3.1. Climate Policy Project

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Climate Change Project

In the Second Phase of the strategic research, the aspect of policy proposals will be reinforced in the Climate Change Project. Thus, the name of the research project will be changed to Climate Policy Project. The following shown in Project Theme are the plans for the strategic research in the NEW phase. We plan to focus on designing and proposing both international and domestic policy measures, synchronizing with the development of the international negotiations in the field of climate change. (See Project Themes a, b, c.) We will contribute to policy-making processes through governmental committees, international meetings and other channels. The Project Theme d will be carried out taking the advantage of the IPCC inventory technical support unit (TSU) located in IGES. Reliable research will be conducted in key technologies. The Project Themes e and f are set as research topics that should have foundations laid in the Second Phase, with a view to future long-term needs of the international community.

1. Project Themes

Our strategic research will aim at providing concrete proposals for policy makers. The research will be carried out mainly to contribute to the design of international policy measures for climate change mitigation. The specific research themes are shown below:

a. Effective domestic policy measures which contribute to the goals of the Kyoto Protocol

- Designing the best policy mix for the observation of the Kyoto Protocol in Japan
- Comparative study on the differences among the policies of developed countries
- Designing effective international mechanisms, such as emissions trading, in order to have international consistency with national policies

b. Effective measures for climate change mitigation from the aspect of industry and business sectors, and technology

- Effects of domestic policy decisions on industries
- What is the possibility of long-term technology innovation (IT and its impact, Factor 4-10, new energy, etc.)? Joint research with Wuppertal Institute will be possible.
- What kind of industrial change will be necessary to enhance technology innovation for climate change mitigation? Also, what kinds of policy means are effective for promoting such industrial change?

- Examination on GHG accounting in business sectors (joint research with WRI, if possible)

The above research will be carried out in cooperation with other IGES research projects, as a part of research activities by IGES as a whole.

c. Designing effective mechanisms for enhancing international cooperation among developed and developing countries, especially in the Asian region

- How can effective operation of the Japanese assistance funds be conducted? Environmental programs are usually conducted on the demand basis. How can the programs be given priority within developing countries?
- How will the energy policies of Asian countries be affected by implementation of the CDM in the Asian region?
- Seek possibilities of joint projects among Japan, Korea, China and Russia. Examine the possible effects that these projects may have in the policy making of Asian countries.
- What kinds of effects will the domestic policies of developed countries have on developing countries?
- Effective design of the CDM which will contribute to sustainable development of developing countries. Research on effective fund management will be conducted through comparative analysis of ODA and private investment. This will be carried out in cooperation with the Urban Environmental Management project, focused on China.
- What kind of a CDM design would be preferable for developing countries? How can the CDM projects be combined with the developing country's domestic policy measures? Will the leading examples of developed countries be beneficial for developing countries?
- Seek effective design of the cooperative mechanisms, considering the political situation of each Asian country, as well as the background of international political confrontation.
- Conduct some fieldwork with several actual cases, in order to establish model cases in the Asian region (China/India/Indonesia?)

d. Development of GHG emissions/sink inventory methods

- Integrating the studies on the accurate measurement systems of GHG emissions in the Asian region in order to formulate into a database.
- How well is the effect of carbon sinks grasped in the Asian region? (scope/sectors/accuracy)
- What kind of effects will the inventory measurement method have in designing the international policy? What is the desirable method of measurement that avoids international political confrontation?

While we proceed with the above-mentioned research themes, we shall look for broader applications of research themes, which are suggested as follows:

e. How should the vulnerability to climate change be assessed in the Asian region? What kinds of measures for adaptation are desirable?

- Identification of the areas vulnerable to climate change in the Asian region
- Framing the idea of adaptation and making proposals for the criteria of the investment as an overriding priority. (In Japan, the National Institute for Environmental Studies has already processed a study to define the vulnerable areas in Asia. IGES will conduct assessment research of the adaptation issue in cooperation with NIES.)

f. What kind of long-term scenarios could be drawn up for a society moving toward climate change mitigation? In order to realize such a society, what kinds of leading measurements should be established?

g. Seek desirable governance for climate change mitigation policies from the aspect of carbon cycle management including the issues of sink and international politics.

2. Background (Research Needs)

The issue of climate change will remain one of the major and urgent tasks of environmental policy. The most immediate task of the FCCC is to continue negotiation toward the first commitment period that is 2008-2012, in order to realize the enforcement of the Kyoto Protocol at an early stage. At COP 6 bis planned in May or July 2001, the actual rules are supposed to be designed. There are still a lot of problems remaining, however, such as the issue of ratification by the U.S. Therefore, the entire framework of international cooperative mechanisms could not be decided at COP 6. Discussions regarding the detailed rules of the international cooperation still continue after COP 6.

National debate on emissions reduction policies, including those in local communities, is already ongoing in each country. The controversy lies in the balance between the economic policy for the industrial sector and forecasting of the international agreement made at COP 6. The discussions on the international framework convention at COP 6 will included the issue of consistency between domestic reduction efforts and international measures. As the domestic reduction policies become more concrete, units for accounting for carbon emissions and sinks will be set. As a result, it will be essential for business sectors to conduct management based on the idea of a carbon economy.

While it is necessary to establish the mitigation framework among developed countries, the effort to encourage developing countries to participate is also an important task of the negotiations at FCCC. Now only a few developing countries are showing their intention to participation. It is necessary to promote concrete plans for technology transfer through mechanisms such as CDM, in order to gain full-scale participation. As the effects of climate change grow more serious, the effects from developing countries will become more evident. Ongoing re-examination of Japan's ODA will affect the developing countries' policy measures for global warming. Discussion on the allocation method of CDM funds toward adaptation measures should also make progress.

The IPCC, supporting the FCCC from the scientific and technological aspects, produced reports in 2000, on the long-term emissions scenario and on the issue of sinks, providing grounds for the discussions under the FCCC. The Conclusion of the Third Assessment Report of IPCC that is to be produced by autumn 2001 shall greatly affect target setting after the first commitment period.

IGES, being not only the sole comprehensive research institute for global environmental policies in Japan/Asia, but also being the host institute of TSU/IPCC for Inventory, is best suited and have a special niche for carrying out research on the above-mentioned research themes. It would be wise to utilize our comparative advantage, even among international researchers for climate change mitigation policies, in researching these topics.

3. Objectives (Policy Relevance and Practicality)

As for the mitigation measures for climate change, a mid-term time line has already been set. FCCC is in the center of coordinating international policies, and as for domestic measures, governmental officials in each country are now refining their ideas. Each research theme mentioned in 2. above is in response to the discussions regarding the policy measures at FCCC, both internationally and domestically.

a. **Domestic Policy** - While the planning of the framework for international cooperation is continuing, all countries concerned have started making preparations for domestic policy measures. It will be quite appropriate to study the Japanese policy means as an example of domestic measures of developed countries, taking into account the position of Japan in the international community. The design of the Japanese policy measures will be a key issue when it comes to designing the international policy measures for climate change mitigation, but since all of the measures of the developed countries will affect each other, comparative studies will be beneficial. The measures of developed countries will also greatly affect developing countries.
b. **Technological Innovation** - One of the urgent tasks of the developed countries is to make concrete plans for stimulating the technology innovation in industry, in order to achieve the commitment targets set in the Kyoto Protocol. Cooperation among developed countries on this matter will be very effective. Especially, it is necessary to forecast the impact of industrial transformation emerging from the so-called IT revolution. Also, as people will start to act on the idea of the carbon economy in various entities such as private companies, local governments and households, a universal measuring system for this will become necessary.
c. **Cooperation among Asian Countries-** Participation by developing countries is indispensable to achieve long-term emissions reduction. It will be necessary for us to actively make proposals on the mechanisms to developed countries, in order to support developing countries. We think Japan should take the initiative in presenting concrete proposals to Asian countries to achieve cooperation within the region, where very rapid development is expected to occur.
d. **GHG Inventory** - Among the scientific data that will be the basis for the negotiations, GHG

emissions/sink inventories should be systematized with the greatest attention. Its measuring methods are not well established, however, so greater accumulation of relevant research is indispensable.

e. Adaptation - It will be important to make guidelines for the adaptation method of vulnerability assessment in developing countries in cooperation with UNEP, etc., taking into account the realization of use of CDM funds in COP decision as well as the progress of actual climate change.

f. Long term Scenario - In addition to the above, it will be necessary to prepare a long-term social scenario for realizing emissions reduction. It is also necessary to conduct research on the policies for environmental security, considering international politics, including international trade and power balance.

4. Target Groups (Expected Policy Impacts on Stakeholders)

4.1 Overall target groups and necessary channels

- Looking at the range of our research themes, the main target groups of our project in the Second Phase continues to be **governments**, both internationally and domestically.
- As for the international aspect, giving impact on the negotiation process by making proposals at meetings related to FCCC process, as well as by participating in the activities of the IPCC is indispensable.
- As for domestic policy measures, it is important to have an impact on **policy makers**, by providing proposals/opinions at Councils or at advisory committees where the national policy plans substantially made. As the plans for domestic policy measures become specific, it will be necessary to strengthen influence on the **industrial sector**. To reach a national consensus for emissions reductions, it is essential to provide **citizens, including NGOs**, the academic sector and local communities with relevant information, in order to enhance the discussion.
- It would be beneficial to gain a high reputation in the **academic society** of the relevant fields, in order to strengthen the value and impact of our research results.

4.2 Specific target groups and necessary channels

Proposals for domestic policy measures are targeted:

- **The Japanese government** through participation in governmental councils and committees.
- **Industrial sector** for disseminating proposals by information exchange with the sector.
- **All levels of citizens** to encourage them to participate in examination of policy measures, by holding IGES Brainstorming Forums or IGES Open Forums for Global Warming Abatement.
- Meetings relevant to the **COP/SBSTA**, in order to provide Japanese opinions regarding an international cooperative mechanism that is consistent with domestic policy measures.

a. Methods to promote climate change mitigation policies for the industrial and business sectors and technology are targeted:

- **Industrial and business sectors** where we hope to guide their activities. From the aspect of providing policy proposals, **the government** will be the target group. It is possible to promote

joint research with the business sector.

b. International cooperative mechanisms among the developed and developing countries are targeted :

- **Policy-makers for the climate change issue**, especially in the **developing countries in the Asian region.** Therefore, we will try to disseminate our proposals to each national government, not only through participation in relevant workshops such as ECO ASIA, the Asia-Pacific Seminars and UNU Seminars, but also by conducting joint research with other countries such as China and India.
- The use of Japanese funds will be one of the essential points. From this aspect, our target groups will be the **Japanese government (ODA), international Aid agencies and governmental institutions in hosting countries.**

c. Research on inventory of the GHG emissions and sinks should be targeted:

- **FCCC national communication** by providing our research findings for the activities of the IPCC inventory technical task force unit, located in IGES. Our target groups are **the IPCC and the FCCC** secretariat, as well as **the relevant international organizations such as GEF.**
- By holding workshops and seminars, as well as by securing funds from GEF or ODA, we will lay a foundation for capacity building to enhance research activities **with researchers from the Asia-Pacific region.**

d. Vulnerability assessment of the Asian region and development of adaptation measures

- It will be important to share our opinions **with developing countries, international institutions such as UNEP and international aid mechanisms such as GEF**, etc., as they are deeply related to CDM funds.

5. Methodology/Schedule

5.1 Research method

A specific research method will be designated in accordance with each research theme.

a. Proposals for domestic policy measures

- Research on international measures and domestic policy means of other countries for formulating proposals
- Conduct comparative research on domestic policy measures in cooperation with other research institutes in developed countries.
- Continue the IGES Open Forum for Global Warming Abatement to deal with controversial points.
- Organize study groups with other research institutes as needed.

b. Methods to promote climate change mitigation policies from the viewpoint of the industrial, business and technological sectors.

- Organize joint study groups with the business sectors
- Conduct international comparative study with othe rinternatiojnal research institute, such as

the Wuppertal Institute, etc.

c. International cooperative mechanisms among developed and developing countries

- Make proposals based on our research on the situation of developing countries, as well as on accumulation of results of international discussion.
- Conduct analysis and assessment of the effect of introducing CDM in the Northeast Asian region, including Russia, by establishing an energy model.
- Propose a plan for an aid framework by conducting research on the effects of environmental aid funds.

d. Inventory method for GHG emissions and sinks

- Accumulate the findings of relevant research by systematizing the researchers in Japan and other Asian countries, through workshops, seminars, etc.

e. Vulnerability assessment and adaptation measures in the Asia-Pacific region

- Conduct pilot research taking one country as an example.
- Conduct joint research, both internationally and domestically, by participating in the activities of IPCC/GEF.

Schedule *For Themes “f” & “g”, research will be carried out in due course

Month/Year	2000	2001/1	2002/1 Rio+10	2003/1	2004/1
FCCC	COP6	COP7 Ratification	COP8 Implementation?	COP9	
SBSTA	↑	↑	↑	↑	
IPCC		Working Group Meeting	TAR	The 4th National Communication	
Asia	CCS EA	CCS EA (Asia Seminar)	CCS EA	CCS EA (Eco Asia)	
a. Domestic Policy	Proposals		Research and Proposal		○
		Domestic workshop	Domestic workshop	Domestic workshop	Domestic workshop ○
	Workshop at COP	Workshop at COP	Workshop at COP	Workshop at COP	
	Open Forum		Open Forum	Open Forum	Open Forum
	Int’l comparative study	Review the research plan	Kick-off meeting	Interim report meeting	○
b. Promotion of industrial technology					
Int’l cooperative study		Review of the research plan	Kick-off meeting	Interim report meeting	○
c. International cooperative mechanism					
			Research and Proposal		○
		Workshop in Asia	Workshop in Asia	Workshop in Asia	Workshop in Asia
	APN project	○	○		
	Research on domestic policies	China	Country A	Country B	Country C
d. Integration of the research on the inventory					
	Research supported by EA budget			○	Renewal
	Eco Frontier Fellowship			○	Renewal
	Inventory workshop	Inventory workshop	Inventory workshop	Inventory workshop, etc.	
e. Vulnerability Assessment		Pilot study	Research related to CDM	Proposal	

6. In-house Staffing and External Collaborators and Organizations

The following are the plans for the regime of our research in the Second Phase.

6.1 Reinforcement of manpower: plans for accepting researchers from abroad

- Among the five current project members (excluding the project secretary and the Eco-Frontier Fellowship researchers, but including the Project Leader), we now have three research fellow from abroad. (Korea, China, Nepal) . When including two EFF from Philippines and China, the ratio between Japanese and foreign researchers is five to three.
- Recruiting more researchers from abroad is intended, considering their qualifications for our research themes and our plans for joints research with the organizations/institutes that signed the charter of IGES.
- To carry out research themes a. and b., more Japanese researchers and visiting researchers from the research institutes in developed countries, to promote our international comparative research is essential.
- Regarding research theme c., continuing collaboration with Chinese Energy Research Institute will be indispensable. He/she will also study the effects of the international cooperative mechanisms in China, as the main theme of the joint research project with Russia, using the APN fund.
- In addition to the above, we will also consider recruiting one more researcher from a developing country to carry out research on the domestic policy measures in developing countries, as well as on the issue of technology transfer to these countries.

6.2 Increase in the number of visiting researchers from national and foreign institutes

To carry out research theme c., we plan to accept a visiting researcher from Russia for a short period in 2001. We will also accept researchers from the National Institute for Environmental Studies, as well as from research institutes from abroad, mainly from IGES signatory organizations.

6.3 Cooperation with other research projects in IGES

As for research theme e., that is, to conduct an analysis from the aspect of international politics and research related to forest conservation, we will enhance our cooperative research activity with other research projects in IGES.

6.4 New researchers dispatched from the business sector

With regard to themes a. and b., we expect relations with the domestic industrial sector to become much deeper. As the time for replacement of the currently dispatched members comes at the end of the fiscal year, we would like to explore the possibility of accepting transfers from businesses that are interested in IGES activities.

6.5 Full-time project manager

Recruiting a full-time project manager who will supervise the project for and on behalf of the Project Leader is needed.. This is to address the inconvenience caused by the absence of a full-time Project Leader that is seen, for example, to cause delays in some tasks. Considering the expected expansion of our research activities, this will be very important.

6.6 *Extension of the Eco-Frontier Fellowship*

For the first year of the Second Phase, we will continue to accept two researchers from the Eco-Frontier Fellowship to conduct inventory research. In response, the Japanese researcher who is in the TSU/IPCC continues to work on the Climate Change Project as well. As for the second year and thereafter, we will request the Ministry of Environment to support this structure, if it is found to be necessary by both TSU and the Climate Change Project.

6.7 Full-time Project Leader

The inconvenience arising from the absence of a full-time Project Leader has also been pointed out at the Project Planning Group meetings and on other occasions.

6.8 Outsourcing for research

Outsourcing for research will be limited as small as possible. The workforce composition of the Climate Change (Climate Policy) Project in the Second Phase shall be as follows.

Overall supervision	*Project Leader
Themes a. and b. (Domestic measures)	*Senior Research Fellow [Continue]
	**Research Associate (Japanese)
	[New recruitment in 2000]
Themes a. and b. (Domestic measures)	**Research Associate
	(on loan from the business sector)
	Expected to work as project manager
Themes a. and b.	Visiting Researcher (Europe)
	[Recruit according to need]
	(Comparative study of domestic policy measures)
Themes a. and b. (International politics)	Visiting Researcher (NIES) [Recruit as needed]
Themes b. and c. (Energy model)	*Senior Research Fellow [Continue]
Theme c.	Research Fellow ［New Recruitment in 2001］
	(Policy measures in developing countries)
Theme c. (Energy model)	Outsourcing research (Korea) [2000-2001]
Theme c. (CDM)	*Research Associate [Continue]
Theme c.	*Visiting Researcher (China) [Continue in 2001]
	(Policy measures in developing countries)

Theme c.	Visiting Researcher (Asia) [Recruit as needed] (Policy measures in developing countries)
Theme c. (Cooperation with Russia)	Visiting Researcher (Russia) [From October 2001]
Theme c. (Cooperation with Russia)	Outsourcing Research [2000-2001]
Theme d. (Inventory)	*Research Fellow (Share with TSU) [Continue]
Theme d. (Inventory)	*Eco-Frontier Fellow (Asia) [Continue] Selection necessary
Theme d. (Inventory)	*Eco-Frontier Fellow (Asia) [Continue] Selection necessary
Theme e. (Vulnerability Assessment)	Research Associate [Recruit as needed]
Theme g. (International politics)	** Research Associate (In addition to other in-house projects)
Theme g. (Sink, etc.)	Visiting Researcher (NIES) [Recruit as needed]
Theme g. (Sink)	Research Associate (Sharing with other in-house projects)
Research support activity	*Project secretary [Continue]

* = Personnel assignment complete
**=Personnel assignment urgently required

7. Funding

Our plan for fundraising for our research is as follows:

7.1 Current situation of the research funds

- The current amount of research funding is insufficient for carrying out the research activities mentioned above.
- Brain power is the real source of research. The Climate Change Project has a policy to allocate basic fund mainly for research personnel expenses. This trend will remain the same under our future research structure.

7.2 Introduction of external funds while maintaining the autonomy of research

- Basically, personnel expenses will be defrayed by the annual budget of IGES. As for research implementation expenses, external funds is sought for.
- It is becoming indispensable to introduce external funds in order to fulfill all the planned research activities. We will definitely bring in external funds. As of August 2000, following amount has been secured.
  - Yen 6,000,000 from APN for research on the Northeast Asian Region (2000-2001)
  - Yen 16,000,000 from National Institute for Environmental Studies (NIES) for research on

GHG Inventory in Asia Region (2000-2001)

- Yen 10,000,000 from Ministry of Education, Culture, Sports, Science and Technology for designing international policy (2001-2003)

- According to the fundamental principles of IGES, it is to be avoided that the shotage of budget spoils the autonomy of the research .Considering the conditions mentioned above, we will make efforts to gain necessary funds for conducting our research independently by negotiating with various potential sponsors, showing them well advanced and well ahead research topics.

7.3 Fund administration

- In response to the introduction of external funds, the process of fund management will become more complicated. It will be necessary to provide training for the project secretary, or the project manager, to manage the funds.

8. Project Management

8.1 Current Concerns over Research Management

- Lack of research guidance – Because of the pressure caused by various events that occurred during the start-up period, some of the researchers were not provided with enough guidance for their research activities.
- Delays in job performance – Due to the absence of a full-time Project Leader, some inconvenience was seen in delays in the decision-making process and in communication problems within and outside of the project.

8.2 New development of research activity

- The following are the plans for the development of our research in the Second Phase.
  - Clarification of the target groups for distribution of the research findings
  - Enhancement of communication with the target groups, reinforcement of the publicity activities of the research findings – try to reflect our research findings in the political decision-making process. Also increasing the activities that give publicity to IGES.
  - Promotion of joint research with the international community, as well as participation in domestic and international committees.
  - Reinforcement of outsourcing, such as accepting visiting researchers
  - Increase the number of foreign researchers and the number of researchers dispatched from other research institutes or from the business sector in Japan
  - Active introduction of external funds, while maintaining autonomy in the research Activities

8.3 Principles in promoting effective project management, considering the conditions mentioned above

- The core of our research activity depends on the independent efforts of the researchers at their work. Researchers should find research themes autonomously and set their research goals, taking into account the designated research field of the project. It is important that the research activities be carried out deliberately, according to the plan.
- The Project Leader will give long-term and short-term guidance regarding the range and direction of the research. Research themes shall be discussed with the researchers and necessary guidance shall be provided. The Project Leader will also improve the working atmosphere, such as by raising research funds, establishing the project structure, maintaining the facility and carrying out necessary negotiations with external institutes. The Project Leader will be responsible for appropriate distribution of funds.
- To compensate for the deficiency arising from the lack of a full-time Project Leader, support by a project manager for adjustment will be encouraged.
- The project secretary will support the research activity from the logistics aspect and work with the Project Leader to improve the working atmosphere.

9. Linkages with International Programs

9.1 Establishment of the domestic policy measures for climate change mitigation

- Conducting joint research for international comparative studies with other international research organizations , such as the Wuppertal Institute, etc.
- Regular exchange of pinions with worldwide research institutes such as the Imperial College, Energy Modeling Program in the U.S. and Groningen University in Holland.
- Enhancing regular exchange of information with research institutes in developed countries (e.g., Imperial College, Dr. Michael Grubb/U.S. Energy Modeling Forum, Dr. J. Wayant/Groningen University/Professor Z.X.Zhang).

9.2 Promotion of policy measures for climate change mitigation in the industry, business and technology sectors

For Example:

- Conduct joint research with the Wuppertal Institute regarding long-term technology innovation, such as IT, Factor 4-10 and new energy, etc.
- Conduct joint research with the World Resources Institute (WRI) on carbon emission/sink calculation for business sectors.

9.3 Establishment of international cooperative mechanisms among developed and developing countries

- Maintain a network by holding annual workshop among researchers from the Asian region, the U.S. and Europe, as well as with international institutions such as UNEP and ADB.
- As an APN funding project, research entitled "Policy Design of Climate Change Collaboration in Northern Asia" will be carried out in cooperation with the Russian Science Academy, Energy Research Institute/China and some designated research institutes in Korea.
- Accept a visiting researcher from the Energy Research Institute/China to conduct joint research on the design of domestic policy measures in China.
- Conduct cooperative research on the issue of technology transfer, in cooperation with research institutes in Asia, such as TERI/India (Dr. Sujarta Gupta) (e.g., Dr. Elena Nikitina/Russian Academy of Science, Dr. Zhou Dadi/Energy Research Institute, China, Dr. Hoesung Lee/Council on Energy & Environment Korea).

9.4 Inventory measurement method and their effect on the design of international policies

Supported by the Ministry of Environment's funds, we have been making good use of the APN Eco-Frontier Fellowship. In 1999, we held a workshop aiming at establishing a strong network among twelve relevant research institutes in the Asian region named NAPIID. In substance, the fellowship researchers are working with the TSU/IPCC located in IGES, therefore, we also have strong ties with the IPCC. In the future, it will be important to work with IGBP as well.

9.5 Vulnerability assessment in the Asian region and examination of adaptation methods

These issues shall be studied as part of the activities for GEF and for the IPCC national communication report. It would also be practical to conduct cooperative research with the Potsdam Institute for Climate Impact Research (Dr. Hans-Joachim Shellnhuber)

9.6 Designing a long-term scenario for climate change mitigation and methods to lead society to Sustainable Development

There are plans to draw up a long-term scenario in cooperation with research institutes such as SEI or WRI, using the method of policy analysis, etc.

9.7 Carbon Cycle Management

This project will be carried out as a part of the main research program of IHDP (Dr. Yoshiki Yamagata/NIES, Dr. Oran R.Young).