Guideline

For

Writing a report on Energy Conservation Target and Plan and audit and Analysis on Operation in compliance with Energy Conservation Target and Plan

For

Designated factory

In accordance with the Ministerial Regulation regarding criteria, procedure and schedule for establishing Energy Conservation target and plan and audit and analysis on Operation in compliance with Energy Conservation Target and plan for designated factory and designated building B.E. 2547 (2004)

Department of Alternative Energy Development and Efficiency (DEDE)
Ministry of Energy

April B.E. 2548 (2005)

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Annex

1. Background

Establishing an energy conservation target and plan is a step in energy conservation that the owner of a designated factory must comply with the Energy Conservation and Promotion Act B.E.2535 (1992) in accordance with the scope as prescribed by the Ministerial Regulations. The Ministerial Regulation regarding criteria, procedure and schedule for establishing Energy Conservation Target and plan and audit and analysis on Operation in compliance with Energy Conservation Target and plan for designated factory and designated building B.E. 2547 (2004), which became enforceable on the 29th day of April B.E. 2548 (2005), shall take the place of the energy conservation procedure prescribed in the previous ministerial regulation, the Ministerial Regulation No.6 (B.E. 2540 (1997)). The previous regulation directed that the owner of a designated factory must compose a report on preliminary audit and analysis of energy consumption, detailed audit and analysis of energy consumption, and establish a report on energy conservation target and plan.

Department of Alternative Energy Development and Efficiency (DEDE) therefore sets up the guideline on establishing a report on energy conservation target and plan for designated factory as prescribed in the Ministerial Regulation B.E. 2547 (2004). The guideline prescribes a procedure in making up a report on energy conservation target and plan, an audit and analysis on energy consumption and also includes a report template to facilitate and clarify the step in establishing a report on energy conservation target and plan so the owner of a designated factory can implement measures recommended in the report to conserve the energy in its business and to comply with the law.

2. Submission deadline for Energy Conservation target and plan

The owner of a designated factory must submit the report on energy conservation target and plan to Department of Alternative Energy Development and Efficiency (DEDE) every three years. At the first time, the report on energy conservation target and plan must be submitted within one year from the date that the Ministerial Regulation regarding criteria, procedure and schedule for establishing Energy Conservation Target and plan and audit and analysis on Operation in compliance with Energy Conservation Target and plan for designated factory and designated building B.E. 2547 (2004) became enforceable, that is 29th April B.E. 2548 (2005).

3. Procedure for writing a report on Energy Conservation target and plan

3.1 Establishing an energy conservation target and plan

Establishing an energy conservation target and plan is one step in an energy management system for the purpose of conserving energy. In general, the development of an energy management system can be divided into eight steps as follows:

Step 1: Define a structure of energy management

Step 2: Preliminary assess the condition

Step 3: Set up a policy and public relations

Step 4: Assess technical competency

Step 5: Define measures, targets, and calculation of investment return

Step 6: Establish an action plan

Step 7: Implement an action plan

Step 8: Review an implementing outcome

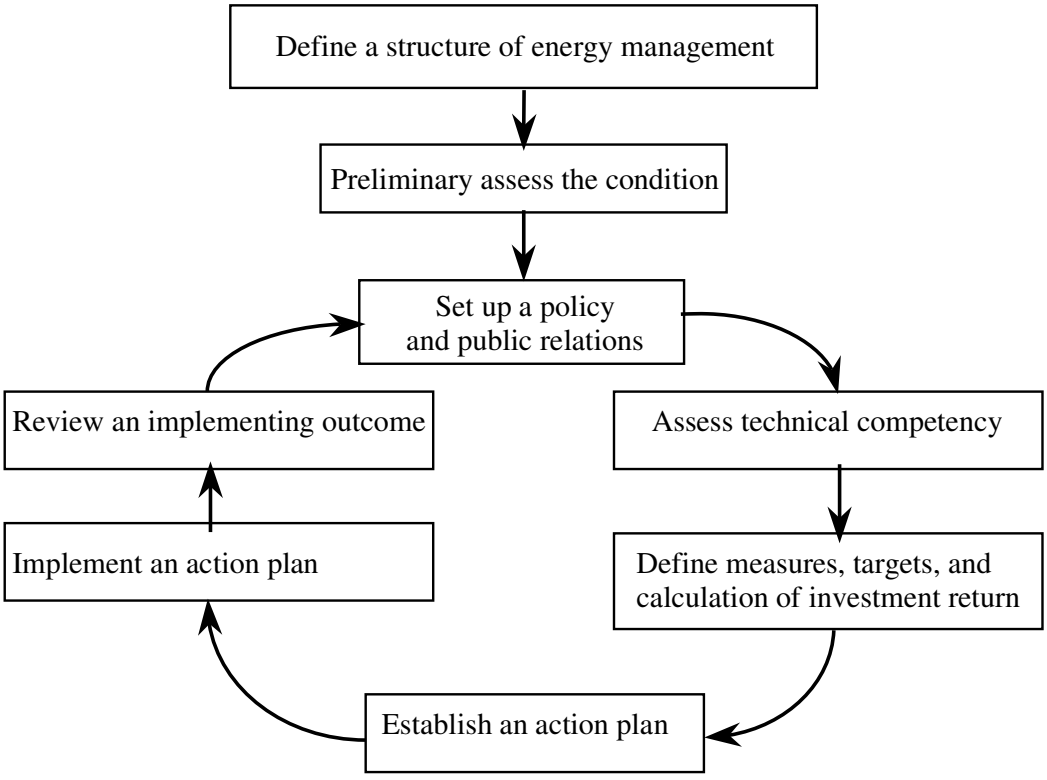

Figure 1: Development of an energy management system

Establishment of an energy conservation target and plan can be done by following the fourth, fifth, and sixth steps. For additional details relating to an energy management system, the owner of a designated factory and the owner of a designated building can follow the Energy Management System: Specification and the Implementation Toolkits which Department of Alternative Energy Development and Efficiency has developed for the owner of a designated factory, the owner of a designated building and others who generally interest in energy conservation to use the specification and the toolkits as a guideline in conserving energy in its facility. However, to comply with the law in establishing the target and plan, there are some suggestions concerning the priority arrangement for each measure and the financial status of the factory owner for each measure as follows:

- Measure that can be easily implemented and needs little money for investment or not at all such as management measure, maintenance measure, etc. This type of measure should be considered as a first priority.

- Measure that needs money for investment should be considered for its investment return rate. The measure giving the highest investment return rate should be considered as a first priority.

- Consideration of the financial status by grouping measures that providing the highest investment return rate as a first priority with the financial status. If the first priority measure cannot be afforded, then the succeeding measure can be considered.

Other problems that may encounter and may affect an improvement of each measure should be considered as well such as technical problem, marketing problem, or a case of discontinuing machinery for an improvement which may have an impact on marketing in the long run, etc. These problems should be carefully considered for each prioritized measure with the good justification.

3.2 Explanation for a report template of Energy Conservation target and plan

A report on energy conservation target and plan shall consist of the details as prescribed in Annex 1 and Annex 2 annexed to the Ministerial Regulation regarding criteria, procedure and schedule for establishing Energy Conservation Target and plan and audit and analysis on Operation in compliance with Energy Conservation Target and plan for designated factory and designated building B.E. 2547 (2004). DEDE has provided a template for a report on energy conservation target and plan as shown in Annex A and an explanation for such template as follows:

1) Report on energy conservation target and plan for a designated factory

Detail	Explanation
Report cover page	Shall provide the following information. 1. name of designated factory and name of legal entity 2. TSIC-ID which is the number that issued by DEDE 3. month and year that a report on energy conservation target and plan has been set up
Report endorsement	The responsible persons for setting up the report on energy conservation target and plan shall endorse all information present in the report as follows: 1. The person setting up all measures or setting up the report is someone involving in assessment of competency and targets in energy conservation, including someone that audits and analyzes energy consumption and bring such findings to set up the energy conservation target and plan. Such person shall endorse its name as the person conducting such activity which clause 5 of the Ministerial Regulation states that any activity in setting up an energy conservation target and plan must be conducted by a certified professional engineer or a certified professional architect. 2. The personnel responsible for energy for a designated factory whom the Energy Conservation Promotion Act B.E. 2535 (1992) stating its responsibility in assisting the owner of a designated factory to set up the energy conservation target and plan and verifying the information present in the report submitted to DEDE. The verified data must correspond with the actual condition of such factory. 3. The owner of a designated factory or the authorized person, who holds legal responsibility in setting up the energy conservation target and plan, must endorse the report on energy conservation target and plan that being submitted to DEDE.
Summary of measure for energy conservation target and plan	All details in the report shall be summarized in table. In case there is some additional explanation, it shall be summarized in remark column.

Detail	Explanation
1. Preliminary data 1.1 Name of a designated factory and TSIC-ID 1.2 Name of legal entity 1.3 Address 1.4 Type of industry 1.5 Production quantity 1.6 Working hours	1. Preliminary data 1.1 Show the name of a designated factory (in general, the name of a designated factory is the same as the name of legal entity. However, it may be difference in some cases when one legal entity owns several factories.) and TSIC-ID which is the identification number that issued by DEDE. 1.2 Show the name of legal entity 1.3 Show the address of a designated factory including telephone number, fax number, and email address (if any). 1.4 Show the type of industry such as food, textile, wood, paper, chemical, non-metal, metal, metal products, and others. 1.5 Show production quantity of a factory by indicating products name, production capacity, and actual production quantity. 1.6 Show working hour of a factory by indicating both office and factory working hours. In case that a factory produces several products and different working hours, please indicate the working hours of production process for main products of a factory.
2. Energy consumption 2.1 Electricity and fuel consumption in one year 2.2 ratio of fuel and electricity consumption in other systems	2. Energy consumption 2.1 Show amount of electricity and fuel consumption of a factory in one year dating back from the date of making a report by showing data in monthly format. 2.2 Show the ratio of fuel and electricity consumption in other systems such as fuel consumption in boiler, oven, combustor, etc, and electricity consumption in production process, air conditioning system, lighting system, and so on. (In case there is some detail on other production process, the table can be adjusted to show the additional information.)
3. Energy consumption level before implementing the plan 3.1 Energy consumption level	3. Energy consumption level before implementing the plan 3.1 Show energy consumption level per unit product for each product by indicating the amount of fuel and electricity consumed per unit product. In case a unit product cannot be identified, the energy consumption level can be presented in other suitable form that allows the efficiency comparison of the energy consumption among different time periods.

Detail	Explanation
4. Energy conservation target for each measure	4. Energy conservation target for each measure
4.1 Summary of targets	4.1 Summarize target of implementation for improving the energy consumption as follows:
1) measure in improvement of energy consumption level	1) Show measure that is a target of implementation for improving the energy consumption level by indicating measure title, measurement of energy consumption, and energy consumption target level.
2) annual target for energy saving	2) Show annual target for energy saving as follows: Electricity: Show electrical power, electricity, electricity value and percentage of energy saving comparing to such system or such equipment. Fuel: Show type of fuel, fuel quantity, fuel value and percentage of fuel saving comparing to such system or such equipment
3) Invested money	3) Show amount of money invested in implementing measure.
4) Investment return rate	4) Show an investment return rate of implementing measure.
4.2 Detail of energy conservation measure	4.2 Show detail of energy conservation measure
1) Measure title, number of improved equipments, and improved location	1) Show title of implementing measure, number of improved equipments, and improved location.
2) Quantitative target	2) Show quantitative target of energy saving resulting from implementing such measure as follows: Electricity: Show electrical power, electricity and electricity value that are saved. Fuel: Show fuel quantity, equivalent heat (MJ) and fuel value that are saved.
3) Reference energy consumption level before improvement	3) Show energy consumption quantity before improvement, in detail similar to 2)
4) Target energy consumption level after improvement	4) Show energy consumption quantity after improvement, in detail similar to 2)
5) Total invested money	5) Show total amount of money invested in implementing measure.
6) Investment return rate	6) Show investment retune rate of implementing measure.
7) Current condition	7) Show the actual condition of equipment or the condition prior to the improvement to be used as energy base line such as indicating type, size, numbers, installation, operating condition, operating hours, average energy rate per unit, measurement of energy consumption, etc.
8) Improvement procedure	8) Indicate improvement procedure for the equipment.
9) Inspection method on saving outcome	9) Indicate inspection, measurement and analysis method in evaluating the energy saving outcome by allow the equipment before and after the improvement to operate on the same condition and compare the energy consumption to evaluate the outcome of energy saving.

Detail	Explanation
5. Implementation plan of energy saving measure	5. Indicate detail of an implementation plan of each step for each measure such as designing process, equipment procurement, equipment installation, operating testing, measurement, evaluation the saving, etc. Also indicate implementing period of each step for each implementing measure within 3 years from the enforceable date of the Ministerial Regulation. (The Ministerial Regulation became enforceable on 29th April B.E. 2548 (2005).)
6. Detailed information and result of audit and analysis of energy consumption level and energy conservation measure	6. Make up a documentation showing detail of audit, measurement, and analysis of the energy consumption of energy-utilizing equipments in a factory and detail of analysis of energy conservation measure for each measure to be used as attached document for making up a report on energy conservation target and plan by indicating the following detail: 1) Technical information of equipment to be improved. 2) Energy consumption measurement data of the equipment to be improved. 3) Analysis data on energy consumption of the equipment before and after the improvement. 4) Energy saving outcome showing in energy unit and saving value. 5) Detail of investment.
7. Other documents (If any)	7. Show all other detail information (if any) to assist the official in inspecting the report on energy conservation target and plan and facilitate the inspection process. The owner of a designated factory can submit additional documentation as desires.

4. Audit and analysis on operation in compliance with energy conservation target and plan

Audit and analysis on operation in compliance with energy conservation target and plan is one procedural step directed by the Ministerial Regulation that the owner of a designated factory must follow by reporting the implementation result in the form for submission of production data, energy consumption and energy conservation for a designated factory (BorPorRor.1). The reporting data shall consist of the following:

- title of inspecting measure
- plan schedule
- actual implementing schedule
- implementing condition
- planning investment
- actual investment
- energy conservation outcome
- problem/obstacle encountered during implementation
- comment and suggestion

The detailed explanation for reporting information is shown in the guideline on writing up a data submission form and data recording form for a designated factory. For the audit and analysis on operation in compliance with energy conservation target and plan, the eighth step of energy management system can be used as an implementing guideline.

Annex A

Report Template of Energy Conservation Target and Plan for Designated Factory

Report on Energy Conservation Target and Plan

of

……..(Factory name and TSIC-ID)…….

……(legal entity name)……..

Submit to

Bureau of Energy Regulation and Conservation
Department of Alternative Energy Development and Efficiency
Ministry of Industry

Month …….. Year ……..

Report endorsement

1. Personnel responsible for setting up measure

I …… acting as (a consulting engineer, authorized personnel, or others), who is responsible for the assessment of competency and targets in energy conservation, including the establishment of implementing measure for energy conservation plan, certify that all activity implemented according to given information are true and the mentioned measures are feasible and appropriate.

Sign …….

(…….)

Position ……

Date …….

2. Personnel responsible for energy

I …… acting as a personnel responsible for energy of ……certify that all given information in the report are true and consistent with the actual condition of the factory.

Sign …….

(…….)

Position: Personnel responsible for energy Registration no. ……..

Date …….

3. The owner of a designated factory

I …… acting as ……. certify that the report on energy conservation target and plan of the factory ……(name of a designated factory)……. issue dated ……. has followed all criteria and method prescribed by the Ministerial Regulation and therefore would like to submit this report to Department of Alternative Energy Development and Efficiency.

Sign …….

(…….)

Date …….

Summary of measure for energy conservation target and plan

1) Name of a designated factory …….
2) Energy consumption
   2.1 Electricity ..... kWh/year Value ..... Bahts/year
   2.2 Fuel Type ..... (Unit/year) Value ..... Bahts/year
3) Summary of energy conservation target and plan

No.	Measure	Action plan (month/year)		Energy conservation targets							Investment	
				Electricity			Fuel		Others		Money invested (Bahts)	Investment return rate (year)
		Start	End	kW	kWh /year	Bahts/ year	Quantity , Unit/year	Bahts/ year	Quantity , Unit/year	Bahts/ year		
Total												
Remark: …….												

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1. Preliminary Data

1.1 Name of a designated factory: ……

TSIC-ID: ……..

1.2 Name of legal entity: ……..

1.3 Address: ……..

……..

……..

Telephone number: …… Fax number: ……..

Email address: ……

1.4 Type of Industry: ……..……

1.5 Production quantity: ……

No.	Product name	Production capacity (unit/year)	Actual production (unit/year)

1.6 Working hours

Office: ..... hours/day ..... days/year

Factory: ..... hours/day ..... days/year

2. Energy consumption

2.1 Electricity and fuel consumption in one year

Type of Electricity users: ..... (Rate: normal, TOD, TOU)

Month/year	Electricity					Fuel				Total energy bill per month (Bahts)
	Maximum electrical power (kW)			Electricity (kWh)	Electricity bill (Bahts)	Fuel type:		Others: ...(specify...)		
	Peak 1	Peak 2	Peak 3			(Liters)	(Bahts)	Quantity (unit/year)	(Bahts)	
Total										
Average										

Remark: For normal rate: specify maximum electrical power in $Peak_1$ column

For TOD rate: $Peak_1$ = On peak , $Peak_2$ = Partial peak , $Peak_3$ = Off peak

For TOU rate: $Peak_1$ = Peak , $Peak_2$ = Off $peak_1$, $Peak_3$ = Off $peak_2$

Heating value of Bunker oil Grade ....MJ/Liter

Heating value (other fuel type) ....MJ/Liter

2.2 Ratio of fuel and electricity consumption in other systems

System	Fuel consumption				Remark
	Fuel type	Unit (specify)/ year	MJ/year	%	
Total					

System	Electricity consumption			Remark
	kWh/year	MJ/year	%	
Total				

3. Energy consumption level before implementing the plan

3.1 Energy consumption level

Product name	Energy consumption level			
	Fuel consumption, MJ/unit product (specify)	Electricity consumption		Total, MJ/unit product (specify)
		kWh/unit product (specify)	MJ/unit product (specify)	
Total				

4. Energy conservation target for each measure

4.1 Summary of targets

No.	Measure in improvement of energy consumption level			Annual Saving Target								Money invested (Bahts)	Investment return rate (year)
	Measure	Measurement before the improvement	Target of improvement	Electricity				Fuel					
				kW	kWh /year	Bahts /year	% saving	Type	Quantity (unit/year)	Bahts /year	% saving		
Total													

Remark: 1) % saving compare to year ..... as baseline

2) Electricity bill rate..... Bahts/kWh

Fuel bill rate..... Bahts/specified unit

4.2 Detail of energy conservation measure (For electricity related measure)

1) Measure title: …… No. ……
Number of equipment to be improved: ..... unit
Location of improvement:……

	kW	kWh/year	Bahts /year
2) Quantitative target			
3) Reference energy consumption level before improvement			
4) Target energy consumption level after improvement			
5) Total invested money			Bahts
6) Investment return rate			year

7) Current condition

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8) Improvement procedure

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9) Inspection method on saving outcome

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4.2 Detail of energy conservation measure (For heat related measure)

1) Measure title: …… No. ……
Number of equipment to be improved: ..... unit
Location of improvement:……

	Unit (specify) /year	MJ/year	Bahts /year
2) Quantitative target			
3) Reference energy consumption level before improvement			
4) Target energy consumption level after improvement			
5) Total invested money			Bahts
6) Investment return rate			year

7) Current condition

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8) Improvement procedure

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9) Inspection method on saving outcome

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Example

4.2 Detail of energy conservation measure (For heat related measure)

1) Measure title: Insulation of steam pipeline
Number of equipment to be improved: insulated glass wool
for pipe with a diameter of 65 mm.
insulation thickness 50 mm.
pipe length 150 m.
including insulated metal sheet
Location of improvement: Factory 1

	Liters/ year	MJ/year	Bahts/ year
2) Quantitative target	59,593	2,042,600	617,383
3) Reference energy consumption level before improvement	74,491	2,553,250	771,726
4) Target energy consumption level after improvement	14,898	510,650	154,343
5) Total invested money		250,000	Bahts
6) Investment return rate		0.40	year

7) Current condition

Steam pipeline at the factory 1, size of 65 mm. in diameter and 150 m. in length, has not been insulated. Although there is some insulated part, it has been damaged. Measurement at the surface of the pipeline found the average temperature of 160^{O}C with the average ambient temperature of 30^{O}C. The factory produces steam by using bunker oil grade C as fuel with the boiler efficiency of 83.6%, operating 24 hours/day 330 days/year with the fuel bill rate of 10.36 Bahts/Liter.

8) Improvement procedure

Insulation of the pipeline with insulated glass wool covered with metal sheet outside.

9) Inspection method on saving outcome

Measure temperature at the surface of the pipeline and ambient temperature before the improvement. Also measure temperature at the surface of metal sheet and ambient temperature after the improvement. Finally, calculate the result of energy saving.

5. Energy Conservation Plan

5.1 Action plan for all energy conservation measures

No.	Measure	First Year (B.E. .....)												Second Year (B.E. .....)												Third Year (B.E. .....)												Remark
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	

5.2 Action plan for each energy conservation measure

Measure: .....

No.	Description of activity	First Year (B.E. .....)												Second Year (B.E. .....)												Third Year (B.E. .....)												Remark
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	

Description of activity: please specify activity in each step need to be implemented to achieve the proposed target such as design process, equipment procurement, installation, etc.

6. Detailed information and result of audit and analysis of energy consumption level and energy conservation measure

(Documentation showing detailed information and result of audit and analysis of energy conservation measure is attached document for a report on energy conservation target and plan)

7. Other documents (if any)

(Documentation showing additional information is attached document for a report on energy conservation target and plan)

Annex B

The Ministerial Regulation regarding criteria, procedure and schedule for establishing Energy Conservation Target and plan and audit and analysis on Operation in compliance with Energy Conservation target and plan for designated factory and designated building B.E. 2547 (2004)

The Ministerial Regulation

Re: Criteria, Procedure and Schedule for Establishing Energy Conservation Target and plan and Audit and Analysis on Operation in Compliance with Energy Conservation Target and Plan for Designated Factory and Designated Building

B.E. 2547 (2004)

By the virtue of section 6 paragraph two, section 11 (4) and (5), and section 22 of the Energy Conservation Promotion Act B.E. 2535 (1992), which contains some provisions concerning the limitation of the people rights and liberties that is permissible by the provisions of section 29 together with section 35, section 48 and section 50 of the Constitution of the Kingdom of Thailand, the Minister of Energy, with the recommendation of the National Energy Policy Council, hereby issues the Ministerial Regulation as follows:

Clause 1 The following regulation shall be annulled:

(1) The Ministerial Regulation No.3 (B.E. 2538 (1995)) issued pursuant to Energy Conservation Promotion Act B.E. 2535 (1992).

(2) The Ministerial Regulation No.6 (B.E. 2540 (1997)) issued pursuant to Energy Conservation Promotion Act B.E. 2535 (1992).

Clause 2 In this Ministerial Regulation,

"Designated factory" shall mean a factory being designated by the Royal Decree under the provision of the Energy Conservation Promotion Act B.E. 2535 (1992).

"The owner of a designated factory" shall mean a person who is responsible for the management of a designated factory.

"Designated building" shall mean a building being designated by the Royal Decree under the provision of the Energy Conservation Promotion Act B.E. 2535 (1992).

"The owner of a designated building" shall mean a person who possesses a designated building.

Clause 3 The owner of a designated factory or the owner of a designated building shall set up an energy conservation target and plan for a designated factory or a designated building as the case may be, and implement the energy conservation according to such proposed target and plan.

Clause 4 In setting up an energy conservation target and plan as in Clause 3, the owner of a designated factory or the owner of a designated building shall establish an energy conservation measures and make up a report in accordance with the detail prescribed in Annex 1 and Annex 2 annexed to this Ministerial Regulation for a designated factory or a designated building, respectively. The report shall be submitted to Department of Alternative Energy Development and Efficiency every three years and the first submission shall be done within one year from the date the Ministerial Regulation become enforceable.

Clause 5 For any activity in the establishment of an energy conservation target and plan that requires a certified professional engineer under the law governing engineering or a certified professional architect under the law governing architecture, a person conducting such activity shall be a certified professional engineer or a certified professional architect, as the case may be.

Clause 6 In accomplishing what prescribed in Clause 4, if a report cannot be submitted in due time due to some inevitability the owner of a designated factory or the owner of a designated building may request for a time extension in submitting a report. On the basis of reasonable justification, the Director-General of Department of Alternative Energy Development and Efficiency shall have the authority to extend such deadline as deem appropriate.

Clause 7 The owner of a designated factory or the owner of a designated building shall conduct an audit and analysis on operation in compliance with energy conservation target and plan by reporting the result of such conduct in Part 4 of a data submission form for production data, energy consumption data and energy conservation data for a designated factory (Form BorPorRor.1) or in Part 3 of a data submission form for building utilization data, energy consumption data and energy conservation data for a designated building (Form BorPorAor.1).

Clause 8 Other orders or announcements issued under the Ministerial Regulation No.3 (B.E. 2538 (1995)) and the Ministerial Regulation No.6 (B.E. 2540 (1995)), issued pursuant to the Energy Conservation Promotion Act B.E. 2535 (1992), shall continue to be enforced in so far as they are not contrary to or inconsistent with the provisions of this Ministerial Regulation until new orders or announcements under this Ministerial Regulation take effect.

Clause 9 This Ministerial Regulation shall come into effect one hundred and twenty days after its publication in the Government Gazette.

Given on the 27th day of December B.E. 2547 (2004)

Signed Prommin Lertsuriyadej
(Mr. Prommin Lertsuriyadej)
Minister of Energy

Remark: The reason for the enactment of this ministerial regulation is that it is deem appropriate to improve the criteria, procedure and schedule for establishing energy conservation target and plan and audit and analysis on operation in compliance with energy conservation target and plan to ease and facilitate the owner of a designated factory or the owner of a designated building. Also it is deem appropriate to combine the provisions under the Ministerial Regulation No.3 (B.E. 2538 (1995)) and the Ministerial Regulation No.6 (B.E. 2540 (1995)), issued pursuant to the Energy Conservation Promotion Act B.E. 2535 (1992),which are enacted on the same principle, for the reference and assessment purpose; it is therefore necessary to issue this ministerial regulation.

Annex 1

Detail for establishment of a report on energy conservation target and plan for a designated factory

Energy conservation target and plan for a designated factory shall be implemented according to the standard and shall consist of the following detail.

1. Report endorsement by responsible personnel

(1) The owner of a designated factory endorses the report

(2) The personnel responsible for energy endorses the accuracy of data present in the report

(3) The personnel responsible for setting up energy conservation measures endorses the report as a person who makes up the report.

2. The report on energy conservation target and plan shall consist of the following.

(1) Preliminary data of a factory

(a) Name of a factory/ name of legal entity
(b) Address
(c) Type of product
(d) Production quantity

(2) Energy consumption in a factory

(a) Fuel (Type, quantity/year, cost)
(b) Electricity (consumption level and maximum electrical power)

(3) Energy consumption level before implementing the plan

(4) Energy conservation target for each measure (Summary of targets for energy conservation and investment)

(a) Target for improvement of energy consumption level
(b) Quantitative target for the improvement
(c) Energy saving outcome and saving value
(d) Investment expense
(e) Analysis on investment return

(5) Action plan for each energy conservation measure to achieve the proposed target.

(6) Detailed information and result of audit and analysis of energy consumption level and energy conservation measure.

Annex 2

Detail for establishment of a report on energy conservation target and plan for a designated building

Energy conservation target and plan for a designated building shall be implemented according to the standard and shall consist of the following detail.

1. Report endorsement by responsible personnel

(1) The owner of a designated factory endorses the report

(2) The personnel responsible for energy endorses the accuracy of data present in the report

(3) The personnel responsible for setting up energy conservation measures endorse the report as a person who makes up the report.

2. The report on energy conservation target and plan shall consist of the following.

(1) Preliminary data of a building

(a) Name of a building/ name of legal entity
(b) Address
(c) Type of building
(d) Number of rooms for a hotel
(e) Number of beds for a hospital
(f) Building area, for all types of building (total area, air-conditioned area)

(2) Energy consumption in a building

(a) Fuel (Type, quantity/year, cost)
(b) Ratio of fuel consumption in other systems
(c) Electricity (consumption level and maximum electrical power)
(d) Ratio of electricity consumption in air conditioning system, lighting system, and others.

(3) Energy consumption level before implementing the plan

(4) Energy conservation target for each measure (Summary of targets for energy conservation and investment)

(a) Target for improvement of energy consumption level
(b) Quantitative target for the improvement
(c) Energy saving outcome and saving value
(d) Investment expense
(e) Analysis on investment return

(5) Action plan for each energy conservation measure to achieve the proposed target.

(6) Detailed information and result of audit and analysis of energy consumption level and energy conservation measure.