



한·독 에너지 파트너십

Energiepartnerschaft

DEUTSCHLAND – KOREA

4th Korean-German Energy Day

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Conference Report

December 7th, 2022 (Berlin)

by The Korean-German Energy Partnership Team

Created by adelphi within the framework of the German-Japanese Energy Partnership funded by the Federal Ministry for Economic Affairs and Climate Action (BMWK)

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Net Zero: Embrace the opportunities of the Energy Transition

The **4th Korean-German Energy Day** took place on Wednesday, December 7th 2022, on behalf of the German Federal Ministry for Economic Affairs and Climate Action (BMWK) and the Korean Ministry of Trade, Industry and Energy (MOTIE) as a physical conference in Berlin. It was co-organized by the Korean-German Chamber of Commerce and Industry (KGCCI) and adelphi, and supported by the German Asia-Pacific Business Association (OAV), the Institute of Energy Economics and Rational Energy Use at the University of Stuttgart (IER), and the Wuppertal Institute. The Korean-German Energy Day is part of the **Korean-German Energy Partnership** formed between the two ministries in December 2019. The annual event provides a platform for energy experts from government, industry, research and civil society to exchange views, engage with one another and learn from each other's experiences in shaping their respective energy transition.

Korea and Germany are committed to the decarbonization of their economies, notably their energy systems. As advanced industrial economies, both countries face similar challenges in this regard. Achieving net-zero emissions also comes with many possible economic benefits. Therefore, the topic of the 4th Korean-Germany Energy Day was **"Net Zero: Embrace the opportunities of the Energy Transition"**. Aligned with the event's title, this year's Korean-German Energy Day explored different opportunities of the energy transition against the backdrop of challenging times of global energy insecurity which we are currently facing. The event was co-moderated by Mr. Gunnar Will (Senior Manager, adelphi), Ms. Jana Narita (Manager, adelphi) and Prof. Peter Radgen (IER, University of Stuttgart). The conference took place at the Vienna House Andel's in Berlin and counted around 80 participants.

Introductory keynote speeches from the ministerial co-hosts

The 4th Korean-German Energy Day (KGED) was opened with a video message from co-host **Dr. Patrick Graichen**, State Secretary at the German Federal Ministry for Economic Affairs and Climate Action (BMWK). He stressed the **urgency of joint action** in the face of the climate crisis and its effects, which are already being felt today through extreme weather events in both Germany and Korea. However, he pointed out that "fear is not the best motivator" and that therefore the KGED is a valuable platform to focus on **"the opportunities of the energy transition towards a green economy"**. A successful energy transition enables "increased energy independence", which is crucial in uncertain geopolitical times. Energy from renewable sources and green hydrogen will play a decisive role in this endeavor. Apart from energy security, **the green transition offers great economic potentials**, according to Graichen. Green technologies and sectors provide "considerable growth potential", the development of green industries and increased efficiency are "essential for future competitiveness" and will ensure economic success, create new jobs and provide solutions for the climate crisis. Last but not least, Graichen highlighted the **importance of international cooperation** in tackling the major challenges of the transition, emphasizing the position of Germany and Korea as "technology powerhouses" and expressed the intention to **further deepen future cooperation and exchange** between the two countries.

The second co-host **Mr. Young-Ghil Cheon**, Deputy Minister for Energy Industry at the Korean Ministry of Trade, Industry and Energy (MOTIE), also welcomed the participants of the event with a video message. In his speech, he also emphasized the **particular importance of strengthening energy security and the efforts towards carbon neutrality** in the currently uncertain geopolitical and economic environment. For Korea under the Yoon administration, nuclear power as well as renewable energies will play an important role to reduce the dependency on fossil fuel imports and to meet climate change demands. Mr. Cheon emphasized that the government is increasing its **focus on innovation especially in the energy sector by supporting businesses** to simultaneously meet the present challenges and create new opportunities and jobs. The Deputy Minister outlined the five major thrusts of Korean energy policy: (1) establish a **feasible and reasonable energy mix**, (2) ensure **strong resources-energy security**, (3) accomplish **energy demand efficiency** and establish a market structure based on **market principles**, (4) foster **new energy industries** as growth engines and to promote **export industrialization**, (5) enhance **energy welfare and policy acceptance**. Similar to Dr. Graichen's statements, Mr. Cheon also stressed the importance of international cooperation in

overcoming major challenges and seizing new opportunities, acknowledged Korea's responsibility to contribute and advocated further intensive exchange between Germany and Korea on energy issues.

Introductory keynote speeches from industry representatives

The conference continued with keynote speeches from decision-makers of the industry sector. First, **Ms. Danielle Jarski**, Chief Development Officer (CDO) Offshore Wind of RWE Renewables, shared her view as an executive in the German energy industry. With regard to the current “multiple crises”, she acknowledged: “We have a very challenging year behind us, but that has also brought us forward”. Ms. Jarski emphasized that now “**cross-border cooperation is more important than ever**”. Offshore wind in this context has a special, if not a key role to play and will therefore become one of the most important energy generation methods in the future. She highlighted RWE's position as the world's second largest player in offshore wind energy with more than 20 years of experience, complimented Korea's ambitious offshore wind energy goals, and emphasized the company's intention **to work more closely with Korean stakeholders in the future and to bring its expertise to the Korean market**. Lastly, she addressed the special role of the Korean and German industry as leading players in the transformation, identified hydrogen and offshore wind energy as perfect complements, and the support from politics and civil society as an important prerequisite for change.

Subsequently, **Mr. Seong-Jun Bae**, Vice President for Energy Strategy of SK ecoplant, elaborated on the Korean perspective as a manager from the Korean industry. In his speech, Mr. Bae explained his company's vision “Our Way to Net Zero, Waste Zero” that aims at contributing significantly to the **establishment of a circular economy** with a specific focus on a sustainable energy supply (renewables, green hydrogen) and solutions for efficient waste disposal and reuse (recycling, waste to energy). He further highlighted SK ecoplant's position as a leader in the Korean fuel cell market and emphasized its role as a “first mover for GW scale green hydrogen projects”. In addition, he explained the **importance of expanding efforts to cooperate in the energy sector with German partners** in order to implement joint green energy projects along the value chain and thus secure and expand the leading position in terms of technology of the two industrialized countries in the long term.

Pathways towards a green economy: Opportunities of the Energy Transition

The first panel discussion was moderated by **Mr. Gunnar Will**, Senior Manager at adelphi, and focused on the **economic opportunities arising from the energy transition**. The topic was discussed by **Dr. Eike Blume-Werry**, Advisor for Energy- and Climate Politics at The Federation of German Industries (BDI), **Ms. Elena Cantos**, Project Manager at the Renewable Energy Agency, **Dr. Sang-Lim Lee**, Research Fellow at the Center for International Energy Cooperation of the Korea Energy Economics Institute (KEEI), **Mr. Sung-Joo Lee**, Executive Director of the Office of Energy Policy at the Korea Institute of Energy Technology Evaluation and Planning (KETEP), and **Mr. Dong-Min Byun**, Managing Director of the Renewable Energy Division at Korea East-West Power.

The central insights and discussed issues of the panel were:

- In the long-run, the energy transition will save money in avoided costs for fossil fuels and climate change adaptation, however high initial costs for renewable energies remain an obstacle.
- The energy transition has the potential to increase the democratization of the energy supply and increase the participation and acceptance of citizens and municipalities in the process.
- Both the Korean and German economies are technology-based and therefore dependent on green innovation and corresponding qualification to maintain its leading economic position.
- Consumers are mostly supporting transition towards green markets and products however it remains to some extent unclear whether consumers are actually willing to pay price markups.
- For the industries, support from governments and academia will be of great importance to provide an adequate policy framework and technology expertise.
- Specific policy instruments such as carbon pricing and carbon contracts for difference (CCfD) can help to reduce planning uncertainty and unnecessary high adaptation costs for businesses.

Focus Session 1: “Green hydrogen for a net zero industry”

The first focus session that included presentations and a panel discussion was moderated by **Ms. Jana Narita**, Manager at adelphi, and focused on the **current status and industry examples of clean hydrogen**. Presentations on the status quo and outlook of hydrogen-related policies were held by the ministry representatives **Mr. Mansik Kim**, Deputy Director at MOTIE, and **Mr. Anton Hufnagl**, Deputy Head of Division on general issues of international climate and energy cooperation at BMWK. Insights on the industry perspective and hydrogen pilot projects were provided by **Mr. Tim Heisterkamp**, Head of Technology & Environmental Policy at Linde, by **Mr. Carsten Hasbach**, Senior Director Government Affairs at Siemens Energy, and by **Mr. Sang-Jin Moon**, Vice President for R&D/New Business Division at Doosan Fuel Cell. The focus topic of the session was subsequently discussed by the panelists **Dr. Matthias Deutsch**, Programme Lead Hydrogen at Agora Energiewende, **Dr. Hye-Jin Lee**, Director of the Business Coordination Center at H2Korea, Mr. Tim Heisterkamp, and Mr. Sang-Jin Moon.

The central insights and discussed issues of the panel were:

- The climate neutral transformation of key industry applications such as steel production is critical to achieving the political goals – the race has started; however, the time window is narrow.
- The challenges for the market ramp-up and utilization of hydrogen are country- and region- as well as application-specific.
- We are currently observing an imbalance between the hydrogen supply side and expectations on the demand side as well as some evidence that consumers don't want to pay premium.
- It is important to prioritize the use of limited hydrogen capacities for so-called “low-regret” applications, where the benefits compared to the costs are the highest.
- Feasible policies to promote the green hydrogen ramp-up include contracts for difference (CCfD), incentives for fuel cell driven power generation and quotas.
- Both Korea and Germany are limited in their capacities to produce hydrogen domestically and will rely on hydrogen imports from abroad, thus notably facing infrastructural challenges.
- Korea and Germany differ in certain respects: Korea will be more dependent on imports through ports while Germany can build on the existing gas infrastructure in Europe, i.e. pipelines, however possibly subject to reconstruction.
- Korea has a stronger focus on promoting fuel cell driven vehicles than Germany, where industrial applications are dominating hydrogen-related discussion and policies.
- Potential fields of cooperation are joint projects with complementary technologies, harmonizing trade rules and exchange of knowledge about hydrogen imports and the role of hydrogen in district heating.

Focus Session 2: “Energy efficiency: how to wake the sleeping giant?”

The second focus session that included presentations and a panel discussion was moderated by **Prof. Peter Radgen**, Head of the Research Department Efficient Energy Use at the Institute of Energy Economics and Rational Energy Use (IER) at the University of Stuttgart, and focused on **best practices for energy efficiency**. Presentations on best practices for energy efficiency were held by **Mr. Chong-Tai Park**, Manager of Smart City Business at KEPCO KDN, and **Dr. Manuel Unger**, Project Lead Energy Services at Freudenberg Service KG. Further inputs on the effectiveness of policy measures for energy efficiency were provided by **Dr. Ji-Hyo Kim**, Researcher at the Korea Energy Economics Institute (KEEI), and **Mr. Michael Müller**, Director Energy Efficiency at the German Energy Agency (dena). The focus topic of the session was subsequently discussed by the panelists **Dr. Andrej Guminski**, Managing Director at Ffe München, Dr. Ji-Hyo Kim, Mr. Chong-Tai Park, and Mr. Michael Müller.

The central insights and discussed issues of the panel were:

- The greatest energy saving potential lies in the energy-intensive industries such as steel, glass, cement and petrochemical goods, since they take up a large share of total energy consumption.
- Sectors such as transport and buildings, should not be neglected, even if the saving potential is more difficult to leverage, at the same time there is huge untapped potential in all sectors.
- There exist potentially conflicting interests for energy-generating companies: earning money from selling energy vs. incentivizing energy savings/efficiency.

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- The conditions for climate-friendly investments at the individual and corporate level are an important aspect that needs to be given greater consideration in the public and policy debate.
- In the building sector, Korea and Germany differ because on average real estate in Korea is newer, thus energy-saving modernizations play a smaller role than in Germany and Europe.
- Despite extensive government funding schemes, we observe little momentum for energy efficiency in the building sector, partly because of a lack of skilled workers in implementation.
- All economic actors, private consumers and companies alike, can contribute to increased flexibility in the energy system, while potential in private applications (household appliances, electric vehicles) is easier to leverage (since companies value efficiency over flexibility).
- Effective policy instruments can be energy saving campaigns, carbon pricing (via price signal), funding schemes, and creating networks to facilitate energy efficiency and climate protection.
- Measuring the effectiveness of policy instruments is difficult. Implementing intelligent energy management systems (EMS) and using the data can provide information on effectiveness.

Visual Impressions of the 4th KGED (find the complete gallery [here](#))



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