



Energy solutions

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Moderator: Peter Kemp, Editorial Director, Energy Intelligence, United Kingdom

Fatih Birol, Chief Economist, IEA

José Dominguez Abascal, Chief Technological Officer, Abengoa, Spain

Philippe Esper, Chairman and Chief Executive Officer, Eurotradia International, France

Anatoly Moskalenko, Member of Management Committee, LUKOIL, Russian Federation

Jean-Noël Poirier, Vice President International and Marketing, Areva, France

Allan Rushforth, Vice President, Hyundai Motor Europe GmbH, Germany

Climate change and energy security were two of the most important challenges we face today, panel members agreed. This debate was mainly focused on the different solutions, with speakers offering a variety of solutions and visions on the way forward.

With a projected 90% increase in fossil fuel consumption in the future, along with higher energy prices, the moderator, **Peter Kemp**, kicked off this key morning debate by calling for “urgent and concerted action”. This is especially critical given the exponential growth in coal usage which counters the goal of limiting greenhouse gas emissions worldwide.

Greenhouse gases are forecast to grow by 45% by 2030, even with the development of carbon capture technologies.

Three quarters of CO₂ emissions are directly or indirectly linked to the energy sector, according to **Fatih Birol**, chief economist at [International Energy Agency](#), a sister organisation of the OECD. More alarming were his projections of a 6 degree Celsius increase in global temperature if we continue on current trends, which means a veritable shift in climate. As 90% of new emission growth will potentially come from developing countries, cooperation on a global scale is paramount.

As **Philippe Esper** highlighted, the fact that nearly three-quarters of EU citizens expect a common European response on environmental protection, while 68% want a common energy policy.

José Dominguez Abascal echoed these concerns and emphasised the duty of leaving a healthy planet for the next generation. Energy security was a major concern for this panel—price of energy, supply stability and infrastructure security. Fatih Birol cited the fact that most fossil fuels come from half a dozen countries, primarily in the Middle East, a concentration that can be a source of price and supply instability. “Before,” he said

“international oil companies played a large role.” He added that the future could see a resurgence of national governments and geopolitics, which was as much a factor in energy as geology. In fact, “the previous big oil shocks had nothing to do with the economy” he reminded the audience.

As for infrastructure security, Philippe Esper worried about the rise of environmental delinquency, fraud, piracy and terrorism in this area.

Faced with these challenges, the panel suggested a variety of solutions. Fatih Birol cited increased efficiency, a larger part for renewable and nuclear energy, and cleaner coal usage.

José Dominguez Abascal, in turn, focused on renewable sources, particularly solar energy. With the earth receiving in an hour enough solar energy for a year’s worth of global consumption, solar energy has the potential to become competitive within a few years. He added that solar energy would be generated more cheaply than oil-based energy within a couple of decades.

Mr Birol was less certain about solar’s potential compared with coal: “If solar power increased 100 times and coal doubled, in 2020 coal’s share of electricity generation would be around half. Solar’s would be 1%.”

Jean-Noël Poirier spoke of a mixed approach with renewables being complementary sources to fossil and nuclear energy. While endorsing renewables and citing Areva’s investment in wind farms and biofuel, he argued that nuclear energy was clean and reliable and an integral part of the solution. According to this speaker, China, today’s biggest emitter of greenhouse gases, has decided to build four to six new nuclear generators per year, and nuclear energy will account for a fifth of that country’s consumption in 2020, up from just 4% today.

Allan Rushforth saw innovation as part of the solution, for instance within the automotive industry which is responsible for 27% of EU emissions. One reason is cost. Hyundai Motors for instance has to comply with multiple regulations for emissions as well as different taxation policies. With 5-10% of revenues invested in R&D, he pointed out that emission regulations and taxation were major drivers in Hyundai’s bid to develop cleaner– and profitable–technologies. The trend is for manufacturers and consumers to “downsize” to smaller and more efficient cars in the EU, he noted.

Anatoly Moskalenko underlined the critical aspect of geographical diversity and vertical integration in addition to diversity of energy sources. By maintaining control of raw materials, production and marketing in several locations, LUKOIL aims to contribute to energy security. It also aims to adhere to the Kyoto Protocol for their strategy for sustainable development.

Finally, the focus turned to the social impact of energy, with Mr Birol pointing out that 1.6 billion people today are yet to have access to electricity. This affects health and

education, and deprives people of access to the Internet too. And this number is projected to diminish only marginally by 2030, to 1.4 billion.

Mr Moskalenko also recognised the importance of the social aspects of the energy sector, notably jobs; LUKOIL was guaranteeing employment to all 27, 000 of its overseas employees during the crisis.

A question from the floor came from **Tim Groser**, the minister of trade and minister of environment of New Zealand. With New Zealand's energy consisting of at least 65% renewable, he emphasized the importance of open trade in order to be able to export "virtual electricity" within the products sent overseas. "Why anyone would want to keep [trade] barriers on clean [energy] technologies is beyond my comprehension", the New Zealand minister remarked.

Cristina Narbona, Spanish Ambassador to OECD inquired on the challenge of having twenty four hours of uninterrupted energy from clean, renewable sources.

José Dominguez Abascal responded by drawing attention to a project in the US state of Arizona, which consists of storing solar energy for seven hours at a time. This storage capacity gave renewable a whole new potential.

Joris Thijssen, from Greenpeace International, questioned the feasibility of carbon capture technology and the rapid increase of coal generators. **Fatih Birol** echoed this concern, particularly as coal use was growing and carbon capture was as yet an unproven, nascent technology. But new coal generators are designed for this technology, he added.

Mr Thijssen argued that there was not enough global capacity for nuclear energy to solve the climate problem either, and the only sure route was to incite more energy efficiency, not least in countries such as China where gains could be made. There, renewable energy was also being developed quickly: "China is building a [wind-power generator] every 2 hours," Mr Thijssen claimed.

To another question from the floor, Jean-Noël Poirier agreed with the importance of assuring social, political and economic stability as a prerequisite for expansion of nuclear energy. On the hotly debated issue of "food vs. biofuel", José Dominguez Abascal believed that biofuel as a commodity will only be viable in the second generation. Anyway, for this speaker, rises in food prices were linked to demand, as witness the rise in price of rice, which is not a biofuel crop.

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