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Chapter three

Spain's response to the challenge of climate change in the new international scenario

Valvanera Ulargui Aparicio

Abstract

The impacts of climate change already being felt globally and in Spain in particular, given our country's high vulnerability to the adverse effects of this phenomenon, by its geographical location and its socio-economic characteristics. The efficient and sustainable use of natural resources, renewable energy and energy efficiency are key to successfully address the shift towards a model of development needed for the fight against climate change.

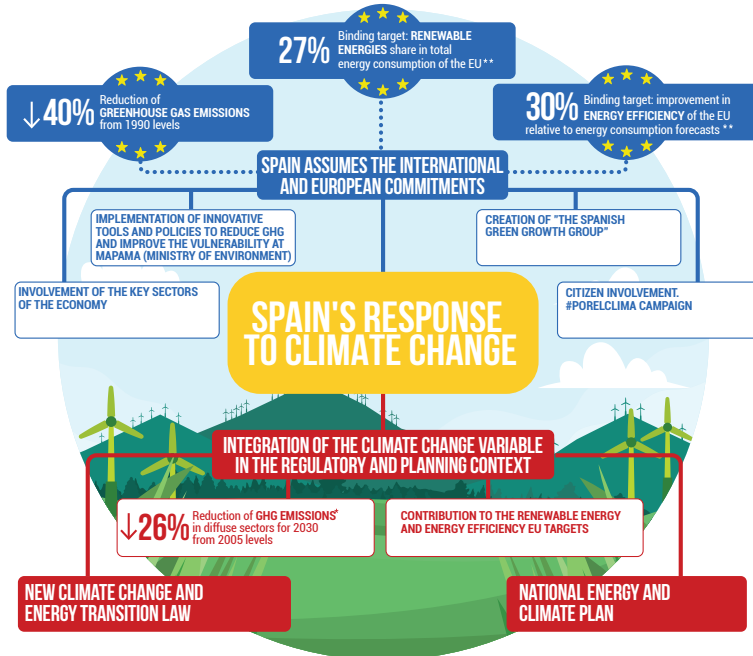
Keywords

Climate change, Spain, Energy model, Paris Agreement.

SPAIN'S RESPONSE TO THE CHALLENGE OF CLIMATE CHANGE IN THE NEW INTERNATIONAL CONTEXT

PARIS AGREEMENT
FLEXIBLE, LONG-TERM INSTRUMENT

- ◊ Global temperature rise well below 2 degrees Celsius and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius
- ◊ The coherence of finance flows with a low-emission, resilient development plan
- ◊ Adaptation target & instruments



*Green House Gas | **Targets in advanced negotiations at the European Parliament

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Brief history of the United Nations Framework Convention on Climate Change

Climate change is a global phenomenon because of its causes and its effects, and requires a multilateral response based on the collaboration of all countries. The impacts of climate change already being felt globally and in Spain in particular, given our country's high vulnerability to the adverse effects of this phenomenon, by its geographical location and its socio-economic characteristics. There is a consensus on the causes of climate change in the scientific community and we also know that the response to the challenge inevitably brings about a profound change in our way of producing and consuming.

It has taken decades to reach this unanimity. The international response to this challenge, until the conclusion of the Paris summit in 2015, was based on two legal instruments: the United Nations Framework Convention on Climate Change, adopted in 1992 and the Kyoto Protocol of 1997. In both instruments, only a few countries had an obligation to reduce their greenhouse gas emissions. It was not enough.

We go back to the year 1979, where the first World Climate Conference identified climate change as a global and urgent problem, and governments were called on to confront it. Since then, a large number of international conferences have been held in order to provide a united response from all countries to this problem.

In 1990, the Intergovernmental Panel on Climate Change (IPCC) published its first Assessment Report on the state of global climate, which became the main reference for the negotiations of a convention on climate change in the United Nations General Assembly. After the Earth Summit in 1992, the United Nations Framework Convention on Climate Change (UNFCCC) was adopted, together with the Convention on Biodiversity and the Convention on Desertification.

With almost universal participation (196 countries ratified it), the UNFCCC is the main United Nations forum where all matters related to the mitigation of greenhouse gas emissions are negotiated, as well as measures of adaptation to the impacts of the climate change and the necessary tools to meet the objectives of the Convention: capacity building, financing and development, and technology transfer.

Its main objective is the «stabilisation of concentrations of greenhouse gases in the atmosphere on a level that prevents anthropogenic (man-made) interference in the climate system». This results in an urgent need to change our production and consumption models towards low emission standards, that is, to avoid the burning of fossil fuels, which is the main cause of global warming.

The important economic and social implications derived from the fight against climate change make international negotiations on this matter very complex. Despite this, in a few years, in 2015, the universal Paris Agreement was adopted, which sends a clear signal about the need to move globally towards a new model of low-carbon development, resilient to the climate.

The United Nations Framework Convention meets annually through the Conference of the Parties (COP). These meetings take place at the end of the year in different countries, on a rotation basis between the different geographical regions of the United Nations.

At the first Conference of the Parties, held in Berlin in 1995, it was recognised that the commitments included in the UNFCCC for industrialised countries were insufficient, as they were of a qualitative nature, and the «Berlin Mandate» was launched, through which the Kyoto Protocol was negotiated.

After two years of negotiations, in 1997, the Kyoto Protocol was adopted, which was qualified as the most ambitious environmental agreement achieved to date. This Protocol includes binding commitments to reduce greenhouse gas emissions for the industrialised countries of the time, which agreed to reduce their emissions by 5% during the five-year period 2008-2012, compared to 1990 levels. Developing countries do not have commitments to reduce emissions in this framework. It also includes a strict compliance regime with economic penalties. The Kyoto Protocol came into force in February 2005 with the participation of 38 parties¹, after the ratification of Russia on 18 November 2004. The European Union and its Member States ratified it in May 2002, under the Spanish presidency of the European Council. The Protocol came into being incomplete, without the United States, which never ratified it due to the opposition of the North American Congress. Another notable absence was that of Canada, which withdrew from compliance with its obligations in 2012.

But the international community led by the European Union, aware that the given framework was neither complete nor sufficient, did not cease in its commitment and, since 2007 has negotiated a universal agreement by which all countries (and not just developed countries) would contribute to reducing global emissions of greenhouse gases. It would be an enormous quantitative and qualitative step to solving the problem of global warming.

In 2009, the Climate Summit in Copenhagen tried to reach that agreement for the first time, although it was not possible. Neither the political nor the economic situation of that time favoured establishing an agreement with a still important divergence between the positions of developed and developing countries in relation to the responsibilities and contributions that each group had to make at the national level to curb the problem.

¹ European Union (including eastern countries), Iceland, Japan, Liechtenstein, Monaco, New Zealand, Norway, Russia, Switzerland, Ukraine and Australia.

From 2011, negotiations were held in the Durban Platform Work Group, created specifically to design a framework for action in which to count on the commitments of all countries to fight against the causes and effects of climate change. The work of the Group concluded with the adoption, on 12 December 2015, of the Paris Agreement.

Since the Paris summit, the negotiation of the technical elements left pending in the Agreement has been carried out in a comprehensive way, taking into account the obligations and elements already existing in the scope of the Convention on Climate Change and in the Protocol. It thus seeks to ensure that the climate regime expressed by the Paris Agreement does not start from scratch but is built on existing architecture.

The climate summit in Paris: a turning point in the fight against climate change and on the international agenda

2015, a key year in the international process

2015 was a key year on the international agenda, with results that will affect all sectors and levels of society, including governments, citizens and the business sector. A road map towards a new and more sustainable world was established with the participation of all.

The Paris Climate Summit (COP21), held in December 2015, concluded with the approval of the Paris Agreement², a historic agreement in the fight against climate change and a universal and legally binding agreement that constitutes the cornerstone to achieve a low-emission, climate-resilient and globally sustainable development. This Agreement sends a clear message to the international community: global development requires a change in growth patterns, so that it is possible to grow while reducing greenhouse gas emissions and strengthening resilience against the effects of climate change.

That same year, at the United Nations Summit for Sustainable Development held in New York from 25 to 27 September, the 2030 Agenda was approved, which includes the so-called Sustainable Development Goals (SDGs). One of them, goal 13, specific on climate action, highlights the transverse effect of climate change on the planet's sustainable development. The Agenda, which came into force on January 1, 2016, supported by 193 countries, represents the political commitment to sustainable development at the highest level. In addition, in July of that same year, the Addis Ababa Action Agenda was approved on financing for development, and which is the basis for implementing the 2030 Agenda for sustainable development.

² http://unfccc.int/files/essential_background/convention/application/pdf/spanish_paris_agreement.pdf.

The Paris Agreement on climate change thus becomes a key element in achieving the sustainable development goals. Climate policies have to be part of the development policy of the countries, they are the same agenda, since they would not be understood in isolation.

The 17 Sustainable Development Goals (SDGs) and their 169 targets have been defined to provide a joint, indivisible and transversal response. Sustainable development requires considering the three dimensions: economic, social and environmental.

Therefore, the proposed transformation is integrating and global in multiple aspects, and is aimed at:

- All public actions: actions, decisions, strategies, policies.
- All levels of action: local, regional, national, regional and global.
- The different agendas: cooperation, economic, environmental...

Of these 17 goals, 13³ are directly related to the environment and one, as mentioned above, goal 13, focuses on climate action.

The transversal nature of the SDGs, which includes economic, social and environmental considerations, makes it necessary for those responsible in all countries to combine these three aspects to ensure their proper implementation.

We must not forget that, in 2015, the impacts of the global economic and financial crisis persisted, and yet the entire international community opted to adopt these three agreements, which are essential for global development in the mid-term. This, without a doubt, gives a positive signal on the new possibilities of economic growth in the development of a new sustainable and low carbon model.

The negotiation of the Paris Climate Agreement

The importance of the Paris Agreement is clear, since it is the first time that all countries have contributed to the fight against climate change, according

³ [1] Goal 1. To bring an end to poverty in all its forms throughout the world.
Goal 2. To bring an end to hunger, to achieve food security and better nutrition, to promote sustainable agriculture.
Goal 3. To guarantee a healthy life and promote well-being in all societies.
Goal 4. To guarantee quality, inclusive and equitable education and to promote permanent learning opportunities for all.
Goal 6. To guarantee the availability and sustainable management of water and sanitation for all.
Goal 7. To guarantee access to affordable, reliable, sustainable and modern energy for all.
Goal 8. To promote sustained, inclusive and sustainable economic growth, full and productive employment and decent jobs for all.

to their respective national capacities and circumstances. The importance of working together and under the same governance that makes it possible to reduce emissions of greenhouse gases on a large scale, with a quantified objective, is recognised, that is the objective of maintaining the increase in global average temperature below 2°C with respect to pre-industrial levels and even, if possible, below 1.5°C. This is the climatic risk that the international community can accept.

But the Agreement goes further and, for the first time, reflects the importance of adaptation as well as mitigation, thus recognising a reality: that the effects of climate change are already being felt throughout the world and that all countries have to urgently adapt to its negative effects. One of the most innovative and visionary elements of the Agreement is that it also includes a financial objective that goes beyond the debate on climate finance that had taken place to date. This objective points out the need to ensure that all public, but also private, financial flows have to be consistent with a development path that is low in emissions and resilient to the climate, thus becoming a critical tool to face climate change.

Scientific studies clearly identify the negative effects of climate change for scenarios in which the increase in global average temperature of the earth exceeds 2°C with respect to pre-industrial levels. Many of these effects have impacts on natural systems (water resources, ecosystems or coastal areas), but also important effects on human systems, both in food production and in increases in temperature or in negative effects for health.

In this sense, climate change has a multiplying effect that will increase existing inequalities, the tension factors and international insecurity at global, regional and national levels. One of the most well-known impacts of climate change refers to territory losses and border disputes, which could even lead to the disappearance of entire countries, such as the Small Island States.

The negotiation of the Paris Agreement was a long and complex process, which took place at a time marked by the strong economic and financial crisis, in which the different players in the negotiation had concerns and interests which in many cases were not shared. France, leading the Summit, was able to promote an agreement in which all countries were reflected, and also, for the first time, to mobilise a large number of non-governmental players through the so-called Lima-Action Agenda Paris, now known as the Global Action Agenda on Climate Change. The binomial United States (then under the Obama Administration) - China, which worked together throughout 2015, was key to leading the negotiation, presenting its contributions in a coordinated way to the Paris Agreement and giving a clear signal to the world that the two largest world powers were committed to a successful outcome of the COP21.

Together with both powers, the European Union and Spain with the rest of the Member States were key players in the success of the summit. Europe

reached the negotiations in Paris as the undisputed leader and with the experience of more than a decade working on policies to combat climate change with positive results: in 2013, emissions had been reduced by 19% compared to 1990 and, in that period, the EU's gross domestic product had increased by 45% in real terms. The EU has demonstrated its leadership with the fulfilment of the Kyoto Protocol, the establishment of the emissions trading system and the approval, in 2008, of the European Energy and Climate Change Package 2013-2020, by means of which concrete objectives were established to be achieved by the year 2020 in terms of renewable energy, energy efficiency and reduction of greenhouse gas emissions. Maintaining this line of firm involvement in the fight against climate change, the Heads of State and Government of the European Union, one year before the Paris Summit, on 24 October 2014, approved the new Framework for Climate Change and Energy to 2030, where the objective that was presented in Paris of reducing the emissions of greenhouse gases by at least 40%, by the year 2030, with respect to the reference year, 1990, was established.

In addition, in the substantive scope of the negotiations, the European Union sought an Agreement that was legally binding, global, ambitious and in solidarity. In this way, fundamental proposals were presented, such as the five-year review mechanism; for the articulation of the agreement, bridges were built between the different positions of the countries and the Coalition of Ambition was led together with other countries. This Coalition, which involved more than one hundred developed and developing countries from all continents, played a key role in achieving an ambitious outcome at COP21, by pressing for the Paris Agreement not to fall short in its objectives.

| EMISIONES DE CO ₂ eq (2014) Millones de toneladas | SIN LULUCF | CON LULUCF | % del total |
|---|------------|------------|-------------|
| GLOBALES | 45.740,70 | 48.892,37 | |
| China | 11.911,71 | 11.600,63 | 26,04 |
| Estados Unidos | 6.371,10 | 6.319,02 | 13,93 |
| Unión Europea (28) | 4.053,66 | 3.624,82 | 8,86 |
| India | 3.079,81 | 3.202,31 | 6,73 |
| Federación Rusa | 2.137,83 | 2.030,14 | 4,67 |
| Japón | 1.314,59 | 1.322,05 | 2,87 |
| Brasil | 1.051,00 | 1.357,18 | 2,30 |
| Indonesia | 789,48 | 2.471,64 | 1,73 |
| Canadá | 745,11 | 867,00 | 1,63 |
| Irán | 733,61 | 800,68 | 1,60 |
| México | 721,65 | 729,10 | 1,58 |
| República de Corea del Sur | 671,19 | 631,60 | 1,47 |
| Australia | 589,73 | 523,21 | 1,29 |
| Arabia Saudita | 583,37 | 583,37 | 1,28 |
| Sudáfrica | 524,89 | 527,22 | 1,15 |
| Turquía | 431,48 | 366,61 | 0,94 |
| Tailandia | 358,42 | 374,38 | 0,78 |
| Argentina | 348,65 | 443,26 | 0,76 |
| Ucrania | 347,55 | 344,13 | 0,76 |
| Paquistán | 333,38 | 361,98 | 0,73 |

Fuente: WRI (CAIT), 2017

Along with a clear political will, parallel to the negotiation itself, in Paris there was a mobilisation of non-governmental actors within the framework of the Global Action Agenda, from civil society, cities and regions, private and business sector, investors, banks, etc., which not only demanded greater government commitment, but tabled their firm commitment to the fight against climate change by launching a large number of initiatives with which to complement and strengthen the efforts of governments. These initiatives can be consulted on the website of the secretariat of the United Nations Framework Convention on Climate Change <http://climateaction.unfccc.int/>.

This mobilisation, key to the success of the Summit, showed that in 2015 many of the solutions, clean technologies, were already accessible and competitive and that in the sharing of powers in global geopolitics came other players who were ready to abandon the most polluting technologies and to put low-carbon innovations at the centre of national development policies entailing a series of benefits, not just environmental, but economic and social too.

Finally, another important factor in the development of the Agreement was the consideration by the countries that a scenario in which no action was taken against climate change was not an option, since the costs of inaction will, in any case, be greater than the costs involved in the implementation of policies and measures. Paris was seen by many as a critical opportunity which could not be missed, to express a global response to climate change appropriate to the scale of the challenge we face.

The Stern Report, of October 2006, already concluded that, if we do not act, the global costs and the risks of the climate change will be equivalent to the loss of at least 5% of the annual global GDP, now and always. Taking into account a greater diversity of risks and impacts, estimates of damages could reach 20% or more of GDP. In contrast, the costs of relevant actions - reducing greenhouse gas emissions to avoid the worst impacts of climate change - can be limited to around 1% of global annual GDP.

The features of the Paris Agreement.

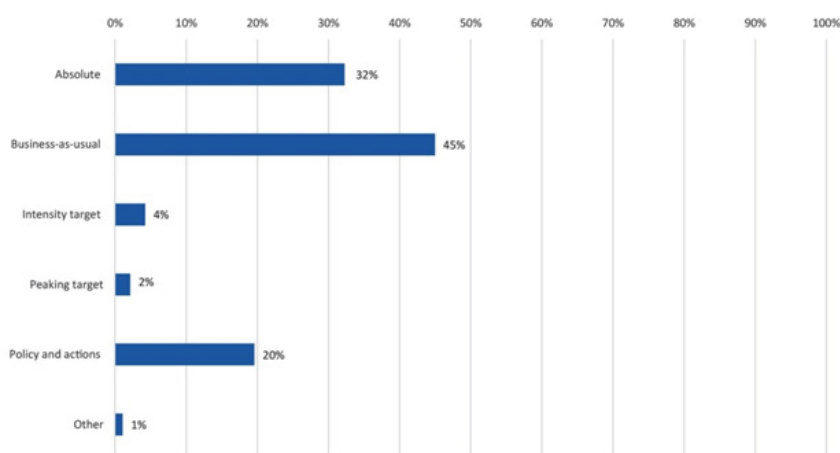
The Paris Agreement was designed as a flexible and long-term instrument. It has three global objectives that guide its general functioning: i) the objective of 2°C, ii) an objective in terms of adaptation and iii) the coherence of financial flows with a scheme of low emission and resilient development. But it is also a framework that responds to current reality and guarantees its long-term sustainability by being designed in a way that, every five years, allows stock to be taken of its operation and progress in achieving the above objectives.

Its elements reflect the current world in which countries have internalised that the fight against climate change, both the reduction of emissions and the implementation of adaptation measures, are essential aspects to ensure the sustainable development of their economies. This idea is reflected in the

concept of «nationally determined contributions». This term, coined in 2013 at the Warsaw Climate Summit, allows each country, based on its national priorities and needs, to determine its contribution to the fight against climate change. In these contributions, each country voluntarily presents its commitments on climate change. The contributions are equivalent to the action plans for combating climate change backed at the highest level, include objectives or actions to reduce GHG emissions in the various socio-economic sectors and, in many cases, objectives and needs in terms of adaptation to impacts of climate change, as well as financial, technological and training needs.

The Report of the Secretariat of the UNFCCC, published in May 2016, *Aggregate effect of the intended nationally Determined Contributions: an update Synthesis report by the secretariat* analyses the global content and aggregate effect of these contributions. The information collected on these contributions is very relevant for different players who will manage «financial and support instruments in developing countries and projects and sectors related to the fight against climate change». New opportunities are thus generated for institutional, technical and business cooperation and collaboration, on which it is important to join efforts to explore and exploit synergies. While also taking into account the other many social and economic co-benefits that are derived from climate change policies.

In this context, it is worth mentioning the recently launched Alliance of Nationally Determined Contributions (*NDCs Partnership*) that brings together developed and developing countries, as well as international organisations, and that aims to increase cooperation and support to countries in the implementation of their NDCs, while also promoting synergies with the Sustainable Development Goals (SDGs) of the 2030 Agenda. The support unit of this partnership is managed by the World Resources Institute.



Graph: Types of mitigation goals communicated in the countries' NDCs. Source: Report "Aggregate effect of the intended nationally determined contributions: an update Synthesis report by the secretariat", UNFCCC Secretariat, 4 May 2016.

The fact that some 190 countries have voluntarily submitted their contributions, covering around 90% of global emissions, clearly shows a change in the perspective of countries in the fight against climate change. The vast majority of the international community has made it clear that it is willing to fight against climate change for the general good, but also as a fundamental development strategy, which implies a change in the definition and prioritisation of public policies and the investments that accompany them. Public policies that go beyond the competences assigned to the environmental departments, to integrate and guide the remaining competencies towards sustainability, from economic to fiscal, health, education, security, or sectoral such as energy, transportation, housing, etc. The Agreement recognises that the sum of these national contributions may not be sufficient at first, so it is ensured that, every five years, it is necessary to evaluate the extent to which progress has been made towards the general objectives, and to make decisions over the necessary ambition to cope with climate change. The first of these analyses of progress towards the commitments is foreseen for 2023 and its results will be fundamental to ensure that the following contributions submitted by countries are more ambitious than the current, promoting a spiral of ambition on a regular basis that brings us closer to what science tells us more and more clearly, that it is necessary to confront climate change.

The outcome of the Paris Summit was expressed through two key documents: the Agreement itself, a legally binding international treaty that includes the most lasting aspects in which the main characteristics are expressed, and a decision that adopts it where some of the most operational issues are resolved, such as the mandates for its development or substantive details thereof. Some of the most concrete characteristics of the Paris Agreement are:

- For the first time, it includes, in a binding treaty, the «quantified objective of preventing the increase in global average temperature from exceeding 2°C compared to pre-industrial levels» and furthermore seeks to promote additional efforts that make it possible for global warming not to exceed 1.5°C, the main demand of the most vulnerable countries, such as the islands. It is a quantified ambition set out in a legally binding agreement and marks a path which establishes that by the middle of the 21st century we have to reach a development model that is climate-neutral. To comply, all countries agree to present their objectives of reducing greenhouse gas emissions and the sum of all national commitments has to result in the achievement of the 2°C objective.
- It is a «dynamic» Agreement that includes a regular review mechanism whereby emissions reduction efforts will be updated every five years, a period in which the the situation regarding the fulfilment of the objectives of the Agreement and the next round of commitments should be reviewed, which will always be more ambitious than the current. The first of these reviews is planned for 2023.

- Until now, adaptation was reflected in response to the lack of ambition to reduce emissions. The Paris Agreement recognises the urgent importance for all countries to have enough resilience to confront the impacts of climate change that are already being felt. Thus it establishes a qualitative global objective, at the same level as the 2°C goal, to increase the capacity for adaptation at the global level, that is, for all countries, and recognises the specific needs of the most vulnerable countries in adapting to the negative impacts of climate change.
- The Agreement lays the foundations for a transformation towards low emission development models, not only through the mitigation objectives, but also because it has a «financial objective» beyond the traditional approach of official aid between developed and developing countries. The Paris Agreement recognises the need to ensure that global financial flows are consistent with low-emission and climate-resilient development patterns, thus involving private sector investors in the fight against climate change, and giving a clear signal that it is necessary for the financial flows to be intelligently redirected to promote climate-respectful development.
- In this sense, the «mobilisation of all types of financial sources» beyond the public, as well as global efforts to promote actions that strengthen the provision of support to developing countries, is one of the characteristics of the Agreement. The importance of adaptation, as well as mitigation, is also reflected in the text when contemplating a balance between funding dedicated to adaptation and that devoted to mitigation, answering one of the main demands of developing countries, and especially those whose contribution to global emissions of greenhouse gases is minimal, but which do have real needs when implementing measures to adapt to climate change.

Climate funding is an essential element in the global effort to combat climate change. This issue is key in the context of international climate change negotiations, and has been included as an obligation since 1992 in the articles of the United Nations Framework Convention on Climate Change. Therefore, the Paris Agreement has an important financial package that will help its implementation and that will be built on the basis of the existing objective for developed countries of moving 100 billion dollars per year, starting in 2020, through different sources, an objective that will be revised upwards before 2025.

As a result of the Paris mandate, the developed countries in 2016 presented a concrete roadmap to show their commitment and path to achieve the goal of 100 billion, based on a report prepared by the OECD detailing the forecasts and commitments of financial flows from developed countries. This roadmap stresses that public financing flows (bilateral and multilateral) from developed to developing countries alone will likely reach 67 billion dollars

by 2020. To this mobilisation of public financing, we should add leveraged private financing flows, so it is estimated that the objective will be met.

Within this context, as a developed country, Spain has been contributing to this effort. Since 2012, 1,985,134,959 million euros have been earmarked for climate financing.

Table: Evolution of climate financing Spain to developing countries

| Climate financing Spain | | | | | |
|-------------------------|-------------|-------------|-------------|-------------|-------------|
| YEAR | 2012 | 2013 | 2014 | 2015 | 2016 |
| Total | 205,677,244 | 254,575,047 | 463,129,072 | 466,719,757 | 595,033,839 |

Includes official development aid contributions (bilateral and multilateral) other official flows.

- The Agreement reinforces the «current system of transparency and accountability» of the United Nations Framework Convention on Climate Change, making transparency and information one of its basic pillars. The establishment of a framework of common information for all countries is therefore promoted, which will make it possible to know the real efforts in the fight against climate change, both in terms of emissions and absorptions of greenhouse gases and financial and technological support and for the capacity building provided and received. In this way, it seeks to ensure a clear understanding of climate change actions in the context of the Convention, thus promoting trust among countries since they can know the level of effort of the main actors in their environment.
- The information will be a key element in the operation of the Agreement since it will be one of the fundamental elements to be considered in the five-year review and will help to highlight the needs and potential improvements that may be incorporated as experience is acquired in its implementation.
- The Agreement recognises the «importance of technology and, in particular, of innovation», as a critical tool to improve resilience to climate change and reduce greenhouse gas emissions and is committed to working on the basis of existing infrastructure to achieve the development, dissemination and large-scale transfer of the necessary technologies to enable a global change.

The strong commitment of the international community to the agreement made it possible to bring it into force in record time. On 4 November 2016, less than a year after its adoption, the Paris Agreement came into force thanks to the European Union's ratification that made it possible for the criteria established in the Agreement itself to be met⁴. Spain, for its part, completed the ratification process on 2 February 2017.

⁴ 55 parties representing a total of at least 55% of the total greenhouse gas emissions would have deposited their instruments of ratification.

The early enforcement of the Agreement, however, posed a technical challenge. The Agreement was a general framework that still had many specific aspects fundamental for its operation and application pending development. Initially, when negotiations began, it was expected that it would not be operational until 2020, so there was time to finalise outstanding issues.

On the enforcement in 2016, many of its elements were not yet closed. Therefore, at the Marrakesh Climate Summit in 2016, a clear calendar was adopted that tried to ensure that the negotiations were not delayed: in December 2018, during the Climate Summit in Katowice (Poland), all of the outstanding elements of the so-called Paris Agreement Work Programme had to be finished. This Work Programme includes issues such as the details of the common transparency framework and information obligations of all countries, the design of the review mechanism or global review, whereby every five years it is necessary to evaluate the progress towards the achievement of the objectives of the Agreement, or the mechanism to facilitate the implementation and compliance with it, among others.

Spain's response from public policy on climate change

Spain's policy on climate change

We are in a new international scenario where the economic and social transition towards sustainable and low carbon models is unstoppable. The current development model has become obsolete and this forces us to rethink how new models of production and consumption should be, in order to preserve the planet and allow sustainable development and the answer is clear: the efficient and sustainable use of natural resources, renewable energy and energy efficiency are key to successfully face this transition

If we confront the challenge of facing the new change of development model where the fight against climate change will play a key role as a trigger and inspirer of a new reality, which is already happening and is innovative, competitive and respectful of the environment, we will be able to take advantage of this competitive advantage over new powers, such as China or India, which are positioning themselves in the new geopolitical order, and where no-one wants to lose positions in this new green race.

It is clear that this transformation will only take place if a clear signal of the assumed commitment and a certain framework is given to all public and private players, and the first unavoidable step is therefore the establishment of ambitious individual greenhouse gas reduction commitments.

Spain has assumed the international and European commitments to fight climate change, is aware of its responsibility and it should be noted that the strategy implemented in the country in recent years has improved

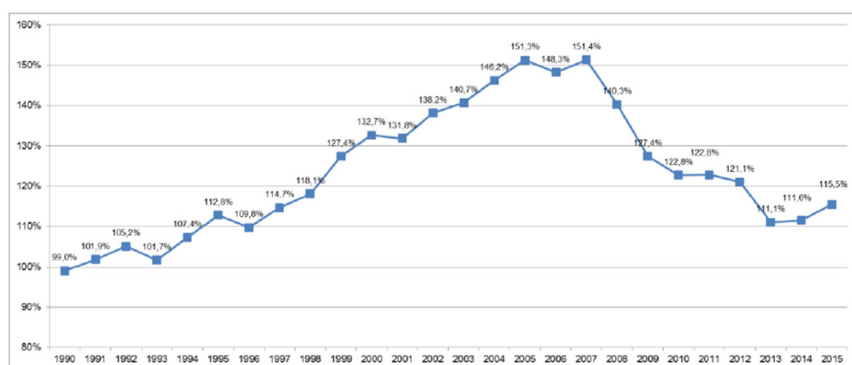
exponentially and has allowed a contribution to the principle that should inspire all policies: to make the environment an ally of economic and social development. Evidence of this commitment are some of the initiatives launched in recent years:

- It has been possible to involve all key economic sectors in the fight against climate change. And thanks to this, emissions from Spain have been reduced through the measures contemplated in the Roadmap 2020, which estimates reductions of more than 50M TCO₂eq and includes actions in areas such as agriculture, the residential sector and transport, among others.
- From the Ministry of Agriculture and Fisheries, Food and Environment, innovative instruments have been established that have allowed a new model of low emission development to be promoted. Initiatives such as the Climate Projects, the Environmental Promotion Plans or the Carbon Footprint Registry are examples of the generation of economic activity in our country, which have shown to favour the creation of employment.
- Progress has also been made in environmental taxation. The actions undertaken in the sector of fluorinated gases have proven to be very effective in reducing emissions (6 million tons in 2015, representing a decrease of 41% in emission reductions, compared to 2014).
- Within the framework of the policy of collaboration and dialogue with all the agents involved, the creation of a stable working group between the Administration and Spanish companies involved in the fight against climate change has been promoted: the Spanish Group of Green Growth that has the objective of sharing information and collaborating in the common goal of achieving a sustainable and low carbon economy.
- And it is involving citizens more and more. Spanish society is beginning to feel involved in the fight against climate change. And its commitment to everyday actions that contribute to reducing emissions is a good example of this. Thanks to the «One million commitments for climate» campaign, many Spaniards have been reached.

Furthermore, the variable of climate change has been integrated into the regulatory and planning context. Some examples are the Environmental Assessment Law, which includes the obligation to consider climate change in the environmental evaluation of plans, programmes and projects; the reform of the Law of Natural Heritage and Biodiversity, which incorporates the need to design adaptation and mitigation measures to minimise the risks and impacts of climate change on biodiversity; and the new Coast Law, which establishes the obligation that the projects to be developed on the coast contain an assessment of the effects of climate change. In addition, it promotes the realisation of coastal regeneration projects. And under its framework, a Strategy for the adaptation of the coastline has been prepared.

Likewise, second cycle hydrological planning considers climate change a determining factor, since it integrates future scenarios in which a reduction in natural water resources is expected as a consequence of climate change, and incorporates the necessary studies to adopt the appropriate measures.

All this effort has produced positive results a sign of which is the data on the fall in emissions in recent years. Total greenhouse gas emissions in Spain between the years 2011-2015 were reduced by 5.5%. And diffuse emissions were reduced in the same period by 10.75%. Thus, Spain has met the first commitment period of the Kyoto Protocol (2008-2012) and is on the right track to meet the second commitment period (2013 to 2020), while continuing to work to design actions that allow low and resilient carbon development in the climate to be developed in the medium and long term to fulfil the commitment assumed in the Paris Agreement.



Graph: Percentage of aggregate greenhouse gas emissions in Spain 1990-2015. Source: National Inventory of Greenhouse Gases, 2017. MAPAMA

Spain, as a member country of the European Union, is aware of the commitment it assumed with the ratification of the Paris Agreement and wants to lead the transition of the economy towards a low carbon model, in order to contribute to the fulfilment of the objective of keeping the increase in the average global temperature below 2°C with respect to pre-industrial levels, and even below 1.5°C, if possible.

In the context of the Paris Agreement, Spain, as a Member State of the European Union, takes on the ambitious commitment of the Union to reduce greenhouse gas emissions by at least 40% by 2030, compared to 1990. And it is putting into practice policies to fulfil the commitment that all countries promoted in Paris, a global and unanimous commitment of the entire international community: the transition towards a low-carbon development model that has no way back, and which Spain wants to lead.

Spain, in principle, must reduce its emissions of greenhouse gases in the diffuse sectors by 26% by the year 2030, and participate in the objectives of promoting renewable energy and energy efficiency.

Therefore, it is necessary to define a medium and long term framework to guarantee an orderly transformation of the economy towards a low carbon economy. The main objectives are clear: on the one hand, decarbonising the main production sectors while promoting economic growth and increasing the generation of employment and, on the other, reducing the risks of the impacts of climate change on more vulnerable sectors and populations. In the public debate on the choice of climate policies it is necessary to assess the additional and not the strictly environmental benefits in terms of reducing emissions or improving air quality. And thus quantifying, among other things, the advantages of reducing the energy dependence of Spain, the new jobs generated by a green economy and energy savings, are key to the successful design of the country strategy for the coming years. The Commission's proposals for a «Clean Energy for all Europeans» plan to mobilise up to 177 billion euros of public and private investment per year starting in 2021, to generate an increase of up to 1% of GDP over the next decade and create 900,000 new jobs.

In this sense, work is being done on the preparation of a «Law on Climate Change and Energy Transition» to comply with the objectives set out in the Paris Agreement and in the framework of the European Union in the medium and long term on climate and energy issues. It is an ideal moment to promote this Law.

In the context of the European Union, since 2015 the legislative proposals of the Commission to achieve the climate and energy objectives of the 2030 Framework have been on the negotiating table.

- In 2015, the proposal to reform the Emissions Rights Trade Regime was presented in order to guarantee that the energy sector and high energy consumption industries could achieve the necessary emissions reduction: 43% by 2030, with respect to 2005.
- In the summer of 2016, the Commission presented proposals to accelerate the transition towards a low-carbon economy in the other key sectors of the European economy (sectors with a reduction target of 30% in 2030 compared to 2005).
- Finally, the 30 November proposals regarding «clean energy for all Europeans» include the remaining elements for a full implementation of the framework of action of the European Union on climate and energy until 2030. In particular, in the field of energy efficiency and renewable energies.

In this context, the Law should promote actions with greater capacity for commitments at the lowest possible cost. So that the energy and climate change policy might favour economic activity, competitiveness and employment and ensure the financial sustainability of energy systems in our country.

The Law will act as a legal framework in the medium and long term in order to effectively respond to the challenge we face, which establishes a certain framework for administrations, the private sector and citizens, and allows

them to plan their actions both from the point of view of management, and from the planning of the production and the management of demands. This requires efforts in many areas, from domestic to large industrial facilities and, of course, that these be sustained over time. That is why the Law is proposed as a Law for all and with a strong vocation for permanence. And for its preparation, an open and participatory process unprecedented in our country has been launched. We are working with all the ministerial departments, Public Administrations and remaining levels of the regional and local Administration. It is also being ensured that there is an open debate that allows the participation of relevant players in the fight against climate change, such as the scientific community, the academic world, trade unions, the business sector and NGOs.

In parallel, the Inter-ministerial Work Group was set up to coordinate the preliminary Bill on Climate Change and Energy Transition and the Integrated National Plan for Energy and Climate, with the aim of providing the State General Administration with a structure of inter-ministerial coordination to support the process of drafting the aforementioned Bill and the Integrated Energy and Climate Plan. Given the transversal nature of climate change policies, this Group has representatives from the Ministry of Agriculture and Fisheries, Food and Environment; of Energy, Tourism and Digital Agenda; of Foreign Affairs and Cooperation; of Economy, Industry and Competitiveness; of Development; of Finance and Public Function; of Health, Social Services and Equality; of the Presidency and for Public Administrations; and of the Economic Office of the Prime Minister, to try to continue integrating the fight against the climate change in the Spanish Administration and thus count on the participation of the different players involved.

The functions of the Inter-ministerial Work Group include promoting and coordinating the actions of the bodies of the General State Administration in drafting the Bill on Climate Change and Energy Transition, and in preparing the National Integrated Plan for Energy and Climate. In the same way, the Group will promote and coordinate the actions within the General State Administration for the preparation of the Strategy for the Decarbonisation of the Economy by 2050, in order to contribute to the fulfilment of the commitments assumed in the United Nations Framework Convention on Climate Change and the Paris Agreement. This Group must inform the Delegate Commission of the Government for Economic Affairs of the corresponding proposals of the Bill, of the Integrated National Plan and the Strategy, as well as the revisions or updates, prior to its submission to the Cabinet. Finally, among the functions of the Group, it should be noted that this should also promote a strategy and roadmap for compliance with the international climate finance obligations of Spain assumed in the context of the Convention and the Paris Agreement.

The fight against climate change is part of the equation of another of the great challenges of our time, which is energy transition. The achievement of climate objectives will depend on the degree of development of different energies such as wind, photovoltaic and energy storage systems, as well as the development of new competitive renewable energies.

Spain's response to the challenge of climate change in the new...

It is not the first energy transition that we have experienced and the passage from coal to oil is not so far in the past, but unlike other energy transitions, this time it is about improving the welfare of citizens by using less energy and with a smaller climate footprint.

In Spain this transition has already begun, in 2015 our country had a larger penetration of renewables than most of our surrounding countries, reaching 17.3% compared to 5.8% in the Netherlands, 8.2% in United Kingdom, 14.6% in Germany and 15.2% in France.

These data place Spain 3.5 points above the path of compliance expected for renewable energy targets by 2020 (20% of the final energy consumption from renewable sources by 2020)

However, additional efforts are necessary to meet the 2020 targets, which will place us at a more favourable starting point for complying with the next round of targets by 2030. Energy policy has thus set the following priorities: energy efficiency, deployment of renewables, competitive prices for consumers, sustainability of energy systems and interconnections.

Along this line, Spain advances in the deployment of new renewable generation through auctions to introduce new renewable power in our system. In 2017, 6,000 megawatts were awarded, which will help achieve the 20% renewable energy target by 2020. Along with this measure, there are also aid plans for the purchase of cars with alternative energy.

As a complement to this, work is being done on planning the main emitting sectors to identify what the efforts to reduce greenhouse gases of each of them should be. In this context, the most relevant due to its weight in emissions and in the design of the country's economic strategy will be the «Integrated National Plan for Energy and Climate» for the period 2021-2030, which is one of Spain's main obligations in the context of the 2030 Energy and Climate Framework and a key tool to ensure coherence between the energy and climate policies of European countries, in which national objectives will be established as well as the necessary policies and measures to achieve the European objectives in the fight against climate change and energy by 2030.

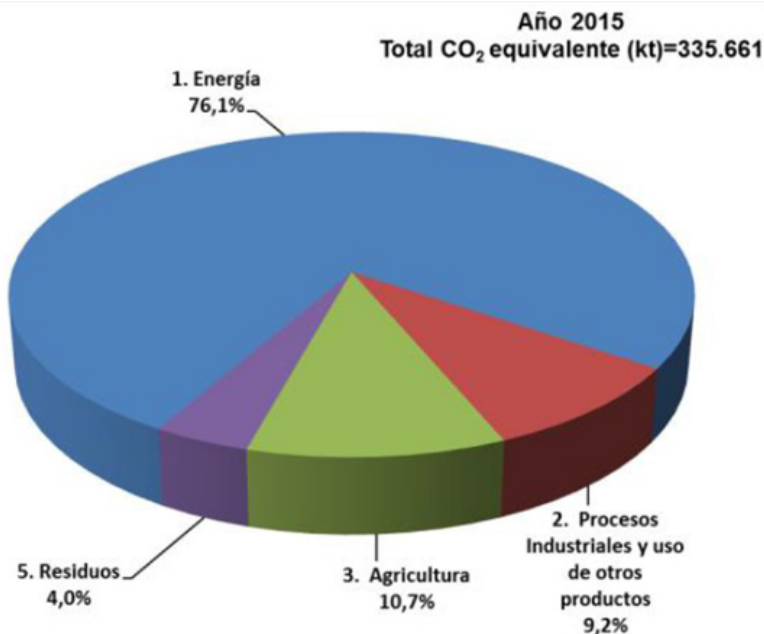
The Integrated National Energy and Climate Plan must therefore reflect each Member State's contribution to the achievement of the commitments presented by the Commission at Community level regarding the reduction of greenhouse gas emissions (at least 40% with respect to 1990 levels), renewable energies (27% of renewable energy sources in final energy consumption), energy efficiency (a 30% improvement in energy efficiency) and electrical interconnections (15%).

On the other hand, agriculture will be one of the key sectors for compliance with the Paris Agreement, especially taking into account that the sector is responsible for 10% of national emissions. In this area, the Government is working to develop a «Strategy of Agriculture, Climate and Environment»,

which will be incorporated into the forest sector, in order to align the objectives of agricultural policy with the fulfilment of the international commitments assumed by Spain on climate and the environment.

Likewise, as required in Paris, Spain will prepare a «Strategy for the decarbonisation of our economy by 2050», which will include Spain's contribution to the goal of climate neutrality and contribute to the fulfilment of the objectives of the Roadmap of the European Union towards a low carbon economy by 2050, which shows that the greenhouse gas emissions of the European Union should be reduced between 85% and 90%, with respect to 1990. This means that the 2050 scenario is a scenario where most of the production sectors have to be decarbonised.

In the field of sectors not regulated by the European Emissions Trading System, known as the diffuse sectors (transport, residential, waste, agriculture, fluorinated gases and small industry), work is already being done within the Coordination Commission of Climate Change Policies on the «Roadmap of the diffuse sectors to 2030». The objective is to identify the measures with the greatest capacity to achieve emission reduction objectives at the lowest possible cost, so that the climate change policy favours and highlights the additional benefits of environmental policies such as savings, benefits in health, improvement in the balance of payments, generation of economic activity, reduction of foreign energy dependence, improvement of competitiveness and creation of employment, as well as the assurance of the sustainability of our economy.



Graph: Distribution of greenhouse gas emissions by sector in Spain. Source: National Inventory of Greenhouse Gases, 2017. MAPAMA

With the primary objective of reducing emissions of greenhouse gases, the Ministry continues to encourage economic activity and private investment with the implementation of the «Climate Projects and Environmental Promotion Plans (PPE)» that show the important role played by the private sector in the fight against climate change and how in Spain it is possible to boost economic activity while protecting the environment.

«Climate Projects» are domestic projects to reduce greenhouse gas emissions in diffuse sectors, which generate economic activity in sectors associated with the fight against climate change, facilitating the fulfilment of the emission reduction objectives while generating growth and employment. The Carbon Fund for a Sustainable Economy (FES-CO₂) acquires the reductions generated by these projects in the first 4 years of activity, thus encouraging the start-up of new low-carbon activities in our country.

Since 2012 five Climate Project calls have been resolved in which over 250 projects have been selected that will represent a total reduction of CO₂ emissions equivalent to more than 7.4 million tons. The Fund plans to hold periodic calls for the implementation of annual projects.

For their part, the «Plans to Promote the Environment (PPE)» are a tool for the promotion of measures that contribute to the improvement of the environment. The different PPEs also have a positive effect on economic development and the promotion of employment in Spain. To date, the following plans have been launched:

- PPE Sun (promoting the refurbishment of hotels to improve energy efficiency).
- PPE Land (promoting the renewal of the farm tractor fleet).
- PPE Air (promoting the renewal of the commercial vehicle fleet with more efficient models).
- PPE Transport (promoting the scrapping of vehicles for the transport of goods and passengers).
- PPE Adapt (for adaptation projects in different areas of the coast, public hydraulic domain, national parks and ecosystems).
- PPE Waste (promoting actions for better waste management, indirectly reducing greenhouse gas emissions).
- PPE Enterprise (promoting the implementation of actions in those companies that are registered in the Carbon Footprint Registry).

Another line of work is the «carbon footprint, its calculation, reduction and compensation».

The Carbon Footprint Registry is a tool that allows organisations with activity in the national territory to register their carbon footprint in a voluntary

registry officially recognised at national level. The importance of the Registry is emphasised, not only in calculating but also in reducing emissions, so that organisations that register their carbon footprint must also submit an emissions reduction plan. If it is finally demonstrated that they have achieved a reduction, the Registry grants them that recognition.

Likewise, it enables organisations to go beyond calculation and the reduction, allowing them to offset their emissions through repopulations that have taken place in the country.

As a platform for disseminating the commitment of Spanish organisations in the fight against climate change, the organisations registered in the Registry receive an official stamp that reflects whether they have calculated, reduced and/or offset their carbon footprint.

The Carbon Footprint Registry in its first three years of operation has achieved 521 organisations registering one or several carbon footprints in it, making a total of 952 footprints.

It is a tool with great potential for the mitigation of climate change which, if properly integrated into organisations, can become a strategic and competitive element for entities competing in global markets.

The Ministry of Agriculture and Fisheries, Food and Environment began to calculate its footprint in 2011, and it has proven to be a tool that has positively helped to reduce Department emissions. In 2015, emissions were reduced by 57% compared to 2010.

In the field of adaptation, Spain was one of the first European countries to establish, in 2006, a strategy for adaptation, through the «National Plan of Adaptation to Climate Change» (NPACC). This Plan is the framework instrument in which all the adaptation actions carried out in Spain are included.

The ultimate objective of the NPACC is the integration of adaptation in the planning and management of all sectors vulnerable to climate change, in order to minimise the impacts and, where appropriate, benefit from new opportunities.

The NPACC is implemented through work programmes, which specifically define the activities to be carried out. To date, two work programmes have been developed, the first valid in 2006-2009; the second, 2009-2013 and, at present, the Third Work Programme (2014-2020) is under way⁵.

In this line of work, progress is being made in the integration of adaptation in the different sectoral policies, while at the same time promoting concrete actions to assess the impacts and vulnerability due to the effects of climate

⁵ http://www.mapama.gob.es/es/cambio-climatico/temas/impactos-vulnerabilidad-y-adaptacion/3PT-PNACC-enero-2014_tcm7-316456.pdf.

change, including extreme events in numerous natural systems and socio-economic sectors in Spain.

In July 2017, the «Strategy for Adaptation to Climate Change of the Spanish Coast» was approved and the Ministry is making progress in the work to develop the Strategy for the Protection and Management of Natural River Reserves, with special attention to adaptation to climate change.

On the other hand, and with a view to strengthening the governance of adaptation to climate change and increasing resilience to climate change in Spain and Portugal, the «LIFE-SHARA Project» (*Sharing Awareness and Governance of Adaptation to Climate Change in Spain*), is being developed in line with the Europe Adaptation Strategy.

The objectives of the LIFE SHARA include the improvement of the capabilities of «AdapteCCa»⁶ (platform for consultation and exchange of information on adaptation to climate change) to improve the quality and quantity of information and facilitate its use as a tool for governance, strengthening the technical capacities to adapt and raise awareness and reinforce coordination and cooperation between key agents (with the private sector, the Spanish Administrations and with Portugal).

Likewise, work is continuing to raise awareness among citizens and make them participants of the important role they play in the fight against climate change and, in this line of action, the Ministry of Agriculture and Fisheries, Food and Environment is part of the «Community #PorElClima» task force⁷.

The initiative aims to put into practice the need to act to curb climate change and its main objective is to move from the assumption of commitments for the climate, to action, to the realisation of the committed actions that result in effective reductions in CO₂ emissions. At the same time, the initiative is intended to reinforce the message of action by uniting it with community belonging of committed people and entities who are already doing things and who want their actions to have visibility to achieve positive synergies.

With all these initiatives from public policies, Spain has no other objective than to respond to the biggest challenge we face at this time: climate change. A challenge that is called to define our times. But which, due to its environmental, social and economic consequences, we can consider without exaggeration one of the most important crossroads we have faced in history.

Climate change challenges us all with the question over the future of the planet. It gives us the responsibility of leaving a better world than that we inherited. And it calls on us to take urgent measures, since it is a process that is underway.

⁶ <http://www.adaptecca.es/>.

⁷ <https://porelclima.es/>.

The fight against climate change requires us to act with vision. And, at the same time, it opens up positive opportunities for the future. Because scientific knowledge not only guides us on the measures to adopt. It also promotes a change in the model that opens up a huge range of possibilities around which to build sustainable economic development for the benefit of all.