12.4 Environmental Impact Assessment System

12.4.1 The Process of Establishing the Environment Impact Assessment System

The "Environmental Impact Assessment System" is a system whereby project proponents investigate, estimate and assess the possible effects on the environment of their development projects which may have significant impacts on the environment before they implement the projects and make appropriate considerations concerning environmental conservation based on these results of the assessment. This system is a very important measure to prevent environmental destruction before it occurs and to build a sustainable society, and ever since it became systematized in the United States of America in 1969, it has become progressively systematized in various countries all over the world.

In the process of putting this system into effect in Japan, a bill was submitted in 1981, after the Cabinet agreement in 1967 on "Mitigation Measures Concerning the Various Public Works", but the bill was rejected in 1983. After that, the environmental impact assessment system has been operated on the basis of the "Implementation Scheme For Implementing Environmental Impact Assessment" (hereafter referred to as the "The 1984 Cabinet Decision Guideline") which was fixed upon in 1984, individual laws like the Public Water Body Reclamation Law, individual administrative guidances like MITI's departmental meeting decisions regarding the sites for power stations, and local governments' ordinances and guidelines. The enactment of the Environment Basic Law in 1993 provided the opportunity to begin to reassess the system and after deliberations by the Central Council for Environmental Pollution Control, the Environmental Impact Assessment Bill was drawn up by Cabinet Decision in March 1997 and was submitted to the 140th session of the Diet where it was passed on June 9th and put into effect as Law No.81.

12.4.2 Environmental Impact Assessment Law and An Overview of the System

Article 20 of the Environment Basic Law requires the national government to take measures toward the environmental impact assessment (hereafter referred to as EIA), and the Environmental Impact Assessment Law stipulates concrete procedures based on this requirement.

Chapter 1 contains the general provisions of the law. Chapter 1, "the Aims", stipulates that this law aims to recognize the importance of the environment impact assessment system, identify the responsibilities of the national government for the smooth running of the system, make proper considerations on environmental conservation by reflecting results of EIA, and contribute to securing healthy, cultural lives for the people. In this way, with the enactment of this law, the operation of the system, according to the administrative guidance of the Cabinet Decision Guidelines, was put into practice with authority and with highly reliable rules. Article 2, "the Definition", defines EIA as project proponents' actions to investigate, estimate and assess the possible environmental impacts caused by the proposed projects, according to the items which are related to environmental elements, identify mitigation measures during the process, and assess the environmental impacts comprehensively if the mitigation measures are implemented. This law defines those targeted projects as "projects which are required

to enter procedures for EIA". Further, it introduces a system of screening whereby the necessity of carrying out assessment is decided on an individual basis, classifying the target projects into "Class-1 Projects" which are of a certain size or larger and must carry out EIA, and "Class-2 Projects" which are smaller in scale than these. In other words, "Class-2 Projects" are judged necessary to carry out EIA and they are considered target projects. The details of "Class-1 and Class-2 Projects" are set down concretely by the government ordinances. Power stations were also included among those targeted projects by law and the screening system was renewed. Article 3, "the Responsibilities of the National Government and Others", stipulates that the national government, local governments, project proponents and the people should recognize the importance of EIA and make appropriate considerations so that the procedures can be implemented smoothly and the environmental burden due to the execution of the projects can be avoided or decreased. In Chapter 2, which sets down the procedures which must be carried out before the preparation of a draft of the environmental impact statements (hereafter referred to as Draft EIS), Article 4 defines the screening process for environmental impact assessment (hereafter referred to as EIS), and Articles 5-10 stipulate the procedures for preparing Scoping Documents for EIA study. More precisely, project proponents prepare Scoping Documents for EIA study regarding the methodology of investigations, estimates, and assessments of the target project and send them to the prefectural governors and municipal mayors. Furthermore, the Scoping Documents for EIA study are also published and offered for public review, and the public opinions on these documents are compiled and sent again to the governors and mayors. Then the prefectural governors, after listening to the opinions from the mayors, submit their opinions to the project proponents. These procedures, which have been newly introduced, are called "scoping". Articles 11-13 concern the implementation of EIA and stipulate that the project proponents select the items of EIA study and methodology of investigations, estimates and assessments, based on the above opinions, and that they may receive technological support and assistance, where necessary, from the Competent Ministers. Also, the basic items for these guidelines are defined by the Director General of the Environment Agency, and the Competent Ministers meet with the Director General to establish regulations of Ministries.

In Chapter 3, "the Draft EIS", Articles 14-20 concern the procedures regarding preparation of Draft EISs and stipulate that the project proponent must prepare a Draft EIS, send it to the prefectural governors and municipal mayors, publish and circulate it, hold public meetings, gather opinions regarding environmental conservation, and then send a summary of these opinions, along with their views on the opinions, to the governors and mayors. Then the governors, after hearing the views of the mayors, inform the project proponents of their views on the content of the Draft EIS. The previous restriction, by the Cabinet Decision Guidelines, of those who may submit their opinions to only those local residents who are affected has been removed, and the chances for residents to submit their views have been augmented. In Chapter 4, "the EIS", Articles 21-27 regulate the procedures regarding preparing the EISs. More precisely, the project proponent, based on the above procedures, prepares an EIS and transmits it to the licensing authority in charge. When necessary, the Director General of the Environment Agency may also submits his opinions to the licensing authority in charge, and based on these procedures, the licensing authority then submit its views to the project proponent. Then, the project proponent reexamines the projects, revises the EIS, issues the final EISs and offers it for public review. Chapter 5 concerns the revisions on the contents of the target projects. Precisely, Articles 28-30 stipulate the revisions of the contents of the target projects and so on, and point out the

necessity for those project proponents, except for the projects whose revisions are minor or which do not fall under the categories designated by the government ordinances, to redo the entire procedure, if they need to revise the contents of their projects, during the period from their public notice regarding Scoping Documents for EIA study to their public notice regarding the Final EIS. Chapter 6 concerns the procedures for after the public notices and circulation of the EISs, and Article 31 forbids the target project proponents to take any actions before the Final EIS is issued and published. Article 32 regulates the re-implementation of EIA after the Final EIS is published, and Articles 33-37 concern the environmental review relating to the approvals and permissions of the proposed projects. It is stipulated that the licensing authorities may conduct environmental reviews, based on the EISs and the opinions toward the EISs, and they may refuse to grant approvals and permissions or append conditions to the granting of them. Article 38 stipulates the considerations which the project proponents must make considerations concerning environmental conservation. In Chapter 7, "the Special Provisions for EIA", Articles 39-46 describe the special cases where those with the power to make city planning decisions may conduct the assessments in place of the project proponents, and Articles 47-48 describe the special cases regarding port and bay area planning. In Chapter 8, "Miscellaneous", Articles 49-50 stipulate communication with local governments, Article 51 concerns technological development, Article 52 stipulates exclusions, Articles 53-56 stipulate procedural measures, Article 57 stipulates matters which are entrusted to the government ordinances, Article 58 concern regulations regarding the Competent Ministers and Article 59 concerns the regulations regarding power stations. Articles 60-61 concerns the relationship with local governments and it stipulates that this law does not interfere with the assessment procedures for those project proponents which do not fall under the categories of the target projects or with local governments' ordinances which regulate the procedures to be conducted in the local governments, which are stipulated in this law. Finally, this law is considered to be effective for a two-year period starting from June 13, 1997.

The flow chart of the EIS process is shown in Fig. 12.4.1. In the operation of this system, attention will be paid to those local governments' ordinances and guidelines.

12.4.3 Assessment concerning Air Quality Conservation

This section generally discusses EIS regarding air quality conservation because the Environment Impact Assessment Law has not yet been put into force. There are many types of pollutants which cause air pollution, but in the EIA of individual projects, according to the contents of the target project, pollutants to be targeted for assessment are selected according to the types and levels of effect of those pollutants which can be emitted in the course of project operations, and considered as items to be investigated, estimated and assessed. Generally, according to the characteristics of those target projects, those substances which are specified by environmental standards, such as sulfur oxide, nitrogen oxide, carbon monoxide and suspended particulate matter, are selected. In environment impact assessment air pollution becomes the target of investigations, estimates and assessments because the atmospheric concentrations of pollutants increase and have a harmful effect on the environment due to the air pollutants being emitted by target projects in the course of their operations. Air pollutants have extremely wide-ranging effects on the environment. They cause not only damage to people's health but also plant and crop failure and corrosion damage to buildings, and smoke, soot, dust, and offensive odors which interfere with people's

daily living environments.

(1) Investigations

Air quality investigations (present condition investigations) for environment impact assessment aim to obtain the acquisition of necessary data to recognize the present conditions of air pollution and estimate and assess future air pollution in areas which are thought to be affected by the operations of target projects. When the atmosphere has become polluted, the first item investigated is the present concentrations of air pollutants. Other items selected for investigation are those necessary for atmospheric diffusion estimates such as meteorological and topographical statistics, data on natural objects and landmarks, land use, the situations with nearby sources of air pollutants and other data necessary in considering the related laws and ordinances.

For example, sulfur oxides, nitrogen oxides, smoke and soot would be chosen as the types of air pollutants which are related to the fuel burning process. Also, in addition to the aforementioned substances, hydrogen chloride, mercury, lead and other heavy metals would be chosen according to the properties of incinerated waste matter in the waste incineration process.

(2) Estimates

Air pollution estimate items are chosen from among those air pollutants considered items for investigation in current condition investigations, with reference to the estimated figures for total air pollutant emission levels, and they are necessary for estimating and considering the level of environment burden caused by the target projects. Other items examined include the possible causes for the impact and the distribution of the impact. Technological guidelines provide many different types of such examples. Sometimes basic estimate items are listed according to the type of target enterprise and other times conditions are indicated for the selection of estimate items. Based on this type of idea, if you look at examples of environment impact assessment and pay attention to what sorts of items were selected as a result, you can see that the items chosen for estimates are the majority of the time, those which are stipulated by general environmental standards, namely, nitrogen oxide, and after that, sulfur oxide, carbon monoxide, dust, and suspended particulate matter.

Pollution estimate methods in environment impact assessment are broadly classified into quantitative methods to estimate air pollutant concentration by methods like diffusion calculations and qualitative methods which do not make quantitative estimates of the concentrations but refer to analogous examples to make qualitative estimates.

(Quantitative Methods)

Quantitative methods include (1) diffusion calculation methods, (2) statistical methods, (3) wind-tunnel experiment methods, and (4) outdoor experiment methods. Sometimes two methods may be combined, but in this case, other methods may be adopted to perfect normal diffusion calculations.

(Qualitative Methods)

Qualitative methods include (1) analogical methods using similar examples, (2) pollutant emission level examination methods, (3) environmental conservation measure examination methods, and (4) meteorological factor (wind speed, wind direction) examination methods.

(3) Assessments

Assessments are usually conducted on items to be estimated on the basis of the scope, period and time. When quantitative estimates are not made, assessments are based on qualitative estimates.

Environment impact in Japan are conducted by identifying mitigation measures for expected environmental impact and indicating project proponents views. When quantitative estimates are made, projects proponents indicate their views on the expected environmental impacts while referring to the uniform national environmental standards, the guideline figures and guidelines set down by the government, and the target figures and guideline figures, based on ordinances and plans set down by local governments reflecting particulate local characteristics.

When there are no administrative target figures, projects proponents indicate their views by establishing environmental target figures based on scientific information regarding pollutant concentrations in the environment, people's health and living environments, and vegetation.

When emission standards and total-volume regulations based on the Air Pollution Control Law and other ordinances are being put into effect, assessments are conducted by first ascertaining whether estimated pollutant emission levels have reached the standards level.

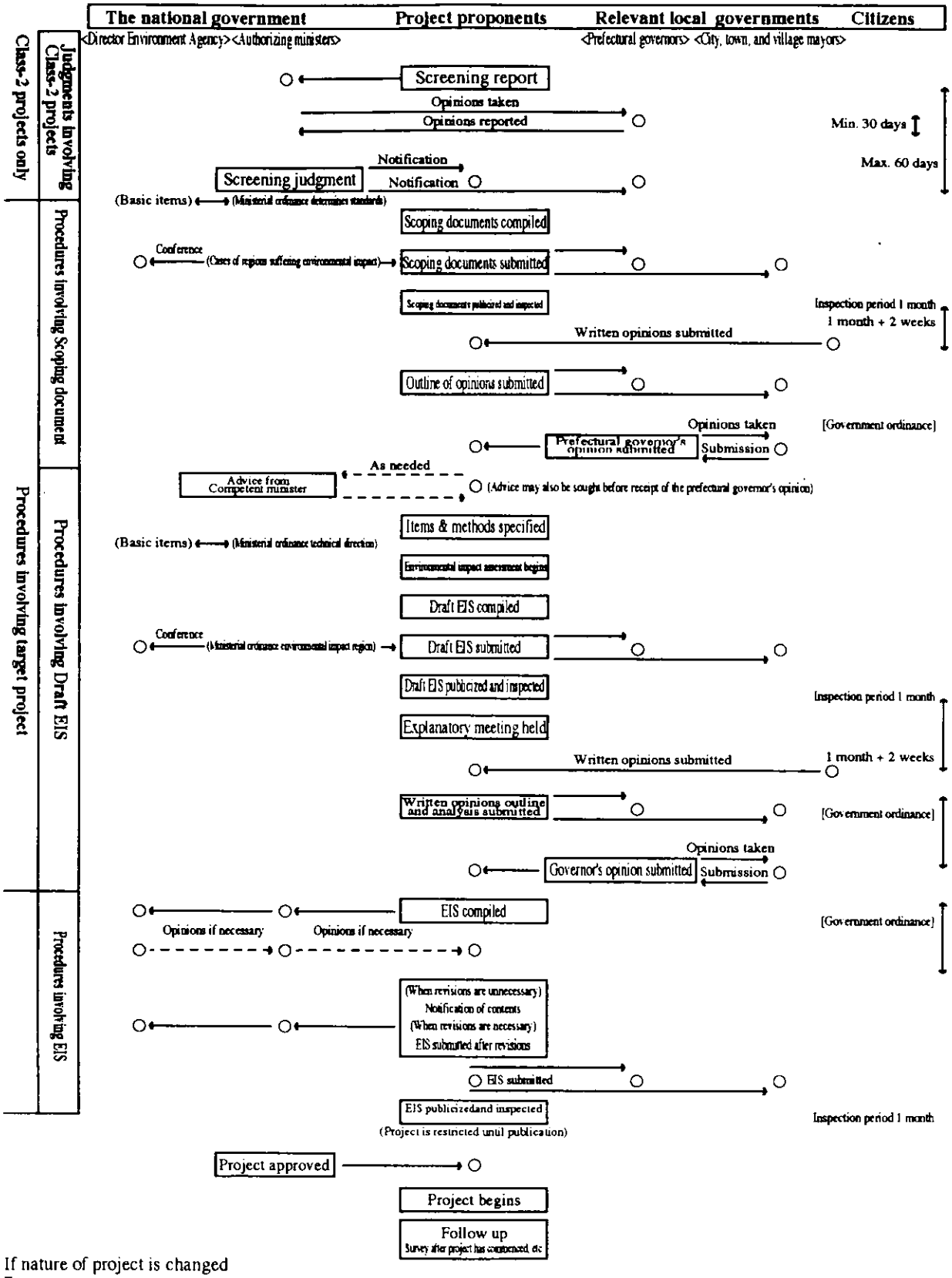
Conditions applied to assessment methods, as shown in technological guidelines, show that, in principle, it is normal to conduct assessments by making comparisons with environmental conservation target figures, and items which have set environmental standards make these environmental standards their environmental conservation targets. Also, when quantitative estimates are difficult to make and for items which have no set environmental standards, many technological guidelines set target figures by referring to qualitative targets and scientific information.

(4) Fellow-Up Investigations

In the environmental impact assessment system, estimates and assessments are generally conducted for project plans drawn up by the projects proponents, but after these plans are already initiated, various fluctuations may be possible in external factors.

For example, as for related facilities, planned transportation levels and moving speeds may change due to changes in the social and economic conditions before the annual year which the estimate is set for, or there may be some uncertainties left in the accuracy or set conditions of estimation methods in the estimation technology for the current environmental impact assessments.

Here, fellow-up investigations are to be conducted regarding environmental impact and project operating circumstances, even after project operations have already commenced. In this case, additional measures can be taken according to these results. Moreover, continuous monitoring of environmental load and impact can be implemented, and if analysis is possible after the accumulation of this data, it may be possible to further add to the scientific knowledge which will become the foundation for environmental impact assessment.



If nature of project is changed

[Slight changes... Conduct additional surveys as needed, continue procedures.
Major changes to project content... Return to preparation of Scoping documents and reimplement procedures.]

Fig.12.4.1 Procedures for the Environment Impact Assessment Law