

Category D: Facility-level Information on Environmental Compliances and Performances

Introduction

Rationales of the Indicators

Almost every stage during industrial activity, from the stages of raw materials procurement to the stages of production and finally to the stages of waste disposal, involves the production of waste outputs. Industrial facilities should therefore give special importance to waste output management so that impacts on the environment would be minimized. Today, there are numerous laws and regulations that industrial facilities have to follow in order to help prevent the community and the environment from any negative impacts that could be caused by waste outputs. Thus, information on how well a facility is conforming to laws and regulations and the environmental performances of a facility should be made easily assessable to the public. The public has the right to be informed about activities occurring within their community and how these activities might have an impact on their livelihoods so precautionary health measures could be taken when needed.

General Situation

In the past three decades, national development policies have focused mainly on the investment and industrial sectors in order to spur exports to replace dependency on the agricultural sector. The industrial sector, therefore, received tremendous support and promotion from the state ever since. This can be reflected through economic development policies particularly in eastern coastal development projects, economic zone projects at the borders of Thailand, and plans on the development of new industrial estates and a new seaport. Examples of projects as such are textile industrial estates in Kanchanaburi and Rachaburi, and industrial estates and distribution facilities in Chiang Saen, Chiang Rai (Industrial Estate Authority of Thailand, www.ieat.go.th). Apart from these, there are policies supporting the expansion and special incentives to attract investors to purchase or rent properties in industrial estates such as an extended personal income tax-exemption duration from 5 to 8 years (Green World Foundation, 2003).

The state's support of the industrial sector resulted in an increase of industrial facilities from 631 facilities in 1969 to 118,176 facilities in 2003 (Information Center of Industrial Facilities, www.diw.go.th) and the establishment of 30 industrial estates throughout 13 provinces all over Thailand. Even though the industrial sector creates tremendous income for Thailand, it leaves burdens of pollution in all sorts of ways – air pollution, water pollution, and hazardous wastes from industries which are all gradually increasing. This includes chemical accidents in industrial estates and during transportation.

The various types of pollution caused from industrial activities are prevalent from increasing complaints from the public, accidents, and the results of inspections from different organizations. From 2003 statistics collected on the complaints of people who have been affected by pollution emitted by industrial facilities, there were a total of 1,374 cases. The most common complaints were on strong odors (29%), noise pollution (17.5%), dust particulates (14.4%), and water pollution (13%)

(Source: Information Center of Industrial Facilities, Department of Industrial Works). The Pollution Control Department also collected statistics in 2003 on complaints on pollution distress where there were a total of 777 cases. In these statistics, the most common complaints were on air pollution which covers strong odors, dust particulates and smoke, and loud noise (66%), water pollution (18%), noise pollution (10%) and pollution from waste materials and hazardous substances (5%) (Pollution Control Department, 2004).

A review of the state of Thailand's air quality in 2003 which was prepared by the Pollution Control Department (please refer to Table 2) deduced that the main problem the country faced was with small particulates less than 10 microns (PM_{10}). The level of small particulates exceeded standards in several areas as with previous years and at the same locations such as Samut Prakarn, Bangkok (areas with roads), and Chalermprakiat District, Saraburi (Air Quality and Noise Management Bureau, 2004). The main reason for the problem with small particulates in Bangkok is the increasing numbers of vehicles on the road. Continuous annual measurements of air quality from seven stations deduced within a 24 hour time frame that there were 108 out of 2,152 monitoring times or 5% of total monitoring times of small particulates between 12.7-208.9 micrograms/cubic meter which exceeded acceptable standards.

Among the four provinces surrounding Bangkok (Samut Prakarn, Samut Sakhon, Pathum Thani, and Nonthaburi), Samut Prakarn has the most problems where in a 24 hours time frame, 458 out of 1,533 monitoring times or 29% of total monitoring times of small particulates between 21.0-331.4 micrograms/cubic meter exceeded acceptable standards. These monitoring data were the highest ever recorded and was said to be due to industrial, transportation, and construction activities (Air Quality and Noise Management Bureau, 2004).

Table 2: Ambient Air Quality in Bangkok, Its Vicinities, and Other Provinces, 2003.

	Particulates smaller than 10 microns (PM_{10})	Ozone (O_3)	Sulfur Dioxide (SO_2)	Nitrogen Oxide (NO_2)	Carbon Monoxide (CO)
	Over 24 hrs ($\mu g/m^3$)	Over 24 hrs (ppb)	Over 1 hr (ppb)	Over 1 hr (ppb)	Over 1 hr (ppm)
Bangkok (general areas)	54.5	15.7	4.7	23.0	0.7
Bangkok (roadside)	61.4	11.8	7.1	35.3	2.0
Samut Prakarn	91.3	-	5.7	20.6	0.6
Samut Sakhon	50.2	18.3	15.5	17.5	0.7
Pathum thani	47.8	21.6	4.1	16.5	0.4
Nonthaburi	53.7	18.0	4.9	18.3	0.8
Chiang Mai	47.1	16.3	1.2	10.5	0.7
Lampang	48.5	14.6	0.7	5.7	0.4
Nakhon Ratchasima	46.8	21.0	0.5	11.9	1.9
Saraburi	51.1	16.2	2.6	13.9	0.5
Chonburi	46.7	17.3	3.9	14.3	0.5
Rayong	41.5	17.1	3.4	8.9	0.4
Ambient Standards	120	100	300	170	30

Note: Data of the areas in the suburbs and other provinces are the average sum of the results from all stations.

Source: Adapted from the information available in the Situation and Management of Air and Noise Pollution Problems 2003 (Tables 1,3,6,7)

The main problem which rural areas of Thailand face is with small particulates especially around Chalermprakiat, Saraburi where within a 24 hour time frame, small particulates between 10.9-388.5 micrograms/cubic meter were monitored and 46 out of 307 or 15% of total monitoring times were found to be beyond acceptable standards. This particular location monitored was an industrial zone for rock quarry and cement industries¹⁷. Other locations which face problems with small particulates are Sriracha District, of Chonburi, Lampang, Chonburi, Nakhon Ratchasima, and Chiang Mai.

Apart from the problems with small particulates, bad odors emitted by factories located in and outside industrial estates also affect the lives of the community residing in the area immensely. An example of a case of such is the complaints filed on the odors emitted by Phoenix Pulp and Paper Public Company Limited which led to inspections of the production process of the factory and the community surrounding the area. The inspections were conducted by the Air Quality and Noise Management Bureau and the Regional Environment Office 10. On 17-21 March 2003, from findings deduced from inspections and academic research, it was determined that the source of the odor was mainly caused by Total Reduced Sulfur (TRS) compounds.

It was found that in the perimeters around production activities of the factory possess, TRS levels (specifically hydrogen sulfide and methylmercaptan) were beyond the levels that can be scrubbed by recovery furnaces. As for the communities around the areas south of the factories which are Moo 8 Baan Khambong Pattana and the central road which runs through the Baan Khambong Pattana settlement, it was found that standards were respectively 11 and 8 times beyond the acceptable limits. (Air and Noise Quality Management Bureau, 2004). Within the industrial estate itself, examples of problems found are the complaints of odors emitted by a factory belonging to Meyer Industries Company Limited in the Laemchabang Industrial Estate which prolonged for more than three years (2000-2002) and problems from odors of coal and odors similar to that of matches emitted from the Auto Alliance and Refining oil refinery in the Map Ta Phut Industrial Estate during 2001-2004 (Green World Foundation, 2003).

The problem with illegal releases of waste water into public property still prevails especially in areas heavily condensed with factories such as Samut Prakarn. There are frequent complaints from the public such as on 16 March 2005, police officers started to investigate the case of three cloth printing and leather tanning factories around Bangpu, Samut Prakarn. Numerous complaints were placed by the community that these industrial factories released their waste water into the sea causing deaths to many of the sea life around the area (Manager Newspaper, 16 March 2005). And on 6 April 2005, the Tambon Administration Organization of Bang Prong, Samut Prakarn and the people in the area, tested the different factories in Bang Prong after there were several complaints that there were factories which illegally released waste water containing lubricant oil into underground wells and prawn and fish ponds, causing tremendous of damage (Manager Newspaper, 6 April 2005).

From inspecting the quality of water at the different sources, the Pollution Control Department found that the main rivers faced the critical problem of continuous contaminations from decomposing waste water especially in the lower Tachin River, the lower Chaopraya River, and the Bang Pakong River. These rivers

¹⁷ Saraburi is the home to 90 rock quarry factories and 40 white plaster and cement factories and Samut Prakarn has a total of 8,256 industrial facilities. (Information as of 2003, Information Center of Industrial Facilities, www.diw.go.th)

are contaminated by waste water from communities in the city, industrial factories, and agricultural activities such as pig farms which was densely populated at the river basins of Tachin and Bang Pakong (Office of Natural Resources and Environmental Policy and Planning, 2004).

Apart from air and water pollution problems, hazardous substances and toxic wastes have become urgent concerns in the country because there is an increase in the usage of hazardous chemicals in industrial and agricultural processes. From data collected by the Pollution Control Department, it was found in 2004 that there was a total of 5.0 million tons of organic and inorganic substances imported and 23.0 millions tons of these substances produced within the country. Thus, the total of hazardous substances used in Thailand, both imported and locally produced, comes to about 28.0 million tons. This figure has increased from 2003 where the total was only 1.1 million tons or 4% of 2004's total (Pollution Control Department, 2004B).

From statistics of the Pollution Control Department which was collected through reports from the public and organizations from January-November 2004, it was found that there were a total of 29 chemical substance-related accidents. These 29 chemical substance-related accidents comprised of 13 cases caused at industrial factories, 6 cases caused at warehouses storing chemicals, 5 cases caused during transportation of chemicals, 4 cases caused by illegal dumping of chemical wastes, and 1 case caused by other reasons. Over the past three years, the annual records of the number of accidents were not very different. On average, there were usually about more than 20 cases per year and chemical leaks are the most common problems which affect the community and the environment (Pollution Control Department, 2004B).

As for problems with the sewage of hazardous wastes in the past decade, the amount of hazardous wastes from all over Thailand increased from 0.9 million tons in 1993 to 1.8 million tons in 2003 where 78% was caused by the industrial sector. In 2004, it was estimated that only 50% of the hazardous wastes produced by industrial activities were sent to be destroyed (Pollution Control Department, 2004B). A 17% increase occurred in 2000 (Green World Foundation) which was due to deregulation of industrial waste disposal services by the Department of Industrial Works. This caused a rapid increase of industrial waste disposal and recycling facilities in the past three years (2002-2004)¹⁸. Nevertheless, the problems which followed were illegal dumping of industrial sewage, unregulated depositing of industrial wastes, or improper disposals of industrial wastes by agents, transportation companies, and disposal companies¹⁹. Apart from this, there are cases of industrial waste incineration in cement ovens where the amount of wastes incinerated exceed the amount permitted. This causes toxic residues and pollution (Green World Foundation, 2003)

¹⁸ In accordance to the Factory Act, B.E. 2535 (1992), Ministerial Regulation Issue 15 (2002) permitted the establishment of two more categories of factories. The first category of factories consist of those which relate to separating or burying waste or exhausted materials from business activities and is classified as factory number 105. The second category of factories consist of those whose activities relate to the production of raw materials or new products which are converted from exhausted industrial materials or factory wastes and is classified as factory number 106. Statistics as of April 2005 revealed that there are 267 factories belonging to factory number 105 classification and 134 factories belonging to factory number 106 classification (Information Center of Industrial Facilities, www.diw.go.th).

¹⁹ In order to prevent illegal dumping of industrial wastes, the Ministry of Industry passed official Documentation Processes to Manage the Transportation of Hazardous Wastes, B.E.2547 (2004).

and frequent accidents due to the lack of knowledge in proper management of hazardous wastes and carelessness²⁰.

Cases of illegal emissions of various pollutants from industrial facilities still prevail even though factories today are starting to engage in environmental management practices such as ISO 14001 and cleaner technologies. However, factories as such are still minority because these production technologies and management techniques are rather costly. Thus, the survival of the businesses outweighs environmental conservation. Even though Thailand has had development in laws related to environmental management in factories to control environmental impacts from the industrial sector, it seems that enforcement of these laws are weak. This is due partly to the unproportionate number of officers at the Department of Industrial Works in comparison to the number of factories all over Thailand²¹.

²⁰ Examples of accidents are: the case of the municipal cement factory which exploded in Kang Koi District, Saraburi on 19 April 2004, the case of the fire at Asok Chemical Limited Company, an industrial waste disposal factory, in Pakchong, Nakhon Ratchasima on 21 July 2004, and the case of the explosions which occurred again on 1 August 2004 (Waste and Hazardous Substances Management Bureau, 2005).

²¹ From the most updated information (February 2005), it was reported that officials who are responsible for controlling and inspecting factories of the Bureau of Industrial Works Branches 1-5 (originally Factory Control and Inspection Bureau 1-4 and Bureau of Factory Registration). The Department of Industrial Works has a total of 207 officials and there are 225 officials who are assigned to the Industrial Works Section of Provincial Industrial Works Offices all over Thailand which is under the responsibility of the Office of the Permanent Secretary of the Ministry of Industry. Therefore, there are only 432 officials in total who control and overlook more than 100,000 factories all over Thailand (Interview with an officer at the Personnel Division of the Department of Industrial Works and officials at the Office of the Permanent Secretary of the Ministry of Industry, 7 March 2005).

Case Study: Report on Environmental Performances from 5 Factories in Samut Prakan Province

Assessment Method

The researchers conducted interviews, both in person and over the phone, at relevant organizations. Interviews over the phone were conducted with the industrial facilities chosen to be assessed in this study. Apart from this, further studies were made on certain important documents which are the laws which are pertinent, reports, and the information available from the websites of relevant organizations.

The main organizations contacted for the interviews are the Department of Industrial Works, the Industrial Estate Authority of Thailand, the Office of Natural Resources and Environmental Policy and Planning, and the Pollution Control Department. Further details on the interviews are as follows:

Department of Industrial Works, Ministry of Industry

- Interviewed Engineer Level 6 from the Bureau of Water Technology and Industrial Pollution Management, during February-May.
- Interviewed Scientist Level 5 from the Information Center for Dangerous Substances, Information and Communication Technology Bureau, 14 February 2005.
- Interviewed Scientist Level 9 from the Hazardous Substance Control Bureau, 12 April 2005.

The Industrial Estate Authority of Thailand, Ministry of Industry

- Interviewed a scientist from the Bangpu Industrial Estate Office, 3 March 2005.

Office of Natural Resources and Environmental Policy and Planning, Ministry of Natural Resources and Environment

- Interviewed an officer from the Office of Environmental Impact Evaluation, 25 February 2005.

Pollution Control Department, Ministry of Natural Resources and Environment

- Interviewed an officer from the Waste and Hazardous Substances Management Bureau, 1 February 2005.

Indicators II.D.5 and II.D.9 evaluates the availability and quality of reports on the performances of industrial facilities in accordance to laws. As the study requires the researchers to choose 5 industrial facilities for the study, the researchers selected factories located in Samut Prakan because it is a province located in proximity to the mouth of the river and the coast. The area is densely populated with more than 8,000 factories and faces pollution problems especially in the degradation of water quality at the coastal lines of Samut Prakan which affects coastal biodiversity, aquaculture, and fisheries. This also affects consumers of seafood that are contaminated by heavy metals.

The factory selection criteria are as follows:

- Chosen factories should be located in the same area so that all will be exposed to the same externalities. (Examples of externalities are regulations set by local and central organizations, people in the communities, circumstances, local environmental problems, pressures from local communities on problem solving, and so on.)
- The factories should be considered as industrial facilities which are projected to have environmental impacts as announced by the Ministry of Industry²².
- The group should be a mixture of factories located both in and outside of industrial estates so that a comparison on environmental performance can be made.
- Factory sizes can vary from small to big.

The researchers searched for information on the factories from the database of the Department of Industrial Works and the Bang Poo Industrial Estate Office. Through initially using the factory selection criteria and narrowing the factories down by classifying the factories by whether it is located in or outside an industrial estate and the size of the factory as demonstrated in the table below, five factories were selected.

Table 3: The Five Industrial Facilities Selected for the Study

Size	Located Inside an Industrial Estate	Located Outside an Industrial Estate
Small (< 20 employees)	-	Metal Pipe Company Limited (molding brass and copper)
Medium (< 50 employees)	Sikpa (Thailand) Company Limited (produces and distributes ink products)	Thainam Bleaching and Dyeing Limited Partnership (bleaching and dyeing cloths)
Large (> 50 employees)	Patochemi Industries Company Limited (produces pest control substances)	Siam Steel Syndicate (smelting and molding metal bars)

Due to time and budget constraints for the study, the researchers conducted interviews over the phone. The information collected from the interviews were then cross examined with information found in the relevant organization. The details of the interviews with the five factories are as follows:

- Interviewed a Management Officer from Metal Pipe Company Limited, 25 February 2005.
- Interviewed a Management Officer from Sikpa (Thailand) Company Limited, 25 February 2005.
- Interviewed a Human Resource Manager from Patochemi Industries Company Limited, 26 February 2005.
- Interviewed a General Officer from Thainam Bleaching and Dyeing Limited Partnership, 9 May 2005.

²² The identification is done by looking at the factory type and size specified in the 13th Announcement of the Ministry of Industry (1982) in accordance to the Factory Act, B.E. 2512 (1969) concerning the role of the recipients of factory permits and the 22nd Announcement of the Ministry of Industry (1985) in accordance to the Factory Act, B.E. 2512 (1969) about the role of the recipients of factory permits.

Table of Indicators

Indicators	
II.D.1 Mandate to make compliance reports accessible to the public*	
Values	Explanation and Justification
<p>(0) Not applicable/not assessed</p> <p>(i) <u>There is no mandate that facility compliance reports be accessible to the public</u></p> <p>(ii) There is a mandate that facility compliance reports be accessible to the public, with vague or broad exceptions or restrictions (please specify)</p> <p>(iii) There is a clear mandate (including periodicity and means of dissemination) that facility compliance reports be accessible to the public, with clearly defined exceptions or restrictions</p>	<p>Existing reports on environmental compliance and performances of industrial facilities according to laws are 1) Report on Pollution Level Analysis, and Report on Waste or Non-used Materials Disposal for Factories registered with Department of Industrial Works (DIW) , or 2) Report on Air Quality Assessment and Report on Waste or Non-used Materials Disposal for Factories registered with Industrial Estate Authority of Thailand (IEAT), and/or 3) Report on Performances in accordance with Environmental Quality Measures for factories which are requested to submit the Environmental Impact Assessment (EIA) Report to Office of Natural Resources and Environmental Policy and Planning (ONEP) (whether the factories are under the governance of Department of Industrial Works or Industrial Estate Authority of Thailand) (Please refer to Box 1)</p> <p>Reviewing of laws and regulations governing industrial facilities to prepare such reports found that there is no prescription for agencies received such reports to disclose the information to general public. The study team reviewed conditions in dissemination of official information from Section 7 and Section 9 of the Official Information Act B.E. 2540 and found that the Act doesn't specify type of information to be made available for public. Whether or not to disclose information to the public is solely depended on a consideration of Official Information Committee. Since this Act give rights for State agency or State official to select which information to be disclosed (Section 15), therefore, information regarding the Report may be considered as information unnecessary to be disclosed under Section 15 (1), (6). Section 17 allows the presentation of objections against such disclosure to the responsible State official.</p> <p>Nevertheless, with aspect to an attempt to disclose information from compliance reports of industrial facilities according to law, it was found that, the EIA System Development and Monitoring Group (shortly, the Monitoring Group) under the Environmental Impact Evaluation Bureau, the ONEP, which is responsible for</p>

	<p>monitoring the environmental performance of projects after the approval of their EIAs, has been currently developing an online network disclosing the monitoring results of these projects' environmental compliances and performances posted in their home page (www.monitor.onep.go.th).</p> <p>By posting the monitoring results online, general public will know whether and how each EIA project/facility has complied with its environmental measures. The online database of EIA projects/facilities' compliances shows details of the projects such as name, address, and contact number of the project's owner. The EIA Monitoring Group also shows requirements for further improvements given to the monitored projects, such as air quality level from tailpipes and wastewater quality level which exceed the standard.</p> <p>Furthermore, the EIA Monitoring Group is developing an online EIA database, which people can search the details of each project that has submitted EIA report as well as its compliance report to mitigate the environmental impact. However, the sample search and inquiries to the officers found that the data is currently uploaded; therefore, information on the website is not fully completed and available.</p> <p>Regarding information disclosure in case of request, the interested person can exercises his rights under Section 11 of the Official Information Act. In practice, responsible agencies such as the DIW have given such report to those who interested without any cost.</p>
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Box 1: Regulations concerning Reports on Performances of Industrial Facilities in accordance with Laws, or Reports on Pollution Level Analysis of the Factories

Legislations requesting industrial factories to report information on pollution release to the environment are included in several relating laws and regulations. Currently, factories under the regulation of the Department of Industrial Works must oblige to regulations under the Factory Act B.E. (and the previous Act B.E. 2512):

- 1) Notification of Ministry of Industry No. 13 (B.E. 2525) revised by Notification of Industry of Ministry No. 22 (B.E. 2528) issued under Factory Act B.E. 2512 determines specific type and size of factories to submit a Report Pollution Level Analysis to Department of Industrial Works every 3 months, under the designated format and procedures.
- 2) Notification of Ministry of Industry No. 6 (B.E. 2540) issued under Factory Act B.E. 2532 regarding waste/non-used materials disposal. Factory operators who have waste or non-used materials as designated shall report details on type, amount, characteristics, features, storage location, storage method, destruction, burial, disposal, transportation of such materials to the authority at one time every year.
- 3) Notification of Ministry of Industry on Determining of Type and Size of Factories, Controlling Method of Waste, Pollutant, and other substances effecting the environment Release, Determining qualifications of controllers, routine officers and criteria on registration of environmental protection system auditors B.E. 2545. Industrial operators of size and typed of factories designated in Chapter 4 No 5 must apply for permission to have environmental staff in the factory. Controllers of water and air pollution treatment system, or controllers of industrial waste release system are responsible for preparation of Report on Pollution Level Analysis in accordance with criteria and procedures designated by Department of Industrial Works (effective from 7 May 2005 onward).

Factories located in the Industrial Estates shall respect to regulations of Industrial Estate Authority of Thailand including

- 1) Notification of Industrial Estate Authority of Thailand No. 46/2541(1998) prescribing that business operators shall submit Report on Air Quality Assessment to the manager of Industrial Estate every 6 months (May and November).
- 2) Notification of Industrial Estate Authority of Thailand No. 25/2547 (2004) determining that business operators shall submit the Report on Waste/Non-used Materials Management every month.

Regarding to Report on Waste Water Quality, the IEAT prescribes factories to drain waste water to central waste water treatment system; therefore, factories are not required to submit such report to the Industrial Estate Authority of Thailand.

Several industrial factories classified under the industry which is needed to prepare Environmental Impact Assessment (EIA) report ²³ including Iron and Steel Industry

²³ According to the Notification of Ministry of Sciences, Technology and Environment (Currently is Ministry of Natural Resources and Environment) on Designation of Types and Size of project or business which must report Environmental Impact Assessment No. 1-2-3, under Section 46 and 51 of the Enhancement and Conservation of Natural Resources Act, B.E. 2535

(minimum production capacity 100 ton/day upward), Cement Production Industry, Pulp Industry (minimum production capacity 50 tons/day). These industries are requested to provide Report on their performances in accordance with environmental quality assessment to Office of Natural Resources and Environmental Policy and Planning. Types of pollution included in the report and frequency of the submission of the report are determined by expert committee. In general, the report shall be submitted every 6 months.

Furthermore, the Enhancement and Conservation of Environmental Quality Act, B.E. 2535 requested factories and other pollution sources to report the operation regarding the environment to local officers of at least once a month. (Section 80) The local officers shall collect such reports and submit to local Pollution Control Officer of at least once a month (Section 81). These provisions are stricter and have more coverage than those of Department of Industrial Works. This Act covers other pollution sources than factories such as Pig Farming, Hotel, Housing Project and Rock Quarry. In the past, since there was no enactment of Ministerial Regulations, or regulations for these two Sections, there was no enforcement of these provisions to factories and other pollution sources. However, presently Pollution Control Department has issued the Ministerial Regulation under Section 80 and 81, and submitted to Council of State for revision, in order to submit for a Cabinet's approval, and official promulgation. (Matichon Newspaper, 28 October 2004, page 10)

Sources:

- Website of the Council of State (<http://www.krisdika.go.th/>)
- Interview with officer at Environmental Impact Evaluation Bureau, Office of the Natural Resources and Environmental Policy and Planning, 25 February 2005.

II.D.2 Mandate to make Pollutant Release and Transfer Registers (PRTs) accessible to the public* (Box 2)	
Values	Explanation and Justification
<p>(0) <u>Not applicable/not assessed</u></p> <p>(i) There is no mandate to make pollutant release and transfer registers of listed substances accessible to the public</p> <p>(ii) There is a mandate to make pollutant release and transfer registers of listed substances accessible to the public, with vague or broad exceptions or restrictions (please specify)</p> <p>(iii) There is a clear mandate (incl. content of accessible information) to make pollutant release and transfer registers of listed substances accessible to the public, with clearly defined exceptions or restrictions</p>	<p>Thailand still has no legislation prescribing industrial factories to have PRTR system to collect and report information on pollution to general public.</p> <p>However, the Enhancement and Conservation of Environmental Quality Promotion Act, B.E. 2535 also aims to establish database or pollution register system (Section 79²⁴ and 80) and to promote public access to environmental information (Section 6). In addition, there are other Acts which Pollution Control Department will coordinate with other agencies in collecting information on environment and pollution to prepare Pollutant Release and Transfer Register such as Hazardous Substances Act B.E. 2535 Section 17 stating that "The Information Center for Hazardous Substance shall be established in the Ministry of Industry as a coordinating center with respect to information on hazardous substance for various government agencies including private sectors for the collections and services of all kinds of information relating to hazardous substance since their existence in foreign countries, importation or domestic production, moving, uses, destruction, and any other relevant matters"</p>

²⁴ Section 79 states: In case there is no specific law applicable thereto, the Minister shall, with the advice of the Pollution Control Committee, have the power to issue ministerial regulation specifying the types and categories of hazardous wastes generated from the production and usage of chemicals or hazardous substances in the production process of industry, agriculture, sanitation and other activities which shall be brought under control. For this purpose, rules, regulations, measures and methods must also be prescribed for the control of collection, storage, safety measures, transportation, import into the Kingdom, export out of the Kingdom, and for proper and technically sound management, treatment and disposal of such hazardous wastes.

Box 2: Pollutant Release and Transfer Register (Pollutant Release and Transfer Register: PRTR)

"Pollutant Release and Transfer Register" (PRTR) is a framework or guideline in establishment of environmental database or inventory of potentially harmful chemical substances and pollutants released to air, water and soil. Also included in the database are wastes transferred for treatment and disposal from the site of their production. PRTR was resulted from the United Nation Conference on Environment and Development 1992 (Earth Summit 1992) in Brazil and the Chapter 19 of Agenda 21 for sustainable development refers to the establishment of national emission inventories and the right of the public to access this information.

PRTR generally has these defining characteristics:

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| 1. reporting on individual chemicals | 6. with consistently structured data |
| 2. by individual industrial facilities | 7. entered into a computer database |
| 3. on all releases and transfers | 8. actively disseminated to the public |
| 4. to all environmental media
(air, water, land) | 9. with limited data withheld as trade secrets, |
| 5. periodically | 10. with the aim to improve environmental
quality and promote cleaner technology. |

PRTR Designing: Guidance Manual for Governments prepared by OECD mentions that PRTR design will be differ by each country in order to achieve goals and objectives of the nation. Designing PRTRs involves several basic steps, which each represents principles of the designing process including: (not by order of importance)

- Establish clear goals and objectives.
- Consult with interested and affected parties (stakeholders).
- Develop a manageable list of potentially hazardous pollutants or chemicals.
- Define the scope the system. Who must report, to whom, how often, etc.
- Define what will be reported, e.g. data from point and/or diffuse sources, name and co-ordinates of a facility, geographic descriptor of facility, latitude and longitude, etc.
- Analyze existing reporting requirements to identify how they can be used to attain PRTR objectives.
- Define how claims of confidential data will be handled.
- Develop data verification method(s).
- Define resource needs.
- Develop a program review system, i.e. facilitate updates and modifications to the system as it grows and advances.
- Formulate an information dissemination strategy.

PRTR system is an important tool, not only enable the government to monitor industrial compliances on environmental regulations and enhance efficiency of the policies and environmental project, but also stimulate industrial sector to voluntary initiate and attempt to reduce pollution emission and hazardous substances transfer. The system is a mechanism to disclose information to the general public who can use such data to investigate factories operations. This method will create pressure in term of marketing to the company's image. Furthermore, PRTR also benefit to industrial sector in that the factory can conducts self evaluation such as to be aware of raw materials lost during production process, or income lost, etc. (OECD, 1997; Penchome Sae-tung and group, 2004)

II.D.3 Claims of confidentiality regarding compliance with regulations on discharges of pollutants to air and water*	
Values	Explanation and Justification
<p>(0) Not applicable/not assessed</p> <p>(i) <u>No explicit rules exist on confidentiality of compliance reports</u></p> <p>(ii) Rules on compliance reports allow broad claims of confidentiality</p> <p>(iii) Rules on compliance reports limit or do not allow claims of confidentiality (for example, rules require that reasons for confidentiality be publicly stated or that other relevant data be supplied in lieu of data deemed confidential)</p>	<p>Review of rules and regulations by relating agencies (See Box 1) found that there is <u>no</u> provisions allow or retain the referral of information in 1) Reports on Pollution Level Analysis of the Factories submitted to Department of Industrial Works or to Industrial Estate of Thailand and in 2) Reports on Performances of Industrial Facilities in accordance with Laws (EIA) submitted to Office of Natural Resources and Environment Policy and Planning, as trade secrets of industrial factories, or governmental agencies that have such information.</p> <p>Interview with officials from Department of Industrial Works and Bangpu Industrial Estate found that governmental agencies who regulate such data will not disclose information in the reports for general public (for example, made available in the website) except with consent from business operators.</p> <p>Sources: -Interview with Engineer Level 6, Bureau of Water Technology and Industrial Pollution Management, Department of Industrial Works, 14 February 2005 -Interview with scientist, Bangpu Industrial Estate Office, 3 March 2005</p>
II.D.4 Claims of confidentiality regarding Pollutant Release and Transfer Registers (PRTRs)*	
Values	Explanation and Justification
<p>(0) <u>Not applicable/not assessed</u></p> <p>(i) No explicit rules exist on confidentiality of PRTRs</p> <p>(ii) Rules on PRTRs allow broad claims of confidentiality</p> <p>(iii) Rules on PRTRs limit or do not allow claims of confidentiality (for example, rules require that reasons for confidentiality be publicly stated or that other relevant data be supplied in lieu of data deemed confidential)</p>	<p>Thailand still has no legislation prescribing industrial factories to have PRTR system to collect and report information on pollution to general public.</p>

II.D.5 Types of compliance data reported*	
Values	Explanation and Justification
<p>(0) Not applicable/not assessed</p> <p>(i) <u>Fewer than five compliance reports could be found at the ministry of environment (or equivalent), on websites, or in libraries</u></p> <p>(ii) Facilities report information on compliance with limits on air emissions or discharges to water (please specify)</p> <p>(iii) Facilities report information on compliance with limits on air emissions and discharges to water</p>	<p>The study team has inspected an existence of Reports on Pollution Level Analysis, Reports on Waste and Non-used Material Disposal or other reports relating to 5 selected factories from the database of Department of Industrial Works (DIW) and Bangpu Industrial Estate Office. Initially, the study team requested such reports from the DIW and was informed that the agency has no information on factories locating in the Industrial Estate from the year 1997 onward.²⁵</p> <p>The study team also checked an existence of the environmental compliance reports in accordance with Laws of 3 factories located outside the Industrial Estate with the Department of Industrial Works. It was found that only 1 factory regularly submits the Report on Pollution Level Analysis and there are no reports from the other 2 factories.</p> <p>Database of the DIW showed that only 1 factory submitted the compliance report in accordance with laws. However this report is not completed, namely, this factory falls into the category of factory which must prepare EIA compliance report (report on its performances in accordance with environmental quality monitoring measures) to Office of Natural Resources and Environmental Policy and Planning (ONEP). The factory stated that it had submitted such report to ONEP. Finally, the study team located such report in the database of the ONEP. (http://monitor.onep.go.th/document/sentmonitor47.xls)</p> <p>With regard to Report on Waste and Non-used Materials (Factory 6), all 3 factories mentioned that they arrange waste disposal within their premises and no waste to be transported outside the factories, hence, there is no need to submit such report to the DIW.</p>

²⁵ Interview with Engineer Level 6, Bureau of Water Technology and Industrial Pollution Management, (14 February 2005 and 5 April 2005) found that most of factories located in Industrial Estate are registered with Industrial Estate Authority of Thailand who always send data to Department of Industrial Works. However, since 1997, Industrial Estate Authority of Thailand has not sent such information to Department of Industrial Works, but the Department of Industrial Works has information on factories located in Industrial Estate which directly applied for register with the office.

	<p>Regarding, other 2 factories located in the Industrial Estate, the study team requested information from Bangpu Industrial Estate Office and found that only 1 factory submit result of waste and non-used disposal every month. Another 1 factory subjected to submit the report on Air Quality Assessment annually has not submitted such report every year.</p> <p>Consequently, it can be concluded that there are 2 of 5 factories that prepare and submit Reports on Performances of Industrial Facilities in accordance with Laws. Other 2 prepare the Report but not complete or irregularly, while another 1 factory did not prepare any report.</p> <p>Sources: -Interview with Engineer Level 6, Bureau of Water Technology and Industrial Pollution Management, Department of Industrial Works, 14 February 2005 -Interview with scientist, Bangpu Industrial Estate Office, 3 March 2005</p>
II.D.6 Production of Pollution Release and Transfer Registers (PRTRs) or equivalent*	
Values	Explanation and Justification
<p>(0) Not applicable/not assessed</p> <p>(i) No PRTR or equivalent reports are released in the examined cases and none is planned</p> <p>(ii) <u>There is a pilot program or other initiative to develop a PRTR or equivalent reporting system, but facilities do not produce reports</u></p> <p>(iii) Facilities do produce PRTR or equivalent reports in the examined case</p>	<p>Pollution Control Department has established a pilot project on an establishment of 5 year Pollutant Release and Transfer Register (2000-2004). The working committee equivalent to the Department level was set up, comprising of representatives from relating agencies such as Department of Industrial Works, Industrial Estate Authority of Thailand and Federation of Thai Industry. The pilot project was applied with Chemical Industrial factories located in Map Ta Phut Industrial Estate, Rayong Province. Training on this subject was conducted at Map Ta Phut Industrial Estate and Bangpu Industrial Estate.</p> <p>However, this project was suspended due to non readiness in terms of knowledge and human resources of the Department. Other governmental agencies and private sector were not corporate in information sharing, usually with the reasons of "Trade Secrets". Presently (2005), Pollution Control Department has started a new project to review the lists of chemical substances to be included in the PRTR.</p> <p>In addition to the pilot project by Pollution Control Department, currently, relating</p>

	<p>authorities governing chemical substances are conducting activities in accordance with 5 Strategies in the Thailand' Second Master Plan on Chemical Safety (2002- 2006):</p> <ol style="list-style-type: none"> 1) Development of National Chemical Substances Network (Department of Industrial Works); 2) Development of Chemical Accident Management and Prevention System (Coordination among several departments); 3) Enhancement of Potentiality in Chemical Waste Management Pollution Control Department and Department of Industrial Works); 4) Establishment of National Poison Information Center (Ministry of Public Health); and 5) Research and Development (Thailand Research Fund). <p>It can be said that above 5 strategies cover competed chemical substance management, namely, strategy 1 controls importation, manufacture, and usage; while strategy 2 and 3 control the affects of chemical usage and prevent accidents. Strategy 4 controls hazardous wastes and strategy 5 covers researching activities to create relating knowledge in every step.</p> <p>However, problems encountered include: responsible agencies were not allocated funds for their operations according to the strategies, and inadequate human resources, specially, experts in network development and lack of cooperation among relating agencies. Consequently, there was a slight progress in operations according to the 5 strategies of the National Master Plan.</p> <p><u>Sources:</u></p> <p>-Interview with officers of Waste and Hazardous Substances Management Bureau, Pollution Control Department, 1 February 2005</p> <p>-Interview with Scientist Level 5, Information Center for Dangerous Substances, Department of Industrial Works, 14 February 2005.</p> <p>-Interview with Scientist Level 9, Hazardous Substance Control Bureau, Department of Industrial Works, 12 April 2005.</p>
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II.D.7 Compliance reports available on Internet*	
Values	Explanation and Justification
<p>(0) Not applicable/not assessed</p> <p>(i) <u>No information on facility compliance could be obtained on government agency website or other websites</u></p> <p>(ii) Information on facility compliance could be obtained after in-depth search or multiple links on government agency website or other websites</p> <p>(iii) Facility compliance information could be obtained immediately in search or on home pages of government agency website or other websites</p>	<p>Ministry of Industry has issued Notification of the Ministry of Industry in Criteria and Procedures in Informing Details of Waste and Non-used Materials from the Factory by Internet B.E. 2547. The objectives of this Notification were to accelerate the issuance of permits for waste/non-used materials transportation, and to governing factories in accordance with law. There was no objective to disclose information on industrial waste management to the general public.</p> <p>Furthermore, though there is a regulation prescribing that large factory operators must install special automatic equipment to monitor air quality from the outlet and waste water quality, and report the assessment results to the database of Department of Industrial Works or relating agencies, the Department and relating agencies have no policies to disseminate such information in their computer networks to the general public via their websites.</p> <p>Sources: -Interview with Engineer Level 6, Bureau of Water Technology and Industrial Pollution Management, Department of Industrial Works, 14 February 2005</p>
II.D.8 Pollutant Release and Transfer Register (PRTR) reports available on the Internet *	
Values	Explanation and Justification
<p>(0) <u>Not applicable/not assessed</u></p> <p>(i) No PRTR reports could be obtained on government agency website or other websites</p> <p>(ii) PRTR reports could be obtained after in-depth search or multiple links on government agency website or other websites</p> <p>(iii) PRTR reports could be obtained immediately in search or on home pages of government agency website or other websites</p>	<p>Thailand still has no legislation prescribing industrial factories to have PRTR system to collect and report information on pollution to general public.</p>

II.D.9 Quality of information accessible to public in compliance reports*	
Values	Explanation and Justification
<p>(0) Not applicable/not assessed</p> <p>(i) <u>Compliance reports for the five selected facilities contained insufficient data for assessment</u></p> <p>(ii) Compliance reports for the five selected facilities included some information on releases of specific substances, but only for 1 year (no trend data)</p> <p>(iii) Compliance reports for the five selected facilities included detailed data on releases of specific substances, and included trend data</p>	<p>From the results of assessment in indicator II.D.5 and the interviews with 5 selected factories found that <u>both 2 factories located in Bangpu Industrial Estate</u> provide same information with Industrial Estate Office, namely, there was 1 factory submit Report on Waste and Non-used Materials Disposal every year, and another was not consecutively submit the Report on Air Quality Assessment to Industrial Estate Office.</p> <p>All 3 <u>factories located outside Industrial Estate</u> also provided same information received from Department of Industrial Works, namely, 1 factory regularly submitted Report on Pollution Level Analysis to Department of Industrial Works (every 3 months) and another 1 factory prepared only Report on performances according to environmental quality monitoring measures for Office of Natural Resources and Environment Policy and Planning every 4 months, but it did not prepare the Report on Pollution Level for Department of Industrial Works. Another 1 factory never prepares the Report for Department of Industrial Works. However, reports prepared by above factories do not exhibit trends since it was not stated in the law.</p> <p>Since there were 2 from 5 factories who submitted completed report regularly, item (i) is, therefore, selected.</p>
II.D.10 Quality of information accessible to public in Pollutant Release and Transfer Register (PRTR) reports*	
Values	Explanation and Justification
<p>(0) <u>Not applicable/not assessed</u></p> <p>(i) PRTR or equivalent reports contained insufficient data for assessment</p> <p>(ii) PRTR or equivalent reports included some information but only for a limited list of substances, or only for 1 year (no trend data)</p> <p>(iii) PRTR or equivalent reports included detailed data on releases of specific substances, and included trend data</p>	<p>Thailand still has no legislation prescribing industrial factories to have PRTR system to collect and report information on pollution to general public.</p>

II.D.11 Timeliness of compliance report data*	
Values	Explanation and Justification
<p>(0) Not applicable/not assessed</p> <p>(i) <u>No data on compliance are available</u></p> <p>(ii) The most recent data on compliance are generally more than 3 years old (specify how old)</p> <p>(iii) The most recent data on compliance are generally 1 to 3 years old (specify how old)</p> <p>(iv) <u>The most recent data on compliance are generally less than 1 year old (specify how old)</u></p>	<p>(i) was selected for 4 factories.</p> <p>(iv) was selected for 1 factory that submitted Monthly Report on Waste/Non-used Materials Disposal to Bangpu Industrial Estate Office, as prescribed by the law.</p>
II.D.12 Timeliness of Pollutant Release and Transfer Register (PRTR) data*	
Values	Explanation and Justification
<p>(0) <u>Not applicable/not assessed</u></p> <p>(i) No PRTR or equivalent data are available</p> <p>(ii) The most recent PRTR or equivalent data are generally more than 3 years old (specify how old)</p> <p>(iii) The most recent PRTR or equivalent data are generally 1 to 3 years old (specify how old)</p> <p>(iv) The most recent PRTR or equivalent data are generally less than 1 year old (specify how old)</p>	<p>Thailand still has no legislation prescribing industrial factories to have PRTR system to collect and report information on pollution to general public.</p>

Analysis

Box 1 shows that Thailand has several laws and legislations prescribing industrial factories to prepare Report on Performances according to Laws. Such examples are Report on Pollution Level Analysis, Report on Waste or Non-used Materials Disposal, Report on Air Quality Assessment and Report on Performances in accordance with Environmental Quality Measures. Minimum 4 governmental agencies involved include Department of Industrial Works, Industrial Estate Authority of Thailand, Office of Natural Resources and Environment Policy and Planning and Pollution Control Department.

Results of Assessment under the indicators framework found that general public still can not access Reports on Performances according to Laws, especially Report on Pollution Level Analysis, Report on Waste or Non-used Materials Disposal, which business operators submitted to Department of Industrial Works or Industrial Estate Authority of Thailand. Though Office of Natural Resources and Environment Policy and Planning has initiated publication of Report on Performances in accordance with Environmental Quality Measures (for industrial factories which are requested to submit the Report on Environmental Impacts), its database is not completed and such factories are only a small number of total factories operating in Thailand.

Indicator of Access of Report on "Pollutant Release and Transfer Register" (PRTR) can not be applied to Thailand since there is no legal provision stating that industrial factories shall develop the PRTR. Nevertheless, Waste and Hazardous Substances Bureau, Pollution Control Department has initiated a pilot project in establishment of Pollutant Release and Transfer Register (PRTR) since 2000. The pilot project was applied with Chemical Industrial factories located in Map Ta Phut Industrial Estate, Rayong Province. Training on this subject was conducted at Map Ta Phut Industrial Estate and Bangpu Industrial Estate. However, this project was suspended due to non readiness in terms of knowledge and human resources of the Department, and no comprehensive cooperation between relating agencies.

In addition to a direct attempt of the Pollution Control Department to establish PRTR system, other governmental agencies have tried to build a network on imported hazardous chemical substances, which is a basis to develop PRTR system in the future. In this regard, the Thailand Research Fund, in collaboration with Customs Department developed a system to monitor imported chemical substances by using document control numbers and linked them to imported chemical substances documentation report system of the Customs Department. This system enables agencies governing imported chemical substances under the Hazardous Act, B.E. 2535 and Armament Control Act, B.E. 2530 to communicate and review importation information between each others and can strictly monitor Controlled Hazardous Substances such as substances in Pesticides, and Ozone Depletion families.

In order to monitor information from importation points, Department of Industrial Works who is responsible for Hazardous Substances for industrial usage, accessed the above information system and reviewed amount of substances requested and amount approved. It also monitor usages of hazardous substances after importation, requesting business owners to report amount of 45 hazardous substances every 6 month, according to the Notification of Ministry of Industry on Reporting on hazardous substances of Manufacturers, Importers, Exporters or those who have hazardous in possession B.E. 2543. From the corporation between Research Center and Department of Industrial Works under such project, in 2004 Department of Industrial Works issued a new Notification for business factories to use Reporting Forms (HZ./In.6 and HZ./In.7) which is resulted from the research project on Reporting of 53 Hazardous Substances (<http://www.chemtrack.org/Manage.asp?ID=2>).

Moreover, Department of Industrial Works issued regulations and procedures on other operations such as determination of Standard Level of Pollutant Released from Factory Chimney, prescribing factory owners to report on waste/non-used materials disposal, development of hazardous substances database, and establishment of National Chemical Substances Network, etc.

Even though the government has attempted to develop the monitoring system for hazardous substances according to the Hazardous Substances Act to systematically manage substances and create safety for all, it should be noted that

safety creation is a role and responsibility of every person and every sector, not only limited to public sector. In order to foster public participation to receive information, to join decision making and to assist public sector in warning system, relating agencies must disclose such information to general public. This notion complies with basic principles in the Constitution of the Kingdom of Thailand regarding Rights to access to information and to receive official information. It also shall clarify which type of information can be disclosed, and information which can not be disclosed due to being trade secrets.

Problems and constraints of inaccessibility to the Report on Performances of Industrial Facilities according to law from this study can be summarized into 2 main issues, including 1) Lack of integrated information among relating agencies and lack of efficient data collection system 2) Problems on law enforcement and legislation gaps.

1) Lack of information integration among relating agencies and lack of efficient data collection system

Thailand has several laws and legislations prescribing industrial factories to prepare Report on Performances according to Laws (See Box 1 above). Minimum 4 governmental agencies involved include Department of Industrial Works, Industrial Estate Authority of Thailand, Office of Natural Resources and Environment Policy and Planning and Pollution Control Department. Furthermore, there are more than 30 legislations with regard to domestic Hazardous Substances Management. Among these, 3 major laws are Hazardous Substances Act B.E. 2535, Armament Control Act B.E. 2530 and Notification of Revolutionary Council No. 103 (presently is responsible by Ministry of Labors). In addition, there are several laws regarding government of Chemical Substances, with 17 of them related with accidents. Hazardous Substances Act B.E. 2535 has widest scope, dividing into 6 responsible agencies according to Chemical Substances usages: Department of Industrial Works, Department of Agricultural Extension, Department of Fisheries, Food and Drug Administration Office, Department of Energy Business and Office of Atoms for Peace.

The most important problem is lack of information integrations among agencies. Data collection of each agency is autonomous, responding to objectives and policies of each office which might be differ. For example, information on factories and reports on industrial facilities in accordance with laws collected by Department of Industrial Works is limited to factories registered with the Department, which majorities of them are located outside Industrial Estates. Such information is, hence, dispersed at responsible agencies and difficult to use such data for analysis of national industrial pollution situation. The same problem happens with statistics on importation and usage of chemical substances and hazardous substances since each agency has different regulations and reporting forms. Different data collection formats and systems hinder the linkage among database. This results in difficulty to monitor overall picture of importation of hazardous substances in order to solve problems for the country.

Though agencies relating to government of chemical substances attempted to establish Central Information Center which links data from several organizations, with Department of Industrial Works as a focal point in accordance with strategies in Thailand' Second National Master Plan on Chemical Safety 2002-2006, the problem encountered is lack of intentions by the executives. Therefore, there was slight progress in operations under the National Master Plan due to zero or inadequate budget allocation. Furthermore, it can be witnessed from the development of database system for Report of Pollution Level Analysis by the Department of Industrial Works that even the data has been inputted into database since 2002,

limitation on resources (number of officers and budget) results in several data left and data was not been included in the database. (Sources: Interview with Engineer Level 6, Bureau of Water Technology and Industrial Pollution Management, Department of Industrial Works, 14 February 2005)

2) Problems on law enforcement and legislation gaps

Review of document from Department of Industrial Works found that since the Ministry of Industrial has issued the Notification of Ministry of Industry No. 13 (B.E. 2525) and No. 22 (B.E. 2528) determining that some types and sizes of factory to report the pollution level analysis and submit to Department of Industrial Works every 3 months, several factories did not follow such notifications. Furthermore, several complaints on illegal pollutant release are still prevailing. This reflects that the factories did not perform in accordance with laws and there is a problem on inability to enforce existing laws. Major cause is inadequate officers. (Number of officers from Sectoral Industrial Bureau 1-5 of Department of Industrial Works are 207 persons, while officers from Provincial Industry Office are 225 persons, totaling 432 persons, compared with total numbers of industrial facilities 100,000 factories.) In addition, regulating systems of officers are not sufficient strictly and not cover all areas.

Inadequate numbers of officers also affects the capacity in data checking in the Report received. Interview with officer from Department of Industrial Works found that information was checked only by document review, which depends on skills and experiences of officers. There was no random investigation, or sample collection of pollution whether it conforms to the information declared by factories.

With regard to legislation gaps, the assessment results by indicators found that laws or legislations were not define rights in withholding trade or business secrets. There were no clear definitions on "Official Secrets" and "Trade or Business Secrets". Consequently, business operators can claim that Report on Pollution Level Analysis contains trade or business secrets, with the reasons that information disclosure to the general public may affect to their operations, profits, and images. This trade secret claim makes relating governmental agencies reluctant to disclose information to the public since there was no consent from the companies. (Sources: Interview with Engineer Level 6, Bureau of Water Technology and Industrial Pollution Management, Department of Industrial Works, 14 February 2005; Interview with an officer from Bangpu Industrial Estate, 3 March 2005.)

The claim on "Business or Trade Secrets" or "Official Secrets" on information containing in Report on Performances of Industrial Facilities according to law is not comply with current trend at the international level. This can be witnessed from the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention)²⁶ which states in Article 4 item 4 (d):

"The confidentiality of commercial and industrial information, where such confidentiality is protected by law in order to protect a legitimate economic interest. Within this framework, information on emissions which is relevant for the protection of the environment shall be disclosed."

²⁶ Aarhus Convention was established in the 4th Ministerial Meeting of the members of United Nations Economic Commission for Europe (UNECE). 39 countries and European Community signed in this convention which was legally enforced on 30 October 2001. Details of Aarhus Convention can be found in the website of UNECE (<http://www.unece.org/env/pp/documents/cep43e.pdf>)

Furthermore, the industrial countries' development of PRTR or "Pollutant Release and Transfer Register"²⁷ which is the mechanism to promote people's rights to access information on pollutant release to the environment, and on Chemical Substances movement and usage, reflects that current international perspectives does not regard such information as business or trade secrets.

Recommendations

▪ For Thailand

Accessibility on Report on Performances of Industrial Facilities according to Laws

- 1) All 4 agencies relating with Report on Performances of Industrial Facilities according to law shall coordinate among each others to establish a united reporting system with standard report formats. This will facilitate reporting process for business owners and persuade regular reporting by factories.
- 2) A focal point in building central database for information containing in Report on Performances of Industrial Facilities according to law shall be established. In addition, this database shall contain information on production, importation, exportation and possession of Hazardous Substances in the same reporting formats and shall be made available to the general public. This will serve as a mechanism for public participation in assessment of factory's operation, which in turn, will also pressure industrial facilities to improve their environmental management.
- 3) Existing legislations regarding the report on pollution level analysis shall be revised and designated that such information shall be disclosed to the general public to be in line with the Official Information Act. In this regard, the definition of "Business or Trade Secrets" shall be clearly defined.
- 4) There shall be an enhancement of efficiency in law enforcement in legislations governing industrial factories by increase rigidity of the regulations, and punishment on offenders.

Development of PRTR System

There shall be a pressure to develop a united Pollutant Release and Transfer Register (PRTR) system with international standard. This will be an important guideline to create social standards and will be a mechanism that will assist an establishment of efficient factory assessment and chemical substances disposal systems by public participation. Recommendations in PRTR development are:

²⁷ In 2003, there were 14 industrial countries which are members of Organization for Economic Cooperation and Development (OECD) that have PRTR systems such as United States, Canada, Japan, South Korea, Mexico, etc. (OECD, 2004). On 23 February 2004, 15 member countries of European Union have announced an application of PRTR system among the union, called European Pollutant Emission Register (EPER) (Enhessa, 2004). In addition, in May 2003, there were 36 members and European Union jointly signed PRTR Protocol under the Aarhus Convention (Commission for Environmental Cooperation of North America, 2004).

- 1) Pollution Control Department shall coordinate with Department of Industrial Works, researchers and scholars from educational institutions to conduct a pilot project PRTR, selecting a pilot area such as Map Ta Phut Industrial Estate and surrounding areas. Operation areas for each agency shall be clearly defined.
- 2) Establish and improve database, lists or statistics providing amount of Chemical substances and their release to the environment (Emission Inventories). Database on chemical substances and particulates in each local area (Baseline data) shall also be developed. In this regard, it shall be done according to correct and completed researching and sample collection methods.
- 3) Since PRTR promotes rights of a community and of an individual to receive and access to information on hazardous substances, amount of hazardous substances release by accident and by normal situation; therefore, it is crucial for local organizations and local community have knowledge and understandings on PRTR system.
- 4) PRTR shall be designed according to the public participation principle from the initial state; this may be done in form of public policy.
- 5) There shall be an in depth analysis and study on Enhancement and Conservation of Environmental Quality Act, B.E. 2535 and Official Information Act B.E. 2540, especially on the operational guidelines on rights for information access of the general public.
- 6) There shall be a definition of "Environmental Information" or equivalent terms to be a board definition. In addition, "Information on Pollutant Release" and other definitions relating with chemical substances management shall be prescribed as information to be disclosed to general public. Limited exceptions may be included but they shall be clearly defined in the law.
- 7) General public can access information easily and without any cost.
- 8) There shall be auditing system and measures controlling false information disclosure.
- 9) Promote industrial sector to aware of importance and benefits of PRTR; demonstrating that such system can be applied in an improvement of technique and methods for pollution reduction, and that the PRTR can decrease operational costs in the long run.
- 10) Data collection format and system shall be developed to be simple ones for industrial operators can adapt existing information for the PRTR purpose.
- 11) Tax incentives or others privileges shall be established in order to receive corporation from business owners.

Access to Environmental Information: Synopsis and Overall Recommendations

▪ Synopsis

- 1) Presently, general public has more access to information due to an enforcement of Constitution of the Kingdom of Thailand B.E. 2540 (1997), Official Information Act B.E. 2540 (1997), and implementations under the Strategic Plan for Thai Public Sector Development (2003-2007). The measures in Strategy 6 stress on modernizing bureaucratic system by application of information technology and communication to improve work performances and to service general public in greater areas. Measures in Strategy 7 on allowance of public participation in government system specify conditions and guidelines to promote awareness of the public sector in undertaking its duties in accordance with intentions of the Constitution and rule of law, especially in providing knowledge and understanding, operational guideline and report of work performance of government functions to directed party and general public. Furthermore, there are measures specify that all government offices shall provide information demonstrating accountability, transparency, and disclosure on work performed in their websites, in order to facilitate public access to the information.
- 2) Though Thailand has a legal structure to promote access of information, but legal mechanisms and procedures for "Environmental Information" which mostly benefit to the general public is still lack of clarity. This is due to no definition of "Environmental Information" and "Confidentiality of Commercial Information" Moreover, there is no specification on types of environmental information which can be disclosed to the public, and which **must be** available to the public. In addition, there is no specified time period for responding to public enquiries. Consequently, degree of dissemination, disclosure and quality of information (in terms of its context and promptness) are depends upon discretion of government officials, as can be witnessed in the case of bird flu outbreaks at its first outbreak. Press and senators strongly criticized an attempt to conceal such information by public authorities and the government, to the extent that Matichon newspaper lodged an appeal to Official Information Board. In case of 5 factories in Samut Prakarn Province, it was found that lack of definition of "Environmental Information" and "Confidentiality of Commercial Information" hinders government agencies collecting reports on Pollution Emission to disclose this information to the public, which is a constraint to development of Pollutant Release and Transfer Register: PRTR. Developed countries have seriously adopted PRTR system such as in England where there are notifications concerning violation of pollution standard level affixed at the community places. This acknowledges residents on pollution situation in the local area, enables general public to monitor the authority and creates social pressure to industry to control their pollution emission in order to conserve their corporate images.
- 3) Most of agencies with direct responsibilities for data preparation and collection eager to publicize information to the general public even though there are no specific legal conditions on this matter. Example of such can be seen from an effort of Pollution Control Department to disseminate air quality information and an attempt of Office of the Natural Resources and Environment Policy and Planning to provide information from State of the Environment to the public. Both agencies continuously improve their operations to disseminate information: there is increase of variety of information formats: printed and CD ROM versions; there

is increases of distribution lists, as well as publicize their information via several kinds of media, specifically through the internet network.

- 4) There is an observation in the case of information which might create negative effects to an individual person/agency or economic and political groups. Even though such information is beneficial to the general public, the government officials especially at operational level are often encountered with political interferences and reluctant to provide that information resulting in arbitrary acts in disseminating information. Example of such were the outbreaks of bird flu which was criticized that there was a cover-up; illegal landfill of hazardous waste at Pak Chong District which did not have continuous information dissemination when the process arrived at investigation stage; no data on report of performances of industrial facilities in accordance with laws disseminated to the surrounding communities and the general public, etc.
- 5) Degree and quality of data disseminated depends upon the seriousness of the emergencies and scope of impact of such incident. Furthermore, it correlates with the seriousness of the impact: information is disseminated to the general public if the incident generates greater effects to the general public and civil society organizations closely monitor that issue. Example of such case is the outbreak of bird flu (from the point that the government admitted the existence of outbreak in Thailand.)
- 6) When compare the findings of this assessment and the pilot test of the past 3 years (2001), it was found that, presently, Thailand has more structures and procedures in favor with information dissemination, especially several measures specified in the Strategic Plan for Thai Public Sector Development 2003-2007. However, assessment findings by the indicators found that in practice, there is "gap" in legal mechanisms which makes information disclosure level still depends on considerations of public officials. Moreover, it found that there are no clear operational procedures in dissemination of information regarding with environmental and health emergencies which are needed to be done with promptness and up to date.

▪ Overall Recommendations

Information Dissemination to General Public

- 1) Improve legal mechanisms in environmental information dissemination such as revision of Official Information Act B.E. 2540 (1997) on 1) the timeframe for responding to inquiries and 2) type of information to be disclosed to the general public (not only by request) such as information relating with environmental and health impacts, for example, Air Quality Information and Pollution Emission, etc.
- 2) There shall be regulations or manuals for operational staff and local administrations on dissemination of useful information to the general public. (local administrations include Bangkok Metropolitan Authority, Provincial Administration Organization, Tambon (Sub-district) Administration Organization and Municipality)
- 3) Government agencies shall attempt to prepare information in different formats to reach several group of population and distribute it to the general at public locations or during any environmental campaigns. Examples of such formats are State of the Environment (Youth Version), posters affixed at schools, brochure concluding annual environment situation, etc.

- 4) The government shall increase channels to reach the general public. Examples include dissemination of accident information and analysis on health and environment impacts in short and long term via websites and printed medias, coordination with local organizations to disseminate information such as coordinate with Tambon (Sub-district) Administration Organization to publicize information on prevention of bird flu, water quality assessment, easy water sterilize methods, and air quality assessment (in risk areas) via local radio stations. In addition, it shall distribute State of the Environment Report to public library of every province, district, sub-district, and village (if any) as well.

Information Dissemination to Directly Affected and Vulnerable Groups

- 1) For big projects which might generate effects to residents of the project location, the responsible agencies shall place emphasis on investment in information dissemination. There shall be clear information dissemination plans with certain budget. The proportion of budget shall be appropriate for information dissemination activities during the project proposal process.
- 2) The government shall increase watching measures on health and environment to those who reside in the risk areas, such as residents near routes of chemical trucks, and residents live and work in Industrial Estates and surrounding areas, etc. Furthermore, measures that shall be simultaneously implemented are an improvement of monitoring, watching, and warning systems to be Real-time systems and a capacity building of residents in the risk area to protect themselves during health and environmental emergency situations. (For example, during the chemical substances dispersion, increase of pollution and bird flu outbreaks, etc.)
- 3) During the bureaucratic structural reform of Ministries, Bureaus and Departments, the government shall emphasizes relating agencies to integrate their performances with information preparations, promotion of coordination among the public sectors (central and local administrations) and creation of networks between government offices and the press with a formal agreement in prompt and efficient information dissemination during the emergency situations.