



Towards a Sustainable Energy Transition
Proposals to face global challenges

Executive Summary



March 2018

Fundación Renovables appreciates the invaluable collaboration of the Foundation's Protective Partners who have participated in this document, as well as the staff effort.

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Preface

Fundación Renovables presents its Energy Policy Proposals to Spanish society as a contribution to the necessary national debate on the Energy Transition that we head toward. ***"Towards a Sustainable Energy Transition"*** is the update and expansion of the document presented in October 2015 upon the December election calling of that year, ***"La energía como vector de cambio para una nueva sociedad y una nueva economía"*** *"Energy as a vector of change for a new society and a new economy"*, to which we give continuity in ideas and approaches, but with much more ambition.

Unfortunately, we have lost thirty months in the task of drastically change our energy model as it requires, first, the fight against climate change, a task in which the **Paris Agreement** January 2016 - despite its limitations - clearly marks that the path goes through the radical transformation of the way we use energy today. Various factors of our country also demand that transition, as are, among others, the high rate of energy dependence - a real drag on our trade balance -, the imbalances of the electrical system that flow into one of the most expensive light receipts of Europe or the scourge of energy poverty that ashamed or should be ashamed us as a society.

In this document we make even more incidence **on the need to act in the city in a global way**, as the main scenario of this change in the energy model, with proposals ranging from the urban configuration, the recovery of the neighborhood as a space for coexistence, rehabilitation and, of course, the transformation of mobility and energy self-sufficiency.

Our Energy Policy Proposals have as a prelude the vindication of the values and principles that frame our actions and that start from the fact that **energy is a right of citizenship**, a basic good, a public attribute that must prevail over the economic interests that move around it.

In the first part of this document we deal with **action plans on demand**, an area in which we have a lot to do and which must contribute decisively to the reduction of emissions with a more rational use of energy and widespread electrification by 2050, but with a necessary big jump in the next decade.

Secondly, we deal with the **offer** with strong action plans for renewable energies, which must assume their role faster, for the closure of coal and nuclear and, of course, for the promotion of self-consumption. The latest proposals refer to more transversal actions such as the urgent global reform of the Electricity Sector or the broad package of fiscal measures that we consider an essential tool to carry out the Energy Transition.

We want to point out that the **change must be fair for the whole citizenry respecting their rights**, starting, for example, for breathing clean air and ending with

the possibility of generating their own energy, right that in some way today is limited by the most restrictive legislation in the world.

*Our starting point is to achieve the goal, now largely accepted, of **having a decarbonised energy system in 2050**, and for that we set objectives for the coming decades in terms of reducing emissions, electrifying demand, penetrating renewables, and so on. We understand that to ensure that final goal we must start by undertaking the task with determination from the start and therefore, we consider that the goal of 2030 is the one that should mark a turning point the way we deal with energy.*

*We have crossed the effects of the proposed measures with different models of prospective and all of them confirm the **viability** of these to achieve the desired objectives.*

Our proposal is consistent with our vision of energy, it is economically and technologically viable, it is global, it is structural and not opportunistic, it is susceptible of amendments and improvements and it is certainly good script for the debate on a reliable Energy Transition that we want it be sustainable and, above all, carry it out with the commitment of all.

Fernando Ferrando Vitales
President

Executive Summary

Fundación Renovables contribute to the debate on the Energy Transition a new version of its Energy Policy Proposals, expanded and revised, which was published in November 2015 with the title “[La energía como vector de cambio para una nueva sociedad y una nueva economía](#)” (“Energy as a vector of change for a new society and a new economy”). With this document we offer **a global and coherent vision of what the change of the energy model implies, a fair and sustainable change and for everyone.**

Although the ultimate goal of these proposals is to achieve by 2050 a decarbonization not only of our energy system but of the economy in general, **our reference for most of the proposed measures is 2030** because we believe that **by that date we should have started the turnaround in the way we relate to the energy** that we claim from **Fundación Renovables.**

And this drastic change, essential for the fight against climate change and against the serious dysfunctions of the energy system that happen in our country goes though, without any doubt, **to act primarily on the demand** to achieve a significant reduction of emissions with two pillars: **a more rational use of energy** and **a generalized electrification of this demand.**

Regarding the offer, we consider first of all that, as we have pointed out on numerous occasions, **renewable technology is ready** to assume their expected role in a sustainable model; the **spectacular decrease in costs** dispels any doubts about the competitiveness of a model based on them; therefore, at this point, **what is missing is a political decision** to overcome the barrier of interests of conventional technologies, interests that do not correspond with those of society as a whole.

Goals

Year	% CO ₂ emission reduction vs. 1990	% CO ₂ emission reduction vs. 2015	% Final Energy demand reduction vs. 2015	% Electrification	% Penetration of RES in the electric system	% Coverage of final energy demand by RES
2030	51	59	25	50	80	50
2040	67	80	30	70	100	80
2050	Zero emissions	Zero emissions	40	80		100

Table 1 Objectives of Fundación Renovables for 2050 and partial objectives for energy sustainability. Source: self made.

As we have said before, the goal is to achieve zero emissions of Greenhouse Gases in 2050 and a system free of any other environmentally unsustainable characteristic, such as the generation of radioactive waste. In **¡Error! No se encuentra el origen de la referencia.** it can be seen that we propose five variables to prepare the roadmap to 2050 with partial objectives by decades. Today nobody discusses the goal of 2050, assumed by the European Union, but the proposal of **Fundación Renovables** is distinguished by stepping on the accelerator from now and not leaving the main task for the last or last decades.

Therefore, by **2030** we propose to achieve a **reduction of emissions of 51%** compared to 1990 and a reduction of 59% compared to 2015, from **255 MTCO₂** in 2015 to **104.1 MTCO₂ in 2030**, (see *Figure 1*), with a **reduction in the final energy demand of 25%** compared to 2015 (or more than 40% compared to what we would have in 2030 if the Spanish economy behaves as before, without changes in energy efficiency and with an annual growth equivalent to **GDP of 1,5%**), an **electrification of 50%** of the final energy demand (twice the level of today), a **penetration of renewable energies of 80%** in the electric system and **50%** in the coverage of final energy demand. (See *Figure 2* and *Figure 3*).

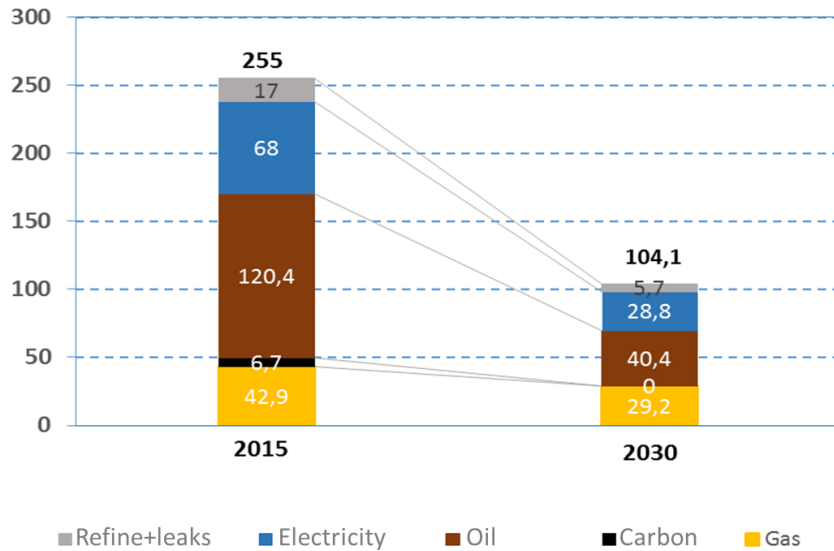


Figure 1 Reduction of CO2 emissions expected in the 2015-2030 period. (In MT CO2).
Source: self-made /Prepared by the author

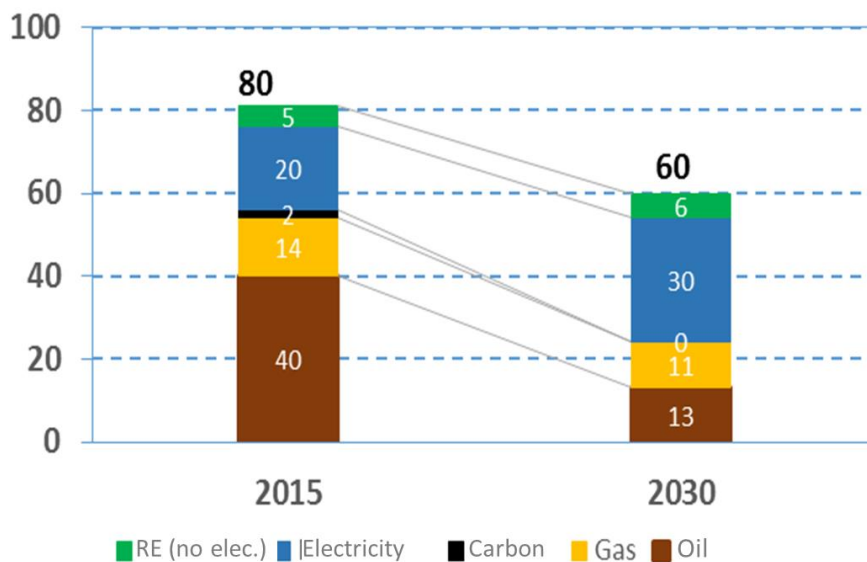


Figure 2 Evolution of the final energy demand and the energy mix for 2015 and 2030. (In Mtep).
Source: self-made / Prepared by the author

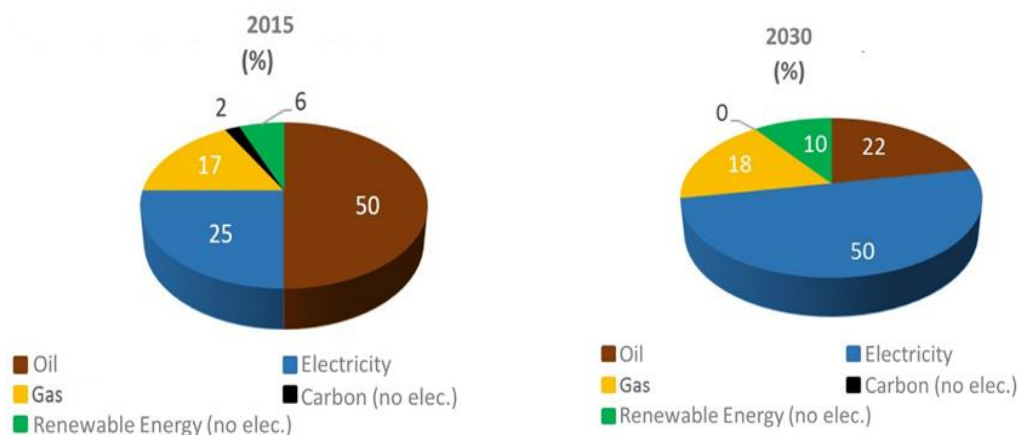


Figure 3 Comparison of the total coverage of the demand for energy sources in 2015 and in 2030.
Source: self made / Prepared by the author

This means that, for example, in the **transport sector** we move from a final energy demand of **33 Mtep** (million tons of oil equivalent) in 2015 to **18 Mtep** in 2030, and of these **only 63% are covered by oil compared to the current 95%**, while within the **residential sector** we are confident to eliminate the consumption of oil derivatives with a final energy demand that would go from 15.4 Mtep to 11.4 Mtep in the same period of time.

This is shown in the following figure:

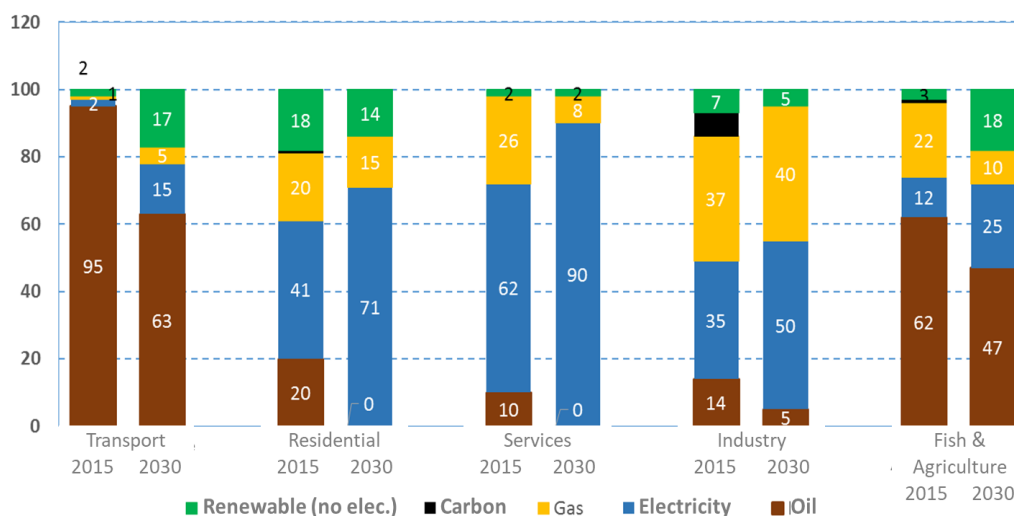


Figure 4 Variation of the coverage mix of the different sectors by energy sources, expressed in percentage, for the 2015-2030 tranche.
Source: self made / Prepared by the author.

Two more data to assess what would be the achievement of these objectives:

- **The reduction of the oil bill in 2030 by more than 9,000 million euros (€ M)** (for a price of \$ 60 per barrel of oil).
- **The reduction of the dependence from the current 83% to 50%.**

Principles and values

If the search for ambitious objectives is one of the main specific characteristics of this document, the other is that we start from the assumption of some principles and values that place the citizen **as the main protagonist of the model**, surpassing their condition as captive consumers they become producers, managers and users of energy.

This positioning starts from the conviction that energy is a **basic good**, a right that goes beyond the economic interests that move around it and therefore we claim its **public utility attribute** and we claim its universal and guaranteed access.

We also believe that **efficiency and renewable energies are the fundamental axes of any action in energy matters**, because there is no better energy than that which is not consumed and because renewable energies are sources with a clear availability distributed throughout the territory.

Another of our fundamental principles is to **consider the city as the engine of the new energy model**. The concentration of population and the model of urban development is turning cities into energy sinks with a high concentration of emissions. Changing the current energy model to a more sustainable one requires urgent action in the urban environment.

When we claim to **act primarily on the demand side and its electrification** we do so because it means democratizing the energy system by placing the citizens in the center. In fact, for **Fundación Renovables** energy is the **engine of a new social and economic model**.

But this will not be possible if we do not make **transparency and good governance the basis of management and relationship** to overcome the current misrule of the system and break the lack of current confidence with principles of action such as openness in decision-making, participation or social dialogue to avoid actions such as those that have taken place in this last legislature.

Finally, it should be noted that we must **promote a new culture of energy** in which society assumes that **the current situation is neither sustainable** nor competitive because of the demand for **unavailable resources** and the cost that **climate change** and pollution are introducing.

This document is divided into three parts that correspond, respectively, to action plans which refer to **demand, supply** and **cross-cutting measures**. In the Annex we present the table of starting data, used hypotheses and estimated results of the application of the measures.

ACTION ON DEMAND SIDE

I Action in the urban environment

Fundación Renovables has been pointing out for years **the city as the scenario of the change of the energy model** not only because more than 80% of the Spanish population lives in a city, and 75% of the energy consumption is produced in them, but also because it is the right environment for a model that empowers the citizen and the whole of society.

For this reason, we demand a **strategic planning** capable of gathering global needs of the city, at a general level, and to mark objectives, terms and revisions of each of the areas of sustainable urban development:

- Actions in defined territorial areas: neighborhood, district, ...
- Mobility actions.
- Rehabilitation of buildings.
- Planning of public spaces.

Proposals for urban action (among others)

- Prioritization of **public space as a space for people**.
- Creation of a network of quality public spaces that are considered as fundamental axes in the **mobility plans**.
- Creation of specific legislation that regulates and contemplates the **new modes of mobility**, prioritizing those that are **without emissions**.
- Review of regulations and design of public roads to **promote the sustainable, accessible and safe use** of them.

The role of the city

- **The city as a service provider:**
 - Energy, as a **public service**, requires the analysis of **new functions of the city** as an **energy trader, manager** of its own energy, promotion of **collaborative and energy exchange capacity platforms P2P**, etc.
- **The city as owner of assets and as an investor or promoter of initiatives:**
 - Transformation of the **distribution lines, rehabilitation** processes, development of **own generating plants** with renewables, points that require, without a doubt, a modification of the [Local Government Regulatory Law 7/1985](#)
- **The city as promulgator of standards:**
 - Mobility and transport:
 - Modification of **motor-vehicle tax, vehicle access and circulation regulations** that do not comply with emissions regulations, **prohibition of the circulation of diesel vehicles by 2025 and by 2040 the prohibition of internal combustion vehicles' circulation**, favoring the installation of VE recharge systems, ...

- Building:
 - **Property tax** based on the qualification of the **energy certificate**.
 - Adaptation of building encourages **the rehabilitation of buildings**.
 - Encourage the installation of **self-consumption initiatives**.
- Energy:
 - **Prohibition or encumbrance of gas installations** and the use of fossil fuels.
 - Commitment to **consume 100% of renewable energy in all public facilities** and to improve their energy efficiency up to 50% by 2030
- **The city as a participatory environment and dissemination of best practices:**
 - Support communication and dissemination of best practices
 - Planning of actions tending to **gather the will of the citizens in the new urban design**.

II Eradication of energy poverty

Energy poverty comes to **ratify**, along with climate change that **the current energy model does not work**. We are talking about a basic good whose availability must be above the purchasing power of the people.

In **energy poverty**, three factors generally converge:

- The **insufficient income of a broad sector of society**.
- An **unaffordable price of energy**.
- **Poor housing and construction conditions**

To eradicate energy poverty, according to the root causes, it is necessary to launch different lines of action:

- Availability of **social rates** that are adapted **according on the income level** and specific family characteristics, which should include:
 - The **non-existence of a fixed tranche**.
 - A sufficient **basic contracted power** depending on the family size.
 - A **minimum consumption of energy at a reduced price**.
 - **VAT exemption or reduced VAT**.
- **Rehabilitate 250,000 homes/year** under a configuration action that does not require resources to those who do not have these resources.
- Consideration of electric power coverage **as a public service of city councils**.

III Energy Performance of Buildings

One of the main lines of **Fundación Renovables** is the development of a program of energy actions that contributes to energy efficiency and improves the habitability of the current real estate park.

Spain has an **energy expenditure on buildings** that accounts for approximately **31% of final energy demand**, with a **strong weight of fossil fuels** especially in the **residential sector, 41%**, and a **low constructive quality since only 3% meets within the standards of the current regulations**.

Areas for intervention

From the analysis of the situation of buildings in Spain, both for its energy and environmental importance, as well as for having decent living conditions, a program of energy actions has been prepared with the following main axes:

- The decisive action in **the sustainable construction of both new buildings and in the rehabilitation of existing ones**.
- **The commitment to the electrification of demand, due to the need** of eradicate the consumption of fuels as inefficient and environmentally unsustainable.
- **The implementation of tools and transversal measures** to facilitate the change of energy model

National Plan for Energy Rehabilitation of Buildings

- **Regulatory framework that penalizes the energy inefficiency of buildings** based on their energy certificate and facilitates their mandatory development.
- **Rehabilitation of 500,000 housing/year** (3% per year of the current real estate park of main residence).
 - **To adapt 250,000 vulnerable homes/year**.
 - To implement **shared investment actions** for those tenants who are unable or refuse to go into debt in their execution.
 - **Public budget provision of 2,500 M€/year**. Origin: 50% increase taxation pressure on fossil fuels, surcharge of 10% on the property tax for each letter that exceeds the C in the energy certification, European Funds and General Budget ...
- **Rehabilitation each year of 5% of public buildings**.
- **Rehabilitation of buildings/stores in the service sector before 2030**.
- Criteria for basic action:
 - **Electrification of 100% of the energy demand, which means a reduction of 50%**.
 - **Fees and taxes depending on the energy label of each building/commercial establishment, both in the property tax and in the business license**.
 - **Requirement of energy certificate C or higher to all the remodeling arrangements to obtain the building permit**.

New construction. Nearly zero-energy buildings (nZEB)

From 2020 the new construction of buildings with over 1,000 m² must be performed under nZEB criteria, assuming the objectives set by the [Directive 2010/31/EU on the energy performance of buildings](#)

Electrification

The electrification of energy demand is a priority of these proposals as it inherently involves eliminating the consumption of fossil fuels, because in addition to not having them, they are inefficient and polluting.

Therefore, **Fundación Renovables** establishes the following lines of action:

- **Prohibition of any type of advertisement that promotes the consumption of fossil fuels.**
- **Replacement plan for air conditioning equipment:**
 - Encouraging high efficiency systems such as the heat pump with the implementation of a plan to replace heating systems with fossil fuels in a double line:
 - **Mandatory incorporation in buildings that are rehabilitated, promoting integral cold / hot air conditioning.**
 - **A replacement plan of boilers by heat pumps** maintaining the heat distribution system and minimizing the execution of works for their incorporation.
 - **Prohibition of heating systems with coal boilers from 2021 and with diesel boilers from 2025.**

Tools and transversal measures

- **Energy Efficiency Certification Plans for Buildings. Modification of the [Royal Decree 235/2013](#), providing it with greater executive and operational position.**
- **Favor the consumption of electricity compared to the consumption of fossil fuels with:**
 - The establishment of **fossil fuel reduction percentages** for utilities.
 - **The separation of the commercialization or sale of electricity and fossil fuels** in the domestic sector and services.
 - Tax action plan to **charge the consumption of diesel, coal, natural gas, butane or propane.**

IV Mobility and sustainable transport

In **Fundación Renovables** we believe that in mobility, not all is related to the change of vehicle model, but also in a conception of mobility under a **shared criterion and public service**. It is necessary, therefore, **to minimize the transport needs** for local and regional services, with **practices of minimum consumption** and emissions, progressively abandoning internal combustion vehicles.

Objectives and commitments

2025

- **Electrification of 100% of the railway network.**
- **Prohibition of circulation in cities of diesel vehicles.**
- Requirement to install in new and rehabilitated buildings a **charging point for each parking space** in private garages and 25% in public garages

2030

- **80% of the fleet for electric vehicles for public use and 100% for new EV.**
- **60% share of new electric private vehicle.**
- **Reach a quota of 30%** with a registration of 5,000,000 electric vehicles.
- **Drop of 15% of the vehicles registered fleet.**
- **Reach 20% of transport of goods by rail.**

Maximum emission standards:

- Average fleet of cars: **50g CO₂/km by 2030.**
- Average fleet of vans: **88g CO₂/km by 2030.**

Reduction of needs and improvement of accessibility

- **Urban planning and design** that promotes accessibility and sustainable mobility, giving priority to pedestrians, bicycles and public transport.
 - **Limited access to cities** of private vehicles.
 - **Treatment of mass tourism.**
 - **Minimization of transport needs.**
 - **Parking management** in the center of cities and in those points where vehicles concentrate the most.
 - **Mobility plans in companies** and industrial parks, educational and commercial centers incorporating the **mobility manager**.
- **Promotion of public transport:**
 - **Change in tariff models** of public transport in urban and metropolitan networks.
 - **Electrification of shared vehicles fleets and urban public transport** surface: buses, trams, railways and metro.
- **Increase vehicle occupation rate:**
 - **Betting on shared-use systems**, facilitating their implementation both with the reduction of tax charges and circulation rates.
 - **Promoting alternatives** to move from an economy based on the possession of means of transport to a model based mobility services.

Investments in mobility infrastructures and transport

- **Change in the priority** of urban and interurban transport **investments.**
- **Cease the construction of new** high capacity roads.
- **Maximization and promoting the use of train.**
- Development **plan** for **charging facilities.**

V SELF-CONSUMPTION

Fundación Renovables is committed to the priority development of self supply as **a right that must be regulated in an appropriate manner without the legal and administrative obstacles** that, as is currently the case of Spain, try to impede its development, for the following reasons:

- **It is a main element to empower the consumer and turn it into an active subject and focus point of the energy system.**

- **It is a basic tool for demand management.**
- Effectiveness by **reducing losses.**
- It is an element of **diversification** of the energy sector actors, encouraging the exchange between consumers.
- **Its ability to store energy as the basis of system manageability.**
- It is a basic pillar of the triangle efficiency, self supply and sustainable mobility.

Binding targets

- Commitment to establishing **binding targets** on the ability to cover the final energy demand by distributed generation systems, **establishing the following objectives of coverage of electricity demand:**
 - **10% by 2030**
 - **20% by 2040**
 - **30% by 2050**

For the year **2030**, the forecasts of the **power to be installed would be 18,000 MWp** of photovoltaic solar energy.

Proposed measures

- **Repeal of [Royal Decree 900/2015](#), and approval of a legal framework in accordance with** the guidelines of the European Parliament and aligned with the objectives of the Paris Climate Summit.
- Availability of **simple administrative procedures.**
- **No limitation to the installed power.**
- **Monetization of all energy flows.**
- **Equal rights** with other market agents.
- **Fair remuneration of all surpluses discharged into the net.**
- Encourage **the incorporation of storage batteries in power generation** facilities to improve the system's manageability.
- **Development of shared self-consumption:**
 - **Allowing the aggregation of consumers and power generators** openly and without restrictions.
 - Facilitating the realization **of unique supply contracts**, allowing the aggregation of meters, both in generation and in consumption.
 - **Allowing energy purchases and sales between individuals** or by aggregation of these.
 - Enabling **individual and/or collective accumulation systems** for demand management.

ACTIONS ON ENERGY SUPPLY

VI Renewable Energies Plan

Technological maturity of renewable energies has been reached mainly in power generation technologies, hence the importance of betting on an electrification system of energy demand.

Proposed goals

The proposal of **Fundación Renovables** and the goals set have been divided into two blocks:

- Contribution of renewable energies to the coverage of total final energy consumption: **50% by 2030, 80% by 2040 and 100% by 2050.**
- Generation of electricity with renewable energies: **80% by 2030 and 100% by 2040.** (See figures 5 and 6).

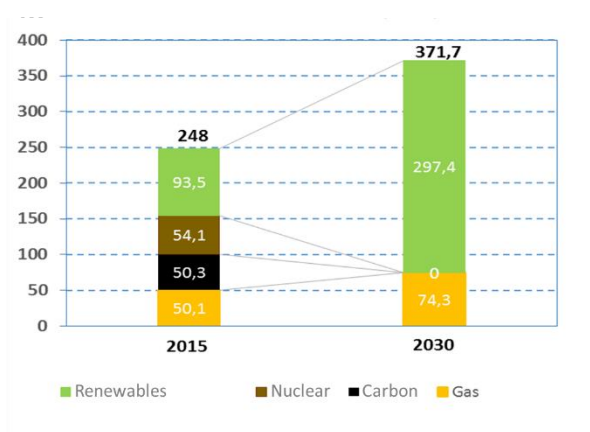


Figure 5. Consumption of electricity by energy sources according to the comparative forecast for the 2015-2030 segment. (In TWh).
Source: self made.

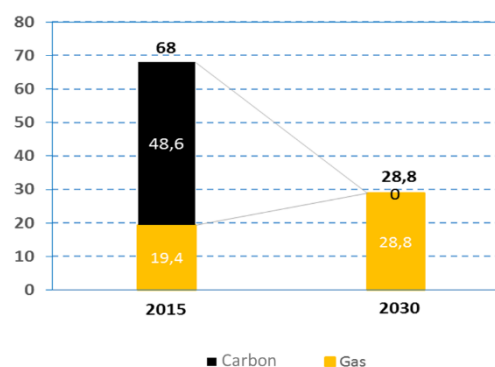


Figure 6. Emissions of electricity according to the comparative forecast for the 2015-2030 segment. (In MT CO₂).
Source: self made.

According to the energy planning carried out, for the fulfillment of the established objectives, the generation **of electricity with renewable energy should reach 297 TWh by 2030**, which represents **an increase with respect to the 2015/17 year of 194 TWh.**

A distribution of the power between technologies has not been included because this exercise must be the result of an energy planning process based on how the demand evolves and on the parameters of the electric system's manageability.

As an example, the installed capacity foreseen within a planning exercise, to date, would be 85,000 MW until 2030, including those assigned in the 3 auctions and 15,000 MW of wind repowering, **which would mean an additional power of 61,000 MW of which 18,000 MW would be from distributed generation or in a self-consumption formulation.**

Proposed measures

- **Cancellation and application of retroactive measures of the current legislation, reestablishing the stability framework** against investments and administrative procedures prior to the reform carried out since 2010 through the **establishment of a political pact** that allows reaching an agreement between the parties.
- **Preparation of a Renewable Energy Plan with a 2050 horizon** and objectives every 10 years, with the following elements:
 - Having the **force of law** and be born from the broadest political agreement possible.
 - With **binding** objectives for all Public Administrations
 - With **objectives by technologies** and forecasts regarding of flexible adaptation mechanisms according to learning curves.
 - Via **different agents** both in size of plants and their origin.
- Establishment of allocation procedures based on **auctions of power block coverage according to PPA model**.
- **Adaptation of networks** and incorporation into state planning with the same binding nature.
- **Increase of interconnection** as a key element to favor the manageability of the electrical system, but without the degree of interconnection being the one that marks the objective of contribution of renewable energies.

VII Carbon, nuclear phase out and waste management plan

Coal Phase Out

Within the decarbonization objectives of our economy, **the progressive coal power plants phase-out and the abandonment of mining is an unavoidable task**. At present, coal-fired power plants have their businesses in operation thanks to **an inefficient policy of setting CO₂ costs** and a policy of subsidizing domestic coal to make competitive what neither quality nor environmental impact is and by the pressure that all governments have had from the mining areas in Spain. Therefore, it would be necessary to:

- **Develop "just transition" plans** in accordance with the International Labor Organization.
- **Specify in 2018 a plan for the progressive coal power plants phase out in Spain**, which in any case will occur before 2025.
- **Eliminate all coal subsidies**, as to the rest of the dirty and inefficient energies.
- **Require that all coal power plants**, while they are not in a situation of closure or dismantling, respect **strictly and completely the compliance with the European emission limits (BREFs)**.
- **The complete internalization of environmental externalities** originated in each power plant to its operating costs.
- **Abandon** the draft of Royal Decree Project that establishes mechanisms for the **impossibility of closing coal power plants**.

Nuclear power plants phase out and waste management

- **Scheduled phase out of all nuclear power plants** for being unsustainable, environmentally unacceptable and non-competitive for society.
- Once the **current licenses have expired**, they should not be renewed any more, if there is no official planning that demonstrates the hypothetical individualized need of a certain power in a certain location.
- The operation of these plants should **assume all cost elements in terms of risk coverage and management difficulties, as well as the investments necessary to maintain the maximum degree of security.**
- The realization of the **“Centralized Temporary Storage” only makes sense as one of the phase out’ elements** and decommissioning of nuclear power plants.

CROSS-SECTORAL PLANS

VIII Urgent reform of the electric power sector

Proposal for actions

If the current tariff model is maintained, the regulation of its operation has to be transformed in a profound way, including:

- **Correspondence of the oil and gas sector** in supporting the costs of compliance with the 2020 commitments of 20% coverage of the final energy demand that, up to now, the electric consumer supports.
- **Elimination** of the application of industrial, territorial and **interruptibility** policies if the current coverage rates are maintained.
- Adjustment of **capacity payments**.
- Reconsideration of **energy distribution tariffs and transport** to the truly distributed one.
- Modification of the **specific retributive system for renewable energy and not investment**.
- **Elimination of the environmental tax** on electric power generation.
- Establishment of **marginally increasing tariffs based on consumption** in the residential sector and services, reducing the fixed part.
- establishment of a **social tariff**.

Proposal of **Fundación Renovables** to reform the tariff system:

- **Configuration of the economic fares** with criteria of transparency and efficiency as practically **monomial and progressive**, defined in terms of the electric power consumed alone, transforming the fixed costs into variables. In short: **that is charged for the energy managed and not for the investment of origin**:
 - **Differentiating consumers** when it comes to determining how the structural costs of the system affect them.
 - **The price of energy will be increasing** with consumption.
 - **The electricity price** will be related to the **hourly energy costs**.
 - **Minimum fixed cost per connection** for the right to receive the supply
 - **Possibility of acquiring energy through PPAs**, establishing only the costs of infrastructure utilization.
 - **Objectivity and transparency** in the distribution of costs among different types of consumers.
 - **Generation costs according to technologies and functions**, abandoning the pricing model with a marginal character.

Other actions to reform the electric power sector

- Increase in separation measures of **vertically integrated activities**.
- **Preparation of an audit to analyze the system costs**.
- Consideration in the retribution of the **value that the management and storage contribute to the system**.
- **Promotion of self-consumption** as a basic technology for the future.
- **Enable and promote the exchange of energy** between consumers and producers.
- **Reestablishment** of the National Energy Commission as a regulatory body that must be totally independent.
- International power grid and island interconnections, as long as it is accredited that it is the most economical and sustainable way.

System Operator: capabilities and configuration

- Its management and strategic plans must be **an instrument in which the social interest prevails and not the economic interest** of the shareholders and their executives.
- **Shareholder and functional separation of System Operator** (including the assets required to perform its function) with the ownership of the High Voltage Networks.

IX Taxation System

An *ad hoc* fiscal policy is proposed as a priority tool to achieve the objectives set, not only to **favor what you want to support**, but to **penalize what you want to limit**. It is not about increasing tax incomes, but about using the fiscal pressure to force changes in consumption habits.

Increase of tax rates (among others)

- **Elimination of fuel subsidies**.
- **Elimination** of special hydrocarbon tax **exemption for aviation**.
- **Review of bonus** in the IAE (Tax on Economic Activities) for **companies far from the urban center**.
- **Elimination of subsidies and incentives, direct and indirect**, to fossil fuels and to the electric energy generated with them or with nuclear energy.
- **Modification of tax rates for economic activities**.
- **Elimination of deductions for investments** in non-renewable energies.

Reduction of tax burden

- Energy rehabilitation in buildings: **reduction of VAT, tax reliefs, reduction of the property tax, and investment grant**.
- Reinforcement of [Movalt Plan](#) **exclusively for electric vehicles**.
- Reduction of Car Registration and Circulation Taxes for vehicles of zero emissions.
- **VAT reduction for efficient equipment**.

- **Bonuses in the IAE** (Tax on Economic Activities) for companies with collective transport, mobility plan or with EMAS environmental management system.
- **VAT reduction** in the proposed Social electricity Tariff.
- ...

For the implementation of the different plans and proposals, it is proposed **to modify the Special Hydrocarbon Tax** by increasing tax rate on fuels derived of liquid petroleum at **5 cents per liter and natural gas at 1 euro per MWh**. This increase must allow collecting approximately 3,500 million €, which will be allocated in annual computation as shown:

• Development of urban plans:	1.000M€/year
• Rehabilitation of vulnerable housing:	1.250 M€/year
• Rehabilitation of non-vulnerable housing:	250 M€/year
• Replacement of boilers by heat pumps:	150M€/year
• Domotics and demand management:	100 M€/year
• Electric vehicle and charging facilities:	750M€/year

The tax rate will initially last for 6 years until 2025 and its priority destination will be the rehabilitation of homes in the case that tax collection is reduced by price elasticity of demand.

X Promotion of citizen participation and dissemination

The Energy Transition demands essential changes in society; changes that can't be postponed under any circumstance. In **Fundación Renovables** we **expect full involvement of society as a whole in the energy model change**: from public administration, through media or companies and as a last resort, but in a very important place, of citizens.

Thus, this document has one of its main motivations in which the nine previous chapters maximize the citizenship in terms of **responsibility, knowledge and assumption of basic concepts about energy**, as well as environmental and political awareness around the change of energy model.

But to be part of it, it is essential to understand, therefore without knowledge there is no possible change and, consequently, the change of energy model will not be a reality. In this context, **Fundación Renovables** wants to be one of the many articulating agents that works so that citizen participation is real, effective and fully implemented in the current social and political agenda.

As we have detailed so far in this document, if we are betting on an energy system based on demand and not exclusively on supply, this same model should be applied to the citizen, who should demand more instead of expecting to consume. Therefore, **you need to learn about it rather than wait for someone else to tell you about it**. In short, to have information about your needs, to be congruent and to demand responsible behavior to all agents involved in climate change.

Transversal lines of action

- **Education: curricular designs.** Proposals for students, teachers and parents.

- **Transparency and clear communication** from all administrations.
- Active promotion of the **energy culture**.
- Dissemination of **good practices**.

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Although they are not developed in this document, **Fundación Renovables** also considers necessary a series of actions in the industrial and agricultural sector.

Industrial sector

As in the service sector, in order **to improve the competitiveness of the industry** in Spain, the updating of industrial plans by sectors is essential, both for the electrification of demand and for the improvement of efficiency and the incorporation of the analysis of environmental suitability and sustainability process.

Sectors such as textile, chemical, cement, metallurgical, paper..., must have a thorough review of its energy component and the development of environmental certifications.

Efficiency and energy efficiency plan in agriculture and livestock

Energy efficiency has never been a determining factor in the selection of equipment and machinery for different agricultural tasks, despite the rotation of existing equipment and its rapid obsolescence. The causes of this situation are due to cultural reasons as well as the existence of subsidized fuels.

This line of action, given its unprecedented nature, requires the **support and participation of both manufacturers and, above all, agricultural organizations**, and a specific regulation for the definition of characteristics of the support to existing equipment and processes.

From **Fundación Renovables** proposes the start-up, throughout 2018, of the following initiatives:

- **Water management plan for irrigation** and satisfaction of energy needs with renewables, in particular, for the desalination of brackish water or seawater.
Currently, the largest stretch of energy expenditure in agriculture is due to water management and energy needs for irrigation. In fact, irrigation communities are the second largest consumer of electricity in Spain.
- **Renove Plan of Agricultural Equipment**, including the certification of specific consumptions.
- **Optimization plan for the use of machinery**. The number of hours of use is much less than optimal and the shared use implies the need to overcome issues of cultural nature.

- **Training plan** for energy efficiency in the use of machinery and the different tasks to be developed by unions and agricultural associations.
- **Plan to promote fuels from agricultural sources** and non-fossil origin. Review of current fuel subsidy models.
- **Energy conditioning** of livestock facilities and producers of meat, dairy products and derivatives.
- **Recovery plan for agricultural and livestock waste** prioritizing the environmental objective on energy.
- **Implementation of renewable energies** plans in agro-livestock facilities for self-consumption generation.

Finally, we would like to point out that it has not been included in this analysis of what its application would mean in terms of employment, but studies published by international and national entities have already shown the high potential for generating jobs that have both the performance in efficiency, obviously the rehabilitation of buildings in particular, and the development of renewable energies.