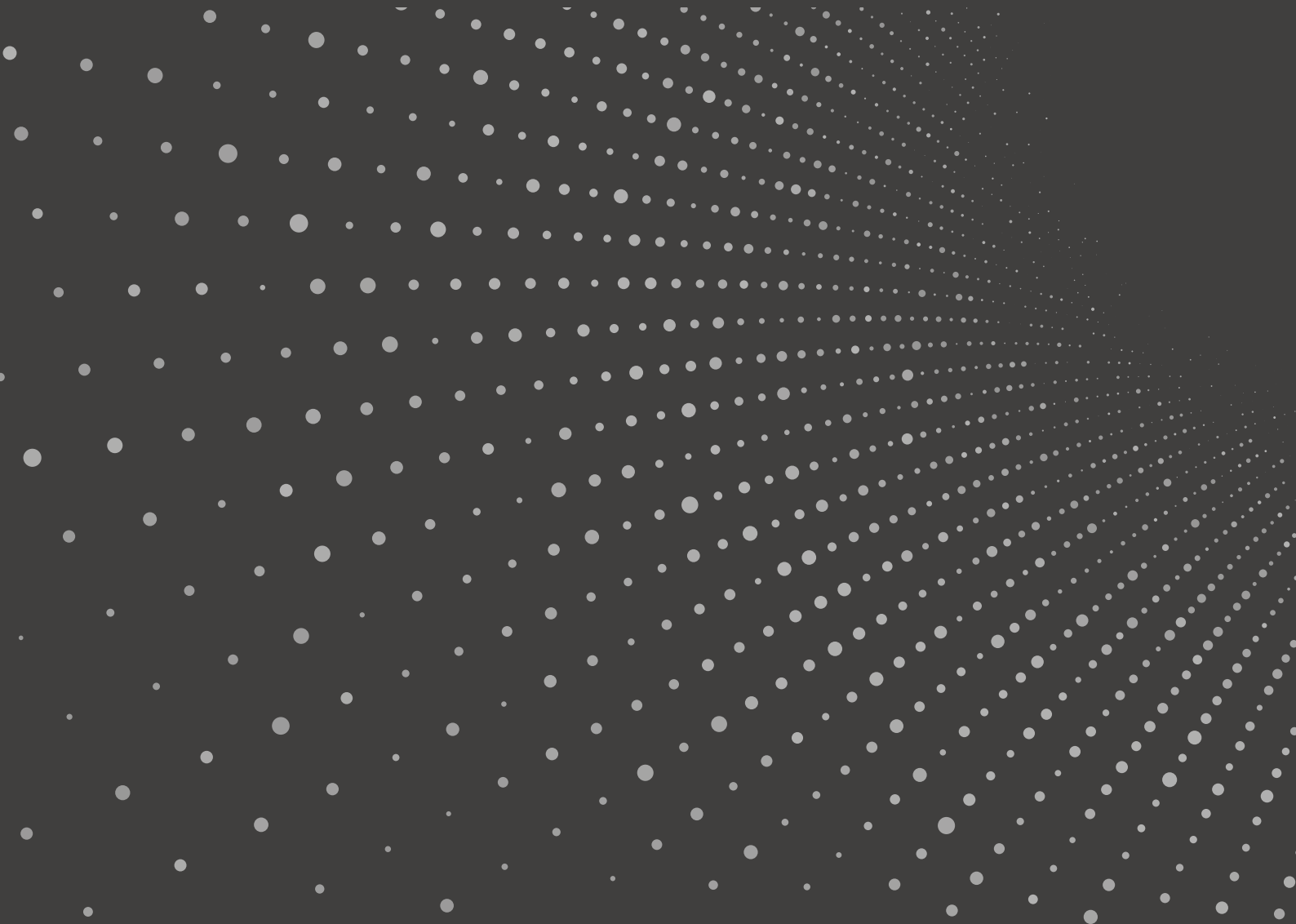
MASMOVIL

More Energy Efficiency

January 2023



The good energy of the MASMOVIL Group

Introduction by Meinrad Spenger, *Chief Executive Officer*

Since the very beginning of the MASMOVIL Group in 2006, we have held efficient management and responsible use of resources to be one of our top priorities. Accordingly, we made the strategic decision to share infrastructure with other operators, thereby avoiding duplication and optimising both use of resources and energy consumption.

The strategic importance of the telecommunications sector and the need to offer the best service with the best customer experience is indisputable. Therefore, our Mission as a Group is to connect people with the latest technologies and our Vision is to do so while providing the highest possible levels of customer satisfaction.

At the MASMOVIL Group, we aim to continue working in this direction, with a commitment to having a positive long-term impact and being a benchmark in the industry. We believe the customer comes first; we work with positivity and simplicity in mind, always in a sustainable manner and while prioritising the creation of long-term value over short-term benefits.

To this end, we designed our **ESG Strategic Plan,** based on our Group's mission, vision and values and using the Sustainable Development Goals (SDGs) of the **United Nations Global Compact** as our point of reference**.**

This Plan is based on five key pillars around which we define KPIs and implement short-term action, always in line with our commitment to responsible use of resources and efficient energy management:

To date, this strategic approach has led us to achieve major milestones, which include the following accomplishments:

- We became the first European telecommunications company and the largest in Spain to be classified as **B Corp,** which means, among many other aspects, an explicit commitment within the Group's By-laws stating that in the performance of its corporate purpose the Company shall ensure a positive social impact for the Company, the persons related to it and the environment, and its commitment to efficient resource management.

- We were the first European telecommunications company to have achieved net zero emissions of CO_2 for Scope 1 and 2 (since 2020), with an emissions level of just **1,715 tons of CO_2 equivalent.** This surprisingly low level of emissions has been achieved through the implementation of a number of strategic measures, the most important of which are mentioned in this brief document.

- 100% of the electricity we use is from renewable sources, with a certificate of origin.

- Our environmental management system has been certified according to the ISO 14001 standard and our energy efficiency management system under ISO 50001. Both systems are supervised by our Environmental and Energy Management Committee, which reports directly to the CEO of the MASMOVIL Group.

- Additionally, as a sign of our commitment to sustainability, ESG has been placed at the level of General Management that reports directly to me as CEO, having been myself appointed as director responsible for ESG by the Board.

- The headquarters in Madrid has been built in line with eco-efficiency standards and meets sustainability requirements, receiving the LEED Gold certificate.

All this demonstrates our sustainable management strategy towards energy and reducing our consumption, thereby generating savings we can reinvest in creating a greater positive long-term impact.
We can group our main energy-saving action and initiatives into the following areas:

- Improving the energy efficiency of both our fixed and mobile networks and data processing centers (DPC)

- Adopting consumption-reduction measures at our premises and headquarter

- Increasing environmental awareness among employees and stakeholders

- Implementing internal measures aimed at reducing energy consumption.

From a regulatory perspective, the roadmap for our activity in this area is summarised in our ESG Policy and our Sustainability, Environment, and Energy Management Policy. These two policies comprise a reference framework for establishing and reviewing our environmental and social targets and goals, as well as those which contribute to the continuous improvement of our energy performance.

Below, we explain the main energy management measures we have taken.

[1]Scope 1 y 2

More energy efficiency in our networks

In a telecommunications company, the energy consumption of its networks makes up most of the company's total consumption and, therefore, working to increase efficiency and generate savings is vitally important. As we mentioned above, in our case the first step was to share networks with other operators in order to avoid unnecessary overlapping. The development of, and migration towards, new generation networks like fiber to the home (FTTH) and 5G are another crucial part of our strategy, as well as implementing whatever measures are possible to modernise our infrastructure and make it more efficient.

SHARING FIXED NETWORKS AND MIGRATION TO FTTH

In 2016, the MASMOVIL Group launched its broadband services with a network mostly based on ADSL technology. Gradually from that moment onwards, investment in our own fiber network (FTTH) and fiber network-sharing agreements based on acquiring indefeasible rights of use (IRUs) began shifting the balance towards an overwhelmingly FTTH network. At the current time, over **97%** of the Group's customers receive a service based on FTTH. This transformation is particularly significant given that FTTH networks consume much less electricity than the old copper-based ADSL networks, with savings in usage that can go up to **90%** in the access network.

As regards the agreements on sharing to optimise resources, as of September 2022 the MASMOVIL Group's fiber network exceeded **27.7 million** building units, which means covering most of the country. Of this total, just 5% would be the Group's own footprint, while the remaining **95%** would be a footprint based on various types of sharing agreements.

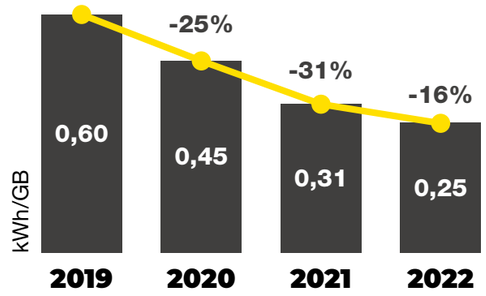
SHARING MOBILE NETWORKS AND PROGRESSION TO 5G

The mobile network of the MASMOVIL Group is made up of **6,012 proprietary radio nodes** which serve **88.79%** of the population. It has also entered into national roaming agreements (NRAs) which enable customers of the MASMOVIL Group to access mobile communications services through networks belonging to other operators. This mechanism makes it possible to concentrate the presence of the radio node network in higher traffic areas, thus almost halving the number of sites needed to provide the service. The remaining traffic related to our customers is sent through the networks of other mobile operators, which enables them to increase the level of use of their equipment and, hence, the efficiency of the network.

The MASMOVIL Group's mobile network is based on the deployment of its telecommunications equipment at existing sites belonging to other operators and infrastructure managers. Over 90% of the sites where MASMOVIL equipment is installed are occupied by two or more mobile operators. This approach optimises the use of locations by reducing the number of sites and therefore the visual and environmental impact of the business.

PROGRESS IN THE EFFICIENCY OF THE MOBILE NETWORK

The energy efficiency of the Group's mobile network is being monitored through energy consumption by gigabyte (GB) supplied. The change in this parameter has been as follows:



The improved efficiency of the network is based on a policy of modernizing equipment, moving towards types of deployment that do not require air conditioning systems, and implementing energy-saving features in the equipment. We provide an analysis of this approach below:

1. MODERNIZATION OF THE MOBILE NETWORK:

One of the Group's priorities has been the modernization of our mobile network in order to respond to the increase in customers and traffic, based on improving the total efficiency of the network. This has implied that investment has been in progress since 2018. Thanks to this economic and human effort which has **enabled more than two-thirds of the network to be modernised in four years,** as well as the other measures explained further on, the Group has reduced energy consumption per gigabyte by 60% over that period.

2. MODERNISATION OF THE NETWORK PROVIDES THE FOLLOWING EFFICIENCY BENEFITS:

- A higher traffic management capacity which contributes to a reduction of approximately **30%** in electricity consumption compared to the equipment in place up to 2018.

- Equipment of a smaller size and lower weight which makes it possible to simplify the infrastructure needed for installation. This decreases the civil works resource and power availability needs, as well as the visual impact of the sites.

- The equipment works at ambient temperatures of up to **50ºC** and therefore does not require air conditioning systems to be used. The need for those systems is removed, resulting in a reduction in maintenance work and visits, the amount of waste generated and the possible emission of refrigerant gases into the atmosphere.

3. DEPLOYMENT OF ENERGY EFFICIENCY FUNCTIONALITIES:

The Group has a specific project in place which focuses on improving network through energy saving features that manage the machine resources in use at any given time. These resources are adapted to the demand requirements and are of a modular design, which allows the equipment to be turned on and off based on the capacity and power needed for the traffic being carried.

During periods of low demand they allow the bands to be switched off, thereby preventing consumption by equipment on standby; moreover, this does not affect the quality of service perceived by the customer and/or improves the overlapping of nodes.

Since 2022, and following the pilot carried out the year before, the Group has re-parameterized its mobile telephone nodes along the lines described above. This is an interactive, continuous improvement process which, as we have mentioned, enables equipment to be switched off and therefore reduces the power wasted in some of its functionalities. The energy efficiency functionalities implemented are:

MIMO Sleep Mode

This reduces consumption by **10-15%** by systems with a low number of users.

Micro Tx Sleep Mode

This optimizes the Tx (transmission) equipment to use energy only at times when there is a need.

Schedule Tx Mode

This compresses information, thereby reducing the equipment's Tx time.

The implementation of the project has led to a **4.5%** decrease in total electricity consumption by the network without affecting quality for the customer.

The project will continue to evolve, seeking to increase the rate of energy savings by trying new parameterizations, new functionalities and the selective migration of traffic between networks to enhance node efficiency.

DEPLOYMENT OF 5G

The MASMOVIL Group enables its customers to access 5G through a network shared with another mobile operator. The 5G technology allows a high network capacity which is sufficient to serve customers, enabling efficiency in terms of deployment, higher implementation speeds, non-duplication of equipment and better energy and general efficiency of the network as opposed to having two independent networks. Currently, the MASMOVIL Group's 5G network exceeds **70.58%** of the population with coverage and a total of **1,396 municipalities** covered.

5G technology is more efficient than existing networks (3G and 4G) as regards the kWh/GB ratio, which, together with the fact of joint use of the network, will mean a substantial improvement for the total network. Thus, as the network traffic progressively migrates to 5G technology, much higher efficiency rates than those of the current network will be achievable.

DPC ENERGY OPTIMIZATION MEASURES

Between 2018 and 2019, a Renewal Plan was put in place to replace old air conditioning equipment with modern equipment using a free-cooling system. It also included replacing retrofitted rectifier equipment and batteries that were reaching or had reached the end of their useful life with new and more efficient rectifier equipment.

In 2020 and 2021 several energy efficiency measures defined by the Group for its two DPCs (Data Processing Centers) in Madrid were completed, among which the following stand out:

- Installation of cold server rack cabinets at both DPCs.
- Installation of LED tubes at DPC #1.
- Installation of free-cooling systems for air conditioning machines at DPC #1.
- Installation of free-cooling ducts at DPC #1 in the uninterruptible power supply (UPS) room, to avoid the mixing of hot and cold air.
- Creation of eight cold corridors at eight locations with estimated electricity savings of 14% at those sites.
- In addition to all of the above, the installation in 2021 of cold corridors enclosures in the technical rooms at both Data Centers, with four cold corridors enclosures.

The plan for 2022 and 2023 involves the installation of three new corridors at DPC #2, as well as the installation of LED screens and of sensors to turn them on. The accomplishment of these measures will mean the virtual completion of our energy improvement plan for our DPCs.

MORE ENERGY EFFICIENCY IN CUSTOMER EQUIPMENT

Approximately 50% of our net adds are already supplied with a WIFI6 router, thanks to which we achieve a capacity that is four times greater than the WIFI5 without increasing the energy consumed. With the WIFI6, the TWT (Target Wake Time) mechanism enables the access point (router) and the different equipment items connected to optimize when data is sent and received. This substantially improves battery life and reduces energy consumption, which some equipment manufacturers such as CISCO have estimated at up to **67%** less.

More sustainability at our headquarters

In June 2020, the MASMOVIL Group inaugurated its headquarters in Avenida Bruselas, in Alcobendas (Madrid). The new building houses a total of 719 employees, which is 46.84% of the total number of employees at the Group with permanent physical workstations. The building has been awarded the LEED Gold certificate, which certifies its status as a sustainable and environmentally friendly building. The baseline for the energy efficiency of our headquarters was therefore very high. However, over the past two years and thanks to our Building Management System (BMS) and the new measures put in place (which we describe below), we have made significant savings and managed to improve the energy efficiency of our premises. The data are measured and analysed in accordance with the ISO standards ISO 14001 and ISO 50001.

ENERGY EFFICIENCY DERIVING FROM TELEWORKING

As a result of the COVID19 health crisis, we implemented a teleworking system under which on Mondays and Fridays employees can choose whether to work on-site at the office or remotely from their homes. This makes it possible to switch off certain areas of the office on those days, leading to energy savings which we have estimated to be nearly **60,000 kWh** per year.

The teleworking system enables us to avoid Scope 1 emissions through energy savings at the headquarters, as well as Scope 3 emissions stemming from employees commuting from their homes to the workplace.

THE BUILDING

The façade of our headquarters is made up of a curtain wall (a type of glazed structure that covers the building) which acts as insulation against outdoor temperatures. This leads to a reduction in heating and cooling needs, thereby providing us with energy savings.

CONSUMPTION REDUCTION MEASURES FOR LIGHTING

In addition to switching off the lighting on a zoned basis on teleworking days, we have also adopted other measures, which include:

- Switching off luminous devices, such as the advertising on the roof of our headquarters, at 10:00 pm.
- Switching off the building's perimeter lights if they are not necessary.
- Installing presence detectors for lighting common areas and corridors.
- Having an automatic sleep mode function in the IT equipment of the Group's employees.
- Replacing bulbs with LED technology in the lights in the outdoor car park and the DPCs.
- Installing presence detectors in the garage and semi-basement areas which had not had them fitted.

For the end of 2022 and during 2023, additional measures have been planned, such as:

- Installing clocks in the indoor parking area to programme the lighting schedule for the roads/ routes.
- Thanks to the mixed remote working system, on Mondays and Fridays from 3:30 pm the air conditioning and lighting system for floor 0 and floor 1 will be switched off.
- Consideration is also being given to switching off the semi-basement floor (Business Center) on Mondays and Fridays, where at the moment the air conditioning is still on, and only switching on rooms that have been booked.

CONSUMPTION REDUCTION MEASURES FOR AIR CONDITIONING

We continue to perform thorough maintenance of the building's air conditioning equipment to ensure its energy efficiency. Of course, we also regulate the temperature in accordance with Royal Decree-Law 14/2022 on energy savings, which sets the highest temperature for heating at **19º C** and the temperature for cooling indoor spaces at no less than **27º C.**

We carry out careful tracking of the consumption levels at each point of supply in order to monitor the energy consumed at the headquarters and detect possible deviations, in order to correct them as swiftly as possible. This type of checking is performed by comparing two pieces of information provided by the BMS with the data provided on the bill sent by the electricity company.

More awareness among our stakeholders

MORE AWARENESS AMONG OUR EMPLOYEES

At the MASMOVIL Group, we understand that progressing in terms of energy efficiency and generating savings is everybody's business. Adopting or suggesting consumption reduction measures is not the most difficult aspect; the hardest part is raising the awareness of different people so that together we become more efficient.

In this respect, we have undertaken numerous awareness-raising communications and measures, highlighting the following:

1. The ESG Strategic Plan, with an explanation of the basic principles.
2. What it means to be a **B Corp** company and our role as employees.
3. How we achieved **net zero emissions** status (Scope 1 and 2) and what this means.
4. Easy access to our **Sustainability Report.**
5. **Energy efficiency day:** join us and join in.
6. European Mobility Week, car-free day.
7. Posters with recommendations on how to save electricity and reduce consumption.

We have also included relevant information about ESG and caring for the environment in our onboarding pack for new hires and through the Odilo online course platform we have created an ESG school where employees can access courses on:

- Environmental management and climate change
- **B Corp** companies and **ISO 14001-certified** company.
- Sustainable consumption and driving habits.

The Group has also executed a number of initiatives aimed at reducing energy costs and that directly involve its employees, such as:

- Subsidising the price and 0% financing of electric urban bicycles which can be used to commute to work, fitting out parking areas, and facilitating battery charging.
- Launching a car sharing app to help employees share their vehicles for the commute to work.
- Installing charging stations for electric vehicles in the car park at our headquarters, with the MASMOVIL Group subsidising consumption in order to encourage use of hybrid/electric vehicles among employees. Thanks to this measure, we avoided nearly **8,000kg** in CO_2 emissions in 2021 and nearly 14,000 in 2022.
- We categorize our in-house events (as well as the events organized by the Group for customers) as green, as we calculate and offset the emissions generated by them.
- We have analysed the emissions of our employees' vehicles, assuming the decarbonization cost of any that are classified as being big emitters.
- We have increased the choice of electric/hybrid vehicles available to employees under the renting scheme.
- We participate in measuring polluting emissions from the traffic in the local municipality where our corporate headquarters is located (executed by OPUS RSE) and we are part of the Strategic Plan for the Digitalization of Urban Traffic and the Reduction of Emissions (DiTRA).

MORE AWARENESS AMONG OUR SUPPLIERS

Managing the supply chain is vital when creating a positive impact through our operations. In this respect, our suppliers must undertake to follow the principles and values set out in the Group's Code of Ethics and the Code of Ethics for Suppliers, where we define our requirements on environmental issues and sustainable procurement.

We also ensure that our suppliers are familiar with the principles contained in the Purchasing Policy, the ESG Policy, and the Sustainability, Environment, and Energy Management Policy in order to act appropriately, in line with the parameters required by our company.

Our awareness-raising efforts with our suppliers and franchisees include regular communications in which we explain our ESG and environmental care milestones and offer our help to aid and work with them on the journey to creating long-term sustainable value.

MORE SUSTAINABLE SOLUTIONS FOR OUR CUSTOMERS

The MASMOVIL Group offers an electricity service which it markets through its brands: Yoigo EnergyGO, MASMOVIL Energía and Pepeenergy. In addition to having **energy from 100% renewable sources,** customers can access consumption monitoring tools through an app we make available to them free of charge.

Furthermore, Yoigo has launched a new commercial proposition focusing on self-consumption through its EnergyGO electrical energy service. This solution involves **installing solar panels that help customers to obtain savings on their bills (between 30% and 40%) and lets them participate in the energy transition to cleaner, greener and more sustainable sources of energy.**

MORE INNOVATION FOR THE ENERGY EFFICIENCY OF CITIES

MAS4City is our smart city platform based on the Innovasur solution, which provides greater energy efficiency as it enables, for example, remote management, energy-based control off urban lighting, and monitoring of electric vehicle recharging stations. It also makes it possible to have smart water meters to measure water quality, manage automatic watering systems, and monitor noise levels and air quality.

Additionally, it transforms the safety and mobility of the local municipal area through presence-based analytical tools, smart parking, smart pedestrian crosswalks, person and vehicle tally systems, and monitoring of traffic flow, parking controls, and road traffic emissions.

FIGHT AGAINST CLIMATE CHANGE AND EFFICIENT CONSUMPTION OF RESOURCES

Although the Group's activities have a limited environmental impact, it is essential to manage and reduce that impact; therefore the Group has defined an environmental strategy based on three main lines of action:

1. Responsible use of natural resources: we measure and define targets for improving our consumption. Priority is given at all times to use of recycled materials, encouraging their use among our stakeholders as well. We have a paperless office, which encourages lower paper use, and a green printer that requires users to identify themselves; we have also removed drawer units and wastepaper baskets.

2. Circularity and e-waste management: both the waste from the facilities and that generated by our network operations are managed through authorized waste management companies. Our commitment to the circular economy is complemented by our application of strict reuse policies for Customer Premises Equipment (CPE) which led to an increase in the ratio of refurbished equipment from **37%** in **2020** to **49%** in **2021.**

3. Encouraging environmental certification and initiatives: in addition to having a sustainability model and an environmental and energy management system, it is important for this to be certified by independent third parties. In this respect, we have ISO 14001 and ISO 50001 standard certifications, the **B Corp** certification, and the Global Compact Communication on Progress report by the United Nations. This commitment also extends to the supply chain, and we request these or similar certifications from our suppliers.

MASMOVIL