



**CLUB ESPAÑOL  
DE LA ENERGÍA**  
INSTITUTO ESPAÑOL DE LA ENERGÍA

# Energy Sustainability Policies: The European Challenge

Sevilla, January 14<sup>th</sup> 2010

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Present and future of energy in the European Union: the Industry's reflections and recommendations

Sevilla, January 14<sup>th</sup>, 2010



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# I – Introduction

The current financial and economic world crisis makes the legislative process being developed in the European Union (EU) even more necessary due to its capacity for tackling the energy problems which affect Member States. Security of supply, completion of the internal market, sustainability and the fight against global warming, and greater competitiveness for our companies in equal conditions, within the internal and global markets, are some of the Industry's main challenges.

Anticipating, collaborating and influencing in the preparation of EU's guidelines, regulations and programmes is increasingly a task for companies, associations and specialist organisations. On the occasion of the meeting of Energy Ministers held in Seville on January 15<sup>th</sup>, 2010, the *Club Español de la Energía* invited various players within the European energy sector to attend a meeting on the previous day, January 14<sup>th</sup>. The objective of the meeting was to obtain the opinions and proposals of the business representatives with regards to the main problems affecting the Industry, which they wish to contribute to resolving, and the legislative policies and developments underway and being studied by European Union Institutions.

More than **90** business representatives (see the list of participants in Annex I) , as well as top level executives of several national and international organizations, participated in five round tables discussing energy matters of particular interest to the Industry and to the European society.

The summary of the opinions and proposals raised during the extensive, fruitful discussions of this group of top level executives is presented below to the Presidency of the Council of EU Energy Ministers, in the trust that it will prove useful to those with the greatest responsibility in achieving the objectives of integrated Energy Policy and Climate Change.

## II – Overview of the Industry and general considerations

1. Business representatives from the European energy sector, brought together in Seville on January 14<sup>th</sup> 2010, are aware of the difficulties to overcome the **great challenges** of the EU: to achieve **low carbon levels** in the European **economy** and, at the same time, to become **the most efficient and competitive economy in the world**.

These challenges in the field of energy are defined by the conventional **objectives** of **security of supply, sustainability and competitiveness**. The **policies** concerning these subjects should be **balanced** and aimed at achieving each of the objectives, **without** leading to **compromises** that are **unacceptably detrimental to any of the others**.

2. The directives of the **March 2007 European Council** and the policies and recently **approved standards** within the scope of **climate policy**, the **internal market** and **technology** determine the framework of future action for the energy sector. Consequently, EU Institutions and Member States are urged to go ahead with a **quick transposition and application of the aforementioned standards**, so that the new legal framework is established as soon as possible.
3. The objectives that have been put forward will require **major investments along the whole chain** from production to consumption: exploration and production; refining; electricity generation, particularly based on renewable energies and other low carbon energy sources; and transmission and distribution infrastructures, particularly for electricity and natural gas. A **priority boost** will also be required in terms of **energy efficiency**, that specifically includes actions to save energy, not only in production but also in consumption, **as well as technological innovation**.

There is a risk that today's negative economic situation could lead to a delay in attaining the objectives set out. It is therefore indispensable that **the policies be maintained in the long term**, thereby making a suitable investment scenario easier, with a stable and predictable regulation framework.

Along these lines, **not only should new energy approaches be set up without delay, but they should be used to revitalize economic activity**. For this purpose proposals such as those put forward by the European Commission in the Second Strategic Energy Review (November 2008), for creating a **financing initiative for**

**sustainable energy** in favour of investments in energy efficiency, renewable energies and non-contaminating use of fossil fuels, are favourably considered.

4. Business representatives resolutely **support** the efforts that are being made to ensure an **international agreement on Climate Change**, particularly those carried out within the scope of the activities of the **United Nations Framework Convention on Climate Change (UNFCCC)** and the Conference of the Parties, which last edition in December in Copenhagen (**COP15**) meant an important step towards this alliance. They also request that this consensus should not result in a loss of competitiveness for European industries, leading to a reduction of industrial activity in the Member States. To be specific, **the Institutions are encouraged** to be on the alert so that **new commitments in Climate Change** matters do not affect the competitiveness of major industrial sectors, whose scope of action goes beyond the EU borders.

Concerning this area of economic efficiency, making progress with the building of an **internal European market is a priority**, particularly by improving its design and strengthening the **Agency for the Cooperation of European Regulators (ACER) as a regulatory organization with European jurisdiction**.

5. **Foreign energy policy** is closely linked to **security of supply, economic efficiency** and also increasingly, related to **climate issues and Global Warming**. **It is crucial to work out the means of achieving an “EU that speaks with one common voice”** and to make its role as a major player in the world of energy be felt.
6. The unpredictable nature of the different events that often condition day-to-day energy reality makes it advisable to **carry out prudent and flexible energy policies, in which all energy options are open**, including conventional energies.

In this context, it can be concluded that the **EU** must be the **area in which** subjects such as those relating to technical, economic, safety and environmental **issues concerning nuclear energy should be discussed**, so that a more solid and reliable analysis about this issue is made available.

7. At the **European Council in Spring 2010**, under Spanish Presidency, the new **Energy Action Plan 2010-2014 for Europe** must be adopted. This is a good opportunity to take into account the matters put forward earlier and those discussed later on, of a more specific nature, concerning the internal market and the generation mix; security of supply; renewable energies; energy saving and efficiency and energy technology.

Likewise, the Institutions should promote the preparation of a long-term energy model, like those developed by international organizations, such as the International Energy Agency (IEA).

## III – The position of business concerning key energy matters

**Europe has an energy deficit and must use all available resources to cover its requirements, while meeting the environmental standards demanded at all times and that must be economically competitive.**

The European Industry hereby expresses its point of view about such relevant issues like: the need for regulatory stability that allows the right decisions to be made concerning new investments; full completion of the internal energy market and interconnections for electricity and natural gas, specially in EU outlying countries; the common concern about the role of R&D in all energy technologies and the financing of initiatives in these issues; stable integration in the electricity market, and the distribution and transmission network of electricity coming from renewable sources; the significance of the role of energy saving and efficiency from production to consumption throughout the whole chain; and the increase in business competitiveness.

### III.1. Internal market and generation mix

#### 1. The internal markets for electricity and gas in Europe

**Full completion of internal markets for electricity and gas** is a task on which the European Institutions, Member States, Regulators and Operators have been working for more than a decade. Although there are **specific agreed regulations** for the **construction of these markets**, the **implementation** in many Member States **does not meet all the requirements** included in these regulations. Strong **political commitment is needed**. Further progress can only be made in a credible way after addressing this issue. When developing new legislation, the current regulation should be fully implemented.

The **fundamental objective** is to **increase the efficiency** of the aforementioned sectors and to **reduce the final prices** of energy, through which Industry competitiveness and the quality of life of European consumers will be improved. Other



**important goals** have been included in issues concerning **renewable energies, security of supply or limiting Greenhouse Gas Emissions (GHG)**.

The **Treaty of Lisbon** has clearly **established the objectives** of the European Union's **energy policy**, which includes **guaranteeing the smooth functioning of the internal energy market**.

## 2. The European political framework

Regarding currently valid regulations on electricity and gas market, **full compliance with the Second Package should be ensured as soon as possible**. In particular, the full opening of the retail market and the access conditions to the grid, as stated in EU Regulations, should be applied as soon as possible. **Two other issues need also to be dealt with more deeply: horizontal integration and transparency in the markets**.

**Horizontal integration** means making progress in the inclusion of the **different national markets in one single market** at **European level**. In addition to the **physical interconnection requirements between markets** that will allow integration, it is necessary for there to be **a higher degree of harmonization, and even full standardization as appropriate** in operating methods and contracting on the different national markets. Progress also needs to be made in **better use of available exchange capacity** between different countries. It is indispensable for the **regional initiatives** that were **launched by the European Regulator's Group for Electricity and Gas (EREG)** to **progress more quickly and in a coordinated manner**, with flexible mechanisms that allow the introduction of necessary changes in market design in order to facilitate integration.

**Better transparency** in energy markets (production capacity, generation volumes and interconnection capacity) not only leads to more efficient operating by agents, but also **reduces barriers for entering markets**. The **best practices** in the **more competitive markets** should be **transferred** to those markets that are **more underdeveloped**.

In August 2009, a new energy market package was published. It is fundamental to take steps so that the **new organisations planned** such as; **the European Network of Transmission System Operators for Electricity (ENTSO-E), the European Network of Transmission System Operators for Gas (ENTSO-G)** and **the Agency for the Cooperation of the Energy Regulators (ACER)** can become **operative in the short term**. In order to speed up the integration of the different national energy markets, it is important to **increase the power and independence of national energy regulators**, as requested in this package, and also to give **ACER more executive powers** that the ones initially considered.

Besides, the **10-year development plan** considered in the Third Energy Package should have a **binding character** if we really want to have an integrated market. On the other hand and besides TSOs, Regulators, Industry, both large and retail consumers and certainly Member States should play a role in setting the standards for the European market.

### 3. Interconnections

**Current development of interconnections**, particularly in outlying countries, is **way below** the **necessary level** for an **efficient and supportive functioning** of the **markets**. At the Barcelona 2002 European Council, a **prime objective** was established, **which has not been achieved**, whereby the Member States should have had **an electrical interconnection level of at least 10% of their installed production capacity by 2005, which was later extended to gas interconnections**. Market integration, guaranteeing energy supply and the development of renewable energies are going to need a much more ambitious level of interconnection between countries. Although **materialization** of the **interconnections** is a bilateral matter between the neighbouring countries linked by interconnections, **support** at a regional level, and even at a **community level**, is very often required. In the Second Strategic Energy Review (November 2008), the Commission proposed **advancing in the building of infrastructures and the implementation of an interconnection development facility** based on the current **Trans-European Networks (TEN)**. **Advances should be made in this facility by reviewing other experiences** such as the appointing of coordinators or the Economic Recovery Plan. **Interconnections over long distances** may require the **creation of a System Operator at EU level**. There are few sectors in which economic growth and job creation opportunities are so obvious.

### 4. Integration of renewable energies

At the present time, the **relevant development** of renewable energies, besides important advantages, **poses** a series of **technical and economic challenges in the internal electricity market**. In addition to strengthening **interconnections**, there is a **need for the availability of flexible and low emission back-up energies** that would contribute to the **required level of security in the electricity supply**. This **backup service** could require some **economical incentives**, which should be provided by means of a **market based scheme**.

A more active participation in the demand, in particular if the awaited launching of the electric vehicle takes place and, in general, the development of means or technologies

of energy storage, could also aid in taking advantage of variations in energy availability that are likely to be produced in the coming years.

**Distribution** will play a key role in the **integration of renewable energies into the system. The development of sufficient distribution capacity combined with the smart grid technology** are prerequisites for the rollout of renewables in the electricity sector.

## 5. The generation mix

**Security of supply** for the whole European Union is **conditioned** by the **autonomous decisions made by each Member State depending on each of their energy mixes.**

It is necessary to **establish models and studies** which, at a Community level, will allow evaluating the progress being made **towards the common energy policy objectives.** To date, no significant progress has been made in this sense; therefore, in **2010** the **first steps** must be taken to provide for the **basic indicative planning of the European generation park** with a view to **2020, 2030 and 2050.**

These plans must also be used to **evaluate risks at a Community level,** from the **point of view of security of supply,** stemming from primary energy storage problems, or from **the lack of enough investment in generation facilities,** and from an **economic point of view,** related to the repercussions of **energy prices on the competitiveness of the European Industry.**

Besides, **the best way to meet the EU objectives** regarding sustainability, competitiveness and security of supply is to **keep all energy options open.** Considering that **firm capacity technologies** (nuclear, gas and coal) will deliver significant volumes of energy in the next decade, it is important that **sufficient R&D funds** will be spent to develop these technologies further, in order to ensure that they meet the new standards in the sustainable environment and economical aspects. **Special attention should be given to the role of nuclear at EU level.**

As long as **subsidies** are not set to zero, **due to technology development,** they should be **based on a competitive European wide system. Commitment of the past should not be influenced by future changes in the system.** Negative wholesale prices caused by subsidised electricity should be avoided.

**Transparency in subsidies and taxes are required** in order to ensure a full functioning European energy market and a **level playing field for operators around Europe.**

## III.2. Security of supply

**The European Union is a net energy importer.** In 2006 imports accounted for 54% of the total energy consumed. The EU imports slightly over 80% of the crude oil it consumes, of which 38% comes from OPEP countries and 33% from Russia. In the case of gas, imports account for around 60%, with the main suppliers being: Russia (43%), Norway (24%) and Algeria (18%). As far as coal imports are concerned, 26% comes from Russia, 25% from South Africa and 13% from Australia.

In the **short and mid terms, oil, gas and coal** will undoubtedly continue to play a **significant role in the energy mix** in the EU. The **world consumption trends for gas and oil in the mid term suggest a** continued, significant and sustained **increase in demand**, particularly in developing countries, whereas the **energy product reserves and the production capacity to exploit them** will increasingly lie **in the hands of just a few countries**, which consequently **could affect the stability of markets and weaken Europe's position** as a demander of energy that is required to maintain levels of development.

In this sense, it should be necessary to pay special attention to the development of the internal energy resources.

### 1. Diversification of the energy mix

It is necessary to establish **rational measures** that **enhance efficiency** in the use of different energy sources, along with mechanisms that **increase** the use of **sources that reduce Europe's dependence** on other countries. **A diversified energy mix is what will best favour the security of supply objective providing, at the same time, a sustainable solution to the energy demand growth in the future**

**Renewable energies** are **advantageous** in that they aid in **reducing energy dependence on outside countries** and, therefore, they **lessen the risks associated with security of supply**. Nevertheless certain instruments to provide incentives for their use could affect the objective of reducing the energy consumption by 20% in 2020, providing that true prices are not transferred to the final customer after a complete calculation of the real and effective benefits and costs of the system. **The measures that tend to promote the use of renewable energies should be focused on the initial stages**, to enhance their development. At the same time, it should be taken into account that a **competitive pressure among all technologies must be pursued**.

**Nuclear energy** has been facing **social rejection** in **many EU countries**, mainly as a consequence of the risks of contamination of this type of energy and the long life of radioactive residues. Nevertheless, **technological advancements** reached in recent

years **have favored the decision of some EU countries to choose this generation source** in order to reduce their outside energy dependence, a benefit to which should be added the positive influence of nuclear energy in relation to sustainability and the battle against climate change, and its low variable costs. **The EU should be the scenario in which to debate** technical, economic, safety and environmental aspects of nuclear energy, in such a way as to achieve the **most sound and reliable analysis of this important subject**.

Regarding the role of **conventional energy sources** to reach a more diversified mix, it must be taken into account that **not all of them depend on third countries to an equal extent**, nor all of them are supplied by the same countries. In the case of **oil and gas**, production is concentrated in **less geo-politically stable countries than those that produce coal**, although this fuel **has the disadvantage** of producing **higher CO<sub>2</sub> emissions**. In any case, the development of **new technologies**, like Carbon Capture and Storage (CCS), is essential to **favour clean consumption**.

Oil comes from many production fields placed in different countries. For this reason, in spite of geopolitical conflicts and **natural phenomena** that have occurred in recent years, **the market has shown the necessary capacity, efficiency and flexibility to avoid any supply disruption**. These circumstances mentioned for oil also apply to Liquefied Natural Gas (LNG).

**Concerning the future of natural gas** in the energy supply, it is important to underline that the IEA's World Energy Outlook 2009 considers that **it will play a key role as a bridge to a cleaner energy future**. On the other hand, natural gas is considered the preferred back up of the base system in general and of renewable energies in particular.

**Furthermore, hydrocarbons contribute to security of supply by means of strategic reserves. In this sense the initiative of a Regulation on supply security of natural gas is positively considered.**

**With respect to the use of biofuels**, the EU should pay **special attention to the custom policy** that affects their promotion. In this sense, it is crucial to adopt measures to avoid **situations of dumping and unfair competition** that represent a serious risk to European Industry. To be specific, it should be on the alert for the arrival on the market of biofuels ready for consumption originating outside the EU, whose price is below production costs.

**A correct balance between the promotion of competitive European energy crops and the opening to biomass coming from outside the EU** is pivotal for the full development of biofuels in Europe.

**Industry is convinced that a more diversified energy mix will strengthen the objective of security of supply. This subject should be considered on an European level.**

2. Diversification of supply routes and origins

In practice, the European objective of diversification is usually centred on adopting **measures that diversify the routes of entry, but not the origins**, and therefore **dependence on producers remains unaffected**. The **recent supply crisis of gas** coming from Russia **recommends** to the EU to search for **new sources** that facilitate the **entry of gas** from other production **areas** such as **North Africa** or the **Caspian**. Eliminating the obstacles for projects such as the Nabucco Pipeline or the Iberian corridor will improve security of supply across Europe.

With regard to **oil**, the fact that its transport is primarily carried out by ship makes its supply more flexible, as compared to gas. **The market is very liquid**, as much for crude oil as for oil products and most biofuels, **and reacts quickly to solve any inefficiency in supply to the market**. In the case of **coal**, in addition to its **flexibility** coming **from its form of supply** (mainly by ship and train), this benefit is combined with the fact that its **production is more diversified**, including **countries** that enjoy **greater political stability** and structures closer to those of the EU countries. **In both cases, the search for alternative routes does not have a significant impact as in the case of gas.**

**Industry believes that it is not only necessary to foster the development of new corridors, but it is also necessary to have a higher diversification of origins (production areas).**

3. Development of infrastructures and the internal market

To reach a **real internal market will permit access to infrastructures and will strengthen the attractiveness** of the EU **for energy suppliers**. The **existence of different regulatory models** in the heart of the EU could make it **more difficult to implement the infrastructures** necessary to strengthen the objective of security of supply.

It will be necessary to review **compliance** of the **effective independence of the transmission infrastructures operator** to avoid discriminatory situations that could harm security of supply in the EU. It is also essential to ensure that transport operators receive adequate incentives to contribute to market integration.

The availability of **sufficient interconnection infrastructures** in the EU **will allow Member States to benefit from the advantages of neighboring countries or**

**regions.** To this end, the EU should develop the opportune legislation to speed up administrative procedures that hinder the fast creation of infrastructures today.

In this context it is of **prime importance to strengthen interconnections in electricity and natural gas of the outlying countries**, for example, in the case of France and Spain. Up to now, the rules that determine and establish the necessary interconnection capacity between two countries have been designed with local considerations. It is important that these rules be established from a regional or even European point of view, being necessary to **reinforce the mechanisms of taking decisions** in this matter. It is convenient to **highlight the importance of integrated regional markets** creation as a **first step in building a single internal European market**.

On the other hand, the objectives of **advancing renewable energies and increasing energy efficiency** also require a **tremendous effort to develop and update transportation and distribution networks**.

**From the security of supply perspective, Industry believes that it is necessary to complete the internal European market placing special emphasis on the development of the necessary energy infrastructures, according to the major principles defined in the Third Package.**

#### 4. Solidarity between Member States

In order to implement a **realistic solidarity mechanism**, it is necessary that the **EU has the minimum required interconnections** that facilitate the circulation of energy between their Member States.

The development of a **single and interconnected internal European market would create electricity and gas networks along the North-South and East-West EU's axis, allowing the expansion of this internal market to other outlying countries**, as well as providing enough transmission capacity to permit the use of solidarity mechanisms in case of emergency.

The EU should exercise its role of **articulating mechanisms which will reinforce cooperation between Member States**, identifying those situations in which the common interest should prevail over individual interests. The afore mentioned gas crisis between Russia and Ukraine has once more raised the issue that solidarity between the Member States is a very relevant matter.

**Industry considers that it is vital to develop internal infrastructures that favour and permit solidarity among the Member States.**

5. Foreign energy policy: One single voice?

**Europe should be able to define a common foreign energy policy and to speak with one single voice that will allow the EU to use its potential advantages that comes from its force as a single body.**

In view of the risks that security of supply in Europe entail, and the advantages which this action would provide, it becomes **increasingly more necessary to make progress** in the **development** of a **common foreign energy policy** from the EU and to define its scope and reach.

**Industry believes that it is necessary to make progress in the defining of a single European energy policy in relation to the supplier countries.**

### **III.3. Renewable energies**

1. Renewable energies in Europe

Thanks to the political boost and the efforts made by the business community, **Europe** has become **the leader** in the renewable energy **sector**.

The growth in renewable energies **not only reduces the energy dependence and CO<sub>2</sub> emissions**, but it also encourages **industrial and economic development** by generating new business opportunities, creating jobs and increasing the export potential of the Industry.

**Industry believes that Europe should consolidate its international leadership in this area, doubling efforts to increase its competitiveness, market share and society support**

2. The European political framework

The objective of reaching a 20% contribution from renewable energies in the overall final energy consumption by 2020 **requires strict compliance with the due dates for the presentation of National Action Plans. Institutions should identify current difficulties in order to attain the mentioned objective and propose any necessary initiatives to be taken.**

In order to achieve a **long term sustainable scenario**, the IEA estimates that, in the period between 2010 and 2030, **low carbon generation investments of 4,400 billion Euros (2008)**, of which 72% will be for renewable sources, must be made worldwide.



**Industry feels it is crucial to make short term decisions and to introduce indicators of short-term compliance for action with the highest impact, as well as to establish objectives and programmes for 2030 and 2050.**

### 3. The role of the Member States

Industry believes that the **current crisis should not slow down the European drive for renewable energies** because there are really very few sectors in which the opportunities for economic development and job creation are so obvious.

It is necessary **to get all the Member States involved** in this commitment, as well as the **regional and local governments**. The **administrative regulations** must be **transparent and agile**. The existence of a **clear and stable legal and regulatory framework**, both in the national and European dimensions, is an indispensable condition for new generation investments to boost energy exchanges and promote compliance with the renewable energy objectives.

### 4. Costs, financial facilities and market mechanisms

The economic competitiveness of the different energy sources should be based on a **complete computation of the real and effective costs** that intervene in the system.

Any decision not to reflect the total costs in the price or to establish incentivizing remuneration systems for certain technologies must be taken within a **defined strategy leading to the final objective of full competitiveness**.

Along with support systems that have proven their efficiency in the development and the competitiveness of these technologies, progress should be made in the **global implementation of a carbon emissions market** in the context of the development of the Copenhagen Accord.

In any case, **for certain technologies** that are still **not mature**, **intervention using the financial facilities in the hands of the EU is advisable to ensure a controlled process with a favourable approach towards competitiveness**.

### 5. Integration of renewable energies in the electricity network

**Industry feels that the electricity system should be capable of integrating energy generated using renewable sources.**

**It is necessary to increase the capacity of the Trans-European electricity transmission networks**, including **new control and management models**, as well

**as technological developments for distribution networks** associated with local generation of energy, **information and communication technology**.

The management and flexibility of the electricity demand is a key element for the penetration of renewable energies: electric vehicles, self supply, storage, etc.

Additionally it is primordial to use renewable energies in a direct manner for thermal uses in buildings.

#### 6. Integration of biofuels in transportation fuels

**Biofuels nowadays represent an efficient alternative in the reduction of CO<sub>2</sub> emissions and the diversification of the origins of the energy** used for transportation.

**The Directives on Renewable Energies and Fuel Quality**, recently approved, set **objectives that will require the involvement of the life cycle**. The response of the automobile Industry, so that vehicles can use fuels with a greater percentage of biofuels, is essential to be able to achieve the objective of reducing CO<sub>2</sub> emissions and the incorporation of bios.

#### 7. Boosting the implementation of renewable energies on the south shore of the Mediterranean

Industry considers that the Mediterranean Solar Plan should be strongly supported by the EU, establishing an Action Plan with objectives and making available the necessary resources.

The Mediterranean Solar Plan will be useful for meeting the objective of reducing emissions, will stimulate the economic growth of the countries of the southern shore and has the potential for reinforcing European supply security.

#### 8. Technological research and development

**Significantly increasing the amount of support for R&D programmes** is of utmost importance as is **centring them on industrial initiatives established by the EU within the scope of the SET-Plan**, most of which are directly related to renewable technologies. The estimated cost of these initiatives over the next decade is between 58.5 and 71.5 billion Euros. It is **indispensable to ensure the necessary funds with suitable participation by public and private funding** that ensure the start up and the leadership consolidation of the European Union.

Moreover, it is very necessary to **boost suitable and specific training of professionals** in the renewable energy sector.

**It is also important to take progressive implementation of electric vehicles into account and the accelerating scientific and technological advances in energy storage systems**, as well as the inclusion of **renewable energies in buildings**.

**The renewable energy Industry as a whole is extremely interested in collaborating with the Commission in the analysis of the obstacles that the deployment of these technologies in the EU is currently facing.**

### **III.4. Energy saving and efficiency**

#### **1. Energy efficiency and energy policy in the EU**

In the **European Commission's Communication of January 2007 on Energy Policy**, the ambitious objectives of "the three 20's" were set forth. Improving energy efficiency aims to **reduce the expected energy consumption in 2020 by 20%**. Said reduction in consumption must **contribute to the attaining of the other two objectives** in a significant way: **20% reduction of Greenhouse Gas Emissions (GHG) and the share of 20% in the final energy demand by renewable energy sources**.

Energy **efficiency, as "virtual energy"**, is also a **fundamental pillar in the EU's energy policy** regarding **security of supply, improving competitiveness and maintaining progress, employment and social welfare**. To the direct benefits of energy saving, other indirect ones need to be added, since the products, materials and services associated with energy efficiency comprise an attractive market, both internal and foreign, that European companies should try to lead.

**Different European legislative initiatives have been adopted concerning energy efficiency, but their estimated impact doesn't seem to reach the 20% reduction objective in 2020.** The **main obstacles** that have been identified so far are of a **legislative nature** (deficient application of current legislation), **lack of awareness by consumers and absence of suitable structures to facilitate necessary investment** in efficiency concerning facilities, goods and services, **as well as commercial acceptance** thereof.

#### **2. Principles for an eco-efficient economy**

Achieving an **eco-efficient economy** must be an **essential element** of the **new post-2010 strategy**, keeping in mind that these solutions are global and closely related to

competitiveness. **Industry supports the European Council's of October 2009 proposals** for:

- **Improving the allocation of the true costs and environmental benefits**
- **Increasing awareness of workers in eco-efficiency**, facilitating employment in sectors such as the construction trade and eco-efficient buildings, sustainable transport, renewable energies and recycling
- **Boosting eco-efficient and eco-innovative public contracting**, thus stimulating the future market of green technologies, products and services.

Furthermore, Industry considers that with the available technologies important progress can be made in achieving the proposed objectives, taking into account also the high percentage of efficient renewal and/or management to be done on existing infrastructures and equipments.

Within the aforementioned strategy, **Industry supports the European Council actions, in particular those aimed at:**

- **Presenting an integrated strategy for the promotion of eco-innovation** as early as possible, proceeding to an exhaustive review of the European Action Plan on energy efficiency
- **Referencing to primary energy all those final energy uses of the different sectors**
- **Establishing strong, reliable and widely recognized indicators and measurement systems to progress towards an eco-efficient economy** considering the complete life cycle of all the investment decisions
- **Favouring motivating models for sustainable consumption** that allow energy efficiency at the levels coinciding with the proposed objectives
- **Favouring development and employment in Information and Communication Technologies (ICT)** for an improved decision taking in this area
- **Promoting the energy efficiency and conservation culture through greater information, education and awareness at all levels.**

**Industry defends the application of regulatory measures, that motivate more than obligate**, to promote energy efficiency in the EU. The basic regulatory principles should be based on transparency, simplicity, stability, aptitude and possibility for prediction, by establishing long term objectives that take into account the complex spectrum of all the sectors involved in energy efficiency.

### 3. Basis for the development of actions

In practice, **improvements in energy efficiency are faced with a large number of barriers**, among which those relating to transmission, energy consuming equipment, electricity generation, buildings and consumer behaviour particularly stand out. **With the current progress, by 2020 it will only have achieved a 13% reduction in energy consumption.** With the major target of reaching a 20% saving and providing security to industrial and energy investors faced with new environmental and regulatory challenges, **it will be necessary to implement new strategies** and additional **actions** in different fields.

- **Building** (improvements in regulation processes, building energy certification, bio-climatic architecture and intelligent cities)
- **Transport** (technology changes in vehicles, inclusion of bio-components in fuel, progress in the electrification of transport through promotion of electric vehicles and educational programmes)
- **Energy companies** (specific measures to promote co-generation, intelligent networks, demand management and new meters)
- **Small and Medium Sized Enterprises – SME** – (public support, tax relief, promoting plans for subsidies on energy saving and efficiency savings)
- **Energy Service Companies – ESCO** – (financing measures, dissemination of the development of action protocols and accreditation systems)
- **International cooperation and partnership**

**Support from the public sector is essential** with measures aimed at information, behaviour and education for citizens and companies, promoting the debate about the best way of using profitable facilities and promoting green public contracting.

## III.5. Energy technologies

### 1. Energy Policy and Climate Change

Ambitious European objectives on Energy and Climate policies have been established for 2020 and additional ones have been declared for 2030 and 2050, moving towards a low carbon economy which will, in the medium and long term, change the energy systems of our European countries. Industry believes these objectives are difficult to achieve but considers it is important to move forward. The support policy for innovation

and the use of low carbon emissions technology is a key factor to achieving these objectives in the EU. Success will only be achieved by **accelerating the large scale generation and deployment of new energy technologies with low carbon emissions** and it is therefore necessary to secure **new human and financial resources**, as well as to increase the efforts to **coordinate** the fragmented and uneven **instruments**, that already exist at the European level, and to create other new ones (referred to, later), which in their conjunction will allow shaping, supporting and guiding this long, complex process.

**Strong investment in R&D and innovation** is required, both from public and private sources. Industry agrees that evolution towards a low carbon content economy can be seen as a series of opportunities to develop the potential for Europe to remain an attractive place for investment and Industry, while pursuing an eco-efficient economic strategy, focusing on governance for innovation and industrial renewal at the same time. But this will only be possible if the **risks** linked to this process are properly taken into account and if the **suitable regulatory and financing conditions** are established for the efforts that are required

## 2. Instruments to promote the development of energy technology

Over recent years **new instruments have been set up at a European level** (Technology Platforms, Joint Technology Initiatives, European Institute of Innovation and Technology, European Research Area, etc.) and, particularly, the Strategic Energy Technology Plan (SET Plan). In order to avoid confusion in the use of these instruments, it would be useful to make an **effort to better coordinate them** (for example the European Energy Research Alliance, EERA, with other research institutions) and to rationalise them, assuring clear and simple information for users.

Within the SET Plan, European Industrial Initiatives (EII) are going to be launched in different technology areas. Objectives have been established for each area along with their financing requirements, roadmaps, costs, indicators, etc. These plans could be useful, but they should be **more directly based on the relationship between the objectives and the necessary resources**. Industry fully agrees with the technology areas identified in the SET Plan and suggests to put more emphasis on electricity networks, including new energy mass storage systems, particularly required for efficient management of the renewable energies, as well as on CCS and sustainable nuclear fission and fusion.

## 3. R&D investments in priority technologies

Industry finances a major part of non-nuclear R&D in technologies identified as priorities under the SET Plan. More specifically, 1,666 million Euros in 2007, which

represents 69% of the total investment made. This emphasises the active role of businesses based in the EU involved in these technologies and their recognition of the **need for more research, development and demonstration in order to strengthen the position of the EU in such promising technologies.**

In nuclear technology (excluding nuclear waste treatment, radioactive protection, etc.), the R&D investment was 939 million Euros (with lower private financing, especially in the case of fusion research).

Taking into account that energy transition is, mainly, driven by the public policies and that the level of technological development with low carbon levels is in its preliminary stages, Industry requests a significant increase in available funding from public sources in the short term, **particularly taken into consideration the major decrease in energy research funding in the last years.**

#### 4. Analysis of the situation

Industry believes that some large and concerted actions, private and publicly funded are urgently required and should be tackled by a common European action (see, for example, section 2).

Low carbon content technology that is appearing on the European energy market faces many regulatory and market judgements that are not taken into account in the energy bill. The market does not provide the socially optimum level of financing and therefore, public intervention is justified. The powerful instrument of subsidies should be efficiently and carefully applied.

It will therefore be necessary to **stimulate and support a substantial increase in private investment through public instruments and measures** for research, technological development, demonstration, and market replication of SET Plan technologies, including the supply of appropriate and sufficient financial resources.

Industry is concerned about the availability of public funds necessary for this process, without which, the challenges could become insurmountable. **The Emissions Trading Scheme (ETS) is one of the possible sources.** Industry strongly recommends that the rules for Member States, to be able to use these funds for energy technology development, are such that they **do not lead to any distortion.** This will be the most effective way to enable a rapid implementation of integrated programmes focused on technologies that have widespread deployment potentials across the EU.

Industry believes that there is a need to **leverage additional funds from the EU budget,** increasing the proportion of public investment at Community level. Industry is ready to advise and accompany this process.

A **stable and positive regulatory regime** is required, including a **proper valuation** of carbon at an international level, so as to reduce uncertainty in businesses in terms of ensuring sufficient, timely investment. A process should be set up at an EU level so that the Member States can ensure stable regulatory conditions in all regions within the EU, for those companies who invest in large scale demonstration projects and make large investments.

A point of major concern is the lack of suitably qualified scientists and engineers, which could pose a threat to the success of the process. Industry therefore feels that it is very essential to make **large scale efforts to attract new professionals to scientific and technical carriers. The EU should contribute to this important issue through new instruments.**

#### 5. Joint programming and the role of the European Investment Bank

Industry agrees that **Joint Programming** could be a way for **Member States to be able to co-finance the SET Plan initiatives** on a variable geometry moving towards another model of co-investment in programmes and flexible Public / Private Partnerships. However, it is not realistic to believe that this process can start immediately at its full potential. Therefore it is necessary to incentivise and support this process.

Industry agrees that, through **loans from the European Investment Bank (EIB)**, the Commission could move and raise other resources from the public and private sectors. Furthermore, it believes that the measures quoted in the Commission's Communication of October 2009 are essential for the success of the process.



## Annex I: List of participants

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- José Domínguez Abascal – Chief Technological Officer. ABENGOA
- Rafael Osuna González Aguilar – Director General. ABENGOA SOLAR NEW TECHNOLOGIES
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- Carmen Becerril Martínez – President. ACCIONA ENERGIA
- Antonio Oporto del Olmo – President. ALSTOM
- Antonio Peris Mingot – President. ASOCIACION ESPAÑOLA DEL GAS (SEDIGAS)
- Pedro Rivero Torre – President. ASOCIACION ESPAÑOLA DE INDUSTRIA ELECTRICA (UNESA)
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- Javier Anta Fernández – President. ASOCIACION DE LA INDUSTRIA FOTOVOLTAICA (ASIF)
- José Donoso Alonso – President. ASOCIACION EMPRESARIAL EOLICA (AEE)
- Tony Kaiser – Director Future Technology & University Relations. ALSTOM
- Alfredo Barrios Prieto – President. BP ESPAÑA
- Jean Baptiste Renard - Regional Group Vicepresident, Europe and Southern Africa. BRITISH PETROLEUM (BP plc)
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- Antonio Llardén Carratalá – President. ENAGAS
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- Andrea Brentan – CEO. ENDESA
- Fernando Ferrando Vitales – Director General of Renewables Energies. ENDESA
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- José Alfonso Nebrera García – President. ESTELA
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