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I am honoured to be able to make my own small contribution to a conference of such high calibre by trying to put across the energy provider's point of view. We have heard that energy is closely linked to economic development. It is needed for trade, mobility, the production of both agricultural and industrial goods, services, education and healthcare.

As we have been told, demand will continue to increase as a result of population growth, though not necessarily in proportion to the level of development as a result of technological or other progress.

We firmly believe that energy is the life-blood of development. That said, perceptions of all our various stakeholders vary in different places.

As the individuals we all are in everyday life, we see energy through the uses made of it and through finished products; in the end it is seen as a commodity, often a cost, and above all a right for many of us. It is probably only the 1.5 or 2 billion people who do not have access to modern forms of energy who do not see things in the same way and who have an awareness of what energy really is, because they have to use their own bodies and the energy in their own muscles, or rely on very basic forms such as collecting wood to keep themselves warm.

Perhaps we should take a moment to recall what energy is. People do not make energy. They exploit its natural forms, transform them and make them available in a more usable form. The only natural energy source, the only natural resource available to everyone on the planet, is essentially solar energy, which has the capacity to meet the needs of even our wildest dreams several thousand times over. There is also mechanical energy, related to the movement of masses of air and water on the surface of the earth, such as wind and tidal energy. There are also natural forms of energy stored in matter, for example the energy contained in atoms, the power of which can be used in the form of nuclear energy. This also includes the energy stored in biomass, which is in fact solar energy stored as a result of the action of photosynthesis.

This is a form of renewable energy that is stored in plants. Biomass is also found in a fossilised form: hydrocarbons, whether we are talking about oil, gas or coal, are simply examples of biomass that has been stored over geological eras.

Luckily for us, the oil discovered some years ago now was a godsend for our civilisation, insofar as it has three advantages that are sometimes forgotten. Firstly, the energy in oil is concentrated in the carbon/hydrogen bond, which releases the energy we use when it combusts. In addition, it is highly concentrated in terms of volume, which makes it very practical in terms of mobility and transport. It is also relatively low in price, in particular when we think about the reserves in the Middle East, of which the technical costs of exploration and production are less than ten dollars or so a barrel.

Three significant factors, however, mean that this godsend is to some extent tainted.

First, the geopolitical situation. The disparity between the natural concentration of oil resources and developed countries and consumers lies behind the tensions we are all aware of and is one of the reasons why international oil companies have sought to explore and exploit resources that are ever-more technologically or logistically complex: this now requires extremely high levels of investment, sometimes of the order of several tens of billions of dollars for one project.

In addition, we have all become aware, although geologists have known it for a long time, that these are natural and therefore limited resources with the potential to run out, and that it is in our interests to make more effective use of them, avoid waste and increase the intensity with which they are used, which also implies the necessity of planning for a period of energy transition.

More recently we have also become aware, thanks to the scientists at the IPCC, that a relatively slight disturbance in the balance of certain gases in the atmosphere produced by human activity, and in particular by burning fossil fuels, creates an imbalance in solar radiation and how it is reflected; this is very likely to cause an increase in average temperatures on earth, which is itself a cause for concern.

What, then, needs to be done to prepare the solutions that will allow humanity to continue to develop peacefully?

I think we need to prepare for the future responsibly and avoid leading people to believe that there is one solution to every problem. We need to maintain and develop our resources to secure the energy supply and enable energy to be generated economically. This means retaining our ability to invest, on the one hand, in making a sufficient supply of hydrocarbons available – because they will be needed until, for example, the current infrastructure can be adapted – and in developing other solutions, including, of course, all the alternative energy sources that the previous speakers have mentioned, whilst also carrying out a comprehensive analysis of the consequences of using them.

Progress is needed on solar energy, particularly photovoltaic systems, to reduce the cost. The researchers have the ideas, but it will take time to develop them. The cost of solar energy will need to fall by 50% before it becomes an economic option.

We also need to develop renewable biomass solutions, but it is important to be honest and transparent about analysing complete life cycles and the political consequences in relation to food and other areas, and of course in relation to soil impoverishment.

We also need to work on storing energy, because all these alternative energy solutions will require storage solutions that we have not yet completely mastered in technical terms and which will themselves require natural resources that may not necessarily be available in sufficient quantities.

It is also important to work on all solutions that contribute to a more sustainable use of natural resources (including primary energy sources). Much has been said about energy efficiency; I would like to say that that of course implies technological progress by industrialists themselves, who use large amounts of energy in their own processes. A little while ago we were talking about co-generation, but there are other solutions as well: in the electricity distribution industry, for example, there are “intelligent”, optimised distribution systems that eliminate waste, including the notion of the “smart grid”, as well as infrastructure and regional development.

We also need to influence individual behaviours through education, avoiding being dogmatic and not leading people to believe that there is one easy solution but explaining that a comprehensive range of solutions will be needed.

It is also important for industrialists to work on consumer expectations for more intelligent products and services in environmental and economic terms, which means being willing to listen and developing not just products but also innovative services in conjunction with consumers and sometimes the public authorities.

It is important to develop solutions and to work together to reduce the inevitable emissions associated with burning fossil fuels, in particular at major industrial facilities. The solution to this is CO₂ capture and geological storage, which is known to be technologically feasible and is applicable to concentrated emissions sources. The technologies exist, but work needs to be done to optimise them in order to reduce costs; it is also important to work with the public authorities to make the solution acceptable to the citizen and to ensure there is both a real incentive and a framework to ensure that industrialists who create emissions and those who have the skills to store them in the ground work together. All of this needs to be done on the basis of a gradual transition and without causing any major disruption to the sensitive global balance with which we are dealing.

As we have seen, industrialists are asking that we reach agreement on clear, negotiated, binding, planned objectives, avoiding competition either between national governments or industrialists themselves. Clarity is essential both for industrialists and investors so that they can make decisions on significant investments, either in R&D or major projects without additional fiscal uncertainty.

It is the responsibility of us all, industrialists as well, to construct and develop access to energy for current and future populations by trying to maintain balance as effectively as possible and create the balanced relationships of the future, systematically taking account of scientific, technological and economic complexities at both the local and global level. As energy providers, we will also try to play our part.