Japan Policy Council

The Second Recommendations:

Creation of Global Cities by hosting the International Linear Collider (ILC)

The Japan Policy Council (JPC) established to create a grand design for Japan with an eye to the world and Asia for the next 10 years to come. Following the first recommendations on *Energy Creation*, the JPC announces its second recommendations concerning *Creation of Global Cities initiated by the International Linear Collider (ILC)*.

Japan should revitalize its provincial cities to revitalize Japan itself, while rapidly losing the vitality with the elderly population reaching 20 percent of the total population continuously declining. Social instability and economic decline in the provincial cities, especially those hit by deindustrialization, are notable. Considering the recent financial situation and a large deficit in the social security system in Japan, the local governments can no longer rely on the tax payers' money from the central government. The provincial cities should find their ways to promote regional development through their own ideas and resources, and the government of Japan should change its political structure to support the local activities by flexibly executing the laws and regulations.

A global viewpoint should be necessary, while finding a solution for the above issue would not be easy if our attention is fixed on domestic matters. The world population will reach 9.3 billion by 2050, whereas Japan is bound to see a further decline. We should consider how to incorporate this global dynamism and vigor in our society. In Europe, where most countries have reached a slow-growth economy and a mature society ahead of Japan, there are cities that are growing continuously by attracting talent and investment from around the world. Not only are they being filled with people of different nationalities, but such cities are recognized as their second home. Long-term visitors from abroad are participating in the city planning together with the local residents, showing their respect for the history and culture of the city. In those cities, we can see a role model, in which the provincial cities of Japan should follow.

The recommendations made here show the both central and local governments being bogged down in lack of future strategy the ways to explore "Domestic Globalization" taking advantage of the opportunity of Japan's possible bid to host the International Linear Collider (ILC) project, which has mainly been promoted by Europe, Japan and the United States. What is lacking in Japan now is the courage to challenge the world again and to open up its society to the world. Japan is a very attractive country with enticing history, culture, nature and technologies. It is not impossible for us to create a city, where both foreigners and Japanese find it "cozy and nice to live in".

July 12, 2012

Hiroya Masuda Chairman, Japan Policy Council

Realize a global city that attracts talent and investment from around the world: Regional development initiated by the International Linear Collider (ILC)

Recommendation 1: Japan should transform a regional city into a global city that attracts talent and investment from around the world; the growth of the nation should be led by local leadership.

- 1. Turn Japan into a *center of intelligence*, attracting international organizations, international research laboratories, universities, and industries. Develop an urban design that is attractive to long-term visitors from abroad. Shift the focus from the buildings and functionality towards the life activities and atmosphere, to make the city a place that can be called a second home.
- 2. Harmonize the city landscape. Create common spaces in the heart of the city to stimulate communication among the residents and to strengthen the community. Create common spaces such as plazas, parks, and cafeterias that reflect the regional characteristics. Revise traffic rules and flow planning for the comfort of pedestrians. Create a symbol of the city both tangible and intangible for a common recollection to be shared by the whole community.
- 3. Diversify the entertainment scene, taking into account the different lifestyles of various cultures, for high quality leisure experiences. Develop urban experience such as restaurants, concert halls, and theaters. If a large facility does not suit to a small city, create an outdoor gathering space in plazas or parks, and invite well-known musical and theatrical groups, to perform during the region's most attractive seasons.
- 4. For the reassurance of overseas visitors and their families, introduce the family medicine system and revitalize regional health care. Re-establish the local health care system by introducing the family medicine system and concentrating advanced medical institutions in the region so that every resident can receive health care services without any inconvenience. Increase the daycare centers and baby-sitters that can cater to foreign languages.
- 5. Build an education system that pays attention to children from overseas and allows a smooth transition to and from overseas educational systems, while at the same time maintaining the good aspects and the uniqueness of the Japanese educational system. In public schools, overseas educational programs should be studied and introduced into the curriculum to improve the quality of the education. Increase international schools accredited by international organizations. Develop an educational support system for a school with a small number of overseas students.
- 6. Improve international transport networks. Increase the percentage of international

flights in regional airports for the convenience of long-term overseas visitors for their temporary return home.

Recommendation 2: Build a role model for the creation of a global city by reforming a local city through founding an international organization for the International Linear Collider (ILC), for which Japan is the most probable host.

- 1. Create a project team within the Cabinet Office to facilitate cooperation with relevant ministries and agencies. Create an all-out effort of promotion with local authorities and communities of the candidate sites, universities, research institutions, and industries. In view of the European strategy for particle physics to be published in May 2013, Japan should reach a policy decision in a timely manner. Create a project team within the Cabinet Office to coordinate with MEXT, METI, MLIT, MOFA, MIC, and Cabinet Office (National Policy Unit, Council for Science and Technology Policy, Government Revitalization Unit).
- 2. Make a proposal on the *Preparatory Committee for the ILC International Organization* (tentative name) and take the initiative in establishing the Committee. Realize the ILC through founding an international organization to which every interested country can commit. The government should officially announce its intent to bid to host the ILC in Japan, and indicate that the ILC project is intended to be organized in cooperation with participating countries. In preparing for a governance structure, the government should take the initiative in establishing a *Preparatory Committee for the ILC International Organization* (tentative name).
- **3.** The decision process of the candidate site should be determined by taking into account that the candidate site should become the *Asian candidate site*, in view of the participation of the other countries. Based on the fact that the majority of the participating researchers will be from overseas, the possibility for other countries to contribute to the decision process should be considered. The candidate site should become the *Asian candidate site*, rather than the national candidate site.
- 4. In parallel with the construction of the ILC (approximately 10 years), a living environment, such as health care and educational services should be put in place. For the convenience of overseas visitors, a one stop service center should be provided at the local government. Create a framework to encourage communication and interaction between local residents and overseas researchers and their families. Arrange gatherings among them to cultivate mutual understanding.
- 5. Create job opportunities for researchers' spouses by designating the ILC campus to be a special zone, "tokku", in which, for example, a medical license issued in the home country is valid. The ILC campus should be a communal space, allowing local residents into certain facilities such as the cafeteria. Facilities such as schools, preschools, and hospitals, which are targeted for visitors and their families, should be built within the

campus. As a special zone, qualified personnel from overseas should become able to work. Create job opportunities for researchers' spouses.

- 6. Set a guideline for the disclosure policy of safety information, to be incorporated into the design of facilities and regulations. Main facilities such as the control rooms should be visible to local residents at any time through transparent glass window. Create a public communications office with full-time workers. Build a relationship of trust with the local residents through transparency and disclosure of information.
- 7. Create an industrial cluster with the ILC at its core to trigger national economic growth. The key technologies developed at the ILC can be utilized in a wide range of applications such as medical diagnostics and treatments. The ILC should be the core of the industrial cluster, which triggers national economic growth. Create jobs related to the ILC for young people in Japan, providing them a viable career path through cooperation of the public and private sectors.

Regional Development: Creation of Global Cities

1. Main Discussion

■ Incorporating dynamic and vigorous global activities – creation of global cities

Due to the declining birthrate and aging population, the Japanese society is losing its vitality. In particular, the hollowing out of industry in provincial cities is striking. Revitalizing Japan should be accomplished by revitalizing provincial cities first. To achieve this, one must free oneself from the closed-minded thinking peculiar to insularism. By 2050, the Japanese population will fall by 20 %, from the current 128 million to 97 million. Maintaining provincial cities become even more difficult, given that the rural population was already in decline even when the total population was rising. In contrast, the world population will rise by 30% from the current 7 billion to 9.3 billion. Ways to incorporate this global dynamism and vigor in provincial areas must be considered.

It is difficult for Japan, a mature country, to win in cost competitiveness against emerging countries. Japan should rush the structural change toward high-value-added industries. To do so, Japan should be transformed into a country that attracts global industries, universities, and research laboratories.¹ Japan should be changed to attract people from around the world, lead innovative research, and take the initiative in rulemaking in international communities. Japan should become a *center of intelligence* in Asia. Not only does the site of international organization create jobs in the local communities, but also it creates opportunities for the young people to acquire international ways of thinking, opening up global career paths for the new generation. City planning should proceed by promoting *Domestic Globalization*, appropriate for a future international hub.

There are numerous global cities around the world. Many of them are conglomerations of people of different nationalities in shared communities. There are always fears of cultural conflicts, crime, and disorder. Meanwhile, in European countries that have reached a slow-growth economy and a mature society ahead of Japan, there exist provincial cities that continue to grow by attracting talent and investment from around the world. People of different nationalities recognize the city as their second home, given their participation in the city planning through respecting the history and culture of the city together with the local residents. Regional cities in Japan should aim to become a global city whose public value is recognized even by foreigners.

¹ Although there are currently 38 international organizations with office locations in Japan, most of them are branches of organizations whose headquarters are located overseas.

■ The nature of Japan's previous failed attempts at building a global city

Realizing a global city is not an easy task. Previous attempts at building a global city in Japan turned out unsatisfactory.

The biggest cause is the lack in the residents' point of view. Development of global cities in Japan concentrates primarily on the hardware aspects, prioritizing building of facilities with reasonable functionalities. The urban development pertaining to life activity basically receives low priority, making the city unattractive to live in even for Japanese. As an example, in Tsukuba Science City, roads clearly separate pedestrians and vehicles, on the presumption that the primary means of transportation is automobiles. Moreover, the roads are too wide for people to comfortably take a walk, which does not tempt people to go out. There are no community centers for local residents to gather, relax, and come in contact with each other on a day-to-day basis, such as parks, plazas, or entertainment facilities, which are prevalent in cities of Western countries. This makes the city inorganic. Because of the insufficient utilization of the inputs from the experiences accumulated in the private sector, as well as Japan's bureaucratic sectionalism, improving the living conditions, such as building shopping areas, recreational facilities, and public transportation to Tokyo, were low on the list. While the city has now become a livable place for families, in the beginning, many people did not bring their family to live with them. This was another reason to make the city an unattractive place.

The second reason is the governance model created by the government. In order to attract talent and investment from around the world and to build a city with public value, it is important for the international organizations and facilities, which form the core of the city, to adopt a governance structure that allows every interested country to participate in the global project on an equal footing, thereby receiving firm commitment from every country.² Instead of such a system, Japan in the past has tried to single-handedly lead national projects while trying to involve other countries into the projects. As a result, the commitment shrank. The Okinawa Institute of Science and Technology that will open this fall remains challenging since it has been funded by Japan only.

The third reason pertains to its decision making process that gives too much priority to domestic issues. When the location for the ITER project was decided in 2005 to be in France, it is said that one reason for the failure of Japan, which was a contender at the time, was due to its inability to lead the international decision making process. Japan has a tendency to concern itself with forming domestic consensus, which is often viewed from other countries as "steady but slow" or "unaccommodating of the needs and opinions of other countries." Since

 $^{^2}$ A global project refers to a project with an international organization with each participating country having equal rights and responsibilities. In the area of particle physics research, there exists "international projects" that have been led by a single country but required funding support from each country.

international projects involve diplomacy as well, a decision process that is unconstrained from the bounds of a single country is needed. Japan should follow a new style, in which the *possibility* is announced first, followed by incorporation of the opinions from other countries, thereby leading to the international decision process.

2. Realizing an attractive urban design – especially for foreigners

■ Harmonization of the landscape and creation of common space

Realizing a global city implies creating a city that makes foreigners want to live in it. It is important to not only realizing international facilities and organizations, but also designing a city that caters to different life styles of different countries to allow foreigners to spend their everyday life at ease, which eventually leads to the improved quality of life for the local residents.

For this to happen, the first priority is city planning which emphasizes life space. Particularly important is the creation of common space that forms the community core³. Historical cities in Western countries contain walkable plazas and parks in the city center. Through gathering in common space and sharing the same experience, the sentiment for a *home city* begins to rise. From this communication, an organic community will be created. The creation of such common space should be taken as the core of the city planning, in which foreigners and Japanese alike can participate, resulting in a formation of a growing community.

The form of common space depends on the region. For example, in areas surrounded by nature, cafeterias can play this role, instead of parks and plazas. The design should take into account the ecological, historical, and cultural characteristics of the region. The scenery is another important factor. City landscapes in Japan are not typically organized and lack the sense of unity. Signboards and utility poles often clash with the natural and cultural scenery. More emphasis should be put on the city scenery. In order to take advantage of the natural beauty of the location, the harmonization of the city landscape should be increased. The access pathway to the common space is also important. It should be designed by taking into account the human behavior such as the preference for taking a nice stroll on the streets. During the high economic growth period, roads were designed to give priority to vehicles, which separated living space in many areas. The utilization of automobiles and public transportation should be reconsidered in the context of living environment.

³ Despite the need for common space in Japan has been considered, it has not been realized in a way seen in Western countries. Behind this is the historical fact that people did not create gathering places besides temples and shrines. However, smaller common space existed, such as *idobata* (water wells) and *engawa* (verandah), which are becoming rare. This is thus also an issue for Japanese people in rebuilding common space.

■ Reassurance for families: infrastructure for healthcare and education

The second priority is providing living infrastructure such as clinics and schools that cater to the needs of foreigners. Clinics should consider the introduction of the family medicine system that is prevalent in Western countries. Restructuring of regional healthcare is an urgent task for the Japanese. With the introduction of the family medicine system, the medical institutions for advanced treatment can be consolidated. A healthcare system that removes people's anxiety will lead to an improved everyday life.

Concerning schools, many foreigners prefer to have a seamless transition in the education when moving from their home country to Japan. To meet these demands, the educational system of other countries should be studied and incorporated as appropriate, in order to improve the overall quality of education in Japan. International schools that are accredited by international organizations⁴ should be expanded. For areas that would have lower demands for international schools during the first phase of the global city construction, academic support should be considered in cooperation with international schools inside and outside the country.

Daycare centers and babysitters are also part of an important living infrastructure. In western countries, small children generally do not accompany adults in the evening. Thus support should be considered not only during work hours but also in the evening. In the United States, because children under age 13 are required by law to be accompanied and protected by adults, their guardians typically hire babysitters when they go out. While preschools in international schools and as well as childcare centers and preschools that can offer foreign languages are needed, it is also an utmost priority to reduce the number of over 46,000 children who are on the waiting list for admission into daycare centers.

While, in general, residential and commercial areas should be left to the private sector to develop them, certain areas require public support during the initial stages of the construction of a global city. It should be noted that offering different choices is important, as in the case of western countries where individualism is established, which should be reflected on offering various options for residence and merchandise, instead of being uniform or homogeneous. In some cities in western countries, weekly markets are held, in which food and household groceries can be purchased. For some, despite being a small village, over a hundred merchants participate, attracting visitors from the neighboring areas, making it a very lively place. Such approaches in making use of common space is not only effective in forming multi-national communities, it also helps stimulate the local economy.

⁴ For example: WASC and ACSI (United States), CIS (United Kingdom), and International Baccalaureate (Switzerland).

■ Fulfilling life activities catering to the different lifestyles

The third priority is to develop life activities for fulfilling leisure activities. Since leisure is one of the fundamental human needs, having high quality activities to choose from make the city an attractive place. Urban activities such as restaurants, concert halls and theaters should be developed so that adult foreigners can enjoy after work.

Providing a hardware infrastructure, including culture centers, public halls, and athletic facilities, which is also necessary for the people's life, may be hard to build in a small local city considering the amount of costs required for their constructions, operations and maintenances. Alternatively, some outdoor facilities can be built in city parks or public areas. These outdoor facilities, for example, could host a popular orchestra or a theatrical company during the best season of the city so that the people can enjoy music festivals or theatrical art festivals⁵.

It is also essential to build a software infrastructure. It is necessary to provide foreign visitors with the opportunities to feel and experience in Japanese culture; for example, the foreign visitors can be invited to participate in traditional festivals or events like Japanese pop cultures, which has been attracting increasing attentions from abroad as "Cool Japan". They can enjoy Japanese culture together with the local residents, and it will facilitate communications between the foreign visitors and local residents and will help enhance their culture level. When creating a global city in a rural area, an agricultural exchange will also be necessary as well as a cultural exchange. It would provide the local senior citizens with the opportunities to actively participate in the regional development activities.

The fourth point is to create a city symbol that can be shared by the city residents. For example, people living in a city with a historical monument (whatever tangible or intangible) recognize their city as "their own city" through the common monument. People may also establish such a shared awareness and a sense of community through local festivals, which are typically held and organized by local community. Thus, it is important to create some city symbol on a hardware or software basis. Meanwhile, Japan is recognized as a scientifically advanced country. Holding a city slogan "Ecological City", which means an ecologically friendly city based on the technologies of Japan, will be well-received by both Japanese and people from abroad.

The fifth point is to reinforce a transportation infrastructure for foreign visitors. Travel accessibility to/from abroad is one of the key aspects for a global city, given that many of those foreign visitors would temporary return to their home countries/regions during their holiday. In Japan, metropolitan/local airports are currently operated in 37 prefectures/cities,

⁵ The world's most beloved music festival, Tanglewood Music Festival, is held while the Boston Symphony Orchestra is visiting their summer home, Lenox, a small town in Western Massachusetts.

but most of them are not functioning well. It is important to review and evaluate on the possibility of extensive and flexible use of those airports as a transportation hub. The possibility of increasing the international air routes should also be considered if the demand increases in the course of the regional development.

3. Japan's Bid to Host the International Linear Collider (ILC) – Toward "Global City"

■ Domestic Infrastructure for the ILC

The International Linear Collider $(ILC)^6$ project, for which Japan is the most probable host, is deemed to be a quite feasible project. If Japan hosts the ILC, an international science city, a science hub of the world, where will attract more than ten thousand people from around the world including researchers and their families, will be created in the country. We should bring our powers and resources together to support Japan's bit to host the ILC, as the first step toward our efforts to revitalize provincial cities to be a "global city". It is estimated that the construction of the ILC, where will be built underneath mountain composed of hard rocks, requires a ten-year timescale. In parallel with the construction, the living infrastructure should be put in place in the surrounding cities, towns and villages. The regional development will be promoted while resolving various social issues that may arise during the process. Japan should encourage the local governments across the nation to autonomously turn their cities into "global city" using their own powers and resources. The ILC Technical Design Report (TDR), whose preparation is being carried out by researchers from Europe, Asia and North America, is scheduled to be completed at the end of 2012. Thereafter, discussions over the site selection will take place among interested countries. Europe plans to publish its basic strategy, the European Strategy for particle physics, in May 2013. With these in mind, Japan should map out a strategy for the ILC project and take necessary actions as soon as possible.

The first action to be taken is establishing a domestic structure toward the ILC bid. To host the ILC, not only a scientific assessment, but also a living environment (including educational and medical facilities, housing and transportation), a governance structure, an intellectual property management system, and a platform for industrial clusters should be assessed among the stakeholders. For this assessment process, a project team dedicated to the ILC bid should be formed in the Cabinet Office of Japan. A promotional structure, which consists of members from MEXT, METI, MLIT, MOFA, MIC and the Cabinet Office (the Council on National Strategy, the Council for Science and Technology, and the Government Revitalization Unit), should also be established as soon as possible. Furthermore, coordination between the

⁶ The ILC is a next generation of the world largest particle collider, after the Large Hadron Collider (LHC) at CERN which has recently been receiving great attention for its discovery of Higgs particle. The ILC is a large-scale project the design and development of which are collaboratively promoted mainly by Japan, the United States and Europe. It is expected that construction will require about ten years and 800 billion yen (Host country is expected to cover 50% of the above amount).

domestic candidate sites is necessary. Our first priority is to create an all-out effort toward the ILC bid.

The second action to be taken is officially announcing its intention to host the ILC to the world. Japan should indicate its plan to host, organize and operate⁷ the ILC as a global project through collaboration among interested countries worldwide. From a global point of view, Japan is not recognized as the nation fully opened up to the world, and such impression should be erased. Specifically, Japan should take the initiative in proposing "*Preparatory Committee for the ILC International Organization* (tentative name)" inviting people from each country/region, in preparation for establishing a governance structure for the ILC project. In addition, given the negative impressions that may have been caused by the East-Japan Earthquake in 2011, the following nuclear reactor accident, and related harmful rumors, it is also important for the government to disclose any information regarding the above and to take necessary measures to make people around the world understand how Japan is "Safe and Secure".

The third action is setting a decision making procedure to determine the domestic candidate site. The current domestic candidates include Kitakami, Iwate prefecture and Sefuri, which is located between Fukuoka and Saga prefectures. Both sites are scientifically suited for ILC, thus selecting the site based on the scientific findings would be difficult. The site selection with the involvement of the communities worldwide should be considered, given that most people working at the ILC will be from abroad. Especially, gaining an understanding and cooperation from the Asian countries/regions is indispensable toward the bid. It should be emphasized that we have "ILC Candidate Site in Asia" to the Asian communities, explaining that the site will not only be beneficial to Japan but also beneficial to the whole region of Asia. This will eventually lead to success of Japan's bid and promotion of activities after completion of the construction.

■ To Gain Understanding from Local Residents and to Prepare for Acceptance

The fourth action is gaining understanding from local residents, and preparing for acceptance of foreigners. Each local government should work on necessary preparations, such as setting a one stop public service office that copes with all the administrative matters in support of the foreign visitors, and developing various culture programs, in which the local residents and families of the ILC employees and visitors from abroad can participate. If necessary, town meetings and panel meetings should be held inviting the foreign researchers and the local residents for them to communicate each other. In this way, the local governments can directly hear opinions and demands from foreign researchers and their families, and can prepare for

⁷ In the case of the international organization CERN, the operation cost is borne by contributions from the member countries. Switzerland, the host country, covers 3.79% of the total amount, and is the seventh largest contributor among the 20 member countries (as of 2011).

that. Japan is one of the safest countries in the world as it is shown in its low crime rate. This kind of advantages will be publicized through the above communications.

At the CERN, securing employments for the long-term visitors from abroad and their spouses is higher on their agenda. As seen in the Western culture, spouses usually accompany their husbands in the event of job transfer or job relocation. If the ILC is constructed in Japan, approximately 90 percent of the ILC employees and visitors from abroad will accompany their spouses. Their average period of stay would be three to five years. Planning on a living environment for these visitors is another key aspect for the bid.

The fifth action is to set a guideline on providing safety information. Safety of a large particle accelerator, like the ILC, has been demonstrated by the accelerators operated at CERN and KEK⁸⁾. However, some local residents may express their concerns over high energy physics experiments using such a large accelerator. In order to assure the people of its safety, information on ILC operations, running status and failure or glitch should be released to the public. Gaining trust from the local residents and establishing a good relationship can be achieved through operational transparency. The CERN, which has been playing a role of the international science hub ahead of ILC, has designed its facilities so that operational transparency can be maintained in every aspect; for example, walls of the major operation control rooms are glass-made so that people can see inside the rooms. They have also arranged a division and a spokesperson dedicated to keeping communication with the public. For the ILC construction, a design scheme for promoting and maintaining operational transparency is necessary from both the hardware and software perspectives.

The sixth action is to evaluate the possibility of developing a regional industrial cluster. Accelerator technologies developed in the ILC R&D will be a key to various applications: the medical application includes PET (a medical diagnostic imaging apparatus), drug discovery using synchrotron radiations, and cancer therapy using heavy ion. Other applications include non-destructive inspection (NDI), ion engines, and a technology to reduce a half-life of radioactive nuclear waste. The component technologies developed in the ILC R&D, such as superconductivity, new materials, and ultra-precision machining, can also be used in various industries. Japan's scientific and technological capabilities will be advanced through the formation and development of a cluster of accelerator industries across the nation including small and medium-sized businesses, with a cutting-edge accelerator, the ILC, at its center. The public and private sectors should work together on this subject.

It is desirable that the ILC functions as a common asset of Japanese citizens as well as every participating country/region. The ILC main campus, which may consist of various research facilities, should be designed with openness and comfort in mind. The campus should have public cafeterias which the local residents and the ILC workers, visitors and their families can freely use. International schools and kindergartens, as well as medical facilities should also be

built for the ILC employees and visitors from abroad and their families. If the city is approved as a "Tokku" (a special zone designed to be operated separately from the national rules and regulations), spouses of the visitors from abroad may be able to work as teachers of medical doctors, if they are eligible and qualified for the jobs. "Global City" can be achieved by making the ILC campus "Commons", a public property for people living there.

4. Current agenda and actions to be taken toward the ILC

Environmental Scheme, Evaluation of City Design, and Growth Strategy

The following two actions are currently planned toward Japan's bit for the ILC. The first one is to make a budget request for the fiscal 2012 supplementary budget or for fiscal 2013 budget to examine/assess environmental scheme and city design. A blue-print for the ILC global project should be prepared so that its details can clearly be shown to the public. To realize this, geological surveys and studies of both Kitakami and Sefuri should be carried out, and their suitability and feasibility should be evaluated from a scientific perspective.

The other one is to make an accelerator-based growth strategy, in which accelerator technology is its core technology. It has been estimated that the applications, from medical treatments and drug discovery to microelectronics fabrication and non-destructive inspection, will create an economic impact that will amount to hundreds of trillion yen. The application is further extending to a novel area such as the technology to reduce the half-life of radioactive nuclear wastes. Through the ILC bid, Japan will be able to maintain the core technology developed with the cutting-edge technology. The public and private sectors should make an all-out effort to develop a strategy and plan to accelerate Japan's growth taking full advantage of Japan's possible bit for the ILC project.

Appendix

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