

WINTER 2018

# 2018 IEA WORLD ENERGY OUTLOOK

GOVERNMENTS NOT MARKETS WILL DETERMINE LONG-TERM GREENER ENERGY FUTURE, REVEALS 2018 IEA WORLD ENERGY OUTLOOK

EVENT REPORT



Cover image credits: Cover image credits: bigstockphoto.com

In association with



The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



Co-funded by the  
Europe for Citizens Programme  
of the European Union

## INTRODUCTION

As the world's attention geared up for what climate experts called the most important climate conference since Paris – COP24 in Katowice, Poland, the world energy sector is experiencing unprecedented transformations. The cost of renewables is dropping dramatically, while oil is entering a new period of renewed uncertainty and volatility. With public interest in nuclear continuing to decline in advanced economies compared to developing ones, and more support required for newer technologies such as hydrogen and carbon capture and storage, wind and solar have the momentum.

At this key time, shortly after the landmark Intergovernmental Governmental Panel on Climate Change (IPCC) special report 'Global Warming of 1.5C' gave dire warnings of what will happen if temperature increases above this threshold, **Fatih Birol**, Executive Director of the International Energy Agency (IEA), launched the World Energy Outlook 2018 report on 27 November in Brussels.

Birol told the conference hosted by leading think tank Friends of Europe that current trends demonstrate some \$42.3 trillion in investment is needed to secure energy supply until 2040. "But what is most important to me is what drives the investments," he said.

And while energy markets are important, "Our energy destiny rests with governments."

Over 70% of the \$2 trillion required each year in energy supply investment either comes from "state-directed entities" or receives "a full or partial revenue guarantee", he explained. The remaining 30% is driven by the market.

The IEA World Energy Outlook, regarded as the "gold standard in energy analysis", reveals the latest energy trends and the implications of different pathways on global climate goals, energy security and geopolitics.

"We chose electricity as the focus this year," Birol said, "firstly as electricity demand is set to grow at twice the pace of total energy demand, its share in final consumption increasing towards one third by 2040; and, secondly because of the challenge for the electricity industry to accommodate renewable energies "in our grids and power systems".

**Maroš Šefčovič**, European Commission Vice-President for the Energy Union, speaking the day before announcing the Commission's decarbonisation strategy for 2050 – "A Clean Planet for All" - agreed electrification, backed by improved regional cooperation and strong

**"Our energy destiny rests  
with governments"**

**Fatih Birol**

Executive Director of the International  
Energy Agency (IEA)

## **“We think wind will be the number one source of power generation in Europe by 2030”**

### **Fatih Birol**

Executive Director of the International Energy Agency (IEA)

interconnections, was important for the energy transition.

The key was also to advance progress in transportation where electricity, notably seen in the huge growth in electric cars and buses, again plays a central role, Šefčovič said. “Here again, the focus on emissions standards for cars and trucks is crucial, but we also need to progress on energy storage in batteries.” In early 2019, the European Commission is planning to report on the Action Plan on Batteries.

### **THE ENERGY LANDSCAPE**

Today’s energy context is fast changing, Birol said. In 2000, the EU was the second-largest energy consumer after the US and China was third. Now China is by far the largest energy consumer and the EU is number three. “In the future we will see a further change in energy geopolitics,” he said, with India moving up the scale.

China is becoming the new super power on nuclear and the US is the main provider of shale gas, now competing with other large natural gas producer countries. This also has the potential to significantly change the dynamics, economics and geopolitics of energy.

In terms of energy sources, many advancing economies are pushing for early retirement of coal plants and “it is the same story with nuclear”. Even France committed to cutting its share of electricity produced by nuclear reactors by 2035 from 75% to 50%.

The IEA outlook also reveals oil markets are entering an “unprecedented period of renewed uncertainty and volatility”. In the West, oil is in decline, driven by the increase in electric vehicles, while there is very strong growth driven by trucks, ships, planes and the petrochemical industry in the emerging world. Generally, investments are weaker in oil projects compared to recent years, with predictions that US shale will “fill the gap” in oil production.

Meanwhile, in the EU, gas production is declining faster than its demand, requiring a modest increase in imports. Natural gas is increasing, spearheaded mainly by China’s bid to cut air pollution and President Xi Jinping’s wish “to make the skies of China blue again”.

The biggest winner is renewable energy. By 2040, 45% of the growth in global energy demand will be met by renewable energies – solar and wind – but also bioenergy, hydropower and geothermal,” Birol said. And by 2030, 30% of electricity demand will come from renewable sources.

“We think wind will be the number one source of power generation in Europe by 2030,” the IEA head added, because of government and Commission policies, but also due to declining costs. “Onshore wind plays a major role but we are very hopeful for offshore,” he said, where the European Union is a leader.

## IS THE FUTURE ELECTRIC?

But renewables are not an all-weather solution. It is essential “when there is no wind, or if the sunshine is not strong enough” to create flexibility in electricity systems. Electricity is now the main focus of energy systems.

Not only that, electricity brings one of the very few good news stories in the disconnect between the ambitious targets and speeches and soaring CO2 emissions, Birol said. The IEA Outlook shows “for the first time, the number of people that don’t have access to electricity fell below 1 billion people [from 1.4 billion in 2010 and 1.7 billion in 2000].”

However, while electrification is important, it cannot stop emissions, that in 2018 reached a “historic high”, the IEA chief said. “Electrification alone does not mean decarbonisation. The perception that electrification means less CO2 emissions is not wrong, it’s absolutely wrong, and our numbers show this.”

So, to meet the global emissions crisis, flexibility is key. “The rapid growth of electricity brings huge opportunities, but market designs need to deliver both electricity and flexibility to keep the lights on,” the IEA report concludes.

The Commission’s Šefčovič said electricity market design would give a “blueprint” for other major companies to follow. But, calling for better regional cooperation, he warned, “We need to overcome the current situation where you can invest millions in new electricity infrastructure building up interconnectors and then more than 50% of capacity is blocked by the regulator.”

## COST IS ACHIEVABLE...

Reaching the toughest net zero emissions “climate scenario” in the Commission’s decarbonisation strategy, which he dubbed ‘a most important communication of this Commission affecting not only the EU but a global public’ will be “an enormous challenge,” Šefčovič emphasised. But while definitely not ‘business-as-usual’, meeting a carbon neutral target will not actually cost much more.

“The scale of the challenge is not that dramatic you’ll be surprised to hear,” he told the audience. “Today we spend 2% of GDP on energy infrastructure but if we go to the top-class scenario this would increase to 2.8%. This is feasible, but it needs very sound strategic thinking into what and how we invest.”

And, **Francesco Gattei**, Executive Vice-President for Scenarios, Strategic Options and Investor Relations at global energy company Eni, added, “We have to keep in mind that an energy system should be reliable and affordable economically in order to be environmentally sustainable.

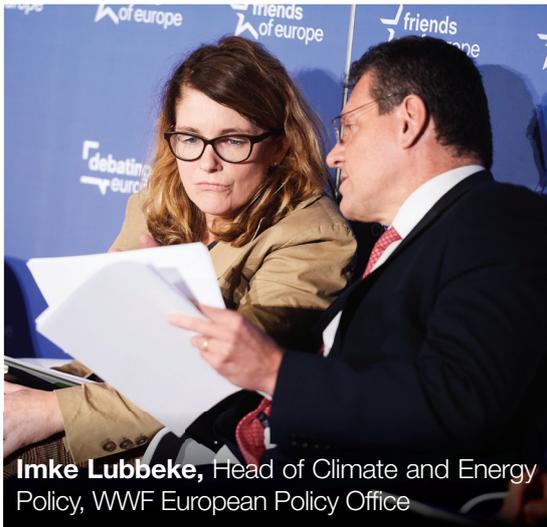
**“Electrification alone does not mean decarbonisation. The perception that electrification means less CO2 emissions is not wrong, it’s absolutely wrong, and our numbers show this”**

**Fatih Birol**

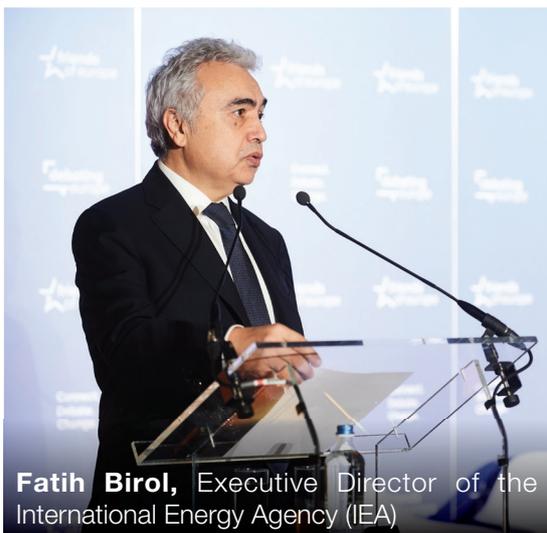
Executive Director of the International Energy Agency (IEA)



**Olivier Grabette**, Executive Vice-President at RTE



**Imke Lubbeke**, Head of Climate and Energy Policy, WWF European Policy Office



**Fatih Birol**, Executive Director of the International Energy Agency (IEA)



**Maros Sefcovic**, European Commission Vice President for Energy Union



**Dharmendra Kanani**, Director of Insights at Friends of Europe



**Francesco Gattei**, Executive Vice-President at ENI; **Fatih Birol**, Executive Director of the International Energy Agency (IEA)



**Imke Lubbeke**, Head of Climate and Energy Policy, WWF European Policy Office



**“There is no perfect energy source, each has its pros and cons”**

**“We need to use existing technology to minimise the carbon footprint while waiting for new measures to become effective”**

**Olivier Grabette**

Executive Vice-President at French Transmission System Operator (TSO) RTE

**... WITH COMBINED SOLUTIONS**

With Birol calling for “much more effort in terms of lower carbon technologies”, the report concludes there is no single emissions solution, “Renewables, efficiency and a host of innovative technologies, including storage, CCUS and hydrogen, are all required.”

This message was supported by Gattei and **Olivier Grabette**, Executive Vice-President at French Transmission System Operator (TSO) RTE – telling the meeting respectively: “There is no perfect energy source, each has its pros and cons,” and, “we want a very diverse energy mix”.

Moreover, you cannot put all your eggs in the new technology basket to reach the net zero goals, Grabette said: “We need to use existing technology to minimise the carbon footprint while waiting for new measures to become effective,” he said, also emphasising the need to consider pressure on non-renewable resources, such as rare earth and copper, when deploying renewables.

Gattei agreed, saying “As an oil or gas company we have to continue to invest in conventional sources,” but we must improve its carbon footprint.

Birol went further, insisting we have to improve existing infrastructure, as “we do not have the luxury to focus on our own darling solutions, we need all the solutions there to help. If you only focus on new builds, PV or wind, you can make yourself happy, but you will not save the world.”

**CONCLUSION**

One major takeaway from the conference was that it is pointless to focus energy on Europe – where all the emissions reductions and technology prowess lay. “If you compare the EU experience to the world, that’s a mistake,” Birol said. “We should have empathy with the emerging world instead of just talking from our comfortable chairs in Brussels, Paris or New York.”

For example, while an international carbon tax might be the best solution in theory, “the practicability of having this in emerging Asian countries would be very, very slim if I am honest with you.”

Making an analogy to football, Birol continued: “There are players that play for the tribunes, not the team itself, but we want to find an universal solution to the climate change problem, which means taking emerging countries on board.”

And, admitting “energy is a very good thing as it makes our life much more modern and comfortable”, he told the meeting, “we don’t have a problem with energy, we have a problem with emissions.”

Returning to the importance of governments, **Imke Lübbecke**, head

of WWF Europe's climate and energy unit, emphasised that to cut emissions: "It's up to governments to decide which pathway we actually take and how low carbon this world will be. We need to steer policy makers to take the 1.5-degree reality into account in making decisions."

"The net zero commitment in the Commission's strategy should provide guidance and lead governments in which direction they need to go," she added, also calling on the new Commission, come autumn 2019, to mainstream climate change into other policies.

**"It's up to governments to decide which pathway we actually take and how low carbon this world will be. We need to steer policy makers to take the 1.5-degree reality into account in making decisions"**

**Imke Lübbecke** Special Advisor on  
head of WWF Europe's climate and energy unit



**Friends of Europe**

Connect. Debate. Change.

+32 2 893 98 10

info@friendsofeurope.org

friendsofeurope.org

---

Friends of Europe is a leading think-tank that connects people, stimulates debate and triggers change to create a more inclusive, sustainable and forward-looking Europe.