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WORLD ENERGY OUTLOOK

EUROPE IN THE GLOBAL ENERGY SCENE

REPORT

In association with

GLOBAL ENERGY IN FLUX AS DEMAND RISES AND PRICES FALL

The global energy market is undergoing dramatic changes, as big consumers such as the United States and China become the major producers of oil and solar power, and renewables plunge in price.

This was the message of the International Energy Agency's (IEA) 2017 World Energy Outlook, whose Brussels launch took place at a Friends of Europe High-level Conference on 20 November. "No country is an energy island, including the US, the EU, China and Luxembourg," said IEA Executive Director **Fatih Birol**. "It is very important for them to understand their energy future. Also, you cannot look at a few sources of energy and decide the future in the absence of other competing fuels. You cannot look at one single fuel."

The IEA noted four upheavals shaping the world energy market, he said. One is the growing electrification of energy, driven in part by digitisation and products such as electric cars. In 2016, global consumer spending on electricity was close to oil products, while future growth in electricity demand is expected to be double that of overall energy.

Another is the move by China away from heavy industry towards a services economy and a cleaner energy mix. China is the largest energy consumer in the world and the biggest source of greenhouse gas emissions, but is trying to bring about a clean energy revolution. "In terms of low carbon, China is and will be the leader in solar, wind and nuclear energy," said Birol. "Almost half of the reactors under construction are in China. Today 6 out of 10 solar panels are manufactured in China."

Thirdly, the United States is becoming the world leader in oil and gas. "We expect in the next five years more than 80% of global oil production will come only from the US."

Finally, clean energy technologies are spreading and falling in cost. The cost of solar energy has halved since 2014. "I don't know any other single good whose price has halved," said Birol. "Solar power is becoming the cheapest source of electricity generation in many countries, including China and India."

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Fatih Birol
Executive Director
at the International Energy Agency

“Two years ago, every country started thinking for the first time about putting forward a climate plan”

Laurence Tubiana
Chief Executive Officer at the European Climate Foundation (ECF) and France's former Climate Change Ambassador and Special Representative for COP21.

CHANGING ENERGY ROLES

The coming years will also see different countries playing new roles in the global energy market. “The Middle East is a major energy exporter and is now becoming one of the major energy consumers,” said Birol. “At the same time, the US is turning into a significant energy exporter.”

One reason for the anticipated growth in renewables is recent changes in thinking partly triggered by COP21, the 2015 United Nations Climate Change Conference, which produced the Paris Agreement. “Two years ago, every country started thinking for the first time about putting forward a climate plan,” said **Laurence Tubiana**, Chief Executive Officer at the European Climate Foundation (ECF) and France's former Climate Change Ambassador and Special Representative for COP21. “Now they are thinking about how to put this into law. It’s a remarkable evolution.”

However, recent global economic growth has led to a rise in carbon dioxide emissions, which was unexpected. “So our ability to forecast is not what we thought it was,” said moderator **Dharmendra Kanani**, Director of Strategy at Friends of Europe. “We do know that the temperature is on the rise. We have had the hottest year on record, and behaviour is not changing much. We thought we had sorted the link between economic growth and emissions.”

The IEA outlined two main scenarios for the coming two decades. In the New Policies Scenario, existing policies and announced intentions cause global energy needs to rise more slowly than in the past – but they still expand by 30% between today and 2040. Carbon dioxide emissions still increase, but slower than before thanks to cleaner sources of energy.

The Sustainable Development Scenario achieves the energy-related aspects of the UN Sustainable Development Goals for 2030, which include action on climate change, universal access to energy and reduced air pollution. Low-carbon sources double their share in the energy mix under this scenario to 40% by 2040, efficiency improves dramatically and coal use immediately declines. Under this scenario, carbon dioxide emissions decline from now, and around 2030 return to their 2000 level.

HOW MUCH DOES A CLEANER PLANET COST?

Clean-energy technologies and energy efficiency take an increasing share of the $60 trillion in cumulative investment in supply and end-uses in the New Policies Scenario – but in the Sustainable Development Scenario, they take up the bulk of $69 trillion required.

That relatively small difference should persuade people of the benefits of aiming for the sustainable scenario, said Maroš Šefčovič, European Commission Vice-President for Energy Union. “If you power everything and make sure that the world is a better place, it is not such a difference,” he said. “A big help for additional investment could be more decentralised ways to power our economies. More consumers are turning into producers, and small towns and villages are turning into clean-energy producers. We need to provide effective delivery and legal certainty.”

The COP23 conference in Bonn in November paved the way to complete by next year the rules that will set the Paris Agreement in motion. Šefčovič highlighted the challenge of financing these efforts and making sure that more investments flow to cities that want to become more sustainable. Public support is available, and institutional investors are keen to get involved. But it is not always easy for cities to access this finance. So the EU has developed tools to help such as providing necessary information. "The atmosphere in Bonn was positive," he said. "The mobilisation of states, cities, NGOs, philanthropists and business was good. We must make sure that countries can benefit from new ways and new technologies for energy transformation."

ELECTRIC CARS TO THE RESCUE?

One of the most visible signs of reduced oil use is the rise of electric cars. Industry has been active and governments supportive. France and the United Kingdom recently decided to phase out sales of conventional petrol and diesel vehicles by 2040. This pushes the WEO projection for the global electric car fleet up to 280 million by 2040, from 2 million today.

"Every day there is an announcement from a country about electric vehicles," said Birol. "We think electric cars are in the fast lane, mainly due to regulations, especially in the EU and China. However, if governments don't install infrastructure in a timely manner, this will slow down."

Still, the impact of electric cars might be limited, he cautioned. "We say oil demand is peaking for cars, full stop. But we don't believe oil demand globally will peak. It will come from drugs, aviation and petrochemicals – plastics for packaging and phones. Trucks are growing, and this is one of the blind spots in the transport sector."

Moreover, electric cars will not solve climate problems. Their impact will be less than 1%, he said. "The share of transportation in emissions is limited, and the share of cars in transportation is limited. I don't expect electric cars to produce a miracle. Electric cars will have implications for oil demand and pollution but not climate change."

A major achievement of the Paris Agreement was to increase climate technology in the financial sector. "The financial community is looking differently at energy systems," said Tubiana. "Three or four years ago, financing clean energy was still a niche activity. Now, when you want to open a new coal mine in Australia, it is not easy to find the funding if the government doesn't get heavily involved."

It is important to look beyond cars, she said. "Maybe the oil in cars will go down, but the next nut to crack is industry and heavy trucks. I think we are seeing a revolution in the petrochemical industry towards plastics use in terms of circularity and the substitution of plastics. I would say that trucks have the same sort of focus."

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Marco Alverà
President of GasNaturally
and Chief Executive Officer of Snam

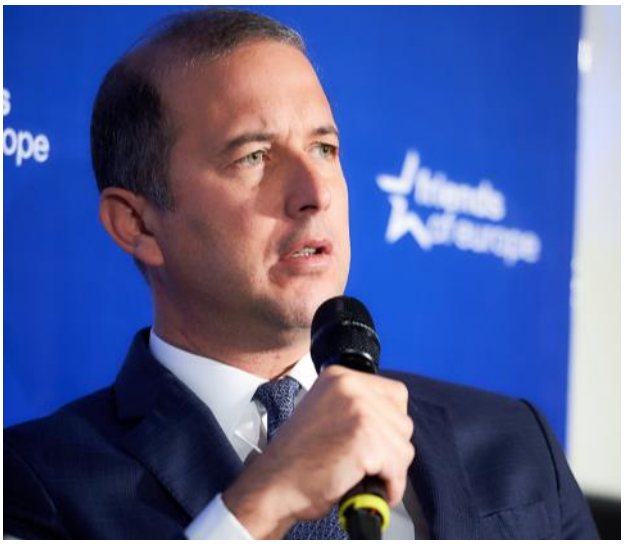
GAS AS AN ALTERNATIVE

Among fossil fuels, gas emits relatively small quantities of greenhouse gases. There are four ways to increase its penetration and growth, said **Marco Alverà**, President of GasNaturally and Chief Executive Officer of Snam. First, gas should be made cheaper to encourage its use by developing economies. “These are the swing economies for energy, particularly China and India. Here it’s really about pricing. The industry can do a lot to further reduce the liquification and the infrastructure costs there. We have seen inflation in liquefaction costs over last 5 or 10 years.”

Second, developed economies should stop using coal altogether. “You can reduce emissions by switching to gas,” Alvera said. “The infrastructure is already there and can have an immediate and positive impact on air quality.” Third, heavy transport – such as trucks, ships and aeroplanes – could switch from oil to gas.

The industry should also put more effort into creativity, innovation, research and development. “There’s a lot that we can do as an industry. We can make gas more and more sustainable,” Alvera said. “Methane leakage has been an issue, but more can be done in the interests of the environment and safety. Initiatives are under way such as common standards and best practices.”

Overall, Birol said, “Two things make me optimistic. One is that the market dynamics are pushing clean technology. Wind, solar and electric cars are becoming cheaper. The other is that there is a strong political will across the world to address climate change.” However, the key question for the world’s energy transformation is its speed. “We know the destination,” Birol said. “The only thing is the pace, and whether it is too late or not.”

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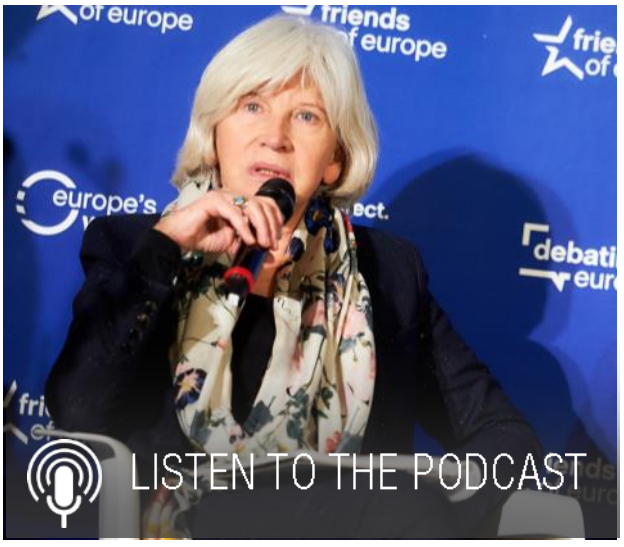
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