REPORT

IMPACT OF THE
NET ZERO INDUSTRY ACT
ON THE ENERGY STORAGE
SECTOR

An analysis of:

CIC
energiGUNE
MEMBER OF BASQUE RESEARCH
& TECHNOLOGY ALLIANCE

The energy storage sector is key to achieving Europe's climate objectives, and the Net Zero Industry Act and the Critical Raw Materials Act not only confirm this, but also define a regulatory framework aimed at promoting it in the most agile and sustainable way, accelerating Europe's positioning as a global benchmark in the energy transition.

NET-ZERO INDUSTRY ACT

As we have previously explained in CIC energiGUNE's blog, the **Net-Zero Industry Act's** main objective is to **simplify the regulatory framework**, **improve investments and increase the production capacity** of key technologies to achieve climate neutrality in Europe.

Some of the key technologies highlighted in this plan are: solar energy, batteries (energy storage), wind energy, electrolyzers and fuel cells, heat pumps and biomethane, among others. And according to clause 17 of Annex 1, specific targets are set for some of them: 30 GW of solar photovoltaic, 36 GW of wind, 31 GW of heat pumps, 550 GWh of batteries, 100 GW of electrolyzers, 370 TWh of biomethane production and 50 million tons of CO_2 capture per year.

KEY TECHNOLOGIES

30 GW

SOLAR PHOTOVOLTAIC/
SOLAR THERMAL

550 GWh

BATTERIES AND
STORAGE

36 GW

ONSHORE WIND/
OFFSHORE RENEWABLES

31 GW

HEAT PUMPS/
GEOTHERMAL ENERGY

100 GW

ELECTROLYZERS/
FUEL CELLS

GRID TECHNOLOGIES

50 MT

CARBON CAPTURE AND
STORAGE

370 TWh

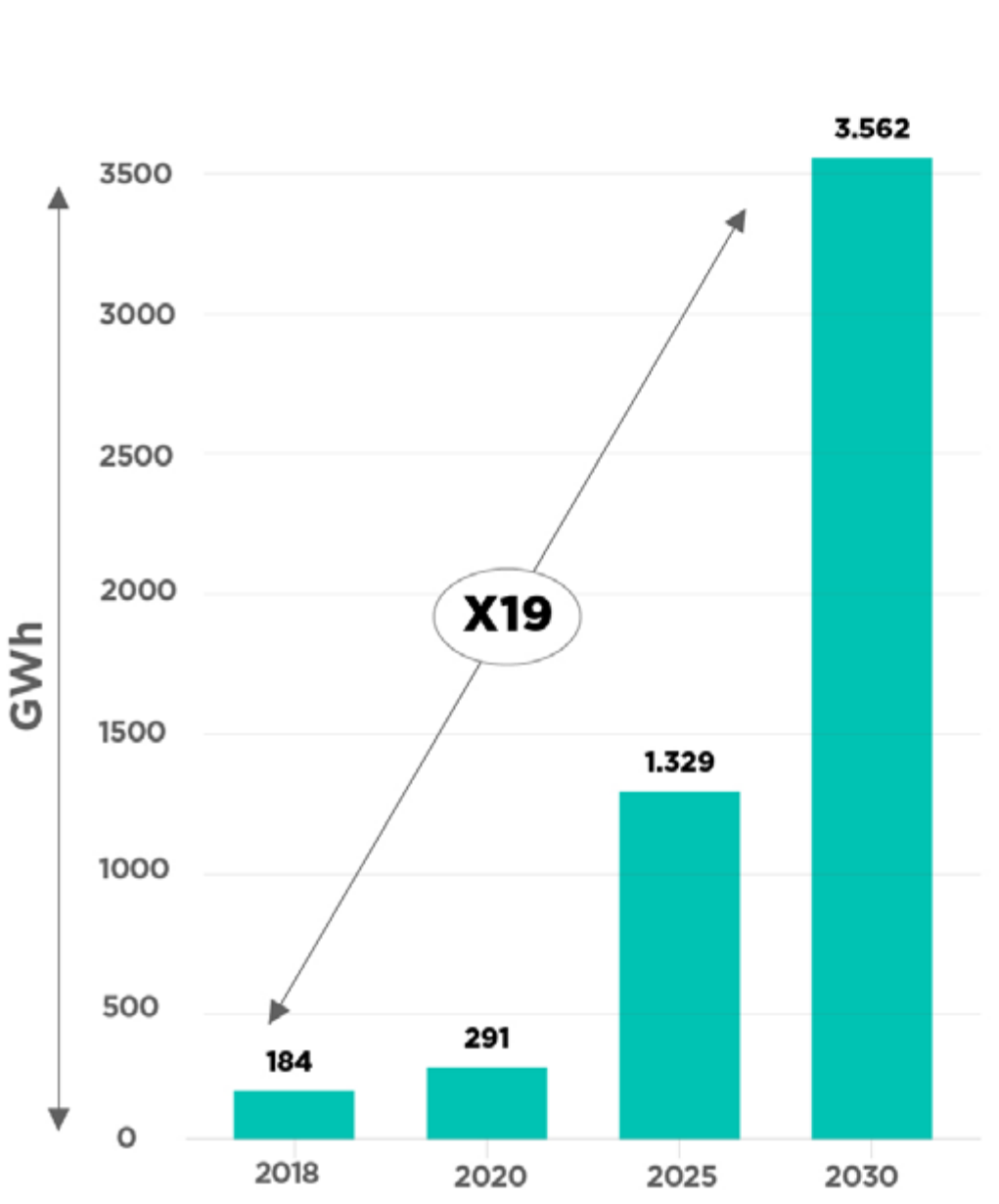
SUSTAINABLE
BIOGAS/BIOMETHANE

Information such as that shown in **Figure 1** (associated with the expected demand for batteries for different uses in 2030) shows the need to improve investment security, reduce administrative procedures and facilitate access to markets for key technologies, which, in addition to guaranteeing the energy transition, will help Europe to reduce its dependence on third countries for energy, technology and critical materials.

Throughout the different chapters of the Net Zero Industry Act, not only are the bases for action defined, but also minimum values are established to guarantee the European Union's manufacturing capacity.

Next, we will analyze those of greatest relevance for the energy storage sector.

GLOBAL BATTERY DEMAND



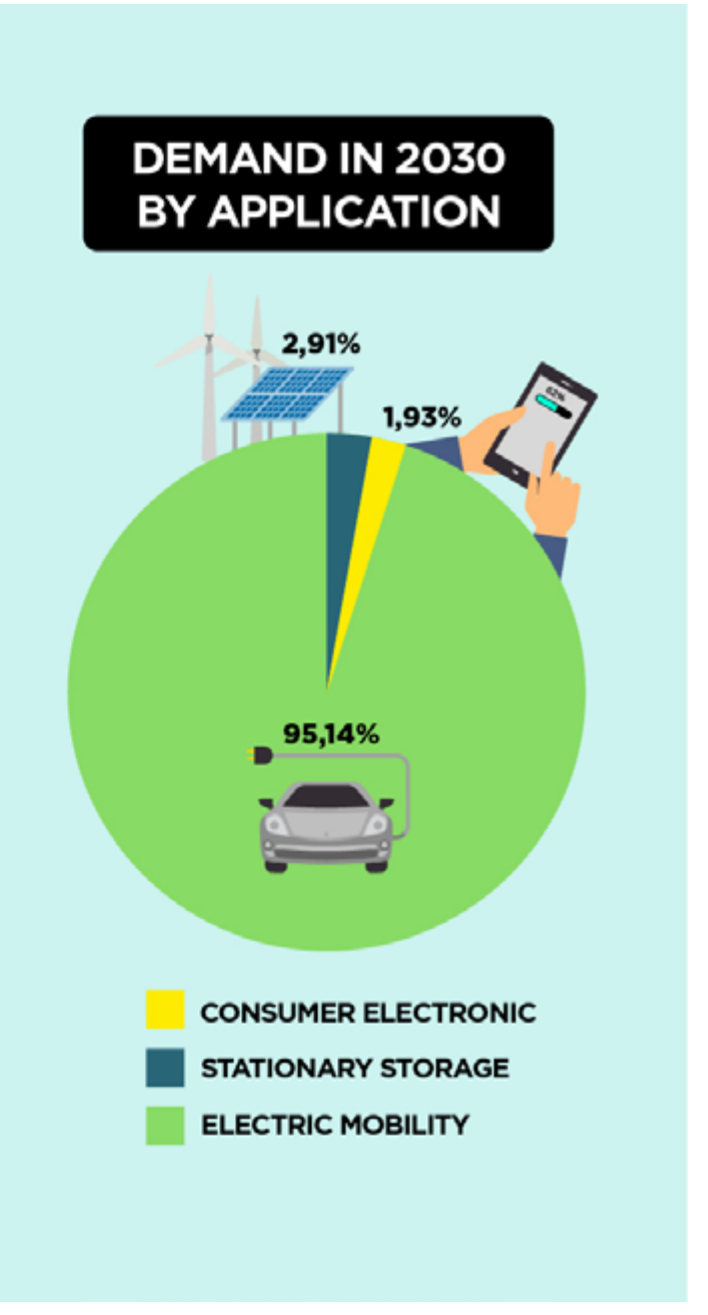


Figure 1

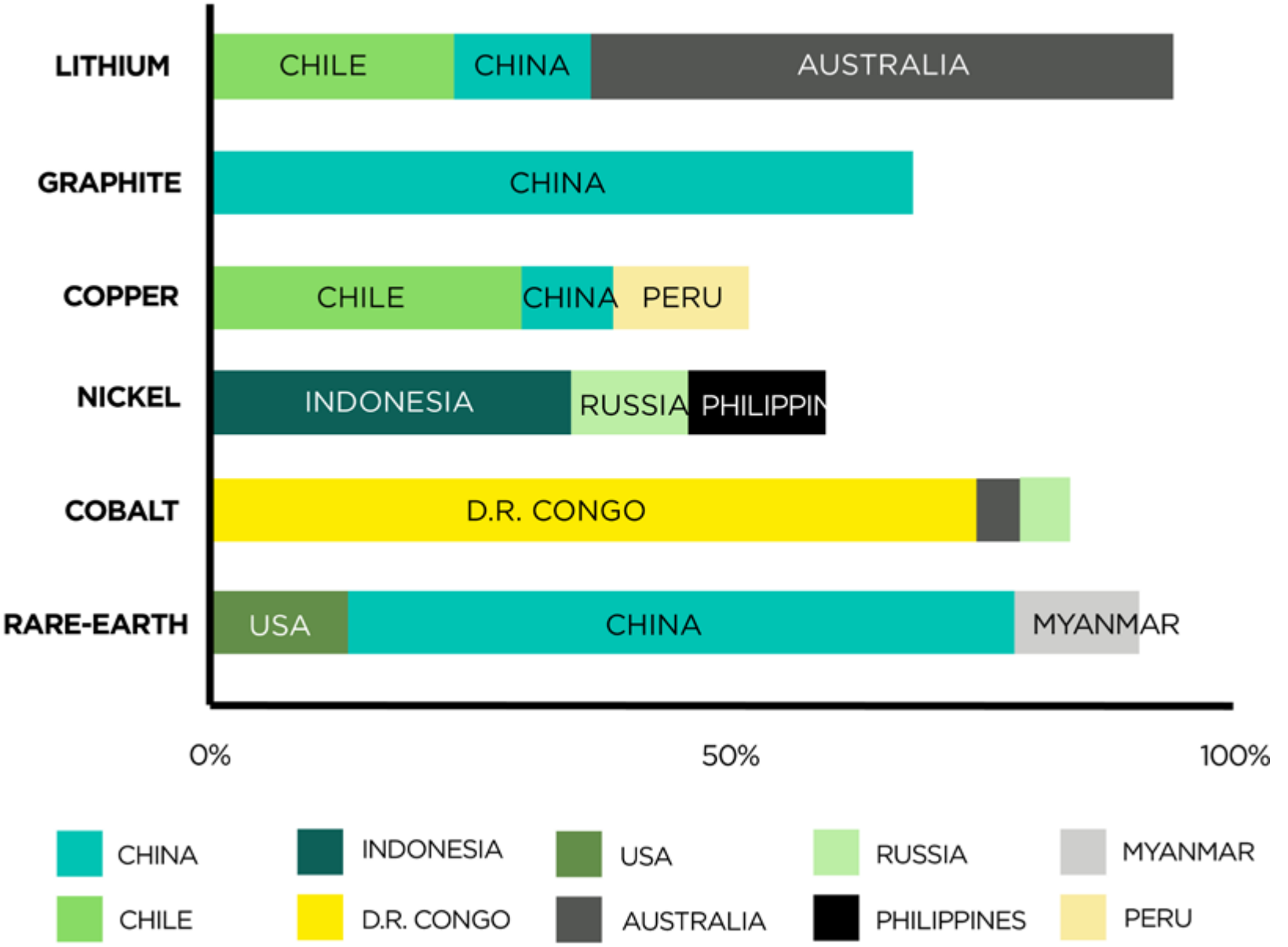
Purpose, scope of application and definitions

“By 2030, the manufacturing capacity of the so-called Net Zero Industry should approach or reach at least 40% of the Union’s annual needs.”

It is important to know that this percentage takes into account the need, not only to manufacture final products but also specific components such as **solar cells in the photovoltaic sector or anodes and cathodes in the battery sector**; for which, according to the plan, “reaching the benchmark level of 40% represents a **realistic but very ambitious target**”.

This value takes on great importance if we take into account that **China currently dominates more than 90% of both the production of anodes and cathodes**, as well as the supply of c**ritical materials for their manufacture** (see Figure 2) and that, with production growth estimates for the coming years, if Europe does not decisively strengthen its productive fabric, China will emerge even stronger in its expansion process.

MAIN PRODUCERS BY KEY MINERAL



SOURCE: IEA

Figure 2

Reaching 40% by 2030 also requires major investment to enable the technological development of key sectors. This is why the financing measures included in the **Green Deal Industrial Plan** are so important.

These measures include the dedication of 20 billion euros from **REPowerEU**; the mobilization of more than 372 billion euros of public funding, but above all private funding, thanks to the backing of the EU budget guarantee, which amounts to 26.2 billion euros, and 40 billion euros from the **Innovation Fund program**.

The challenge will therefore be to identify which funding channel is best suited to the needs of each project, maximizing exponentially the opportunities for technological development in Europe in the medium term.

20
billion €
REPowerEU

372
billion €
Public funding

26.2
billion €
Backing of the EU budget guarantee

40
billion €
Innovation Fund program

Requirements for manufacturing with net-zero technology

Chapter 2 of the plan establishes the selection criteria that **projects must meet in order to be considered strategic**. To this end, indicators such as the following will be taken into account:

“The project’s contribution to the technological and industrial resilience of the Union’s energy system and/or the project’s contribution to the competitiveness of the EU supply chain.”

One of the most important parts of this chapter is that it establishes that a so-called strategic project will have **priority** both in terms of access to financing and speed in the authorization processes, in accordance with national and EU legislation.

Access to markets

Chapter 4 defines different actions aimed at facilitating and accelerating market access to key technologies. These actions firstly involve generating **public demand** for the so-called “Net Zero Industry”, generating **economic incentives** to encourage companies to manufacture products with high standards of sustainability and resilience and tailored to the needs of the EU.

At this point, it should be noted that the sustainability and resilience of the projects considered strategic will be decisive parameters in their eligibility.

“Contracting authorities and contracting entities shall give the bid’s contribution to sustainability and resilience a weighting between 15% and 30% of the award criteria.”

Some of the plans developed by the European Union in recent years, such as the **Battery Passport** (see Figure 3) or the **EU Digital Product Passport**, demonstrate the increasingly stringent requirements for the manufacture of products in Europe, from the point of view of sustainability. The importance of determining and declaring the **environmental footprint, the rates of recycled material or the circularity** of manufactured products throughout their life cycle contribute to the so-called strategic projects that enable Europe to meet decarbonization and energy transition objectives.

IMPLICATIONS OF THE BATTERY PASSPORT

All batteries will have a clearly visible QR code that provides all the key information: composition, capacity, results in key indicators, durability...

Batteries exceeding 2kWh will have a digital passport reporting technical details, the percentage of recycled materials used and the associated carbon footprint.

Minimum percentages of recycled materials to be contained in all batteries are set according to their nature: 16% cobalt, 6% lithium, 6% nickel and 85% lead.

It is mandatory to calculate the carbon footprint of each battery model for its entire life cycle.

A "due diligence policy" is established to reduce social and environmental risks in the sourcing, processing and marketing of batteries.

Figure 3

However, it is important to bear in mind that the development of technology that is sometimes disruptive and much more sustainable, not only has significant technological risks associated with it, but also **high costs**.

Hence the importance that the demand for these projects is determined by the public sector, because the development of these technologies will not only provide answers to specific needs but will also **minimize the associated risk**. This will provide security to the business fabric, encouraging both innovation and investment.

In the words of the President of the European Commission, “Research in Europe is excellent, but there is a gap that prevents this quality research in clean technology from really being scaled up to industrial levels, providing a response to the objectives to be achieved by 2030”. Until this changes, it will be difficult to convince European companies not to look for these opportunities in third countries. A “due diligence policy” is established to reduce social and environmental risks in the sourcing, processing and marketing of batteries.

Improving skills to create quality employment

Chapter 5 addresses another of the relevant issues in the energy transition and is related to the development of the necessary measures to guarantee **access to qualified labor in all key sectors**.

On this point, the plan establishes that "education and training providers" must design the courses to **recycle the professionals needed for key technologies**. On the other hand, the EU will develop the **Net Zero European Platform**, which will be in charge of "contributing to the availability and deployment of people with the necessary skills in key sectors".

One of the constraints to the development of disruptive technology projects is precisely the lack of qualified personnel for their implementation. In the electric automotive sector, for example, the lack of qualified personnel is one of the problems to be solved worldwide, due to the variety of profiles existing in the different stages of the value chain, both upstream and downstream (see **Figures 4.1** y **4.2**).

TRENDS IN PROFESSIONAL PROFILES

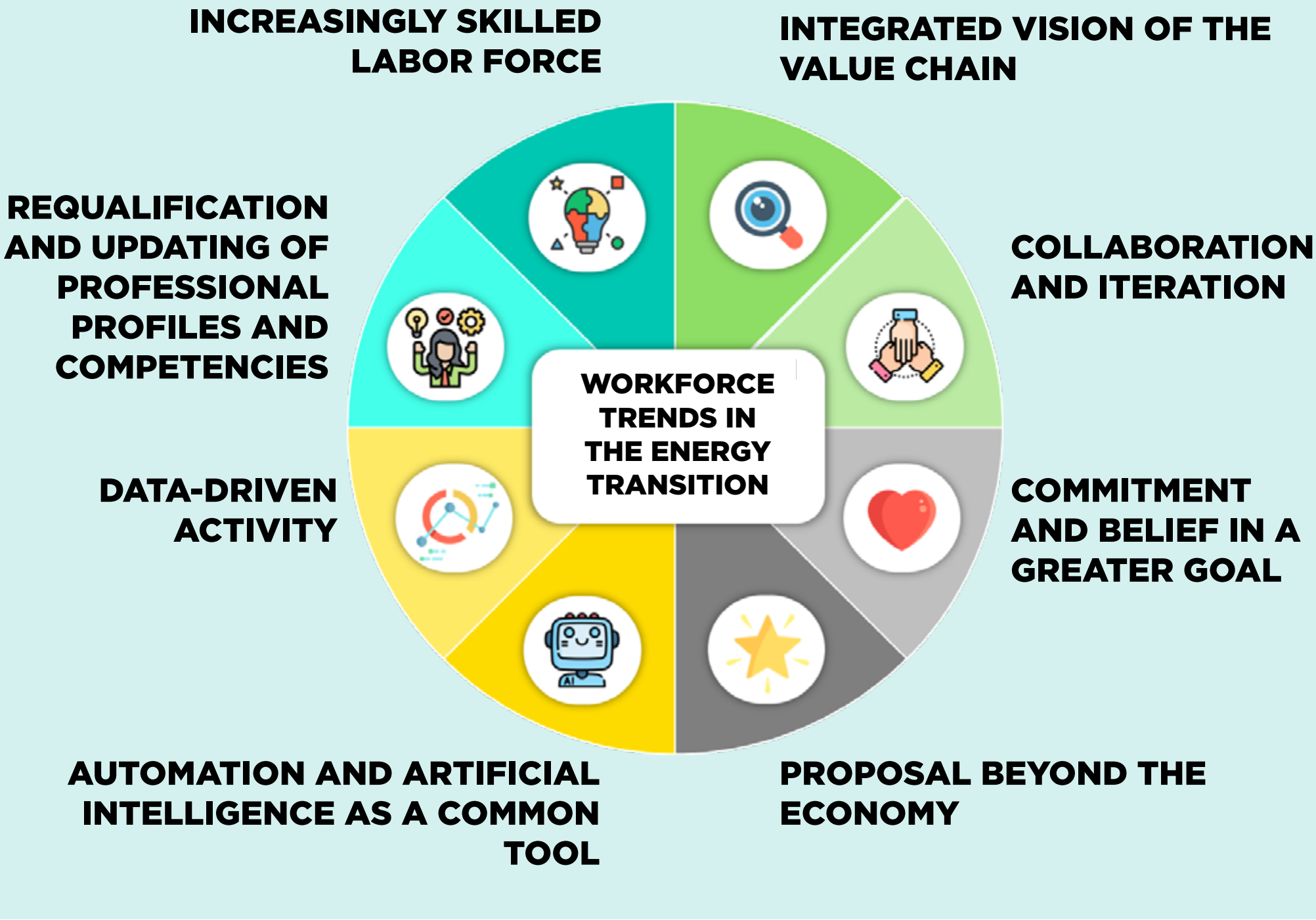


Figure 4.1

JOBS IN THE BATTERY INDUSTRY

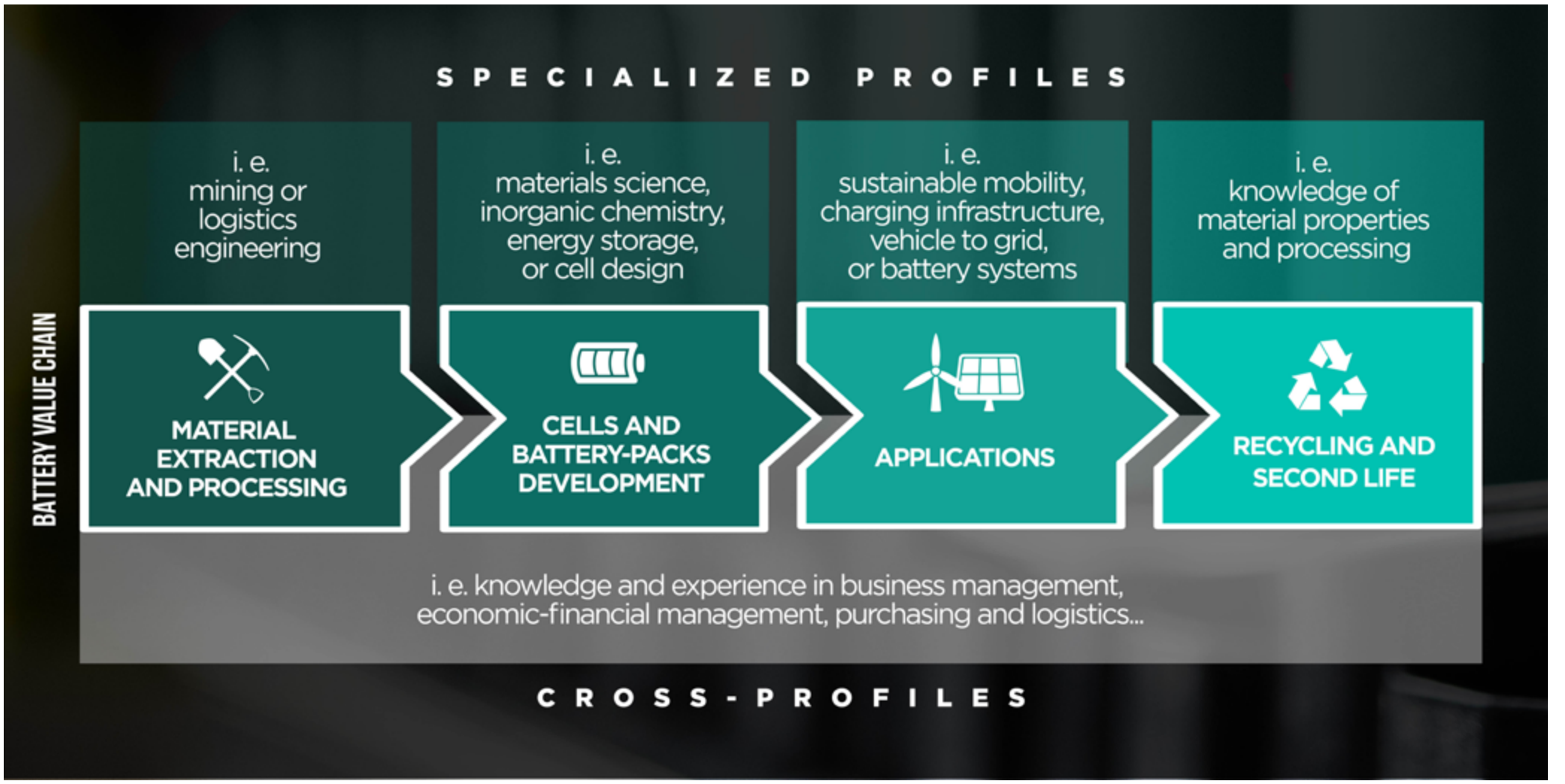


Figure 4.2

Innovation

On the other hand, Chapter 6 is, from our point of view, one of the most interesting for sectors such as energy storage. This section establishes that member states "may create, on their own initiative, **isolated spaces that allow the development, testing and validation of innovative technologies**, in a real controlled environment and for a limited time before their commercialization or entry into service, thus improving regulatory learning and the possible extension and more widespread deployment". These so-called "**sand boxes"** will therefore foster "innovation and regulatory learning and will be a competitive advantage for participating SMEs, including start-ups", as they will take special account of the special circumstances and capabilities of each of the participants.

Earlier we mentioned the technological and economic challenges involved in the development of the key sectors. Taking into account what has been raised in this point, and in case their operation is properly implemented, it will be ensured that the developed technology will be really technologically transferred and become an asset that will boost Europe in its leadership in the energy transition.

Finally, it is important to keep in mind that the key technologies are mainly based on **three criteria**:

1) **Technology readiness level.**

It refers to the fact that this plan is aimed primarily at those technologies with TRL 8 or higher.

2) **Contribution to decarbonization and competitiveness.**

Identifies technologies that are expected to contribute significantly to the 2030 goal of reducing net greenhouse gas emissions by at least 55% from 1990 levels.

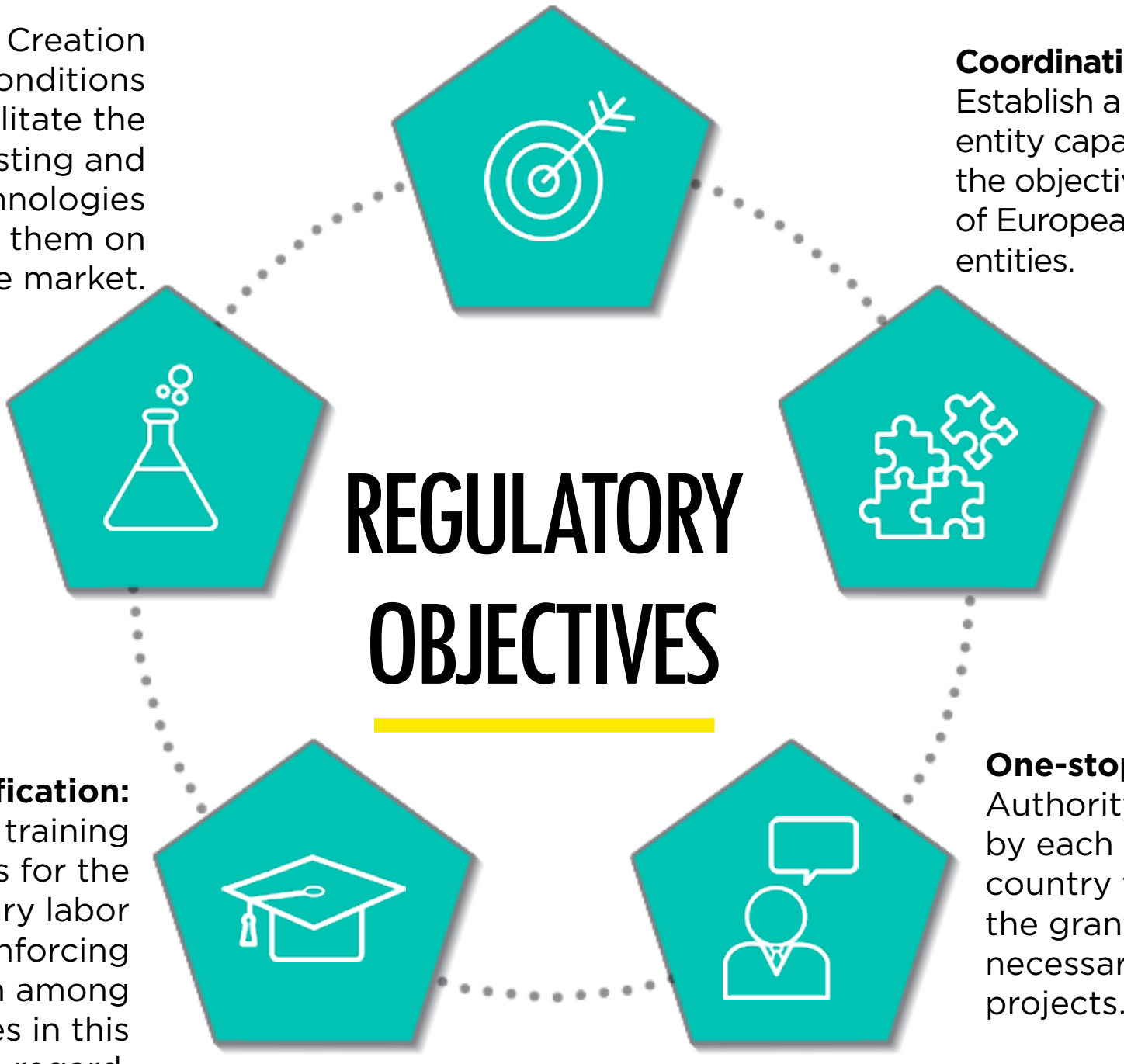
3) **Risks to security of supply.**

It ensures the technological and industrial resilience of the Union's energy system by increasing the manufacturing capacity of a component or part of the value chain of key sectors, in order to reduce the Union's dependence on imports, mainly from countries such as China.

Promote strategic projects: Ensure the successful development and deployment of initiatives associated with the continent's green future.

Sandboxes: Creation of special conditions to facilitate the development, testing and validation of technologies before launching them on the market.

Coordination platform: Establish a structure and entity capable of aligning the objectives and actions of European countries and entities.



REGULATORY OBJECTIVES

Qualification: Promoting training programs for the necessary labor force, reinforcing collaboration among EU countries in this regard.

One-stop shops: Authority created by each member country to facilitate the granting of the necessary permits for projects.

Our vision

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From CIC energiGUNE, we believe that these regulations contribute to strengthening the European industrial sector, **encouraging clear competitive advantages in the development of pioneering and sustainable technology** that contributes to the challenges set for 2030. Although each of the measures set out in the Net Zero Industry Act are absolutely necessary and their implementation is urgent, it is still too early to know how all these tools will be deployed in each of the member countries.

The speed with which its deployment is carried out will determine whether the automotive sector, for example, will find the necessary i**ncentives to continue with its investment and development in Europe**, addressing each of the links in the value chain, from the manufacture of active materials for the production of cathodes and anodes to the recycling of batteries to obtain the critical materials so necessary for the development of this sector.

This will be what will **consolidate Europe in its race for decarbonization and energy transition** and, above all, will counteract the impact generated by other equally attractive plans, such as, for example, the US IRA, which we have already discussed above.

Finally, it is important not to forget that the basis of all these key technological developments worldwide, have their foundations in the generation of knowledge, through disruptive research and excellence, which responds to the challenges generated, and in **CIC energiGUNE** we will remain committed to this.

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