Second Term Medium-range Industrial Cluster Plan

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Regional Economic and Industrial Policy Group
Ministry of Economy, Trade and Industry

As international competition is intensifying, it is important in order for industries to survive in every part of Japan that each of the regions should exploit its own industrial resources to establish innovations and create new business and industries, and that the innovations should spread in a chain all through Japan. It is, in turn, essential in order for the regions to develop self-reliant economies.

For this purpose, it is important that local small and medium enterprises, universities, and public institutions should leave behind conventional one-sided vertical relationships, or situations where they stand side by side geographically, but are indifferent to one another should be left behind; that, instead, they should form horizontal networks that spread like webs, use their intellectual and business resources together, and promote partnership between the enterprises, universities and government agencies and between the businesses in order to develop business environment where new businesses can be created one after another; and that, as a result, they should pursue conditions where industries are agglomerated in broader areas with those with comparative advantage as a core (the conditions hereinafter referred to as "industrial cluster").

From such a viewpoint, the Ministry of Economy, Trade and Industry (METI) has established, and is carrying out, the Industrial Cluster Plan, whose first term started in Fiscal 2001 and ended in Fiscal 2005, to form new industrial clusters all through Japan. This plan, unlike conventional programs similar to this, where the central government’s decisions are automatically applied to local communities, has developed the bottom-up approach in which staff of METI's regional Bureaus of Economy, Trade and Industry (Regional Bureau)*, located in each of the regional blocs, visit companies and universities to grasp current situations of the region and to form networks between industry, academia and government.

The initiatives of the Regional Bureaus have resulted in 19 projects in total intended to form industrial clusters for IT, bioengineering, environment technology, and manufacturing. The projects have got started with participants of around 6,100 companies and 250 universities in total in Japan, and through the schemes networks have been established for partnership between industrial and academic communities, between businesses, and between different industries, and specific activities have been carried out.

Now that the plan moves from the first to the second term, assessments have been made of what have been done through the first stage, and industrial resources of regions have been reviewed so that individual industrial cluster plans that each Regional Bureau should carry out can be modified, reconsider, and reorganized or integrated. Under the new industrial cluster plan, Second Term Medium-range Plan (FY 2006 through FY 2010) the reorganized 17 projects are carried out to form more networks and develop environment where clusters function to create new businesses and industries in regions.

* The Industrial Cluster Plan is carried out by the following ten regional branches of METI: Hokkaido, Tohoku, Kanto, Chubu, Kinki, Chugoku, Shikoku, and Kyushu Regional Bureau, Hokuriku Branch of Electricity and Gas Department of Chubu Regional Bureau, and Economy and Industry Department of Okinawa General Bureau.

I Targets of the Industrial Cluster Plan

1. Objective and missions of the Industrial Cluster Plan

In order to strengthen global competitiveness of Japan and help local economies get more active, the Industrial Cluster Plan is carried out with the objective of having businesses and universities form in regions all through Japan broad-area networks for partnership between businesses, universities and government agencies, between businesses, and between different industries, and having the networks, which allow participants to use their intellectual and other resources together, achieve conditions where new industries and businesses are created (the conditions to be known as industrial clusters).

The Ministry of Economy, Trade and Industry (METI), so as to attain the objective, carries out the missions stated below.

(1) Development of business environment to promote innovation

In order to promote innovative activities of businesses, universities, and government agencies for creating new businesses, network systems are developed for broad-area partnership between them, promotions are carried out to attract more users for support systems on launching business, new business development, business collaboration and management innovation, and other improvements are made in business environment.

(2) Creation of new businesses in accordance with national strategies

As for the new businesses designated in the "Strategy for Creation of New Industries (Nakagawa Report) or other plans as important fields for national strategy, their germinations are found and developed in regions, and support is provided so that they will take root in regions to be globally competitive.

(3) Synergistic effects with local industry promotion

Collaboration with local industry promotion policy led mainly by the region aiming for independence of local economy is effective for the creation of new business and new industry. It also contributes to local industry promotion and brings about a greater synergy between the region and the central government.

2. Basic policies of the Industrial Cluster Plan

(1) Respect for the priority of field

Polices have often been carried out uniformly thought Japan, and their management centralized. The management style is transformed, and policies are implemented principally by those working at fields. That is, the priority of field is respected. Specifically, as much discretion as possible is secured for Regional Bureaus and other agencies that play central roles to carry out industrial policies METI is responsible for.

Especially, when staff of Regional Bureaus or other agencies visit or contact companies, universities or others and collect information about actual conditions of industries, their needs for policies, their evaluation of policies, and the like, the primary data is given

higher value. Initiatives of Regional Bureaus are given as much respect as possible in designing, planning and implementing polices for industrial clusters.

For that purpose, when industrial cluster projects are adopted, modified, or abolished, priority is principally given to Regional Bureaus' judgment while Regional Economic and Industrial Policy Group develops policy frameworks and packages to carry out the projects.

(2) Strategic use of policies and measures

For measures designed to support partnership between businesses and universities, that between different industries, and creation of new businesses, several ministries, departments and bureaus are responsible for, and carry out, their systems and tools from their own points of view. In consideration of the fact, industrial cluster projects are carried out to secure unique tools for constructing core networks, in principle. When other tools are needed to support research development, partnership between businesses, development of marketing channels, entrepreneurs, human resource development and others, policies and measures of other ministries, departments, bureaus and organizations are applied strategically.

Especially, as METI's policy tools are implemented more intensively by Regional Bureaus, the operational units for carrying out industrial cluster projects should have central roles in applying relevant policies and measures with a view to constructing industrial clusters. Regional Bureaus also take the initiative in having local organizations of independent administrative agencies work in cooperation to form industrial clusters.

3. Ultimate target of industrial clusters

Cases of other countries show that full-scale industrial clusters that help constantly establish innovations can be formed only after a long period of time with a lot of efforts made by those related. On the basis of the fact, under the industrial cluster plan, policies and measures are implemented with a long-term point of view, for decades. The ultimate target is to form industrial clusters that have properties stated below:

(1) Chain reaction of innovations

In forming an industrial cluster, a wide variety of entities, including businesses, universities, research and educational institutions, industry assistance organizations, and government agencies, such as Regional Bureaus and local governments, meet to consider and design, led by core persons and groups, strategies and scenarios for local industries. Through the process, they come to understand what problems they share in the region.

At the same time, as people of the companies, institutions, organizations, and agencies frequently meet and talk face to face, they form a “network where each face is visible,” or a human network, that is, a group of people in a geographically and mentally close relationship based on their personal confidence in one another. Through the network, they begin to exchange information and work together for projects. The network generates a core, or a base. Several cores/bases merge to form a wider-area network,

which eventually evolves to be an industrial cluster.

In the industrial cluster, with such activities as foundations, knowledge and other resources owned by component entities, such as technologies, know-how, expertise, and information, are exchanged among the entities freely on the flexible, horizontal network set up all through the cluster, and the knowledge and resources produce fusion reactions. When cooperation is established with industries out of the cluster and new resources are introduced from them, an intellectual chain between different industries causes synergy effects, which in turn accelerate further innovations.

Such activities to from an industrial cluster in a region arouse a wave of innovations, which reaches another region and stimulates its cluster, whose innovation wave in turn prompts another to make further innovations. As waves of innovations spread all through Japan, more innovations are made nationwide. It is one of the purposes of the Industrial Cluster Plan.

(2) Optimization of industries and strengthening of their tolerance to changing environment

Development of industrial clusters and innovations established through the development make existing, inflexible agglomerations of industries more dynamic their human resources, technologies, and capital more fluidity. As for business management, companies focus on core businesses and form partnerships with others for the cores, while outsourcing non-cores and reorganizing inefficient divisions. Through the restructuring and other efforts, companies repeatedly streamline their organizations, realign them to make them more efficient, and form and dissolve quasi-organization relations with other companies.

Such constant changes in and development of industrial organizations optimize industrial structures in regions, and make their fundamentals so strong that they will be able to make quick and flexible responses to changing business conditions. That helps industries in the regions gain competitiveness advantages in the global market. Such activities, carried out all through Japan, optimize its industries as a whole, and make them more tolerant of changing environment. To support the activities is another purpose of the Industrial Cluster Plan.

(3) Brand-building for accelerating formation of international clusters or enhancing their quality.

A “network where each face is visible,” or a network of people connected through their confidence in and cooperation with one another, catalyzes greater centripetal force in the region, which attracts groups of companies engaged in certain industries that are linked together, those of universities, research institutions and experts, and other players. They form a kind of base, and it is given more exposure.

When regional cooperation activities between businesses, universities and government agencies, between businesses, and between different industries get widely known through media reports or when goods produced or services provided acquire a certain level of reputation and are reported in and out of Japan, the industrial cluster of the region gets much better known and recognized immediately in and out of Japan, and the region gets regarded as an international brand.

As the region gets better known, companies there receive more inquiries about their products or services from prospective customers in and out of Japan. When their potential customers acknowledge high quality of their products or services and very low risks of business deals with them they acquire more opportunities of trade and a higher probability of successful business deals. The region, in addition, can attract companies and human resources more successfully.

Once the region gets regarded as an international brand, its industrial cluster acquires more centripetal force, and the force attracts more businesses, people, and investments from all over the world, which then accelerates international agglomeration of industries, or enhance quality of agglomeration. When such industrial clusters are formed all through Japan, it will be one of the global centers of innovation. It is the third purpose of the Industrial Cluster Plan.

II. Achievements of the First Term Industrial Cluster Plan

[Planning period] from April 2001 to March 2006

The first term was placed as the "start-up period of industrial cluster." Through the period, Regional Bureaus, located in each of the regional blocs, worked, in cooperation with private networking assistance organizations and others, as the hub of a network of people from industries, academic communities and government agencies to start up a total of 19 projects in Japan. For the projects, Regional Bureaus tried to find entities that should constitute an industrial cluster, such as local small and medium enterprises (SMEs), universities, and public institutions, and communicate information with one another more actively. Such efforts were made to form "networks where each face is visible," foundations of industrial clusters.

Based on networks stated above, companies that participated in industrial clusters were encouraged to make efforts to create new businesses, and support was provided for those who tried to set up venture businesses with the use of intellectual resources of universities and other organizations. For example, business matching got started, and R&D projects were launched under the partnership between businesses, universities, and government agencies.

1. Formation in regions of networks of businesses, universities and government agencies

(1) Formation of "network where each face is visible"

Staff and coordinators of ten regional branches of METI, such as Regional Bureaus, visited SMEs that operated in regions, venture businesses, large corporations, universities, public research institutions, technical high schools, local governments, industry assistance organizations, Government Industrial Research Institutes, Chambers of Commerce and other business groups, NPOs, and others in order to grasp what policies and measures they needed, and worked to form networks with a view to establishing industrial clusters.

To establish a concrete scheme for activities, private institutions that should play central roles in forming broad-area networks were placed as "project promotion institution." Industrial cluster projects that covered broad areas or a wide range of industries were set up.

During the term of the plan, staff and coordinators of the ten METI branches visited a total of around 18,000 companies (some counted twice or more), and a total of around 6,800 researchers. They also held 1,200 seminars (attended by a total of 200,000 people), 1,400 business persons-researchers meetings (attended by a total of 120,000 people), and 400 business matching sessions (attended by 163,000 people). (All the numbers are approximate ones.)

As a result of such efforts, a total of 19 industrial cluster projects were set up in Japan with broad-area networks for partnership between businesses, universities and government agencies, whose participants were 6,100 SMEs and 250 universities in total in Japan.

(2) Increased participants of networks

In fiscal 2005, with an aim to expand broad-area networks, industry assistance organizations, universities and other organizations that could be new cores in forming industrial clusters in certain regions or industry segments were placed as “base organization”, in addition to existing project promotion institutions, to start providing assistance for the organizations.

As a result, the number of participants, such as SMEs, universities, public assistance organizations, local governments, is increasing more rapidly. In fiscal 2005, 81 organizations were designated as base organization. It is expected that when networks are developed between companies and universities that have participated in the base organizations, more companies and universities will take part in the industrial cluster projects stated above.

(3) Designation of cluster managers

Also in fiscal 2005, people that should play central roles in forming industrial clusters (cluster managers) were designated at project promotion institutions and base organizations to promote the projects efficiently and effectively. In the year, 105 managers were designated in total in Japan, and most of them had experience of working at private businesses.

2. Support for creating new industries and businesses

Once networks were established for partnership between businesses, universities and government agencies, the networks helped them conduct joint researches or other activities with the use of technological seeds and expertise of universities and other institutions and create new industries and businesses. The networks also supported a lot of universities in launching venture businesses.

(1) Creation of new businesses

1) Creation of new businesses

During the three years from fiscal 2001 through fiscal 2003, member companies of “Industrial Cluster Plan” networks launched around 17,000 new businesses in total, including production, processing and marketing of new products, introduction of new processing technologies, and trial manufacturing. As the networks for partnership between businesses, universities and government agencies expanded, another 40,000 or so new businesses are expected to have been created by the end of fiscal 2005, the last year of the first term.

2) Promotion of business matching

Through business matching and technology exchange meetings held and coordinators sent 708 cases of matching were completed, and 145 technologies were transferred.

(2) Promotion of technology development

1) Promotion of R&D projects through partnership between local businesses and universities

Projects were carried out to develop techniques necessary to put technologies into practical use through partnership between local businesses and universities ("Local Regeneration Consortium Program for Research and Development"). For the programs, industrial cluster networks were also applied. Through the programs, 1,130 or so projects were completed from fiscal 1997 to fiscal 2004. Now 125 projects are under way. Around 60% of the projects are conducted by member companies of industrial cluster networks. Among the completed 1,130 projects, around 300, or 27%, have successfully developed techniques into commercial use.

2) Promotion of linkage with intelligent clusters

The Ministry of Education, Culture, Sports, Science and Technology has been conducting the Intellectual Cluster Creation Project since fiscal 2002, and some other ministries also have projects for R&D policies and measures. To provide assistance for new technological seeds found in the projects, the "Program for Cooperation with Other Ministries" has been prepared as a part of the Local Regeneration Consortium Program for Research and Development. The program is designed to give the projects seamless assistance from the time when technological seeds are found through the time when the technologies are put into practical and commercial use. In fiscal 2005, the Consortium Program was carried out with 20 projects that had been adopted as consortium projects that would try to put into practical use technological seeds found in Intellectual Cluster Creation Projects.

3) Promotion of linkage with SMEs assistance policies and measures

Since fiscal 2005, the "Local Manufacturing Innovation Program" has been prepared, as a part of the Local Regeneration Consortium Program for Research and Development, for the purpose of raising the level of basic technologies of SMEs in advanced parts and materials industries. In fiscal 2005, 7 projects were adopted for the Innovation Program. The program has been carried out to strengthen basis of industries that should support foundations of industrial clusters.

The "New Cooperation Support System," launched by the Small and Medium Enterprise Agency in fiscal 2005, has been applied to start providing support for new partnership projects that have been created through industrial cluster networks. Among 170 projects whose plans had been approved for a new partnership support project, 80 were carried out by member companies of industrial cluster networks (as of March 2006).

4) Support for universities in launching venture businesses

Through the process of industrial cluster projects, prospective entrepreneurs in universities who intended to launch venture businesses were asked to participate in industrial cluster networks, and they were provided with support. As a result,

from fiscal 2001 through fiscal 2004 members of the networks had established 133 university ventures in total, or around 20% of the 683 venture companies launched by university researchers during the period.

(3) Funding, development of markets, and business incubation

1) Establishment of the Finance Conferences for Support for Industrial Clusters, and partnership with financial institutions

According to the "Action Program for Enhancing Functions of Relationship Banking", issued by the Financial Services Agency, Finance Conferences for Support for Industrial Clusters were established in 11 blocs in Japan with 447 financial institutions as members, and 69 meetings were held. Among them around 160 financial institutions established "Bridge Financing Systems for Grants Concerning the Industrial Cluster Plan," including Industrial Cluster Support Loans. By September 2005, they had made ¥2,400,000,000 (¥2.4 billion) loans for 125 projects. The Conferences worked to hold business plan presentations, explanatory meetings for policies and measures for industrial clusters, tours for study of public laboratories and research institutions, which people from financial institutions took part in. With the help of the Conferences, several types of funds were set up one after another to support partnership between businesses, universities and government agencies, including the Industrial Cluster Plan, and development of new businesses. As shown in such cases, construction of systems for funding is advancing for partnership with financial institutions.

2) Support for development of new markets in and mutual development programs with foreign countries with the use of Japan External Trade Organization (JETRO)

With the use of JETRO's Local-to-Local Initiatives for Mutual Industrial Development, support was provided for companies that belonged to industrial clusters in their pursuing partnership with organizations in foreign countries. Some of the local-to-local projects are that for Technology Advanced Metropolitan Area (TAMA) and Bennet, Italy, (50 inquiries in fiscal 2004, including consultation about advancement into the Japanese market and request for partnership for marketing), and that for Hiroshima prefecture and Zug, Switzerland, which tried to develop communication between their business-university partnership clusters.

JETRO's Program for Promotion of Advanced Direct Investment in Japan was applied to help a German automaker establish a subsidiary and branch offices in Japan. The assistance was provided as part of international communication activities on the Greater Nagoya Initiatives (GNI).

JETRO's Survey Program for Industrial Clusters International Communication was used to conduct examinations of programs for communication with clusters overseas (dispatch of mission). Among the clusters for which surveys were carried out, Tokai Bio-factory Researchers Group of Tokai Manufacturing Project, present Tokai Biotechnology and Manufacturing Creation Project, still keeps contact with their counterparts in North Carolina, United States. Under the Strategy for Promotion of Hokkaido Super Clusters, a mission of government agencies and private companies, including IT businesses, was dispatched to

Shenyang, China, and some of the participants received concrete offers of business.

3) Cooperation with entrepreneurs support programs (Business Incubation)

Business Incubation (BI) Programs are designed to provide support for university researchers in establishing venture companies and for SMEs in launching new businesses. The programs are carried out at 300 or more facilities, including those constructed for business incubation by the Organization for Small & Medium Enterprises and Regional Innovation. More than 400 Incubation Managers (IM) work to help entrepreneurs on site. Among the BI projects, more than 100 are regarded as especially important industrial cluster program.

III Second Term Medium-range Industrial Cluster Plan

[Planning period]

From April 2006 to March 2011

[Numerical target]

40,000 new businesses in total launched during the the 5-year planning period

[Number of projects]

17 projects [stated below]

* Five projects abolished, three adopted, nine modified, and five continued

[Industries covered (number of projects)]

Fuel cell (3), intelligent household appliances (8), robot (3), contents (4), health care, Welfare, Appliances and Services (9), and Environment, Energy, Appliances and Services (6) Some projects are counted in two or more industries.

(Reference) Number of projects for regions, and major strategic industries of the Strategy for Creation of New Industries which the projects fall within

	Fuel cell	Intelligent household appliances	Robot	Contents	Health care/ Welfare/ Appliances/ Services	Environment / Energy/ Appliances/ Services
Hokkaido (1)	-	-	-	○	○	-
Tohoku (1)	-	○	-	-	(○)	(○)
Kanto (3)	(○)	○	(○)	○	○	-
Chubu (2)	(○)	○	(○)	-	○	(○)
Hokuriku (1)	-	(○)	-	-	○	-
Kinki (3)	(○)	○	(○)	- (○)	○	○
Chugoku (2)	-	○	-	-	(○)	○
Shikoku (1)	-	(○)	-	-	○	-
Kyushu (2)	-	○	-	-	-	○
Okinawa (1)	-	-	-	○		

A parenthesized circle indicates an industry whose project also falls within another industry.

1. Basic principles of the Second Term Medium-range Industrial Cluster Plan

The second term is placed as the “Growth period of industrial cluster.” Through the period, efforts are made, as in the first term, to form “networks where each face is visible,” which generate cores/bases for activities to establish clusters. On the networks, innovations are accelerated, and concrete achievements are pursued in creation of new industries and

businesses. In order to implement policies and measures more effectively and make their effects longer lasting and more far-reaching, cooperation is established between ministries and agencies concerned, projects are carried out not only in Japan but also overseas, project policies and measures are made known more broadly, and project activities are made independent. Such actions are taken with an aim to achieve stronger global competitiveness of Japanese industries and self-reliant development of local economies.

(1) Expansion of networks and obvious success of commercialization

In the first term of the Industrial Cluster Plan, formation of "networks where each face is visible," bases of industrial clusters, was carried out to set up the plan. In the second term, in order to conduct projects for building industrial clusters in regions to the utmost extent in a steady manner assistance is provided, as in the first term, for efforts to form networks, made mainly by "project promotion institutions" and "base organizations," to further expand and develop networks for partnership between businesses, universities, and government agencies, and between businesses, as the networks are taking roots in regions nationwide.

Formation and expansion of networks, and resulting accelerated innovations are pursued to develop environment where "cases of obvious success" are found in, for example, establishment of new businesses, "second" establishment of businesses, initial public offerings, foundation of venture businesses. Especially, in order to achieve success in commercialization, business environment is developed, so that clusters will have incentives to work to develop marketable products, what is called, and to enhance systems for marketing, with specified targets of goods, services and customers.

(2) Linkage with local technology policies

The Second Term Basic Program for Science and Technology (2001 to 2005) gave the "formation of regional clusters" a role to exploit potentials of regions in order to advance and diversify technologies, and another to help regions create innovative technologies and new businesses in order to rejuvenate Japanese economy.

The Third Term Basic Program for Science and Technology (2006 to 2010) also acknowledges, "Development of technologies in local communities helps construct local innovation systems and make the communities active, which will lead to advanced and diversified technologies of Japan as a whole and stronger competitiveness of its innovation systems," and clearly states that long-term efforts should be made to "form regional clusters" in order to achieve "constant creation of innovations."

Accordingly, the Third Term Basic Program for Science and Technology, Strategies for Promotion of Focused Technologies, designed on the basis of the Basic Program, and other basic policies of the government for science and industrial technologies are incorporated into policies and measures prepared for the Industrial Cluster Plan. For the purpose, concrete projects are carried out under the "Technology Cooperation Policies Group" and "Local Technology Cluster", established by the Council for Science and Technology Policy, and cooperation between other ministries and agencies is enhanced. Especially, policies and measures for industrial clusters are carried out with close linkage kept with the "Intellectual Cluster Creation Projects," conducted by the Ministry of Education, Culture, Sports, Science and Technology, and other policies

for promotion of local technologies.

(3) Strengthening of cooperation with policies, ministries, institutions, and local governments

With a view to realizing business seeds found in industrial cluster networks, policies for SMEs and industrial technologies are more actively than ever applied. Cooperative relationships are established with Organization for Small & Medium Enterprises and Regional Innovation, New Energy and Industrial Technology Development Organization (NEDO), and National Institute of Advanced Industrial Science and Technology, and they are, in principle, explicitly regarded as members of industrial cluster formation activities.

At the same time, as industrial clusters are developing, more needs are emerging for collaboration between different segments, such as cooperation between agricultural and manufacturing industries, and between medical and manufacturing industries. So closer cooperation between ministries related and their affiliates are pursued. In addition, as the Industrial Cluster Plan helps local economies and industries get more active and independent, stronger systems are constructed for cooperation and collaboration with local governments for industry support activities and private sectors for new business creation activities in order to multiply effects of the Plan with policies of local governments and others for regional promotion.

(4) Closer communication between clusters, and promotion of international communication

In order to encourage development of industrial clusters in a region, it is important that human resources, technologies and marketing channels the region lacks should be pursued out of the region. When, however, the region combine its strengthens and weaknesses with those of other regions, they all can obtain benefits. Regional Bureaus and cluster managers, therefore, take the initiative in promoting broad area partnership between industrial clusters in Japan.

At the same time, for partnership with clusters overseas, communication between the government and private sectors of Japan and those of other countries is enhanced through diplomatic channels and JETRO. Through the process, when development of markets overseas, business partnership, joint research and development, or investment overseas is needed for business operations, Regional Bureaus and cluster managers support it. Efforts are also made to enhance international communication and make regions in Japan well known in foreign countries and to promote dissemination of technological innovations and partnership for business, both of which are caused, for example, by companies attracted to the regions, in order to enlarge opportunities for business.

In order to make communication closer between clusters and with foreign countries, cluster managers are trained, so that they will work to promote international communication.

(5) Independent operation of industrial cluster projects

As industrial clusters grow, innovations are activated and development of business activities are accelerated in the clusters. Projects, then, must be carried out in a more flexible manner according to stages of the growth.

Now that public sectors are required to transfer to private sectors any tasks they can undertake, a trend often referred to as “from governments to citizens”, it is important that project promotion institutions, which play central roles in forming clusters, should be encouraged to work independently as private organization.

Accordingly, government agencies should decrease direct commitment to project promotion institutions in order to give them more free hands and independency. Rather, they should indirectly support project promotion institutions from a fair and neutral position in obtaining private or competitive funding through partnership between businesses, universities, and government agencies, so that they will be prompted to explore independent sources of funds and get independent financially.

Especially organization structures are strengthened to secure and train business supporters, such as cluster managers, coordinators, who have expertise about business matching and other core expertise for cluster activities, so that companies that take part in industrial clusters will feel projects beneficial to their business and useful to improve customer satisfaction.

(6) Wider dissemination and recognition of the Industrial Cluster Plan

When methods of industrial cluster projects are widespread and voluntary clusters appear nationwide, synergetic effects are generated between them for forming more clusters and further developing them. Industrial cluster policies can be expected, then, to have multiplier effects.

All the available information channels are used to send information about the Industrial Cluster Plan and make industrial clusters better known in and out of Japan. Promotional activities are carried out to have industrial clusters regarded as brand, so that member companies will have more opportunities for business and attract more financial and human resources.

2. Numerical targets of the Second Term Medium-range Plan

As the purpose of the Industrial Cluster Plan is to activate innovations and create new businesses and industries, its numerical targets are set in numbers of new businesses launched.

Because projects differ in industries and regions covered, progress, economic and industrial background, and ideas how to form clusters, each of them has its own numerical targets set according to its characteristics.

(1) Common targets: Number of new businesses launched (total number among member companies)

From fiscal 2006 through fiscal 2010, 40,000 new businesses should be launched in total in Japan.

New businesses launched include: trial manufacturing, production, and marketing of new goods and products, introduction of new processing technologies, and provision of new services.

(2) Numerical targets of the projects (through fiscal 2010)

Name of project	Number of new businesses launched (common targets)	Additional targets
Hokkaido Super Cluster Promotion Strategy II	3,000 businesses in 5 years * To be modified when the next plan is established (in fiscal 2006).	• Sales ¥440 billion (Information industry: ¥400 billion, Biotechnology industry: ¥40 billion) • IPO 15 companies • Sales (information industry) 60 companies sell more than ¥1 billion. • New companies established (biotechnology industry) 15 companies * Targets in the current plan (from fiscal 2004 through fiscal 2006).
Tohoku Manufacturing Corridor	2,400 businesses in 5 years	-
Regional Industries Activation Project	(TAMA) 2,000 in 5 years (Chuo-do) 1,000in 5 years (Tokatsu/Kawaguchi/Tsukuba) 1,000 in 5 years (San/En/Nan/Shin) 2,000 in 5 years (Northern Tokyo Metropolitan Area) 1,500 in 5 years (Keihin) 3,000in 5 years	-
Tokyo Metropolitan Area Information Venture Forum	250 businesses in 5 years	Creation of independent core networks 5 networks in 5 years
Tokyo Metropolis Area Bio-Genome Venture Network	250 businesses in 5 years	-
Tokai Manufacturing Creation Project	5,000 businesses in 5 years	-
Tokai Biotechnology and Manufacturing Creation Project	60 businesses in 5 years	• 30 new companies established in 5 years
Hokuriku Manufacturing Creation Project	1,000 businesses in 5 years	• Sales 3% per year growth in sales of member companies
Kansai Front Runner Project Neo Cluster	8,000 businesses in 5 years	• Cluster cores established 175 cores in 5 years • 25% growth in five years in sales of cluster core companies
Kansai Bio Cluster Project Bio Cluster	1,000 businesses in 5 years	• Cluster cores established 75 cores in 5 years • 25% growth in five years in sales of cluster core companies

Environment Business Kansai Project Green Cluster	1,000 businesses in 5 years	• Number of cluster cores established 100 cores in 5 years • 25% growth in five years in sales of cluster core companies
Next Generation Core Industries Creation Project	3,000 businesses in 5 years	-
Recycling- and Environment-Oriented Society Creation Project	800 businesses in 5 years	-
Shikoku Techno-bridge Plan	2,000 businesses in 5 years	• Second establishment of companies 60 companies in 5 years • IPOs of university venture companies 5 companies in 5 years
Kyushu-area Environment and Recycling Industries Communication Plaza (K-RIP)	1,500 businesses in 5 years	• Businesses launched overseas (transactions with foreign companies, advancement into foreign markets) 20 companies (4 per year) • Companies newly established 25 companies (5 per year)
Kyushu Silicon Cluster Plan	1,500 businesses in 5 years	• Companies newly established 50 companies in 5 years • Global top share companies 10 companies in 5 years • IPOs 10 companies in 5 years
Okinawa-industries Promotion Project	4,500 businesses in 5 years	• Companies established in Okinawa 341 companies in 5 years • Sales Around ¥1 trillion in all the industries related to the project (2010)

3. Reorganization of industrial cluster projects

(1) Reorganization of the first-term industrial cluster projects

Partly because the Fist Term Industrial Cluster Plan focused on finding entities that should form industrial clusters and establishing initial networks, the plan avoided restricting regions and industries it would cover and, rather, contained some projects designed for too wide areas and too large a variety of industries and businesses.

Now that the first term has terminated and the second commenced, review has been conducted on, during the first term, what networks have been formed and how much the projects have been matured. In addition, on the basis of actual conditions of industries, seeds of technologies, needs of industries, potentials of economies and industries, and other current situations in regions, some projects have been abolished, integrated or reorganized, industries covered by projects have been modified, focuses have been placed on some areas, and some other improvements have been made.

After careful examination of the 19 projects Regional Bureaus carried out under the First Term Plan, those listed below have been newly adopted, abolished, integrated, or

reorganized. This has rearranged the 19 projects in the first term into 17 at the beginning of the second term.

Abolished or integrated: 5 projects	
• (Tohoku Regional Bureau)	Information-Life-Future Oriented Manufacturing Industries Project
• (Tohoku Regional Bureau)	Recycling-oriented Society Industries Promotion Project
• (Kinki Regional Bureau)	Active Manufacturing Businesses Support Project
• (Kinki Regional Bureau)	Information Industry Clusters Promotion Project
• (Kinki Regional Bureau)	Kinki Advanced Energy and Environment Promotion Project
Newly adopted: 3 projects	
• (Tohoku Regional Bureau)	Tohoku Manufacturing Corridor
• (Kinki Regional Bureau)	Kansai Front Runner Project: Neo Cluster
• (Kinki Regional Bureau)	Environment Business Kansai Project: Green Cluster
Existing projects reorganized: 1 project	
• (Kanto Regional Bureau)	The whole area of Kanto-Ko-Shin-Etsu covered, and the areas of Keihin and Tsukuba added.
Focuses placed on specific industries under existing projects: 3 projects	
• (Chubu Regional Bureau)	Focusing mainly on robot, intelligent household appliances, fuel cell, and new ceramics
• (Hokuriku Regional Bureau)	Focusing mainly on health care, medical and welfare, and manufacturing, such as nano-processing, and composite materials
• (Shikoku Regional Bureau)	Focusing on the two industries of manufacturing and health care/biotechnology
Range of industries expanded under existing projects: 5 projects	
• (Kanto Regional Bureau: information)	fusion of IT and other industries
• (Kinki Regional Bureau: bio)	bio-process, bio-food and others added
• (Chugoku Regional Bureau: next generation)	electric device, bio, FDP, and others added
• (Chugoku Regional Bureau: environment)	energy industry added
• (Okinawa General Bureau)	health resort and other services added.
Existing projects to be continued: 5 projects	
• (Hokkaido Regional Bureau)	Strategy II for Promotion of Hokkaido Super Clusters
• (Kanto Regional Bureau)	Tokyo Metropolis Area Bio-Genome Venture Network
• (Chubu Regional Bureau)	Tokai Biotechnology and Manufacturing Creation Project
• (Kyushu Regional Bureau)	Kyushu-area Environment and Recycling Industries Communication Plaza (K-RIP)
• (Kyushu Regional Bureau)	Kyushu Silicon Cluster Plan

(2) Flexible adoption, modification, and abolishment of projects during the second term of the plan

From the second term, the cycle of PDCA is fully introduced to change and modify the plan in a flexible manner during the period of the plan according to progress of projects and changes in economic and industrial trends against which the plan has been designed.

Specifically, when a project that is not designated as industrial cluster project at the beginning of the Second Term Plan turns out to be eligible for that on the basis of what

it has achieved as regional cluster project, it will be adopted as a new industrial cluster project in a flexible manner even during the period of the second term plan.

At the same time, projects will be adopted, abolished, reorganized or integrated, or focuses will be placed on specific industries in projects when necessary according to progress and achievements of projects, or evaluation of projects by member companies and external experts.

4. Policies to implement the Industrial Cluster Plan

Support for creating industrial clusters contains two factors as stated below. The Industrial Cluster Plan focuses on one of them, referred to as "b)" below, and polices and measures stated below in 1), 2) and 3) are carried out in coordination with other policies and measures related.

a) Establishment and supplement of components of industrial clusters (establishment of networking assistance organizations and institutions fostering partnership between businesses and universities, support for local businesses for growth, development of human resources, such as business supporters).

b) Encouragement of interactions between the components to establish new businesses (formation of networks between businesses, universities and government agencies, promotion of partnership between businesses, universities and government agencies for R&D and commercialization projects, support for partnership between different industries, business matching with companies out of regions, etc.)

(1) Support for forming networks

Funds and human resources are supplied to organizations for promoting broad-area clusters in order to develop "networks where each face is visible," composed of businesses, universities and government agencies, which generate cores of clusters. Support is also provided for base organizations useful to form clusters and major industry assistance organizations to encourage their activities and expand the networks.

(2) Support for components in carrying out programs in cooperation

When components carry out concrete programs in cooperation, they can receive support for R&D, development of new markets, establishment of new businesses, incubation, partnership with different industries, reform of business management, international communication, and others. For the support, budgets for SMEs assistance and science and technology promotion, and other schemes are applied in a broad and strategic manner.

(3) Promotion of cooperation with organizations related

Cooperative relations are constructed with local financial institutions, distributors, including specialty and ordinary wholesalers, large manufacturers, educational institutions, such as schools, and other organizations concerned because their support is necessary for clusters to raise funds, explore new markets, develop human resources and carry out other programs.

5. Specific items of support to be provided for the present

According to what is specified above in section 4, such items as detailed below are designated as specific items of support to be provided for the present, and concrete policies and measures are conducted. The items are composed of support for forming networks, support for R&D, developing new markets, and raising funds, human resource development, cooperation with business incubation, local governments' application of each other's polices and measures.

As stated in the basic policies of the Industrial Cluster Plan, policies and measure related are strategically applied as tools for the support.

(1) Support for forming networks

1) Support for project promotion and base organizations for their programs

Among private institutions that have filed application, those adopted are designated as “project promotion organizations”, and they are provided with grants for their programs, such as workshop, exhibition, business matching, symposium, dispatch of experts.

In addition, when an institution, such as an industry assistance organization and a university, files an application and is selected as a core that should take the initiative in partnership between businesses, universities, and government agencies to form industrial clusters in a certain district or for a certain industry, it is designated as “base organization”, and provided with grants, as project promotion organizations.

People that should take the initiative in forming industrial clusters are designated at project promotion and base organizations as cluster manager. They are responsible for constructing and managing systems that have information about new business needs or others shared among cluster members once it reaches the cluster. They must work to secure partners needed to create new businesses. They are also coordinators of the business-researcher partnership projects, or one-stop points of contact to and from outsiders.

2) Development of a national organization for forming clusters

In early fiscal 2006, real and virtual councils are set up, composed of cluster managers and sub managers, to distribute information among clusters, and strengthen their cooperation, as well as grasp quickly what is needed on site, and take actions. After observing how the councils work, a conference is set up, composed of project promotion organizations, to develop a national organization for forming industrial clusters.

(2) Support for sophisticating networks

1) Promotion of cluster linkage

Support is provided in constructing partnership with regions in and out of Japan to supply each other what one has but the other lacks, such as information, technologies, human resources, business players, when they are needed to carry out industrial cluster projects. The partnership must be designed in consideration of markets and purchasers targeted (business to business or business to consumer), R&D, manufacturing and marketing processes, specifications and design of goods, intellectual properties, and funding, and in a manner that all partners will gain benefits (win-win).

Especially, to initiate partnerships with Japanese and foreign clusters, Regional Bureaus act as an intermediary when Japanese clusters attend international exhibitions, business shows, and academic meetings, and provide them with assistance. Support programs of JETRO are also applied for them. In addition, JETRO's networks overseas are used to form cooperative relation with counterparts there to provide and receive information about products and technologies and strengthen partnerships with them.

To help clusters establish linkages with counterparts overseas and act in international communities, efforts are made for cluster assistance organizations to develop human resources who work to promote internationalization of clusters.

2) Construction of networks to support creation of new businesses

To provide new businesses with comprehensive and careful assistance from the earliest stage, support networks are formed with the use of policies and measures for SMEs assistance, intellectual property and others. The assistance is given for a series of operations necessary to set up a business: developing of marketing strategies and business plans after defining target customers and their needs; designing of products and services; conducting of research and development necessary to develop products; protecting of intellectual properties, making plans of raw materials procurement, production lines and service supply systems; considering of distribution, marketing channels and pricing, and examining of funding sources.

Especially, potential purchasers and those who know well how to develop new markets should be involved in technology development and research from the early stage, and other necessary efforts should be made in order to find how to construct systems for marketing when products are put on the market in future.

(3) Support for research and development

By means of policies and measures for local technologies are applied, R&D projects to be conducted under partnerships between businesses and universities formed on networks of business-university clusters are adopted as consignment project or provided with grants as support project, when applications are filed and they are approved as such project.

Especially, in order to make projects commercially successful, focus is placed on a feasibility study when a decision is made on whether a project should be adopted. When a company has produced a certain level of achievements in R&D, it is given further support for commercialization of its products to help it put them on the market.

With the use of policies and measures for promotion of industrial technologies, science and technologies, and other R&D, consistent support is provided from the time when technological seeds are found through the time when the technologies are put into practical and commercial use. Especially when technological seeds are found through the Intellectual Cluster Creation Project or other local science and technology promotion policies, the application of them is promoted.

(4) Support for development of new markets

Greater efforts are made to strengthen partnerships with trading companies and develop new markets so that more goods and services developed will be sold. In order to promote partnerships with foreign companies, policies and measures for promotion of international trade are applied in order to find business players overseas needed to conduct studies of foreign markets and establish sales partnerships overseas, and in order to provide support for those attending exhibitions and business matching meetings held overseas. When an industrial cluster tries to sell goods or services that seem to satisfy needs especially in foreign markets, it is assisted to have active interactions with clusters abroad.

(5) Support for funding

As in the first term, according to the “Action Program for Enhancing Functions of Relationship Banking”, issued by the Financial Services Agency, “Conferences for Industrial Cluster Support Finance” are held to encourage local financial institutions to provide support for programs of business-university partnerships and new businesses, enhance matching between financial institutions and industrial clusters, and help financial industries improve abilities to assess technologies and new businesses.

Local venture funds established with the use of public funds are applied to support venture companies for their growth, and public loan systems for SMEs' management innovation, establishment of new enterprises, and partnerships between companies are used to help SMEs to develop new businesses.

(6) Human resource development

“Business supporters” are recruited and honored as they play central roles in the Industrial Cluster Plan, establishment of new businesses, and other activities. Networks of such business supporters and know-how to establish new businesses are incorporated into industrial cluster projects. Such efforts are made to raise the level of activities carried out by coordinators and cluster managers, major players of industrial cluster activities.

In cooperation between universities and businesses, the Program for Developing Core Human Resources for Manufacturing and other projects are carried out, so that

universities will send their researchers to factories to have them learn manufacturing.

(7) Cooperation with business incubation

In order to support entrepreneurs in establishing new businesses, it is still effective get them together closely, in a physical sense, in a place, in coordination with programs for support of research and development, development of new markets, funding, and others. This is because an incubator manager can support more entrepreneurs and because they can share facilities and instruments to cut expenses. It is also expected that when entrepreneurs and former member companies, as well as universities and laboratories, if they are in the neighborhood, form and strengthen a network, with incubator managers as its core, or through their daily communication, the network helps them exchange information and transfer know-how among them, both in tangible and intangible ways, and make positive effects on those trying to establish new businesses. Networks of the kind should be incorporated into clusters as their core/base.

(8) Mutual application between local governments of their policies and measures

When local governments' policies and measures for industry promotion can be applied in carrying out some parts of a project, for example, deciding a range of areas and focused industries,networks of 17 industrial cluster national projects are used to support the local governments in carrying out their programs for research and development, assistance of establishing new businesses,and attraction of companies. At the same time, local governments use their tax incentives, financial support measures, organizations, and facilities to form industrial clusters.

Especially, when local governments carry out policies and measures to form bases for industrial clusters in regions, necessary support is provided with a view to establishing new industries, and assistance is also given to them because the policies are part of efforts to form networks for industrial clusters.

Especially for programs for interchange with clusters overseas, local governments that have been working to establish close cooperation with industrial cluster projects are asked to develop communication with counterparts overseas by, for example, having summit meetings between governors or mayors, to help industrial clusters act globally.

IV. Introduction of a policy evaluation and management system (PDCA cycle)

1. Necessity of introduction of the PDCA cycle

As clearly shown in cases overseas, it takes long-term efforts, around 20 years, for form industrial clusters.

In consideration of the fact, for the second term of the Plan, a system for policy assessment and management is introduced. The system is based on the cycle of Plan-Do-Check-Action (PDCA), which helps respond properly to changing economic and industrial trends during the period of the Plan, and carry out projects flexibly during the period by, for example, adopting efficient and effective policies and measures according to progress and achievements of projects and making intensive investment to industries that have stronger global competitiveness or are expected to accomplish better results. The PDCA system is flexible, and efficient enough for government agencies to manage.

2. PDCA cycle management method

(1) Assessment method

1) Assessment of individual project plans

Every fiscal year, each of the Regional Bureaus assesses each of the projects before the beginning of the year on the basis of its annual plan made by the promotion or base organization for the year. After the end of the year, on the basis of the very plan, the Bureau also conducts assessment of how the project has been carried out and whether its numerical targets, such as the number of new businesses established, have been completed, and publishes the assessment results.

2) Assessment of the projects as a whole

Every fiscal year, the Regional Economic and Industrial Policy Group of the Ministry of Economy, Trade and Industry, assesses industrial cluster policies as a whole on the basis of the results of the before-and-after assessment of individual project plans and results of monitoring researches conducted to find, among others, what effects the projects have made on participant companies and how much they have been satisfied with the projects, and publishes the assessment results.

3) Assessment of the overall total plan

On the basis of assessments carried out each year for industrial cluster plans, an ex-ante assessment is carried out at the first year of the Plan, an intermediate assessment at the third year for the first two years of the plan, and an ex-post assessment at the fifth year for the preceding four years.

The assessments are conducted to make related parties commonly aware of purposes of projects, and have plans reviewed in a flexible manner mainly on the basis of achievements of the projects and policies implemented for strategic management of the projects.

(2) Introduction of external assessment

For the assessments stated above, an external assessment commission is established with outsider experts and professionals and their opinions are referred to when projects are evaluated in order to conduct objective and fair assessments, make constant improvements of cluster policies, and encourage clusters reform themselves.

(3) Way to recognize achievements, and indicators for assessment

1) Way to recognize achievements

○ Project follow-up surveys (twice a year)

The surveys are carried out in terms of individual projects to find what project promotion and base organizations and Regional Bureaus have achieved for a project, and to use the achievements as indicators for ex-post assessments of the project and distribution of budgets to it.

Conducted in: once from April to May (to grasp indicators for ex-post assessments)
once from December to January (to grasp indicators for budget distribution)

○ Monitoring survey (once a year)

To carry out annual assessments of the projects as a whole, and ex-ante, intermediate, and post-ante assessments of the overall plan, member companies and researchers of projects are asked, through questionnaires or others, mainly about what they have done for projects, what effects have been made, and how mach they have been satisfied with the projects, and actual conditions industrial cluster policies in general are surveyed.

Conducted in: once from June to October

2) Indicators for assessment

In order to measure effects of industrial cluster policies and measures on various aspects of cluster formation, such as flow and stock, and final achievements, such indicators are used as effects of project participation, those of policy satisfaction, those of improved environment for creation of innovations, achievements of innovation, and economic results. The measurement is carried out with focus on what achievements projects have produced and how much customers have been satisfied.

○ Indicators for project follow-up surveys

Number of: visits to companies and researchers; seminars held and participants; exchange meetings and participants; business matching sessions (sessions held, participants, and person-to-person consultations); successful matching;

technologies transferred; new businesses started; new companies and venture companies established; second establishments of business; IPOs; etc.

○ Indicators for monitoring surveys

Effects of project participation (those of partnerships, R&D, new businesses, companies establishment, and economic effects on sales, profits and employees), and degree of use, satisfaction and expectation of projects

(4) Reflection of assessment results

On the basis of assessment results reached in consideration of opinions of the commission, the Plan is reviewed in a quick and flexible manner, so that projects will be accelerated, reorganized or integrated, abolished, that focuses will be placed some of them, or that their targets are modified.

The assessment results are respected when budges are allocated to projects, so that those related to industrial cluster policies will be motivated and that a sense of solidarity will be aroused, as well as that cluster formation programs will be carried out more efficiently and effectively. More financial sources are distributed to more efficient and effective projects.