Appendix 1.
Summary of the International Nuclear Energy Symposium in Tokyo

Date and Time: 09:00 – 17:30, 19 May 2015

Venue: Sokairo Hall, National Graduate Institute for Policy Studies, Tokyo, Japan

8:30	Doors open, Registration
9:00- 9:10	Opening Address Masakazu Toyoda, President & CEO, The Institute of Energy Economics, Japan
9:10- 9:25	Special Lectures：Yosuke Takagi, State Minister of Economy, Trade and Industry, Japan
9:25- 9:40	Keynote Speech：Hidetoshi Nishimura, Executive Director, ERIA
9:40- 9:55	Keynote Speech：Agneta Rising, Director General of World Nuclear Association, Co-founder and Former President of Women In Nuclear
Session 1 :	*"Why is nuclear energy necessary?"* (Moderator: Ann MacLachlan, journalist)
9:55-10:25 (Talk to order from each invited speakers （Each 7 min. ×4 speakers）)	1) Anne-Marie Choho, AREVA Executive Committee Member, France
	2) Ana Raffo-Caiado, Director, Division of Programme Support and Coordination, IAEA
	3) Xudan Song, CEO of China Division, EDF, China
	4) Reiko Fujita, President of Atomic Energy Society of Japan, Program Manager of ImPACT R&D program, Japan Science and Technology Agency, Japan
10:25-11:10	Panel Discussion
11:10-11:25	Coffee Break
Session 2 :	*"Can we cope with the climate change without nuclear energy? "* (Moderator: Sumiko Takeuchi, Senior Fellow, IEEI)
11:25-11:55 (Talk to order from each invited speakers （Each 7 min. ×4 speakers）))	1) Jessica Lovering, Senior Analyst, The Breakthrough Institute, USA
	2) Ximena Vásquez-Maignan, Senior Legal Adviser, Organisation for Economic Co-operation and Development/Nuclear Energy Agency
	3) Cecilia Tam, Deputy Vice President, Asia Pacific Energy Research Centre, Former Head of the Energy Demand Technology Unit, International Energy Agency
	4) Siriratana Biramontri, Former Deputy Secretary General of Office of Atoms for Peace, Thailand
11:55-12:40	Panel Discussion
12:40-14:00	Lunch Break
14:00-14:10	Keynote Speech：Takashi Shiraishi, President, National Graduate Institute for Policy Studies

Session 3 :	*"How safe is safe enough when there is nothing absolutely safe?"* (Moderator: Ann MacLachlan, journalist)
14:10-14:40 (Talk to order from each invited speakers （Each 7 min. ×4 speakers）))	1) Kaija Kainurinne, Former Head of TVO Brussels Office , Finland
	2) Gerry Thomas, Professor of Molecular Pathology at Imperial College London, UK
	3) Monamie Bhadra, Arizona State University, USA
	4) Kazuko Uno, Department Head, Interferon & Host Defense Laboratory, Louis Pasteur Center for Medical Research, Japan
14:40-15:25	Panel Discussion
15:25-15:40	Coffee Break
Session 4 :	*"What is necessary to gain support for nuclear energy from the public, especially from women?"* (Moderator: Yukari Yamashita, Director, IEEJ)
15:40-17:10 (Talk to order from each invited speakers （Each 7 min. ×12 speakers）))	1) Anne-Marie Choho, AREVA Executive Committee Member, France
	2) Ms Ana Raffo-Caiado, Director, Division of Programme Support and Coordination, IAEA
	3) Xudan Song, CEO of China Division, EDF, China
	4) Reiko Fujita, President of AESJ, Program Manager of ImPACT R&D program, JST, Japan
	5) Jessica Lovering, Senior Analyst, The Breakthrough Institute, USA
	6) Ximena Vásquez-Maignan, Senior Legal Adviser, OECD/NEA
	7) Cecilia Tam, Deputy Vice President, APERC, Former Head of the Energy Demand Technology Unit, International Energy Agency
	8) Siriratana Biramontri, Former Deputy Secretary General of Office of Atoms for Peace, Thailand
	9) Kaija Kainurinne, Former Head of TVO Brussels Office , Finland
	10) Gerry Thomas, Professor of Molecular Pathology at Imperial College London, UK
	11) Monamie Bhadra, Arizona State University, USA
	12) Kazuko Uno, Department Head, Interferon & Host Defense Laboratory, Louis Pasteur Center for Medical Research, Japan
17:10-17:25	Closing Address : Rachel Pritzker, Chair of Advisory Board, Breakthrough Institute, USA
17:25-17:30	Closing Address : Masakazu Toyoda, President & CEO, the Institute of Energy Economics, Japan

Minutes of the Symposium

(1) On May 19, the Institute of Energy Economics, Japan (IEEJ), the US environment think tank the Breakthrough Institute, the Economic Research Institute for ASEAN and East Asia (ERIA) and the National Graduate Institute for Policy Studies (GRIPS) cosponsored the International Nuclear Energy Symposium at GRIPS.

(2) Seventeen female experts in nuclear, energy and environment issues from Japan and other countries met at the symposium to discuss how best to secure nuclear safety, the necessity and roles of nuclear energy, measures against climate change, how to communicate with the public on nuclear energy and other matters from a wide range of female viewpoints under the theme 'Discussions on Nuclear Energy from the Female Point of View – Why is it necessary? Why is it safe enough? Why is it irreplaceable?' This is a tough theme over which Japanese people are divided.

(3) Ms Agneta Rising, director general of the World Nuclear Association, delivered a keynote speech introducing the present situation where 'nuclear energy serves as a base load power source in most countries that have achieved a low-carbon power generation sector.' Quoting a report by the International Energy Agency (IEA), she said, 'Nuclear power generation will make the greatest contribution to solving global warming in the future.' Reviewing the past process in which public confidence in nuclear energy was restored gradually after the Three Mile Island and Chernobyl nuclear power plant accidents, she assured Japan that nuclear energy promoters 'will be able to restore public support' for nuclear energy through their tenacious dialogue with all layers of citizens.

Session 1: 'Why is nuclear energy necessary?'

(1) Four panellists from France, the International Atomic Energy Agency (IAEA), China and Japan gave presentations.

(2) First, Ms Anne-Marie Choho, a member of the AREVA Executive Committee, France, explained the process in which the oil crisis in the 1970s led France to choose nuclear energy for improving its energy self-sufficiency rate. She pointed out that public understanding about nuclear energy would be required first for its promotion and that transparency of nuclear energy must be enhanced to secure such understanding. Ms Choho noted that the present French administration's policy of reducing nuclear energy's

share of power generation reflects its coalition with Europe Ecology, or the Greens. The administration, though planning to promote renewable energy development, would have to maintain a certain level of nuclear power generation from the viewpoint of competitiveness, she said.

(3) From the viewpoint that a growing number of countries in Southeast Asia and Africa are considering introducing nuclear energy for the first time, Ms Ana Raffo-Caiado, director of the IAEA Division of Program Support and Coordination, explained a framework for the IAEA's support for the countries planning to introduce nuclear energy for the first time. She said, 'If IAEA member countries request support from IAEA, IAEA has prepared resources (safety analysis systems and technical cooperation projects) to sufficiently meet their requests.' 'IAEA also hopes member countries to promote nuclear energy with safe ways, though refraining from forcing them to introduce it,' she added.

(4) Ms Xudan Song, CEO of the China Division of French power utility EDF, said that this year was an important year for China to resume its nuclear power plant construction projects suspended since the Fukushima accident. For China that has already developed hydro resources as a low carbon power source almost to the maximum extent and depends heavily on coal power generation, nuclear energy "is an environment-friendly power source that can respond to fast-growing electricity demand," she said, emphasising the necessity of nuclear energy. With China's plan to raise nuclear energy's share of power generation output to 3 percent by 2020 and to 6 percent by 2030, she explained that China was planning efforts to build nuclear reactors in inland zones as well as coastal zones while promoting public understanding about nuclear energy.

(5) Ms Reiko Fujita, president of the Atomic Energy Society of Japan (AESJ), said nuclear energy was one of solutions to the global warming problems and a stable base load power source. She also said: 'Irrespective of whether to support or oppose nuclear, no one can get around the challenge of high-level radioactive wastes. Wastes should be minimised and recycled as much as possible.' As nuclear energy has an advantage of being conservable or usable over a long term, it is important to establish a fuel cycle including fast breeder reactors in the future, Ms Fujita said, citing the present postponement of the nuclear fuel cycle project as a problem.

(6) Panel discussions focused on whether female viewpoints are different from male viewpoints. Ms Anne-Marie Choho said that while female and male viewpoints are not so

different, women spend more time on childcare and contacts with neighbours than men so female viewpoints might reflect home life to a greater extent than male viewpoints. Ms Ana Claudia Raffo-Caiado said women tended to take reasonable approaches and do business enthusiastically. Ms Xudan Song explained that due to the limited number of women majoring in nuclear reactor engineering, she could be viewed as representing female viewpoints and could attract more attention. She also said her opinions could gain more attention as female views when talking about new projects for nuclear power generation. Ms Reiko Fujita said women, though becoming emotional sometimes in private situations, were as logical as men in public situations.

Session 2

(1) Four panellists from the United States, the Nuclear Energy Agency of the Organisation for Economic Cooperation and Development (OECD/NEA), the Asia Pacific Energy Research Center (APERC) and Thailand took the rostrum to give presentations.

(2) First, Ms Jessica Lovering, senior analyst at the U.S. Breakthrough Institute, said, 'Japan actually increased energy-sector CO_2 emissions despite its target of cutting such emissions by 6 percent by 2012 under the Kyoto Protocol.' 'Low-carbon power sources' share of total power generation output has failed to increase since the late 1990s while the share has remained around 5 percent for hydro and rose rapidly for nuclear energy in the 1980s and for renewable energy recently.' She also said: 'The risk of CO_2 emissions through oil, natural gas and coal combustion is greater than that of nuclear power generation from the viewpoint of the global environment. In Japan, the economic risk of the shutdown of all nuclear reactors is also great.'

(3) OECD/NEA Senior Legal Adviser Ms Ximena Vasquez-Maignan said: 'The IEA's Technology Roadmap released in 2015 makes 10 proposals to overcome major obstacles to the introduction of nuclear energy. In the 2 degrees C scenario, nuclear energy will play a key role in cutting emissions in the power generation sector. The roadmap predicts that the development of small modular nuclear reactors will expand the nuclear market and allow even isolated markets to get nuclear reactors.' She also said: 'Key actions should to be taken in the next decade to keep the nuclear option open. Not only governments but also all other stakeholders should take actions to allow nuclear generating and other countries to promote nuclear reactors that are safe, acceptable for the public and cheap.'

(4) APERC Deputy Vice President Ms Cecilia Tam, as an author of the IEA Technology Roadmap 2010-2015, introduced a prediction that 'OECD countries, which have diversified energy sources, will increase nuclear energy consumption while reducing coal and oil consumption, while non-OECD countries will expand consumption of all energy sources.' She also said: 'Various areas should be decarbonised to limit the temperature rise to 2 degrees C or less. Given that nuclear energy is required to account for some 17 percent of power generation output in 2050, achieving the limitation without using nuclear energy would cost more.' 'While there would be various challenges to be solved for Southeast Asian countries' introduction of nuclear energy, a globally united organisation would be required to promote nuclear energy as a key option to develop countries. The next APEC (Asia-Pacific Economic Cooperation) meeting is planned to indicate that the stability as a feature of nuclear energy would become necessary'."

(5) Ms Siriratana Biramontri, a former deputy secretary general of the Thai Office of Atoms for Peace, said: 'In Thailand as well, the energy sector emits massive CO_2. Thai power generation is mostly covered by natural gas, emitting massive CO_2. Furthermore, Thailand imports natural gas from neighbouring countries.' 'Thailand decided to construct a nuclear power plant more than 30 years ago. But the project was suspended as offshore natural gas resources were discovered. I hope that the government will make a decision to use nuclear from the viewpoint of energy security.'

(6) In panel discussions, moderator Ms Sumiko Takeuchi, a senior fellow at the International Environment and Economy Institute, first asked a question about the Obama administration's attitude on nuclear energy. In response, Ms Jessica Lovering indicated her hopes on U.S. nuclear energy policy, saying: 'President Obama has made no specific remarks on nuclear energy. In respect to Climate Action Plan being drafted by the Environmental Protection Agency, however, momentum for nuclear is growing in the political world.'

(7) Next, asked "why nuclear failed to be recognised as a low-carbon technology under the Kyoto Mechanism and if the situation would change in the future," Ms Ximena Vasquez-Maignan said, 'Nuclear failed to be put into the Clean Development Mechanism due to the radioactivity and other problems.' But she said: 'Excluding nuclear means limiting options and is not positive. Discussions should be continued on nuclear energy's contribution, which is important from the viewpoint of climate change.'

(8) Asked 'if Japan, which spends funds on diffusing existing technologies, should invest more in development,' Ms Cecilia Tam said: 'Most emerging countries are considering the nuclear option. Various technologies must be considered for satisfying future energy demand.' She also said: 'Japan, which has no international grid network linked to neighbouring countries, must consider flexibility and energy storage. As energy storage technology may be developed over a long term, it is important to support the development.'

(9) Asked 'what contributions Japan's nuclear technology would make,' Ms Siriratana Biramontri said: 'Japan has experienced various natural disasters and can become a model for the Thai people. Despite the Fukushima accident, most Thai people support Japan. Thailand, though having yet to introduce nuclear energy, is looking to Japan in preparation for the introduction.'

Session 4

(1) In the fourth and last session, a total of 12 panelists from the first to third sessions took the rostrum. All were asked what is necessary to gain support for nuclear energy from the public, especially from women, and made the following comments:

(2) Ms Monamie Bhadra: 'Without having a preconception that ordinary people are irrational and full of fears, we should make discussions under the conception that they are intelligent.'

(3) Ms Siriratana Biramontri: 'Women may be in an advantageous position in talking with people. We should have dialogue with ordinary citizens to win their confidence in nuclear energy.'

(4) Ms Ana Raffo-Caiado: 'We should involve young generations who are free from any specific views. It is also important to use easy-to-understand words for explanations.'

(5) Ms Reiko Fujita: 'AESJ members have been visiting Fukushima. Initially, Fukushima residents questioned why we were visiting Fukushima. As we have won their confidence through the continuation of such visits, experts should continue such activities to maintain connections with many people.

(6) Ms Kaija Kainurinne: 'Patience is a key factor. While winning public confidence in nuclear energy is indispensable, citizens' participation only in one meeting would be insufficient.

Women should take advantage of their patience for continuing the communication process.'

(7) Ms Jessica Lovering: 'Women are apt to have interests in solving actual problems rather than in science or engineering. Nuclear energy should be emphasised as "a means to provide cheap, clean energy' rather than as 'one of the power generation means."'

(8) Ms Ximena Vasquez-Maignan: 'In order to gain confidence in nuclear energy from the public, a legal framework is required for operators' safe use of nuclear energy and regulator's oversight. Preparations for accidents are also necessary.'

(9) Ms Xudan Song: 'China has started initiatives to increase the public acceptance of nuclear energy. Since the Fukushima accident, citizens have become willing to get involved in decision-making processes for nuclear plant construction projects and locating such plants. It is important to provide information to the public in early stages.'

(10) Ms Cecilia Tam: 'We should identify matters of concern to our conversation partners before talking with them. It is important for us to explain and get conversation partners' understanding about the advantages of nuclear energy.'

(11) Ms Gerry Thomas: 'We must discuss various matters. Explaining only puts us at the starting point. As for differences between women and men, some may point out that women tend to refrain from making comments. But all people should be allowed to participate in discussions and make comments, irrespective of whether they are men or women.'

(12) Panelists also introduced interesting episodes based on their actual experiences. Ms Anne-Marie Choho quoted one of her neighbours as telling her: 'I had been opposed to nuclear energy until several years ago. After seeing you (Ms Choho) living as an ordinary citizen while working in the nuclear industry, however, I have begun to believe nuclear energy is reliable.' 'People working in the nuclear industry should become reliable to win public confidence in nuclear energy,' Ms Choho said.

(13) Ms Kazuko Uno introduced an episode where she gave a hand massage to a person wanting healing rather than a difficult lecture during her visit to Fukushima and found the massage very welcomed. Ms Uno also said, 'When I used a simple experiment to explain about food products that can reduce the risk of cancer, my audience understood my explanation well.' Then, she repeated a part of the experiments.

(14) Following comments by panelists, the audience was invited to ask questions. A GRIPS

student said: ‘There were comments that emphasised transparency. What does transparency mean? Does it mean an explanation about a process or a detailed scientific explanation to the public?’ In response, Ms Gerry Thomas said: ‘We must first find what kind of detailed explanations the public wants. It is not easy to explain about radiation or doses.’ ‘It is not appropriate to provide only a mountain of facts,’ she said. Ms Ana Raffo-Caiado said, ‘IAEA staff members are ready to provide answers for various cases in preparation for being asked why nuclear energy can be used for peaceful purposes.’ She also said: ‘We must consider who our conversation partners are, what we want to communicate to our conversation partners and what words we should use for such communication. Messages should be clear.’ Finally, the session ended with a concluding remark by moderator Ms Yukari Yamashita, IEEJ director in charge of the Energy Data and Modeling Center: ‘I thank you for your very significant discussions. I would like you to refer to the discussions here after returning to your businesses.’

(15) After all the sessions ended, Ms Rachel Pritzker, chair of the Advisory Board of the Breakthrough Institute, delivered a closing address. The Breakthrough Institute, which had doubted the safety or economic efficiency of nuclear energy 5 to 6 years ago, has recognised nuclear energy as indispensable for satisfying energy demand in the world through its past researches, according to Ms Pritzker. In the research process, she said, she had paid attention to the fact that no one had died from radiation in the Fukushima accident while fossil fuel combustion for energy supply had led 30,000 people to die of respiratory diseases annually in the world. She then emphasised nuclear energy as one of the safest and cleanest energy sources. When asked if she would allow her daughter to live near a nuclear power plant, she said powerfully: ‘Yes.’

(16) As for challenges regarding nuclear energy, Ms Pritzker said Japan had faced difficulties in gaining public understanding about nuclear energy after the Fukushima accident. While noting it would not be easy to overcome the difficulties, she expressed expectations that Japan, attracting global attention now, could develop a new model for dialogue with the public about nuclear energy.

(17) The symposium brought about a common perception that (1) promoting understanding about the necessity of nuclear energy as an energy source that is effective for preventing climate change and economical, (2) continuing to provide correct information and communications on safety of nuclear power plants and radiation risks, and (3) patient dialogue with people taking advantage of female viewpoints, particularly ‘transparent’ and

‘easy-to-understand’ explanations, are required for gaining understanding about nuclear energy from the public, particularly women.