



International Pathways to Net-Zero



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The Energy Day, the annual conference of the World Energy Council – Germany, took place on 12 October 2023 in the Berlin-Brandenburg Academy of Sciences and Humanities in Berlin, under the title „International Pathways to Net-Zero“.



In his opening address, **Dr Uwe Franke, Chair of the World Energy Council – Germany**, mentioned that the World Energy Council (WEC) and the World Energy Council – Germany are this year proudly celebrating their centenary anniversaries. He reminded the audience that Mr Daniel Dunlop organised the *World Power Conference*, the WEC's predecessor, a 100 years ago because he realised that a global network and close collaboration between all relevant stakeholders, from business, politics, and academia, are needed to manage energy around the world. Members appreciate that the Council is neutral and independent and is objective and open to all technologies. This makes the Council uniquely positioned as a much-needed platform for fact-based knowledge exchange. It is also important to promote young talent. The Council's global Future Energy Leaders programme as well as the

Young Energy Professionals (YEP) programme in Germany provide added value to our members and the YEPs themselves. So, all in all, the Council is geared up for continuing its role into the future.

In the opening dialogue between **Dr Marcus Hicken, Director for Energy Diplomacy, Climate and Security in the Federal Foreign Office** and moderator **Marco Seiffert, radioeins, Rundfunk Berlin-Brandenburg (rbb)**, Dr. Hicken congratulated the WEC and WEC Germany on their centenaries. He stressed that foreign relations are key to realising the objectives in Germany's foreign energy policy, namely, to provide secure, sustainable, and affordable energy supply. He recalled how the Ukraine crisis caused unprecedented challenges in these areas and how relevant measures were taken to secure our energy supply. The reliance on Russia for much of the German energy supply was in hindsight a mistake and a diversification of energy supplies is important. Dr Hicken also made clear that Germany needs to accelerate the energy transition. The climate crisis is the vital crisis of our future and it can only be tackled through international collaboration. According to him, the upcoming COP 28 in Dubai is a great opportunity and platform for a global stocktake and to make sure that we are all on the right path.



Stefan Wenzel, MP, State Secretary in the Federal Ministry for Economic Affairs and Climate Action, in his keynote also congratulated the Council on its centenary and agreed with previous speakers that international collaboration is more relevant than ever. The Russo-Ukrainian war exposed great vulnerability and was a wake-up call for the world. It demonstrated that unilateral dependency can have enormous repercussions. State Secretary Wenzel recalled the measures that were taken at the national level, including reducing the gas consumption and increasing the share of renewables. He also referred to the role of

hydrogen, which can be a solution in sectors where electrification is not possible. Two-thirds of the projected future demand for hydrogen will need to be imported from elsewhere. Production supply chains of renewable technologies are also increasingly important as there is a risk of new vulnerabilities. For example, 90 % of solar PV production comes from China. So diversification is key here as well. According to him, increasing energy access worldwide also remains a priority, as 800 million people still have no access to modern energy

technologies. Cooperation can bring in these new technologies for local use, for example for clean cooking. 2023 can be a decisive moment in our struggle against climate change, there is no time to waste. State Secretary Wenzel ended with a conclusion from the *Stern report* from 2006: Acting is expensive, but not acting is much more expensive.

In his international keynote, **Michel Heijdra, Director-General for Climate and Energy in the Ministry of Economic Affairs and Climate Policy, The Netherlands**, congratulated the WEC and WEC Germany for their centenary and also mentioned the World Energy Congress that will take place in Rotterdam next April. He stressed the importance of phasing out carbon as soon as possible and referred to the finalisation of the *Fit-for-55* package as a historical step in Europe: 12,000 pages of legal texts – the largest text since the creation of the internal market. Carbon pricing will be key and so the EU Emissions Trading System (ETS) will be at the heart of carbon phase-out. The Netherlands and Germany collaborated on this. The ETS will accelerate corporate action, but public-private cooperation will be also important. This also includes investing in grids and other infrastructure such as interconnectors, so that international electricity markets are strengthened. The market for hydrogen is still in development and comprehensive value-chain approach is needed, including building international partnerships along the supply chain. In all of the above, Netherlands – Germany cooperation is as important as ever.



In the following panel discussion **International Pathways to Net-Zero**, the panellists reflected on the need to speed up the energy transition globally and the role of technologies such as blue hydrogen, Carbon Capture and Storage (CCS), wind power and E-Fuels.



Samuel Alt, Senior Director Energy Policy, Siemens Energy AG, saw a role for blue hydrogen as a bridging technology on the way to green hydrogen. Mr Alt also said that wind energy will be a key contributor to the future energy system: Its share is now roughly 17 % but it will increase to 50 %. But to get there, there are issues to be solved. In offshore wind power, for example, there are huge cost pressures



as well as high competition. This leads to a situation where the next bigger wind turbines are already being built while the current ones have not been properly evaluated yet. In a structural way, the industry needs to be strengthened and Germany can learn from other countries. In The Netherlands for example, 90 % of the auction criteria was quality-based. Approval procedures must also be improved – they can take up to 8 years at the moment. Such delays mean a big financial risk and auctions do not take this into account. It should be allowed to reallocate costs for example.

Michel Heijdra mentioned that The Netherlands now has a clear strategy in place, with a sector-by-sector analysis of what are the fuel sources of the future. At the heart is a whole-of-system approach with the ambition to have achieved net-zero by 2040. The strategy considers what is needed to realise this, in terms of grid infrastructure for example, and includes ways of addressing bottlenecks. This provides clear incentives for companies, including for energy saving. Technologies like blue hydrogen and CCS also have a role to play, depending on the application. Wind power will be a very important part of the energy mix and The Netherlands

is realising a lot of new capacity on the North Sea. Public-private collaboration is key, and we have learned along the way how to best organise this. Europe has a historical responsibility to the world to lead in the fight against climate change, given its historical CO₂ emissions. Taking the lead also allows Europe to make the most out of its first-mover position, which in turn can create economic benefits in the longer run.



Patrick Wendeler, Chairman of the Executive Board, BP Europa SE, stated that every technology that is affordable and available and that helps to decarbonise should be used. Some sectors are difficult to decarbonise for the moment, e.g. shipping and aviation – but we should start with sectors that are possible such as general transportation. Blue hydrogen has potential as a bridging technology, however, it requires better regulation. Regarding wind energy, it is important to develop a proper market and we also need to consider the supply chain, including

electrolysers, charging stations etc. According to him, port infrastructure is also important, but this takes a long time to build. The EU climate goals are an opportunity to speed up the energy transition, but we need to take away bottlenecks.

Dr Christoph Frei, Partner at Emerald Ventures, mentioned that we cannot rule out any technology for the moment, including blue hydrogen and CCS, because we are not on track to meet our climate goals. Some sectors are more difficult and require more time, such as aviation, but there are still things that can be done now. For instance, 5 % of emissions in the aviation sector happen in the ground handling processes. Those processes can be electrified already. We should also remember that different countries and regions may choose a different path or solution on the way to Net-Zero. For example, the ETS works in Europe but may not work elsewhere. Today we see a lot of competition globally for clean energy technologies. This is in principle good to promote innovation and the uptake of renewables, but it should not lead to ‘resource-nationalism’. Europe’s energy and innovation system is very complex. However, we also have great comparative advantages in clean tech and fintech, which can be exported to other places.



In his impulse speech, the **Chair of the World Energy Council, Dr Michael Howard**, said that there has never been a better time for the WEC, because people are eager for fact-based discussions on energy, which is precisely what the organisation is all about. The transition to a *zero emissions-society* by 2050 is the most profound transition in humanity, and very complex. It requires a societal transformation and social adaptation. The WEC brings forward realistic discussions regarding the challenges. Dr Howard celebrated WEC Germany on its accomplishments: To convene, provide insights and bring

stakeholders together. Dr Howard also mentioned the World Energy Congress in Rotterdam next year and encouraged everyone to be there – to learn new things and meet new people. International collaboration is key for the challenges we face and to realise a secure, just and affordable energy future.

Dr Howard’s impulse was followed by an **International WEC panel discussion**, with representatives from Member Committees in Europe and moderated by Dr Carsten Rolle, Executive Director of the WEC Germany.



Priit Mändmaa, Secretary General of World Energy Council Estonia, mentioned how energy security became a main issue in Estonia after the Russo-Ukrainian war broke out. The recent incident with the Estonian-Finnish interconnector only served as a reminder of that point. Although investigations into what has happened are still ongoing, it is clear that human action caused the incident – which is concerning. Energy prices reacted to the incident, although in Finland much stronger than in Estonia. Sufficient and stable interconnection capacity is key in Europe, to ensure energy security but also to

integrate energy systems and speed up decarbonisation.

Marie-Line Vaiani, Secretary General of World Energy Council France, mentioned that the situation in France is now less anxious compared to last year around this time as the country is better prepared. The government conducted various studies and energy dependency turned out to be not as good as it seemed. There is a 60 % energy import dependency, despite all the domestic nuclear power capacity in France. The government introduced a plan with a time horizon until 2050. An important point of the plan is to involve everyone in the energy transition, not only energy producers but also energy users. Like the World Energy Trilemma methodology, the strategy, therefore, did not only cover environment and technology but also equity, affordability, and social acceptance. Since the yellow jackets-movement some years ago, the French government is more aware of social implications of energy supply.



In her contribution, **Ana Padilla, Secretary General of World Energy Council Spain**, explained that Spain is less dependent on Russian pipeline gas than Germany and some other countries in Europe, as Spain uses more liquefied natural gas (LNG). But Spain still felt the price impacts, so diversification became an important new concept. Spain now imports gas from 20 different countries. A new law forbids the import of more than 50 % from one country. International collaboration is therefore very important, including close to home, for example when it comes to increasing the interconnector capacity with

France. It is positive that the governments of Spain, Portugal and France concluded an agreement to increase collaboration regarding hydrogen. Social acceptance has not been an issue in Spain so far, but this is starting to change as the climate goals are so ambitious. What has worked in Spain is that people need to see the benefits of the energy transition, e.g. in job creation.

With Presidential elections taking place in the USA next year, **Dr Mike Howard** said it is difficult to predict whether energy will be an important topic in the elections. A lot can happen within the time of one year. The U.S. Inflation Reduction Act was a major new initiative to attract investment in clean energy technologies, but the operationalisation is hampered at the moment because of the situation in the House of Representatives.

Jeroen van Hoof and Aad Groenenboom, Chair and Secretary of the Dutch Member Committee, invited everyone to attend the World Energy Congress in Rotterdam next year. They reiterated how previous speakers have all stressed the importance of international collaboration. The World Energy Congress will be THE platform to bring that further as it will bring together all sectors and all technologies. It is also important to *Humanise Energy* and to make sure



that we bridge the gaps. 180 international speakers have already been confirmed. There will be 60 sessions on 5 themes as well as a big exhibition space. King Willem Alexander of The Netherlands has been invited to open the congress. Various packages for participation and sponsoring are available.



The event closed with a moderated **panel discussion on Energy Security in Ukraine and a vision for the reconstruction**. **Volodymyr Kudrytskyi, Chairman of the Management Board, NPC Ukrenergo**, participated virtually from Kiev and presented the disturbing fact that 40-50 % of power system objects in Ukraine were damaged or destroyed as a result of Russia's war in Ukraine. It will take decades to fully rebuild but with the help of international partners, 80 % of the damages have been restored and the system is at a level that it can operate relatively reliably. This winter Ukraine will be better prepared because of the new equipment and the experience it now has. Looking ahead, it is important that Ukraine replaces its existing power plants with smaller, decentralised, and also *greener* power plants. Mr Kudrytskyi reiterated that Ukraine is a key part of the European energy system and that the integration with Europe will continue. He underlined that there are multiple opportunities for collaboration, between governments, companies, system operators, etc. Central and Eastern Europe is a region of growing energy demand. Ukraine and Germany can collaborate to supply this region for example. Beyond, also in energy terms, Ukraine should be seen and treated as a European business partner, and not as a beneficiary of aid.



Continuation of our support to Ukraine is important, said **Stefan Kapferer, CEO, 50Hertz Transmission GmbH**. According to him, we will have to accept that this may impact supply chains for technical equipment, which are often global, and that it may lead to a postponement of some projects in Europe or Germany. Mr Kapferer saw many opportunities for energy collaboration with Ukraine. Ukraine is eager to present itself as an energy exporter but also as a provider of gas storage capacity, for instance. Biogas from Ukraine could also play a role in the German market. More integration will create opportunities for business collaboration.

Ukraine will need a lot of private capital to invest in infrastructures, not only energy, and there will be significant opportunities.

Dr Susanne Nies and **Dr Georg Zachmann, Lead and Scientific Lead of Green Deal Ukraine, Helmholtz-Zentrum Berlin**, explained that the Green Deal Ukraine is a new thinktank that was set up by 27 European countries with an aim to help Ukraine prepare for further European integration. There is a lot of eagerness in Ukraine for that. Ukraine has the ambition to be a green energy hub in Europe and to export megawatts to other European countries. Therefore, it is important to help rebuild the country for this new future and already integrate new energy uses, including e-mobility. New business models will also be important. They require an upgraded, modern regulatory framework.



In his concluding remarks, moderator **Dr Carsten Rolle** thanked all speakers for their valuable contributions as well as the audience for their participation in the Energy Day 2023. He also extended a big thank you to the official partners of the conference, 50Hertz Transmission GmbH and BP Europa SE.