

6-3 Conclusions and Recommendations for Promotion of Energy Efficiency

6-3-1 International Comparison of Measures for Promotion of Energy Efficiency

In order to evaluate the effectiveness of Government measures for the promotion of energy efficiency in Malaysia, the cases for other countries as such Thailand, Turkey, and Japan are studied. Table 6-6 is the comparison table, in which the Malaysian situation is also listed for reference.

Table 6-6 International Comparison of Measures for Promotion of Energy Efficiency

	Malaysia	Thailand	Turkey	Japan
Energy Efficiency Coordination Board	×	×	○	×
Central Body for Energy Saving	×	○	○	○
Law and Regulations	Draft	○	○	○
• Energy Managed Entities System	Draft	Factory & Buildings	Factory	Factory Buildings and Machinery
• Energy Manager System	Draft	○	○	○
• Energy Manager Qualification	Draft	○	○	○
• Standards	×	n.a.	×	○
• Guidelines	×	n.a.	×	○
Incentives	×	○	×	○
Penalties	Draft	○	×	○
Training (Energy Manager)	○	○	○	○
Energy Manager Certification by Examination	×	×	×	○
Energy Audit				
• Free of Charge	—	—	○	○
• Paid	○	○	○	○
• Energy Bus Programme	×	×	○	×
Data Base	Planning	n.a.	(On-going)	○
• Energy Statistics			(On-going)	○
• Technical Information			(On-going)	○
Technical Documents	○	○	○	○
Publications	×	○	○	○
Media Campaigns				
• TV and Radio Broadcasting	—	○	×	○
• Video Cassette Recording	○	○	×	○
• Seminars	○	○	○	○
• Exhibitions	○	○	○	○
Energy Saving Campaign Weeks	×	×	○	○

Energy promotion activities are considered to be normal practice in Japan, while such activities are now progressing with special emphasis in Thailand and Turkey. Hence energy promotion

activities should be emphasized and continuously carried out in Malaysia.

The draft of Malaysian regulations for promotion of energy efficiency resembles similar laws in Thailand, and reaches the same level as the ministry ordinance of Turkey. Hence it is recommended to first enforce the regulations (for promotion of energy efficiency in Malaysia), then try to fulfill the content and gradually complete the regulations.

(1) Energy Efficiency Promotion Board

In Turkey, the Electric Power Agency under the Ministry of Energy has organized a board for the promotion of energy efficiency, and engaged in relevant coordination work.

(2) Centralization of Promotion of Energy Efficiency

Japan and Turkey are trying to concentrate activities for the promotion of energy efficiency, by establishing organizations such as the Energy Conservation Center. In Thailand also, the Department of Energy Development and Promotion of the Ministry of Science, Technology and Environment is about promotion of energy efficiency and has been continuing related activities up to the present day.

(3) Energy Efficiency Promotion Laws and Regulations

At present, regulations are still in the draft stage in Malaysia. In Thailand, an energy conservation law was put into force in 1992, aiming to promote energy efficiency for factories and commercial buildings. The law stipulates those factories requiring guidance that consume electricity and/or other energy according to the consumption level (electricity consumption: more than 1MW, and/or energy consumption: more than 20 million MJ). In Turkey, an energy conservation law was put into force in 1997 to improve the energy efficiency of industrial factories (energy consumption: more than 2,000TOE). In Japan, energy conservation laws were enacted in 1977. The laws cover such facilities as factories, commercial buildings, private housing and machinery.

The energy conservation laws include systems for the energy-managed entities in Thailand, Turkey, and Japan. The big difference in the Japanese laws is that it contains standards of judgement criteria for energy saving that is necessary for individual enterprises.

(4) Incentives

Apart from Turkey, laws for the promotion of energy efficiency and conservation stipulate incentives for energy saving. In the case of Thailand, the preferential treatment consists of a

subsidy to be provided for a simplified energy audit, for the fees to establish an energy conservation program, and for the interest incurred from the loans used for the procurement of energy saving equipment. In case of Japan, the incentives are applicable to the investment for the promotion of energy efficiency based on a law, which supports the law for rational use of energy. The incentives consist of tax exemptions or granting loans at a very low interest rate.

(5) Penalties

There is no stipulation of penalties under Turkish law. In Thailand, violation of this law is punished with surcharges levied on the electricity cost. In Japan, the names of companies that violate the laws are announced and made known to the general public.

(6) Energy Efficiency Activities

Energy saving activities are vigorous throughout Thailand, Turkey and Japan. From the table, it is recommended to further develop energy saving activities especially in Malaysia, by offering gratis energy audits, by database build-up, by issuing printed materials regarding energy saving, and by promoting awareness activities for energy efficiency campaign weeks. It would be helpful to load measuring equipment on the bus and utilize such equipment when executing gratis energy audits.

6-3-2 Recommendations for Promotion of Energy Efficiency

(1) Basic Concept and Bottleneck

There are many problems to be solved and many measures to be introduced. In dealing with such situations, it is very important that the basic concept be first established. Measures, strategies and action plans should be examined in light of the basic concept; otherwise, one is inclined to recommend what is most convenient and easy under a given circumstance rather than what is actually required. The study team proposes to establish the following basic concept.

Basic Concept for Recommendation

The recommendations for the study of policy will be based on the following basic concept. The recommendations intend:

1. To promote rational use of energy in a manner that will contribute to environmental conservation,
2. To enhance awareness of the importance of promoting rational use of energy,

3. To improve the organizational setup of the Government so that the roles of the responsible organizations may be clearly defined and authorized so as to enable them to implement those roles,
4. To identify and develop human resources, both in the public and private sectors, that will be needed to promote rational use of energy,
5. To prepare effective and easy-to-access incentives and finance to promote energy efficiency,
6. To pursue inexpensive but effective strategies and methods in policy implementation,
7. To seek policy measures that will be accepted and cooperated with willingly,
8. To facilitate development and introduction of technologies that promote rational use and efficiency of energy, and
9. To establish a legal structure under which the promotion of energy efficiency may be effectively implemented.

A number of bottlenecks to smooth implementation of energy saving seem to exist on the part of entities as listed below.

Bottlenecks

1. Lack of information
 - (a) Awareness
Insufficient recognition of the importance of energy savings
 - (b) Lack of technical guidelines or targets for energy utilization equipment operations
 - (c) Education
Lack of in-house educational system to accumulate energy efficiency skills and improve those skills
2. Lack of technical staff to carry out energy audit by the factories themselves, or to take necessary measures to improve energy efficiency
3. Insufficient maintenance of energy consuming equipment
4. Lack of funds for investment in energy efficient equipment
5. Lack of incentives for investment in the promotion of energy efficiency

(2) Recommendations for Promotion of Energy Efficiency

Table 6-7 shows recommendations, present state and problems remaining to be solved.

Table 6-7 Recommendations on the Promotion of Energy Efficiency

1. Policies, Institutions and Systems

Itemized promotion of energy efficiency measures	Present State	Problems and Notes	Recommendations
<p>1. Organizations for Promotion of Energy Efficiency</p>	<p>There are many public organizations, universities and private entities participating in plans and activities for the promotion of energy efficiency.</p>	<p>Problems A centralized strong coordination organization based on legal mandate is necessary to coordinate among government and private organizations to promote energy efficiency. A coordination board is required to coordinate energy efficiency activities of the government, ministries, agencies, universities and private entities for the purpose of coordinating planning works for the promotion of energy efficiency; various studies for energy-saving policies and institutions; preparation of information network; research works for technical developments; and creating awareness.</p> <p>Notes A study on energy efficiency in IEA member countries by the International Energy Agency concluded that strong political leadership and bureaucratic commitment are, however, the key to the success of government energy saving activities. In addition, there should be effective interdepartmental coordination in the government for the smooth promotion of energy efficiency activities. For this purpose, a strong political leadership with bureaucratic interest is expected to promote the promotion of energy efficiency.</p>	<p>It is recommended that an energy efficiency coordination board headed by organizations such as the Economic Planning Unit (EPU) and participated in by the Ministry of Energy, Communications and Multimedia (MECM) as a key member is created. The board is recommended to work on a basis with legal mandate.</p>

Itemized promotion of energy efficiency measures	Present State	Problems and Notes	Recommendations
<p>2. Laws and Regulations for Promotion of Energy Efficiency</p>	<p>Laws or regulations on which nationwide energy efficiency measures can be based are still needed in order to execute energy efficiency programs in an integrated manner. It is necessary for the government to express its commitment to energy efficiency, and to formulate laws or regulations on which various measures are to be based. No laws or regulations for the promotion of energy efficiency have been enacted yet in Malaysia. JBE&G formulated a draft of new energy efficiency regulations in 1997 and submitted them to MECM for approval to include them in the Electricity Supply Act.</p>	<p>Problems The draft of regulations prepared by JBE&G includes an energy manager system, an energy manager system, provisions for the qualification of energy manager and standards for electrical appliances. The regulations do not include standards for judgement of energy use. The regulations cover mainly electricity. Accordingly, the scope of regulations should be expanded not only for electricity, but also other fuels in order to promote further energy efficiency. In addition, regulations should cover other sectors such as the residential sector, and specification of machinery when their revision is required.</p> <p>Notes It takes a lot of time to prepare laws and regulations for the promotion of energy efficiency like those enacted in Japan. This is because with Japan's stage of development, the laws and regulations are more stringent. The early enforcement of laws or regulations of countries such as Thailand, which has similar economic characteristics to Malaysia, and Turkey, which is an Islamic country, are expected. In order to ensure that energy-saving activities can be carried out more effectively, revision of regulations is also expected in the future.</p>	<p>1. Early enactment of laws and regulations It is recommended that the government express its commitment to the promotion of energy efficiency, and for it to formulate regulations on which its various measures are to be based. A draft of regulations has been prepared by JBE&G, and is expected to be enacted in 1999 or 2000. Early revision of the Energy Supply Act with regulations for the promotion of energy efficiency is recommended.</p> <p>2. Preparation of standards and guidelines for promotion of energy efficiency It is strongly recommended that standards and guidelines be prepared, and these are described in the respective sections.</p> <p>3. Expansion of scope of prepared regulations The prepared regulations by JBE&G are mainly for electricity. It is recommended to expand the scope of the regulations not only for electricity, but also other fuels when revision is required for the purpose of further energy-saving. It is also recommended that other sectors such as residential and machinery such as electrical appliances, vehicles and office equipment be covered.</p>

Itemized promotion of energy efficiency measures	Present State	Problems and Notes	Recommendations
3. Energy Managed-Entities System	<p>An energy-managed entity system is not yet effective in Malaysia. This system consists of appointing a company as an energy-managed entity with the aim of controlling the rational use of energy for the promotion of energy efficiency. As described before, the draft of regulations prepared by JBE&G stipulates the entities consuming large volume of electricity. The entities consuming 3600,00kWh or more energy per month, or exceeding maximum demand of 1 MW, are obligated to appoint an energy manager officer in order to promote rational use of energy.</p>	<p>Problems It is a good system to appoint a company as an energy-managed entity that consumes a large volume of electricity to promote energy efficiency. Judging from the efficiency of this system in Thailand, Turkey and Japan, entities that are large energy consumers should be stipulated by this system in order to control 60% or 70% of total consumption of energy in Malaysia. As detailed energy statistics are not available in Malaysia, it is difficult to identify the entities that consume more than 360,000kWh of electricity per month or 1 MW.</p> <p>Large-scale manufacturing industries are mostly large energy consumers. Some of them use a large volume of fuel, not only electricity, but also petroleum products natural gas, etc. This system should be applied not only to consumption of electricity but also to fuels especially for the industrial sector.</p> <p>Notes The energy-managed entity system should not be applied to the small and medium scale entities, as it would force them to bear cost and technical burdens.</p>	<p>1. Early enactment of energy-managed entity system For the promotion of energy efficiency, the early establishment of an energy-managed factory designation system is recommended. Entities that consume a large volume of energy are designated as energy-managed entities and are urged to effectively carry out energy efficiency programs, and furthermore are held responsible for reporting their energy supply and consumption every year. This will help the designated factories to recognize their energy consumption; to analyze their energy consumption process-by-process; and to understand the causes of fluctuations in energy consumption. As a result, this will lead them to take effective measures to conserve energy. At the same time, MECM and JBE&G will be able to analyze the energy data thus made available to them, and to use these data in formulating their policies for the industrial sector. This system should not include small and medium scale entities in view of efficiency.</p> <p>2. Expanding scope of regulations It is recommended to revise the scope of the regulations, expanding it not only to consumption of electricity, but also to fuels (petroleum products and natural gas) especially for the industrial sector.</p>

Itemized promotion of energy efficiency measures	Present State	Problems and Notes	Recommendations
4. Energy Manager System	An energy-managed entity system is not yet enacted in Malaysia. As a result, an energy manager system is not established as yet.	<p>Problems At present, not all entities that consume more than 360,000 kWh of electricity or have more than 1 MW of electricity demand employ enough qualified energy managers. It is necessary to train engineers and improve their technical skills for enforcement of this system.</p> <p>Notes It is a good system for a designated entities to have energy managers and to enable these managers to play a key role in promoting energy efficiency.</p>	<p>Recommendation It is recommended that this system be established as soon as possible, since the system of energy managers will greatly contribute to nationwide energy efficiency measures for the manufacturing industry sector.</p>

Itemized promotion of energy efficiency measures	Present State	Problems and Notes	Recommendations
<p>5 Qualification System of Energy Manager</p>	<p>An energy manager qualification system is not established in Malaysia, but the draft of regulations prepared by JBE&G includes the criteria to qualify as an energy manager.</p>	<p>Problems An energy-managed entities will be obligated to appoint an energy manager. The Malaysia of nowadays, experienced energy engineers are not sufficient enough.</p> <p>Notes The qualification system for an energy manager should be a socially authoritative one.</p> <p>(a) Energy manager certificate The Government is advised to establish short-term courses to provide training on energy management subjects to the personnel to be assigned by the entities, and/or shall issue authorization to the training organizations to arrange these courses. MECM or JBE&G is responsible to issue certificates after the examinations at the end of the said courses.</p> <p>(b) Energy efficiency classes in universities When engineers who have received a semester of energy efficiency education during their education at a university apply to JBE&G with the necessary documents, they may be issued with the certificate of Energy Manager.</p>	<p>1.State-approved qualification system To expedite deployment of energy managers as soon as possible, it is advisable to introduce a state-approved qualification system for energy managers, for example by issuing certificates to graduates of technology courses and to engineers with years of experience in the promotion of energy efficiency.</p> <p>2. Training Arrangement of training courses for the promotion of energy efficiency is recommended to provide certification. It is recommended to introduce the system of issuing certificates after examinations in order to enhance the capabilities of energy managers.</p> <p>3.Registration of energy managers A registration system for qualified energy managers is recommended. After the qualified engineers are posted to energy-managed entities, JBE&G would provide them with updated information obtained by surveys and foreign information on the promotion of energy efficiency, as well as communicating government measures and providing specialized technical education. In order to maintain and improve the quality of energy managers, it is necessary to organize and register them with technical information on energy efficiency and conservation, and to train them.</p>

Itemized promotion of energy efficiency measures	Present State	Problems and Notes	Recommendations
6. Award for Energy Efficiency	To increase business interest in energy efficiency, awards should be given to individual engineers or groups of employees or entities, which have achieved excellent results in promoting energy efficiency, but an award system is not established yet in Malaysia.	<p>Problems The key factor is for this system to be recognized by engineers and managers.</p> <p>Notes As this system will lead to the boosted morale of people engaged in energy efficiency, it is important that it be carried out periodically. In addition, nationwide recognition of this system is a key factor.</p>	It is considered necessary for a state organization to publicly commend entities that have achieved excellent results in energy efficiency and that have made constant efforts in energy management, as well as manufacturers who have developed highly effective energy efficiency equipment during the year.

Itemized promotion of energy efficiency measures	Present State	Problems and Notes	Recommendations
7. Standards for Energy Use (Industrial Sector)	<p>In Malaysia, there are no concrete forms of energy standards that could serve as the base for industrial sectors to judge the degree to which energy efficiency is promoted.</p>	<p>Problems The preparation of various non-compulsory standards for the promotion of energy efficiency, which show quantitative targets, is essential for the promotion of energy efficiency. The draft of regulations are without standards for energy use.</p> <p>Notes The necessity and technological level of energy efficiency in the industrial sector seem more advanced compared to the commercial sector. And the promotion of energy efficiency in soft aspects such as management, operation and maintenance is an important management target. However, there are still old types of energy-consuming facilities whose energy efficiency is markedly different from new ones. In terms of also strengthening the international competitiveness of Malaysian products, the application of Japanese standards is considered to be highly significant.</p>	<p>Standards for judgement are desperately needed. MECM and JBE&G are strongly advised to take the initiative in preparing these standards in collaboration with PTM and other organizations concerned with promoting energy efficiency. In the case of the industrial sector, it is recommended that the standard portion of Japanese criteria be adopted in the preceding four years and the targeted portion in the latter six years. The standards of energy efficiency developed by the study team are described in Chapter 7 of the main report. For reference, the items of standards for the industrial sector described in the main report are shown below:</p> <ol style="list-style-type: none"> 1. Rationalization of fuel combustion system 2. Rationalization of heating, cooling and heat transfer system 3. Prevention of heat loss due to radiation and transmission 4. Recovery and utilization of waste heat 5. Rationalization of systems to convert heat into motive power 6. Prevention of electric power loss due to resistance and other factors 7. Rationalization of systems to convert electricity into motive power, heat, etc.

Itemized promotion of energy efficiency measures	Present State	Problems and Notes	Recommendations
8. Preparation of Guidelines (Industrial Sector)	<p>As there are no energy standards, there are also no guidelines for the promotion of energy efficiency in Malaysia. It is essential that an energy-managed factory endeavors to improve the efficiency of its energy-consuming equipment. For the above purpose, it is necessary to guide each entity on ways to improve itself to pass the above-mentioned standards.</p>	<p>Problems The draft prepared by JBE&G does not include guidelines for the promotion of energy efficiency that may help entities to save energy.</p> <p>Notes The guidelines may help staffs to conduct energy efficiency promotion measures and may help business operators to manage positive efforts for the streamlining of energy use in each factory, for example by enabling them to select sounder solutions adapted to the given conditions. To attain the above standards, it is effective to apply guidelines developed by advanced countries in the area of energy efficiency.</p>	<p>Various guidelines with quantitative targets for the promotion of energy efficiency should be prepared, which show realistic methods to improve energy efficiency. MECM and JBE&G are strongly urged to take the initiative in preparing guidelines. The guidelines on energy efficiency developed by the study team are described in Chapter 7 of the main report. For reference, the items of standards described in the main report are shown below:</p> <ol style="list-style-type: none"> 1. Fuel combustion system 2. Heating, cooling and heat transfer 3. Radiation and transmission 4. Recovery and utilization of waste heat 5. Converting heat into motive power 6. Electric power loss 7. Converting electricity into motive power

Itemized promotion of energy efficiency measures	Present State	Problems and Notes	Recommendations
<p>9. Standards for Energy Use (Commercial Sector)</p>	<p>In Malaysia, there is no concrete form of energy standards that could serve as a base for the commercial sector to judge the degree to which energy efficiency is promoted.</p>	<p>Problems In order to ensure appropriate and effective implementation, the ministry concerned shall stipulate and announce items to which building owners should refer as standards in making decisions concerning which specific measures to take. However, after the study team conducted energy audits in the commercial sector of Malaysia, it is evident that the application of current Japanese standards to the commercial sector would be rather difficult compared to the industrial sector.</p> <p>Note Though Japanese standards were established on the basis of technical and economic appropriateness and are supported by every commercial sector in Japan, they could be applied as a basis for setting long-term standards for Malaysia, by making adjustments for climate and other environmental differences. Accordingly, it seems realistic to apply Japanese standards to Malaysia in a step-by-step manner.</p>	<p>MECM and JBE&G are strongly urged to take the initiative in preparing these standards in collaboration with PTM and other organizations concerned with promoting energy efficiency. The standards of energy efficiency developed by the study team are described in Chapter 7 of the main report. For reference, the items of standards described in the main report are shown below:</p> <ol style="list-style-type: none"> 1. Target : To attain the current level of energy efficiency in Japan within ten years 2. Periods and duration : Preceding term of 4 years and latter term of 6 years 3. Preceding four years : Soft approach (management, operation and maintenance) 4. Latter six years : <ul style="list-style-type: none"> -Application of current Japanese standards to new facilities -Application of energy efficiency standards to existing facilities requiring relatively small investment -In the case of equipment renovation, standards equivalent to those for new equipment could be applied.

Itemized promotion of energy efficiency measures	Present State	Problems and Notes	Recommendations
<p>10. Guidelines for Promotion of Energy Efficiency (Commercial Sector)</p>	<p>It is essential that an energy-managed entity endeavors to improve the efficiency of its energy-consuming equipment. For the above purpose, it is necessary to guide each entity on ways to improve itself to pass the above-mentioned standard. However, there is no form of guidelines for the promotion of energy efficiency.</p>	<p>Problems Various non-compulsory guidelines should be prepared for the commercial sector to promote energy efficiency, which show realistic methods to improve energy efficiency.</p> <p>Notes It seems realistic to develop guidelines in a step-by-step manner.</p>	<p>MECM and JBE&G are strongly urged to take the initiative in preparing these guidelines in collaboration with PTM and other organizations concerned with promoting energy efficiency. The guidelines of energy efficiency developed by the study team are described in Chapter 7 of the main report.</p>

Itemized promotion of energy efficiency measures	Present State	Problems and Notes	Recommendations
<p>11. Incentives for Promotion of Energy Efficiency</p>	<p>The most popular legal incentives are tax credits and tax exemptions. The administrative incentives are soft loans. Tax incentives and soft loans for investment in energy-saving are not available in Malaysia.</p>	<p>Problems There are many entities that are suffering from a shortage of funds for investment in energy-efficient equipment. Government assistance programs are needed.</p> <p>Notes The establishment of legal incentives requires a partial amendment of the concerned act, and the preparation of administrative incentives needs a large amount of budget and governmental support.</p>	<p>In order to promote energy-saving smoothly on a nationwide scale, establishment of the following incentives is advisable in parallel with the enforcement of regulations.</p> <ol style="list-style-type: none"> 1. The implementation of customs duty exemption, investment allowance, and tax incentives, etc. 2. Low interest finance and a system of endorsement for debt 3. An incentive package scheme using incentives such as incentives of taxes and loans mentioned above. <p>To increase the effectiveness of incentives for energy efficiency promotion such as tax credits and exemption, and loan incentives, it would be useful to formulate an integrated incentive package, or incentive schemes consisting of tax credits and exemptions, soft loans.</p>

Itemized promotion of energy efficiency measures	Present State	Problems and Notes	Recommendations
12. Others			<p>It would be advisable for MECM to coordinate and arrange a study to enhance ESCOs, which are private entities. The further activation of ESCOs is one option to promote developments in the efficient use of energy. The function of an ESCO would be to carry out energy audits, assist arrangement of finance and modification of facilities and to operate for the benefit of various entities. These activities would be carried out through the allocation of profits obtained by the promotion of energy efficiency between entities and ESCOs.</p>

2. Training for Energy Managers

Itemized promotion of energy efficiency measures	Present State	Problems and Notes	Recommendations
Energy Manager Training	The system of training energy managers for the promotion of energy efficiency is served by private entities but is still recognized to be underway.	In order to facilitate energy efficiency promotion, the cultivation of talented individuals to engage in the promotion of energy efficiency becomes necessary so that such individuals do indeed engage in the promotion of energy efficiency; the training is also necessary of energy managers for each entity, and of talented individuals to train those managers.	<p>The objective of training is to foster talented individuals who possess the planning sense, knowledge and experience necessary to promote energy efficiency. In order to achieve this objective, it is recommended that the following be carried out.</p> <ol style="list-style-type: none"> 1. Preparation of a system 2. Preparation of a training organ 3. Establishment of a training plan 4. Preparation of a qualification system 5. Creation of a schedule

3. Activities for Promotion of Energy Efficiency

Itemized promotion of energy efficiency measures	Present State	Problems and Notes	Recommendations
<p>Activities for Promotion of Energy Efficiency by JBE&G and PTM</p>	<p>A number of activities were carried out by the JBE&G recently. Many of them are for electricity and include holding seminars, workshops, and exhibitions, to conduct energy audits; preparing materials for the promotion of energy efficiency; and approving co-generation projects.</p> <p>PTM was newly established in 1998 as a technical arm of MECM and has just commenced its activities for the promotion for energy efficiency.</p>	<p>Many activities for the promotion of energy efficiency will be carried out by JBE&G and PTM.</p>	<p>In order to promote energy efficiency smoothly, it is necessary for JBE&G and PTM jointly or separately to carry out the following activities.</p> <ol style="list-style-type: none"> 1. Energy audits (JBE&G, PTM) 2. Seminars for energy efficiency (JBE&G, PTM) 3. Energy data base (PTM) 4. Research on promotion of energy efficiency (PTM) 5. Promotion of energy efficiency campaign (JBE&G, PTM) 6. Publication (PTM) 7. Education and training on energy efficiency (JBE&G, PTM) <p>Strengthening the Energy Efficiency Promotion Division of PTM is recommended in order to centralize the above activities in the long-range plan.</p>

4. Energy Efficiency Promotion Division of PTM and Activities

Itemized promotion of energy efficiency measures	Present State	Problems and Notes	Recommendations
<p>1. Organization and Role of Energy Efficiency Promotion Division of PTM</p>	<p>PTM is newly established and the group for the promotion of energy efficiency of PTM is just starting its activities to promote energy efficiency. The following organizational demarcation of activities regarding promotion of energy efficiency is clarified at present.</p> <p>Scope of Implementation for PTM:</p> <ol style="list-style-type: none"> 1. Promotion of energy efficiency campaign 2. Research activities 3. Energy data base 4. Seminars on energy efficiency 5. Technical development 6. Energy audits 7. Publication <p>Scope of Implementation for Others (JBE&G, Universities and others):</p> <ol style="list-style-type: none"> 1. Education and training programs on energy efficiency 2. Energy manager's qualification 3. Energy management lessons for university students 	<p>PTM is newly organized and does not have much experience in the promotion of energy efficiency activities. There is an insufficient number of staff for the promotion of energy efficiency. There are no plans for developing the capability of engineers of private entities by means of opening training courses.</p>	<p>Recommendations</p> <p>The study team recognizes that following items still remain as important issues:</p> <ol style="list-style-type: none"> 1. Decentralization of activities for energy efficiency among various organizations, universities and entities will be inefficient in the future. Centralization of activities for the promotion of energy efficiency to PTM is recommended. 2. It is hoped that the promotion of energy efficiency activities, namely education and consulting, can be further developed and enhanced using international collaboration schemes. 3. The activities of PTM should not be limited but diversified to include education and training. 4. As a centralized organization for the promotion of energy efficiency in Malaysia, it is recommended to expand and enhance PTM's organization in order to establish sections such for public relations and publication, research, technical and training.

Itemized promotion of energy efficiency measures	Present State	Problems and Notes	Recommendations
2. Energy Audits	<p>PTM plans to carry out energy audits using Malaysian institutes, universities and private entities. PTM is also expected to assist energy managers to carry out energy audits at their institutions or plants.</p>	<p>Analytic technology, engineers and equipment are not sufficient even in large-scale manufacturing industries as well as PTM. Entities of the commercial sector are in an even poorer state. In addition, the Government should allocate a larger budget to implement the energy audits.</p>	<p>Followings are recommendations for PTM to conduct energy audit smoothly and fruitfully.</p> <ol style="list-style-type: none"> 1. To thoroughly utilize the equipment provided by JICA for conducting energy audits. 2. To use human resources available inside and outside including overseas to cope with the increasing need for audits after the enactment of regulations. 3. To conduct simpler energy audits mainly at entities in the commercial sector, medium and small-scale factories, in order to make these entities interested in the promotion of energy efficiency. 4. To study energy bus program in order to execute simplified audits. 5. Introduction of paid energy audits <p>Paid energy audits should also be studied, since many human resources and costly experts from outside including overseas are needed for carrying out precise, high level diagnosis and guidance services.</p>

Itemized promotion of energy efficiency measures	Present State	Problems and Notes	Recommendations
<p>3. Dissemination of Technical Information on the Promotion of Energy Efficiency</p>	<p>There is no organization with aggressive activities to disseminate technical information for the promotion of energy efficiency.</p>	<p>At present, sufficient information on the promotion of energy efficiency is probably not being provided to managers and engineers of entities. Provision of the latest technical information would serve to upgrade the technical levels of factories and institutions, and to stimulate them in the promotion of energy efficiency activities.</p>	<p>1. PTM is planning various activities for enhancement of awareness for the promotion of energy efficiency such as:</p> <ul style="list-style-type: none"> - seminars on technology for rational use of energy - publication of technical information such as magazines and papers - holding of exhibitions devoted to the promotion of energy efficiency <p>It will be necessary to obtain technical collaborations from experienced organizations or entities to facilitate the activities mentioned above.</p> <p>2. As an essential activity of publication activities, it is recommended that a pocket-sized book be issued entitled, 'The Promotion of Energy Efficiency Reference Book', illustrating related regulations, statistics, standards and technical data on heat management and electricity management, in order to enable staff to easily access the needed information while they are conducting promotion of energy efficiency activities.</p>

Itemized promotion of energy efficiency measures	Present State	Problems and Notes	Recommendations
<p>4. Establishment of Energy Data Base System (Energy statistics and Technical information)</p>	<p>PTM has a plan to develop an energy database by gathering, and sorting out information and publications concerned with the promotion of energy efficiency data and technology.</p>	<p>To establish an energy data system, the following are required: Highly educated man-power, a sophisticated computer system, a large amount of budget, long range period, large volume of information and data, and coordination and assistance from various organizations, agencies and universities and private entities. It is also necessary to establish proper and wide channels of information gathering, and increase public trust therein as a reliable source of information to people and enterprises.</p>	<p>1. It is recommended that information service outlets be established in order to effectively provide entities with statistical and technical information on the promotion of energy efficiency; it is necessary to establish a system by which the present situation and future trends in energy statistics and technology in various areas can be accurately grasped, and with which such information can be used effectively.</p> <p>2. It is recommended that the information gathering system be consolidated, and that PTM channels be broadened for the acquisition of international technical information on the promotion of energy efficiency, by promoting cooperative relations with overseas organizations, and that the information is then released to the public.</p> <p>3. It is recommended that an on-line information provision and retrieval system be installed.</p>

Itemized promotion of energy efficiency measures	Present State	Problems and Notes	Recommendations
5. Promotion of Energy Efficiency Seminars	JBE&G and private entities with foreign collaborations hold seminars for energy-saving, but are not sufficient in terms of advertisement and extension of energy-saving.	There is a shortage of engineers and technology at entities of the commercial sector and medium and small-scale factories. Managers and staff are not sufficiently aware of the need for the promotion of energy efficiency, because they are concerned more about production and cost.	It is recommended that seminars be held concerning successful examples of the promotion of energy efficiency in entities and to give education in the promotion of energy efficiency to management and engineers of entities. Advertisement of successful examples of the promotion of energy efficiency will be effective in leading those engineers to recognize the importance of the promotion of energy efficiency. In this regard, the collaboration of related organizations such as universities or private consultants is recommended in holding joint seminars on the promotion of energy efficiency in order to improve awareness of energy-saving among management and engineers.

6-3-3 Plans for Promotion of Energy Efficiency

(1) Plans and Priority of Measures for Promotion of Energy Efficiency

A plan for the promotion of energy efficiency based on the study for energy efficiency promotion measures described in Sections 6-1 and 6-2 is shown in Table 6-8. In addition, the measures are evaluated by rating based on criteria of urgency, basic concept, existence, ease of execution and importance and summarized in Table 6-9. It is concluded that the following measures be important and executed in a step-by-step manner.

Plan for the promotion of energy efficiency on yearly basis is summarized in Figure 6-2.

- (1) Short Range Plan (measures to be enacted at an early date)
 - 1) Establishment of Energy Efficiency Promotion Board
 - 2) Enactment of Energy Efficiency Promotion Regulations
The regulations should include the following systems.
 - (a) Energy managed entity system
 - (b) Energy manager system
 - (c) Qualification system for energy managers
 - (d) Reporting duty regarding data and information for the promotion of energy efficiency
 - 3) Preparation of standards for promotion of energy efficiency
 - 4) Preparation of guidelines for promotion of energy efficiency
 - 5) Training for trainer and energy managers
 - 6) Enhancement of activities for promotion of energy efficiency such as energy audits and awareness
 - 7) Establishment of data base for the promotion of energy efficiency
 - 8) Expansion and enhancement of the group for the promotion of energy efficiency of PTM
- (2) Middle Range Plan
 - 1) Establishment of tax incentives
- (3) Long Range Plan
 - 1) Revision of energy efficiency promotion regulations
 - 2) Revision of standards
 - 3) Revision of guidelines
 - 4) Arrangement of incentive loans

Table 6-8 Plan for Promotion of Energy Efficiency

Organization		Phase 1 (1-4 Years)	Phase 2 (5-7 Years)	Phase 3 (8-10 Years)
Laws and Regulations	EPU	Overall Coordination	Energy Efficiency Promotion Coordination Board	
		Energy Efficiency Law Kind of Energy Reporting Duty Recommendation	Energy Efficiency Law Annual Plan of Energy Efficiency	Revised Energy Efficiency Law Heat, Gas, Coal etc.
MECM JBE&G		Energy Managed Factory Energy Officer (Qualification) Award	Regulation of Energy Managed Factory Energy Officer Method of Application and Approval	Confirmation of Energy Efficiency Revised Energy Managed Factory Application, Examination and Approval Award of Excellent Managed Factory
		Energy Standards Industrial Sector Commercial Sector	Basic Energy Standards for Factory	Targeted Energy Standards for Factory Revised Energy Standards for Building Building Architecture
		Guidelines Industrial Sector Commercial Sector	Basic Energy Guidelines for Factory	Revised Energy Guidelines for Factory Revised Energy Guidelines for Building
		Incentives Taxes Low Interest Loan	Investment for Energy Efficiency Tax Exemption and Reduction Approval of Special Depreciation	Investment for Energy Efficiency Low interest Loan Debt Guarantee
Human Resources		Trainer Education	Education in Universities, Energy Institutions or Private Sector Education and Training	
		Training Qualifying Examination	Qualifying Examination	
Extension		Energy Audit Measuring Instruments Energy Bus	Continuation and Propagation of Energy Audit utilizing Instruments provided by JICA	Propagation of Activity following the establishment of various resources
	JBE&G	Data Base Energy Statistics	Structural Data Base	
	PTM	Technical Information Propagating Activity Campaign Seminar Exhibition	Domestic and International Technology Soft Aspects (Management, Operation, Maintenance)	Energy Efficiency Data Base Leading to Energy Policy Utilization of Data Base of PTM
ESCO		Study on ESCO	Activation of ESCO	New and Advanced Technology and Information required for Energetically Advanced Country

Table 6-9 Priority of Measures for Promotion of Energy Efficiency (1)

Category	Recommendation Item	Urgency	Basic Concept	Existing or Not*	Easiness	Importance	Total Point	Priority Ranking
Overall Coordination Energy Efficiency Promotion Regulations	Energy Efficiency Promotion Coordination Board	5	5	5	3	5	23	A
	Energy Efficiency Promotion Law (Electricity)	5	5	5	3	5	23	A
Reporting Duty	Revised Energy Efficiency Promotion Law (Heat, Gas, Coal, etc.)	1	5	5	1	5	17	B
	Annual Plan of Energy Efficiency Promotion Unit Consumption of Energy Efficiency	5	5	5	4	4	23	A
Energy-Managed Factory and Building	Confirmation of Energy Efficiency Production	1	4	5	5	3	18	B
	System of Energy-Managed Factories	5	5	5	3	5	23	A
	System of Energy-Managed Buildings	5	5	5	3	5	23	A
	Revised Energy-Managed Factory System	1	5	5	3	5	19	B
Energy Officer	Energy Officer System (Factory)	5	5	5	3	5	23	A
	Energy Officer System (Building)	5	5	5	3	5	23	A
Qualification	Revised Energy Officer System (Factory)	1	5	5	3	5	19	B
	Method of Application and Approval (Factory)	5	5	5	4	5	24	A
Award	Method of Application and Approval (Building)	5	5	5	4	5	24	A
	Application, Examination and Approval (Factory)	2	5	5	3	3	18	B
Energy Standard Industrial Sector	Award of Well-Managed Factory	2	3	5	4	2	16	B
	Basic Energy Standards for Factories	5	5	5	1	5	21	A
Commercial Sector	Targeted Energy Standards for Factories	2	5	5	1	5	18	B
	Basic Energy Standards for Buildings	4	5	5	2	5	21	A
	Soft Aspects (Management, Operation and Maintenance)	2	5	5	1	5	18	B
Guideline Industrial Sector	Targeted Energy Standard for Buildings Building Architecture	2	5	5	1	5	18	B
	Basic Energy Guidelines for Factories	5	5	5	1	5	21	A
Commercial Sector	Revised Energy Guidelines for Factories	2	5	5	1	5	18	B
	Basic Energy Guidelines for Buildings	4	5	5	1	5	20	A
	Revised Energy Guidelines for Factories	2	5	5	1	5	18	B

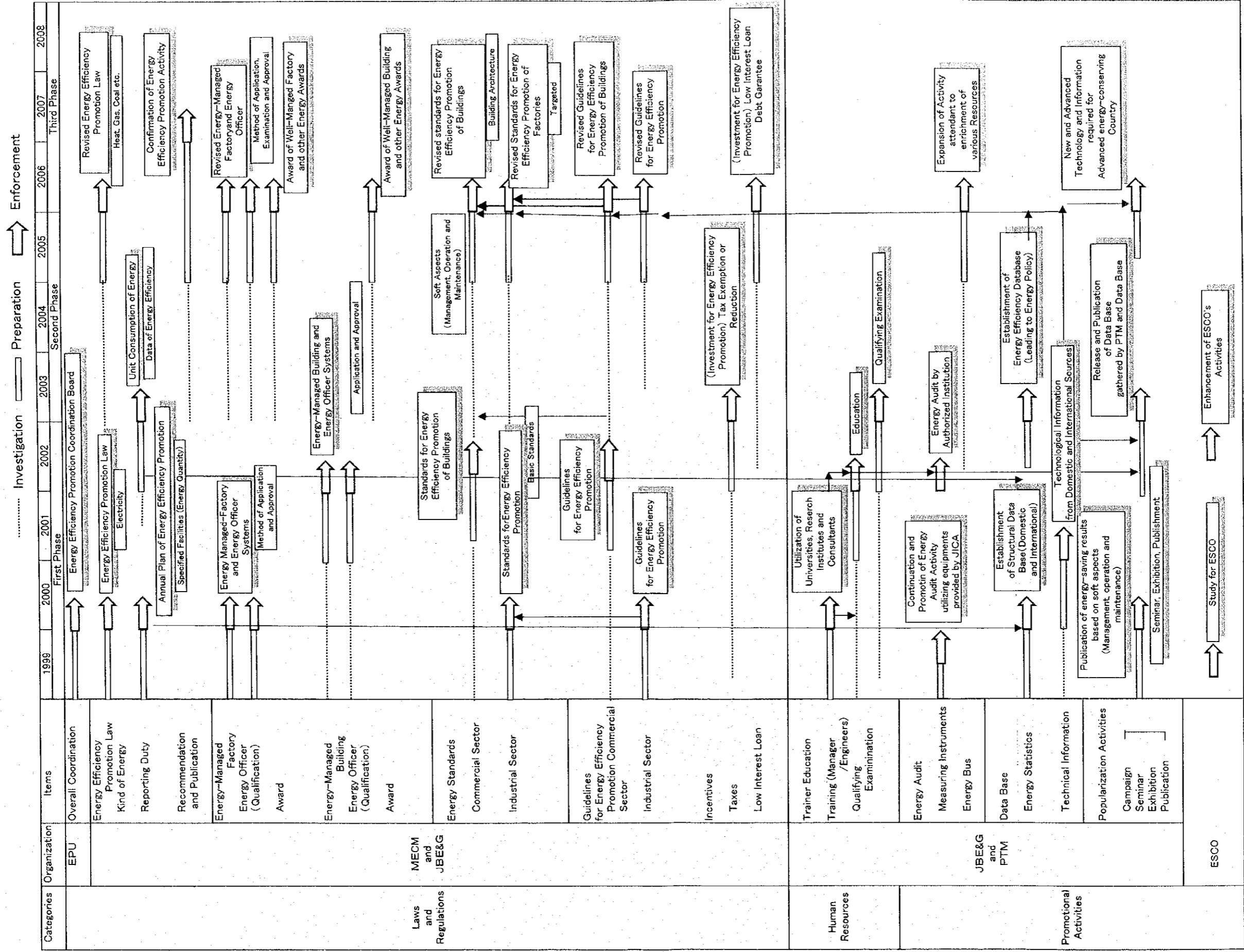
Note *: Non-existing measures are counted as 5 points

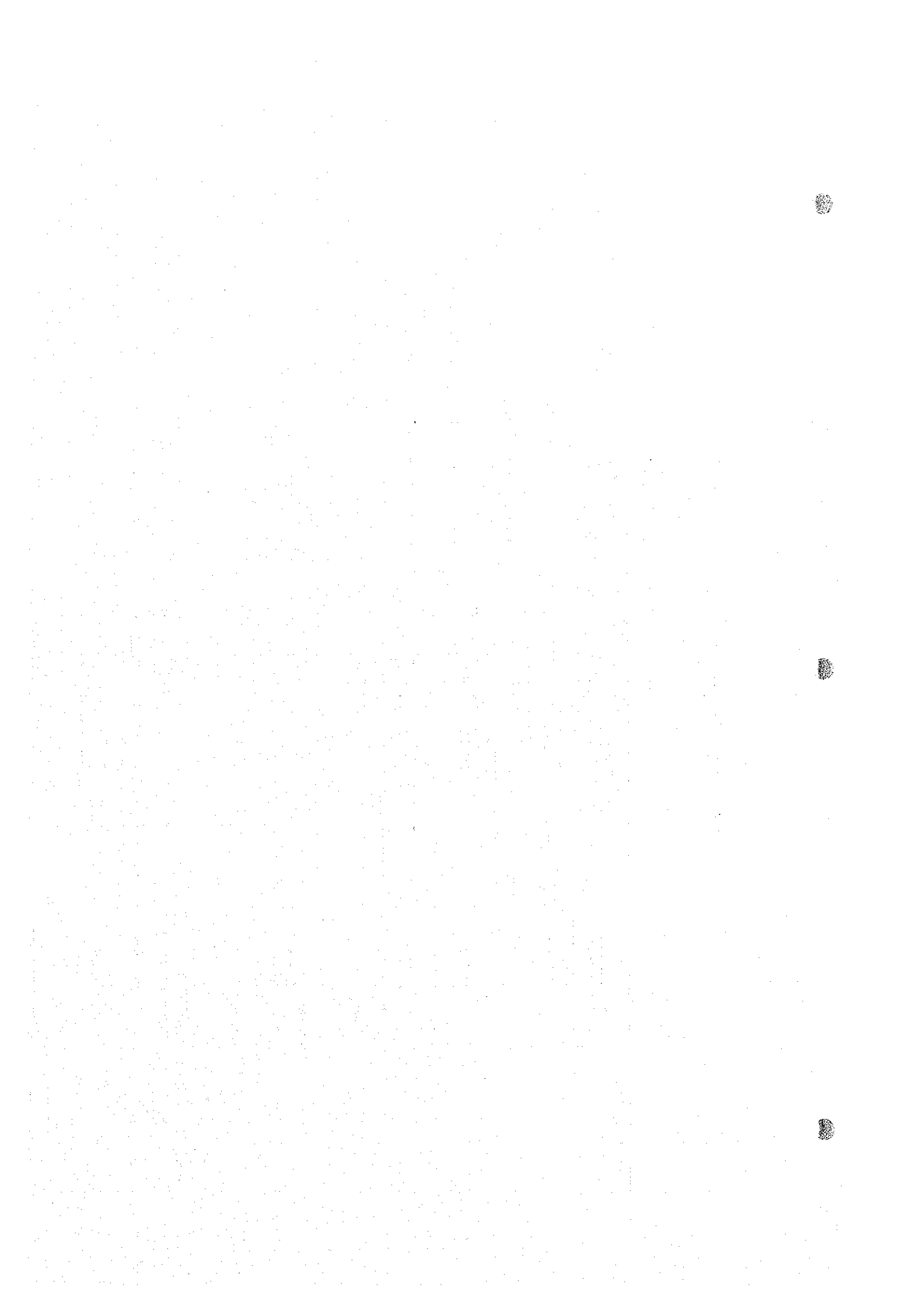
Table 6-9 Priority of Measures for Promotion of Energy Efficiency (2)

Category	Recommendation Item	Urgency	Basic Concept	Existing or Not*	Easiness	Importance	Total Point	Priority Ranking
Incentives Taxes	(Investment for Energy Efficiency Promotion)							
	Tax Exemption and Reduction	3	5	5	2	5	20	A
	Low Interest Loan	2	5	5	1	5	18	B
	Other Incentives	3	5	5	3	5	21	A
Trainer Education	Debt guarantee	2	5	5	3	3	18	B
	Education in Universities, Energy Institution or Private Sector	5	5	3	3	5	21	A
Training Qualifying Examination	Education and Training	5	5	3	4	5	22	A
	Qualifying Examination	3	4	4	4	4	19	B
Energy Audit Measuring Instruments	Continuation and Promotion of Energy Audit	5	5	3	4	5	22	A
	Utilizing Equipment Provided by JICA							
	Energy Audit by Experienced Institution	3	5	3	4	4	19	B
	Expansion of Activity attendant to the enrichment of Various Resources	2	5	1	4	4	16	B
Data Base Energy Statistics	Data Bases (Energy Statistics)	5	5	4	3	5	22	A
	Energy Data Base	3	5	5	3	3	19	B
Technical Information Popularization Activities	Leading to Energy Policy							
	Domestic and International Technology	5	4	3	3	4	19	B
Campaign	Soft Aspects (Management, Operation and Maintenance)	5	5	3	5	4	22	A
	Publicizing Effect of Energy Efficiency Promotion							
	Campaign, Seminar, Exhibition and Publication	4	5	3	5	4	21	A
	Utilization of Data of PTM	3	5	5	3	3	19	B
ESCO	Publication and Advertisement of Collected Information							
	Development to Advanced Energy-Efficient Country	1	4	5	1	3	14	C
ESCO	New and Advanced Technology							
	Study on ESCO	3	4	3	5	4	19	B
	Activation of ESCO	3	5	3	2	4	17	B

Note* : Non-existing measures are counted as 5 points

Figure 6-5 Plan for Promotion of Energy Efficiency





(2) Plan for Extension of Promotion of Energy Efficiency

The outline of plan for extension of the promotion of energy efficiency carried out by private entities with governmental measures is summarized.

1) Purpose

This plan shows the improvement of mode entities on a plan - do - see cycle to achieve better use of energy along with the measures MECM, JBE&G, PTM and concerned government organizations can take at the right time.

2) Outline of Plan

The outline of plan for nationwide energy efficiency promotion is illustrated in Figure 6-3.

3) Schedule

Start: Year of 2000

(a) First Step (2000)

- a) Identification and Selection of Model Entities
- b) Implementation of Audit
- c) Formulation of Plan based on Recommendation from Audit Results

(b) Second Sep (2001-2002)

- a) Execution of the Plan at Model Entities
- b) Assessment of Results
- c) Recognition of Entities

(c) Third Step (2003 and the year after)

Nationwide Execution

4) Important Measures for Execution of Plan

Problems and measures are listed in the column of figure. Among them, the followings are identified with the important measures for the execution of the plan.

- (a) Enactment of Law and Regulation
- (b) Preparation of Standards and Guidelines
- (c) Preparation and legalization of Incentives

Activity Flow

Problems and Measures

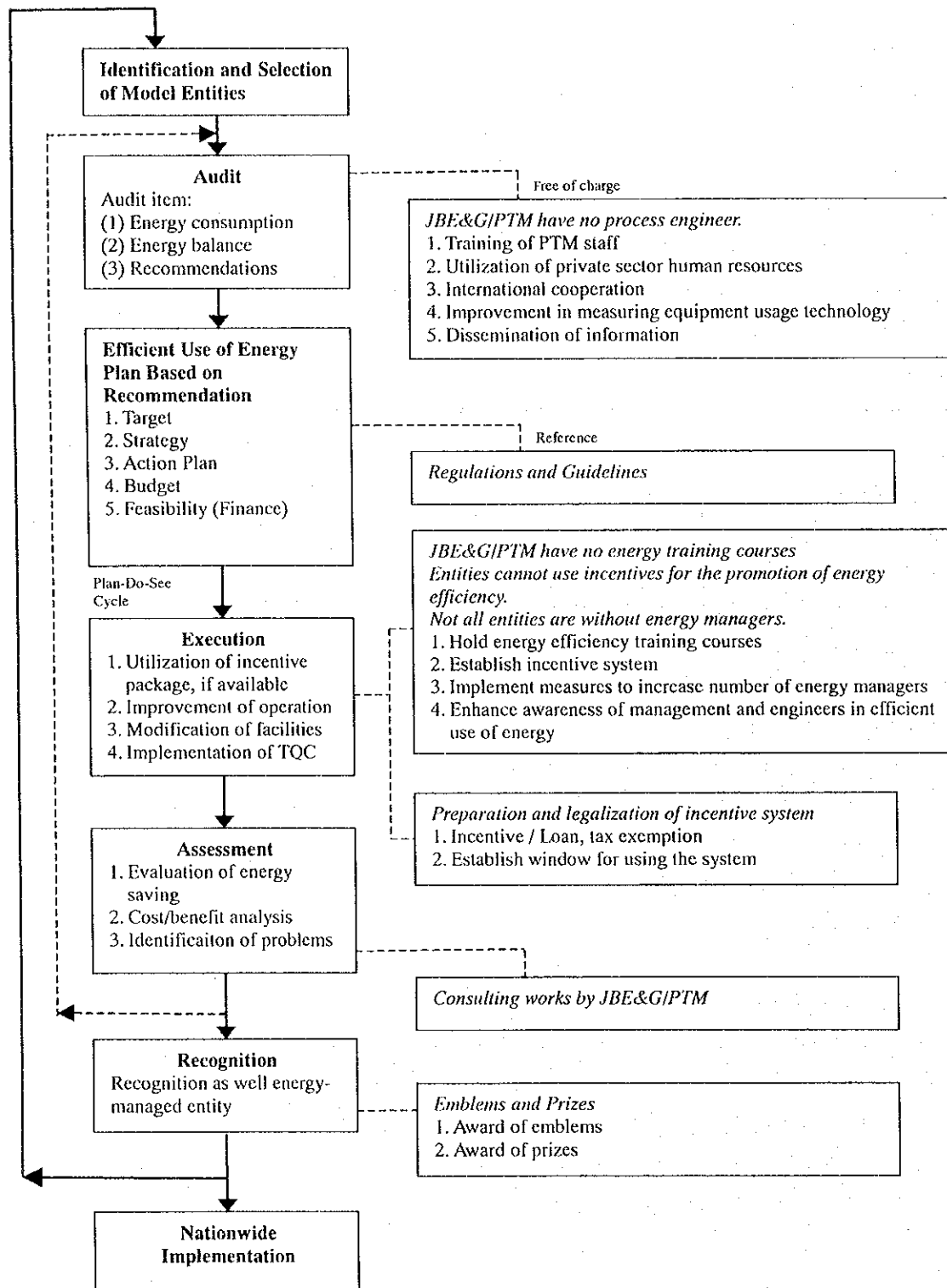
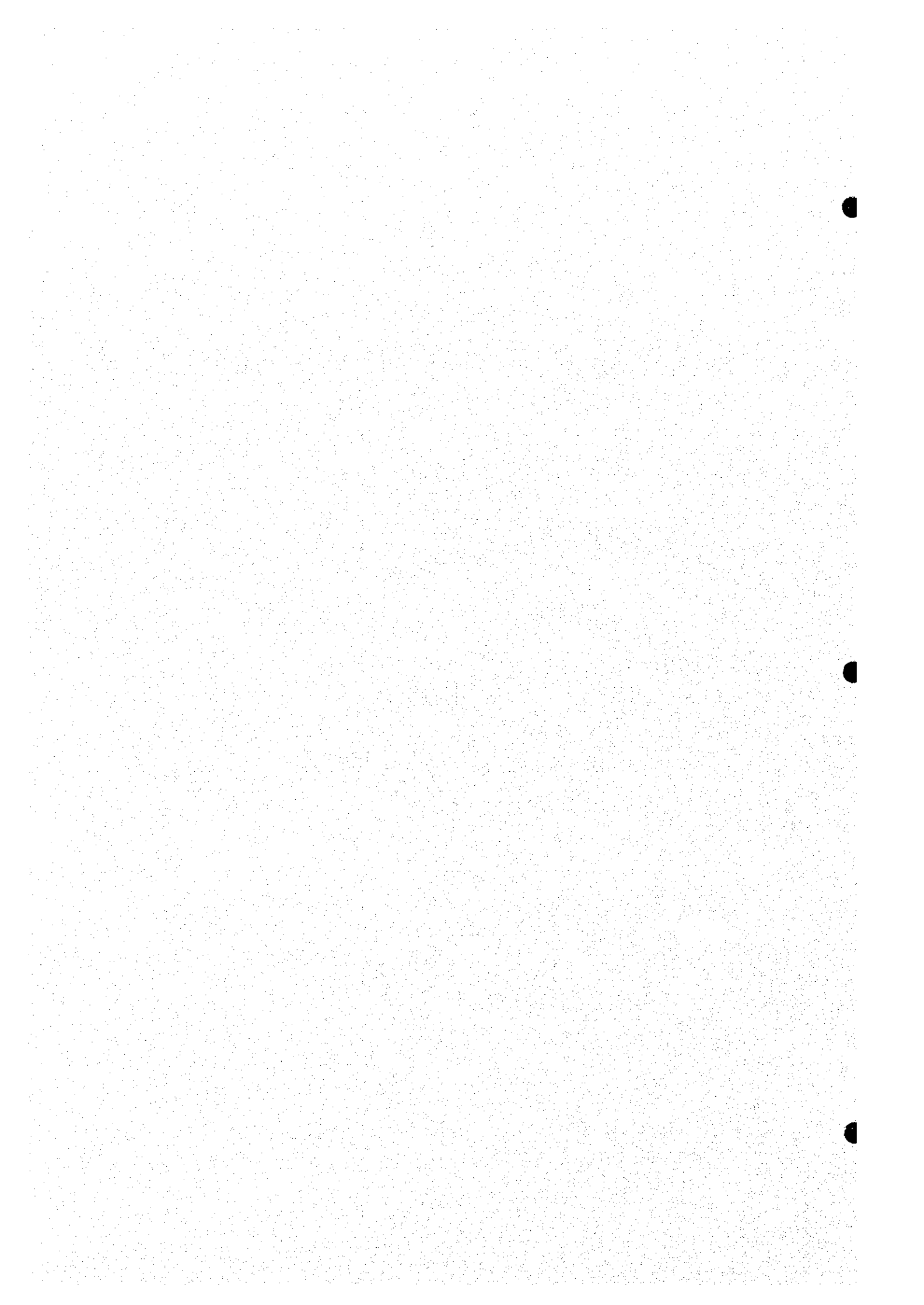


Figure 6-6 Plan for Extension of Promotion of Energy Efficiency

Appendix 6

Law Concerning Rational Use of Energy (Japan)



Law Concerning Rational Use of Energy (Japan)

Chapter 1. General

Article 1. Objective

The objective of this Law is to contribute to sound growth of the nation's economy through taking necessary measures to achieve the rationalization of energy use in factories, buildings, and machinery/equipment, and through taking necessary measures to promote comprehensive rationalization of energy use for other purposes, in order to ensure effective use of fuel resources in consideration of the socioeconomic environment of energy in Japan and abroad.

Article 2. Definition

1. For the purpose of the Law, the term, "Energy," means fuels as well as heat and electricity generated from these fuels as heat sources.
2. For the purpose of the Law, the term, "Fuel," means crude oil, volatile oil, heavy oil, and other petroleum products and flammable natural gases defined in the ordinance of the Ministry of International Trade and Industry (hereinafter referred to as "MITI") as well as coal, coke, and other coal products defined in the ordinance of MITI, all of which are to be used as fuel.

Chapter 1.2 Basic policies and others

Article 3.1 Basic policies

1. The Minister of International Trade and Industry shall establish and publicly announce its basic policies (hereinafter referred to as the "Basic Policies" or "Basic Policy") with regard to rationalization of Energy use from the viewpoint of comprehensively promoting rationalization of Energy use in factories and other industrial workplaces (hereinafter referred to as the "Factories" or "Factory"), buildings, machinery/equipment and the like.
2. Such Basic Policies shall be systematically compiled in consideration of long-term prospects for supply and demand of Energy as well as available technical levels for rationalization of Energy use and other factors, as they relate to the principal issues for measures which should

be taken by Energy users for the purpose of more effective use of Energy, to principal issues for policies of promoting rationalization of Energy use, and to other issues regarding rationalization of Energy use.

3. Any Basic Policies established by the Minister of International Trade and Industry shall be authorized by Cabinet Meeting.
4. Prior to determining any Basic Policies, the Minister of International Trade and Industry shall consult with the Minister of Construction with regard to construction and maintenance of building(s), or with the Minister of Transport with regard to efficiency of automobiles in terms of Energy consumption.
5. When the Minister of International Trade and Industry deems it is necessary to revise a Basic Policy in view of a change or changes in the situation stated in the above clause 2, such Basic Policy shall be revised so that it conforms with the new situation.
6. The provisions stipulated in the above clauses from 1 through to 4 shall be applied to the Basic Policies referred to in the above sub-clause 5 as well.

Article 3.2 Exertion by Energy users

Those who use Energy must make every effort to rationalize their use of it in consideration of the rules set forth in the Basic Policies.

Chapter 2. Measures and other rules concerning Factories

Section 1. Measures concerning Factories

Article 4. Guidelines for business operators

1. In order to adequately and effectively implement measures for rationalization of Energy use in individual Factories, the Minister of International Trade and Industry shall establish and publicly announce guidelines upon which proprietors, who operate businesses by using energy at their Factories (hereinafter referred to as "Business Operators"), can rely in connection with the items listed below, and shall also establish the goals for rationalization of Energy use:
 - 1) Rationalization of Fuel combustion systems
 - 2) Rationalization of heating, cooling, and heat transfer systems
 - 3) Prevention of heat loss due to radiation and transmission
 - 4) Recovery and utilization of waste heat
 - 5) Rationalization of systems to convert heat into motive power
 - 6) Prevention of electric power loss due to resistance and other factors
 - 7) Rationalization of systems to convert electricity into motive power, heat, etc.
2. The guidelines for criteria described in the above clause 1 shall be compiled in consideration of a long-term projection of supply/demand of Energy resources, technological level for rationalization of Energy use, and other relevant situations. In accordance with changes in such situations, the guidelines shall be revised from time to time if necessary.

Article 5. Guidance and advice

The competent minister with regulatory authority over the industrial sector to which that Factory belongs (hereinafter referred to as the "Competent Minister") may provide the Business Operators with guidance and/or advice necessary to implement items enlisted in each sub-clause of clause 1 of Article 4 in consideration of the guidelines for criteria described in the said clause of the same Article, in the event that the said minister deems it is necessary to do so in order to ensure adequate implementation of rationalization of Energy use in the Factories

Article 6. Designation of Factories

1. The Minister of International Trade and Industry may individually designate a manufacturers'

Factory or any other industrial establishment, which is used for types of particular industrial sectors defined by government ordinance, as a Factory which is specially required to promote rationalization in connection with use of fuels and other materials applicable to the items stipulated in the provisions of the government ordinance concerning consumption volumes of fuels and heat generated by these fuels (hereinafter referred to as "Fuels"), or as a Factory which is specially required to promote rationalization in term of electricity use applicable to the items stipulated in the provisions of the ordinance concerning consumption volume of electricity.

2. A Business Operator, who has a Factory which is used as the type of operation site defined in the ordinance described in the above clause 1, shall report to the Minister of International Trade and Industry on its consumption situation with regard to Fuels and electricity in the said Factory, as required by the provisions of the ordinance instituted by MITI, if the amount of the Fuel and electricity consumed during the previous fiscal year (the immediate previous one year started April 1 and ended March 31) at the said Factory is applicable to the ordinance mentioned in the provision of the above clause 1. However, the provision in this clause is not applicable to a Factory designated as a Factory which is required to specially promote rationalization of Fuel use based on the provision of the above clause 1 (hereinafter referred to as "Designated Heat Management Factory"), or as a Factory which is required to specially promote rationalization of electricity use based on the provision of the same clause (hereinafter referred to as "Designated Electricity Management Factory").
3. A proprietor (hereinafter referred to as the "Specific Business Operator") who has a Designated Heat Management Factory or a Designated Electricity Management Factory (both are generically referred to as a "Designated Energy Management Factory") may apply to the Minister of International Trade and Industry to cancel the said designation described in the above clause 2 in accordance with the ordinance of MITI, provided the said Factory falls into one of the following situations:
 - 1) if the Specified Business Operator terminates the type of business operation designated by the government ordinance described in the above clause 1.
 - 2) if the volume of fuel or electricity consumption is projected no longer to reach the minimum level regulated by the government ordinance described in the above clause 1.
4. The Minister of International Trade and Industry who receives an application as stated in the above clause 3 shall cancel the designation described in the above clause 1 without delay, provided the said application is deemed to be reasonable. Even if such an application is not

submitted, the provision of this clause is applied whenever the said Factory is deemed to fall into one of the situations specified in each sub-clause of the above clause 3.

5. When the Ministry of the International Trade and Industry designates a factory described in the above clause 1 or cancels designation described in the above clause 4, the Minister shall report such change to the Competent Minister with regulatory authority over the industrial sector to which the said Factory belongs.

Article 7. Energy Manager

In accordance with the provisions of the ordinance of MITI, each Specific Business Operator must select from among the employees and appoint a certain number of Energy Managers who possess the certificate of Energy Controller acquired pursuant to the standards stipulated in the government ordinance, for the respective Designated Energy Management Factory.

2. Whenever an Energy Manager is appointed or deceased or removed from his/her position, the Specified Business Operator must report such change to the Minister of International Trade and Industry in compliance with the provisions of the ordinance of MITI.

Article 8.1 Certification of Energy Controller

1. The certification of Energy Controller includes two types of certifications; Heat Controller and Electricity Controller. The Minister of International Trade and Industry shall issue the certifications to those who fall into one of the following qualifications:
 - 1) Those who have successfully passed the examination for the certified Energy Controller
 - 2) Those who have been authorized by the Minister of International Trade and Industry as having the equivalent or superior knowledge and experiences to those who are described in the above sub-clause (1).
2. Procedures for issuance of certificates for Energy Controllers shall be stipulated in an ordinance of MITI.

Article 8.2 Examination for the Energy Controllers' certification

1. The Minister of International Trade and Industry shall conduct examinations for the Energy Controllers' certification for respective types of Energy Controllers' certification.

2. The examination for Energy Controllers (hereinafter referred to as "Administration of the Examination") may be performed by an organization designated by the Minister of International Trade and Industry (hereinafter referred to as the "Designated Examination Institution").
3. The subjects of the examination for Energy Controllers, examination procedures, and other detailed requirements for the examination for Energy Controllers shall be defined in an ordinance of MITI.

Article 9. Functions Energy Managers

In respect of rational use of Fuels, Energy Managers in the Designated Heat Management Factories shall manage maintenance of equipment and facilities which consume Fuels, shall improve and monitor utilization methods of the Fuels, and shall perform duties defined by ordinances of MITI, while, in respect of rationalization of electricity usage, Energy Managers in the Designated Electricity Management Factory shall manage maintenance of equipment and facilities which consume electricity, improve and monitor utilization methods of electricity, and perform duties defined by ordinances of MITI.

Article 10. Duties of Energy Managers and others

1. Energy Managers must perform their responsibilities in good faith.
2. In connection with rationalization of energy use, the Specific Business Operators must respect the opinions of Energy Managers who are engaged in performing their responsibilities.
3. Every employee of the Designated Energy Management Factory must observe any instructions given by the Energy Managers who judge such instructions are necessary for the performance of their responsibilities.

Article 11. Periodical report

In compliance with the ordinance of MITI, Specific Business Operators must annually report items defined by the ordinance of MITI to the Competent Minister; in the case of Designated Heat Management Factories, each Specific Business must report with regard to consumed

volumes of the Fuels, other status of Fuels use (including data concerning utilization efficiency of the Fuels), status of equipment and facilities which consume the Fuels, and introductions and removals of equipment and facilities relevant to rational use of the Fuels; in the case of Designated Electric Management Factories, Specific Business Operators must report with regard to consumed volume of electricity, other status of electricity use (including data concerning utilization efficiency of electricity), status of equipment and facilities which consume electricity, and introductions and removal of equipment and facilities relevant to rational use of electricity.

Article 12.1 Instructions and orders to make rationalization plan

1. If the Competent Minister regards that the rationalization status of Energy use in a Designated Energy Management Factory is notably insufficient with respect to the criteria of guidelines described in clause 1 of Article 4, the minister, by showing reasons for the judgment, can instruct the Specific Business Operator of the said Designated Energy Management Factory to prepare and submit a plan for rationalization of Energy use (hereinafter referred to as a "Rationalization Plan").
2. If the Competent Minister regards that the said Rationalization Plan is improper for ensuring adequate achievement of rational use of Energy in the said Designated Energy Management Factory, the minister may instruct the Specified Business Operator to amend the Rationalization Plan.
3. If the Competent Minister deems that a Specific Business Operator has neglected implementation of the said Rationalization Plan, the Minister can instruct the said Specific Business Operator to execute the Rationalization Plan properly.
4. If the Specific Business Operator who was given the instruction described in the above clause 3 has failed to observe it, the Competent Minister may announce the fact to the public.
5. If the Specific Business Operator, who has been given instructions based on the clauses from 1 through 3, does not execute the instructed measures without fair reasons, the Competent Minister, after listening to opinions of the council organized by the government ordinance, can order the applicable Specific Business Operator to implement the instructed measures.

Section 2. Designated Examination Institution

Article 12.2. Designation

1. Designation defined in clause 2 of Article 8.2 shall be made following an application by one who wishes to perform Administration of the Examination in accordance with the ordinance of MITI.
2. Should the Minister of International Trade and Industry designate the Examination Institution based on clause 2 of Article 8.2, then the Ministry will not execute Administration of the Examination.

Article 12.3. Disqualification

Organization that falls into one of the following items cannot be designated as the Examination Institution defined in clause 2 of Article 8.2:

- 1) Organization that has its designation canceled in accordance with the provision defined in clause 2 of Article 12.13, and the elapsed time since such cancellation is two years or shorter.
- 2) Organization that has an operating director who falls into one of the following conditions:
 - a) One for whom two years or more have not elapsed since he/she breached this Law, or a proceeding based on this Law imposed a punishment, and completed such a punishment, or since the day such a punishment was terminated.
 - b) One who was dismissed due to the order defined in Article 12.9, and the elapsed time since such dismissal is two years or less.

Article 12.4 Standards for designation

The Minister of International Trade and Industry shall not designate any examination institution if another organization is designated based on clause 2 of Article 8.2, and unless the organization that applies for the designation defined in the same clause satisfies each of the following conditions:

- 1) The execution plan for Administration of the Examination including the staff members, equipment and facilities, operation methods for Administration of the Examination, and other requirements are appropriate to ensure performance of Administration of the Examination.
- 2) The organization has enough basic accounting and technical capabilities to ensure

execution of the plan for the Administration of the Examination described in the above sub-clause (1).

- 3) The applying organization is a corporation established in compliance with the provision of Article 34 of the Civil Law Act (Law No. 89 of 1986).
- 4) If the applying organization has another business operation other than Administration of the Examination, there is no risk of having an adverse effect on Administration of the Examination due to activities for the other operation.

Article 12.5 Rules for Administration of the Examination

1. The Designated Examination Institution shall prepare rules concerning implementation of Administration of the Examination (hereinafter referred to as the "Rules for Administration of the Examination"), and such rules shall be authorized by the Minister of International Trade and Industry. When such Rules are to be revised, the same procedure shall be taken.
2. The items that are required to be contained in Rules for Administration of the Examination will be specified by an ordinance of MITI.
3. When the Minister of International Trade and Industry deems that the Rules for Administration of the Examination authorized in accordance with the above clause 1 have become inadequate for fair execution of Administration of the Examination, the Minister may order the Designated Examination Institution to amend such Rules for Administration of the Examination.

Article 12.6 Suspension and relinquishment of Administration of the Examination

Unless authorized by the Minister of International Trade and Industry, the Designated Examination Institution shall not suspend nor relinquish any part of nor all of the operation of Administration of the Examination.

Article 12.7 Work plan and others

1. The Designated Examination Institution shall annually formulate a work plan as well as a budgetary plan for the ensuing fiscal year, and such plans must be authorized by the Ministry of International Trade and Industry before start of every fiscal year (in the case of the fiscal year when the organization was designated, the plan must be prepared without delay). When

such a plan is to be revised, the same procedure shall be taken.

2. The Designated Examination Institute must prepare an operation report as well as a financial report for the fiscal year within three months from the end of every fiscal year, and must provide the Minister of International Trade and Industry with such reports.

Article 12.8 Assignment and dismissal of directors

Assignment and dismissal of directors of the Designated Examination Institutions shall not be validated without obtaining authorization from the Minister of International Trade and Industry.

Article 12.9 Order to dismiss director

Should a director of the Designated Examination Institution breach a provision in this Law (including punishment based on this Law) or the Rules for Administration of the Examination, or commit markedly unfair practice in relation to Administration of the Examination, the Minister of International Trade and Industry can order the Designated Examination Institution to dismiss such a director.

Article 12.10 Examiners for Energy Controllers

1. In performing Administration of the Examination, the Designated Examination Institution must have examiners for Energy Controller examination (hereinafter referred to as "Examiners") who are capable of engaging in any works with regard to judgment for knowledge and capabilities of applicants for Energy Controllers.
2. In assigning Examiners, the Designated Examination Institution must select them from among persons who satisfy the requirements specified in the ordinance of MITI.
3. Upon assigning the said Examiners, the Designated Examination Institution must report it to the Minister of International Trade and Industry in accordance with the ordinance of MITI. The same procedure shall be taken whenever an Examiner is replaced.
4. The provision of the above Article 12.9 shall be applied to Examiners as well.

Article 12.11 Non-disclosure responsibility and others

1. The directors and employees (including Examiners; this is applicable to the following clause 2) of the Designated Examination Institution, and those who have once worked for the said Institution must disclose no confidential information known through Administration of the Examination.
2. Any directors and employees of the Designated Examination Institution who engage in Administration of the Examination are deemed to be public officials by law in terms of application of the Criminal Law Act (Law No. 45 of 1907) and other penal regulations.

Article 12.12 Order for conformity

1. If the Minister of International Trade and Industry deems that the Designated Examination Institution has become unable to satisfy any of the sub-clauses (except for sub-clause 3; this is applicable to the other part of this clause) of Article 12.4, the Minister can order the Designated Examination Institution to take proper measures to satisfy each provision of the said sub-clauses.
2. In addition to the provision of the above clause 1, the Minister of International Trade and Industry may issue any orders necessary for controlling Administration of the Examination with respect to the Designated Examination Institution, when the Minister regards it necessary to do so in order to execute this Law.

Article 12.13 Cancellation of designation

1. Provided the Designated Examination Institution has become unable to satisfy sub-clause (3) of Article 12.4, the Minister of International Trade and Industry must cancel the designation defined in clause 2 of Article 8.2.
2. If the Designated Examination Institution falls into one of the situations specified in the following sub-clauses, the Minister of International Trade and Industry may cancel the designation defined in clause 2 of Article 8.2, or may order suspension of all of or a part of operations of Administration of the Examination for a certain period:
 - 1) The said Institution has breached a provision in this clause.
 - 2) The said Institution has fallen into the situation described in sub-clause (2) of Article 12.3.

- 3) The said Institution has implemented Administration of the Examination without depending upon the Rules for Administration of the Examination authorized in accordance with sub-clause 1 of Article 12.5.
- 4) The said Institution failed to follow the order described in clause 3 of Article 12.5, or Article 12.9 (including cases applied in accordance with clause 4 of Article 12.9), or Article 12.12.
- 5) It is found that the said Institution was designated, based on the provision of the clause 2 of the Article 8.2, as a result of using unlawful means.

Article 12.14 Record book

1. The Designated Examination Institution must prepare books to record any information required by the ordinance of MITI concerning Administration of the Examination.
2. The above mentioned books must be preserved in accordance with the ordinance of MITI.

Article 12.15 Implementation of Administration of the Examination by the Minister of International Trade and Industry

1. The Minister of International Trade and Industry, if he/she deems it necessary, shall execute all or a part of Administration of the Examination by himself/herself if the Designated Examination Institution stops all or a part of Administration of the Examination after receiving authorization stated in Article 12.6; or if the Designated Examination Institution was ordered to suspend all or a part of Administration of the Examination pursuant to the provision of clause 2 of Article 12.13; or if the Designated Examination Institute has become unable to implement all or a part of Administration of the Examination due to an Act of God or another reason.
2. If the Minister of International Trade and Industry executes all or a part of Administration of the Examination by himself/herself as a result of the above clause 1, or if the Designated Examination Institution relinquishes all or a part of Administration of the Examination after obtaining the authorization described in the provision of Article 12.6, or if the Minister of International Trade and Industry cancels designation of the Examination Institute based on the provision of Article 12.13, any necessary procedures to transfer the operations of Administration of the Examination shall be specified by an ordinance of MITI.

Article 12.16 Public announcement

If one of the following cases arises, the Minister of International Trade and Industry shall announce it to the public through an official gazette:

- 1) Designation based on clause 2 of Article 8.2
- 2) Authorization based on Article 12.6
- 3) Cancellation of designation based on Article 12.3, or suspension of all or part of Administration of the Examination based on clause 2 of the same Article.
- 4) When the Minister of International Trade and Industry takes over all or part of Administration of the Examination to execute by himself/herself in accordance with the provision of clause 1 of Article 12.15, or when the Minister stops all or a part of the operation of Administration of the Examination that had been implemented by himself/herself.

Chapter 3. Measures for buildings

Article 13. Obligations of building owners

In consideration of the provisions stipulated in the Basic Policies, any person who intends to construct a building (hereinafter referred to as the "Building Owner") must strive to contribute to rationalization of Energy use in relation to the building through properly implementing the following measures:

- 1) Measures to prevent heat loss through external walls, windows, etc.
- 2) Measures for efficient use of Energy in relation to air-conditioners to be installed in the building, and other building-related equipment classified by other government ordinance (hereinafter referred to as "Air-conditioners")

Article 14. Standards for Building Owners' criteria

1. For the purpose of promoting appropriate and effective rationalization of Energy use concerning buildings, the Minister of International Trade and Industry and the Minister of Construction shall establish and publicly announce standards of criteria to which Building Owners should refer in making decisions on measures described in each sub-clause of Article 13.

2. The provision of clause 2 of Article 4 shall be applied to the above clause 1 as well.

Article 15.1. Guidance and advice on construction

1. When the Minister of Construction judges it is necessary for ensuring the appropriate execution of measures described in each sub-clause of Article 13 with regard to building (except for private dwellings, which is applied to both this clause and clause 1 of Article 16.), the Minister, in consideration of the standards of criteria defined in clause 1 of Article 14, may give necessary guidance and advice on building design and construction to the Building Owners.
2. When the Minister of Construction judges it is necessary for ensuring appropriate execution of measures for housing construction described in each sub-clause of Article 13, the Minister shall establish and publicly announce guidelines for designs and construction of private dwellings in term of efficient use of Energy with regard to prevention of heat loss through external walls, windows, etc. of houses as well as Air-conditioners installed in houses pursuant to the standards of criteria defined in the clauses of Article 14.

Article 15.2. Instruction for special buildings

1. If the Minister of Construction deems that the measures for prevention of heat loss through external walls, windows, etc. and efficient use of Energy concerning the Air-conditioners of Specific Buildings which are to be specified in the government ordinance in term of sizes (hereinafter referred to as the "Specific Buildings") are insufficient with respect to the standards of criteria defined in clause 1 of Article 14, the Minister, by explaining the basis of his/her judgment, may give necessary instruction to the Building Owners who intend to construct the Specified Buildings (hereinafter referred to as the "Specific Building Owners") with regard to measures for prevention of heat loss through external walls, windows, etc. of Specific Buildings as well as efficient use of Energy by Air-conditioners installed in the Specific Buildings in connection with design and construction of the said Specific Buildings.
2. In the event that a Specific Building Owner fails to observe the above mentioned instruction without fair reason, the Minister of Construction may announce it to the public.

Article 16. Guidance and Advice for building materials

When the Minister of Construction judges it is particularly necessary to ensure that a building is to be constructed in conformity with the standards of criteria defined in clause 1 of Article 14 or the guideline described in clause 2 of Article 15, the Minister, in consideration of the standards of criteria or the said guidelines, may give necessary guidance and advice to the manufacturers who produce building materials to be used for prevention of heat loss through external walls, windows, etc. of buildings, concerning the enhancement of quality as well as display of quality information about the insulation properties of the said building materials.

Chapter 4.1 Measures for machinery and other equipment

Article 17. Exertion by suppliers

In consideration of the Basic Policies, persons who manufacture or import Energy-consuming machinery and other equipment (hereinafter referred to as "Suppliers") must strive to promote rationalization of Energy use by machinery and equipment through enhancing the performance of machinery or equipment that they manufacture or import, in terms of Energy consumption.

Article 18. Standards of criteria for the Suppliers

1. With regard to the automobiles (limited to the types of automobiles that are designated by government ordinance as the automobiles specially required to improve their performances defined in the above Article 17; this interpretation is applied to the rest of this Law) and other machinery/equipment that are used in large volumes in Japan and consume considerable amounts of Energy during their use, and that are designated by the government ordinance as the products that are specially required to improve the said performances (hereinafter referred to as the "Specific Equipment"), the Minister of International Trade and Industry (for automobiles, the Minister of International Trade and Industry as well as the Minister of Transportation; this interpretation is applied to other parts of this Article and clause 5 of Article 25) shall establish and publicly announce standards for criteria for respective Specific Equipment to which Suppliers should refer in making decisions concerning the said performances.
2. The provision of clause 2 of Article 4 is applied to the standards for the criteria defined in the above clause 1 as well.

Article 19. Recommendation concerning Energy efficiency

When the Minister of International Trade and Industry, with regard to the Specific Equipment manufactured or imported by the Suppliers whose manufacturing volumes or importing volumes of the Specific Equipment exceed the requirements specified by the government ordinance, deems that it is necessary to improve Energy efficiency defined in Article 17 to a considerable extent in view of the standards for criteria defined in clause 1 of Article 18, the Minister may recommend that the said Suppliers improve the said performances of the their manufactured or imported Specific Equipment by showing their target values.

Article 20. Labeling

The Minister of International Trade and Industry shall decide and announce to the public the following items for the respective Specific Equipment (except for household articles specified in sub-clause 1.1 of Article 2 in the Household Products Labeling Act -- Law No. 104 of 1972; this interpretation is applied to rest of this Article and Article 21):

- 1) Information that the Suppliers should display concerning Energy consumption efficiency (i.e. values calculated in accordance with the formulae specified in the ordinance of MITI — the ordinances of MITI and Ministry of Transport for automobiles — of the Specific Equipment, which was provided as the performance values of Specific Equipment in view of Energy consumption volume) of the Specific Equipment
- 2) Items that must be observed by the Suppliers for labeling methods and other marking information about Energy consumption efficiencies

Article 21.1. Recommendation and order for labeling

1. When the Minister of International Trade and Industry judges that a Supplier is not displaying information regarding Energy consumption efficiency in conformity with the items announced based on the provision of Article 20 with regard to a the Specific Equipment, the Minister, concerning the Specific Equipment manufactured or imported, can recommend that the said Supplier display the information about its Energy consumption efficiency in accordance with the items announced.
2. If the Supplier who was recommended as described in the above clause 1 does not observe the said recommendation, the Minister of International Trade and Industry may announce the fact

to the public.

3. If the Supplier who was recommended pursuant to the above clause 1 neglects to take any measures to satisfy the recommendation without fair reason, and if the Minister of International Trade and Industry judges that such negligence may considerably obstruct rationalization of Energy consumption in relation to the said Specific Equipment, the Minister, after hearing opinions of the council set forth by the government ordinance, can order the said Supplier to take necessary measures in conformity with the recommendation.

Chapter 4.2 Activities for rational use of energy by the New Energy and Industrial Technology Development Organization

Article 21.2. Activities for rational use of Energy

In addition to the activities defined in clauses 1 and 2 of Article 39 of the "Law Concerning Promotion of Development and Introduction of Oil-substitutive Energy" (Law No. 71 of 1980; hereinafter referred to as "Law for Oil-substitutive Energy"), the New Energy and Industrial Technology Development Organization (hereinafter referred to as the "Organization") shall implement the following activities in order to promote rational use of Energy:

- 1) Development of technologies for rationalization of Energy use, which is deemed to be necessary for promotion of the nation's economy
- 2) To grant financial aid to be spent for rational Energy use technologies of which dissemination is deemed to be particularly necessary
- 3) Collection and provision of information regarding rationalization of Energy use, and the giving of guidance in relation to technologies for rationalization of Energy use
- 4) Activities accompanied by the activities listed in each of the above sub-clauses

Article 21.3 Exceptional changes in the Law for Oil-substitutive Energy

While activities of the Organization are being implemented in accordance with the provisions of Article 21.2, "sub-clauses 1.1 and 1.9 of Article 39" appearing in clause 1 of Article 40 of the Law for Oil-substitutive Energy shall be construed as "sub-clauses 1.1 and 1.9 of Article 39 as well as sub-clause 2.1 of Article 21 of the Law Concerning Rational Use of Energy (hereinafter referred to as the "Rationalization Law"); similarly "clause 1 of Article 39" appearing in clause 1 of Article 41 of the Law for Oil-substitutive Energy shall be construed as "clause 1 of Article 39 as well as clause 2 of Article 21 of the Rationalization Law"; "this Law" appearing in clause 2 of

Article 53 and clause 1 of Article 54 of the Law for Oil-substitutive Energy shall be construed as "this Law or Rationalization Law"; and "clause 1 of Article 39" appearing in sub-clause (3) of Article 59 of the Law for Oil-substitutive Energy shall be construed as "clause 1 of Article 39 as well as clause 2 of Article 21 of the Rationalization Law."

Chapter 5. Miscellaneous provisions

Article 22. Financial measures

The government shall strive to take financial, monetary, and taxation measures necessary for promotion of rational use of energy and other relevant policies.

Article 23. Promotion of science and technology

The government shall make efforts to take measures for promotion of science and technology, dissemination of the results, and other necessary measures which contribute to promotion of rational use of energy and other relevant policies.

Article 24. Measures to deepen consumers' awareness

The government shall make efforts to deepen awareness of consumers in relation to rational use of energy through educational, publicity and other activities, while the government shall ask consumers to cooperate in implementing such efforts.

Article 25.1. Reports and spot-inspections

1. In accordance with government ordinance, the Minister of International Trade and Industry may ask proprietors who are engaged in the type of businesses specified by the government ordinance described in clause 1 of Article 6, to report the status of operations in the applicable Factories, to the extent that is necessary for execution of the provision in clauses 1 and 4 of Article 6.
2. In accordance with the government ordinance, the Competent Minister may ask the Specific Operators to report the status of operations in the said Designated Energy Management Factories, or may have officers of the said ministry conduct on-site inspections of energy-

consuming equipment, books, documents, and other relevant materials, to the extent that is necessary for execution of the provision of Article 12.

3. The Minister of International Trade and Industry may ask the Designated Examination Institution to report the status of its operation or financial situation, or may have officers of the said ministry conduct a spot-inspection of books, documents, and other relevant materials at the office of the said Designated Examination Institution, to the extent that is necessary for executing the provisions of Section 2 of Chapter 2.
4. In accordance with the government ordinance, the Minister of Construction may ask the Specific Building Owners to report on items concerning designs and construction of the applicable Specific Buildings, or may have officers of the said ministry conduct site inspections for the Specific Buildings, construction equipment, documents, and other materials at the Specific Buildings or the construction sites of the Specific Buildings, to the extent that is necessary to execute sub-clause 2 of Article 15.
5. In accordance with government ordinance, the Minister of International Trade and Industry may ask the Suppliers of Specific Equipment to report on the status of their operations concerning the Specific Equipment, or may have officers of the said ministry conduct site inspections of the Specific Equipment, books, documents, and other materials at the office, or factory or warehouse of the said Suppliers of the Specific Equipment, to the extent that is necessary to execute sub-clause 2 of Article 15.
6. Each officer who conducts spot-inspections in accordance with the above clauses 2 through 5 must carry certification identifying himself/herself, and must show it to the relevant persons.
7. The rights of the officers described in the above clauses 2 through 5 shall not be construed to be permitted for the purpose of criminal investigation.

Article 25.2. Charges

1. The persons who intend to take the examination for Energy Controllers, who intend to acquire the certification based on the provision of sub-clause 1 (2) of Article 8, and who intend to receive the certification of Energy Controllers as a result of success in the examination for Energy Controllers conducted by the Designated Examination Institution must pay respective charges that are specified by the government ordinance in view of the actual cost.

2. The above mentioned charges paid by persons who intend to take the examination for Energy Controllers conducted by the Designated Examination Institution shall become income of the Designated Examination Institution, while the other charges shall be transferred to the national revenue.

Article 25.3. Special case of hearing method

1. Trials to be held on the day of hearing concerning punishment in accordance with the provisions of Article 12.9 (including application of clause 4 of Article 12.10) or Article 12.13 must be opened to the public.
2. When a person concerned with such a punishment asks to participate in the procedure for the hearing in accordance with the provision of clause 1 of Article 17 of the Administration Procedure Act (Law No. 88 of 1993), the chairman of the said hearing shall allow his/her participation.

Article 25.4. Appeal of dissatisfaction concerning punishment to be made by the Designated Examination Institution

Any person who is dissatisfied with the punishment (except for cases arising as a result of examination) imposed by the Designated Examination Institution in relation to Administration of the Examination or with the forbearance, may submit an application to the Minister of International Trade and Industry for investigation in accordance with the Dissatisfaction Appeal Administrative Examination Act (Law No. 160 of 1962).

Article 26. Authorization of orders by interim measures

When an order is formulated or revised or canceled in accordance with this Law, a necessary interim measure can be instituted, as a result of such formulation or revision or cancellation, by means of such order, to the extent that it is judged to be reasonably necessary.

Article 27.1. The Competent Minister and others

1. The Competent Minister in charge of this Law is the Minister of International Trade and Industry as well as the minister with regulatory authority over the industrial sector to which

the applicable Factories belong.

2. The competence specified in this Law may be consigned to the heads of local branches or department or bureau in accordance with the government ordinance.

Chapter 6. Penal regulations

Article 27.2. Persons who have breached the provision of clause 1 of Article 12.11 are subject to penal servitude of up to one year, or a fine of up to one million yen.

Article 27.3. If the Designated Examination Institution breaches an order suspending Administration of the Examination described in clause 2 of Article 12.13, the director(s) or staff member(s) of the Institution who violated such order is/are subject to penal servitude of up to one year, or a fine of up to one million yen.

Article 28. The person who falls into one of the following categories is subject to a fine of up to five hundred thousand yen:

- 1) Any person who has breached the provision of clause 1 of Article 7
- 2) Any person who has breached an order defined in the provision of Article 12.5 or 21.3

Article 29.1. The person who falls into one of the following categories is subject to a fine of up to three hundred thousand yen:

- 1) Any person who has neglected to submit the report defined in clause 2 of Article 6, or who has submitted a false report
- 2) Any person who has neglected to submit the report defined in clause 1, 2, 4 or 5 of Article 25, or who has submitted a false report, or who has rejected or interrupted or avoided the inspection defined in clause 2, 4, or 5 of the same Article.

Article 29.2. The violating director or staff member of the Designated Examination Institution who falls into one of the following situations is subject to a fine of up to three hundred thousand yen:

- 1) He/she abolished all operations of the Administration of the Examination without obtaining authorization as defined in Article 12.6.
- 2) He/she, breaching the provision of clause 1 of Article 12.14, did not prepare a book, nor

keep a record, or prepared a false record, or did not preserve the books under the provision of clause 2 of the same Article.

- 3) He/she neglected to submit the report defined in clause 3 of Article 25, or submitted a false report, or rejected or interrupted or avoided the inspection defined in the same clause of the same Article.

Article 30. In the event that the representative director of a corporation, proxy for a corporation or personnel, its employee, or other employee breaches the provisions of Articles 28 and 29 in connection with the operations of the corporation or personnel, a penalty shall be imposed on such corporation or person(s), while the actual breaching person shall be punished.

Article 31. Any person who has neglected to submit the report defined in clause 2 of Article 7, or who has submitted a false report, is subject to a fine of up to one hundred thousand yen.

Supplementary provisions (June 22, 1979)

1. Law enforcement date

This Law is to be enforced commencing on a date within nine months from the date of its promulgation, as set forth by the government ordinance. However, the provision of Article 8 shall be enforced commencing on the date of promulgation.

2. Review

The government shall review each provision in this Law corresponding to changes in Energy situations and other economic situations at home and abroad, and shall take necessary measures based on the result of such review.

3. Abolition of the Heat Management Law

The Heat Management Law (Law No. 146 of 1951) shall be abolished.

4. Interim measures following abolition of the Heat Management Law

Any certificates of Heat Controllers issued in accordance with Article 12 of the Heat Management Law prior to the abolition described in the above clause 3 shall be regarded as certificates of Heat Controllers issued based on the provision of clause 1 of Article 8.

5. The applicable penal regulations with respect to deeds committed prior to the enforcement of this Law shall be the previous regulations that were in effect before such new enforcement.

6. A partial revision of the Law Concerning Establishment of MITI

A part of the Law Concerning the Establishment of the Ministry of International Trade and Industry (Law No. 27 of 1952) is revised as follows:

The following sub-clause shall be added after sub-clause 6.10 of Article 36:

10.2 In relation to execution of the Law Concerning Rational use of Energy (Law No. 49 of 1979)

7. A partial revision of the Law Concerning the Establishment of the Ministry of Construction

A part of the Law Concerning the Establishment of the Ministry of Construction (Law No. 113 of 1948) is revised as follows:

Sub-clause 22.6 in Article 3 is changed to sub-clause 22.7, and accordingly sub-clauses 22.2 through 22.5 are shifted down respectively from 22.3 through 22.6. Then, the following sub-

clause 22.2 is added immediately after 22.1:

22.2 To manage clerical works in relation to enforcement of the Law Concerning Rational Use of Energy (Law No. 49 of 1979)

The portion "22 (2) through 22 (5)" in clause 3 of Article 4 is changed to "22 (3) through 22 (6)," then "clerical works defined in sub-clause 19 of the same Article, clerical works defined in sub-clause 20 of the same Article, sub-clauses 21, 22, and 22 (6)" of clause 7 of the same Article are changed to "sub-clauses 19 through 22 (2) as well as sub-clause 22 (7)."

Supplementary provisions (March 31, 1993)

Article 1. Law enforcement date

This Law shall be enforced commencing on the day of its promulgation. However, the provision defined in each of the following sub-clauses shall be enforced commencing on the day specified in each sub-clause.

(Omitted)

- 5) The day defined by the government ordinance, which is within three months from the date of promulgation of the provisions of Articles 25, 26, 28 through 30, 33, and 35 (i.e. a partial revision of the Law Concerning Rational Use of Energy), the provision of Article 36 (except for the provision for revision specified in Article 54 of the Electricity Enterprises Act. This is applied to Article 8 of the supplementary provisions except for its clause 3), provisions of Articles 37, 39, and 43 as well as Article 8 (except for clause 3) of the supplementary provisions.

(Omitted)

Article 16. Interim measures concerning penal regulations

Any deeds made before enforcement of this Law as well as any deeds made after enforcement date of the provisions of Articles 17, 22, 36, 37, and 39, if such deeds are subject to punishment by the previous penal regulations in accordance with Article 3 of the supplementary provision, clause 5 of Article 5, clause 2 of Article 8, Articles 9 or 10, shall be applied the previous penal regulations.

(Omitted)

Supplementary provision (November 12, 1993)

Article 1. Law enforcement date

This Law shall be enforced commencing on the date of enforcement of the Administrative Procedure Act (Law No. 88 of 1993).

(Omitted)

Supplementary provisions (April 9, 1997)

Article 1. Law enforcement date

This Law shall be enforced on the date of its promulgation. However, the provisions of Articles 3, 4, and 15 as well as Articles 4, 5, 16, 20, and 21 of the supplementary provisions shall be enforced on the day within one month from the promulgation date, as specified by the government ordinance.

(Omitted)

Article 9. Interim measures following a partial revision of the Law Concerning Rational Use of Energy

If an Energy Manager is assigned or deceased or dismissed before enforcement of the provision of Article 8, the submission of the report shall be implemented in compliance with the previous rule.

(Omitted)