April 2021

Democratising energy as a national project

The Next Generation EU funds and the infrastructure of the electricity system

FUNDACIÓN RENOVABLES

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Contents

Introduction

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Introduction

The energy and economic policy of the future is based on a commitment to the electrification of demand in order to consolidate and achieve increasingly sustainable development and the decarbonisation of the economy by 2050, mainly because electricity:

- **Is a basic need for the entire population.**
- **Is the base for any efficiency and renewable energy policy.**
- **Encourages an improved commercial balance** by reducing fuel imports.
- **Reduces energy dependence on foreign countries,** creating a more local and distributed production structure in Spain.
- **Has zero emissions when it is consumed and, if it is generated using renewable sources, also at source. Changing to an electricity model decreases atmospheric contamination and is key for improving air quality**, especially in cities.
- **Democratises energy by enabling citizens**, as established in the EU Renewables Directive, to buy, sell, manage, generate and store electricity as an inalienable right, playing a decisive role in greater social and territorial inclusion.

  EU Directive 2019/944 on the interior market for electricity introduces the need to commit to active electricity consumers and citizen energy communities as market players. This enables them to manage electric vehicle recharging services and operate electricity distribution networks while also participating in all the organised markets in the electricity sector. This means they can play a strategic role in making demand management more flexible.

Without a doubt, the challenges of electrifying the energy demand and ensuring this process is carried out progressively and sustainably depend on the policies implemented. This is especially key to guarantee that:

- **It is universally accessible for everybody and domestic consumers have complete freedom.**
- **Electricity is the basis for economic development, by having both competitive prices and signals of political support.**
- **Consumers become the centre of the system, meaning they take on more active roles. In order to achieve this, self-consumption, the incorporation of storage (both fixed and in electric vehicles), demand management and, ultimately, responsible consumption must be the basic pillars underpinning the energy policy.**

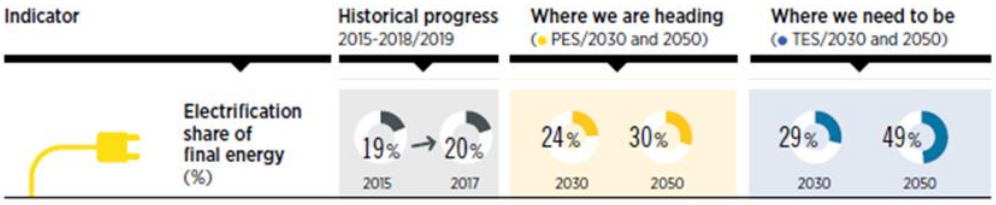
- **The price per kWh is set transparently and in line with the costs involved** in order to encourage and facilitate responsible consumption.
- **The price per kWh is reduced to stimulate the economy and facilitate universal access to electricity for domestic consumers.**
- **We have energy policies and taxation in line with what we want to promote and what we need to phase out.**
- **The available technology is used with sustainability, safety, resilience and social and territorial inclusion criteria, in accordance with the United Nations SDGs (Sustainable Development Goals).**
- **The configuration of the electricity system**, in an economic market of basic need, **is not based on a profit-making and business-focused concept.**

The various documents **Fundación Renovables** has been preparing propose **lines of action to ensure that the electrification of demand becomes the fundamental axis of Spanish energy policy, and thus forms part of the objectives established**. Among other reasons, this is because this commitment is the trigger to be able to meet energy efficiency targets and cover the final demand with renewable energy, as well as to extend the GHG (greenhouse gas) emission reduction target.

Making electrification a basic objective to be implemented is a first step towards a differential and ethical energy policy which, until now, has not been proposed. This is probably because of the desire to maintain a non-belligerent and equidistant position with the big players in the energy sector. In fact, in the Integrated National Energy and Climate Plan (known by its Spanish acronym, PNIEC) the result obtained for 2030 is 27% of the final energy demand covered by electricity, which is a very low value in terms of the targets set in the government's own document. Similarly, this target does not even appear in the Spanish Law on Climate Change and Energy Transition. From all of this, it can be concluded that:

- The lack of commitment to electrification, despite the fact that 74% of generation is from renewable sources, is one of the main reasons why the emissions reduction target for 2030 is so far from the target set by the European
- Commission (EC): from 23% for Spain, set out in the PNIEC, to 55% for the European Union (EU). Covering the demand without electricity means retaining combustion processes, which means that, even if this is done using renewably sourced fuels, it is impossible to reduce local emissions.
- If we compare the results obtained with those of the world average, it shows that Spain is not in line with the higher economic and social development position it holds internationally. **It is illogical that the degree of electrification in Spain—27% in 2030—is the same as the target for the entire world, which is set between 24% and 30%** according to the different IRENA scenarios, as shown in Figure 1. In Spain, the consumption structure and access to electricity can both

be significantly more developed than they are currently, which obviously involves a greater degree of electrification.



PES.- Planned Energy Scenario 2,5 ºC. TES.- Transforming Energy Scenario por debajo de los 2 ºC

Figure 1. Electrification of demand targets for 2030 and 2050 at a global level. Source: IRENA.

- **The percentage of electricity covering the final energy demand is not in line with the targets of 42% renewables penetration and 74% of renewably generated electricity.** These targets represent continued commitment to the combustion processes and, therefore, to energy dependency and maintaining the high-emission economy. **27% of electrification in the final energy with 74% of generation using renewable energy means the electricity contribution from renewables is 20%. That is 22 percentage points short of hitting the target of 42%** to be achieved using thermal processes.
- A lack of commitment to consumer autonomy and independence means maintaining a centralised energy structure that is rooted in the past, that will always be oversized, and that will, therefore, increase the cost of electricity bills, impacting consumers.

The future is shaped by self-consumption and distributed generation. Electrifying demand requires this to be part of electricity generation and system manageability. Otherwise, we will continue to have a system that is oversized in terms of generation and grids, and flexibility will always come from the supply side.

Committing to an electric mobility model with considering its contribution and management capacity means that what should be dynamic will remain static.

In our energy policy proposal from 2015, and updated in 2018, Fundación Renovables established a target of 50% electrification of final demand by 2030, with 80% generated renewably, in order to reach the target of renewables covering 50% of final demand.

It is interesting that **in our projections, 10 percentage points of the renewables coverage in 2030 would originate from thermal processes**, while **in the PNIEC**, despite having less ambitious targets, this value **assumes that thermal renewables contribute**

22 percentage points, which is 52% of the target and more than double what Fundación Renovables proposed. This situation worsens at the proposed long-term horizon of 2050, where thermal renewables account for 45 percentage points of demand, compared to 20% in the energy policy proposal made by **Fundación Renovables**.

Origin of the proposal	Reduction of emissions (1990)		Electrification of demand		Penetration of renewables in 2030		Penetration of renewables in 2050	
	2030	2050	2030	2050	Final consumption	Electricity system	Final consumption	Electricity system
Fundación Renovables (*)	55%	100%	50%	80%	50%	80%	100%	100%(**)
Government (PNIEC/ELP 2050)	23%	90%	27%	52%	42%	74%	97%	100%

Figure 2. PNIEC targets for 2030 and 2050 and the Fundación Renovables proposals. Created by Fundación Renovables.

This does not include the emission reduction results, which are much worse—23% compared to 50% in 2030—given the commitment to maintaining thermal and non-electric processes. This situation changes in 2050 despite maintaining the same composition of the demand mix as in 2030, which casts doubt on the projected results.

The energy transition represents an opportunity to implement a new production model with the capacity to generate value in a distributed manner that is based on the inclusion of new technology, both to adapt supply and shape demand using sustainability criteria. This transformation is based on the need to implement investment processes that replace technologies and facilities and enable existing ones to be modernised, therefore equipping them with the flexibility and capacity to adapt from a concentrated supply system to a highly distributed one.

Digitalisation, transformation of supply considering renewable energy sources and assuming an efficient and flexible demand are part of the Next Generation EU funds approved as a solution to reactivate the economy following the economic crisis caused by Covid-19.

The suitability of the use of the funds must be framed, according to the eligibility criteria promoted by **Fundación Renovables** in its document "Lessons learned: how to overcome the crisis", in the objective of committing to the transformation of the energy system and its digitalisation with initiatives that have a multiplier effect,

(*) The electrification of demand is not part of the targets set but is the result of quotas envisaged with the proposed policies. It should be noted that electricity has currently lost weight in the mix of the final energy demand coverage.
*(**) **Fundación Renovables** believes it is feasible to reach the target of 100% renewably generated electricity in 2040.*

eliminating the barriers that currently hinder the development of an inclusive and flexible energy system.

Throughout this proposal, we have tried to act on the element that unites all consumers as energy producers and interconnected people, namely the electricity distribution networks. **The Next Generation EU must enable the elements that act as catalysts for an interconnected and inclusive electricity model to be regenerated.**

Electrification for democratisation

Of the lines of action we believe to be necessary to electrify demand, we consider the priority to be **reducing the price of electricity**. **In this respect**, **Fundación Renovables** published the document "¿Qué hacemos con la tarifa eléctrica? Ideas y propuestas para su desarrollo desde el objetivo de la electrificación de la demanda" (What can we do with the electricity tariff? Ideas and proposals for its development from the electrification of demand target) in February 2021.

The report contains different initiatives, including:

- **Gradually modifying the marginal model**, removing part of the demand from the system to opt for bilateral matching, through PPAs, renewables auctions or negotiating fixed prices for the production of some plants.
- **Proposals for co-responsibility for costs** arising from the fulfilment of commitments to cover demand with renewable energies. The National Fund for the Sustainability of the Electric System (known by its Spanish acronym, FNSSE) is a basic element on top of which Fundación Renovables has included some elements to make it more ambitious and realistic in its report entitled "Observaciones y medidas de correspondencia para la transición energética" (Observations and corresponding measures for the energy transition).
- **Reducing asymmetry when allocating regulated costs** to different consumer segments, so that, ultimately, households stop subsidising the industry.
- **The need to commit to electricity generation and storage at consumption points as basic elements for demand management. Fundación Renovables** has demanded clear measures and targets for the electrification of demand in energy policies in order to not only increase its contribution, but also to develop a new, inclusive electricity model in which consumers are active parts of the system.
- **The consideration of an ownership and differential management model for the transmission and distribution network, which is the objective of this document.**

Developing the electrification of demand is intrinsically linked to the consideration of electrical infrastructure as elements of essential importance.

It is equally important to generate electricity sustainably and competitively while ensuring that the systems that connect to generation and consumption have maximum flexibility and interaction capacity.

Our electricity infrastructure has been designed, and continues operating, radially: generation, transmission, distribution and consumption, always flowing in one direction and with an increasingly flexible supply. But when there is a supply with a large variety of sources and the consumers are entitled to decide and participate in the way their needs are covered, we must start to assess if our system allows it, both due to the availability of infrastructure and its capacity and the management of this infrastructure.

The **electrical grid needs to be modernised** so that the electricity system is designed as a **large spider's web** and not as a **radial system** that perpetuates an electricity model based on keeping market power and ownership of assets in the hands of a few companies.

The profitability set for electricity infrastructure, without taking into account the benefits outside the regulated remuneration, has been the fundamental element for maintaining a growing model of investment in networks, as both the yield and the guarantee of collection were difficult to compare with the possibilities offered by the market.

This effect of calling for investment and the design of a model for covering our needs based on an abundant, flexible and unlimited supply is one of the causes of oversized infrastructure, something that the proposal contained in this report aims to avoid.

Any supply-side model tends to be oversized and in the case of electricity infrastructure the situation has been supported because consumers or users have never taken part in the decision and their capacity to bear regulated costs has not been limited, despite the crisis and the need to reduce the tariff deficit. This can be seen in the evolution of the amounts in Figure 3.

Items	2008	2009	2010	2011	2012	2013	2014	2015
Transmission	1,246	1,344	1,397	1,534	1,477	1,604	1,674	1,712
Distribution	4,364	4,528	5,488	5,451	5,005	5,098	5,043	5,039

Figure 3. Evolution of income from transmission and distribution from 2008 to 2015, years of adjustment and restrictions to overcome the crisis and fight against the tariff deficit. (In €m) Created by Fundación Renovables.

Spain is one of the countries where the deregulation of the electricity system has been carried out while maintaining the hegemony of traditional electricity companies and, above all, enabling them to remain vertically integrated throughout the value chain of the electricity business.

Although it is supposedly impossible to share information between the different business areas—something that is impossible to verify—being vertically integrated means added value at all levels: in the setting of transfer prices in generation, in information on network capacity, in information on PVPC (voluntary price for small consumers) customers for their transition to the deregulated market, and so on. Risks and recommendations highlighted in the document "*European barriers in retail energy markets*", published by the EC in February 2021.

Article 35 of the Directive on the interior market for electricity is ambiguous about the possibility of acting in an integrated business manner, but the reality tells us that the targets and recommendations it sets out are impossible to achieve if there is dominance through both concentration and integration of activities in the same companies.

We can safely say that **deregulating the electricity market has not met expectations** and has ended up being the umbrella of the commercial strategy of the electricity sector. This means that consumers who leave the regulated tariff (PVPC), will go on to contract in the free market with suppliers of the same business group with supply costs as they are in the hands of the reference suppliers, who were previously called last resort suppliers, are owned by the distributors and who have the same shareholding as the traditional suppliers. The Spanish National Markets and Competition Commission (known by its Spanish acronym, CNMC) says that it would be 20% more expensive than if they had not left the PVPC (Retail Market Supervision Report 2019 IS/DE/027/20, 17 December 2020 – in Spanish only). What is worse is that this transfer of consumers takes place without many of them really knowing that they are changing companies, nor are they aware of what this change entails.

This situation is confirmed by the fact that despite the bad reputation of the traditional electricity sector, 81% of domestic consumers have supply contracts with Endesa, Iberdrola and Naturgy, according to CNMC data.

The domestic market is changing very slowly because switching between suppliers is not frequent. Furthermore, in most cases the offers from new suppliers retain the same profile and scope as the companies in the traditional sector. This means that deregulation has not only not achieved a migration from traditional supply, but the opposite effect has occurred. Finding a flat rate or discounts that do not correspond to the costs of generating electricity is no longer the practice of integrated sector suppliers, but of most of those operating in the electricity system.

The democratisation of the electricity system and, therefore, the success of a fair energy transition depends on the key characteristic of the different players not being the concentration and consolidation of their market power. This is especially the case when, as we mentioned above, the infrastructure needs to be updated and adapted to the presence and participation of a multitude of different players across the country.

Regardless of the product and whether this is considered basic or not, **the markets are evolving from centralised to distributed models of energy providers**. This is primarily due to the progress of the **Internet of Things** (IoT), which is providing greater freedom to the actors involved.

The coverage of electricity needs is not indifferent. Indeed, it is undergoing a much more disruptive process as the possibility of generating and storing our own electricity and turning a passive consumer into an active one in the market opens up technically and economically.

The reality is that the migration to a more democratised electricity model is directly related to the capacities and features that connect all consumers, namely the **electricity supply grid** and especially the **distribution network, which is something we are trying to leverage and exploit with our proposed measures.**

Transmission

The transmission grid is ***owned as a natural monopoly*** by Red Eléctrica de España (REE) a company that also acts as the system operator (SO) and whose shareholding structure is as follows: 67% owned by foreign institutional investors, 20% controlled by the state through the Sociedad Estatal de Participaciones Industriales (Spanish state-owned industrial holding company—SEPI), 4% by Spanish institutional investors and 13% by retailers. The government reserves certain areas of power to itself, such as the appointment of councillors and the presidency, elements derived from Function 14 or the power of what has been called the "golden share".

REE, in addition to its public service functions, responds to the commitments made by the board of directors with the shareholders regarding profitability via dividends with the setting of a very high pay out. This makes it a bondholder investment for institutional investors due to its business structure and its relationship with the government, and the maintenance of an attractive share price due to its classification as a safe-haven company.

Figure 4 shows the REE activity in the last ten years. It shows how the EBITDA/sales ratios have averaged 78% over the last five years and the EBIT/sales ratio has exceeded 50% on average. These values show the stability in the company figures and its growth trend over time despite being a basic supply pillar of a basic need. On the other hand, the analysis of the payout clearly shows that the REE target is to maintain growing return to its shareholders, guaranteeing it despite, for example, 2020 being an atypical year.

Financial year	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Sales (M€)	1,986	2,007	1,949	1,941	1,932	1,939	1,847	1,758	1,755	1,637
EBITDA (M€)	1,541	1,575	1,533	1,520	1,486	1,458	1,385	1,302	1,299	1,215
EBITDA/Sales	78%	78%	79%	78%	77%	75%	75%	74%	74%	74%
EBIT (M€)	929	1,081	1,070	1,031	1,003	989	949	899	860	844
EBIT/Sales	47%	54%	55%	53%	52%	51%	51%	51%	49%	52%
Pay out	87%	79%	76%	74%	73%	72%	73%	65%	65%	65%

Figure 4. Economic figures of REE from 2011 to 2020.
Source: CNMV. Created by Fundación Renovables.

The data clearly shows that REE prioritises the maximisation of value for private shareholders over public service.

The structure of REE's income statement needs to keep the investment process recognised as RAB (regulatory asset base) growing in order for the company's results and, above all, for its share price to remain in line with the commitments made to shareholders. The commitment to investment, for example in grids outside Spain or in other business lines such as communications with the purchase of Hispasat, means in many cases it has lost sight of the public service it is obliged to provide as a system operator and transmission company charged to the electricity tariff.

The eagerness to identify new investments has also been based on the need to provide the SO with the means to help it maintain supply security in the electricity system and as an element of control of price fluctuations that may occur due to climatic phenomena.

In this line, since 2012, there has been continued pressure for pumping systems to join REE following the PP (People's Party) mandate. This situation has led to conflicts with the integrated companies because, among other reasons, pumping is considered as a generation system and REE, as owner of the transmission network, could not perform the activity of a generator. Due to the energy balance that this type of power plant has throughout the year, this situation is closer to being a system regulation system than a generation system.

As an example of this desire to increase its positioning, it is important to highlight the decision of the Spanish government in May 2014 to oblige Unelco-Endesa to transfer to REE the Chira-Soria 200 MW pumping station project in Gran Canaria. It even established that in the event of failure to reach an agreement, CNMC would set the price.

In January 2015, the agreement was reached and REE published an informative note (***) specifically stating that it assumed the pumping station would not be used as a generation facility but as a tool for system stability and the role given to CNMC to establish a fair price.

The importance of REE as a player for developing an inclusive and modern electricity system is particularly relevant due to its role as a system operator and the fact that its work as a transmission company is of secondary importance. This is why **Fundación Renovables** has always requested that the system operator be a 100% publicly owned entity, with its assets including what is required to make the system operation more flexible, such as ownership of the storage systems, especially if we consider the targets of generation with renewable sources.

Distribution

The distribution in our legal system is based on their functions in relation to the consumer and according to the voltage level at which they work. Voltage levels that are not set according to the size of the electricity system that differentiates between mainland and non-mainland territories and usage in relation to consumption.

With regard to distribution, the high-voltage grid, as established in the Regulation on technical conditions and safety guarantees in high-voltage electrical lines, is divided into three categories:

1. From 66 kV to 220 kV.
2. From 30 kV to 66 kV.
3. From 1 kV to 30 kV.

*** *(***): "Today, REE and Endesa have signed an agreement whereby, as stipulated by the Spanish Ministry of Industry on 28 April 2014, Endesa shall transfer to REE the project of the Chira-Soria 200 MW reversible hydro-electric plant facilities in Gran Canaria for an amount of €11.2 million for the costs incurred in the project to date. The total investment of the facilities could rise to around €300 million.*

Driven by the central and regional administrations, the project, which is in the processing stage, comprises the construction of a reversible pumping station and the connection of the plant to the Santa Águeda substation via a 220-kilowatt electrical line. It also includes a concession of 25 years, extendable to 50 years, of the reservoir water for hydro-electric purposes.
REE and Endesa have committed to streamlining the administrative processes, highlighting the change of ownership for the concession that the Gran Canaria Island Water Board (Consejo Insular de Aguas de Gran Canaria) granted to Endesa for the construction and operation of a hydro-electric plant between the Chira and Soria dams.
The pumping station will not be used as a generation facility but as a system operator tool for the stability and security of the electricity supply. On the other hand, it will be one of the largest projects for REE over recent years as it will construct a key infrastructure for the integration of renewables on the island and provide the Canary Islands with a new energy model that is more sustainable, more environmentally friendly and more economically efficient."

In addition to this are all the facilities of less than 1 kV that connect the distributors to the vast majority of consumers in what is known as low voltage and goes up to a

voltage level of 220 V. **This voltage range is fundamental** for both the individual and shared domestic self-consumption facilities and the introduction of electric vehicles as a means of urban transport. Therefore, this is the infrastructure we should focus on when digitalising them and making access and response more flexible, whether electrically or administratively.

The business structure of the distribution ownership is highly concentrated. In fact, the five traditional companies receive 92% of the remuneration despite the fact that there are currently 365 companies recognised in the distributor category.

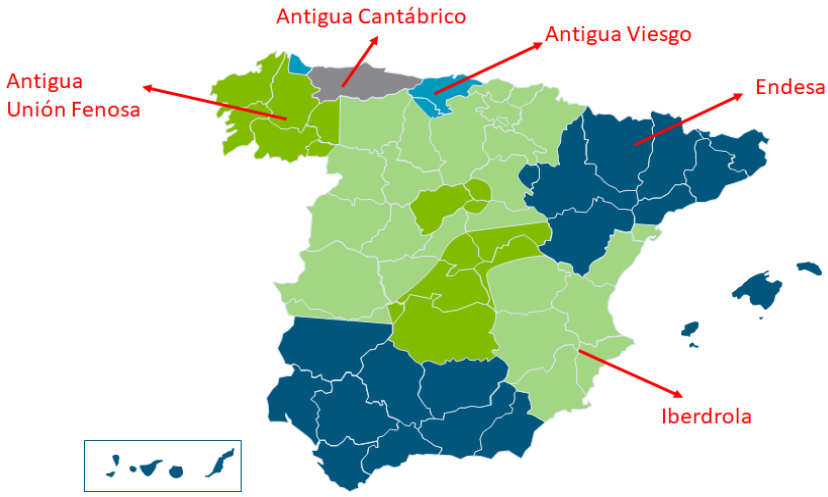


Figure 5. Map of operation of the five principal suppliers.
Created by Fundación Renovables.

The future of the grids

According to different reports (Deloitte, REE, AIE, IRENA, Bloomberg, among others), adapting the electricity system to the future energy needs and updating it will require more than €30 billion of investment, including the automation and renewal of distribution and transmission equipment, digitalisation, and automation and modernisation of the system.

So, the first question that arises is: **who should make this investment?** Especially because the electricity sector has already promoted reports defining three quarters as investors subject to RAB, i.e. costs eligible for the electricity system and subject to regulated remuneration set by the Spanish government.

On this point, all governments have always been in favour of maintaining the revenue structure of distribution and transmission. In fact, as reflected in the **Fundación**

Renovables report entitled "Lessons learned: how to overcome the crisis", despite cutbacks, the revenue from both activities has always been growing.

This protectionism has not changed, as can be seen in the content of Royal Decree-Law 23/2020, whose emergency measures included an increase of the coefficient in investment over GDP for transmission and distribution activities, which were increased from 0.065% to 0.075% in the case of transmission and from 0.13% to 0.14% in the case of distribution.

The transmission and distribution represented a cost on the electricity bill of €6.89 billion in 2019, 38% of the regulated costs or in other terms, 22% of the total electricity supply costs, which was increased when a VAT rate of 21% was applied.

The second question raised is: **is the modernisation of networks and behaviour in line with future demands for interaction with consumers guaranteed?**

The answer raises doubts because, in many cases, acting in the interest of the public service goes against the interests of the companies that currently own them, bearing in mind that the electricity company works as an integrated unit in all the activities that make up the electricity system.

In fact, the transition of consumers from the PVPC to the market has been characterised by continuity of service because, although the electricity companies ratify, as required by regulation, the existence of large barriers between distribution and marketing, there are many doubts about the veracity of this situation, a problem that is echoed in the aforementioned document on the barriers existing in the EC retail electricity markets.

When we talk about the necessary meshing and automation of the grid, we all have digitalisation in mind and, above all, we remember how in Spain, by legal mandate, analogue electricity meters have been replaced in record time by digital meters, the rental cost of which is included in the electricity bill. This process has not been equitable or adjusted to the market, and what is worse is that the **services consumers receive do not correspond to the technological opportunities available nor to those that existed when they were installed**.

They do not include a direct communication capacity with other equipment and cannot make a usable reading in real time. The lack of ports or a communication IP makes it clear how little interest the electricity companies had in providing degrees of freedom to the electricity system. In fact, two models have been mostly implemented: the one manufactured under the auspices of the Italian public company ENEL, owner of Endesa, and the one mainly managed by Iberdrola. **The end result of the implementation of digital meters has been a high and disproportionate rental cost with insufficient performance, due to the decision of those who installed them and the CNMC, who allowed it.**

RENTAL OF METERS	
Type of meter	**Rental fee**
Single-phase meters without time discrimination and without the possibility of remote management for domestic consumers (1)	€0.54/month
Three-phase or double single-phase meters without time discrimination and without the possibility of remote management (1)	€1.53/month
Single-phase meters with time discrimination and without the possibility of remote management for domestic consumers (1)	€1.11/month
Three-phase or double single-phase meters with time discrimination and without the possibility of remote management (1)	€2.22/month (double fee) €2.79/month (triple fee)
Single-phase meters with time discrimination and remote management options for domestic consumers (2)	€0.81/month
Three-phase meters with time discrimination and remote management options for domestic consumers (2)	€1.36/month

NOTES:
- (1) This includes all the costs associated with installation, operation and maintenance of the meters, as well as the costs associated with verification.
- (2) Provisional application prices from 3 August 2013 until approval of the definitive price of the electronic meters based on the report from the Spanish National Markets and Competition Commission.

Figure 6. Rental fees by type of meter. January 2021.
Sources: (1) BOE no. 312, 29 December 2007; (2) BOE no. 185, 3 August 2013. Created by Fundación Renovables.

This situation is made worse by the introduction of self-consumption, the launch of electric vehicles or, ultimately, the role that demand management should have in the functioning of the future electricity system.

There is a strong need to interact with the distributing company to install a self-consumption facility. In order to design it suitably, it is essential to have historical consumption data as well as to be able to proceed with the billing of surpluses and coefficients. In this respect, we should start thinking about measures such as ex-post hourly models, approving evacuation capacity in hourly or dynamic coefficients, developing facilities above the contracted powers of 15 kW or facilities that are not in urban areas. And this is all without forgetting the lack of progress in modifying the RBT so that connection requirements are standardised and simplified. In short, there are lots of conflicts that have been reported by the Alliance for self-consumption and that have not only been resolved in a general way, but that require an ongoing discussion, case by case, with some distributors who are not very collaborative.

Along this line, the government launched a public consultation on the modification of Annex I of Royal Decree 244/2019 for the implementation of dynamic distribution coefficients in collective self-consumption, introducing the possibility of using ex-ante

hourly coefficients among the users of a shared self-consumption facility, a procedure in which distributors will play a predominant role.

Making surplus management among the rest of the participants more flexible requires distributors to play an active role, which is obviously a fundamental element for maintaining the hegemony of their suppliers.

We need distribution companies that do not establish measures to maximise their financial value, but to provide better services instead. They must also not prioritise the profit of integrated business groups over taking on the challenges demanded by the energy transition.

The remuneration of electricity infrastructure is regulated by the recognition of profitability, regardless of its use, which will be 7.3% for the 2020–2025 period, a value that has been set after a small adjustment to the profitability of the previous year.

It is important to note that the remuneration level is not related to the pay-per-use criterion nor the cost of money for the owners of the infrastructure. This is despite the repeated efforts of CNMC to include the remuneration based on WACC (Weighted Average Cost of Money) criteria of the electricity sector itself, which are included as an example in the report INF/DE/044/18 Proposal for the calculation method of the financial remuneration rate for electricity transmission and distribution activities for the second regulatory period 2020–2025 (only in Spanish), which would represent a discount in the amounts to be paid.

This remuneration has adjustment parameters for Equivalent Outage Time of Installed Power (known by its Spanish acronym, TIEPI) and Number of Equivalent Outages of Installed Power (known by its Spanish acronym, NIEPI). Values that must be recognised show the excellent quality of the service that has been growing year by year due to both the professionalism of its operation and the reduction in demand that has eliminated the overloads on the lines that existed in the past.

In addition to the recognised coefficients to cover O&M costs, an escalation coefficient of up to 30% has been established for depreciated facilities, if the period is less than 15 years from depreciation, or 100% from 15 years onwards.

To a certain extent, an element of discussion we are ignoring is whether the functioning of the market should be controlled by demand or whether it should continue to be supply that determines decisions based on criteria, in many cases, of security of supply and, above all, when this is highly concentrated and integrated in three agents that control more than 80% of the market.

The value that distribution contributes to its owners

It is obvious that the integrated electricity sector has always advocated for maintaining the distribution networks within its balance and under the same control as the rest of the activities. Among other reasons, this is because of the capacity of the infrastructure to generate value. In fact, we were able to identify the following as value elements:

- **The return on the investments** described in the previous points. Excluding the existing doubts concerning the correspondence between the investments that yield returns and those that, due to their equity situation, should yield returns.
- **The setting of additional operation and maintenance costs** to the return on investments defined in a regulated manner and without considering the use of the network itself.
- **The establishment of escalation coefficients** for recognised operation and maintenance costs that increase with the time elapsed since their depreciation.
- As an essential element, **the incorporation of distributors as reference suppliers**, both in terms of economic activity and, above all, as an element of loyalty or facilitator of the maintenance of a captive customer in the processes of migration to the deregulated market.
- The **difficulty in accessing historical data in the hands of distributors** to change supplier or design self-consumption facilities is a barrier to prevent the loss of customers from those who have the largest share of the market and who belong to the same business lobby group.
- **The use of lines to connect electricity generation systems with renewable sources owned by the same shareholder group.**
- **Access to the electricity grid is an extraordinary source of information** that, on the one hand, provides detail on consumer consumption habits and, on the other hand, forms a fundamental barrier to being able to complete a renewable energy generation plant. This is a situation that the integrated companies have been able to take advantage of by having privileged access to renewable electricity generation facilities connected to their distribution networks as they are companies from the same business group.

  As it cannot be any other way, Royal Decree 1183/2020 on access and connection to electricity transmission and distribution networks continues to leave it up to the distributors to establish the evacuation capacity in the different nodes of the system itself. This privileged information is a comparative disadvantage compared to developers who do not belong to an integrated electricity group. Thinking that the owners of the infrastructure are

not going to take advantage of this information is unrealistic, especially considering the historical situation.

The usual practice is that the lines or infrastructure built by renewables developers end up being owned by the area's distributor due to donations, while obviously the evacuation rights agreed between the different participants in the execution of the facilities remain in place. Behind this practice is the facilitation of permits and the reduction of maintenance costs, as they do not have the required training to carry them out. Therefore, to consider that these decisions were voluntary or that there were other alternatives is to ignore reality.

Ownership of interconnection infrastructure as a key to access electricity demand is a real value, both in terms of present and future transactions or opportunities, especially when there is a large amount of idle capacity due to reduced electricity demand. In terms of electricity demand, we are at values equivalent to 2004 and in terms of maximum power demanded, to 2007, with investments that have been carried out or that have been captured at zero cost for electricity distributors and which, it is assumed, do not receive remuneration from the tariff.

Controlling ownership of the distribution networks not only generates value via the previous five points, but **it is the key to developing the future energy model**. This is something that our proposal, which is detailed at the end of this document, aims to solve, favouring acceleration towards the definitive integration of citizens as an active part.

An electricity model that is more open, participatory and flexible cannot be developed if those who should modernise the connection element between agents encounter conflicts with their economic interests and hegemonic positioning.

The development of individual and shared self-consumption, energy communities and distributed generation depends on the functioning and accessibility of the grid, and it is clear that their future cannot pose a threat to those who have to carry it out.

When we talk about networks, we focus on the remuneration received by their owners, which is charged to the electricity bill as a fixed item, regardless of our needs and ignoring the windfall profits that are generated when ownership and management of the network are in an integrated business group.

Whose electricity infrastructure should it be and who should pay for it?

Democratising energy as a national project

FUNDACIÓN RENOVABLES

Whose electricity infrastructure should it be and who should pay for it?

We are opening the eternal discussion on infrastructure that guarantees a fundamental service should be **public or private** and who should pay for it: **taxpayers or consumers**.

The analysis should be conducted jointly as a response needs to be given to:

- **Social justice criteria**, considering electricity as a basic need guaranteed as a public service.
- **The reduction of the imputed cost as a public service.**
- **The necessary correlation between the cost and the price signal to be passed on** to ensure that consumption is responsible and in line with the availability of energy resources and the sustainability of their use.
- **The non-existence of dominance practices that risk its functioning and lead to an oversizing of the necessary infrastructure.**
- **Guaranteeing the democratisation of the electricity system** by making the consumer the centre of the model and allowing the incorporation of all the technological advances that are occurring.

This discussion is resolved and accepted by everyone when we refer, for example, to healthcare infrastructure, although in some areas their management model has migrated to private management that is also passed on to the taxpayer; or to transport infrastructure, except the infrastructure that has been built via administrative grants and users pay for but which end up being assumed by the taxpayer if the economic flow obtained by the concessionaire is not sufficient. In fact, we can say that in most cases it is assumed that, in order for the service to be provided, the cost will be borne by the Spanish General State Budget (PGE) and not by the user.

Interestingly, **this model has not been extrapolated to the electricity system despite electricity being a basic need of universal access, there being a greater coincidence between consumers and taxpayers, and also it being the driver of future economic development and an element of territorial cohesion.**

The development of essential services or access to inalienable rights such as healthcare, transport infrastructure, education and energy, when they are executed using private capital with a guarantee of return, tend to result in **costs far higher** than what would correspond to their characteristics as public services. And this is without considering the inability to eliminate market failures that affect both the quality of supply and the lack of universal access, which has required the implementation of the rates subsidy from regulation or continuous corrective measures that do not tackle the root of the problem, but rather resolve specific elements of disruption.

The demands of the European directives to incorporate an element of improvement in the electricity systems have been poorly implemented.

The EU Directive 2019/944 on the interior market for electricity from June 2019 obliges different countries to implement innovative mechanisms to ensure consumers form part of the functioning of the electricity system. There is no doubt that the most important element to achieve this target is acting on the electricity grid that connects us to all consumers.

On the other hand, the distribution and transmission remuneration framework established on the value of the non-depreciated assets should incorporate that when an asset is depreciated, it should belong to those who have paid for this asset, especially when this payment was not consideration for a service but remuneration for the pending investment. **It is illogical that after depreciation these assets continue generating use value for the investors who executed them when they have already recouped their investment more than sufficiently.**

Obviously, the processes of reversion of electricity system assets from the private to the public domain, once the established terms of operation have been met, clearly define the commitment of governments. In addition to these positions, it is important to note the suitability criteria of reversion, including:

- **When the operation and generation of income is produced via a single-use administrative concession for a limited period of time.** For example, hydroelectric concessions whose reversion and use should be subject to a thorough analysis not only of the reversion processes and their effectiveness, but also of the extension of concession terms that have been carried out without an improvement for the owner of the resource, which is society. In fact, the Preliminary Draft Law on Climate Change and Energy Transition establishes a 75-year limit on concessions in coastal areas, compared to hydro-electric concessions inland which far exceed this period of time.
- **Assets for which implementation and operation was approved without the existence of a competitive market or pay-per-use**, such as transmission and distribution lines and facilities. It is important to note, and this is the consideration of the RAB model, that investors hold an asset for which they are paid regardless of what they contribute. Under this regime, it is clear that the demand for return is more than justified because the investor has recovered all the returns without risk and without competition.
- **The characteristics of a public good.** The electricity grids are essential infrastructure, as well as being the basis of universal access and the implementation of the different roles consumers are entitled to adopt. Not establishing a public destination for these when the commitment of

consideration with the investors has been fulfilled is not giving continuity to these rights.

We are undergoing a necessary process of changing our economic model and we are in the midst of fighting against climate change and electrifying demand, so the availability of an open and flexible electricity system will be one of the most important elements for reactivating the economy—committing to the future in the face of practices that belong in the past as they are neither sustainable nor inclusive.

In our economic history, there have been processes of reactivation or adoption of measures to overcome the different economic crises. In some cases, these processes have focused on adopting restrictive policies, as happened in the previous economic crisis in 2008, when, interestingly, an attempt was made to combat its origin—the result of deregulation and the ultra-deregulation of the economy—with cuts aimed at those who in no way participated or benefitted. There are examples where the political practice has been to adopt expansive processes, as happened following the 1929 crisis with the stock market crash and the implementation of the so-called New Deal.

Fortunately, overcoming the crisis caused by Covid-19 cannot be achieved through restrictive policies, but rather expansive ones. This is perhaps as a result of the consequence of the policies adopted in the previous crisis.

In 1931, as a response to overcoming the crisis of the stock market crash, the mathematician **Harold Hottelling** declared that in order to reactivate the markets and the economy, there needed to be progress in creating publicly owned infrastructure as an activation method. This was so that the goods and services that relied on this infrastructure could sell or transfer according to their marginal cost. His proposal, which was framed by economic deregulation, emphasised the role of the government in guaranteeing the availability of the channels required at minimum cost.

Interestingly, this proposal coincides with what we could deem to be Keynesian practices, albeit from a different point of view, as the government is an investor, administrator or supervisor for guaranteeing basic services, as opposed to the Hottelling theory, which tried to maximise competition by reducing fixed costs.

At the moment, and considering electricity as a basic need and an axis of value creation and progress, **both theories suggest the need for the government to assume the role of investor**, which it currently does not, or of administrator/regulator, which it has done until now. However, public interest still does not take priority over the real power of the infrastructure owners and their natural objective of maximising profit or returns for investors, shareholders and executives.

We could arrive at the conclusion that a regulated and controlled system can cover the needs of society and the opportunities that the technological evolution creates. The problem arises when **transforming the infrastructure leads to economic disruption or**

a loss of control and dominance for the other business lines of the companies that own the distributors.

As an example of the error of the Spanish energy policy and the government's passivity, we can highlight the existence of companies such as Enagás or REE, companies that manage a public utility service but for business profit and increasing the economic benefits of their executives, although the government reserves the "right" to appoint directors as a political gift.

It is safe to say that Function 14, by which the government, via the CNMC, reserves the right to act against corporate movements has never been so beneficial to the capital invested in REE.

The new policy we need to implement cannot be formed thinking that regulation is enough to ensure the behaviour of companies is aligned with the supply of a basic need in conditions of accessibility, guarantee of supply, with transparent price setting and in compliance with the sustainability targets we have accepted as basic and obligatory.

We have to go a step further and take advantage of the opportunities proffered by the Next Generation EU and that should be one of the starting points for modifying the current situation of prioritising private over public interest (The Social Contract of Energy. Electrification for democratisation. **Fundación Renovables,** October 2019).

Proposed measures

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Proposed measures

The unavoidable targets of the energy policy should be:

- **Recovering electricity as a public utility.**
- **Reducing the price of electricity and improving the price signals to the consumer.**
- **Guaranteeing the modernisation and digitalisation of the system.**
- **Democratising the operation of the electricity system, making access more flexible and reducing the business concentration in crucial elements.**

In this respect, we should have an energy policy proposal that gradually guarantees the targets mentioned previously, among which it is **essential to show signs of action that guarantee access to and deployment of electricity infrastructure that is not based on maximising the financial return of investors but on guaranteeing the provision and modernisation of the service**.

This energy policy should be implemented by:

1. Thoroughly reforming the Electricity Sector Act 24/2013. Despite patches added by the government, this current law does not deal with socially equitable supply nor the challenges of the electricity system.
2. Implementing the National Fund for the Sustainability of the Electric System (FNSSE), including the improvement proposals from **Fundación Renovables**.
3. Recovering symmetrical criteria in the electricity tariff.
4. Creating a social tariff.
5. Introducing criteria of a green and sustainable taxation policy.
6. Making system operator publicly run.
7. Fully and forcefully separating ownership of the electricity infrastructure from the private companies that carry out deregulated activities (generation and distribution).
8. Redefining the role of the government and the different levels of the central, regional and local administration as investors in the energy transition.
9. Ensuring the electricity grids really remain in the hands of independent agents (who could be public or private) without interference from the interests of the companies that compete in the deregulated market.

In its document, **Fundación Renovables** has proposed developing these points to complete a political proposal, directly referring to the conception of the role that the state should play in using the **Next Generation EU funds** (the items of which are detailed in **Annex I**).

The fate of the Next Generation EU funds, given the characteristics of the projects presented by the traditional energy sector, introduces the uncertainty of **supporting initiatives that lack economic and industrial maturity, requesting amounts that are not consistent with the maturity, technology or market to be supplied**.

Projects subject to funding should be promoted under **suitability criteria that underpin the change we are aiming for, without exacerbating the problem** or perpetuating the centralised model we are moving from. As advocated in EU Directive 2019/944 on the interior market for electricity, this change is towards a distributed and open system in which millions of citizens can participate. Therefore, advancing in this direction involves creating and stipulating criteria to ensure that the projects that extensively represent and contribute sustainability are implemented immediately or in the short term, are replicable and distributed across the country, can be executed by small- and medium-sized companies, and that their social actions and benefits reach citizens.

The final impetus for reaping the benefits of our distributed energy resources inexorably depends on the **role that distribution and transmission grids play and will play in the transformation process from a centralised to a decentralised model.** This reconversion requires a robust energy policy that is committed to this by correctly applying the Next Generation EU funds. This then enables the direct participation of the consumers, incorporation of aggregators and a reduced electricity price.

These funds can be used to support consolidation of a strong electricity system that is not oligopolistic and is based on the provision of a service and not on profitability of assets. It is worth mentioning that **the following proposal could be implemented better with the chance to apply the funds, but its purpose, suitability, need and execution is not dependent on them. In other words, it is a proposal that can be implemented using other financial means.**

The multiplier effect of applying the Next Generation EU funds to this initiative is clear because it opens up the possibility for highly replicable and distributed activities, such as self-consumption, sustainable mobility, demand management, implementation of distributed generation, etc. to be implemented more simply, in addition to reducing the price of electricity, which is a real driver of development.

The **Fundación Renovables** proposal contains the following steps:

1. **Separating the functions of system operator and transmission operator and recovering the public nature of the system operator**, which is currently performed by REE, a company in which the state has a 20% shareholding. This

position does not demand the transmission networks be nationalised, but that their remuneration be adjusted according to the services provided and the reality of the cost of money and remuneration of this type of infrastructure as a natural monopoly.

Fundación Renovables does not believe that the transmission being publicly owned is an additional benefit because it is an activity that is carried out according to the government's energy plan. However, we do think it is necessary to readjust their remuneration figures and, above all, that the system operator with the assets it requires to guarantee the manageability of the system should be of a public nature.

The system operator, as a public entity, should include the ownership of the elements and infrastructure required for the manageability of the system, with a special emphasis on the storage facilities, including the pumping facilities. We are not trying to intervene in the setting of prices, including hydroelectric power plants in the scope of action or as facilities owned by the system operator; we only refer to providing it with the means to make system manageability possible. Combatting the positions of dominance in the price setting of the wholesale market should be the role of the government, the control institutions such as the CNMC and, why not, of self-regulation and greater competition in the market itself.

2. **Completely separating the ownership of the electricity distribution grids and associated service infrastructure from the private companies that carry out deregulated activities (generation and distribution).**

   This step would be equivalent to what has already been carried out with the transmission grid, from which the traditional electricity companies had to be forcefully removed, although this was not to improve the public service and independence but to create a structure that is more to do with bonds than service. Learning from previous experience would mean that a rapid and direct separation scheduled could be applied now for the distribution networks. This would stop economic interest prevailing over public service and stop the current companies maintaining partial ownership, even on a transitory basis.

   This proposal is designed for the companies that have integrated control and a specifically relevant influence. Distributors deserve special consideration as their scope of activity is merely local or regional, so it would not be necessary to apply this measure.

3. **Progressively recovering public ownership of assets and distribution functions, especially those connected to towns and cities**.

   This measure would not only recover the driving force of the future, but also the management of the reference suppliers that manage 10.5 million

customers, who are being pressured to migrate to a deregulated market in which not only is the supply of electricity 20% more expensive according to the CNMC or the statements from the Fourth Vice-President and Minister for Ecological Transition and the Demographic Challenge, but also the consumers are the ones who retain the PVPC. This supply is sold by the reference suppliers, who are protected from having their supply cut off due to non-payment or being able to benefit from the rates subsidy.

This measure would involve:

- **Avoiding the effects of oligopolistic concentration in the grid ownership.**
- **Breaking the vertical integration of the electricity system.**
- **Recovering management for the most disadvantaged consumers by taking on the management of the reference suppliers, which are currently subsumed under the distributors.**
- **Liberating access to the local electricity grid.**
- **Promoting self-consumption and demand management.**
- **Democratising management of the electricity system.**
- **Incorporating pay-per-use in the grid.**
- **Lowering the electricity tariff by reducing the profitability demanded by being publicly owned.**
- **Electrifying demand and ensuring that this improves the functioning of the system thanks to its manageability.**
- **Ensuring that consumer data is in the hands of the state for protection and flexibility of use for the benefit of the system.**

Public ownership of the local distribution networks is a fundamental element for introducing electric vehicles, self-consumption, demand management, consumer protection and, ultimately, for ensuring system manageability has different and transparent signs.

In different countries, especially in the EU, towns have taken on ownership of the urban electricity lines. In Spain, we already have cooperatives owned by towns or operating in the municipal area, such as Cadiz, Crevillente and Catral. These are examples of how public bodies can assume the supply of electricity and actions that are taking shape within citizen initiatives, such as the Associació de Municipis i Entitats per l'Energia Pública (Association of Municipalities and Entities for Public Energy, AMEP), for example. In countries such as Germany, several towns have formed municipal electricity companies, such as Schönau, Hamburg and Stuttgart.

4. **The scope of action should be defined progressively**, starting with the local distribution networks, i.e. the urban and municipal distribution networks, modifying the remuneration criteria for transmission and distribution networks up to the supply voltage for selling.

   The process should be established progressively, placing special emphasis on starting with low-voltage lines up to the categories for high-voltage lines set out in Royal Decree 223/2008, including incorporating in inverse order of voltage level, in other words, prioritising category 3, then 2, and finally 1. It is important to bear in mind the differential consideration that this infrastructure has in the peninsula system and in the extra-peninsula regions.

   It is important that the action is prioritised in **compact urban areas** with the aim of facilitating completion of the desired functions the infrastructure should have and being the nexus of self-consumption, sustainable mobility, electricity storage for consumption and, ultimately, demand management.

   The reason for selection should be in line with their role of interacting with consumers and the intrinsic need to promote the sustainable, fair and inclusive energy transition.

5. **Guaranteeing the modernisation and digitalisation of the grids is a public service target and one that the state is willing to carry out**.

6. Obviously, **this proposal is open to different public-private co-participation models**, but with a greater public contribution to guarantee this development at the lowest cost. The Next Generation EU funds are an opportunity to implement this proposal without losing sight of the possibility of carrying out mixed public-private measures. In fact, the appetite of some investment funds unwilling to participate in management is clear, which would reduce public investment.

   One of the elements open to discussion is that the shareholder structure should reflect the regional organisation of Spain. **This infrastructure is the backbone of a local reality and it is important that the towns and autonomous regions participate in this business structure.**

7. **The assessment criteria for reaching an agreement should be the result of dialogue, a process in which the CNMC should play a key role**. This is not only because of the mandate it has already assumed in the transfer of the Chira-Soria pumping plant, but also because its functions include proposing remuneration of the assets and its O&M, and it has a perfect inventory of all the assets, their depreciation, and their suitability as RABs on which to obtain the valuation base. Obviously, the discount rates should take into account that what is being assessed is infrastructure required for a public service, the history

of remuneration already received, and its meaning, both in terms of form and quantity.

The CNMC has inventories and figures that should specify the limits and their valuation in books in accordance with the bases established in the different files of the Regulatory Supervision Chamber, but this information has become confidential and is not available. On the other hand, CNMC Resolution 6084 of 20 May 2020 establishes the criteria for creating the audited inventory of distribution facilities, which should serve as a base for establishing the value.

Ultimately, the Fundación Renovables proposal is to assign part of the Next Generation EU funds to recovering public ownership of both the system operator and the property, and to modernising the distribution networks.

This is not a proposal to create a public electricity company confined to generating electricity because there is a lack of opportunity for this scope, among other reasons. If there is a surplus, it is the diversity of actors to generate electricity and of procedures for them to operate at the lowest cost. It is essential to incentivise and facilitate the **diversification of supply for self-consumption, distributed generation and energy communities**. The state should not compete in generating something that is extensively supplied and in which there is a lot of interest in investment, which, obviously, should be made under strict control in accordance with the regulation on quantities that the energy policy identifies.

To ensure this diversification happens, the infrastructure that connects the consumers and the producers needs to guarantee flexibility and access without prioritising the economy of a few over the progress of everyone.

Annex 1. How do the Next Generation EU funds work and what are they?

Democratising energy as a national project

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Annex 1

How do the Next Generation EU funds work and what are they?

We are in a key moment in an economic crisis caused by the voluntary reduction of activity to slow the spread of Covid-19 and in which significant amounts of money are being mobilised to reactivate the economy, primarily in investment processes.

The Next Generation EU funds are a financial instrument providing €750 billion to stimulate the recovery. They are included in the long-term EU budget (amounting to a total of €1.8 trillion) to construct a more ecological, digital and resilient Europe. The allocation is as follows:

- Single market, digital economy and innovation: €10.6 billion
- Cohesion, resilience and values: €721.9 billion
- Natural resources and the environment: €17.5 billion

This distribution is according to different mechanisms with different typology, application and budget allocation:

- **European Recovery and Resilience Facility (RRF).** A central pillar of the Next Generation EU, with €672.5 billion in loans and subsidies. Its primary objective is economic recovery by creating more sustainable and resilient economies and societies that are better prepared for the challenges we need to address in the ecological and digital transformation. These are accessed via the Spanish National Recovery and Resilience Plans.
- **Recovery Assistance for Cohesion and the Territories of Europe (REACT-EU)**. This portion of the Next Generation EU funds will be provided in 2021 and 2022. It amounts to €47.5 billion and is an initiative to continue the financial response measures, making them available to the European Regional Development Fund (ERDF) and the Fund for European Aid to the Most Deprived (FEAD).
- The rest of the funds will be assigned to European programmes such as the **Horizon 2020 (€5 billion), InvestEU (€5.6 billion), Rural Development (€7.5 billion), the Just Transition Mechanism (€10 billion) and Resc EU (€1.9 billion)**.

The EC started committing the funds within the multi-annual financial framework on 1 January 2021 after adopting the relevant sectoral legislation and the annual budget for 2021 by the European Parliament and the Council.

To ensure that the EC starts providing the loans via the Next Generation EU, making the instrument operational, it remains necessary for all member states to ratify the new decision on own resources, according to their respective constitutional requirements. Anybody can benefit from the EU budget, so it is possible to access financing proposal calls, obtain general information on the funding programmes and procedures, and request funding online.

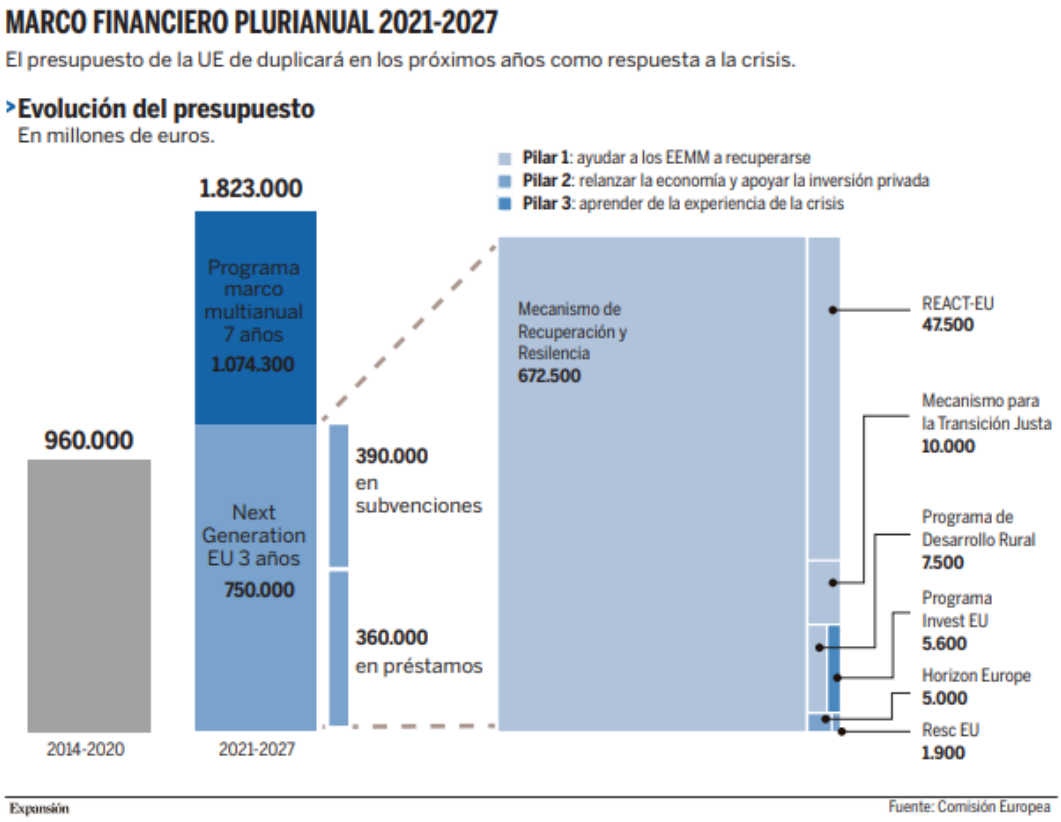

Figure 7. EU multi-annual financial framework 2021–2017.
Source: Expansión - European Commission.

The Next Generation EU in Spain

The EU has allocated Spain up to €140 billion under conditions whereby the energy transition and digitalisation are the foundations for facilitating the recovery.

In Spain, the Next Generation EU funds **will be delivered through the** Spanish General State Budget once the EC has approved Spain's Recovery, Transformation and Resilience Plan (RTRP). In Spain's case, the Central Spanish Government will transfer the funds to the autonomous regions of Spain and local bodies through agreements and subsidies that are always aligned with the targets set in Brussels.

- **Economic items in the Spanish General State Budget**

The Spanish government included a first portion of funds in the 2021 General State Budget that amounted to up to **€26.63** billion out of a total consolidated expense of

€550.48 billion, which does not include this first part of the funds. This would entail an increase of 13.6% of the amount allocated in the previous budgets, but if you include the liquidity that these funds provide, the increase would be 19.4% on the accounts set in 2020.

Looking ahead to the future, specifically at the period between 2021 and 2023, Spain could receive transfers totalling a maximum of €71.60 billion via two of the instruments mentioned above: the Recovery and Resilience Facility (€59.17 billion) and REACT-EU (€12.44 billion).

Specifically, the 2021 General State Budget would raise €24.20 billion from the RRF and €2.44 billion from REACT-EU to reach the proposed figure. Therefore, 37.1% of the total Next Generation EU funds will be invested in 2021.

- **Allocation of the funds**

The economic resources will not be channelled in a centralised manner completely, but rather in a distributed manner. Therefore, of the €24.20 billion from the RRF, 55% (€13.41 billion) will be managed directly by the state, while the remaining 45% (€10.79 billion) will be managed by the autonomous regions. The regionalisation of €4.25 billion has already been determined for the autonomous regions, with the following breakdown: Andalusia (€702 million), Catalonia (€596 million), Madrid (€461 million) and Valencia (€414 million).

Similarly, 20% of the REACT-EU funds (€12.44 billion between 2021 and 2023) will be managed by the state (the €2.44 billion that is part of the 2021 budget). The remaining 80% (€10 billion will be managed by the autonomous regions as part of a process that will include regional operation programmes for each region.

RECOVERY FUNDS IN SPANISH GENERAL STATE BUDGET 2021			
POLICY AREA	Regions	Local entities	Amount
Industry and energy	**2,663**	**0**	**2,663**
Healthcare	1,821	0	1,821
Education	1,685	3	1,689
Infrastructure and resilient ecosystems	**1,152**	**513**	**1,664**
Access to housing and building development	1,580	50	1,630
Social services and social development	942	15	957
Trade, tourism and SMEs	150	782	932
R&D and digitalisation	504	15	519
General services	136	92	228
Agriculture, fishing and food	115	0	115
Employment promotion	12	12	24
Other economic measures	23	2	25
Culture	11	0	11
Justice	0	0	0
Total	**10,794**	**1,484**	**12,278**

Figure 8. Transfers of recovery funds in the Spanish General State Budget for 2021 to territorial administrations by policy area. In millions of euros.
Source: Spanish General State Budget 2021. Created by Fundación Renovables.

- **Expenditure by ministry**

If we thoroughly examine the percentage of the fund allocations in the budget by ministerial area, there are clues as to which sectors are more relevant when applying financial resources and where new opportunities will be created for technological and labour development.

The Ministry for Ecological Transition and the Demographic Challenge will account for the bulk of the distribution, with €6.81 billion (28% of total resources) focused on the deployment of renewable generation, the promotion and digitalisation of electricity transmission and distribution networks, and the development and implementation of energy storage.

The second largest amount will be allocated to the Ministry of Transport, Mobility and Urban Agenda, with €4.98 billion (21%) assigned to the energy and structural rehabilitation of homes and to sustainable mobility plans and associated infrastructure, as is the case with the expansion and implementation of recharging points for electric vehicles and railway infrastructure.

The Ministry of Economic Affairs and Digital Transformation has been allocated €3.65 billion (15%), which will primarily be used for digitalising the production fabric, promoting digital connectivity and digitalising public administration.

The remaining resources will be allocated to Education and Vocational Training (8%), Industry, Trade and Tourism (7%), Labour and Social Economy (5%), Science and Innovation (5%) and Social Rights and Agenda 2030 (4%).

Recovery, Transformation and Resilience Plan

Following approval by the European Council on 30 December 2020, the BOE published Royal Decree Act 36/2020, which approves urgent measures for modernising public administration and executing the Recovery, Transformation and Resilience Plan (PRTR).

This Royal Decree aims to guarantee the effective implementation of the European Recovery Funds and is articulated as an instrument to support investment and the reforms necessary to guarantee a sustainable recovery, an ecological and digital transition and a rapid and agile response to the needs of Spain and its production sector, as required by the EU. It also introduces different measures designed to facilitate the implementation of the Recovery Plan presented by the government.

This plan includes the creation of a new public-private collaboration formula: **Strategic Projects for Economic Recovery and Transformation** (PERTE), which is the primary figurehead for executing the projects provided for in the Recovery Plan. This formula aims to ensure that the projects are of a strategic nature, have a significant potential

to have a knock-on effect on the rest of the economy and require collaboration between administrations, companies and research centres.

List of figures

Democratising energy as a national project

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List of figures

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