two sections:

1. Consumption in the Production Process. Consumption that is periodically monitored to analyse its evolution and take the measures needed to control it. In recent years, work in this area has been strengthened with new implementations of closed circuits, purifying systems and water treatment that guarantee good water treatment of process water so it can be reused.
2. Internal Consumption Consumption by workers, company dining areas, cleaning facilities and similar procedures. Irizar has done awareness raising campaigns for staff to try to reduce that consumption and minimise its impact.

• **Electrical power consumption:** The relative decrease in 2022 testifies to the actions put into practice since 2013 for controlling consumption that are set forth in the energy efficiency action plan, which are discussed in detail in the energy efficiency section.

- **Natural gas consumption:** It can be seen that there was a 36% decrease in gas consumption per coach billed in 2022 in regards to the previous year due to the recovery of coach production. We should indicate that we believe the decrease is due in large part to the measures used in the last year for monitoring consumption, which let us improve our energy efficiency.

Actions carried out that affect **electricity and natural gas:**

- In 2021 energy qualification studies were done for the offices in all the plants.

- We have been monitoring the energy consumption of the main facilities since the start of 2021.
- In 2021, we analysed and corrected how the readings work and we placed metres in areas where we saw they were needed.
- In 2022 a control and detection panel was put into action in the entrance booth of the facilities that lets us detect and correct deviations in gas and electricity consumption early.



Consumption of chemical resources

This consumption is exclusive to the plant (Lezeta), which is where the main painting activity associated with this indicator is done.

Consumption of chemical resources (per surface are treated)

	Paint consumption/m ² Surface area treated (kg/ m ²)	Solvent consumption/m ² Surface area treated (kg/ m ²)
2013	0.404	0.231
2014	0.347	0.196
2015	0.493	0.163
2016	0.450	0.163
2017	0.479	0.139
2018	0.510	0.158
2019	0.461	0.131
2020	0.582	0.169
2021	0.571	0.152
2022	0.432	0.142

Absolute resource consumption (Lezeta)

	2017	2018	2019	2020	2021	2022
Paint (DMA, EVA) (kg)	385,326	412,298	364,737	2 15506	151500	238,551

• Paint consumption

Even though the absolute data in 2020 showed a significant decrease in consumption, also due to the effect of the pandemic, there was an increase in paint consumption per square metre of surface area treated, specifically 26.25%. The increase occurred despite the work done on the implementation of the paint management plan because of the several productivity factors mentioned previously (primarily the decrease in high-end coaches and integral coaches, etc.). Paint consumption per square metre was reduced in 2022, specifically by 24.44%. The decrease is associated with the work done on implementing the paint management plan and the various productivity factors mentioned previously (the decrease in large coaches and specifications with a large amount of paint, etc.).

- **Solvent consumption:** In a similar way, in 2022 solvent consumption per square metre of surface treated fell considerably, but like the rest of the cases its ratio increased by 9.79%. The solvent reduction plans under way since 2007 are having positive and remarkable results. And with the plans we are making a direct contribution to **reducing emissions of volatile organic compounds**, such as:
 - Formulation and development of new water-based technologies.

- Replacing products with other ones that have less solvent content
- Establishment of a product control methodology.
- Optimising production processes
- Continuous audits by the supplier and Irizar.
- Continuous training of workers.
- Investments aimed at improving the facilities
- Renewing work equipment with more efficient equipment
- etc.

For both paint and solvent, despite the downward trend of recent years in consumption per m² of both continuing in 2022, it is associated, in large part, with changing the small commercialised product and low specifications chosen by clients.



6.3.2. We Reduced the Generation of Waste and Dumping

Applying measures that guarantee more efficient consumption also enables us to act in reducing waste. To achieve this, we consider it essential to understand the materials used in each process of the manufacturing chain and, thus, to adjust the quantities of materials that we use during the production processes. In this vein, the environment area works with purchases, supplies and warehouse, to reduce the amount of packaging or commit to returnable materials.

The Image Project also manages surplus production and surplus or obsolete materials, by reintroducing them into the process or looking for another alternative way out, through exhaustive control of all the material found in the production lines. To achieve this, periodic audits are carried out for critical materials, reallocation of surplus materials in cars on each line, etc.

As an example, in 2020 we started supplying bits for work tools with a vending machine. That supply system still lets us reduce annual consumption of bits and the derived waste.

In 2022 new waste was included in the collection systems in the various online centres with Irizar's ambitious goal of zero waste going to the landfill. Among the most notable are waste from: film, organic and urban packaging

Waste Generation (kg / coach produced)

	Hazardous waste	Non-hazardous Waste
2013	241.40	1,191.07
2014	234.68	1,184.57
2015	286.37	1,236.19
2016	285.30	1,211.22
2017	306.75	1,157.06
2018	320.52	1,020.62
2019	352.36	998.90
2020^(*)	433.92	1,296.30
2021^(*)	361.11	1,369.99
2022^(*)	314.78	1,132.48

^(*) In 2020 and 2021, unlike previous years when the indicators only showed data from the main production plant (Lezeta), data are provided for all Irizar S.Coop production plants.



Absolute resource consumption

	2018 (Lezeta plant)	2019 (Lezeta plant)	2020	2021	2022
Hazardous waste (kg)	438,151	473,919	281,616	198,970	308,204
Non- hazardous waste (Kg)	1,395,183	1,343,519	841,280	613,436	983,626

The **absolute data** for **hazardous and non-hazardous waste generation** shows a recovery of pre-pandemic trends. However, a decrease in the **relative indicators per coach** can be seen due to the diverse improvement actions implemented.

- **Hazardous Waste Generation:** In absolute numbers, hazardous waste generation increased by 64% in 2022. Taking into account the ratio of hazardous waste generation per coach, a decrease was nevertheless observed, going from 361.11 kg of hazardous waste/coach in 2021 to 314.78 kg of hazardous waste/coach in 2022.

At Irizar we keep implementing improvement actions that let us be more efficient in the area of waste generation. We believe the indicators are starting to recover their situation before the pandemic, in accordance with production.

The data makes it possible to show a stable trend of waste genera-

tion, and it shows the continuous improvement in waste segregation, as well as other improvement measures that have been implemented.

- **Generation of non-hazardous waste** In 2022, the same as in the hazardous waste section, the absolute data shows an increase in the amount of non-hazardous waste generated. Nevertheless, taking into account the ratio of non-hazardous waste generation per coach there has been a decrease of 12.01%, going from 1087.56 kg/coach in 2021 to 956.95 kg/coach in 2022, which is a decrease in generating this type of waste.

It should be highlighted that we keep working on the environmental management plan and doing various circular economy projects and collaborations with other organisations to optimise the supply, storage and use of materials in production, find alternatives to dumping waste materials in a landfill, and improve the separation of hazardous and non-hazardous waste that is generated and collected directly in the plant.

In addition to the decrease in the ratio of waste generated per coach, the decrease seen in the ratio of inert type 2 waste that will be disposed of in a landfill is important. All of that has made the percentage of waste recovered reach its highest figure yet at 68.05%, with an increase of 4.51% in comparison with 2021.

Among the actions put in place, we should highlight the second segregation done through the intermediate waste handler Urkiondo, as well as the countless circular economy projects put into action at Irizar to bring value to waste, for which they have received recognition.

We are also constantly promoting the circular economy and we col-

laborate with chassis manufacturing brands (Mercedes, Scania, MAN, etc.). We return disassembled chassis parts to them so they can be re-used. It is very notable because of the large volume of parts, the complexity of their production and high value. And because it is a clear example of our application of the circular economy to the supply chain. In 2022 40,278 Tn of plastic and metal parts were disassembled and returned to suppliers, which is equivalent to avoiding 857,138 kg of CO₂ emissions.

Improvements in discharges: Irizar has invested in the best available technology (BAT) for treating water before it is discharged. And they periodically monitor the quality of the water through monitoring bodies (OCAs). Likewise, they do ongoing awareness raising campaigns for reducing consumption and discharge.

6.3.3. Minimising Ground Pollution

At Irizar we have identified the points of production that risk soil contamination, and we adopt specific control and prevention measures to minimize and even eliminate the risk.

Likewise, in accordance with the commitment to continuous improvement, innovations and alternatives offered by the market for the inclusion of new measures in the annual action plan are reviewed and stud-

ied annually.

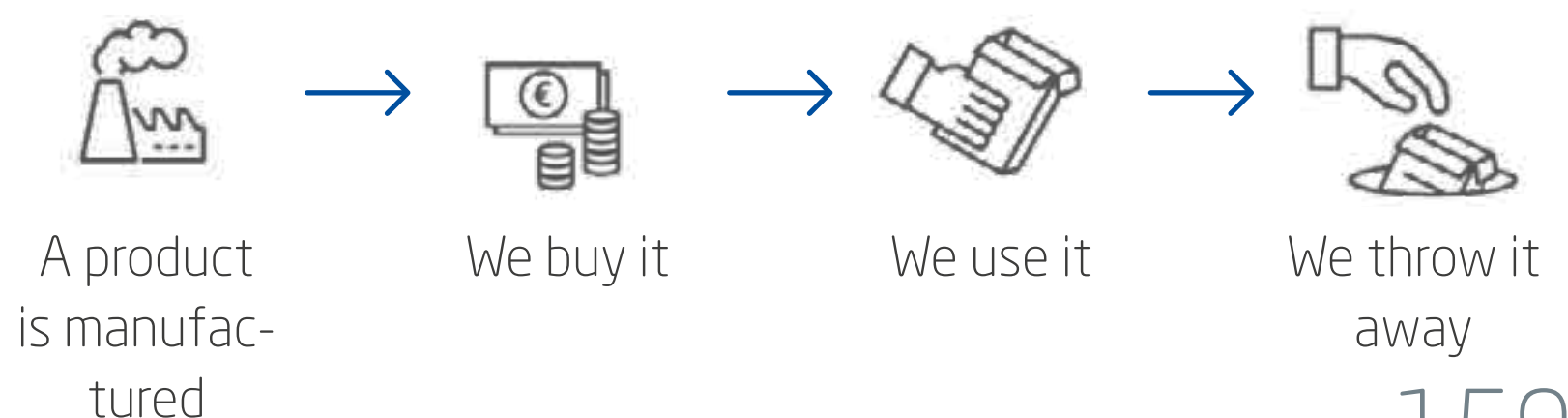
Among the most notable measures is the application of a superfloor treatment to the ground. The treatment makes it possible to close the pores on the surface of the ground using a mechanical treatment, which in that way reduces its permeability and minimises the risk of pollution associated with production.

6.3.4. Committed to the Circular Economy

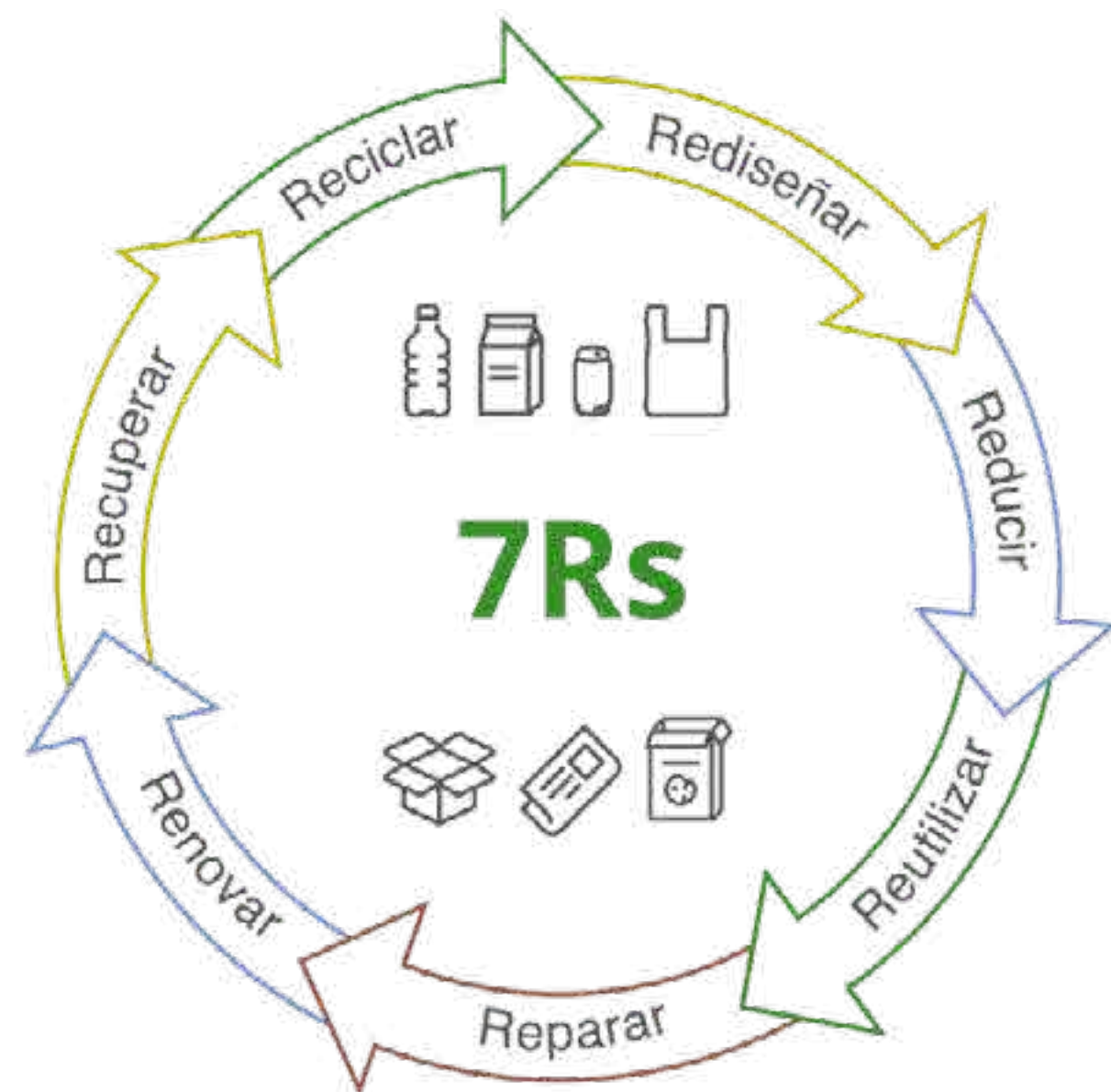
The Circular Economy is a model that prioritizes the use of resources and the reduction of raw materials. This system thus becomes an alternative to the current extraction, production, consumption and disposal model – the linear economic model. It proposes a paradigm shift in the use of resources and in relation to the environment: maintaining the life cycle of products and materials for as long as possible; reducing waste to a minimum; and reintroducing resources into the production cycle, seeking a second life for waste and surplus production.

The **7Rs** concept, where products are designed to be reused, is needed for that.

Linear economy



Circular economy



In the previous sections we have addressed eco-innovation (redesign) and reduction of consumption and waste. In chapter 3. (about our customers, passengers and citizens), we talk in more detail about eco-innovation (we consider environmental factors as additional criteria when making decisions in the design process of our products), reducing, re-covering and recycling batteries. In chapter 5. (dedicated to our external partners, supply chain and alliances) we also discussed repairs.

We can highlight two other lines of work in this section: reuse and recycling

Reuse

We try to find a second life in the plant itself for waste that cannot be reintroduced into the production chain. We have reused products such as leftover LED strips that cannot be used in new coaches for LED lighting in new rooms; and we have used discarded seats to create new seats in meeting rooms.

Following this line of use in 2020, a **“second hand space”** has been created where surplus production materials (fabrics, mats, etc.) are deposited so that workers can use them for other uses outside of Irizar. The aim once again is to reuse materials and minimize waste.

Recycling

Differentiated collection for new waste categories was implemented in 2020. As an example, several collection points for drill bits used in the shop have been installed. This waste is delivered to an authorized manager who recycles them to provide them with a second life.

Likewise, we stay in continuous contact with suppliers that make it **possible to replace traditional materials with others so the end-of-life is more sustainable**. An example of this is the replacement of plastic cups in all vending coffee machines with compostable cups, which also includes the “no cup” option to prevent the generation of the corresponding waste.

At the Irizar Group we are convinced of the benefits of knowing how to integrate the **Circular Economy concept internally and in close**

collaboration with other organisations. We are therefore looking for ways to reuse, including externally, surplus production and waste. This has led us to undertake various projects in collaboration with other associations and organisations:

- **Creation of Izir - Irizar’s Circular Economy brand:** At the end of 2019, Irizar’s own brand, Izir, was created, for products created from surplus production. The Izir project (Irizar Zirkularra) has the main mission of the promotion of the commitment of all Irizar people in aspects of environmental, social and economic sustainability, and specifically, the circular economy.





The innovativeness of the project lies in how it includes the element of social commitment. In collaboration with the **EMAUS** foundation, a non-profit organisation dedicated to various social and environmental projects, a line of merchandising products is being created from textile waste from the factory.

Textile remnants from making the seats or interior linings are collected separately and sent to **Eko-Center**, which is a textiles workshop that employs people at risk of social exclusion where merchandising items are created with the **Iziz** brand.



In 2020 we took a step further in this area, by designing the catalogue of products for merchandising, as well as another range of products aimed at protecting parts for various production processes. On the other hand, to show and share the progress of the circular economy with the citizens of Gipuzkoa, we have given a coach to the Provincial Council of Gipuzkoa (provincial government) to demonstrate its **Trakziona** project carried out in collaboration with different companies, among which Irizar is also present, in an exhibition on the project in different neighbourhoods of the city of San Sebastián.

Ondarreta eta Concha-ko toldo eta karpén olanekin eta gure besaulkietako larru gorriarekin egindako osagarri txuriurdinak

Irizarren beste urrats bat emari dugu jasangarritasunarekin eta ekonomia zirkulararen aldeko konpromisoarekin, Emausek sortutako eta Gipuzkoako kostaldean inspiratutako moda jasangarriko bilduma berria parte hartuz.

Gure Iziz proiektuaren barnean, gure besaulkietatik soberan dagoen materiala ekarri dugu Tela Marinera izeneko bilduma honetarako. Poltsak, motxilak, diru-zoropak eta nezeserak sortzen dira, Ondarretako eta Konchako hondartzako olanak eta karpak aprobetxatuz.

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Complementos txuriurdirin elaborados con las lonas de toldos y carpas de Ondarreta y la Concha y cuero rojo de nuestras butacas

En Irizar damos un paso más con nuestro compromiso por la sostenibilidad y la Economía Circular participando en la nueva colección de moda sostenible creada por Emaus e inspirada en las costas de Gipuzkoa.

Enmarcado dentro de nuestro proyecto Iziz, hemos aportado material excedente de nuestras butacas para esta colección llamada Tela Marinera, que crea bolsos, mochilas, monederos, neceseres... aprovechando las lonas de toldos y carpas de la playa de Ondarreta y La Concha.

Como agradecimiento a esta colaboración toda la colección está disponible con un 10% de descuento para todos nosotros. Si quieres adquirir algún producto entra en www.sindespentzia.es e introduce nuestro **código de descuento: Irizar10**

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Descuento 10%

Irizarko pertsona guztientzat
Para todas las personas de Irizar

DESKONTU KODEA: Irizar10
CÓDIGO DESCUENTO: Irizar10

The creation of the Izir products made possible a 16,000 kg reduction of waste for us in 2021. We estimate that annually we can avoid generating more than 20,000 kg of waste, in addition to the economic and environmental costs associated with managing and treating it. In 2021 work was continued on defining products and prototyping new samples to make new merchandising products with the brand.

Irizar received several external acknowledgements in 2020 related with Izir, and they continue making a large impact in the media, where Irizar has been positioned as an industry leader in circularity.

- **BIRSORTU Project - Collaboration with the EMAUS and HIK-HASI Foundations** In addition to the circular economy brand itself, we continue collaborating on this project with EMAUS and the HIK-HASI association. Waste derived from production is used and donated to partner educational centres, so that children can experiment and create with them. There are currently collaborations with pre-school and primary school students, but the goal is to also expand it to secondary education and professional training. This is where Irizar's waste is considered to have more relevance, especially in subjects related to technology and industry.

So far items like spotlights, hubcaps, rugs, LED strips, etc. have been donated.

In June 2021 we joined the CIFP Don Bosco LHII project for experimentation in the education community, and that also promotes the circular economy, where material discarded by the company is made available to students.

- **Collaboration with UGLE** (Alto Urola Vocational Training School), a post-compulsory social initiative education centre. Irizar continues to

donate materials for reuse by students at the UGLE facilities: different work tables and shelves, which are no longer used by Irizar and go to UGLE for a second life.



- **Collaboration with Fanny Alonso, sustainable fashion designer and creator of cultural projects, since 2020** The waste donated by Irizar becomes raw material.
 - Textiles from roof surplus, bus parts and seats, etc.
 - LED strips discarded due to defects
 - Scraps of smooth wood and wood covered in scrap cloth from cuts
 Two projects got under way in 2021:
 - a. The "Women of Cotton" exhibition project which continued in 2022



b. Clothing collection project at the autumn-winter fashion show [#gkgreenfashion](#) organised by the Environmental Department of the regional government of Gipuzkoa



- **Collaboration with TECNUN-University of Navarre**, through two projects:

a. Circular Market Since 2019, we have been collaborating on developing and starting up this platform for selling or donating unused items. Circular Market is a collaborative platform to connect companies, with the aim of helping them create value in their operations. It allows them to turn waste and by-products from one organisation into the raw material of another organisation. It also allows users to: connect to make joint purchases, share resources and services. It facilitates lowering environmental impacts, significant cost and energy savings, and ability to create new jobs and business opportunities. www.circularmarket.es

Irizar collaborates with this new platform by hanging unused products, like concrete blocks, scraps of rubber, carpet remains, polyester scraps, etc.



b. Sarea See details in section 6.6.3.

- **CircularTrans Project - Collaboration with Mondragon University** Another collaboration project launched in 2020 together with the University of Mondragón was CircularTrans. The main objective of the project is the creation and validation of a digital platform to guide the transition of industrial organisations towards a circular economy model in Gipuzkoa. CircularTrans defines a five-step process: diagnosis, results, selection of opportunities, roadmap and action plan, thus defining a process of continuous improvement. The INMOIN Circular project, which will be discussed below, is the second phase of this project.
- We joined **Terracycle** in 2019. It is an organisation that collects certain materials that will be given a second use, and they reward collection points that we will reinvent into social actions. We got an action running, which continued in 2022, aimed at gathering used writing materials from our staff, including pens, correction pens, highlighters, etc.
- **FOOTPLASTIC Project** In 2021 Irizar joined this project along with Sarennet, Kaytek, Birziplastic and MIK-Mondragon for developing an IOT and blockchain platform for monitoring, evaluating and predicting plastic leaks in corporate value chains. The goal is to develop a technological solution to monitor, calculate, analyse and predict micro and macro plastic leaks in product life cycles or at a corporate level. We think this is highly relevant for plastic managers/vaporizers.
- **Biziberritu Proiektua /Resuscitation Project** Irizar launched this project in 2021 under the leadership of Hik and Mondragon Unibertsitatea. Its main goal is to carry through the idea of the book "Go deep into experimentation, revitalize" and provide opportunities to go deep

into experimentation and make different materials available to people and focus on experiences. For the project they will:

- Contact companies to talk about waste materials and decide on the organisation
- Collect surplus materials, make them attractive and make them available to people/schools
- Provide training, consulting, ideas, experiences and research about experimental proposals
- Try to see needs and respond to the needs of the schools
- Set up a space for doing personal projects and collect material, etc.

<https://www.youtube.com/watch?v=W-3IQNSewP8>

- **Igartubeitia Museoa and Kotoi - European Heritage Days** We collaborate on the European Heritage Days, which this year are focused on sustainability. We are also participating in the "FROM WHERE AND TO WHERE" (DE DÓNDE Y HACIA DÓNDE) exhibition that brings value to the heritage power of Igartubeitia and sustainability, creating a dialogue about our commitment to waste reduction. It has pieces made by the sustainable brand Kotoi, who reuse waste textiles from Irizar to make us reconsider our past, present and future of sustainability actions. Several sewing workshops for adults and children where items were made using surplus textiles from Irizar's production have been held in the framework of this project. People are informed about concepts like the circular economy and sustainability, etc. through those workshops.

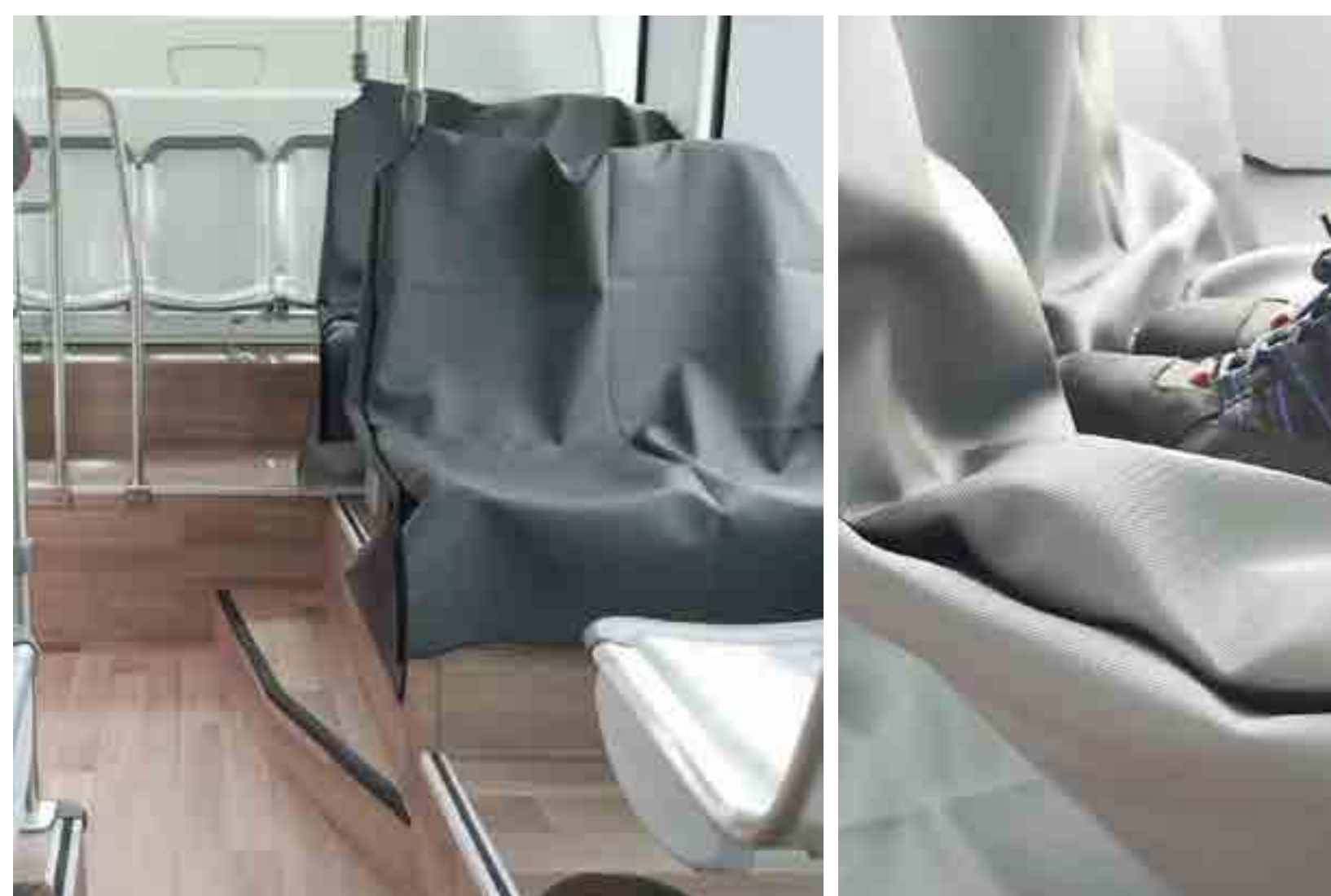


- **Restorable - Maialen Porroi** Maialen Porroi is a designer who we collaborated with on her fine arts thesis project called "RESTORABLE" (REHABILITABLE). It was a project that worked on fashion pattern design through textiles from a sculptural point of view. Irizar donated surplus textiles from their process of manufacturing roof linings for the project.

Insofar as **Irizar e-mobility**

- In 2020 they started their collaboration with the **Emaús** social foundation with the goal of giving a second life to waste generated during the vehicle manufacturing process. In 2022, we can highlight:
 - o They used surplus textile materials from roof linings for their bus-

es so Emaús could make covers for the seats and dashboards of their buses. The covers help protect the bus interior by preventing abrasions and damage during the production process. In that way, an interesting circle is closed in which waste becomes a resource (we used 216 kg of textile material). And, furthermore, they are manufactured in a social way.



- o A second life has been given to the boxes of wood removed from Irizar chassis and to the surplus wooden spools for production to create a garden at the Karmelo school in San Sebastián.



- o Everybody is encouraged to bring the clothes they no longer use for internal clothing collection to give them a second life.

- Collaboration with Ekomodo** In 2021 Irizar e-mobility joined in with the work Irizar S. Coop. was already doing with Ekomodo to transform their waste into office material for their workers in 2021 and 2022.



Innovating in circular economy implementation methodology

We also made progress in innovative projects in collaboration to facilitate circular economy methodology and techniques in organisations.

- **INMOIN Circular:** This is a project financed by the Department of Economic Promotion, Tourism and Rural Areas of the regional government of Gipuzkoa together with the collaboration of Mondragón Unibersitatea and the clusters of: Mobility and Logistics of the Basque Country, Aclima and GAIA

The main goal of the project is to research how to develop a model of indicators that makes it possible to integrate the circular economy (CE) into an organisation and areas or departments of an organisation (management, sales, financial, marketing, product/service development and R&D, production, purchasing and supply, SAT, IT and general services), at the same time that it deals with the relationship with the sustainable development goals (SDGs).

In 2022, 123 indicators were identified which have been related with CE strategies and solutions, life cycle and departments to be able to identify and cover the needs organisations may have.

In addition, a new model of indicators is being created to be able to meet all the needs of organisations with an emphasis on all the functional areas being able to work aspects of the CE.

- **Hazitek Sustainability Indicators** We collaborate with other companies on the HAZITEK 2021 "Life Cycle Sustainability Assessment service" project for developing a service that can perform integral sustainability evaluations of products and services of companies

throughout their entire life cycle from an environmental, economic and social point of view. In parallel, the creation of a certification service is planned for 2023 with which this service can be certified and accredited by third-parties.



6.4. Sustainable Supplier Management

The enormous importance we give to managing sustainable suppliers at Irizar has already been shown in detail in chapter 5 about external collaborators, the supply chain and alliances - Sustainable Supply Chain:

- Sustainability requirements for our suppliers, including environmental requirements
- Supply of cells for batteries
- Environmental behaviour questionnaire

The purchasing team is promoting the use of raw materials from sustainable origins, with little environmental impact.

In addition, the environment area participates in **environmental audits of suppliers**.

- In 2020 the visit to the Urkiondo Ekolor facilities non-hazardous waste manager was notable to see their new facilities and processes and jointly analyse alternatives aimed at minimising dumping waste in landfills.
- No visits were made to managers in 2021 due to the Covid-19 restrictions. We started doing visits again in 2022.
- In 2022, questionnaires about environmental behaviour were sent to Ecoiruña and Bildu S.L. hazardous waste managers. The results will be taken into account when planning new improvement actions.

6.5. Committed to the Struggle Against Climate Change

The fight against climate change is the greatest challenge of the 21st century for the **health of the Earth**; glaciers are melting and forests are being depleted and the biodiversity of our planet is being destroyed. But the challenge is even greater for **people's physical and mental health**, given that one quarter of illnesses in the world are caused by risks related with the environment. And the effects of the changing climate directly threaten the lives and livelihoods of human beings, also causing hunger and malnutrition.

Climate change is a reality and all social, economic and public agents must join forces for its mitigation. We are in a new stage of climate transition in which the Irizar Group, from its Sustainability strategy, has also been working to contribute to the fight against Climate Change.

The limited nature of traditional energy sources, energy dependence on foreign countries and environmental impact are aspects that have made us consider plans aimed at achieving the energy efficiency of our organisation. Plans that, in order to be effective and reliable, cannot address reduction alone: they must show a route towards the complete transformation by following the Sustainable Development Goals of the 2030 Agenda, **especially SDG13**.

Our fight against Climate Change, we also address it especially in:

- In the sections of chapter 3 about clients, passengers and citizens related with decarbonisation (3.3., 3.4., 3.5. and 3.6.), where we see the reductions in fuel consumption and GHG emissions from **using our vehicles** depending on the kind of drive system (scope 3 down-stream).
- In sections "5.3. Sustainable supply chain" and "5.5. Irizar Group level logistics optimisation" of chapter 5 about external collaborators, the supply chain and alliances: sustainability requirements for **suppliers** and reducing CO₂ emissions from **transporting goods** (scope 3 up-stream).

In this chapter, we will tackle energy efficiency and air quality management together as it is related with:

- Our **activity at our facilities** (scope 1 and 2), and
- **indirect emissions caused by transport, products we use and emissions associated with the use of our products** (scope 3).

All the actions that we will see here also highlight that the Irizar Group wishes to actively and decisively contribute to a sustainable and low-carbon future.



6.5.1. Air Quality and Maximum Energy Efficiency

Energy efficiency of the activity

Energy efficiency is based on optimizing energy consumption, through the implementation of measures that minimize energy losses and on adjusting energy consumption. In this sense, the new European guidelines have set new goals, focused on the one hand on achieving reductions in energy consumption by promoting energy efficiency and, on the other hand, on reducing greenhouse gas emissions.

In recent years at Irizar, we have carried out various actions focused on transforming conventional forms of energy consumption with a commitment to achieving energy efficiency:

- Replacing conventional lighting with low consumption lighting
- monitoring of our consumption
- conducting energy audits
- installing various automation systems and devices to avoid unnecessary consumption in our facilities
- carrying out various energy studies and analyses that allow us to identify facilities, equipment and processes in which energy consumption can be optimized

With the goal of grouping together all the actions aligned with energy efficiency, with an external energy manager in 2021 Irizar started implementing an uncertified **Energy Management System** that lets them monitor consumption in detail, minimise inefficient use and implement improvement actions. All the information related with energy management and the actions carried out or planned are centralised with the system.

All the improvements in energy consumption have lead to a **reduction in total gas and electricity consumption and, consequently, the CO₂ emissions associated with them**, which we expect to continue in coming years.

The evolution of gas and electricity consumption can be seen in section “6.3.1 Resource consumption efficiency”.

We are firmly committed to investing in the **Best Available Technologies** that allow us to make our commitment to contributing to the fight against Climate Change into a reality, thus participating actively in the energy transformation.

An important point to highlight is that, [since June 2021, the origin of the electrical energy supplied to all Irizar S.Coop. and Irizar e-mobility centres is 100% renewable](#). The impact of that measure on CO₂ emissions can already be seen in the corporate carbon footprint for 2021.



Irizar S.Coop. carbon footprint

In 2020 and 2021 we did the calculation and verification of the carbon footprint for the business activities of Irizar S.Coop. according to the **ISO14064-1:2015** standard for our **main production plant** (Lezeta). Later we recorded our Carbon Footprint at MITECO (Ministry for the Ecological Transition and the Demographic Challenge).

That let us know and put improvements plans into action to reduce the scope 1 and 2 GHG (greenhouse gas) emissions:

- Scope 1: Direct GHG emissions from sources that belong to or are controlled by the organisation itself
 - Scope 2: Indirect GHG emissions associated with generating electricity acquired and consumed by our organisation
- In our 2020 and 2021 sustainability reports we included the evolution of scope 1 and 2 emission for the Lezeta plant.

In 2022, we did a study and certification of the energy qualification of all of Irizar’s non-production facilities and made an action plan to improve efficiency.

In 2022 Irizar did a calculation and external verification of the carbon footprint of Irizar according to the **ISO14064-1:2019** standard. We **expanded the scope of** the verification to include:

- **Categories 1 and 2 (scopes 1 and 2) of all our facilities** (not just the main plant)
- all the **categories (3, 4, 5 and 6) associated with scope 3 indirect emissions**





Later we recorded our Carbon Footprint at MITECO (Ministry for the Ecological Transition and the Demographic Challenge).



The results of the current calculation for our weighted relative carbon footprint are presented below. For the calculation we used weighted

data relative to vehicles billed for categories 1, 2, 3 and 4 and vehicles on the road (category 5), which made it possible to obtain the total relative carbon footprint for 2021. At Irizar we understand that relativised data for coaches is more representative than absolute emissions (yearly totals). We will evaluate the impact evolution based on that and we will set goals correspondingly.

Classification of emissions	Weighted relative carbon footprint tCO ₂ eq	Weighted relative carbon footprint tCO ₂ eq by scope	Scopes
Direct Emissions	0.11	0.14	Scopes 1 and 2
Category 1: Direct GHG emissions and removals	0.11		
Indirect Emissions	100.18		
Category 2: Indirect GHG emissions caused by imported energy	0.04	100.15	Scope 3
Category 3: Indirect GHG emissions caused by transport	0.14		
Category 4: Indirect GHG emissions caused by products the organisation uses	0.37		
Category 5: Indirect GHG emissions associated with the organisation's use of products	99.63		
Total Irizar S. Coop. Carbon Footprint		100.18	

The change in the standard used gives us an even greater scope for measuring the impact of our greenhouse gas emissions, and it lets us evaluate the benefits that are the consequence of the actions implemented better.

Using this carbon footprint certification, and with [2021 as the base year](#), in 2022 we redesigned an ambitious **2022-2025 action plan** for progressively reducing consumption and reducing the associated GHG emissions, with a reduction goal for the first period. And we have created a number of lines of action that we will follow throughout this cycle.

You can see more information related with [CATEGORY 3: Indirect GHG emissions caused by transport](#) from:

- [Upstream transport \(materials to/from Irizar\)](#) is the section with the most weight and improvement of it is being worked on by the logistics area with haulers (road, ship and air). You can see more details in section “5.5. Irizar Group level logistics optimisation” in chapter 5 about external collaborators, the supply chain and alliances.
- Although it is far from the previous one, [employee commutes](#) is the second most important in this category. You can see more details in section “6.5.2. We promote the sustainable mobility of people”.

Regarding [CATEGORY 4: Indirect GHG emissions caused by products Irizar uses](#): We are evaluating strengthening sustainability requirements for our suppliers. See details in section “5.3. Sustainable supply chain” in chapter 5 about external collaborators, the supply chain and alliances.

[CATEGORY 5: Associated with using the organisation’s products](#). This is where 99% of our emissions come from, given that even though we manufacture vehicles with lower and lower emissions, we take into account the emissions made by all the vehicles we have manufactured

and remain on the road. The primary strategy we use is [to put more and more sustainable vehicles on the market](#), details about which can be seen in chapter 3. about our clients, passengers and citizens.

The 2022 carbon footprint data, which will be calculated and verified in 2023, lets us re-evaluate our focus and keep reducing the impact of our emissions.

Irizar e-mobility carbon footprint

At the end of 2021 at Irizar we did the calculation and external verification of the carbon footprint for Irizar S.Coop. activities following the **ISO14064** standard [in our Irizar e-mobility facilities](#). Later we recorded our Carbon Footprint at MITECO (Ministry for the Ecological Transition and the Demographic Challenge).

That let us know and put improvements plans into action to reduce the scope 1 and 2 GHG (greenhouse gas) emissions:

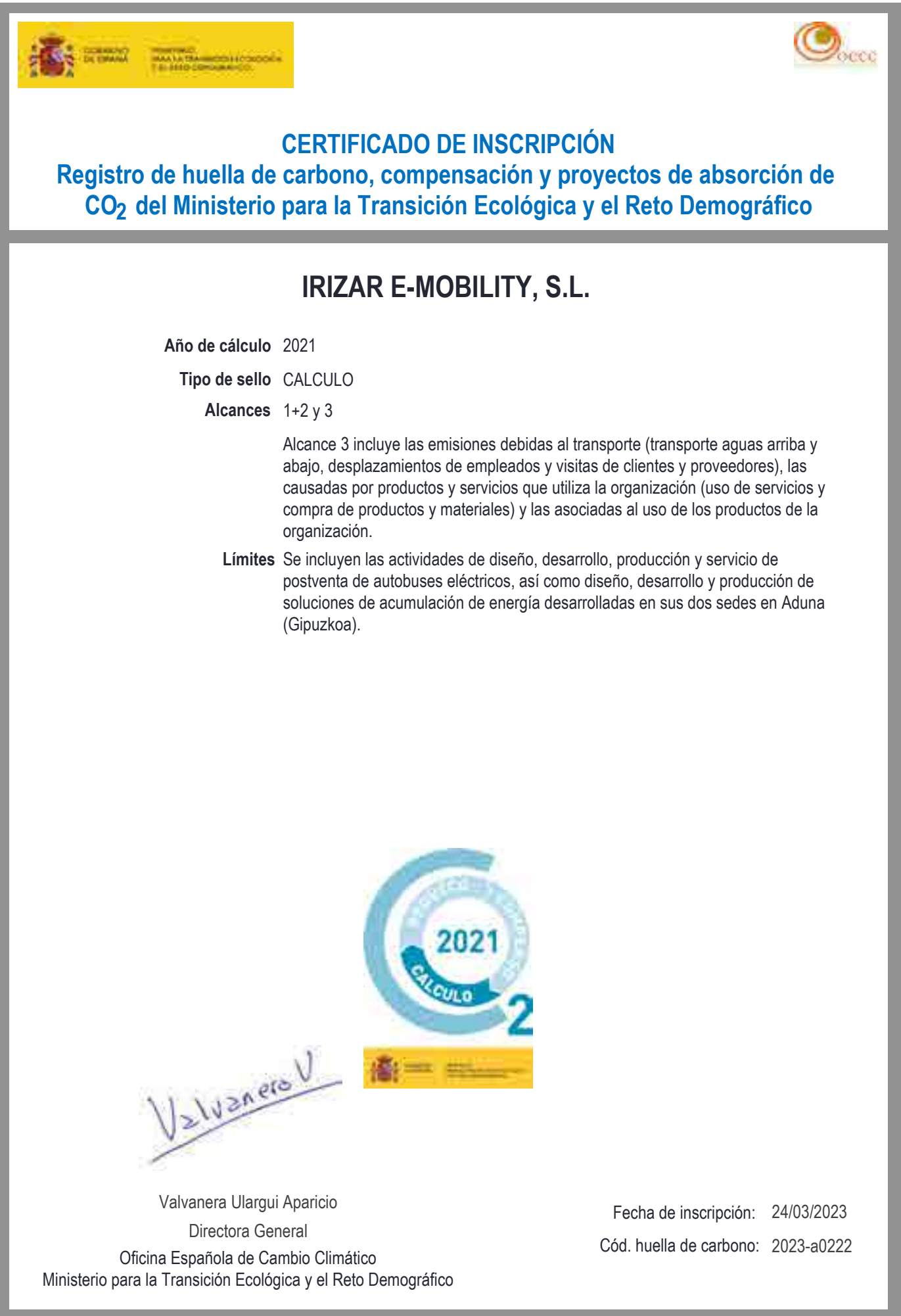
- Scope 1: Direct GHG emissions from sources that belong to or are controlled by the organisation itself
- Scope 2: Indirect GHG emissions associated with generating electricity acquired and consumed by our organisation

In 2022 Irizar e-mobility also did a calculation and external verification of their carbon footprint using the **ISO14064-1:2019 standard**. **Expanding the scope of** the verification to:

- **categories 1 and 2 (scopes 1 and 2) for all their facilities**
- **all the categories (3, 4, 5 and 6) associated with scope 3 indirect emissions**



They subsequently registered their carbon footprint at MITECO (Ministry for the Ecological Transition and the Demographic Challenge).



The results of the current calculation for our weighted relative carbon footprint are presented below. For the calculation we used weighted data relative to vehicles billed for categories 1, 2, 3 and 4 and vehicles on the road (category 5), which made it possible to obtain the total relative carbon footprint for 2021. At Irizar e-mobility we understand that relativised data for coaches is more representative than absolute emissions (yearly totals). We will evaluate the impact evolution based on that and we will set goals correspondingly.

Classification of emissions	Weighted relative carbon footprint tCO ₂ eq	Weighted relative carbon footprint tCO ₂ eq by scope	Scopes
Direct Emissions	2.78	6.51	Scopes 1 and 2
Category 1: Direct GHG emissions and removals	2.78		
Indirect Emissions	81.01		
Category 2: Indirect GHG emissions caused by imported energy	3.74	77.28	Scope 3
Category 3: Indirect GHG emissions caused by transport	11.06		
Category 4: Indirect GHG emissions caused by products the organisation uses	58.79		
Category 5: Indirect GHG emissions associated with the organisation's use of products	7.43		
Total Irizar e-mobility Carbon Footprint		83.79	

With the implementation of this Carbon Footprint certification, and taking 2021 as the base year, in 2022 we designed an ambitious **2022-2025 Action Plan** for the gradual reduction of energy consumption and the reduction of GHG gas emissions, associated with a reduction target for the first period, establishing a series of lines of action that will be fulfilled throughout this cycle.

First fully sustainable energy electromobility factory in Europe

In 2018, Irizar e-mobility was launched, the first electromobility factory in Europe It was designed and manufactured based on eco-Sustainability concepts with a type A energy efficiency certificate, the highest existing in Europe. It includes a warehouse and domestic water heating system that works by using the surplus steam from a company located in the adjoining plot.

In December 2019 it also became the first fully sustainable energy electromobility factory in Europe, thanks to the commissioning of the largest photovoltaic solar park in the Basque Country (**EKIAN**), where Irizar is one of the largest investors with 3 megawatts purchased. This is one more example of the importance that we give to the establishment of Alliances with other entities, as we have already addressed in other chapters of this Sustainability Report.





The EKIAN solar park is a public private initiative promoted by the Basque Energy Agency (EVE) and KREAN and has 25 investor companies. It consists of 67,000 latest generation solar panels, 355 watts each, generating total installed capacity of 24 MW, thus doubling the current solar power of the Basque Country. At full output it will produce about 40,000 MWh per year, i.e. electricity equivalent to the electrical consumption of 15,000 families in one year and will prevent the emission of about 14,600 tons of CO₂ if that energy were produced by other fossil-based energy sources.

6.5.2. We Promote the Sustainable Mobility of People

In addition to our commitment to sustainable mobility through our products (as we already saw in chapters 2 and 3, customers, passengers and citizens), we also promote applying these principles in our own organisation. We created a **sustainable mobility plan** to promote best practices in transporting people that we are using at Irizar, like using collective transport and other more sustainable means (thus reducing scope 3 category 3 upstream transport GHG emissions).

In 2019, agreements with bicycle supply companies to make **subsidized electric bicycles** available to Irizar people at very competitive prices materialised. In 2019 we also started the **IRIKLETA project** where we adapted our parking facilities and loading areas for electric bicycles with solar power generation.



In 2021, we participated in several sessions of the Mobility and Logistics Cluster of Euskadi about “Workplace Commuting Plans”

We reviewed and updated the **work mobility plan for people at Irizar in 2022**. Surveys were done related with the mode of transport used by workers that, in conjunction with other information provided by diverse areas at Irizar, made it possible to update the plan and plan future actions.

6.6. Contribution to Environmental Sustainability

At Irizar we are convinced that we must continue to advance to achieve a world that is more sustainable and respectful of our environment as the main guarantee for future generations. It necessarily involves a change of mentality in our current forms of consumption. Hence, in addition to the continuous training of people in the environmental area, we give special importance to the development of training and awareness-raising campaigns, both internally and externally.

6.6.1. We Train and Raise Awareness for People, Clients and Suppliers about the Environment

Persons

- We periodically hold training and awareness raising sessions aimed at our workers about sustainable mobility that are promoted by EVE (Basque energy agency) and are centred around efficient driving.
- All new people who join our organisation are provided with an Efficient Driving Manual, inviting them to play an active part in our commitment to sustainable mobility.

- In 2022 we held training days for the **commercial area** about new laws and to inform them about the main lines of action in the area of the environment, which will result in a better transfer of environmental information from Irizar to our clients.

Customers

In chapter 3. about customers, passengers and citizens ", we discussed:

- Eco-driving courses for our customers, and
- the efficient driving manuals that we include in all coaches.

Suppliers

The environment area delivers different training sessions to staff from various cleaning providers, those involved in the Image Project (see section 6.3.) or painting:

- Order and environment
- Management of hazardous waste and goods
- Training in Good Practices in different production areas
- Storage of Chemicals.



6.6.2. Waste Minimisation Campaigns

As an integral part of our Circular Economy project, internal **awareness campaigns** are conducted for all Irizar people with the aim of optimizing sorted waste collection as much as possible so that landfill disposal is minimized. In 2020, due to the pandemic situation, these sessions were not held.

- In 2021 **campaigns for collecting work clothes were done**
- In 2022 we also did a **personal clothing collection**, where we encouraged everyone to bring clothes they no longer used so they could be given a second life.

Ekarri zure arropa eta eman bigarren bizitza bat!

NON - DÓNDE

Zer utzi? ¿Qué dejar?

Arropak - Ropas
Zapatak - Zapatos
Osagarriak - Complementos
Poltsuak - Bolsos
Gerrikoak - Cinturones
Mahai - zapiak - Manteles
Malandreak - Sábanas
Koltxak - Colchas
Gortinak - Cortinas

Nola utzi? ¿Cómo dejar?

Boltsatan - En bolsas

¡Trae tu ropa y dale una segunda vida!

INGURUMENAK BEHAR ZAITU! ¡EL MEDIOAMBIENTE TE NECESITA!

Sustatu kontsumo kontziente eta arduratsua	Fomentar el consumo consciente y responsable
Egin Ekonomia Zirkularraren alde	Apuesta por la Economía Circular
BA AL ZENEKIEN ehungintza munduko bigarren kutsatzailerik kutsatzalleena dela?	¿SABÍAS QUE la industria del textil es la segunda más contaminante del mundo?

- And in conjunction with Irizar e-mobility (as we mentioned in section 6.3.4 about the circular economy), in 2022 Irizar also did a **campaign to make use of surplus wood from production**.
- There was an outing in the Mater boat to **collect waste at sea**. We are aware of the importance it has, because according to the United Nations between 19 and 23 million tons (approximately equivalent to the weight of 2000 Eiffel towers together) of plastic waste ends up in lakes, rivers and seas every year.



6.6.3. We Participate in External Environmental Forums

By publicizing the work and good practices that we follow at Irizar to move towards a more environmentally sustainable world, we can encourage other organisations to join this new stage of ecological transition and a new development model. This is why we also attach importance to our participation in different Fairs and Conferences focused on learning about the experiences of organisations that work in this regard.

For example, in 2021 Irizar participated in:

- **Collaboration with TECNUN-Universidad de Navarra, SAREA project.** In 2020, we started participating to develop a set of strategies that strive to integrate the circular economy into business operations, taking into account the role of all stakeholders in accelerating this new model with an agreement with the regional government of Gipuzkoa. As the first action for this project, a workshop was organised in November with various public and private entities called **“Transition Towards a Circular Economy”**. In March 2021, Irizar collaborated on the interviews done with people who are pioneers in the circular economy with the goal of obtaining information that helps prioritise, mobilise and measure implementation actions under certain circular economy strategies that help accelerate the transition in the short term. In collaboration with the Regional Government of Gipuzkoa, in October Tecnun published a report titled **“Initiatives and actors in implementing the circular economy”**, which describes the conclusions.

- **Etorkizuna Eraikiz Project - Collaboration with the University of the Basque Country UPV/EHU.** It is a sustainability research project carried out by the UPV/EHU in conjunction with the regional government of Gipuzkoa. Etorkizuna Eraikiz is a model whose final goal is to carry out a public agenda through public policies derived from proposals from previous spaces and from the society of Gipuzkoa to create open and collaborative governance.

Irizar shared ideas and concepts in the focus group held in November 2020 alongside various representatives from Gipuzkoa and the mobility sector. In May 2021, they participated in another round of interviews to delve deeper into the circular economy and the mobility sector.

In 2022, Irizar’s participation in the **Basque Circular Summit 2022**, held in Ficoba, Gipuzkoa led by the Basque government, with two speakers can be highlighted.





Egun on,

Me gustaría agradecer de forma personal vuestra participación en la Exposición **"Zirkularrak-Circulares"** de productos circulares fabricados en Euskadi. La exposición, que ha estado compuesta por más de 140 productos relacionados con las cadenas de valor presentes en Euskadi, permite disponer de una visión integral del potencial de la economía circular en cualquier sector de actividad y es un reflejo del recorrido de más de 20 años aplicando criterios ambientales desde la fase de diseño y desarrollo de los productos, por parte de todos vosotros.

En este enlace tenéis acceso a la galería completa de imágenes, para que escojáis las que consideréis oportunas. Además, hemos editado un pequeño video que también podéis utilizar en vuestras redes sociales:

- Ver y descargar video: <https://youtu.be/Bv4BHqRNwY> (Youtube)
- Ver y descargar imágenes: **"Zirkularrak-Circulares"** (Flickr)

Como sabéis, la exposición tiene carácter itinerante y volverá a estar abierta al público del 22 al 27 de noviembre en Ficoba, Recinto Ferial de Gipuzkoa, coincidiendo con el **Basque Circular Summit**, al que tengo el placer de invitaros. El congreso, cuya **inscripción está abierta**, tiene como lema **"Walking the talk"**, se desarrollará a lo largo de tres jornadas cuyos objetivos son:

- Acercar a las empresas vascas los nuevos retos y oportunidades en Economía Circular impulsados por el Green Deal Europeo.
- Mostrar el compromiso del Gobierno Vasco para apoyar a las empresas y sus resultados (nuevos métodos, herramientas, guías y manuales...).
- Trasladar el trabajo desarrollado y los resultados innovadores obtenidos por parte de las empresas vascas (Basque Ecodesign Center, PYME Circular Euskadi y proyectos de Ecoinnovación) en Economía Circular.
- Aportar criterio e impulsar a las empresas vascas, a las entidades públicas y entidades locales, y a la juventud comprometida, a intensificar su apuesta por la economía circular.
- Visibilizar y posicionar internacionalmente a Euskadi como "vanguardia del sur de Europa" en economía circular empresarial.

De nuevo muchas gracias y nos vemos, en Ficoba, en el marco del **Basque Circular Summit**

Alexander Boto Bastegieta
Zuzendari Nagusia / Director General

Ihobe, Ingurumen Jarduketarako Sozietate Publikoa / Sociedad Pública de Gestión Ambiental

Ekonomiaren Garapen, Jasangarritasun eta Ingurumen Saila - Eusko Jaurlaritza
Departamento de Desarrollo Económico, Sostenibilidad y Medio Ambiente - Gobierno Vasco



WE CREATE VALUE FOR SOCIETY

7

Contributing to the SDGs and goals of the UN 2030 Agenda

Priority SDGs



- 8.1. Maintaining economic growth
- 8.5. Achieving full employment and decent work
- 8.7. Eradication of slavery, trafficking and child labour



- 9.2. Promotion of inclusive and sustainable industry



- 11.2. Providing access to public transport
- 11.6. Reduction of environmental impact in cities.



- 12.6. Adoption of sustainable practices in businesses
- 12.8. Ensuring education for Sustainable Development
- 12.B. Achieving sustainable tourism

Cross-cutting SDGs



- 5.1. Ending discrimination



- 16.2. Eradication of child abuse, exploitation, trafficking and child exploitation
- 16.11. Promotion and application of laws and policies (HR)

Secondary SDGs



WE CREATE VALUE FOR SOCIETY

7

7.1. Our Commitment to Society

- Social Commitment Integrated with the 2030 Agenda SDGs

7.2. Annual Tribute to Retirees

7.3. We Collaborate on Activities with our Industry and Socio-Economic Environment

- With local business organisations
- With industry associations

7.4. We Collaborate on Educational Activities

7.5. We Collaborate on Cultural Activities

7.6. We collaborate on sports activities

7.7. We collaborate on development cooperation activities

- With local organisations
- With NGOs on international projects

7.1. Our Commitment to Society

The Irizar Group's mission is the unequivocal commitment to the growth and creation of wealth and employment, with personnel in the local environments and countries where we are present. In addition, as you can see in more detail in the chapters about sustainable competitiveness and people, the best reflection of our strategic commitment in sustainability with society are the charts of the evolution and **commitment to employment** in the local areas where we operate.

“Our relationship with society will be respectful, open and participatory, helping to create wealth and employment, culture, education, and sport in our immediate environment, as well carrying out social work in our immediate surroundings and in the world's most disadvantaged areas.”

In keeping with this strategy, we make great efforts, both financially and in our dedication to Irizar personnel, to contribute to building a better socio-economic environment and a better society of which we are an integral part.

In addition to the **commitment to society in general** that we are going to reflect in this section, we have also addressed it in other chapters:

- In chapter 2, about Irizar and **sustainable competitiveness**, we see our commitments to sustainability and association with bodies that are global leaders. We also share our experience in different forums

to contribute to increasing awareness about sustainability with our stakeholders and society in general.

- In chapter 4 about people **we also saw that we work with** local **training centres and universities**.
- In chapter 5 about external collaborators, the supply chain and alliances, also with the **responsible management of our supply chain** we can highlight our deep commitment to our immediate surroundings (Gipuzkoa) with the high number of purchases in the province and employing underprivileged people with the collaboration of organisations with social purposes.

In chapter 6 about the environment we also saw our cooperation with other local organisations (fundamentally not-for-profits like the EMAUS foundation) in order to, in line with **our circular economy strategy** be able to give a second life to surplus production materials and share our experience to raise awareness in our area.

In the framework of our commitment to society every year we dedicate a significant sum of money to not-for-profit activities related with: our industry, education, culture, sport and, primarily, social cooperation both domestically and internationally. Not only to boost global development, but also as an avenue for internal growth. The criteria for selecting and specifying the duration of support according to the scope of each collaboration project are determined through the Irizar Company Board, and all employees are informed through the communication channels established for this purpose.

We didn't stop doing it despite the 2020 and 2021 pandemic. In 2022 our contribution for education and promoting cooperatives and other purposes of public interest **was, like in previous years, more than 1 million Euros**. The amount was primarily given to not-for-profit activi-

ties.

The most significant lines of activity in recent years are listed below, particularly new initiative introduced in 2022.



Social commitment integrated with the 2030 Agenda SDGs

As we put forward in chapter 2 about Irizar and **sustainable competitiveness**, in 2022 we took a big step in our commitment to the 2030 Agenda SDGs by measuring our impact on priority KPIs. At the Company Board we consequently decided to prioritise social contribution to **co-operation development activities** including: NGOs and associations that do work to benefit education, health and gender equality and to eradicate poverty, hunger and inequalities



PRINCIPLES OF THE GLOBAL COMPACT	SDGs	KPI	INDICATOR	2019	2020	2021	2022	OBJECTIVE	DATE OBJECTIVE
F. EXTENDING SUSTAINABLE DEVELOPMENT									
 DERECHOS HUMANOS  ESTÁNDARES LABORALES  MEDIO AMBIENTE  ANTICORRUPCIÓN	 5 IGUALDAD DE GÉNERO  8 TRABAJO DECENTE Y CRECIMIENTO ECONÓMICO  9 INDUSTRIA, INNOVACIÓN E INFRAESTRUCTURA  11 CIUDADES Y COMUNIDADES SOSTENIBLES  12 PRODUCCIÓN Y CONSUMO RESPONSABLES  13 ACCIÓN POR EL CLIMA  16 PAZ, JUSTICIA E INSTITUCIONES SÓLIDAS  OBJETIVOS DE DESARROLLO SOSTENIBLE	23. Contribution to improvement in the sustainability of other external people and organisations (public and private). <u>Outside of Irizar S. Coop.</u> <u>Sharing our knowledge of and experience with sustainability in forums and training and awareness raising activities</u> <ul style="list-style-type: none">• High priority stakeholders Clients, suppliers, distributors, etc.• Group coach companies• Other Group companies• Students, external organisations and other people in the social environment	no. actions / year	8	12	25	43	Minimum 20 actions / year	annual
		24. Social Commitment to Cooperation Development Activities <u>Includes: NGOs and associations that do work to benefit education, health and gender equality and to eradicate poverty, hunger and inequalities</u>	% € Development cooperation activities / € total designated for not-for-profit activities	55 %	50 %	42 %	56 %	50 % minimum	annual

BASE YEAR: year data in blue if shown in GOAL later

7.2. Annual Tribute to Retirees

Every year the retirees come to their annual event, the tribute they have been given for many years at Irizar. At the event they can enjoy a whole day in the company of their friends and former workmates, where there's never a loss for memories and anecdotes from the old days. At the same time, the retirees still have bonds with the people and knowledge of the activities that were part of their life for many years.

In 2020, like in 2021, due to the Pandemic, we were unable to celebrate the annual event with retired people, so we sent them a gift instead.

In 2022, we could have the retirees' tribute day in an ideal setting. It started with a visit to the Balenciaga museum in Getaria followed by a meal. Of course, we travelled in Irizar coaches all together.



7.3. We Collaborate on Activities with our Industry and Socio- Economic Environment

We have a **bus fitted out for exhibition that we altruistically loan to various social initiatives**. Since 2016, it has been used as a Mobile Classroom for the “Kultura Digital@” campaign in 5 towns in Gipuzkoa. It was an educational awareness raising campaign promoted by the Regional Government of Gipuzkoa to foster the creative use of technology through teaching programming at an early age (8-16) and, in this way, foster technological pursuits. The figures for the number of participants in the workshops, the media impact of the programme and the degree of satisfaction were very positive, which reinforces our opinion about the programme’s future relevance and suitability. Unfortunately, because of the pandemic, it has not been possible to do this initiative since 2020.

With local business organisations

In addition to all the organisations and clusters we have alliances or collaboration agreements with (as seen in the chapter about external collaborators and local alliances), we can highlight these two that we collaborate with to contribute to the positive socio-economic impact at a very local level:

- In 2022 we kept actively collaborating with the **Goierri Valley**, initiative, which is an industrial partner in the metal-mechanic sector that is leading the industrial transformation of the Goierri valley, where Irizar S. Coop. is located).
- For many years we have also collaborated with the **Gipuzkoa Chamber of Commerce**, financing their activities related with **SDG8**- “Promoting sustained, inclusive and sustainable economic growth, full productive employment and decent work for everyone”:
- Employment and social insertion
- Business creation
- Business continuity
- Sharing knowledge and business experience.



With industry associations

We also annually **sponsor several industry associations**, like Asetra, Aetram, Atuc, Fecalbus, Fenebus and Consorcio de Madrid, with the goal of promoting and positioning bus and coach transport as a mode of transportation that is necessary for the future. All of them have been working and are continuing to work to find solutions and economic support for the survival of public transport operators. A sector that in the first phase of the pandemic suffered greatly and was stigmatized given the campaign to use private vehicles to prevent the spread of the virus. What has become very clear and evident in this crisis is that **public transport plays a priority and fundamental role in the energy transition and that the bus is a key element in the new mobility and the achievement of sustainability objectives**.

Since 2020 the importance of staying united, playing an active role to defend our industry, its high added value and promoting economic recovery since the beginning of 2022, has become evident.



7.4. We Collaborate on Educational Activities

Irizar collaborates in various ways within the field of education:

We actively engage in activities with the objective of **sharing our experience with society** and generating concerns that may be reflected in the progress of other organisations, educational centres, and people. We do this through the organisation of open days at our facilities and through participation in external conferences (in universities and business schools) and discussion forums among various national and international organisations. In all these forums, it is becoming increasingly relevant and there are more and more demands for us to share **how we approach sustainability at Irizar**. In 2020 and 2021, the in-person open doors days had to be cancelled. They were replaced by virtual get-togethers. However, in 2022 we could go back to the in-person event.

The events and actions where we share our experience in sustainability with our stakeholders and society at large are discussed in various chapters of this report (especially chapter 2 about our sustainable competitiveness and chapter 6 about the environment).

We continue our yearly sponsorship of the **“voyage of life”** cycle of the summer courses at the **University of the Basque Country**. The event is a continued learning and open training cycle, as well as a reflection on the world in which we live with the aim of contributing as much as possible towards shaping a better and desirable future. In 2022 those

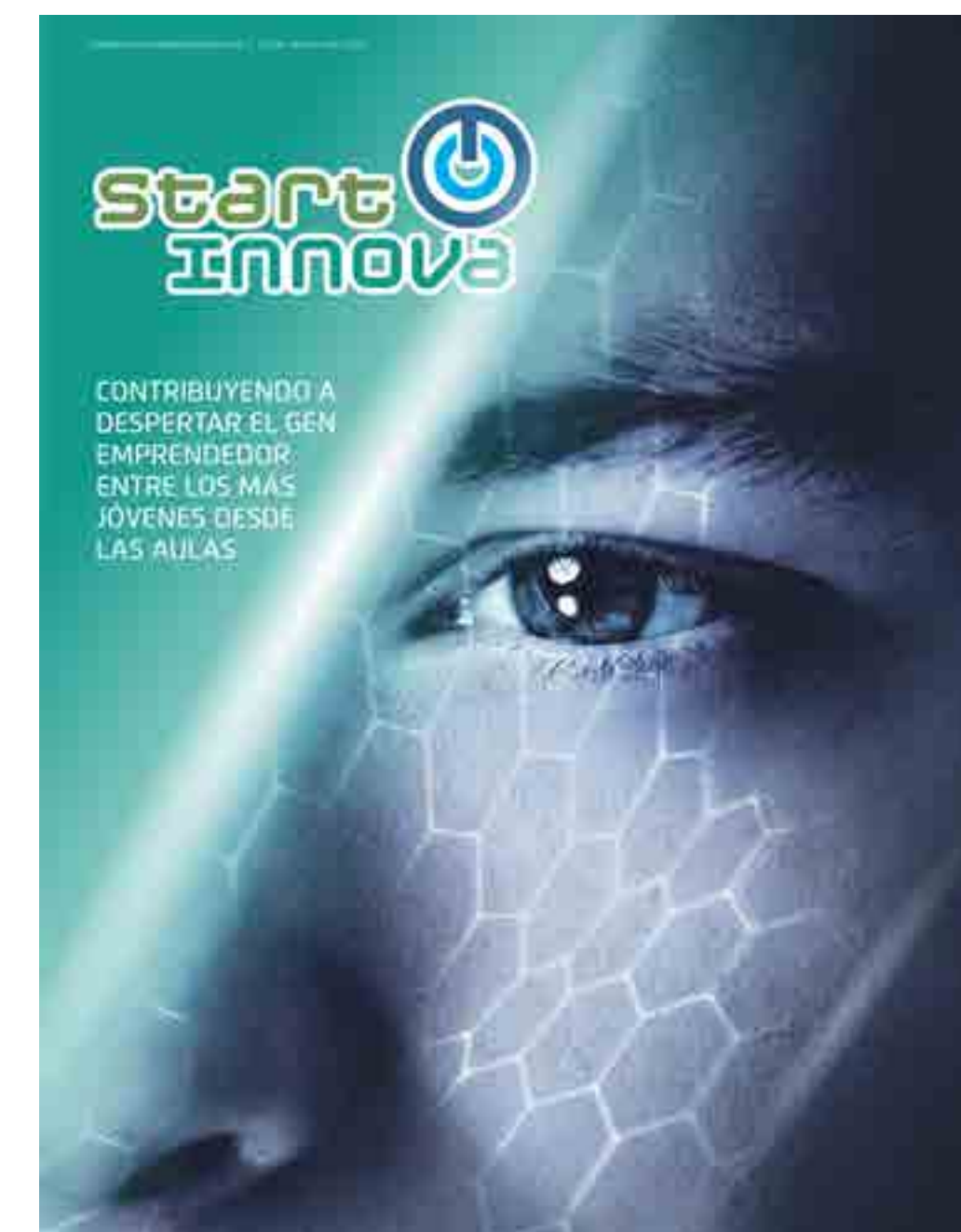
courses kept being adapted to the situation caused by Covid-19 like in 2021, there were in-person, remote and mixed courses.

Along with town councils and other companies, we are a member of the **Goierri Foundation**, whose social purpose is the technical, economic and social training and development of the Goierri comarque, which is home to the town of Ormaiztegui.



We participate in the **Goieki Business Incubator**, whose objective is to support and promote the emergence of new business initiatives in the Goierri comarque.

In 2022, for the eight consecutive year, Irizar was a mentor company for the **STARTInnova** teaching programme promoted by El Diario Vasco newspaper geared towards developing the entrepreneurial spirit among young people. Aimed at youth between 16 - 17 years old who are in secondary school and/or doing vocational training, the programme encourages entrepreneurial attitudes and promotes greater contact between educational centres and the business community, which could fortunately be done in-person again in 2022.



We sponsor students at the Urretxu-Zumarraga ikastola school. Two teams reached the finals and one of them, RA, was the winner. The experience was not only gratifying for the participants, but also for Irizar.



URRETXU-ZUMARRAGA IKAS TOLA

Tutor: Alain Be Itza
Participantes: Asier Gabilondo, Garazi Laso, Maddi Bilbao y Maider Urkiola
Curso: Bachillerat oC urso 1
Asignatura: Ec onomía
Empresa mentora: Irizar



RA

Esta iniciativa busca concienciar sobre el autismo por medio de cuatro juegos que toman como base sus síntomas para que los participantes se pongan en la piel de una persona que sufre esta afección. También habrá charlas con el objetivo de fomentar la empatía y la normalización del autismo.



URRETXU-ZUMARRAGA IKAS TOLA

Tutor: Alain Bel tza
Participantes: Aiur Hurtado, Ferdaouws El Machkouri, Irune Igarza y Martin Arbulu
Curso: Bachillerato Curs o1
Asignatura: Ec onomía
Empresa mentora: Irizar



MAIF

Han diseñado una app para quienes quieren crear una empresa, orientando de la manera más sencilla posible y ayudando a localizar posibles integrantes para el proyecto con los mismos intereses. Una herramienta idónea para sacar adelante y con éxito una idea de negocio.

For another year we continued collaborating on “**Universal design for learning in complementary school programmes**” on two projects with GLE-Urola Garaiko Lanbide Eskola and Peñascal S.Coop. aimed at students from 14 to 16 who have special educational support needs because of their personal condition or school history.



7.5. We Collaborate on Cultural Activities

We support cultural and traditional activities in our immediate environment.

Irizar is actively involved in promoting **Euskera** (the Basque language), to increase its use and standardisation, both internally through the Basque Language Plan, as well as socially by sponsoring different organisations and activities, including: Kontseilua, Kilometroak, Nafarroa Oinez, Ibilaldia, Araba euskaraz, etc.



We're annual sponsors of the **Irizar Prize for Basque Film** at the San Sebastian International Film Festival. In 2022 the film **Suro**, by Mikel Gurrea won the prize. The first feature film by Mikel Gurrea also won the Fipresci international film critics prize and the Asociación Vasca de Guionistas (Basque screenwriter's association) award.

With the aim of contributing to the dissemination of **music**, Irizar collaborates with different entities, including the annual sponsorship of the **Orfeón Donostiarra**, with which it has had a relationship for more than a decade. We also collaborated with the **Basque National Orchestra** (Euskadiko Orkestra) in 2022 for the second consecutive year, which contributed to later concerts.

There are also collaborations **with traditional Basque music and dance** through Euskadiko Dantza Txapelketa.

For the eighth consecutive year in 2022 we collaborated with the **Vasca Albaola Maritime Foundation** to build historic ships in an innovative space that brings value to and revives traditional maritime technology. In the video you can watch how they're making the San Juan whaler be reborn: <https://www.youtube.com/watch?v=nBMx-qOmAnM>

We are continuing our collaboration with the **Museo Zumalakarregi** of Ormaiztegi, a service of the Provincial Council of Gipuzkoa, whose purpose is to bring the general and specialised public closer to the 19th century in the Basque Country, a period of great social, cultural, economic, and political changes, and the beginning of the contemporary world.

7.6. We Collaborate on Sports Activities

We maintain several types of **annual sponsorships** including:

- > **Fundación Kirolgi** Not-for-profit for promoting and developing sports in Gipuzkoa with a priority on high performance sport
- > **Top level sport in Gipuzkoa:** football (Real Sociedad), basketball (Gipuzkoa Basket Saskibaloia), rugby (Ordizia Rugby taldea), handball (Bidasoa) and women's handball (Bera-Bera).
- > **Teams, trials and regional tournaments** in: track and field, rural Basque sports, mountain sports, cycling and sports activities and championships held in the Ormaiztegi area.
- > **Lasarte hippodrome:** annual sponsorship of the **Irizar Award** for the winner of the horse race of the inaugural session.

They are becoming more and more involved in **adapted sport and women's sport**. Where we can highlight collaborations with:

- > **HEGALAK Zabalik Fundazioa:** "Programme for improving the quality of life for dependent people who are disabled and/or have an illness, through re-adapting physical activity in Gipuzkoa" and the "Programme for swimming without barriers on the Concha beach in San Sebastian".



- > **Adapted Sports Federation of Gipuzkoa** Through the “Comprehensive project of adaptive and inclusive physical activity aimed at children and young people with physical disabilities in Urola Garaia and Goierri”.
- > “Zuzenak” **wheelchair basketball**
- > Bera Bera **women’s handball club**
- The Goierri Gorri Futbol Klub **women’s football** initiative that brings together and strengthens the teams above in the Goierri region
- IDK-Euskotren - **Ibaeta women’s basketball club**
- Donostiako **emakumezkoen klasika** (women’s bicycle race)
- > **Itzulia - Basque Country Women** (women’s bicycle race)
- > **TEAM ZATIKA BIKE WOMEN** (women’s cycling team)
- > **KEMEN sports club for differently abled people**
- > **MINDARA ELKARTEA**, Gipuzkoa association for providing care for people with functional diversities
- > **LIMOUSIN women’s cycling team**



7.7. We Collaborate on Development Cooperation Activities

We place a high priority and make the largest economic contribution to sponsoring various not-for-profit social and assistance entities.

With surrounding organisations

We collaborate with around **30 associations that work locally and throughout the province**, including:

> **Large associations** that we collaborate with on specific projects, such as the **Food Bank** We continued helping them in 2022 after increasing assistance in 2020 and 2021 to alleviate the effects caused by Covid-19: Provincial associations, fundamentally **patient and family associations**,



> from the cancer prevention AECC- Association to **associations for rare diseases**: Piel de Mariposa, Stop San Filipo and Asociación Inés de Pablo Llorens The latter has the goal of providing economic assistance for research about rare and infrequent tumours.

> Associations that provide assistance to the elderly

> In 2020 we began our collaboration with **Bizipoza**, a non-profit association that brings together 35 collectives from the Basque Country. The Bizipoza movement promotes values like solidarity, teamwork and life in society using Basque as the working language. Also since 2022, Irizar has collaborated on the “Kantu eta Bideoklipak” project for helping various associations.

Alongside the projects already mentioned in education and adapted sports, we can highlight that our annual support for **disability support projects** carried out with **GUREAK Fundazioa** continued in 2022. “Employability of people with Asperger syndrome” and “Ni Au Blas-I am like you” (to demonstrate a positive and active vision of disability to the Gipuzkoan children’s population).

With NGOs in international projects

We cooperate internationally through projects with **17 NGOs** in order to **contribute to the promotion of education, health, and gender equality, as well as the eradication of poverty, hunger, and inequality**.

In addition to continuing with projects already mentioned in previous Sustainability Reports, we would like to present **the most significant projects** in which we continued to collaborate in 2022:

> **Vicente Ferrer Foundation** Project for building a school for children with cerebral palsy in the Dornala, India area



> **Doctors without Borders** Medical and nutritional care for people trapped by conflict (Zamfara, Nigeria)



> **UNICEF** Comprehensive medical care for children linked to the armed forces and armed groups in the Central African Republic



In 2022, we collaborated with many more international projects, among which we can also highlight:

> **Herriak Elkarlanean** Lasserre eskola berria, due to the survival situation they are in, Father Doumond has asked for help to buy basic food items.



> **Baltistan Fundazioa** Strategic plan and access for disabled people to education in the Hushe valley (Baltistan, Pakistan)

> **Ayuda en Acción** Food security in Zapoteca communities in Sierra Sur, Oaxaca, Mexico

> **Medecins du Monde** Strengthening the capacities of the health units of the Infulene, Mozambique administrative post, including their staff for providing sexual and reproductive health care and services

> **ALBOAN Foundation** Migration and forced displacement in Central America



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