



## POLICY BRIEF

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## PRIORITIES ON ENERGY AND SUSTAINABILITY FOR THE SPANISH PRESIDENCY OF THE EU

Recommendations by the BP Chair on Sustainable Development

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### 1. Introduction

Next January 1st, 2010, the Spanish Government will take on the presidency of the European Union. It is true that the rotating presidencies of the EU, lasting only six months, do not give much leeway. This is particularly true for policies on energy and sustainability, which, as many others do, require continuity and a more extended period of study and definition. However, it is also true that the Spanish presidency offers a special opportunity to contribute to shaping the EU's future political agenda from our country. This point is being strengthened with the coordination of the Spanish, Belgian and Hungarian governments, which will hold the two next presidencies, to achieve a deeper coherence in the priorities that are to be supported by each of them.

Shaping the future politic agenda at a European level is especially important in the field of energy and sustainability. Current unsustainable energy models, both European and global, and especially their consequences on climate change, need an urgent action on this field, which must be agreed at a European level from a long-term approach.

In this framework, and according to its mission<sup>1</sup>, the BP Chair has decided, as other institutions are doing, to issue some recommendations on the priorities that the Spanish Government should consider to achieve the goal of a sustainable energy model at the Spanish and European level during its presidency.

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<sup>1</sup> The BP Chair's mission is to promote public debate through research, training and dissemination actions in the field of energy and sustainable development.

As a starting point, the BP Chair considers that a sustainable energy model has to be consistent with the protection of the environment, to contribute to a viable economic development –with affordable and competitive energy prices and a reliable supply– and to allow social cohesion –providing universal access to modern forms of energy, prices of energy products attainable for the weakest economies and economic and technology cooperation with the least developed countries.

## 2. The global context on Energy and Sustainability

It is commonplace to say that the current energy model is in a critical position and needs a drastic change, gradually and firmly set and with clear goals. The reasons are well known: the lack of access to modern forms of energy for a significant part of the global population, serious uncertainties about the reliability and affordability of the future energy supply, and the unsustainable environmental impact of the current model of energy transformation and consumption. The fight against climate change, because of its seriousness and impact, stands out from these redoubtable challenges, as is shown in the United Nations summit in Copenhagen in December 2009.

The International Energy Agency, IEA, cannot speak clearer in its last “World Energy Outlook 2009”: *“As the leading source of greenhouse-gas emissions, energy is at the heart of the problem and so must be integral to the solution [...] In the absence of new initiatives to tackle climate change, rising global fossil fuel use continues to drive up energy-related CO<sub>2</sub> emissions, from 29 Gt in 2007 to 40 Gt in 2030, an increase of 40%. Although the financial crisis has slowed the growth in emissions, current trends put us on a path to a global average temperature increase of **up to 6°C** [...] global sea levels are on course to rise by around **one meter** over the remainder of the century. [...] this could lead to hundreds of millions of people being displaced from their homes, massive water and food shortages, widespread mortality of ecosystems and species, and substantial human health risks. Even long before this stage is reached, there is a risk that the world would reach significant tipping points that could propel the climate into a vicious cycle of deterioration [...] Studies published since the IPCC report suggest that the risks associated with global warming are even more severe than previously thought.”*

The global answer to this redoubtable challenge needs to encompass a global long-range agreement, with a set of engagements assumed by all countries that result in a long term plan to reduce greenhouse gases (GHG) that can avert IEA’s dreadful predictions. But there are still many hurdles in the way to reach this binding agreement. Possibly, the most critical one is that the US Congress has not been able of passing environmental laws that imply specific obligations on GHG emissions. Lacking this commitment, other nations deny theirs. Most recent news shows that the US and China consider that a legally binding agreement will not be possible to reach immediately. In the best scenario, only a political agreement could be achieved, even if President Obama intends to inspire confidence about a future medium and long-term US commitment to reduce emissions and China makes its plans of improvement of energy intensity public. It seems clear that during 2020 it will be essential to keep the highest level of commitment in order to reach a global agreement able to cope with the challenge we face. The Spanish presidency will have to lead that effort. Independent experts state that so far the proposals which have been offered are still not enough to fight climate change in an effective manner.

In short, the energy model of the future and its blueprint for every country are at stake. The abovementioned WEO-2009 by the IEA provides the keys to understand the dilemma of the current energy model, its vision of a sustainable scenario and the path to reach it. Its messages are clear and urgent:

- Continuing with current energy policies would have catastrophic consequences on climate, as it has been previously stated.
- The current economic crisis, which has reduced emissions, offers an opportunity for a transition to stabilize the concentration of CO<sub>2</sub> equivalent in 450 ppm, consistent with the generally accepted goal of limiting to 2 °C the rise of temperature by the end of the century.
- An immediate action is required. Any delay increases the costs and reduce drastically the possibilities of success. It will be difficult and will need the collaboration of all countries, but it is feasible.
- Its cost, which IEA estimates as \$10 trillion of 2008, in addition to \$26 trillion of investment required until 2030 in energy infrastructures for production, distribution and transport, is high but reachable<sup>2</sup>.
- The most important part of the reduction of emissions in the 450 ppm scenario, in relation to the reference scenario, has to be reached with measures of energy saving and energy efficiency, followed by a change in the technologies that take part in the generation mix: firstly, renewables, and secondly nuclear energy and carbon capture and storage in fossil fuel power plants.
- The restructuring of the energy sector will also bring improvement in economic development, energy security, human health and other environmental benefits.
- Achieving universal access to electricity by 2030 would cost an additional \$1.5 trillion (6% of the expected cost in the reference scenario) and an increase by 1% in carbon emissions related to the energy sector.

### 3. The European Union priority lines of action

In this international context, the European Union appears as a privileged actor with a unique experience in reaching transnational agreements and in creating and managing the institutions of global governance that the world needs. According to the previously stated facts, the following guidelines can be derived:

- Leadership, exigency and commitment in climate change related negotiations,

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<sup>2</sup> More than three quarters of this additional cost would take place in the last decade of this period and 50% would take place in the OECD countries. Half of the additional cost should be allocated to the improvement of transport and a quarter to building efficiency.

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- Contribution to shape a future sustainable energy model,
- Attention to the needs of developing countries and universal access to modern forms of energy.
- Demanding plans in the specific aspects of application (*energy efficiency, effort in energy R&D, renewable energy promotion, improvement of networks or supply security*).

These guidelines should be complemented with those derived from the current context of the EU. On the one hand, the ratification of the Treaty of Lisbon, where energy is explicitly considered with specific goals. On the other hand, the priorities held by the incumbent European Commission and those established by former presidencies of Europe, because the aim should be adding efforts and taking advantage of the political impetus as possible, in order to ensure a better effectiveness of the proposals made here. Finally, it is worth mentioning that, even if the priorities of the Spanish presidency have to be consistent with national interests, they have to be set with a global vision, as the search of a sustainable energy model requires, according to criteria described in the introduction.

Fortunately, the guidelines that the BP Chair considers that the EU should follow are very similar to some of the priorities of the European Union 2020, recently declared by President Barroso. Some of them are:

- Achieve a more sustainable, smarter and “greener” development;
- fight against climate change, promoting a low-carbon economy and making use of the competitive advantage that could follow;
- deploy modern networks; and
- promote research and innovation.

They are also consistent with the goals –more specific– of the energy policy of the EU, as they are described in the Treaty of Lisbon:

- Ensure the functioning of the energy market
- Ensure security of energy supply in the Union
- Promote energy efficiency and conservation and the development of new and renewable forms of energy; and
- Promote the interconnection of energy networks.

Likewise, as previously stated, it would be convenient that the Spanish priorities take advantage of the political momentum achieved by the Swedish presidency. The Swedish priorities were:

- Achieve an agreement on climate change, including costs of adaptation and developing mechanism to finance the reduction of emissions,

- develop a sustainable transport policy, promoting particularly transnational networks,
- promote research on energy and climate change,
- give incentives to energy efficiency, promoting the Directive on the Energy Performance of Buildings, energy labeling, and developing the Action Plan on Energy Efficiency, and
- start a roadmap to achieve a European Strategy of Sustainable Development.

#### 4. Europe's Pending Issues on Energy and Sustainability

There is a long list of pending issues on energy and sustainability, with a different level of urgency, to be tackled during the next trio of presidencies of Spain, Belgium and Hungary:

- Adoption of the Action Plan for 2010-2014, presented in the previous spring European Council, where security of supply, interconnections, foreign affairs on energy and new regulation on efficient buildings and products are priorities,
- regulation of security of gas supply,
- internal market of gas and electricity,
- the European energy regulators agency,
- energy efficiency policies,
- launch of industrial initiatives from the SET Plan,
- new regulation of the coal sector,
- definition of a vision for the energy model for 2050 and,
- security standards for the nuclear industry.

From the items of this list, the Spanish government has already declared some of its priorities, including some new subjects:

- Action Plan on Energy 2010-2014,
- energy efficiency plan,
- promotion of the electric vehicle,
- interconnections of electricity and gas to improve the security of supply,
- new regulation of the support for domestic coal,
- national plans to promote renewable energy,

- development of low-carbon initiatives,
- development of the European Agency of Regulators, and
- the Mediterranean Solar Plan

### 5. The Recommendations by the BP Chair for the Spanish Presidency

Taking into account the abovementioned facts, the BP Chair issues comments and suggestions about the priorities that, in its opinion, the Spanish presidency should have. Considering the list above, it seems that the number of items should be reduced in order to concentrate efforts. The selected priorities should have a high potential to reach the goal of a sustainable energy model. They should be politically affordable in today's context, require a European approach and be interesting for Spain.

Thus, the BP Chair's recommendation is selecting four general priorities:

- Decarbonization of the energy sector,
- research and technology transfer on energy,
- promotion of energy savings, and
- energy interconnections.

Each of them is thoroughly described below. There is no order of priority. All them are equally important and necessary.

#### 5.1. Reduction of carbon emissions in the energy sector

The first priority should be progressing in the reduction of carbon emissions in the energy sector, because of its importance for sustainability and its relevance in order to abide by the international commitments which have been acquired. The urgency of this reduction of emissions has been stated in many documents, such as the IPCC reports and the World Energy Outlook 2009 (WEO 2009) by the International Energy Agency. These reports say that a reduction between 50% and 80% of carbon emissions in developed countries, including Europe (30% in the reference scenario in 2030), should be achieved in order to not exceed the CO<sub>2</sub> concentration that implies an increase of more than 2 °C in global temperatures, the commonly agreed maximum threshold. Obviously, the challenge is huge. Actually, the urgency and scale of the issue make this priority independent from the result of international climate change negotiations.

Hence, the first priority should be achieving a global agreement on climate change, which may follow from the preliminary agreement reached at Copenhagen. It seems clear that a global agreement on this matter cannot be further delayed, under the architecture deemed more appropriate. The European Union must play again a leadership role due to its pioneering initiatives on the regulation of GHG emissions. As a final agreement has not

been reached in Copenhagen, the Spanish presidency will have to assume this leadership under the new conditions in this critical interlude until the next conference.

However, no matter the result achieved in the international negotiations, the BP Chair considers that the European Commission should review unilaterally its emission reduction goals in order to ensure the transformation of its energy system into one with lower carbon emissions. For this reason, it seems essential to ensure a price of the emission allowance in the ETS scheme high enough to offer an adequate signal to the required transformation of the energy sector (some experts set the price needed to change investment patterns in •40-50/tCO<sub>2</sub>). Moreover, the Commission should ensure the price stability, make it foreseeable using the available mechanisms, in order to offer security to the private or public investor, who in the end are responsible for the desired change.

Additionally, it is essential to extend the carbon price signal to the sectors that are not covered by the European emission trading system. Non-covered sectors, or diffuse sectors, are responsible for 50% of GHG emissions in Europe, so their contribution to reductions is relevant. However, the regulation on diffuse sectors rests in the hands of the Member States. This may lead to differences in the reduction policies and, indirectly, to efficiency losses (reducing more in countries where it is more expensive) and to competitive losses between countries. Some Member States have already started to send price signals with taxes to diffuse sectors, but it would be better, due to the reasons mentioned, that this extension of the prices to diffuse sectors be harmonized in the Union.

Obviously, it is essential to consider the effects of the emission reduction policies on the competitiveness of the European economy, especially if they are taken unilaterally. For this reason, the corresponding safeguard measures should be adopted.

### 5.2. Research and technology transfer

Another priority should be the promotion of R&D investment in energy technologies and its transfer to developing countries. Again, the priority of this line is justified in the recent estimations of the WEO 2009: in order to achieve an energy model consistent with the 450ppm limit, an investment of \$220 billion in OECD countries and \$200 billion in developing countries will be needed. Reducing the cost of these technology solutions will help to achieve the reduction goals at a much lower cost.

Therefore, the R&D goal must be to reduce the cost of low carbon technologies, both from the supply point of view (especially renewable energy to generate electricity, heat or fuel, and maybe also other technologies such as carbon capture and storage, considering their transfer to developing countries) and from the demand side (energy efficiency technologies, low consumption vehicles, electric or hybrid, etc.).

Actually, and given that the reduction of energy demand seems to offer, according to all estimations (for instance, WEO 2009) a much higher potential to reduce emissions (more than 50%), with immediate application and at a lower cost, the BP Chair considers that investment on R&D for technologies for energy demand reduction should be particularly encouraged.

Hence, the proposals to allocate the SET Plan funds, currently discussed, should focus particularly on energy conservation technologies and, secondly, on renewable energy.

In addition to being key to reduce carbon emissions in Europe, this investment should provide a competitive advantage to European companies, which will be able of reducing costs and export technologies to other countries.

As has been previously stated, technology transfer to developing countries is essential. Firstly, it makes more affordable the effort to reduce emissions, which is particularly demanding in those countries. Secondly, it will help to reach a fair and equitable international agreement on climate change. Therefore, the transfer of technology in acceptable conditions to developing countries is considered as an equally important priority for Europe. Obviously, this transfer will run into problems, especially those related to intellectual property. However, these hurdles can be surmounted, as has happened in fields like public health, through flexible negotiations or, as a last resort, through the economic contribution from developed countries. The launch of international support actions to achieve universal electricity access, consistent with a sustainable energy model, should receive special attention.

### 5.3. Energy conservation

In addition to the actions described above, the promotion of energy conservation should be done intensively. The European Commission has already announced this priority in many white papers, green papers and Directives, especially the Action Plan for Energy Efficiency, under review now.

In this respect, it seems convenient to change the denomination from efficiency policies to conservation policies, because the latter is the actual goal. The priorities in this field should be focused on publishing the Directive of Energy Renovation for Buildings in the appropriate conditions, and the Energy Efficiency Action Plan (the Commission does not have a document on the subject yet). For the latter, the BP Chair proposes the addition of compulsory goals for each country, and the obligation of evaluating the savings potential for each of them, for all specific sectors. Also, the European support to energy services companies (ESCOs) should be strengthened.

Also in the field of energy conservation, including all the costs in the energy price is considered a priority. On the one hand, it means to make visible the external costs of the production and use of energy. Although the European policy already considers, as has being previously mentioned, the incorporation of a carbon price –something that, as said before, should be extended to diffuse sectors–, there are other external costs of energy related to the emission of other pollutants, security of supply, or other aspects such as road congestion, that should be also included in the energy price to achieve an efficient users' behavior. On the other hand, the same reasoning implies the prohibition of subsidies for the use of energy (subsidized prices or any other subsidy that reduces the final energy price), except for exceptional and justified situations.

### 5.4. Energy interconnections

Finally, keeping in mind the concern about security of supply in Europe, energy interconnections, their promotion and their construction are also considered a priority.

Today, international exchanges are limited, in spite of the European objective of a functioning single energy market. The main reason is the lack of energy interconnections. Moreover, this need for interconnections is expected to grow in the future because of the anticipated massive deployment of renewable energy. A window of opportunity exists now with the impending publication of the first ten year plan of development of European networks by the association of European transmission network operators.

Therefore, the priority is the increase of interconnections at the European level and its correct regulation for an effective functioning of energy markets. In this respect, a deeper coordination between those responsible for transport networks and energy regulators is recommended.

Those interconnections will not only ensure security of supply –both at the European and Spanish level– but will also help to create wider and more efficient energy markets, encourage a more efficient use of energy sources and allow a higher integration of renewable energy in energy systems. In the Spanish case, the lack of electricity and gas interconnections is clear. The advantages of its deployment, too: increasing the Iberian Electricity Market, the possibility of a deeper penetration of intermittent renewable energies and the ability of providing a more diversified gas supply to Central Europe.

The promotion of interconnections clashes with obvious problems of national sovereignty. Thus, the challenge is more political than technical or economic and its strategy should be more politically oriented than fund-oriented.

### 6. Less important issues

Once the priorities have been set, it is necessary to justify why other priorities have not been included, at least regarding those indicated by the Spanish government.

First, it has to be said that this does not mean that these measures are not relevant. It has just been considered that they have less potential to achieve a sustainable energy model or a smaller need for political impetus. Thus, there are interesting issues to set out at European level, such as the European Agency of Regulators, the mandatory nature of indicative planning of the energy sector, the analysis of the sustainability of biofuels, awareness and training actions in energy subjects, the promotion of smart grids or the modification of the energy market design in order to encourage or, at least not discourage, renewable energy or energy efficiency. All these issues have to be managed properly, respecting the priorities that have been described.

In the case of electric vehicles, it is not intended to reduce its priority character but to change its support system, going from public support for the fabrication and purchase of this kind of vehicles to a direct support to R&D, particularly in the field of batteries, integrated in the wider context of an increase of R&D in the energy sector. The reason of this proposal is that today the main barrier to the massive adoption of these vehicles is the high cost of batteries (related to range and user's comfort). Therefore, it seems essential to continue to research for alternatives that bring solutions to these issues. Support to R&D seems to be much more effective than market stimulus, although this should not mean the disconnection between R&D and markets. This idea is strengthened if one thinks that the market stimulus

may include technological lock-in elements, something that should not be done, given that there are still different possibilities of business models for the electric vehicle.

Regarding the Mediterranean Solar Plan, the main problem might be its current conception. The Solar Plan may be interpreted in two senses: as a renewable supply source of electricity for Europe or as a form of access to clean energy for the countries from the South of the Mediterranean. Both concepts are interesting from the sustainability point of view, but they also have important drawbacks. In the case of electricity supply for Europe, the main disadvantage is the lack of electricity interconnections, an problem of difficult solution, as has already been said. Interconnections in Europe should go first, being secondary those to import electricity from the southern Mediterranean.

With regard to the solar electricity access for part of the southern inhabitants, this Plan may also arise questions. The inclusion of big scale power plants, often located far from the centers of consumption, makes this goal difficult. Hence, it might be convenient to review the goals of the plan and focus it correctly before tagging it as a priority of the Spanish presidency. If the intention is to achieve a renewable energy supply for Europe, it should also be considered the possibility to generate this energy in the northern Mediterranean, to avoid the problems related to interconnections. If the goal is making the access to renewable energy easier for the consumers in the southern Mediterranean, the design should be more decentralized and closer to the centers of consumption. In short, it seems necessary to examine this Plan more carefully before setting it among the top priorities.

Another element that may be missed among the mentioned priorities is the direct promotion of renewable energy, even if it has been indirectly included in R&D, the carbon emission reduction of the energy system and energy interconnections. The BP Chair considers that the European Commission has made great efforts in this direction, as can be clearly observed in the climate package 20-20 for 2020. On the one hand, the impetus of a presidency must be dedicated to launch new topics or to close those which are almost finished, not to reopen issues recently closed. Now the effort corresponds to the Member States which must transpose the corresponding Directive. On the other hand, the legal capacity of the Commission to remove some of the barriers that stand against the development of renewable energy –the regulatory instability of some countries, for example– is not clear.

The case of public aids for domestic coal is also worth mentioning. It is true that there exists a social aspect related to coal mining in some countries. But it is also true that, as long as the technology of carbon capture and storage is not developed in a commercial level – something that should be examined at a research level–, there is no point in considering the use of European coal because it clashes with the main priority of the European Union, the reduction of greenhouse gas emissions. Hence, the reform of the European Regulation on aid to coal should be oriented in this sense.