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EUROPE'S ENERGY OUTLOOK

The race against the clock

Spring 2015

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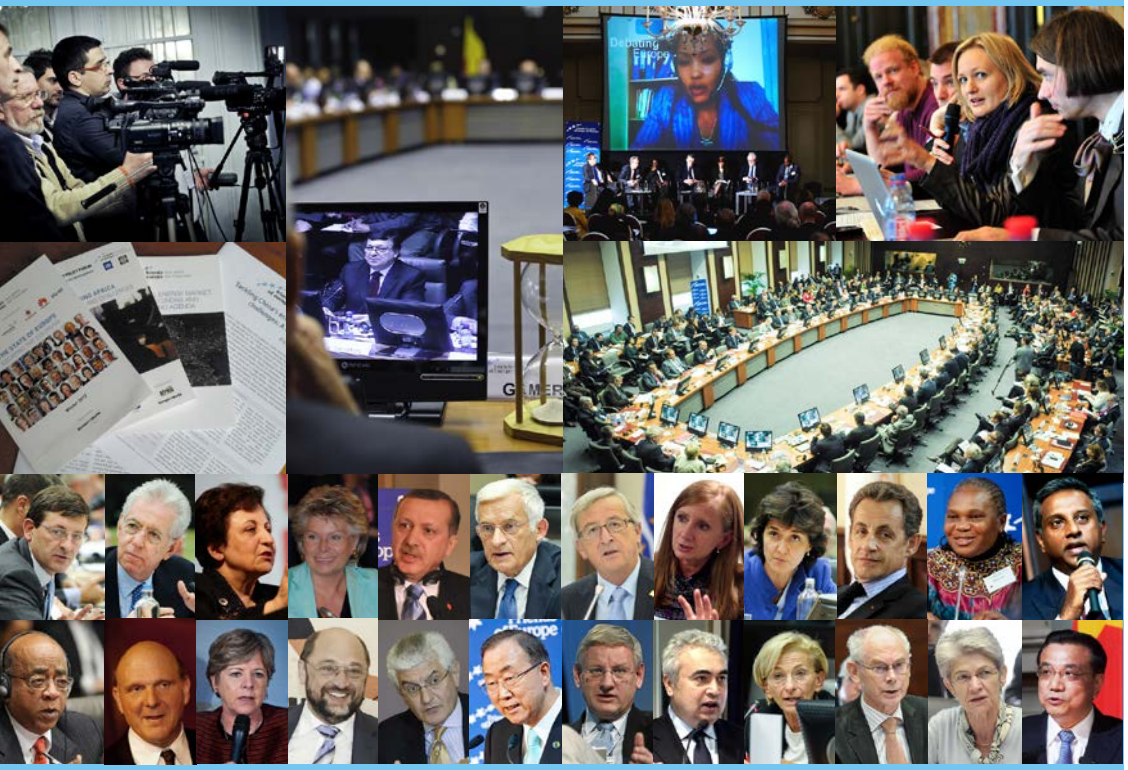

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EUROPE'S ENERGY OUTLOOK

The race against the clock

Report of the European Policy Summit

co-organised by Friends of Europe,
the Italian Presidency of the Council of the EU, FuelsEurope and Statnett

with the support of the European Investment Bank,
E.ON, ExxonMobil, GDF Suez and SHV Energy

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EXECUTIVE SUMMARY

The move to a low carbon economy will involve a tough transition that can create winners and losers, Friends of Europe's 2014 energy summit heard, just days after the European Council agreement on the 2030 climate and energy framework.

In such circumstances, strong leadership is needed from Brussels and member states, which need to take responsibility for the transformation. But there are still wide-ranging differences over exactly what that leadership entails, and which parts of the energy "trilemma" of cost competitiveness, sustainability and energy security Europe should focus on most.

Some speakers said that Europe should abandon its focus on renewables and let the market decide the best route to decarbonisation. Others suggested that stronger targets for renewables and energy efficiency are needed – and that the 2030 framework was the product of governments fighting for their own national interests rather than the wider benefit of all Europeans in the most nationalistic atmosphere for decades.

"We need to avoid becoming too technology-focused and let the market decide which technologies are the winning ones. Stop the 'renewable only' mantra", said Bryony Worthington, UK Shadow Minister for Energy and Climate.

There was widespread agreement that investments in energy efficiency are crucial to addressing all three elements of the trilemma, but also an acknowledgement that efficiency investments are easier said than done.

Energy efficiency should be "Europe's first fuel", Claude Turmes, member of the European Parliament Committee on Industry, Research and Energy, yet it is the only one of the EU's 2020 targets that the bloc is not on track to meet. Turmes pointed out that if Europe had a 40% energy efficiency target as part of the 2030 package, as many people had argued for, it would be able to wean itself off Russian gas and massively reduce the continent's energy insecurity. In addition, the EU's energy bill would be cut by a third at the same time as emissions were further reduced, it was claimed.

There was much talk about the impact of the high cost of energy in Europe on competitiveness, particularly compared to the US, where the boom in shale oil and gas production has slashed costs. But David Buchan, senior research fellow at the Oxford Institute for Energy Studies, said that Europeans "need to stop fussing about other people's resources, and make do with what we've got."

Europe's development of its 2030 Energy and Climate Package is taking place in a completely different international environment than the negotiations over the 2020 package, pointed out Paul Watkinson, head of the climate negotiation team at the French Ministry of Ecology, Sustainable Development and Energy. There is increased interest in a binding global agreement from China and more pressure from investors for governments to sign up to a deal in Paris in 2015. His point was proven just days later when the US announced significantly more ambitious emissions reduction targets and China committed for the first time to cap its emissions by 2030.

EUROPE'S BATTLE TO STAY IN THE LOW-CARBON RACE

Friends of Europe's 2014 Energy Summit came at an auspicious time, just after the arrival of the Juncker Commission, the release of the final Intergovernmental Panel on Climate Change report and the European Council meeting that agreed on the 2030 climate and energy package, said Giles Merritt, Secretary General of Friends of Europe, as he opened the meeting.

"I think there is a real opportunity for the EU, with its new five-year mandates starting now, to take energy and move it from a technological 'back page' issue to the front pages and make it political," he said. "There are early signs from the Juncker Commission that they are going to take energy and make it into a banner for what Europe does for European citizens and bill payers."

Global perspective

Energy was for a long time at the heart of Europe, a unifying issue that led heads of government to sign up to the development roadmaps leading to the 2050 targets, said Karsten Neuhoff, Head of Climate Policy Department at the German Institute for Economics Research (DIW Berlin). But in the last few years policymakers have struggled to find a common perspective of how to move to 2030, he added. "Much of that was because we were looking outside to see if the rest of the world was replicating exactly what we were doing. We did not find that and thought that we had to wait."

Then we suddenly noticed that lots of new technology is moving forward outside Europe and that there is a great deal of action to tackle climate change in other parts of the world, particularly in the US and China, he added.

"Lots of new technology is moving forward outside Europe and there is a great deal of action to tackle climate change in other parts of the world, particularly in the US and China."

Karsten Neuhoff, Head of Climate Policy Department at the German Institute for Economics Research (DIW Berlin)

"There is a very different situation in the multilateral field than five years ago in Copenhagen, when there was a question as to whether the Chinese would even turn up," said Paul Watkinson, Head of Climate Negotiation Team at the French Ministry of Ecology, Sustainable Development and Energy. "China is acting extremely swiftly and clearly wants to be part of an international climate deal."

The effort to develop a lasting and ambitious multilateral deal on climate change is set to frame the energy debate, said Watkinson. From the outside the climate negotiations can look like business as usual as governments squabble and fail to move forward, "but positions are beginning to form on how to achieve a legal instrument that is long-lasting, universal and capable of evolving without having to be renegotiated every time".

"China is acting extremely swiftly and clearly wants to be part of an international climate deal."

Paul Watkinson, Head of Climate Negotiation Team at the French Ministry of Ecology, Sustainable Development and Energy

It is crucial to get contributions on the table well before the 2015 climate talks in Paris and the European Commission's resolution to be ready to put its offer of at least a 40% cut in emissions on the table first is very welcome, he added. "We need more than one-off contributions – we need a long-term commitment cycle that will build ambition and a sense of direction towards a truly zero-carbon future" Watkinson said.

The heart of any agreement in Paris is in the field of rules, he added. "It's very boring and detailed but it is what really matters."

Translating political will into action

The new Commission has a strong climate and energy mandate, with 28 heads of government having set out what they want the Juncker Commission to do in the coming years, said Artur Runge-Metzger, Director of International and Climate Strategy at the European Commission Directorate General for Climate Action. "The framework and political will for which direction to take has been put down on paper."

However, he pointed out that there is still a lot to do. "There is only 15% interconnection, for example, so the entire job is ahead of us. Germans are happy to go to Seville to buy oranges but they are not yet prepared to go to Seville to buy solar energy. That's quite strange and there is a realisation that needs to change."

The binding target to cut greenhouse gas emissions by 40% needs to be broken down to the member state level, taking into account countries' differing capabilities. "This was the stickiest point of the negotiations," Runge-Metzger said.

"The framework and political will for which direction to take has been put down on paper."

Artur Runge-Metzger, Director of International and Climate Strategy at the European Commission Directorate General for Climate Action

However, "the number of times we have seen heads of government sign up to things and not do anything is countless," argued Merritt. "How do we change the political culture that has been such a brake on reconciling climate and energy goals? What do we do about subsidies that distort and counter-distort and make it so difficult for companies with investors to satisfy to make rational decisions?"

"The number of times we have seen heads of government sign up to things and not do anything is countless."

Giles Merritt, Secretary General of Friends of Europe

Moreover, there are limits to what extent the Commission can drive the direction of technological development, said Chris Beddoes, Director General of FuelsEurope, citing the 10% biofuels mandate, which has been derailed by the failure of the technology to advance as rapidly as required. "You cannot force the economics against the physics," he said.

"Let's look at the physics of the energy system and decide what is feasible," agreed Christopher Delbrück, CEO of E.ON Global Commodities SE, adding that there is a need to build partnerships. "The energy industry is ready to partner up and make that happen. But there will be trade-offs. Setting individual national targets on top of the EU target creates more costs than we need to. Let's put renewables where there is the least impact on the system and the least cost to society.

There must be much more engagement with citizens to explain why energy prices are going to rise and why we need to do this, he added. "We need a united voice rather than attacking each other over who is responsible for higher bills. We need to say this is not energy companies putting up bills but the cost of transforming the energy system, which is something that we as a society want."

However, Neuhoff pointed out that the cost to the consumer of energy is 2.4% of average expenditure, up from 2.1% in the 1980s so cost is not really the issue. "The big surplus of generation capacity is why energy companies struggle to make money."

Searching for investment signals

There is also a need for the right signals to ensure that the trillions of euros of infrastructure that are needed contribute to decarbonisation.

One of the key facilitators of this will be the European Investment Bank (EIB), whose Head of Environment and Climate, Matthew Arndt, said the bank is ready to support the European Council's "absolutely attainable" targets. However, he pointed out that to get from the EU's 2020 targets to the 2030 ones will require an extra €70bn of EU investment every year. Much of this investment will go towards energy efficiency and grids, he said. Grids need more capacity, they need to be more interconnected and they need to be smarter.

For renewable energy, Arndt identified three areas of risk and challenges – the first is regulatory uncertainty. "Stability is what investors like, especially if it is achieved in a rational framework that is not distortive."

And while it is a sign of the maturity of the technologies that renewable energy subsidies are starting to come down, there are still some technological risks that deter investors in technologies such as offshore wind. "Innovation is absolutely critical. It is the sweet spot for EU competitiveness and its ability to demonstrate leadership. It is the sweet spot for the EIB, too. We have developed a number of products that target specific risks related to the innovation cycle."

"Innovation is critical. It is the sweet spot for EU competitiveness and its ability to demonstrate leadership."

Matthew Arndt, Head of Environmental, Climate and Social Policy, European Investment Bank (EIB)

Also, the European Council very clearly stated the need to strengthen the ETS to strengthen the Emissions Trading System (ETS) so that it can deliver what it was meant to do. Commission proposal to introduce a Market Stability Reserve (MSR) is a starting point, said Neuhoff, "but it is probably too little, too late."

"We need a steering signal that lets companies in the market decide where to invest to enable the targets to be met."

Christopher Delbrück, CEO of E.ON Global Commodities SE

There should be less resistance to bringing the MSR forward, Delbrück said, because investors need a strong investment signal. Without it, there is continuous policy intervention in markets that means renewable energy projects are not sited where they are best suited – for example, solar power in Northern Germany. "I wish we had that much sun, but we don't. It would be much more efficient to put that capacity in Italy or Spain."

"We don't do this because every country has its own national framework and wants to be seen as doing something. There is an incentive inherent in each political arena to do something that is economically inefficient," he added. "National investment plans are by nature inefficient. We need a steering signal that lets companies in the market decide where to invest to enable the targets to be met."

Instead, investors looking to invest for 20 years in the case of renewables and 40-50 years in the case of conventional energy assets are finding that policies can be completely reversed after four or five years, leaving assets at risk of being stranded. "It simply does not provide a framework where investors are willing to put money on the table. We need a stable framework that lasts longer than the next legislative period."

The 2030 climate and energy package was welcomed by Delbrück as a very strong signal to steer investment decisions in the right direction. But he warned that it is a fallacy to believe that the EU can regulate and determine everything in detail without letting companies make investment decisions.

Will business move away?

There is also a balance to be struck, said co-moderator Chris Burns, Editor and Media Director for Friends of Europe. "How do we reach the targets that the science dictates without driving business away?" he asked.

For 90% of industry, energy makes up 2% or less of their turnover. While they need help to use energy more efficiently, for some sectors energy costs are a core aspect of their business and climate policy is really important to them, Neuhoff said. "We have done a deep dive on two of these sectors - steel and cement - and in each case it is fascinating how many modernisation and mitigation opportunities exist," he added. "But steel demand fell during the financial crisis by 25% and it is unlikely to recover. So without policy initiatives we will see a gradual decline of productive capacity and little reinvestment. Climate and energy policy can be key to really support the sectors' modernisation."

Tackling climate change is a race against the clock, but a global race, said Beddoes. "It's like a three-legged race where everyone's legs are tied together. It's difficult to go faster than the slowest person. If there is only one small player trying to drag the rest along, that is going to be tough."

"How do we reach the targets that the science dictates without driving business away?"

Chris Burns, Editor and Media Director for Friends of Europe

In addition, there are other races, he pointed out. “There are still 1.5bn people without electricity and 2.5bn people cooking with basic biomass which is bad for their health. We need a transition to a low-carbon economy but we also need affordable energy for our industries,” he added. “The debate is not about whether the world is warming. The science is unequivocal It’s about what the EU will do.”

“Our industries are not threatening to leave,” he added. “They are saying they will take their investment elsewhere but it’s not a threat, it’s just a consequence of the fact that Europe has the highest energy costs in the world.”

“We need a transition to a low-carbon economy but we also need affordable energy for our industries.”

Chris Beddoes, Director General of FuelsEurope

Leadership needed

There have been leadership problems at a European level, claimed Neuhoff. “Brussels designed a model for a European power market and then left it to stakeholders that have vested interests to protect to make all the decisions.”

“But transformation has winners and losers. Sometimes you have to take political responsibility for that process,” he added. “The Commission will have to take a stronger role in stressing that we have an ultimate political objective that we want to implement. It will enhance the efficiency of how we achieve these objectives in the long term.”

The College of Commissioners have not been very courageous in that regard over the last decade, Merritt suggested, and have failed to name and shame governments that don’t deliver.

However, Metzler said that the Commission’s role is to come up with proposals that make sense and let the political process decide how and if they are implemented. For example, the Commission was always concerned about the distortive effects of individual member state support schemes for renewables but “at every attempt to get member state agreement on an EU-wide system to create a level playing field and use comparative advantages for the benefit of the EU’s 500mn citizens, there was no consensus.”

The governance of the energy system is squarely on the table and Europe’s citizens expect the right answer, he said. “No-one can really duck it this time.”

From left to right: **Fulco van Lede**, SHV Energy; **Mechthild Wörsdörfer**, European Commission; **Bryony Worthington**, UK Parliament; **Giles Merritt**, Friends of Europe; **Chris Burns**, Friends of Europe; **Linda DuCharme**, ExxonMobil; **David Buchan**, Oxford Institute for Energy Studies

ENERGY EFFICIENCY: EUROPE'S FIRST FUEL

Energy efficiency is the one aspect of the EU's 20/20/20 targets that the bloc is not on track to meet, said co-moderator Chris Burns, and adoption of efficiency measures is not being helped by the fact that the oil price has fallen spectacularly since June.

The atmosphere in the current European Council is like stepping back 20 years, said Claude Turmes MEP, Member of the European Parliament Committee on Industry, Research and Energy. "We are in a culture of vetoing everything – France gets a veto on interconnection, Poland gets one on the ETS, the UK on efficiency. The Council conclusions [October 2014] are the most nationalistic I have seen since I arrived in Brussels in 1999. We really need to shake them up."

Europe is a resource-poor but innovation-rich continent, which is also suffering from a dearth of investment, Turmes added. "Who invented energy-positive houses? Who has the most energy-efficient refrigerators, the best law in the world on standby, the best law to promote CO2 reduction in cars? Europe! We should be proud of being the most innovative economy on technology. We are the continent where conditions to move ahead fast are best".

"The fact that we are resource-poor in a world where there is a lot of energy hunger and rising prices has a tremendous cost for the European economy," he pointed out. "In 2000 we spend €100bn on energy imports or 1% of GDP. In 2013, we spent €450bn, almost 4% of GDP. It is the single biggest wealth transfer in the world. How can an economy be strong that is bleeding at such a pace?"

The answer is more energy efficiency, which should be Europe's "first fuel", Turmes said. But efficiency is complicated, particularly in a climate of current under-investment.

Electric future

"The future is uncertain, but it is electric and efficiency will be a big part of that," said Auke Lont, Chief Executive Officer of Statnett. Before the fall in oil prices, the price of crude oil was about the same as the cost of solar electricity – a tipping point for the energy system, he said. "The world will not be the same after that."

"The future is uncertain, but it is electric and efficiency will be a big part of that."

Auke Lont, Chief Executive Officer of Statnett

Currently, the large sectors of transport and heating, in particular, are still not very efficient but they would become more so through increased electrification – electric vehicles are 3-4 times as efficient as petroleum-fuelled cars while "we use a lot of energy to heat our homes but it's not a very efficient way of producing heat. Heat pumps produce three times as much heat per kilowatt of electricity. There is tremendous energy-saving potential from existing technologies.

"So how do we get there? We need to build stronger grids, there is no doubt about that. We have recently signed agreements for interconnections to Germany and the UK from Norway that are good examples of how we want to do that".

"And markets need to be stronger. Today they only give weak signals because of contradictory policies. The Commission needs to save the market and let it work as it should. The price of carbon needs to be the guiding signal."

Lont stressed that "to realise the electric future, we need to engage the demand side (who are also voters). How? The roll-out of smart meters will be a way to engage voters and integrate the demand side into efforts to balance the overall system."

With more and more voters "fed up with their governments being ineffective and the EU being pointless, energy efficiency could directly reconnect voters with the European project," said Sanjeev Kumar, founder of Change Partnership.

Remaining challenges and how to deal with them

Despite a very strong macro case for energy efficiency, the EU is going to miss its 2020 target "and heads of state had to be dragged kicking and screaming to agree an energy efficiency target of at least 27%," pointed out Ingrid Holmes, Associate Director at Third Generation Environmentalism (E3G). Meanwhile, "24 of the 28 member states have not acceptably met the conditions around providing finance strategies for their buildings. If energy efficiency is such a brilliant thing with such fantastic evidence to back it up, why are member states so reluctant to deliver it?"

"If energy efficiency is such a brilliant thing with such fantastic evidence to back it up, why are member states so reluctant to deliver it?"

Ingrid Holmes, Associate Director at Third Generation Environmentalism (E3G)

The first issue is cost – the amount of investment needed to deliver efficiency improvements across the economy dwarfs the amount need for the power sector – and it's not just the power sector, it covers industry, building refurbishment, appliances and transport. "It's a really good investment but it's hard to deliver. It's embedded across millions of actors throughout the economy and markets are not set up to do that. It's also a very big ask in the current age of austerity."

Markets are happier dealing with large, single-source infrastructure projects, while efficiency is about many investments under £1mn, which makes the transaction costs too high, Holmes said.

As a result, efficiency needs to be thought about with the appropriate framing, she added. "We cannot keep thinking of it as part of the environmental spending. It is large-scale capital expenditure. If you compare building retrofit programmes with other large infrastructure projects such as road and rail, the value for money case is very high."

The 40% energy savings target that E3G and others, including many in the European Parliament, supported would have cut the EU's energy import bill by around a third, Holmes contended. "If we were seeing labour productivity waste on this scale, you can bet Ecofin would be pushing member states to do more."

Another benefit of cutting consumption by 40% would be that "we would be able to say to Russia: 'we don't need your fuel'. That would give us a different bargaining position than the one we have today," Turmes said.

There is a need to extend the capacity to build energy efficiency projects beyond the European Investment Bank and a few member states, Holmes said. Incentivising demand-side markets could really deliver solidarity across Europe, a jobs boost and an investment programme.

A recent Ecofys study on subsidies and externalities in the energy sector showed that efficiency is the poor relation when it comes to subsidies, garnering just 8% of all support payments, Turmes said. "Efficiency has been neglected by policy-makers. We need to tell them it's about efficiency now."

"Efficiency has been neglected by policy-makers. We need to tell them it's about efficiency now."

Claude Turmes MEP, Member of the European Parliament Committee on Industry, Research and Energy

Spending mismatch

Even Italy, which is one of the best performers in the EU with an energy intensity 14% below the European average and a target to improve its efficiency by 24%, is finding it challenging, said Marcello Capra, Senior Expert of the Department of Energy at the Italian Ministry of Economic Development.

He concurred with Turmes' point about spending on efficiency, pointing out that Italy spends about €1.5bn on efficiency compared to €13bn on renewables.

The country's focus on cutting energy use developed because of its high dependence on imports, Capra said, and the 24% reduction equates to 20mn tonnes of oil-equivalent.

Although Italy was one of the leaders in launching white certificate and obligation schemes back in 2005, it still faces barriers to adoption, he added, particularly in the private sector. "Sometimes final consumers find it difficult to invest because they have to spend money on renovating buildings first and then they can recover the money through a tax reduction scheme," Capra said.

"There is often a mismatch between those spending the money and taking the risk – and those who benefit from the energy savings."

Marcello Capra, Senior Expert of the Department of Energy at the Italian Ministry of Economic Development

Meanwhile, ministries cannot use the tax reduction scheme because they are government bodies. Then there is the "principle agent" problem, which means there is often a mismatch between those spending the money and taking the risk – and those who benefit from the energy savings.

It should be easier to engage industry, where there is a long tradition of efficiency in process industries – but 90% of the sector's companies are SMEs and they often lack the resources and the expertise to implement energy-saving measures.

The same problem applies to households, Holmes said. Loans at commercial rates for efficiency measures "just don't add up". As a result, "we will only see energy efficiency properly valued when it is properly regulated," she suggested.

As well as regulating, governments should also lead the way through public procurement, said Lont. But ultimately, he said, "what will really do the job is a stable, high CO2 price and strong standards."

ENERGY UNION: SEARCHING FOR BALANCE BETWEEN ENERGY SECURITY, CLIMATE POLICY AND COMPETITIVENESS

The way the EU deals with affordability, security and sustainability is a bit like juggling three balls, said David Buchan, Senior Research Fellow at the Oxford Institute for Energy Studies. "There is always one ball being thrown higher in the air. Before the Copenhagen climate conference in 2009, that was climate, then there was growing concern about cost and competitiveness and this year the focus has shifted to security."

Energy security, in particular the reliance on Russian supplies, has long been neglected, he claimed. "The Eastern Europeans joined the union hoping to be wrapped in a warm security blanket but they found the Western European members did not pay the issue much attention. However, that is much remedied now. We are putting some serious money into infrastructure to improve resilience and the internal market and stress tests show the system is not as vulnerable as was thought."

When it comes to energy resources, "people need to stop fussing about other people's energy endowments, get over it and make do with what we've got," he added.

"People need to stop fussing about other people's energy endowments, get over it and make do with what we've got."

David Buchan, Senior Research Fellow at the Oxford Institute for Energy Studies

Developing a genuine European energy policy

The Commission is very happy with the outcome of the negotiations for the 2030 climate and energy package, said Mechthild Wörsdörfer, European Commission Director for Energy Policy. It has ambitious targets to cut greenhouse gases by 40%, to derive at least 27% of energy from renewable sources and to improve energy efficiency by at least 27%. It includes a review by 2020 to look at increasing the target to 30%.

"There is a great deal of momentum to develop a more European energy policy."

Mechthild Wörsdörfer, European Commission Director for Energy Policy

Next comes the difficult task of implementation, which will require a new governance system to follow up on the energy efficiency targets with proposals such as eco-design and eco-efficiency standards. The renewables sector will also be closely monitored in light of Juncker's announcement that the EU should become the world leader in renewable energy, she added.

The guiding principles of the 2030 framework were the "trilemma" of cost effectiveness, energy security and the environment, with a particular focus on cost effectiveness, Wörsdörfer said, and the whole process stands side-by-side with efforts to create an energy union. "There is a great deal of momentum to develop a more European energy policy in matters such as energy diplomacy vis-à-vis third countries, diversity of resources and suppliers, and the internal energy market and infrastructure."

The idea of energy union needs solidarity to make it work, said Fulco van Lede, Member of the Management Board of SHV Energy and former CEO of SHV Energy China, whose company provides low-carbon energy to off-grid customers, mainly in rural areas.

This solidarity is not just between member states but also between urban and rural areas, he said. The rural population makes up almost 25% of the EU at about 130mn people. Contrary to popular perception, rural energy consumers are not greener than those in urban areas. Energy use is higher and many people depend on high-carbon solutions such as coal and heating oil. "So an energy union needs to balance the needs of the urban and rural population," van Lede said. "We need targets specifically for rural areas, regulations that help people to choose lower carbon solutions."

It is not true that people do not know what is going on, he added. "All of our consumers are dying to save energy and deal with climate change, but they often lack the means to make the necessary investments. Support is necessary for a real energy union."

"An energy union needs to balance the needs of the urban and rural population."

Fulco van Lede, Member of the Management Board of SHV Energy and former CEO of SHV Energy China

What about the US competitive advantage?

An energy and climate policy can deliver an internationally competitive economy in the EU, underpinned by a reliable and cleaner supply of energy can happen, but it needs the right policies, said Linda DuCharme, Vice President Europe, Russia and Caspian at ExxonMobil Gas & Power Marketing.

She compared developments in the EU with the more market-driven policies of the US that "have allowed the trilemma of affordable energy, security of supply and sustainability to be dealt with in a slightly different way".

Competitiveness is a massive issue in Europe, which has a 10% unemployment rate and 25mn people without jobs, she said. Between January 2010 and August 2014, Europe lost 2mn jobs. During the same period, the US created 5mn jobs, many as a direct result of the shale gas revolution and many more as a knock-on effect of the lower price of gas and electricity. As Europe's indigenous gas resources decline, Europe has to compete for global gas supplies and its electricity prices are the highest in the world, creating higher costs for industry.

"Our installations pay twice as much for electricity in Germany as they do in Texas. If we had to pay the renewables surcharge, it would be three times as much. What does that mean as a global investor? We recently invested $1bn in our Antwerp refinery but that pales in comparison with the $10bn we invested in a similar facility in the US," DuCharme asserted.

"The US has been able to reduce its emissions to levels not seen since 1992 and the carbon intensity of the power production fleet has fallen. Europe has done a fantastic job, but through targets and subsidies that have meant a lot more renewables, but also a lot more coal and less gas," she added. She expressed concern that the 2030 package will prolong "the targets and subsidies approach that has not achieved what you want to achieve but which could be achieved relatively easily".

However, Buchan said that while the reduction in emissions that the market has delivered in the US as a result of the price differential between gas and coal is very welcome, "will it always stay that way? How cyclical is it? Will the US offer the reduction as something that the rest of the world will legally trust in an agreement?"

Moreover, the position of the energy-intensive industries is much better understood than it was in the past, said Buchan. That, he said, is thanks to some successful lobbying that has highlighted the fact that these sectors cannot make some of the reductions that are possible in less energy-intensive sectors. There is also now a much better system of cost relief for carbon costs and renewables through the free allocation of EU allowances or state aid, he added.

What policy measures can then Europe use to lure Exxon's investments back to the continent, DuCharme was asked. It should let the market decide, she said. "If society has decided that the goal is to reduce GHGs, don't also tell industry the most cost-effective way to achieve that. Renewables and efficiency investments, and emissions reductions, will occur but at a lower cost to society if you allow the market to figure out how to achieve the goal. The market is looking for a policy approach predictable enough and transparent enough to enable long-term industries such as power generation and pipelines to invest."

> "If society has decided that the goal is to reduce GHGs, don't also tell industry the most cost-effective way to achieve that."
>
> Linda DuCharme, Vice President Europe, Russia and Caspian at ExxonMobil Gas & Power Marketing

However, Buchan said that if Europe wants a specific outcome on emissions reduction and, to a certain extent, on how that will be achieved then it does need some intervention. "Markets won't deliver a specific outcome," he pointed out.

Too much focus on technology

Bryony Worthington, UK Shadow Minister for Energy and Climate, said that she is frequently lobbied on how energy policy should change and the conversation always revolves around a technology battle. “As a policy-maker I don’t have that much interest in which technology to use. I just want a very clear policy framework that delivers outcomes,” she said. “We need to avoid the temptation to become too technology-specific and let the market decide which the best technologies are. Stop the ‘renewable only’ mantra”

“We need to avoid the temptation to become too technology-specific and let the market decide. Stop the ‘renewable only’ mantra.”

Bryony Worthington, UK Shadow Minister for Energy and Climate

“If we continue to pursue technology-specific routes, we will see more fragmentation of Europe and that is something I don’t want to see,” she said. “Let’s get Europe back to basics and focus on what we can do well. We need to focus much more on enabling frameworks, clear regulation, and clear outcomes.”

The Commission is technology-neutral, Wörsdörfer retorted, with all scenarios of the 2030 package flexible enough to allow member states to exploit low carbon resources and indigenous reserves.

“So why is CCS not more of a focus and why is nuclear a word that no-one can speak even though it has helped to decarbonise the economies of France, Sweden and the UK?” Worthington asked. “There is a danger that we take one nation’s view of the trilemma and impose it on everyone else. There should be more diversity of approach. We should not just choose one and see if it works.”

Carbon Capture and Storage is crucial, she added, because it can be retrofitted to existing coal and gas facilities but Wörsdörfer pointed out that it is not always fair to blame the EU. Despite EU support many CCS projects have fallen by the wayside because member states have opted out on their own initiative.

Solving the energy “trilemma”

When it comes to the energy “trilemma”, tackling carbon emissions is the easiest element to define, but the hardest to tackle, because it requires working together with others. Competitiveness and energy security are often dogged by hazy definitions, Worthington noted. On energy security, if you are talking about keeping the lights on, it’s about interconnection, networks and energy storage. But if you are worried about imported fuels, that is a different conversation with different outcomes, she said.

Cost and competitiveness is the hardest element to address, Worthington argued. “The market naturally tends to move towards the lowest costs and there is a political imperative, too, so there are lots of incentives to keep costs low, but it only works if markets are open. We have far too much national control over energy markets still, which may not be letting the market do what it is best at.”

One thing that can help is to take much more of a sectoral approach to GHGs, she added. There are clear differences between the power sector and other industries with power producers having multiple technologies that can be deployed. While there are still issues such as the continued use of coal "the decarbonisation of power is relatively easy. The plan is fairly clear." But for industrial sectors, "I don't think any of us have a blueprint of how to decarbonise industry. We need a far clearer industrial strategy and innovation policy at a European level so that industry does not move offshore but invests in Europe, because that is what will create jobs."

However, Worthington pointed out, the investment climate is challenging because demand for energy is falling and the addition of large amounts of renewable capacity at ever-cheaper prices means there is no real need for any thermal generation capacity. "The challenge for people who are used to investing in the power sector is that everything is shifting. The fundamentals are changing."

Climate change should now be the focus of EU energy policy, Buchan said, and the 2030 targets are an opportunity to do that. "I regret the free-for-all regime for renewables and energy efficiency and I'm curious to see how governance will work as a substitute for national targets in those areas."

The situation is better than it looks, Worthington said, "but more by accident than design". The gas/coal conundrum is still a real issue. And although "there is a clear direction of travel, how we are going to do this is sadly lost in the fight between different technologies," She said. "If we had a proper carbon price, we would not have externalities and we would not need subsidies. But I would bet that we won't have a €45 carbon price in my lifetime."

ANNEX I – Programme

SESSION I
Europe's battle to stay in the global low-carbon race

The global low-carbon market is now worth €4tn, employs 6.5m people and is expanding rapidly at over 4% a year, as more and more countries and regions are working to reduce their CO2 emissions, to price or tax carbon, to increase the deployment of renewables and to enhance energy efficiency. Europe still accounts for 22% of the global low-carbon investment and holds the highest number of green technology patents, but countries like the U.S., China and South Korea are catching up in low-carbon innovation. Renewable energy has been booming worldwide, with over 100 countries having set renewable energy targets and introduced renewable support measures, and with 70% of new wind power capacity and 40% of new photovoltaic panels installed outside Europe in 2012. Europe also now lags behind Asian countries in some energy efficiency programmes and technologies for industry. Key questions for Europe are what needs to be done to stay with the leaders and ahead of the game in international climate negotiations, and what are the consequences of falling behind? What factors explain Europe's recent slowdown in clean energy investment; can low-carbon innovation and investment be spurred only by market-based instruments if we are to scrap energy subsidies? How ambitious a 2030 climate and energy framework and R&D strategy are needed to attract the capital for low-carbon technologies to Europe and prevent Europe's clean energy companies from relocating abroad? What policies could help the EU find an optimal balance between protecting traditional sectors and encouraging new industries? And how can companies take greater advantage of a low-carbon economy?

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Christopher Delbrück	CEO of E.ON Global Commodities SE
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Co-moderated by Giles Merritt, Secretary General of Friends of Europe, and Chris Burns, Editor and Media Director at Friends of Europe

SESSION II
Energy efficiency: Europe's first fuel

Investments in energy efficiency markets worldwide amounted in 2012 to $310bn-$360bn, with energy savings outweighing the output from most energy sources, says the International Energy Agency. Energy efficiency promises cost savings, new jobs and reduced energy dependence, and is also widely seen as the most cost-effective way of reducing CO2 emissions while protecting both energy-intensive industries and household consumers from price rises. Yet despite these benefits, Europe's energy saving potential is being underexploited and most of the energy efficiency investment and business growth is happening outside Europe. Many EU member states have still to transpose the Energy Efficiency Directive, and of its 2020 energy and climate targets, the non-binding 20% energy efficiency target is the only one the EU isn't on track to meet. What best explains EU member states' insufficient action or political will? How can we break the deadlocks on greater energy efficiency in buildings, transport and industry, and maximise energy efficient technologies and services? Will the new 2030 energy efficiency target increase stability for investors, or should investment be driven solely by a robust carbon price? Where might the increased investment and innovation needed come from, and could momentum be spurred by energy efficiency obligation schemes to be in place in all EU countries this year? To what extent could innovative solutions and technologies, like smart meters and big data that allow both utilities and consumers to manage the energy use, revolutionise the energy efficiency market?

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SESSION III
Energy union: Searching for the balance between energy security, climate policy and competitiveness

Fears that the EU's dependence on energy imports continues to be above half of its energy consumption have been pushed once again to the top of the political agenda by the Ukraine crisis, overshadowing the EU's long-term climate strategy. It's far from a new problem, but diverging national interests and energy strategies have long obstructed progress on energy security and the completion of the internal energy market. The deepest divisions refer to the alternative energy-mix choices. While some countries give priority to investments in domestic sources of renewable energy, others seek their energy independence in burning more coal, in new nuclear power projects and in a dash for shale gas. There are however serious concerns that rehabilitating coal could jeopardise Europe's CO2 emission reductions goals at a time when tackling climate change is more urgent than ever with new climate deal negotiations underway. Should Europe scale back its climate ambitions in the name of energy security or could low-carbon technology and energy efficiency be the drivers of energy independence and economic competitiveness? What are the prospects for increased natural gas imports from the U.S., European shale gas production, and carbon capture and storage (CCS)? What subsidies and support mechanisms might make sense in view of securing clean, affordable and reliable energy supplies? Where should the funding come from to upgrade Europe's energy infrastructures, improve cross-border grid connections and boost energy storage? What lessons did we learn from past disruptions in the supply of Russian gas; is it possible that the Ukraine crisis might finally end national divisions and lay the foundations of an energy union? If so, what should it look like in order to solve Europe's 'energy trilemma'?

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Bryony Worthington	UK Shadow Minister for Energy and Climate

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