

A Proposal for Future Energy Policy

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KEIDANREN

In January this year, Prime Minister Shinzo Abe announced instructions to conduct a zero-based review of the previous administration's Innovative Strategy for Energy and the Environment and to establish a responsible energy policy from the perspective of ensuring both a stable energy supply and reduced energy costs. Based on these instructions, the government has been formulating a new Basic Energy Plan, which is to be completed by the end of the year.

Since the Great East Japan Earthquake, Japan has been faced with many difficulties regarding its energy supply, which is fundamental to national livelihood and corporate activities. Industry welcomes the developments recently observed in the government and holds high expectations towards the forthcoming Basic Energy Plan.

Seeking to fully overcome deflation and pursue growth, the Cabinet adopted the "Japan Revitalization Strategy – Japan is Back –" in June. The strategy aims to achieve an nominal GDP growth of 3% and a real GDP growth of 2% on average in the following decade, but this will only be possible if a stable energy supply can be ensured at an economically efficient price so that corporate activities can be sustained and new investments can be made.

Keidanren has continuously called for the establishment of a well-balanced energy policy that is premised on ensuring safety, based on the lessons learned in the nuclear accident at Fukushima Daiichi Nuclear Plant¹. In light of the new Basic Energy Plan to be formulated, we would like to reiterate our proposals as follows:

1. Critical issues in the near-term

- (1) The fundamental resolution of the radiation-tainted water issue at Fukushima Daiichi Nuclear Plant is essential to the reconstruction and revitalization of

¹ Further reference is provided in:

"First Proposal on Energy Policy" (www.keidanren.or.jp/en/policy/2011/078outline.pdf);

"Second Proposal on Energy Policy" (www.keidanren.or.jp/en/policy/2011/107.html);

"KEIDANREN's Views on the "Options for Energy and the Environment" (www.keidanren.or.jp/en/policy/2012/057.html);

"A Demand for the Reconstruction of Energy Policy" (www.keidanren.or.jp/en/policy/2012/088.html)

Fukushima Prefecture. We highly appreciate the government's adoption of a basic policy under which it will come to the fore and take the initiative in achieving a fundamental solution for the radiation-tainted water leaking from the Fukushima Daiichi Nuclear Power Station². The government is required to firmly implement the policy with particularly enhanced efforts in dispelling not only domestic but also international concerns and in preventing the spread of harmful rumors through the monitoring of radioactive substances in the marine environment and the complete disclosure of information. The government is also expected to assume a more proactive role in the decontamination of surrounding areas which is vital to the reconstruction of Fukushima Prefecture.

Nuclear decommissioning measures are also an important agenda that must be consistently addressed based on full public-private partnership and through continued reviewing of the middle- to long-term roadmap³ which provides for the promotion of research and development and enhanced dialog with the general public.

(2) The anxiety over the energy supply and the rising electricity prices associated with the Great East Japan Earthquake and nuclear shutdown are yet far from being resolved. Although we have managed to prevent major blackouts through the committed efforts of relevant parties, the unstable circumstances in which power supply-demand forecasts need to be reviewed every summer and winter to verify whether or not power-saving requirements should be announced have undermined corporate willingness to make investments. Furthermore, the cost of replacing suspended nuclear power stations with thermal power stations is estimated to reach 3.6 trillion yen for this fiscal year. The resulting increase in electricity prices and aggravated trade balance are hindering the enhancement of industrial competitiveness and economic growth.

Securing an inexpensive and stable energy supply is indispensable to steering the Japanese economy which is on a recovery path towards full-scale growth. A firm timeline covering the next three to five years for securing a stable supply of electricity

² Nuclear Emergency Response Headquarters "Basic Policy for the Contaminated Water Issue at the TEPCO's Fukushima Daiichi Nuclear Power Station" (September 3, 2013)
(http://www.meti.go.jp/english/earthquake/nuclear/decommissioning/pdf/20130904_01a.pdf)

³ Council for the Decommissioning of TEPCO's Fukushima Daiichi Nuclear Power Plant, Nuclear Accident Response Office "Announcement of the Revised Version of the Mid-and-Long-Term Roadmap towards the Decommissioning of TEPCO's Fukushima Daiichi Nuclear Power Station Units 1-4" (June 27, 2013) (http://www.meti.go.jp/english/press/2013/pdf/0627_01.pdf)

at an economically efficient price should be promptly presented and implemented in order to enable companies to formulate plans for production and investment⁴ without undue anxiety.

Therefore, the process of restarting nuclear power plants must be accelerated to a maximum extent, with safety as an indispensable prerequisite. In addition to efficient safety inspections conducted by the Nuclear Regulation Authority (NRA)⁵, the government and the NRA must offer thorough explanations to local governments in order to gain their understanding.

(3) The tax against global warming⁶, being one of the factors raising energy prices, should undergo fundamental review, including consideration of its abolishment. The second tax hike scheduled in April 2014 should at least be suspended.

2. Basic concept for future energy policy

(1) Japan has historically confronted the following energy-related issues:

- a) In addition to a low energy self-sufficiency rate⁷, Japan struggles with significant geopolitical risks, including its dependency on the Middle East for approximately 80% of its crude oil. Furthermore, being an island country, Japan is faced with difficulties in mutually trading with neighboring countries.
- b) As emerging economies strive to catch up and global competition intensifies, equal footing of locational competitiveness in terms of both energy prices and

⁴ In an urgent questionnaire survey conducted in April this year on electricity-related issues, the manufacturing industry responded that if an unpredictable outlook for electricity supply and demands for power savings coincides with higher electricity prices, 81.7% would reduce or drastically reduce production and 55.0% would reduce or drastically reduce domestic capacity investment. (www.keidanren.or.jp/policy/2013/031.pdf; available only in Japanese)

⁵ “Keidanren “Our Opinion on the ‘Draft Rules on the Establishment of Relevant Rules Concerning the Partial Implementation of the Act for Establishment of the Nuclear Regulation Authority’ (May 10, 2013) (www.keidanren.or.jp/policy/2013/043.html; available only in Japanese)

⁶ Under current circumstances, (i) as a result of changes due to the Great East Japan Earthquake, the government tax revenue is larger than original estimates (under the initial budget for fiscal 2013, 102 billion yen (18.6%) of the total petroleum and coal tax revenue of 650 billion yen is estimated to be a result of increased fossil fuel consumption); (ii) some of the tax revenue is retained in the general budget and is therefore not used for global warming countermeasures; (130.4 billion yen (20.0%) of the abovementioned 650 billion yen tax revenue is retained in the general budget); and (iii) part of the tax revenue allocated to the Special Account for Energy Policy remains unused and carried forward to the next year (under the fiscal 2013 budget, a surplus of 171.7 billion yen (24.5% of total for accounts for supply and demand of energy) was generated in the Accounts for Supply and Demand of Energy under the Special Account for Energy Policy);. Therefore, the need for a tax raise is questionable.

⁷ As a result of the Great East Japan Earthquake and the shutdown of nuclear power plants Japan’s energy self-sufficiency rate dropped further from 19.5% (nuclear power 15.1%) (CY 2010) to 6.0% (nuclear power 0.6%) (CY 2012 estimates).

stable supply is imperative.

- c) With a view to the COP21 meeting at which a new international framework for 2020 and onwards will be determined, proactive efforts in combating global warming are called for.

In addition to these issues, the accident at Fukushima Daiichi Nuclear Power Plant has greatly shaken public confidence in the safety of nuclear power plants.

- (2) Each energy source has advantages and disadvantages. Given the challenges faced by our country, it is important for Japan to maintain a diversity of energy choices in order to achieve an energy mix that ensures an appropriate balance among energy security (stable supply), economic efficiency, environmental suitability based on the premises of ensured safety (“S+3E”).

Technological innovation from a middle- to long-term perspective is also essential. By further enhancing Japan’s advanced environmental and energy technologies, we can build on the strengths and supplement the flaws of each energy source, thereby improving their potential.

The new Basic Energy Plan will be required to establish a reinforced energy supply structure and a highly efficient energy demand structure as well as to stipulate concrete steps to promote technological innovation.

3. Reinforcement of the energy supply structure

- (1) Fossil fuels

In light of their relative advantages in terms of economic efficiency and stable output, fossil fuels including coal should continue to be efficiently utilized, despite their drawbacks which include challenges in securing resources and CO2 emissions.

We welcome the government’s decision at the end of April this year to deal flexibly with environmental assessment for coal-fired thermal power plants⁸ and expect that assessments will be consistently conducted in accordance with this policy.

Japan relies on imports for most of its fossil energy resources; and therefore, public-private collaboration is essential in acquiring interests in natural resources and enhancing price negotiation power. We highly appreciate the developments in resource

⁸ Ministry of Economy, Trade and Industry and Ministry of the Environment “Summary of a meeting by relevant directors on TEPCO’s bid for thermal power” (April 25, 2013)
(www.meti.go.jp/press/2013/04/20130426003/20130426003-3.pdf; available only in Japanese)

diplomacy which has been proactively taken forward by Prime Minister Abe and other government leaders.

In the middle- and long-term, the exploitation and commercialization of marine resources, including methane hydrate, lying in Japan's coastal waters is another important agenda which needs to be addressed. Industry will pursue the development and practical application of mining technologies and requests continued government support.

Despite its cost-related shortcomings as fuel for power generation, oil continues to support national livelihood as a key energy source, especially for transport and heating fuel uses and is expected to play an important role in the future optimal energy mix.

Further use of natural gas is desirable from the perspectives of stable supply and outstanding environmental suitability. Deliberation on setting the environment for its less costly and more stable use, including the harnessing of unconventional natural gas resources whose production have recently been on the increase, is called for.

In order to reduce the environmental burden accompanied by the use of fossil fuels, public-private partnership is also required in the research and development and practical application of technologies to further the high efficiency and low-carbonization of thermal power plants⁹.

(2) Nuclear power

Nuclear power is an extremely important energy source in terms of energy security and economic efficiency for a country like Japan with limited natural resources. Furthermore, using nuclear energy will not only contribute to the advancement of domestic global warming countermeasures but also to the resolution of global energy and climate change issues¹⁰.

Therefore, the Basic Energy Plan should stipulate the basic concept that Japan will continue to use nuclear power as its base load power source on the premises of assured safety. It is essential that the national government present a firm nuclear policy in light

⁹ For detailed descriptions of individual technologies, refer to: Keidanren "Outline of the Questionnaire Survey on Energy and Low-Carbon Technologies" (July 22, 2013) (www.keidanren.or.jp/policy/2013/069_kekka.pdf; available only in Japanese) An English summary can be obtained at www.keidanren.or.jp/en/policy/2013/069.html.

¹⁰ CO₂ emissions are estimated to increase by 6.1 – 6.5 millions tons annually when a nuclear power plant (1.2 million kW) is replaced by a thermal (coal-fired) power plant.

of maintaining and enhancing the human resources and technologies that support nuclear safety.

Drawing on the experiences of the Great East Japan Earthquake and the accident at Fukushima Daiichi Nuclear Power Plant, the following efforts are indispensable:

a) Enhancing and fully developing the nuclear safety system

In accordance with the Supplementary Provisions Article 6 Paragraph 4 of the Act for Establishment of the Nuclear Regulation Authority, the Japan Nuclear Energy Safety Organization (JNES) must be promptly integrated with the NRA in order to support its measures to restore public confidence in nuclear regulation administration and the safety inspections of nuclear power plants by NRA on a technical level.

Furthermore, the NRA should seek to further improve safety levels and public reassurance through (i) enhanced dialog with local governments that host nuclear power plants; and (ii) facilitated communication and knowledge-sharing with experts, including electric power companies and manufacturers that have accumulated practical experiences in designing and operating nuclear power plants, on the premises of independence and transparency.

Electric power companies and manufacturers should not confine themselves to meeting the safety standards required by relevant regulations but should also very importantly engage in untiring and autonomous efforts towards achieving further safety improvements, including promoting the Japan Nuclear Safety Institute (JANSI)'s activities.¹¹

b) Rebuilding the compensation system for nuclear damage

Based on torts of civil law framework, the current Act on Compensation for Nuclear Damage holds companies, as private individuals, responsible for directly compensating each victim for individual damages. However, as the accident at the Fukushima Daiichi Nuclear Power Plant revealed, a system that leaves companies liable for the damages incurred in a nuclear disaster, which involves multiple, wide-spread and diversified damages, has limited capacity for prompt redress.

Although one of the legislative purposes is to “contribute to the sound development of the nuclear industry,” the law fails to guarantee companies the

¹¹ In November 2012, electric power companies and manufacturers established the Japan Nuclear Safety Institute (JANSI) in order to provide assessment, proposals / recommendations and support nuclear safety improvement measures and operation management at nuclear power facilities.

predictability of business risks. While it imposes unlimited and strict liability upon companies, it does not clarify the extent to which the exceptional clause of Article 3, which stipulates immunity “in the case where the damage is caused by a grave natural disaster of an exceptional character,” can be applied.

Given the abovementioned issues which were brought to light in the recent accident, from the perspectives of enhancing the protection of victims and promoting the sound future development of the nuclear industry, the government should review the compensation system, including clarifying the State’s role in nuclear accidents, on the earliest occasion possible, in accordance with the Supplementary Provisions to the Nuclear Damage Compensation Facilitation Corporation Act¹², and take necessary measures, including the amendments of the law, based on the results of these reviews.

c) Establishing a nuclear fuel cycle

The establishment of a nuclear fuel cycle is essential to the efficient use of uranium resources and the reduction of high-level radioactive waste.

From this perspective, we hold high expectations for the early operation of the nuclear reprocessing plant and MOX fuel fabrication plant located in the village of Rokkasho in Aomori Prefecture which are preparing for commercial operation, as well as the interim storage facility for spent fuel which is under construction in Mutsu City, Aomori Prefecture.

Further efforts should also be made in deciding on a high-level radioactive-waste (vitrified waste) site after reprocessing.

In addition, research and development for fast-breeder nuclear reactors should be steadily enhanced, based on the premise that a fundamental reform of the Japan Atomic Energy Agency (JAEA) will be conducted based on the recently decided Basic Direction for JAEA Reform.

The nuclear fuel cycle is a privilege granted only to Japan outside the nuclear powers¹³. Japan must secure this right in order to contribute to the peaceful use of nuclear power.

¹² The Supplementary Provisions Article 6 provides that “As soon as possible after the enforcement of this Act, the government ...shall take the necessary measures based on the results of these reviews, including a fundamental re-examination of the amendment, etc. of the Act on Compensation.” According to a collateral resolution to the draft law, “as soon as possible” means “within approximately one year.”

¹³ Japan is granted the privilege under the Japan-US Nuclear Cooperation Agreement. The current agreement which entered into force in 1988 will expire after 30 years in July 2018

(3) Renewable energy

Renewable energy is important for its high potential in terms of energy security for a country as Japan with very limited natural resources, and global warming countermeasures. However, at present, we have yet to find solutions to its challenges, such as low efficiency, instability and high costs¹⁴; and industry is determined to focus on its further research and development, demonstration and practical application. We look to the government for support from a middle- and long-term viewpoint such as enhancing research and development tax incentives.

Important innovative technology advances that require special focus include the sophistication of high-precision exploration technologies for geothermal reservoirs, the employment of nanostructure solar cells to achieve higher efficiency in photovoltaic power generation, the development of production, transportation and storage technologies for hydrogen as an energy carrier for solar and wind power, the technological development and practical application of wave and tidal power generation, and the achievement of higher performance in storage batteries¹⁵.

Deregulation measures for agricultural land and the simplification of environmental assessment procedures are also called for.

The current feed-in-tariff program embraces many shortcomings, such as forecasts of drastic increases in future public burden as well as its risks of hindering the wider introduction of relatively low cost renewable energy and inhibiting innovation¹⁶. The

¹⁴ In addition to power generation costs, grid stabilization costs and backup power costs will be required.

¹⁵ For detailed descriptions of individual technologies refer to:

Keidanren “Outline of the Questionnaire Survey on Energy and Low-Carbon Technologies” (July 22, 2013) (www.keidanren.or.jp/policy/2013/069_kekka.pdf; available only in Japanese). An English summary can be obtained at www.keidanren.or.jp/en/policy/2013/069.html.

¹⁶ For example, i) the fixed purchase price under the program is much higher than that of other countries; ii) solar power, which is purchased for a particularly high price, represents a major portion of generation facilities certificated under the program (solar power (non-residential) and solar power (residential) covers 87% and 7%, respectively, of all the facilities certificated as of the end of May 2013). Furthermore, because the given purchase price at the time of certification of generation facilities is applied under the Japanese program, unlike in other countries, the construction of facilities is sometimes intentionally delayed in order to await a decline in solar panel prices. In such cases, not only will electricity be purchased at a price that is substantially profitable compared to actual generation costs, aspiring companies that desire to operate early may consequently fail to gain grid connection rights and therefore be excluded from the system. Furthermore, under a FIT program, a certain profit derived from existing technologies will be guaranteed over a long period and cost reduction efforts will lead to lower purchased prices in the future, therefore leaving little incentive to improve business efficiency and technological innovation.

government should promptly correct the current program. It, also, should conduct a fundamental review of the feed-in-tariff program as it renews the Basic Energy Plan, including whether it is a truly appropriate and sustainable program from the perspective of the efficient deployment of renewable energy, based on Article 10 Paragraph 1 and 2 of the Supplementary Provisions of the Act on Special Measures Concerning Procurement of Renewable Electric Energy by Operators of Electric Utilities.

(4) Electricity system reforms

A stable and economically efficient supply of high-quality electricity is indispensable for national livelihood and corporate activities. From this perspective, it is important for Japan to make an effort to boost the efficiency of its electricity system by developing a competitive market environment and creating a new market in the electricity field.

Many countries have been struggling in pursuit of the ideal electricity system. Given the constant shortage of the electricity supply after the Great East Japan Earthquake, Japan must be especially careful not to expose the various risk factors¹⁷ that have been identified regarding the direction of future system reforms. In order to fulfill the major aim of energy policy to secure a stable and economically efficient supply of high-quality electricity, Japan is required to carefully deliberate on its reforms, drawing on the experiences of other countries. Detailed analysis should be conducted on the impacts that electricity system reforms such as unbundling power generation and transmission will have on the efficiency of the electricity system and electricity rates.

¹⁷ For example, the following issues have been suggested regarding the unbundling of power generation and transmission:

- a) Since decisions on investments in power sources (power plant construction) are made by electric power companies based on their economic viability, investments may no longer be secured for power sources such as nuclear power which require costly long-term investments or for power plants which promise only a low operation rate such as peak load power plants and backup power plants for renewable energy.
- b) The legal unbundling of power generation, power transmission and distribution and retail may complicate mutual cooperation among individual sectors, therefore undermining grid stability. In the event of emergencies, including natural disasters, in particular, the stable supply of electricity and stable procurement of electricity from the market may be put at stake.
- c) The unbundling of power generation and transmission has not resulted in the reduction of electricity prices in other countries but has rather induced higher prices in many countries.
- d) Given the excessively reduced creditability of electric power companies and confusion in the financial market, electric power generation companies may encounter difficulties in procuring funds.
- e) Energy security (securing diverse energy sources) and environmental suitability, which have been promoted under national policy, may no longer be secured.

The results of such studies should be communicated to the public and industry in a comprehensible manner.

4. Enhancing the efficiency of energy demand structure

It is important to enhance the efficiency of the energy demand structure such as promoting energy conservation, as well as reinforcing the energy supply structure. Industry is also determined to make maximum efforts to develop and disseminate energy-saving technologies¹⁸.

The government should promote policies to encourage corporate efforts instead of imposing regulations and burdens which will undermine corporate vitality – for example, investment tax reductions to advance the dissemination of energy-saving equipment and facilities, enhanced research and development tax program and support for empirical research. The establishment of appropriate technology-based energy conservation standards and the development of a national campaign for the promotion of power saving and replacing old appliances with energy-saving models are also called for.

A detailed forecast of future energy demand is required in formulating the new Basic Energy Plan. This should involve securing consistency with the national growth strategy and careful verification of the feasibility of energy conservation efforts, including those which will impose public burden¹⁹. Furthermore, the detailed disclosure of information which will leave room for third-party verification is indispensable.

5. Development of innovative technologies and domestic and overseas diffusion of best available technologies

From a middle- to long-term perspective, uninterrupted efforts to develop innovative technologies are indispensable in resolving the three critical issues shared by Japan and the world, namely, energy security (stable supply), economic growth and

¹⁸ For detailed descriptions of individual technologies refer to:

Keidanren “Outline of the Questionnaire Survey on Energy and Low-Carbon Technologies” (July 22, 2013) (www.keidanren.or.jp/policy/2013/069_kekka.pdf; available only in Japanese). An English summary can be obtained at www.keidanren.or.jp/en/policy/2013/069.html.

¹⁹ Verification on feasibility should also involve taking into consideration that an economic environment that promises to maintain or expand domestic projects is a premises for companies to make large energy-saving investments and the labor costs and opportunity costs required in implementing measures but have not conventionally been included in energy-saving costs.

reduction of greenhouse gas emissions.

Industry is determined to contribute to the development of innovative technologies built on the world-leading technologies that Japan has developed and introduced to the world. The domestic and overseas diffusion of Japanese best available technologies will not only help resolve challenges at the global level but will also benefit Japan's growth.

The government is required to formulate and share with the private sector a concrete roadmap based on the Innovation Plan for Environmental Energy Technology and to promote innovative technology development in focal areas along with human resources development through concentrated public and private resources.

Furthermore, the bilateral offset mechanism is an effective means to contribute to the world²⁰ by harnessing Japanese technology. Therefore, we expect the government to continue its efforts in promoting the mechanism through close opinion exchange with industry.²¹

²⁰ Technologies in the energy field include: thermal power plant operation and management technologies, production of biodiesel fuel, cogeneration equipment, combined use of diesel generators and solar power, harnessing solar power and storage batteries to cell towers, and use of LNG technologies.

Details can be found in Keidanren "Outcome of Questionnaire Survey on the Bilateral Offset Mechanism" (April 6, 2013) (www.keidanren.or.jp/policy/2013/036.pdf; available only in Japanese)

²¹ Keidanren "Proposal for Assertive Diplomatic Strategies to Tackle Climate Change" (July 16, 2013) (www.keidanren.or.jp/en/policy/2013/065.html)