# *Energy: Political Economy and Sustainable Development*

## *Summary and Conclusions*

*The Spanish Committee of the World Energy Council (SCWEC) hosted the latest edition of its annual international conference on 17 November under the title of "Energy: Political Economy and Sustainable Development", organised in collaboration with the Royal Elcano Institute and the sponsorship of Repsol. The event, which for the fifth consecutive year was held at the Repsol Campus in Madrid, was attended by 400 guests.*

*In attendance at the inaugural session were Antonio Brufau, Chairman of Repsol; Miguel Antoñanzas, Vice President of Enerclub; and Emilio Lamo de Espinosa, Chairman of the Royal Elcano Institute.*

*There were two roundtable discussions which examined two of the most relevant questions in the international energy world today: on the one hand, the economic and political implications of commodity prices; and on the other, the economic, political, institutional and social dimensions of the Sustainable Development Goals (SDGs) approved in September 2015 in New York, with special emphasis on those objectives where energy plays a relevant role.*

*The first roundtable titled "The political economy of energy prices" was moderated by Paulina Beato Blanco, Secretary of the Board of Trustees of the Ibero-American Council for competitiveness and productivity. The second roundtable, "Energy in the Sustainable Development Goals" was moderated by Iliana Olivié Aldasor, Senior Analyst for International Cooperation and Development in the Royal Elcano Institute.*

*The panellists at the roundtables were high-level experts from the energy sector coming from various national and international organizations, as the Graduate Institute of International and Development Studies of the University of Geneva, the Oxford Institute for Energy Studies, the World Energy Council, the United Nations Economic Commission for Europe, the Development Bank of Latin America and the International Energy Agency, amongst others. In addition, the representatives of the SCWEC members – Cepsa, Enagás, Endesa, Gas Natural Fenosa, Iberdrola, Repsol, Sedigas, Siemens, Unesa and Viesgo shared their business vision on some of the topics of debate from a Spanish point of view.*

*As in past years, the conference also included a plenary session and a monographic session. During the plenary session, which took the form of a dialogue-interview between Arturo Gonzalo, President of SCWEC and Claudia Cronenbold, Vice President of the Latin American and Caribbean Region of WEC, some of the most relevant aspects of the global energy agenda were discussed, such as global energy governance, access to energy, managing uncertainty, internationalisation of companies in the sector, talent retention or attracting young professionals to the energy industry. They also shared with the audience the main conclusions of the 23rd World Energy Congress whose theme was "Embracing New Frontiers".*

*At the monographic session, Marta Camacho, Secretary General of SCWEC, discussed the main conclusions of the "World Energy Issues Monitor 2017" project, a strategic tool for analysing and comparing the key issues that define the national and international energy agenda over time and across geographical areas.*

*The closing remarks were given by Rafael Estrella, Vice President of the Royal Elcano Institute and Arturo Gonzalo, President of SCWEC, who reviewed the main conclusions of the day's events.*

*Some of the most salient messages and conclusions that came out of the November 2016 conference are summarised below.*

## The great global transition. The WEC scenarios.

The world is undergoing a transition that is being shaped by a variety of factors, including:

1) The global demographic pattern, in which the population doubled between the period from 1970 to 2015 and will grow at a substantially slower rate over the next 45 years, growing by approximately 40%;

2) The accelerated introduction of new technologies and an inexorable digital revolution that is leading to new ways of doing business and social changes (individual empowerment);

3) The appearance of new players, with Asia assuming a more important role in the global economy and world politics as a reflection of the growth of its population, its productive capability and the emergence of a large, urban middle class.

4) The need to seek global solutions for matters that affect all of us, with special emphasis on areas like climate change, biodiversity or deforestation.

This transformation has the potential to change the way we produce and consume energy in the years to come. This will have an impact on the current models and the economic fundamentals of nations, states and corporations, leading to a new balance across sectors and regions that will have a significant impact on the global economy.

In this context, the World Energy Council sees two possible paths to the future which are differentiated primarily by how successful we are going to be in achieving a more sustainable economic model. These two possible scenarios are: a first one based on market solutions (known as the modern jazz scenario) and another promoted mainly by the states and sustainability-oriented policies (the unfinished symphony scenario). The second, a less successful path, with no productive articulation between players, leads us to a fragmentation pushed by the desire for energy security and the search for local solutions (hard rock scenario).

## A time of great uncertainty

There is a great deal of uncertainty at this time as to which scenarios will play out.

The accelerated globalisation process and digital revolution are having a significant impact in all areas, including energy, and this is only going to continue. There will be many other unforeseen events that will impact the future scenarios.

With the Paris Climate Change Agreement, we began to think that the global path to be followed was somewhere between the WEC's first two scenarios. However, during the last Conference of the Parties (COP) held in Marrakech in December 2016 there was a sense of uncertainty due to the prospect of a possible shift in the energy policies of the new president of the United States, who has different opinions about climate change. The country's position on the Agreement could make it difficult to achieve the stated objectives.

Despite the consensus on the importance of global coordination to achieve climate change objectives and universal access to energy, we are seeing a certain social unrest, where the public seems to be leaning toward a hard rock scenario, more concerned about satisfying individual needs than stimulating the global conversation.

To deal with these uncertainties, access to information and first-hand knowledge of what is happening in the global energy context, paying careful attention to the unfolding events, is fundamental. Only in this way will we be able to define the right strategies to face the challenges of the future.

**Figura 1**

## Main messages of the 2016 World Energy Congress. The new reality.

The main messages of the last World Energy Congress held in Istanbul in October 2016 can be summarised in the following seven points:

**1) From a peak in oil production to a peak in primary energy demand**

The reality is that per capital energy demand will reach its peak before 2030. The reduction in energy intensity, supported by the effects of substituting the primary energy mix, will increase at a higher rate than the increase in the demand of a growing global middle class. This leads to a change in the discussion from oil peak to demand peak, with anticipated growth that is limited to a 20% increase over the next 45 years. This will have meaningful consequences for the growth of energy companies, which will have to consider it as a factor in their investment strategies.

**2) We have not done enough to "decarbonize" our economies:**

In order to limit the global increase in the Earth's temperature to 2ºC, the world will have to accelerate the decarbonisation of global GDP to an annual rate of 6%. This will require considerable effort since, if the current trend continues, we will exceed the carbon budget somewhere between 2045 and 2055, even based on the most optimistic assumptions in terms of reducing energy intensity. The Intended Nationally Determined Contributions (INDCs) agreed at COP21 provide for approximately one-third of the required ambition level. The most significant obstacle (or opportunity) to achieving these goals is the rapid and successful global transition of the transport sector to low-carbon solutions.

**3) From stranded assets to stranded resources:**

The changes in the way we produce energy pose a risk to existing assets and the possibility of their becoming stranded (unused). But looking to the future, we see a growing number of primary resources, particularly coal and possibly petroleum, that will not be used. With the potential for stagnated growth in the oil sector and for coal to become an irrelevant resource by 2060, the discussion surrounding stranded assets (primarily those owned by companies) will shift to a discussion focused on stranded resources in the coal and oil sector (predominantly owned by states). This has the potential to upset the current global economic and geopolitical balance and will require widespread involvement in the international dialogue on climate.

**4) Changes in the system's resilience:**

In the last 30 years we've seen the number of extreme climate events quadruple, growing pressure on the use of water to produce energy and increasing levels of cyber threats. All of these risks taken as a whole are contributing to a new reality for the energy sector. With growing system integration, resilience means more than just building stronger systems. When interdependent systems fail due to the events such as those mentioned above, the system as a whole is at risk of falling into deadlock. The system's reset capacity, the autonomy of decentralized decision-making and local empowerment have become key concepts of an approach to "soft resilience" as opposed to the traditional "strong resilience", whose only aim is to build the most robust system. Operating in this new environment requires different tools and approaches to risk management.

**5) We are beyond the turning point of a technological revolution in the energy sector:**

Energy markets are becoming increasingly complex, exacerbated by a fragmented energy policy, the rapid advance of innovation and changes in consumers' expectations. The new realities are increasingly characterised by zero margin cost production, low barriers to entry, heavy emphasis on decentralization and local empowerment, digitalization and mercantilisation of technology, more flexible payment solutions, increasingly active investors, and service to emancipated consumers.

**6) Energy's centre of gravity has moved outside of OECD countries:**

China, India and Africa will define the energy agenda of tomorrow and must occupy their rightful places in the governance of the world's energy. The world is witnessing a more inclusive form of governance with more management tools than five years ago: the United Nations has agreed that one of the Sustainable Development Goals is energy (objective 7); the Conference of Parties (COP) signed an accord in Paris and organizations like the International Energy Agency (IEA) have approached new key players in the energy sector, including China; the G20 has included energy security on its agenda and the Clean Energy Ministerial (CEM) Meeting has welcomed countries that are not G20 members. .

**7) Progress has been made but we still have 1.1 billion people without access to energy**

The recognition of energy as a sustainable development objective by the United Nations has led to an additional focus on

high impact opportunities and rapid deployment of the best technological solutions. The recent emergence of disruptive business models in rural, unconnected zones provides a formidable opportunity for the neediest places in Sub-Saharan Africa and South Asia. The deployment of these solutions will define key points of market entry in the future and will contribute to preventing equity gaps from widening. Climate and trade policy empowered will be very important to the transfer of technology and will help to prevent past errors from being repeated. Robust policies and institutional frameworks are urgently needed, as is support for entrepreneurs to enable them to access large investors.

## A call to action

The "Great Transition" is unstoppable and it requires a global response that must be built around the three principles of the "Energy Trilemma" which are energy security, energy equity and environmental sustainability. A successful energy transformation requires global political and economic collaboration on a scale never before seen. Leaders and society need to confront these new realities and work for continuous innovation while simultaneously maintaining stable investment frameworks.

Innovative approaches are needed to maintain the balance of the three dimensions of the Energy Trilemma. Governments, business leaders, investors and society will have to find new ways of avoiding dead ends that allow decisions to be taken that lead to an effective, efficient and integrated energy infrastructure. Innovative urban planning solutions, adequate responses with a focus on resilience as well as enabling policies and commercial frameworks will be the key elements when confronting the "Great Transition". The solutions will come not only from the energy sector, although it does have a historic opportunity to assume a leadership role in enabling a more broad-ranging industrial revolution. Adapting to this new reality will require a massive effort and our ability to respond will define the winners and losers.

## Energy prices show a clear relationship between economics and policies

The political economics of energy analyses the interaction between political and economic vectors. Examples of this interaction can be found in the electricity and hydrocarbon sectors.

In the case of hydrocarbon prices there are clear economic and political implications for both producers and consumers. Society is more aware of this relationship after witnessing a drop of nearly 60% in crude oil prices in recent years. The price situation has had a series of consequences on the global economy. For producers, the impact of declining hydrocarbon prices varies depending on each country's situation when prices started to drop. Generally speaking, lower oil prices have harmed countries' economies and placed stressors on the social contract implicit in most of them, according to which the population's participation in the proceeds created an economic legitimacy that reduces the need for political concessions. In particular, emerging economies and OPEC countries that had been using the proceeds from oil to increase public investments have been forced to implement austerity measures, as a consequence of which they have seen slowed economic growth and in some cases the emergence of social conflict.

It is very important to monitor these economies closely to see how they are adjusting to lower prices. In some cases, such as Saudi Arabia, energy pricing reforms are being introduced and plans are in the works for strategies to diversify their economies in the long term. Social contracts have been shown to be flexible, but not to the extent that anything goes. When prices rise, an important aspect for consumers is the simultaneous introduction of some type of compensation scheme, especially for the lowest income members of society. It is important that the taken agreements are validated and approved by society, which in turn requires more active communication and dissemination.

In countries with more energy-intensive industries like the Persian Gulf region, it is also important to consider industrial policy, since competitiveness depends to a large extent on low energy prices.

Outside of this environment, the consequence of low oil prices that is of greatest concern is the sharp reduction in investments for exploration and production that has occurred in the sector for two years in a row (2015 and 2016), due to a lack of investor confidence and incentives. This is the first time this has ever happened and according to the International Energy Agency, if this trend continues it could have serious consequences for the production/consumption equilibrium in the medium term. In the particular case of the United States, the low prices that resulted in a spectacular decline in the investment in oil and gas infrastructure in 2015 caused GDP to shrink by 0.5%.

As far as consumers are concerned, prices also affect the political balance: in many cases high prices require subsidies that are fiscally unsustainable. Lower prices stimulate the economy, for example, by boosting fuel and vehicle sales, and offer a window of opportunity to reduce subsidies in countries that use them.

In Spain's case, the drop in crude oil prices was a contributing factor to an increase in GDP

between 0.5 and 0.8 points in 2015, which also generated 10 billion euros in energy savings at the national level.

Examples of this interaction between politics and economics can also be seen in the electricity sector. For example, there is consensus among many economists that the most efficient way to reduce $CO_2$ emissions is to impose a fee on the producers of the emissions, whether in the form of a tax or by charging a fee for emission permits. In some countries, in order to avoid the political cost of imposing a tax, the energy sources with the lowest emissions (as renewable) are subsidised, introducing elements that are not directly related to supply into the cost, which ultimately raises the final sale price to consumers. The introduction of renewable energies, on the other hand, has the effect of lowering electricity prices in the market. It is therefore essential to analyse the impact of any public policy being considered for implementation.

One of the principles of the political economics of energy prices is that in the presence of volatility the competition between public players for energy revenues is intensified. Changing prices create winners and losers, both domestically and internationally, altering the balance of the domestic political economy and the regional geopolitical situation. The absence of mechanisms to mitigate the volatility of hydrocarbon prices is undoubtedly one of the greatest weaknesses of global energy governance, which seems to be increasingly overwhelmed by geopolitical and technological events.

Regardless of whether or not an agreement is reached within OPEC, the organisational dynamics have become more difficult. What we have at this time is a new context in which the more political and carefully planned OPEC model coexists with the American model, where thousands of companies operate under purely market-driven rules. At first glance it might seem like these two models could act as market stabilisers but there are enough nuances that lead us to believe that this will not be the case. One thing there is no doubt about is that geopolitical factors will play an increasingly important role in the energy industry of the future.

## World Energy Issued Monitor 2017

The "World Energy Issues Monitor" project has become a strategic tool for both WEC and SCWEC for analysing and comparing the key issues that define the national and international energy agenda over time and across geographical regions.

**Figura 2**

This year, there is evidence of a general consensus in all geographical areas and sectors regarding certain critical questions in the current global energy debate, such as energy efficiency and commodity prices. However, there is a geographical component that influences the casuistic perception of each region and defines the degree of uncertainty and the impact they have on the leaders in the sector.

So for energy leaders in Spain in 2017 (a country where the survey was taken for the fourth year in a row), the priorities are in line with those of their European counterparts and include the development of renewables, energy efficiency and European cohesion, among others.

The price of energy is the issue that has the greatest impact and poses the greatest uncertainty at the domestic level, in line with the results in Europe and the rest of the world. Among others, issues like rising electricity prices, the volatility of oil prices and the slowing of global energy demand are having a significant impact in this area.

Another topic that is a source of great uncertainty is European cohesion, fuelled primarily by Brexit and different social movements that have gained popularity recently, in a year when there are general elections slated in some of the most relevant member countries of the EU.

Geopolitical aspects also have a notable influence on the results of the Issues Monitor in our country, with aspects like regional integration and North American policy creating a great deal of uncertainty.

As mentioned above, climate change, the development of renewable energies and energy efficiency are some of the aspects that need to be implemented (high impact and low uncertainty).

Compared to other years, issues like sustainable cities, market design or electricity storage have shifted to high impact and high uncertainty status. On the other hand, issues like unconventional resources have seen a reduction in both dimensions.

## The important role of energy in Sustainable Development Goals

The new Sustainable Development Goals (SDGs) were launched at the UN General Assembly in September 2015. Without a doubt, they represent a milestone in the global development agenda by forming the framework for the international processes and strategies in this area over the next fifteen years.

The SDGs replace the Millennium Development Goals (MDGs) approved in the early 2000s which enjoyed unprecedented global consensus regarding the specific objectives of developmen-

**Figura 3**

tal aid. The MDGs were specifically focused on human and social development, with a strong emphasis on alleviating poverty and satisfying basic needs (education and health).

The new SDGs combine the development and sustainability agendas with the fight against climate change. Moreover, the new objectives recognise the multidisciplinary nature of development with its social objectives but many more dimensions as well, including economic, political and institutional ones. As such, they propose a shift from aid to development to national and international commercial, financial, production and energy policies.

While the MDGs were more aspirational in nature, the SDGs are more concrete. They comprise 17 goals, 169 objectives and a series of possible tracking indicators for greater precision and the ability to quantify progress.

These new and varied goals recognise the complexity of development processes and the need for new agents. Hence, the SDGs expand the number and variety of parties who play an active role in the agenda, from national governments - traditional donors, civilian organisations - to local and international companies and research centres. Moreover, the public and private policies involved go well beyond international cooperation.

According to this bolder vision of world governance and development, there is much more emphasis now on energy and the role it plays in development processes and strategies than there was in the MDGs. More specifically, goal 7 seeks to guarantee access to available, reliable, sustainable and modern energy for all, with a clear mandate for cooperation on development activities (goal 7a) but also for infrastructure, technology and energy policies (goal 7b).

As a result of merging the development and sustainability agendas on the one hand and interconnecting different goals and objectives on the other, several of these goals affect the energy dimension. This is the case, for example, of the responsible consumption and production goal (12), sustainable cities (11), climate action (13) and industry, innovation and infrastructure (9).

Energy is one of the most horizontal aspects of SDGs and it plays an indispensable role in achieving them. Access to energy has improved greatly in recent years but at least 1.1 billion people still live without electricity and 2.7 billion do not have safe and modern energy for cooking. Guaranteeing access to reliable, affordable, economically viable and socially and environmentally acceptable energy sources is therefore a fundamental priority for economic growth and sustainable development.

As far as the SDGs are concerned, having access to energy is equivalent to having access to drinking water, food preservation, transport, health care, sanitation and communications, among other things. Energy companies have not only a great deal to say but a great deal to contribute in achieving these goals. The involvement of the private sector, which has the know-how and best practices needed to pave the way, is key to complying with the agenda.

Given the anticipated growth of the world population and along with it the increase in global energy demand, there are no expendable energy sources. Each energy source presents opportunities and limitations that will vary depending on local circumstances. Therefore, all energy options should be on the table to deal with the wide variety of national and regional situations.

Since the energy sector is, to a large extent, responsible for climate change (it is responsible for two-thirds of all greenhouse gas emissions), it should also be the one to offer solutions. The sector must make an effort to progressively and responsibly transition to an energy mix with fewer emissions, making all kinds of energy more efficient and sustainable through technological development and innovation.

This commitment to foster the sustainability of all forms of energy should be one of the main areas of public-private partnerships. As a result of such collaborative efforts and through effective measures such as R&D+I incentives, it will be possible to develop less expensive technologies designed to achieve a zero net emission scenario without compromising economic growth.

Another key factor in solving the problem of access to energy is the necessary regional interaction. It is important that global agreements be reached that incentivize investment, with stable regulatory frameworks to allow them to be profitable in the long term. International institutions and bodies have a relevant role to play as "enrollers" of the different actors in achieving these goals.

One of the critical factors for attaining these objectives is access to financing. It is essential to find new ways of working together and being creative in the search for new financing mechanisms. This is an opportunity for development banks to take an innovative approach to working with the private sector in a coordinated fashion. In addition, it is essential that the interests of those making the investments and those who benefit from them (society) are aligned.

It is also important to have quality statistics because "what cannot be measured cannot be improved". And we must not forget that the energy model is changing and that we may need to find different indicators than the traditional ones. Finally, there must be some continuity to the available information and it must be comparable from one country or region to the next. ■

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