



# Germany and Japan



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## **Current Status and Outlook of German-Japanese Energy and Environmental Cooperation -Responding with Pragmatism-**

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### **1. Introduction**

Japan and Germany are strategic partners that share universal values, and the cooperation between the countries in the fields of energy and environment is one of the pillars of the bilateral cooperation. The author has been a member of the German-Japanese Energy Transition Council since 2016 and has been involved in the cooperation between the two countries. In this paper, the author would like to express his humble opinions about the current status and future issues of the German-Japanese energy and environmental cooperation in light of his previous experiences.

### **2. Multi-layered Framework of the German-Japanese Energy Cooperation**

The importance of the German-Japanese cooperation in the energy and global warming fields has often been raised at meetings between the countries' leaders and ministers. The framework for the cooperation is diverse, ranging from inter-ministerial dialogues to inter-institutional dialogues, public-private forums and so on.

### (1) German-Japanese vice-ministerial dialogue

The vice-ministerial dialogue, which was established in 1987 under the agreement between the then Minister of International Trade and Industry Hajime Tamura and Federal Minister of Economics Martin Bangemann, has continued to the present day, with energy and climate change being important pillars along with macro economy, industrial structure, and investment promotion. At the 19th regular meeting of the dialogue held in December 2021, views were exchanged on economic impacts of COVID-19, economic recovery measures, international affairs including German-Japanese cooperation in the Indo-Pacific regions and WTO reform, as well as the energy and climate change fields, Industry 4.0/IoT and automobiles.

### (2) German-Japanese energy partnership

The cooperation that focuses on the energy area includes the Declaration of Cooperation in Energy Transition<sup>1</sup> signed in 2019 between Taizo Takahashi, Commissioner of the Japanese Agency for Natural Resources and Energy, and Andreas Feicht, State Secretary at the German Federal Ministry for Economic Affairs and Energy. The declaration is intended to promote policy exchange, people-to-people exchanges, joint research and pilot projects in the following areas, based on the recognition that the strategic role of clean energy is significant in the implementation of the Paris Agreement and that cooperation between the two countries in transitioning to safe and clean energy not only delivers mutual benefits but also is required for the sustainable prosperity of the international community.

Overall policies on energy and energy transition	
Deployment of renewable energy and system integration of renewable energy	Development of wind energy e.g. offshore
CO2 emissions reduction through sustainable technologies such as hydrogen	Future innovative energy systems, such as sector coupling, increased flexibility, smart grids and energy storage systems (ESS), Power to X and hydrogen

To effectively implement this DOC, the Japan-Germany Energy Transition Cooperation Committee is held at least once a year as a high-level meeting, and the energy transition working group and hydrogen working group have been set up under the committee.

### (3) German-Japanese Environment and Energy Dialogue Forum (EEDF<sup>2</sup>)

As a platform for the exchange of views on current energy and environmental issues between the governments, industries and academia, the German-Japanese Energy and Environment Forum was established in 2007. The forum is run by the German Federal Ministry for the Environment, the German Ministry for Economic Affairs and Climate Protection and the New Energy and Industrial Technology Development Organization (NEDO) with the support of the Japanese Ministry of Economy, Trade and Industry (METI) and the Japanese Ministry of the Environment. While the forum has so far addressed issues such as renewable energy integration, energy storage, decarbonisation of the mobility sector and other industries, the 12th edition of the EEDF to be held in September 2022 will focus on "the role of cities and municipalities toward net zero." Stakeholders from cities and municipalities as well as industries and academia will present examples of concepts, good practices, demonstration projects and innovative technologies in Germany and Japan for

smart grids, urban renewable energy and hydrogen usage, mobility concepts, district heating, urban circular economy, etc. The author participated in the first edition of the Forum in 2007 and has since then been a speaker and panelist on several occasions.

#### **(4) German-Japanese Energy Transition Council (GJETC<sup>3</sup>)**

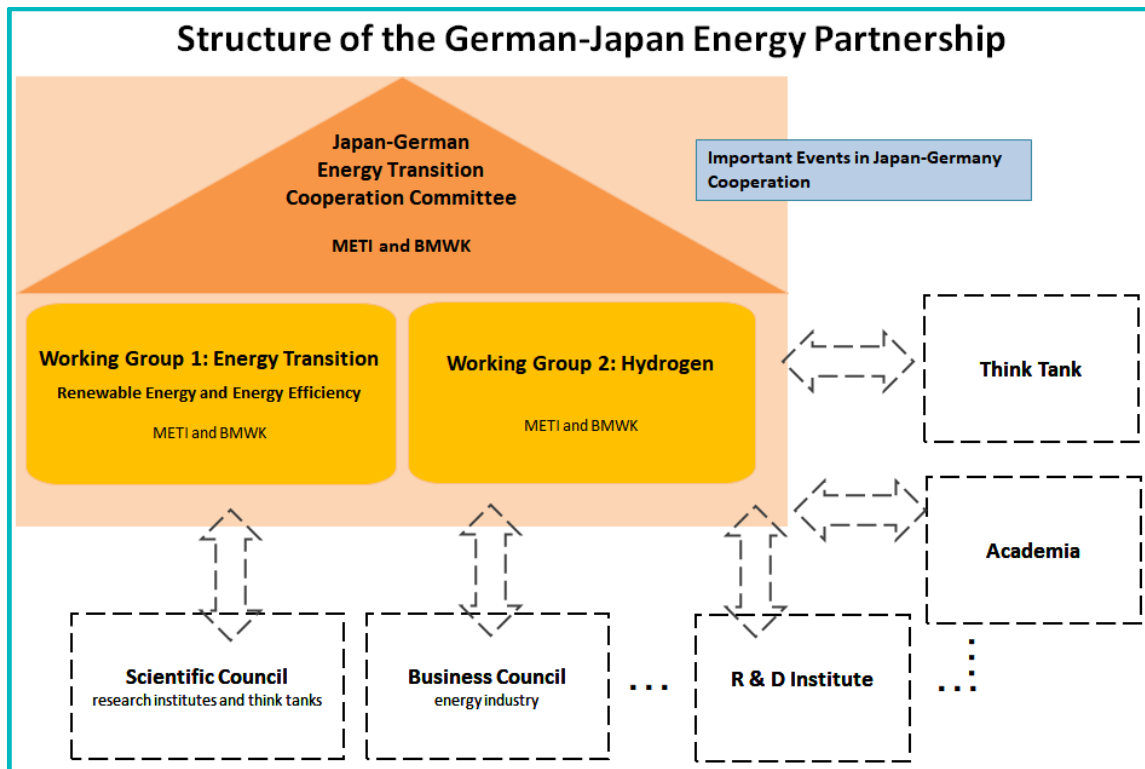
The German-Japanese Energy Transition Council (GJETC) was established in 2016 with the aim of exchanging views on policy frameworks, markets, infrastructure, and technology for energy transition. The goal of GJETC is to analyze current and future issues regarding policy frameworks, markets, infrastructure, and technological developments for implementing energy transition and to hold Council meetings to exchange ideas and propose better policies and strategies to the countries' governments.

The German co-chair of the GJETC is Prof. Peter Hennicke, former director of the Wuppertal Institute for Climate, Environment and Energy, while the Japanese co-chair was Prof. Masakazu Toyoda, Chairman and CEO of the Institute of Energy Economics, Japan (IEEJ) (At the time. He has now been replaced by Prof. Tatsuya Terazawa). The council consists of six energy experts and three associate members each from Japan and Germany. The author has participated in meetings and outreach events from the first meeting to the 12th meeting held in May this year.

The GJETC has worked on a diverse range of issues, including strategic goals in German-Japanese energy transition, review of German and Japanese long-term energy scenarios and their evaluation mechanism, integration costs of renewable energies, energy efficiency for buildings, digitalisation, and hydrogen.

#### **(5) Benefits of a multi-layered cooperation framework**

The energy and global warming issue involves the whole economy and society and has a diverse range of stakeholders. Having multilayered dialogue channels is beneficial for deepening cooperation on all fronts. The government-level German-Japanese Energy Transition Cooperation Committee also receives input from the Japanese-German Energy Transformation Council at the research institute level, and the interlinkage is active between the respective cooperation frameworks. The diagram below illustrates the linkages between the German-Japanese Energy Transition Cooperation Committee and other cooperation frameworks.



### 3. Experiences in the German-Japanese Energy Transition Council and Joint Recommendations to the Governments of Both Countries

Six years of participation in the German-Japanese Energy Transformation Council has been extremely fruitful for the author. In addition to individual thematic research topics, the Council produced comprehensive reports in 2018<sup>4</sup> and 2020<sup>5</sup>. The 2018 report focused on four themes: (1) Energy transition targets/goals, (2) Participation and dialogues on the energy transition, (3) Energy efficiency and savings, and (4) Energy supply and electricity market design. The 2020 report dealt with (1) Climate & energy policy targets, strategies and monitoring, (2) Energy saving in buildings (3) Transport and sector coupling, and (4) Integration of variable renewable energy sources. In fiscal 2021 and 2022, studies were conducted on digitalisation of grids, CCUS, hydrogen, and energy and climate policy in the post COVID-19 era, as well as a comparison of German and Japanese long-term scenario analyses up to 2045/2050.

The 2018 and 2020 reports contain joint recommendations from the Council to the Japanese and German (bilateral) governments. Their main items are as follows.

As industrial and technology-based countries, Germany and Japan should take the lead in establishing ambitious long-term goals and strategies.

Structural reform of the energy sector should be promoted towards 2050 while ensuring industrial competitiveness and energy security.

Monitoring and governance processes for long-term decarbonisation should be established.

Priority should be given to the introduction of energy-saving technologies and the expansion of renewable energy, although views differ on nuclear energy.

While promoting cost reductions in solar PV, wind and other energy sources, the design of electricity markets requires flexibility options and incentives for the expansion of variable renewable energies.

On the "Energy Saving First" principle, the implementation gap with energy saving potentials should be closed.

The governance of energy-saving policies should be strengthened (e.g., establish an energy-saving agency, energy-savings fund)

Co-benefits and synergies of energy saving and resource saving should be pursued.

Cost reduction and technology improvement (green hydrogen, CCS, etc.) for the development of a hydrogen society and an international governance scheme that safeguards GHG standards for hydrogen supplies should be explored.

GHG neutral of buildings should be promoted.

Sustainable digitalisation for the energy transition should be implemented.

Coexistence of centralized infrastructures and decentralized activities (citizens' finance, energy cooperatives, etc.) should be supported.

Research cooperation such as the development of joint scenarios and establishment of academic exchange programs should be strengthened.

Naturally, there are differences in thinking between Germany, which has chosen to phase out nuclear power, and Japan, which retains the nuclear option, and there is little hope of reaching a consensus on this point. The situation is also different between Germany, which has grid connections with neighboring countries and can absorb output fluctuations from variable renewable energy sources, and Japan, which has no grid connections with neighboring countries. At the German-Japanese Energy Transition Council, discussions based on such differences were also active, often resulting in agreements to disagree. It is significant that, despite such differences, Japanese and German experts transcended their national circumstances and positions and put together a joint proposal.

The 2018 report also contains frank comments by both Germany and Japan on the energy transition in their own and partner countries (e.g. the potential for introducing renewable energies, the positioning of nuclear power, etc.) and their approach to setting targets. The report is very interesting because it does not seek a consensus and thus makes clear the differences in thinking and approaches of the two sides. The author has written an article on this point, which can be found here.<sup>6</sup>

#### **4. The Ukraine crisis and the potential for German-Japanese cooperation – Responding with pragmatism –**

The Ukrainian crisis has brought about a global surge in energy and food prices, and the danger of the world economy falling into stagflation has become apparent. The Ukrainian crisis has reminded us of the vital importance of a low-cost, stable supply of energy, which is the blood of national life and industry, and of the fact that a stable energy supply is significantly impacted by geopolitics. Energy and global warming are also two sides of the same coin, and global warming responses cannot escape the influence of geopolitics. This poses a major challenge for the promotion of energy and global warming policies in Germany and Japan.

##### **(1) Issues for and responses of Germany**

Germany was probably the country most affected by the Ukrainian crisis. The country, which is committed to abandoning nuclear power and coal, was strongly promoting the introduction of variable renewable energy sources such as wind power, and had decided to adjust most of the fluctuations in renewable energy output with natural gas from Russia. However, the Ukrainian crisis has derailed the Nord Stream 2 project and Germany is now facing an energy supply interruption crisis. Gazprom has already notified Germany that it will cut its gas supplies. It is undeniable that the experience of stable gas supplies from

the Soviet Union during the Cold War has led Germany to a lack of consideration for energy security in terms of retaining many options for supply sources and energy sources. Germany aims to reduce oil and gas consumption through energy conservation and fuel switching, to replace Russian pipeline gas by building LNG terminals, and to shift its entire electricity supply to renewable energy by 2035, while working with the EU's RePowerEU, a plan to break away from its dependence on fossil fuels from Russia before 2030. However, if the nuclear phase-out during 2022 is implemented as planned, it will be inevitable that dependence on coal-fired power will increase, at least in the short term. This would run counter to curbing global warming.

## **(2) Issues for and responses by Japan**

Japan's dependence on Russian energy is not as high as Europe's, but there are concerns that soaring global energy prices and a weakening of the yen will further increase energy costs, which are even more expensive than in other countries. In addition, the supply and demand of electricity is becoming extremely tight due to the retirement of thermal power generation facilities, and the risk of blackouts in summer and winter is becoming apparent. The Sixth Basic Energy Plan calls for raising the share of renewable electricity to 36-38% in 2030, but there are constraints to further expanding the introduction of solar and wind power due to the limited area of flat land, deep oceans, etc. Delays in restarting suspended nuclear power plants and being forced to procure LNG, whose spot price has risen due to tight supply and demand, will lead to a significant rise in electricity costs. It is for this reason that Prime Minister Fumio Kishida has stressed the need to save electricity and restart nuclear power plants. The restart of one nuclear power plant would save one million tonnes of LNG, and with global LNG supply and demand expected to tighten as the EU switches from Russian pipeline gas to LNG, the effect of restarting nuclear power plants would be significant.

## **(3) Issues common to Germany and Japan and the need for German-Japanese co-operation**

The Ukrainian crisis is certain to make it more difficult for both Germany and Japan to steer their energy and climate policies. While there are differences between Germany, which will phase out nuclear power plants as planned, and Japan, which is emphasizing the restart of nuclear power plants, there are many common issues to be addressed. In particular, the further promotion of energy conservation and achieving both greater introduction of renewable energy and stability in electricity supply and demand are becoming even more important under the Ukrainian crisis.

Cooperation between Japan and Germany, both highly industrial and technological countries, is highly significant. Improved performance and lower costs of storage batteries to absorb variable power sources in the domestic power system, technological development and lower costs of green hydrogen to enable sectoral coupling beyond the electric power, transport and heat sectors, and CCUS technology to neutralize CO<sub>2</sub> emissions from fossil fuel use are promising areas for German-Japanese cooperation. It is also important to pursue innovative models that promote energy efficiency and conservation while expanding consumer convenience through the use of IoT, AI and big data. These issues have been addressed in the past by the German-Japanese Energy Transition Council and other organisations, but in the face of the Ukrainian crisis, these efforts must be further strengthened.

At the same time, both countries' responses must be underpinned by pragmatism. Energy policy in developed countries, including Germany and Japan, has been dominated exclusively by the decarbonisation agenda since the Paris Agreement. The Glasgow Climate Agreement of last November contained an ambitious message of a 45% reduction in global

emissions in 2030 and carbon neutrality in 2050, in order to limit the temperature increase since the industrial revolution to 1.5°C. Memories of the two oil crises have faded, and despite fossil fuels continuing to play a major role in global energy supply, extreme arguments have been propagated that fossil fuels should be eliminated and that fossil fuel investments will become stranded assets. This is one reason why investment has been slow to progress even in the current phase of rising energy prices, but it also endangers the stable supply of fossil fuels. The energy transition will not be achieved overnight, and there are twists and turns along the way. It must not be forgotten that an energy policy that neglects energy security, including fossil fuels, will not win public support.

#### **(4) Importance of cooperation for developing countries, particularly in the Indo-Pacific**

Global action is needed to prevent climate change, and the majority of future greenhouse gas emissions will come from developing countries in the Asia-Pacific region. Even if Japan and Germany achieve carbon neutrality as targeted, the impact on the planet as a whole will be negligible, and it is extremely important to support energy transformation in developing countries in the Indo-Pacific region.

Again, pragmatism is what both countries need to bear in mind: the situation is completely different between developed and developing countries in terms of which of the 17 SDGs they prioritize. According to the UN's My World 2030, in developed countries, SDG 13 (climate action) is often ranked as priority number one, while in Indonesia it is ranked as number nine and in China only number 15. In regions with low GDP per capita, priority for SDG 1 (poverty eradication), SDG 2 (hunger eradication), SDG 3 (health and sanitation), SDG 4 (quality education), SDG 6 (safe water) and SDG 8 (employment and economic growth) is understandably high. Affordability is the most important aspect of the energy transition in the Asian region, and it is difficult to gain political support for a costly energy transition; we must not forget India's strong resistance to coal phase-out at COP26.

The negative effects of rising energy prices are also weighing heavily on Japan and Indo-Pacific countries. In particular, the replacement of natural gas pipelines from Russia by LNG by European countries could significantly raise LNG prices in Asian markets. In this case, fuel switching from coal to natural gas, which is a powerful tool for low carbonisation in the highly coal-dependent Indo-Pacific region, could be significantly delayed.

While it is extremely important for Japan and Germany, individually and in cooperation, to extend support to Asian countries to improve energy efficiency and increase the introduction of renewable energy, they should be cautious about imposing the same energy transition model on the Asian region as they do on their own countries. Unlike Germany and Japan, which are mature economies, it is unrealistic to expect the Indo-Pacific region, with its rapidly growing economy, to replace all of its growing electricity demand with renewable energy. Even if energy conservation and renewable energy are promoted, it is necessary to face the reality that fossil fuel use will continue for the foreseeable future and to support the conversion from coal to gas and the diffusion of technologies such as ammonia, hydrogen and CCUS that contribute to the clean use of fossil fuels.

The paths of energy transition pursued by Germany and Japan are not identical, as typified by the different approaches to the use of nuclear energy. The energy transition in the Asian region, which is at a different stage of economic development, is even more diverse, taking into account the actual situation in each country. The joint statement of the G7 Climate, Energy and Environment Ministers' Meeting held in Germany in May this year included the promotion of Just Energy Transition Partnership with developing and emerging countries, but if the G7 countries impose a specific energy transition model on developing countries based solely on the evaluation axis of greenhouse gas reductions,

this will, in turn, provoke a backlash from developing countries. The same holds true for the "Climate Club" proposed by Germany in the G7. There are different opinions within the G7 on the requirements for participation in the Climate Club and the content of cooperation, but the membership should not be closed to the G7, but should be open and cooperative with the emerging economies of Asia. If carbon tariffs are used as a weapon to force developing countries to act, they will react violently against it as 'protectionism disguised as a response to climate change', which is prohibited under the Framework Convention on Climate Change. In the divided world after the Ukraine crisis, China and Russia are planning to change the international order based on liberal democracy. If developed countries were to impose their own values on developing countries with regard to global warming prevention, this could trigger a confrontation between developed and developing countries, and China, treading its way through the gap, could expand its influence as an 'ally of developing countries'. This is a geopolitical threat in a different sense from that of Russia, and requires a calm and realistic response from Germany and Japan.

## 5. Conclusion

The Glasgow Climate Accord and the Ukraine crisis have significantly changed the situation surrounding global energy and global warming policies, and efforts to balance energy security, climate protection and economic growth are becoming increasingly complex. Japan and Germany, both of which have thick industrial clusters and are keen to research, develop and disseminate advanced technologies, are playing an increasingly important role. Beyond domestic measures in both countries, there are many areas for cooperation in the low-carbonisation and decarbonisation of the Asia-Pacific region. As already mentioned, the author has participated in the GJETC for six years. Judging from the constructive discussions that have taken place there, great results can be expected for the future of German-Japanese energy and environmental cooperation. The author would like to continue to contribute to the discussions and policy implementation in the German-Japanese energy sector.

This article does not represent the official position or thoughts of the KAS, but only the author's personal analysis and views.

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1982 Graduated from University of Tokyo (Bachelor in Economics)

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2002-2006: Head, Country Studies Division, IEA (International Energy Agency)

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His publication includes "Energy Policies of the IEA Countries" (2003-2006 editions), "Memoir of the Kyoto Protocol" (2014), "Truth of Global Warming Negotiation – Economic War on National Interests-"(2015), "Global Warming Countermeasures with Pragmatism – Paris Agreement and Thereafter" (2016), "Trump Risk – America First and Global Warming" (2017), "Policy Recommendations by the Quadripartite Commission on the Indian Ocean Regional Security" (Chapter 2) (2017 Sasakawa Peace Foundation), "Japan's Energy Conundrum" (Chapter 11) (2018 Sasakawa Peace Foundation), "Finding a Viable Path for Reducing GHG Emissions2 (2019 King Abdullah Petroleum Studies and Research Center (KAPSARC), "Eco-fundamentalism as a Grist to China's Mill" (2021), "Eco-fundamentalism will ruin our country" (2021)

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Note: Not all the links are available in English.

<sup>1</sup> Declaration of cooperation on energy transition between Ministry of Economy, Trade and Industry of Japan and the Federal Ministry for Economic Affairs and Energy of the Federal Republic of Germany

[https://www.meti.go.jp/press/2019/06/20190618008/20190618008\\_10.pdf](https://www.meti.go.jp/press/2019/06/20190618008/20190618008_10.pdf)

<sup>2</sup> German-Japanese Environment and Energy Dialogue Forum

<https://gj-eedf.org/de>

<sup>3</sup> German-Japanese Energy Transition Council

<http://www.gjetc.org/>

<sup>4</sup> German-Japanese Energy Transition Council Report 2018

<sup>5</sup> German-Japanese Energy Transition Council Report 2020

<sup>6</sup> See Jun Arima, "[GEPR] Japan-Germany Energy Transformation Council - points of agreement and differences", 29 Apr 2018.

<https://agora-web.jp/archives/2032366.html>

(All the links last accessed on July 5, 2022)

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