EU - Japan Business Round Table
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Recommendations of the EU-Japan Business Round Table to the Leaders of the European Union and Japan

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Working Party E
Energy, Environment, and Sustainable Development
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Introduction

Securing low-cost, abundant, safe and sustainable energy supply is key to both Japan and the EU to meet the energy demands of their governments, companies, industries and people while addressing several other challenges, such as reforming energy systems, reducing energy needs and greenhouse gas emissions, and protecting the environment, while at the same time ensuring each region's preparedness for natural disasters with sound crisis management systems in place.

Recommendations from both European and Japanese industries

WP-E / # 01* / EJ to EJ Changes and harmonization in energy and environment

Significant geopolitical risks in energy-supply areas

Political and social instability remain in the Middle East, a region that supplies a large portion of the world's energy. The road to stability in oil-producing countries such as Iraq, Libya, Algeria, and Iran remains unclear. For Japan, a country that imports more than 80% of its oil from the Middle East, securing the energy required to support the country's economic activities is an issue of vital importance. This applies also to EU, whose average oil import dependency is 83%.

Recent events in Ukraine and Russia also raise concerns over security of gas supplies as the EU-28 imports more than 60% of its energy needs in gas, a quarter of which from Russia.

Energy importers also continue to face security issues such as combating piracy off the coast of Somalia and maintaining access to sea lanes such as the Suez Canal and the Strait of Hormuz. Japan and the EU should therefore enhance international collaboration to preserve energy security.

Energy price volatility strongly impacts importing countries such as Japan and the EU

Oil prices have halved in less than 6 months since June 2014, with mixed consequences worldwide: sizable revenue losses for energy exporters such as Russia and Venezuela, cheaper energy and improvement of trade deficit in Japan and the EU. However, this situation negatively affected the effort by the EU and Japan to end long periods of deflation.

Increased energy demand from emerging countries affects the energy policies of other countries and price stability

As the world's population continues to increase, the main consumption of energy is shifting from developed to emerging countries. In the long term, exports of shale gas from the United States may help stabilizing both energy prices and supply; however, the development of resources by state-owned enterprises in emerging countries will lead to severe competition to secure stable supply at affordable prices .

Japan and the EU should cooperate to stabilize natural resource prices and establish an energy mix policy that reflects the actual energy situation in each country so that private-sector corporations can continue to carry out stable business activities.

Increase in greenhouse gas emissions and its impact on the environment

Global warming causes increase in the acidity of the oceans, raises sea levels, and severely affects many aspects of human life such as agriculture, forestry and fishing, ecosystems, water resources, and human health.

Governments, industries, and academia in Japan and EU should deepen their dialogue on measures to mitigate global warming.

Japan and EU should accelerate developing the next generation of technically advanced and competitive renewable energies and promote the technologies globally.

In Japan, in order to reduce greenhouse emissions, restarting the nuclear power plants that are verified as being safe needs to be seriously considered.

WP-E / # 02** / EJ to EJ Basic energy policy

It is crucial for the EU and Japan to secure stable energy supply and to reduce their energy needs while supporting the development of their economic infrastructure in an affordable manner.

Striking a balance among stable energy supply, economic efficiency, environmental issues, and safety regulation

Energy is the basis of all economic activities. Securing stable energy supply at reasonable prices, developing the necessary infrastructure as well as reducing energy needs are crucial not only for sustainable business activities but also for the creation of new business opportunities. At the same time, it is important to consider the environmental impact of energy use. Paying utmost attention to safety, Japan and EU should establish energy policies which preserve a role for nuclear power, one of the effective means of reducing greenhouse gas emissions.

International coordination

The acceleration of the global demand for energy, particularly in Asia, combined with an increase in the diversity of available energy sources such as natural gas, renewable energy, and nuclear energy, is transforming the global pattern of energy supply and demand. At the same time, the negative impact on the environment caused by human energy use makes the adoption of rational energy policies more urgent and complex.

Japan and EU should create a comprehensive and collaborative framework to handle the inter-relationship between energy and environment issues. Japan and EU should also deepen their cooperation through their participation in the IEA and IAEA, as well as through information exchanges at other relevant international meetings in which they participate.

WP-E / # 03** / EJ to EJ Energy policy timeline, energy mix policies and integrated energy market

Short, medium and long-term energy policies

Large-scale natural disasters, such as the Great East Japan Earthquake, underscore the challenge of providing energy in an emergency. The earthquake also demonstrated that, in order to maintain an uninterrupted supply of energy logistics issues such as the repair of roads and ports, securing tank lorries, tankers and other appropriate means of transport, and setting up supply bases, must be solved. Geopolitical instability can also contribute to fluctuations in resource prices as a result of speculative purchases. The EU and Japan should establish both a short-term energy strategy for handling crisis situations, such as the immediate aftermath of a natural disaster, and a long-term energy mix strategy that will provide a stable supply of energy in the face of inevitable changes in geopolitics.

Promoting supply stability through a multi-layered energy policy

All sources of energy have their strengths and vulnerabilities; no energy source can meet all demands for stability and affordability. Therefore, it is necessary to build a multi-layered energy supply system supported by an adequate power transmission infrastructure that can function both in normal times and during crises.

Creating an energy mix considering regional variations and cost

In Japan and the EU, there are some regions blessed with abundant energy resources, and some that are not.

While some regions have already established an inter-dependent power exchange system, with other countries, some countries have no close neighbours and have therefore had to build an independent supply system. Deliberations by Japan and EU concerning the stable and safe supply of energy, economic efficiency, and environmental issues should take into account these regional variations.

Creating and maintaining a resilient and effective energy infrastructure

To secure a stable and affordable supply of energy, Japan and the EU should share best practice on how to build an energy value chain, including a resilient and reliable energy infrastructure, capable of executing their chosen energy mix policies and consider measures to replace outdated equipment and facilities to improve safety.

Developing an integrated and safe energy market

Japan and EU should actively exchange best practices on the design and market mechanism necessary to ensure a well-functioning integrated Energy market, allowing the chosen energy mix at an affordable cost.

WP-E / # 04* / EJ to EJ Fossil fuels

Advantages and disadvantages of coal, oil, natural gas, and LP gas

Fossil fuels emit greenhouse gases, but have a relative advantage in terms of cost and stable supply. Research into making the use of fossil fuels more efficient and reducing CO_2 emissions is ongoing. Japan and EU should support this research and developing countries' use of the resulting technologies.

Coal is still being evaluated as an important base power supply because it involves the lowest geopolitical risk and has the lowest price per unit of heat energy among fossil fuels especially in developing countries. Japan and EU should contribute to reduction of greenhouse gas emission by adopting highly efficient power generation systems, and promoting the development of new technologies such as carbon dioxide capture and storage (CCS).

WP-E / # 05** / EJ to EJ Nuclear power

Nuclear power is an important and competitive source of energy, in particular for regions with no other economically extractable energy resources.

The accident at the Fukushima Daiichi nuclear power plant demonstrated the need for failsafe systems, based on a thorough analysis of the causes of the accident, to restore public confidence in nuclear power.

Safe nuclear power generation can play an important role in the energy mix of the EU and Japan. It could be a valuable asset supporting EU and Japanese competitiveness, supplying base load electricity at low cost and contributing to grid stability, reduction of CO_2 emissions, and economic growth.

Rising global expectations for nuclear energy and the necessity for education and training to assure safety

Many countries throughout the world are looking to nuclear energy to release them from their dependency on fossil fuels, and are evaluating schemes to adopt nuclear power. The EU and Japan should cooperate to provide education and training to assure the safety of nuclear power generation.

In Japan, accelerating the restart of nuclear power plants in areas verified as safe

The lack of nuclear power generation has caused a rise in electricity prices, affecting the competitiveness of the activities of both the EU and the Japanese industries in Japan, as well as increased GHG emissions. In terms of both economical reasons and reducing greenhouse gas emissions, it is necessary to restart as soon as practically possible those nuclear power plants that are verified as being safe by the Nuclear Regulation Authority.

Replacing ageing nuclear reactors with safer models

The latest nuclear reactors such as Gen III and Gen III+ are designed to meet very high safety standards. It is therefore necessary to explore the possibility of using these state-of-the-art reactors in future energy mixes, and also consider replacing some ageing reactors, in both the EU and Japan. Construction of latest generation of reactor models in both Japan and the EU can also serve as reference for export of European and Japanese nuclear technologies to third countries.

Nuclear fuel recycling and waste disposal

Regarding the situation of spent nuclear fuels, Japan and EU should drastically reinforce and comprehensively promote efforts to resolve the challenge of how to manage, recycle and dispose of spent fuels. Japan and EU should also promote collaborative R&D programs on the disposal of waste.

Financial support

To assure the highest level of safety, Japan and the EU should promote investment in nuclear energy, and at the same time, encourage financial institutions such as the World Bank, the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (EIB), and the Japan Bank for International Cooperation (JBIC) to provide finance for projects that promote the safety of nuclear power.

Safety measures

Japan and EU should cooperate bilaterally and in the relevant multilateral fora on all aspects of nuclear energy, in particular the development and effective implementation of harmonized international nuclear power safety standards.

Japan and the EU should continue their specialist consultations concerning technologies related to decommissioning nuclear reactors, decontamination, and radioactive waste treatment at nuclear power plants.

WP-E / # 06** / EJ to EJ Renewable energies

Advantages of renewable energies

Renewable energies can reduce carbon emissions and increase the security of supply, but it also poses huge challenges in terms of grid integration and stability of supply. Realizing its potential to complement conventional energy requires a robust and fully-integrated distribution network.

Renewable energy sources are available in many forms, including wind, solar, hydro, geothermal, tidal, biomass, etc. However, with the exception of hydro, which is already a power supply source to a certain degree, renewable energy remains unclear in terms of economic potential, efficiency, and stable supply due to variations in availability to different regions. To answer these uncertainties, it is therefore necessary:

- to study carefully how the adoption of renewable energy sources will be specifically carried out,
- to assess accurately the total cost of renewable energies throughout the supply chain,
- to encourage research into their commercialization, of less mature renewable energy technologies. On the other hand, both the EU and Japan should avoid costly support for the deployment of mature renewable energy sources which distort the energy market.

Storage of Energy (such as batteries)

Storage batteries can contribute to ironing out fluctuations in the supply and demand for energy. As a convenient way of storing electricity and thermal heat, they can be used at any time and in any location.

Thanks to the development of smart grids, storage batteries have the potential for use in a wide variety of applications, including cars, houses, and commercial buildings. Japan and EU should continue to cooperate in the development of storage battery technology and the harmonization of standards, in order to achieve low-cost production and to improve energy efficiency of batteries.

Feed-in-tariff system

The objective of a feed-in-tariff programme is to accelerate investment in renewable energy by providing a predictable revenue stream. In order to minimize the cost burden on business and private households, the capital cost of such schemes should be thoroughly evaluated to ensure that it reflects the amount of cost reduction achieved in accordance with the legal provisions. Feed-in-tariff programmes need also to take into account the cost of the reinforcement of the power grid etc.

Recognizing that the cost of renewable energy generally is still too high to be widely used with economical sense, Japan and the EU should prioritize support for R&D to facilitate innovation that lower the cost of renewable energy drastically.

WP-E / # 07** / EJ to EJ Utilization of renewable bio-based resources as versatile raw materials

The development and implementation of technologies and processes to convert biomass to fuels and chemicals are important to replace fossil resources with bio-based ones, thereby drastically reducing greenhouse gas emission.

Support for R&D and technology demonstration

In order to accelerate the practical implementation of technologies to convert non-edible plant-based resources, such as agricultural waste and woody biomass, to fuels and chemicals, the EU and Japan should increase public support for collaborative R&D and technology demonstrations by companies and academic institutions in Japan and EU.

Promotion of the use of bio-based fuels and chemicals

To promote the use of products made with renewable bio-based technology, the EU and Japan should provide subsidies and preferential tax systems, for bio-based fuels and chemicals.

WP-E / # 08** / EJ to EJ Energy conservation and energy efficiency

Enhancing energy conservation in all fields

The construction of energy efficient buildings, as well as the energy efficient renovation of domestic houses and office buildings with high level insulation materials and high-performance windows, are very effective in reducing energy consumption.

The development of energy-saving technologies for electrical equipment, such as refrigerators, air conditioners, servers and LED lights, is also ongoing. In the transport sector, EV, PHEV, Clean Diesel and Hydrogen Fuel Cell Vehicles all have considerable potential to make automobiles more energy efficient. Japan and the EU should work together to develop harmonized standards to facilitate their early market introduction.

In all fields, it is clear that the implementation of energy management systems is an effective means for improving energy efficiency.

Japan and the EU should consider taking further measures to promote energy conservation, by financing research projects to develop technologies and methodologies for improving energy efficiency and by sharing their best practices. At the same time, the reality is that active measures must be complemented by passive measures, which affect building insulation and temperature stabilization. Japan and the EU should support such moves, in particular by setting as early as possible regulations and mandatory standards for better energy-efficient buildings and houses to reduce energy consumption and expenses at a family and country level, to decrease CO_2 emissions and to enhance health.

WP-E / # 09* / EJ to EJ Energy research and international cooperation

Energy research for reducing greenhouse gas emissions and developing energy technologies for achieving long-term goals:

The emission of greenhouse gases that trigger climate change and impact the environment is an issue that affects the entire human race, and requires international knowledge and cooperation to solve. Global-scale research is therefore required to develop technologies to reduce GHG emissions in power generation using fossil fuels and ones to utilize non-fossil energy sources, such as renewable and nuclear energies in practical applications with assured safety.

Human resources development

Energy is crucial for every nation and industry. Japan and the EU should consider how to create systems, including personnel exchange, to produce and train energy-related specialists uninterruptedly.

WP-E / # 10** / EJ to EJ Importance of measures against global warming and to reduce greenhouse gases emissions

Mitigating global warming is a global challenge. Emerging countries are already overtaking developed countries as the world's major greenhouse gas emitters. It is consequently imperative that emission reductions are also undertaken by emerging countries. Japan and the EU should work together to create a comprehensive, fair and effective mechanism for reducing global greenhouse emissions.

Situation in Japan following the Great East Japan Earthquake and issues to be resolved

The scenario initially envisioned by Japan of reducing greenhouse gas emissions by increasing nuclear power generation has been derailed by the Great East Japan Earthquake and subsequent accident at the Fukushima-Daiichi nuclear power plant, following which all of Japan's nuclear power plants remain idled and the country continues to rely heavily on fossil fuels. Japan is now working on the details of its COP21 commitment.

A government plan to move the country in the direction of restarting some of the idled nuclear reactors, known as the Basic Energy Plan, was determined in April 2014; however, the unresolved nature of the unstable energy supply continues to suppress corporate investment. For these reasons, and also to help mitigate global warming, the government of Japan should urgently present a comprehensive vision of the country's future energy mix.

Measures to be taken by the EU:

In January 2014, the EU Commission published a white paper policy framework for climate and energy for the period from 2020–2030, proposing a cut in carbon emissions by 40 % below the 1990 level in 2030. Such a single ambitious CO_2 emissions reduction target by 2030 is, together with the

structural reform of the European Trading System, a key signal to return to robust prices for CO_2. Furthermore, it would give a strong signal of the EU's commitment to fighting against climate change before the upcoming international negotiations (COP21 in 2015). It is therefore important EU maintain such ambitious objectives without Carbon Leakage and the means to realize a cost-effective low-carbon society in the long-term. A global dialogue on these issues should also be maintained.

WP-E / # 11* / EJ to EJ International contributions

Contributions by Japan and EU to global warming countermeasures

It is important for developed and developing countries to cooperate on measures to mitigate climate change by creating mechanisms to achieve lower carbon growth. Advanced technologies, products, and expertise from Japan and EU can contribute to mitigating global warming worldwide.

Bilateral offset mechanisms are effective solutions for emerging countries, whose energy demand is increasing rapidly, to reduce greenhouse gas emissions. Japan and the EU should work together at both government and industry levels to design systems to support emerging countries in their efforts to combat global warming.

To implement adaptation strategies as well, the governments of Japan and EU should continue to expand more cooperative dynamics such as sharing project opportunities, implementation outline, required technology, financial assistance, etc. to the public, so that industries can participate in the adaptation projects without difficulty. Japan and EU share common interests in securing the establishment of high standard rules and open markets not only in both countries but in third countries.

Visualization of emissions reduction results

"Visualizing" CO_2 emissions reduction results is an effective way to verify the impact of low-carbon technologies and energy-saving products. LCA (Life-cycle assessment) is one of the appropriate techniques to assess the environmental impact associated with all stages of a product's life from cradle to grave.

Visualization of added value for products and technologies with effect to reduce CO_2 emissions based on LCA analysis should be promoted through public-private collaboration.

Protecting intellectual property rights and developing human resources

An appropriate regulatory framework to ensure the protection of intellectual property rights (IPR) is needed to promote the transfer of commercially developed technologies. Japan and EU should help emerging countries to create such a framework by providing advice on the adoption of supervisory systems, training, support for licensing, and encouraging technical collaboration.

WP-E / # 12* / EJ to EJ Environmental technology collaboration between EU and Japan

Promoting innovative R&D projects to reduce greenhouse gas emissions in Japan and EU

Japan and EU should promote joint R&D between industries, academia, and governments to develop innovative technologies that can be used to reduce greenhouse gas emissions.

R&D projects

Developing advanced and innovative technologies from the initial research phase, applying them to products, and promoting their use requires considerable time and money. Japan and the EU should therefore provide mutual access to the results of R&D projects implemented with government support.

WP-E / # 13* / EJ to EJ Promote foreign investments and foster long term cooperation

A long term sustainable energy policy requires adequate level of investments and strong international cooperation in order to reach those ambitious challenges. During this last decade, Europe has worked at creating a European Integrated Energy Market aiming at long term sustainability at an affordable price. In spite of the worldwide energy mix shift, those evolutions have created new investments opportunities attracting international investors including large Japanese companies. Japan is currently facing the same challenges with the current Energy Market Reform.

Japan and EU should promote foreign direct investments thanks to a transparent, open and long term predictable investment legal and regulated framework to sustain the energy market reform through increased transmission capacities.