

Summary of the Energy Day 2020, October 27, 2020

"Green Recovery in Europe? Energy Future at the Crossroads" was the guiding theme of the Energy Day of the World Energy Council – Germany which took place virtually for the first time in its history. Will the EU be able to promote a low-carbon transition during the greatest recession in its history? What role can regional energy cooperation play in tackling the current challenges of the European energy sector? And to what extent will hydrogen, which has become a new political priority for many countries worldwide, be a key element for the decarbonisation of the energy system? These were some of the questions discussed by high-level international experts together with about 100 participants.



Green Recovery in Europe?
Energy Future at the Crossroads

27 October 2020 | 8:45 – 14:00 CET

8:45 Welcome		12:45 Wrap-up	13:55 Closing Remarks
9:00 Keynote	9:20 Discussion	10:30 Discussion	13:00 Discussion
How to recover from crisis and achieve transformational outcomes	Global Hydrogen Outlook: How to H2 market	Energy cooperation in Northwestern Europe: How to achieve climate neutrality by 2050?	Green Recovery in Europe? Energy Future at the Crossroads - an Outlook

In his welcome speech, **Dr. Uwe Franke**, President of the World Energy Council – Germany, stated that, under the impression of the COVID-19 pandemic, the (energy)world had become a different one than it was at the beginning of the year. All G20 states, with the exception of China, had gone into recession. At the same time, the fight against the pandemic also offers opportunities, for example through increased investments in innovation, digitalisation and green technologies. A "new normal" is to be expected in which we will deal with pressing issues, first and foremost, the achievement of the European climate and energy targets. In particular, achieving climate neutrality by 2050, while keeping an eye on the balance between sustainability, energy supply security and competitiveness, will be a challenge. In this context, Dr. Franke also emphasised the need for global cooperation on key challenges such as the climate crisis. He urged Europe to think beyond its own borders.



Green Recovery in Europe?
Energy Future at the Crossroads

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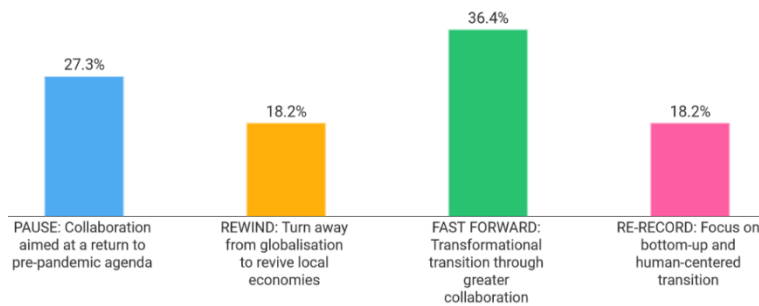
9:00 Keynote
How to recover from crisis and achieve transformational outcomes

Dr. Angela Wilkinson
Secretary General and CEO,
World Energy Council

The keynote speaker of the Energy Day, **Dr. Angela Wilkinson**, Secretary General and CEO of the World Energy Council, addressed in her intervention how to overcome the COVID-19 crisis: "Energy is an essential story about humanity". The transformations taking place right now already existed before COVID-19, but the pandemic will intensify them. There will be four drivers for the "Energy for the People and the Planet": In addition to decarbonisation, decentralisation and digitalisation, there will be the so-called

disruption, which will reorganise the energy world. According to Dr. Wilkinson, investors, who could choose from countless energy projects, steer the direction of the energy transition worldwide by deciding which projects will be realised.

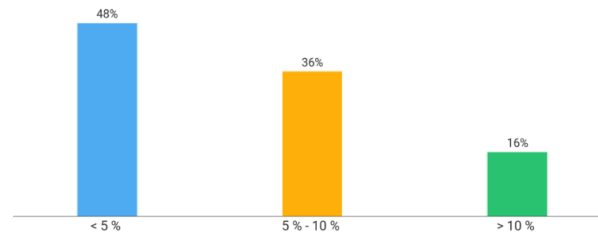
After Covid-19: For which Scenario do we see more signals today?



A **survey** on possible development scenarios after the end of the pandemic, conducted among the audience prior to Dr. Wilkinson's speech, came to the conclusion that one third of the participants voted for the so-called "Fast Forward" scenario (transformational transition through greater cooperation), followed by the "Pause" scenario (collaboration aimed at a return to the pre-pandemic agenda) with 27,3%.

Another interactive survey was conducted as part of the subsequent panel discussion **"Global Hydrogen Outlook: How to H2 Market"**. It focused on the question of the possible share of hydrogen in the global energy mix by 2030. Almost half of the participants answered with a rather pessimistic outlook of less than 5%. Another third assumed a share of 5 to 10%.

What will be the share of hydrogen in the global energy mix by 2030?



ENERGY DAY | 2020

Green Recovery in Europe?
Energy Future at the Crossroads

27 October 2020 | 9:20 – 10:20 CET

I Discussion

Global Hydrogen Outlook: How to H2 market

WORLD ENERGY COUNCIL

WELTENERGIERAT DEUTSCHLAND

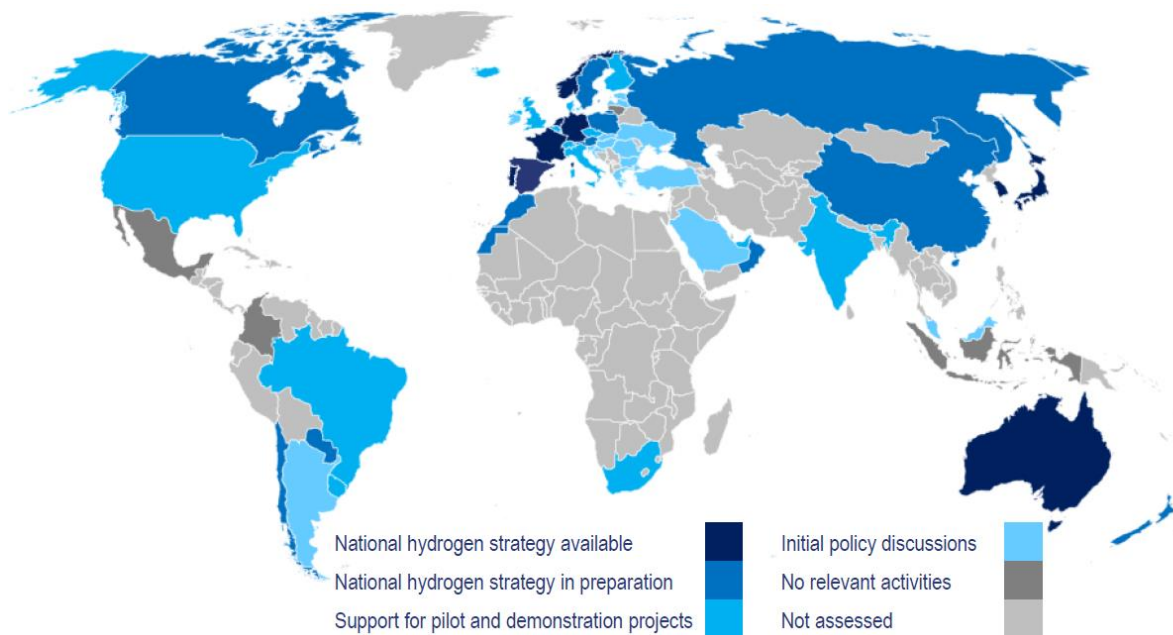
Dr. Uwe Albrecht
Managing Director, Ludwig-Bölkow-Systemtechnik GmbH

Ryo Chishiro
Manager, Kawasaki Heavy Industries, Ltd.

Alison Reeve
Research Fellow, The Australian National University

Andreas Schierenbeck
CEO, Uniper SE

Subsequently, **Dr. Uwe Albrecht**, Managing Director of Ludwig-Bölkow-Systemtechnik GmbH, presented the new study "International Hydrogen Strategies", which was commissioned by the World Energy Council – Germany. The study examines the hydrogen activities of 56 countries worldwide, of which 9 have already published a national hydrogen strategy and 11 others are currently planning one. The main driver for national hydrogen strategies is decarbonisation. However, according to Dr. Albrecht, it already becomes apparent that the future consumption of hydrogen in many industrialised countries will be higher than the national production. A large part of the demand would, therefore, have to be imported. The industry, refineries and the transport sector will probably be the first major target sectors for hydrogen use, followed by the heat market and electricity generation.



Alison Reeve, Research Fellow at the Australian National University, was accompanying the development of Australia's National Hydrogen Strategy as leader of the responsible taskforce in the Australian Government last year. In her contribution she emphasised the importance of international cooperation for developing a global hydrogen market and setting international standards. Cooperation could be as powerful as competition. International collaboration can also be important with regard to the price, which will have to be below 2 AUD/kg hydrogen (approx. 1.20€/kg) to make the energy carrier competitive. The hydrogen economy is still in its early stages in Australia. The use of hydrogen is currently being tested in pilot and research projects. However, none of the scenarios developed in the Australian hydrogen strategy had envisaged a pandemic – which means that there could be a damper on the implementation of the H₂ plans.

For **Andreas Schierenbeck**, CEO of Uniper SE, the economic viability of hydrogen is the determining factor for the development of a hydrogen market. This is linked to production and transport costs: large industrialised countries will be dependent on imports in the future. If the H₂ price is to be competitive, green hydrogen will have to be produced at low-cost locations, such as Saudi Arabia or Tunisia, which would then export it to Europe. He pointed out, however, that large amounts of fresh water were necessary for the hydrogen production. The climate crisis should not be replaced by a water crisis. In principle, he sees a big future for blue and turquoise hydrogen.

Ryo Chishiro, Manager of the Hydrogen Energy Use Promotion Section at Kawasaki Heavy Industries, Ltd. in Japan, spoke about the potential of an international supply chain for liquefied hydrogen. Kawasaki Heavy Industries has developed the world's first carrier for liquid hydrogen. The launch ceremony of the tanker "Suiso Frontier" took place in December 2019. Liquid hydrogen has the advantage that it is easy to transport and sustainable. However, the economic viability of transporting hydrogen by ship, according to Ryo Chishiro, is only economical if the hydrogen transported amounts to 11,000 tons per trip. Currently, the quantity accounts for only 75 tons.

The subsequent discussion with moderator **Sonja van Renssen**, Managing Editor of the Energy Monitor at the New Statesman Group, focused on the question of whether the debate on the colour of hydrogen is purely European, which was affirmed by Dr. Wilkinson. Most countries outside of Europe are primarily concerned with reducing their emissions when they adopt a hydrogen strategy. Whether green, blue, purple (or whatever colour) is assigned to hydrogen is more a question of definition. Andreas Schierenbeck pointed out the current low competitiveness of hydrogen compared to other, already established, renewable energies in Germany.

Green Recovery in Europe? Energy Future at the Crossroads

27 October 2020 | 10:30 – 11:30 CET

I Discussion

Energy cooperation in Northwestern Europe: How to achieve climate neutrality by 2050?

Stefan Dohler
CEO, EWE AG

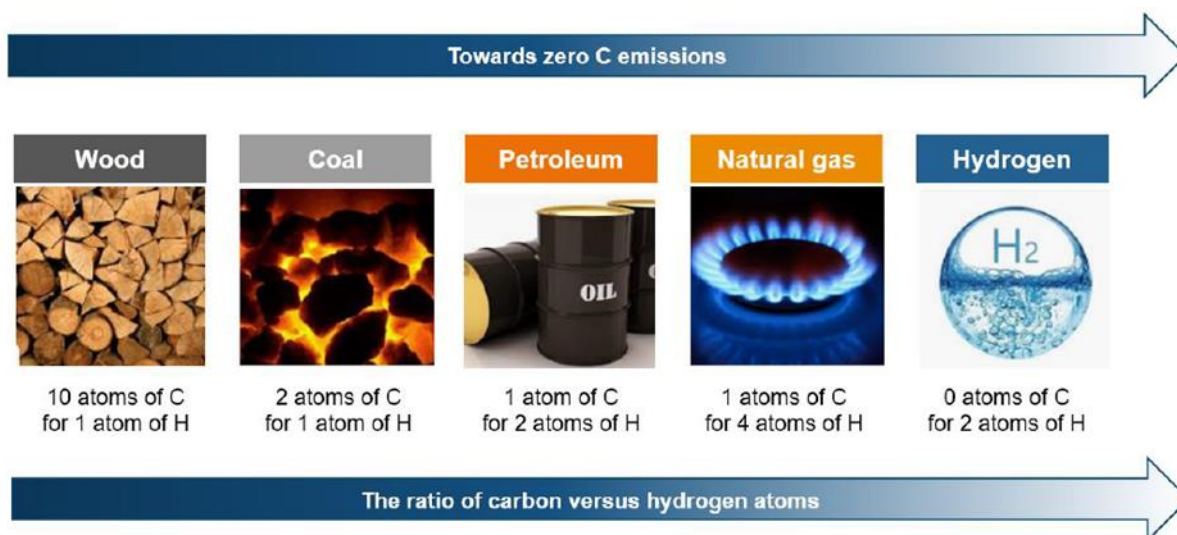
Paula Pinho
Head of Unit, Strategy
and policy coordination,
DG Energy, European
Commission

Prof. Dr. Andreas Pinkwart
Minister of Economic Affairs,
Innovation, Digitalization and
Energy, North Rhine-Westphalia

Stijn van Els
Director Commercial Delivery, Port of
Rotterdam

Prof. Dr. Jan Willem Velthuisen
Partner Economics & Chief Economist, PwC Europe

The second panel discussion on "**Energy cooperation in Northwestern Europe: How to achieve climate neutrality by 2050?**" raised the question to what extent Northwestern Europe could serve as a model for other regions in terms of achieving the climate neutrality goal. **Prof. Dr. Jan Willem Velthuisen**, Partner Economics & Chief Economist at PwC Europe, presented the core results of a study by the World Energy Council Netherlands on the decarbonisation of Northwestern Europe by 2050. He identified three key elements for achieving the climate neutrality target: electrification, improving energy efficiency and the decarbonisation of fuels and gases. According to Prof. Velthuisen, due to its existing infrastructure, the North Sea is a perfect place for the use of offshore and onshore wind, Power-to-Gas technologies and as energy storage for Western Europe. "It's all there!", he said, you just need the courage to think beyond borders.



The CEO of EWE AG, **Stefan Dohler**, pleaded for keeping an eye on the economic profitability and for always thinking along the entire value chain. It is worthwhile to rely on wind-strong coastal locations for hydrogen production in Northern Europe in order to avoid the additional development of electricity grids. Whether hydrogen will establish itself on the market will depend, according to him, on the OPEX costs for raw materials and supplies, personnel and other factors. When asked whether Europe could be a model for other regions Stefan Dohler answered that one had to handle financial resources with care. Projects should not be regarded as laboratory experiments; they should rather serve the realities. If energy imports are cheaper than the domestic production, they should be used.

Stijn van Els, Director Commercial Delivery of the Rotterdam Port Authority, spoke about current energy projects in the port and about the Dutch-German cooperation. The infrastructure in and around the port of Rotterdam is already well developed and prepared for the hydrogen use. Existing H₂ import terminals, offshore wind parks, Carbon Capture Storage (CCS) projects, bunker sites and filling stations in the important corridors as well as the possibility of using the local gas network would provide a good basis for cross-border cooperation. However, Germany is finding it difficult to invest in such projects, Stijn van Els stated, because it is hard to foresee how the market will develop.



Paula Pinho, head of the Strategy and policy coordination unit in the EU Commission's Directorate-General for Energy, remarked that cross-border regional cooperation is not the standard, yet. It is still a great mental challenge to think in the dimension of an energy community of a region and not as a nation. Changing this, however, holds incredible potential for progress and the achievement of common EU goals. The Pentilateral Energy Forum, which promotes regional energy integration, has also recognised the importance of hydrogen for the decarbonisation process. It had already emphasised the importance of cooperation on the hydrogen topic in June 2020, in order to enable the benefits of cooperation in this area not only for one but for several states and regions. According to Paula Pinho, the EU's focus is on green hydrogen.

After a short **wrap-up of part I** of the Energy Day by **Sonja van Renssen**, the afternoon was dedicated to the topic "Green Recovery in Europe? Energy Future at the Crossroads - an Outlook". **Dr. Carsten Rolle**, Executive Director of the World Energy Council – Germany, moderated the debate between **Andreas Feicht**, State Secretary in the Federal Ministry of Economics and Energy, and **Adam Guibourgé-Czetwertyński**, Undersecretary of State in the Polish Ministry of Climate.

Green Recovery in Europe?
Energy Future at the Crossroads

27 October 2020 | 13:00 – 13:55 CET

I Discussion

Green Recovery in Europe? Energy Future at the Crossroads - an Outlook

Andreas FeichtState Secretary, Federal Ministry for
Economic Affairs and Energy, Germany**Adam Guibourgé-Czetwertyński**Undersecretary of State, Ministry of
Climate, Poland

State Secretary Andreas Feicht assessed the European energy policy from the perspective of Germany, which holds the Presidency of the Council of the EU until the end of this year. He stated that, despite the challenges posed by the COVID-19 pandemic the EU continues to pursue the goals of implementing the Green Deal, increasing the share of low-carbon energy and building a carbon-free infrastructure. This approach will also include the application of the CO₂ emissions trading scheme to the transport sector. Both the promotion of European cooperation in the development of offshore wind energy and the decarbonisation of aviation and the transport sector are being supported by the German government. According to State Secretary Feicht, Germany is very well integrated in an electricity market with its neighbours. As an example, he cited the offshore wind cooperation, including with Poland, in the Baltic Sea. The mix and the way in which technologies interact are a national matter, however, he said – but European cooperation could help solve infrastructural challenges in the context of the energy transformation. Hydrogen could have a major impact on achieving climate protection goals, but we are dealing with a "chicken-or-the-egg dilemma". People are reluctant to make investments because they do not know in which direction this technology will develop.

Adam Guibourgé-Czetwertyński took a closer look at his country's national energy strategy, published in 2020. The Polish Ministry of Climate, he said, had embarked on a path to make the phase-out of coal-based electricity generation not only environmentally friendly but also socially acceptable and fair. As a coal-mining country, Poland has decided to completely abandon coal use with the closure of the last coal mine in 2049. The aim is now to establish an emission-free energy system over the next 20 years. By 2033, Poland's energy needs are to be met by nuclear energy with a capacity of 6-9 GW and (by 2040) by renewable energies with a capacity of 8-11 GW. Offshore wind farm projects with Germany and the Baltic States have already been initiated. The expansion of photovoltaics is to be promoted by public funding. Transport in large Polish cities should also become emission-free (keyword: e-buses). He saw a challenge in the decarbonisation of the heating market, however, especially with regard to low-carbon heating systems in private households.

During the discussion, the two government representatives also exchanged views on the acceptance of investments in energy and climate projects. It is important that people are able to understand and see the investments that are being made. In addition, the Undersecretary of State **Guibourgé-Czetwertyński** referred to the challenges for states with low capital investment. A low GDP means limited access to capital and thus limited capacity to finance projects.

Finally, both discussed the COVID-19 pandemic and the learning curve from it. "The pandemic teaches us a lot", Guibourgé-Czetwertyński was optimistic. "We can achieve the set goals, despite all challenges". State Secretary **Feicht** added: "There is always a time after the crisis. The deeper this crisis is, the more we see the need to build a resilient economy." A clear reference to the challenges that lie ahead in the coming months.