

## Press Release

# Key strategies towards decarbonized energy systems: GJETC presents three new studies with policy recommendations

**Berlin/Tokyo, April 7, 2022.** In its role as a provider of research on key issues of the energy transition, today the German Japanese Energy Transition Council (GJETC) publishes three studies that have been conducted during the past nine months. The German and Japanese scientists have been working on research concerning a comparison of long-term scenario analyses up to 2045/2050, the decarbonization of the steel industry, and the role of batteries towards carbon neutrality. The findings from the studies form the basis for GJETC recommendations to policymakers. The studies are freely downloadable from the GJETC website.

Both countries have now adopted goals for achieving net carbon neutrality by 2045 (Germany) and 2050 (Japan). However, the economic recovery after the 2020 recession due to Covid-19 pandemic led to increases in greenhouse gas emissions in 2021. The key question is, how these rebound effects can be curbed and what are key pathways towards achieving these goals of decarbonized energy systems.

“In 2021, more CO<sub>2</sub> is being produced than ever globally and also Germany wasn’t on track of its ambitious climate targets. At the same time, the Russian aggression against Ukraine has put the urgent reduction of fossil energy dependency high on the agenda. This calls for intensified efforts on international knowledge exchange to speed up the energy transition and to generate synergies of climate mitigation and less import dependency” says Prof. Dr. Peter Hennicke, the German co-chair of the GJETC, “From the results of our studies, we can derive recommendations for political decision-makers in Germany and Japan in this regard that can help achieve the climate targets and energy security alike.”

The Japanese co-chair of the GJETC, Prof. Tatsuya Terazawa, says: “There is still room for our two countries to reach their full potential as reflected in the results of our studies. Reducing the energy demand in all sectors and implementing stronger efficiency measures remains the first pillar of a successful energy transition. It is especially noted that the use of innovative technologies for decarbonizing fossil energy and alternative fuels in industry are important. In addition to the continued focus and expansion of renewable energies, pilot projects, such as for the use of battery systems for the sustainable storage of electricity, are necessary to drive energy transition efforts. At the same time, taking the current Ukraine situation into account, we will have to reemphasize the importance of energy security. In light of this, we need to diversify the energy types and sources as well as to ensure realistic transition of the energy mix consistent with the necessary timeframe.”

**Study 1:** *The decarbonization of the steel industry*

This study shows that governments and major companies in both Germany and Japan have adopted similar goals for the decarbonization of the steel industry, and how these may be achieved. Both countries focus on full decarbonization mainly through new direct reduction processes using hydrogen as fuel in primary steel making and the further expansion of secondary steel use through electric arc furnaces. Policy recommendations that can be derived include, among other things, fostering the use of clean hydrogen, the use of innovative technologies for steel production, the generation of CO<sub>2</sub>-neutral electricity and an acceptance of decarbonized steel on the market.

**Study 2:** *Long-term scenarios for achieving climate neutrality by 2050*

This study analyses scenarios of several studies that examine the achievement of climate neutrality in Germany and Japan. For both countries, the scenarios underscored the importance of energy efficiency and of a forced market introduction of renewable energies as key strategies. They go hand in hand with expanded electrification of the building and transport sector, the increased use of clean hydrogen and synthetic fuels, and technical carbon sinks to compensate residual (“hard to abate”) greenhouse gas emissions. In addition, the GJETC discusses shortfalls that the respective technology focussed scenarios have with respect to, e.g., social acceptance or missing integration of circular economy strategies. Additionally, an adequate contribution of both countries to limiting global warming to 1.5 degrees has to be developed. The GJETC thus opens the subject up for further specific research.

**Study 3:** *The role of batteries towards carbon neutrality - How can distributed electricity storage contribute to balancing supply and demand in power markets as well as in power grids?*

This study examines three different battery systems for electricity storage and their potential for stabilizing the power markets and grids: Grid-Integrated large storage systems (LSS), Home, Commercial, or Industrial Storages (HSS/ISS), and Battery-electric Vehicles (BEV). The GJETC sees HSS/ISS and BEV in particular as having great potential. To improve conditions for the use of battery systems as a flexibility resource, the GJETC advises a clear definition of storage as an own element of the electricity system; removing any double charging with levies, fees, or taxes of electricity during storage charging and feed-back to the grid; and the use of smart meters and smart pricing.

All recent studies can be found at: <http://www.gjetc.org/publications/>

The GJETC's third council phase ended last month. Another, fourth council phase is planned to continue the exchange between German and Japanese scientists intensively in the future. New formats are being discussed for the dialogue: An Innovation Lab will further encourage the exchange with the young researchers in particular, and an Innovation Hub will create a space for deeper communications with the industry in developing solutions.

### ***About the GJETC***

The German-Japanese Energy Transition Cooperation Council is an international model to strengthen knowledge exchange on technologies, policies and the impacts of the energy transition. In its form, continuity and size, the GJETC is the first German-Japanese cooperation project on the energy transition of its kind. Founded in spring 2016, the Council conducts an extensive study program on core topics of the energy transition, holds stakeholder dialogues with industry and civil society, and has published eleven studies, a series of strategic input papers, and two reports with key recommendations for a successful energy transition in March 2018 and June 2020.

The project, jointly launched by the Wuppertal Institute, ECOS, hennicke.consult and the Institute of Energy Economics Japan (IEEJ/Tokyo) was funded by the German Federal Environmental Foundation (DBU), the Mercator Foundation and the Japanese Ministry of Economy, Trade and Industry (METI) in working phase 1 and 2. In the 3<sup>rd</sup> phase of the council's work, the former German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) took over funding for the GJETC from the DBU. The former Federal Ministry for Economic Affairs and Energy (BMWi), and the Japanese-German Center Berlin (JDZB) also support the project. On the German side, the Wuppertal Institute is coordinating the Council's work as secretariat together with ECOS; on the Japanese side, the Institute of Energy Economics Japan (IEEJ) had been doing this task.

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