# 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

Harnessing a low-cost, abundant, safe and sustainable energy supply is key to both Japan and the EU to meet the energy demands of their companies, industries and people while addressing several other challenges, such as transforming 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 and crisis management.

One asterisk (*) identifies "priority" Recommendations, two asterisks (**) identify "top priority" Recommendations. (e.g. WP A / # 01** / EJ to EJ)

# 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**
  The Arab Spring revolution that was triggered by the Jasmine revolution in Tunisia in December of 2010 and spread throughout the Middle East and North Africa, including Jordan, Egypt, and Bahrain, has created political and social instability 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-27 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.

- **Increased energy demand from emerging countries affects the energy policy 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 from the emerging countries will lead to severe competition to secure stable supplies at affordable prices .
  Japan and the EU should cooperate to stabilize natural resources prices and establish an energy mix policy that reflects the actual energy policy 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 will cause an increase in the acidity of the oceans, raise sea levels, and severely affect many aspects of human life such as agriculture, forestry and fishing, ecosystems, water resources, and human health. Government, industry, and academia in Japan and EU should deepen their dialogue on measures to mitigate global warming. In Japan, in order to reduce green house emissions, restarting the nuclear power plants needs to be thoroughly considered.

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

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

- **Striking balance among stable energy supply, economic efficiency, environmental issues, and safety regulation**
  Energy is the basis of all economic activity. Securing a stable energy supply at a reasonable price, developing the necessary infrastructure as well as reducing energy needs are not only crucial 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. Japan and EU should establish energy policies which preserve a role for nuclear power, one of the effective means of reducing greenhouse gas emissions, while paying utmost attention to safety..

- **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 of 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 and energy mix policies**

- **Short, Medium and long-term energy policies**
  Large-scale natural disasters, such as the Great Eastern 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 sources 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 that allows for 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 an 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 capable of executing their chosen energy mix policies and consider measures to replace outdated equipment and facilities to improve safety.

**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 an advantage in terms of cost and stable supply. Research into making the use of fossil fuels more efficient and reducing CO2 emissions is ongoing. Japan and EU should support this research and the use of more energy-efficient and cleaner fossil fuels by developing countries.

**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, economic growth and jobs creation.

- **Rising global expectations for nuclear energy and the necessity for an enhanced safety framework**

  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 cost of generating power in Japan in fiscal 2013 greatly increased due to the use of thermal power plants to compensate for the lack of nuclear power generation. This 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 those nuclear power plants that are verified as being safe by the safety authority.

- **Replacing ageing nuclear reactors with safer models**

  The latest nuclear reactors are designed to 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.

- **Nuclear fuel recycling**

  Japan and the EU should work together to devise a safe and efficient method of recycling nuclear fuel.

- **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.

**WP-E/#06**/EJ to EJ Safety measures**

- **Measures to assure safety**

  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.

- **Consultation**

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

**WP-E/#07**/EJ to EJ Renewable energy**

- **Advantages of renewable energy**
  Uncertainties remain about the cost and security of supply of renewable energy. But it has the potential to complement conventional energy since it does not emit greenhouse gas, can reduce import dependency, and be securely utilized through a balanced network. To answer these uncertainties, it is therefore important to correctly assess the total cost of renewable energies along their value chain, and to encourage research into the practical stage of renewable energy sources.

- **Practical project approaches with respect to renewable energy sources**
  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 base 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. It is therefore necessary to study carefully how the adoption of renewable energy sources will be specifically carried out.

- **Storage 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.

**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, Hydrogen Fuel Cell Vehicles 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, and the governments of both countries must be encouraged to support such moves. In particular, setting mandatory regulations for building standards and house insulation plays a major role in reducing energy consumption.

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

- **Energy researches 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 renewable energy sources and assure the safety of nuclear power, as well as explore new energy fields such as methane hydrates.

- **Human resources development**
  Energy is crucial for every nations and industries. Japan and the EU should consider how to create systems to train and develop human resources to become energy-related specialists.

**WP-E/#10**/ EJ to EJ Importance of measures against global warming**

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 and effective mechanism for reducing global greenhouse emissions.

**WP-E/#11*/ EJ to EJ Measures to be taken by Japan and EU to reduce greenhouse gas emissions**

- **Situation in Japan following the Great Eastern 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 Eastern 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 determining the specific details of its COP19 agreement, which is to establish voluntary post 2020 reductions that are to be measured, reported and mutually verified by other countries.

A government plan to move the country in the direction of restarting some of the idled nuclear reactors, known as the Basic Energy Plan, has been drafted; 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 CO2 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 CO2. 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 and the means to achieve a cost-effective decabornisation in the long-term. A global dialog on these issues should also be maintained.

**WP-E/#12*/ 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 an effective solution 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 level to design systems to support emerging countries in their efforts to combat t global warming.

- **Visualization of emissions reduction results**

"Visualizing" CO2 emissions reduction results is an effective way to verify the impact of low-carbon technologies and energy-saving products. Specific methods to visualize reduction results should be developed 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 in by providing advice on the adoption of supervisory systems, training , support for licensing, and encouraging technical collaboration.

**WP-E/#13*/ EJ to EJ Environmental technology collaboration**

- **Promoting innovative R&D projects to reduce greenhouse gas emissions in Japan and EU**
  Japan and EU should promote joint R&D between industry, 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.