

**STUDY ON “INDUSTRIAL WASTE  
MANAGEMENT AND RECYCLING IN INDONESIA”**

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## Chapter I

### Industrial Waste Management and Recycling in Indonesia

#### I.1 Background

If a foreign firm wants to invest in Indonesia, it is required to comply with all of the legislative and regulatory provisions prevailing in this country. This is essential so that future generations may continue to enjoy Indonesia's natural wealth. Investment activities give rise to various logical consequences, and have the potential to create major environmental impacts, and even threaten the continued existence of ecosystems. On the one hand, investment is a sine qua non to development, but on the other it has a major impact on the Indonesian environment. That is why we have commenced our discussion by referring to the onus on every foreign investor to comply with the Indonesian legislative and regulatory framework as regards industrial operations and the processing and disposal of waste. This study is intended to ascertain and clearly identify the legislative enactments and subsidiary legislation (i.e., regulations) that govern waste management and recycling in Indonesia. By doing this, it is hoped to provide a concrete picture of the obligations and responsibilities incumbent upon investors when putting their money into Indonesia, and to provide a description of the situation as regards environmental law in this country.

#### I.2 Definitions

The Environmental Management Law (Number 23 of 1997), uses the terms "waste" and "hazardous and toxic waste" (B3 waste). These are defined as follows:

**Waste** means (anything) produced as an (unwanted) by product of a process and/or activity (Article 1 (6) Act No. 23/1997).

**Hazardous and/or toxic waste** means (anything) produced as an (unwanted) byproduct of a process and/or activity, where such byproduct is toxic and/or hazardous as a result of its nature and/or concentration and/or quantity, and which may directly or indirectly result in pollution and/or environmental damage, and/or endanger the environment and/or the health or lives of human beings and/or other living things (Article 1 (18) Act no. 23/1997).

**Industry** is an economic activity that produces raw material, basic commodity, soft material and/or complete material with a higher value for use, including project planning activity and industrial engineering activity. (Article 1 Act No. 5/1984)

Also in the Government Regulation No 19 of 1999 regarding the Control of Sea Pollution is found 2 terminologies about waste

**Liquid waste** means (anything) produced as an (unwanted) by product of a process and/or activity with a liquid form (article 1)

**Solid Waste** means (anything) produced as an (unwanted) by product of a process and/or activity with a solid form including garbage (article 1)

The management of hazardous and/or toxic waste involves its processing, recycling and disposal. The definition of each of these activities is given below:

**a) Processing of hazardous and/or toxic waste**

This involves altering the nature and composition of the hazardous and/or toxic waste so as to eliminate and/or reduce its hazardous and/or toxic character.

**b) Disposal of hazardous and/or toxic waste**

Storage involves the disposing of hazardous and/or toxic waste in a special facility so as to ensure that it does not endanger human health and/or the environment.

### **c) Recycling Hazardous and/or toxic waste**

This refers to a process of recovery, reuse and/or recycling for the purpose of converting the hazardous and/or toxic waste into a product that can be used and that is safe to the environment and human health.

Under Government Regulation Number 18 of 1999 on the management of hazardous and/or toxic waste, the chain of activities involved in the management of hazardous and/or toxic waste involves six components: the production of the waste, the collection of the waste, the transportation of the waste, the recycling of the waste, the processing of the waste, and the disposal of the waste. This Government Regulation also defines “management” as a series of activities involving the reduction, storage, collection, transportation, recycling, processing and disposal of hazardous and/or toxic waste.

From the above definitions, it will be seen that not all waste may be classified as hazardous or toxic in nature. This is referred to as non-hazardous and/or toxic waste. The rules regarding the specifications and identification of hazardous and/or toxic waste are set out in Government Regulation Number 85 of 1999 on the amendment of Government Regulation Number 18 of 1999 concerning the management of hazardous and/or toxic waste. This divides hazardous and/or toxic waste up into three types based upon source: hazardous and/or toxic waste from non-specific sources, hazardous and/or toxic waste from out-of-date chemicals, spillages and used packaging materials, and discarded products that fail to satisfy the specifications (article 7). More detailed descriptions of each of these types of waste are provided in the three appendices to the said Government Regulation. We shall discuss this in greater detail in Chapter II.

### I.3 General Conditions of Waste and Waste management in Indonesia

According to the Indonesian Waste management Center (PPLI), Indonesia probably produced 7,022,808 tons of hazardous and/or toxic waste in 2003. However, the Center only had the capacity to process five percent of this.<sup>1</sup> Today Indonesia only have 2 waste management center for liquid hazardous toxic waste with class 1 landfill<sup>2</sup>. Nevertheless, this actually represented an improvement on the preceding years. The top five producers of hazardous and/or toxic waste in Indonesia in 2003 were the oil and gas industry (36.1 percent), the chemical industry (33 percent), the mining industry (11.8 percent), the electricity generating industry (4.2 percent) and the pharmaceutical industry (3.6 percent).<sup>3</sup> In 2004, the number of individual industries that had the potential to pollute the environment amounted to 105, including the beverage, cosmetics, motor vehicle components, electronic component plastics, printing and tanning industries. The data given in this study excludes the oil and gas, banking, insurance, leasing, mining (contract of work), portfolio and domestic investment industries.<sup>4</sup>

In 2004, of the total waste produced by the manufacturing, services and infrastructure sectors, 1,084,805.5 tons were recycled, 346,207 tons were disposed of, and 74,059 tons were processed.

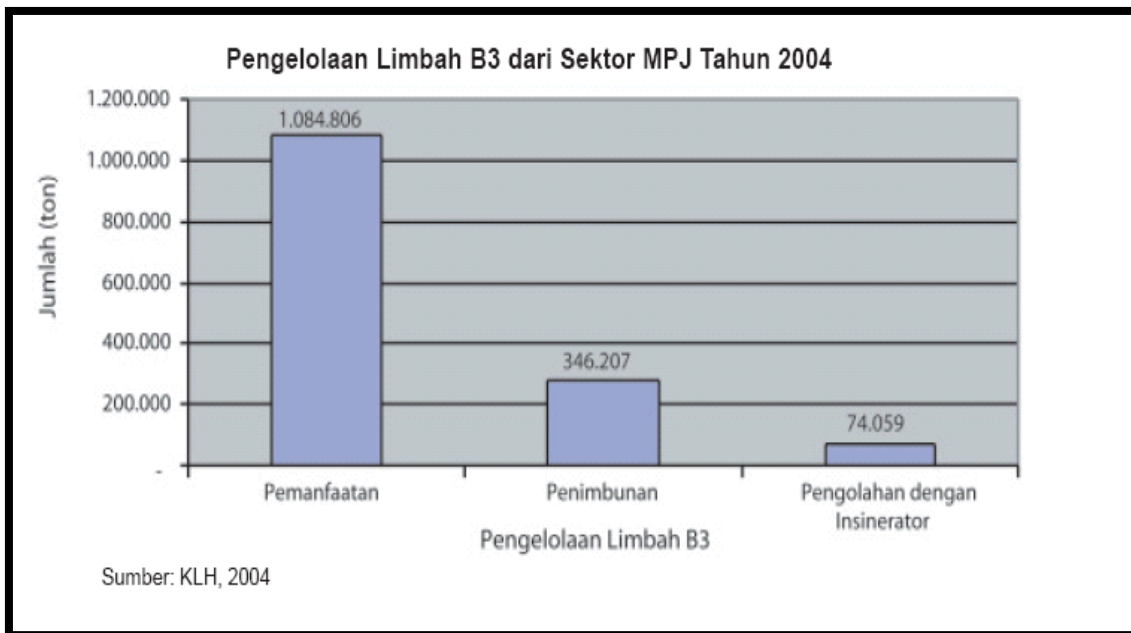
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<sup>1</sup> Kementerian Lingkungan Hidup, *Status Lingkungan Hidup Indonesia 2003*, p. 203

<sup>2</sup> Kementerian Lingkungan Hidup, *Status Lingkungan Hidup Indonesia 2004*, p.:220-201

<sup>3</sup> Data Collected from PPLI 2003, on Kementerian Lingkungan Hidup *Status Lingkungan Hidup Indonesia 2003*, p. 204

<sup>3</sup> *Loc Cit*, p. 200



Translation of table:

Pengelolaan Limbah B3 dari Sektor MPJ Tahun 2004 = Management of hazardous and/or toxic waste from the manufacturing, services and infrastructure sectors, 2004

Jumlah (ton) = Total (tons)

Pemanfaatan = Recycling

Penimbunan = Disposal

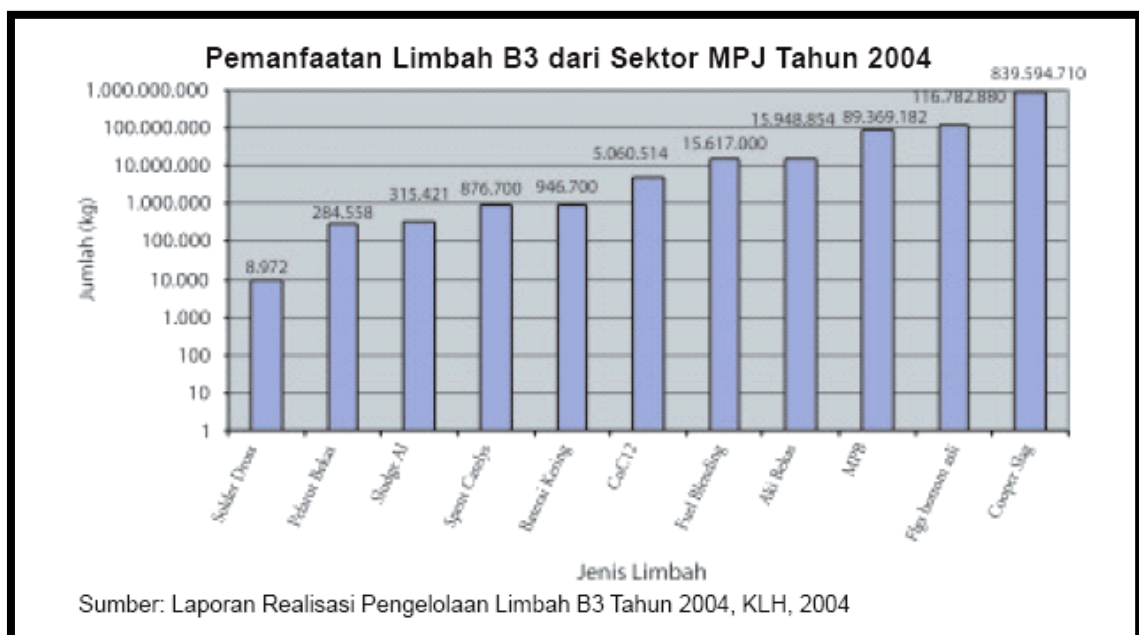
Pengolahan = Processing in Incinerator

Pengelolaan Limbah B3 = Management of hazardous and/or toxic waste

Source: KLH, 2004

The question of recycling industrial waste in Indonesia is not specifically addressed by a specific piece of legislation or subsidiary legislation. However, it is specifically referred to in the provisions Of Article 33 (1) Government Regulation Number 18 Of 1999 on the Management of Hazardous and/or Toxic Waste states that

recycling includes recovery, reuse and recycle. Up to the end of 2004, a total of 30 firms (manufacture, product, and services) possessed recycling licenses for hazardous and/or toxic waste, with a total of 1,084,805.5 tons of such waste actually being recycled. The types of waste that were recycled included spent catalysts, copper slag, fly and bottom ash from coal, used batteries, CuCl<sub>2</sub>, tin solders, and liquid industrial waste. Copper slag was the most common type of hazardous and/or toxic waste that was recycled.<sup>5</sup>



Translation:

Pemanfaatan Limbah B3 dari Sektor MPJ Tahun 2004 = Translation: Recycling of hazardous and/or toxic waste from the manufacturing, services and infrastructure sectors, 2004

Jumlah (Kg) = Total (Kg)

<sup>5</sup> Ibid p. 204

Sumber = Source: Report on management of hazardous and/or toxic waste in 2004, KLH, 2004

#### **I.4 Current Problems**

There are a number of fundamental problems currently affected the management of hazardous and/or toxic waste in Indonesia, including the following:

- a. A lack of knowledge on the part of the public at large as regards the dangers posed by hazardous and/or toxic waste. This is because the impacts often take a long time to become apparent.
- b. The highly limited availability of facilities for the processing of hazardous and/or toxic waste. Most of these are located on Java Island and are almost non-existent elsewhere.
- c. There is an increasing number of sources of hazardous and/or toxic waste, including from industries switching to coal as an energy sources.
- d. Compliance with environmental legislation on the part of industry is still very low.<sup>6</sup>
- e. The illegal importation of hazardous and/or toxic waste is still continuing, even though this is expressly prohibited by the legislation.<sup>7</sup>

#### **I.5 Scope of the Study**

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<sup>6</sup> PROPER August 2<sup>nd</sup>, 2005 claim that at least 20 company that were in the “black list” as the contributor for Surabaya river contamination (<http://www.terranel.or.id/tulisandetil.php?id=1691>), and also some of other cases that related to contamination is happening such as the cases of Jakarta Bay contamination, Buyat Bay, and the cases of thousand island contamination

<sup>7</sup>The case that being in the headline is waste importing by the PT. Asia Pacific Eco Lestari (APEL) in 2005 from Singapore to Indonesia ([www.kompas.com/kompas-cetak/0501/29/daerah/1527584](http://www.kompas.com/kompas-cetak/0501/29/daerah/1527584))

This study is intended to identify and describe the industrial waste management system in Indonesia, and is based on the primary and subsidiary legislation in the environmental field, and in particular that governing the management of hazardous and/or toxic waste. Those legislative enactments and regulations that are discussed herein provide the foundations for the industrial waste management system in Indonesia at the present time, and encompass the entire hierarchy of legislation from acts of parliament down to decrees and directives issued by ministers and statutory agencies. It is hoped that this study will serve to provide a general picture of the waste management and recycling system in Indonesia.

## **I.6 Research Methodology**

This study has been carried out in accordance with the tenets of legal dogmatism, that is to say, the setting out, analyzing, systemizing and interpreting the prevailing statute law, including subordinate legislation (positive law). The characteristics of legal dogmatism may be summed up as follows: the subject is statute law (including subordinate legislation), the goals are theoretical, but nevertheless practical, in nature, the perspective is internal, the correct theory is pragmatic, and is informative, normative and evaluative in character.<sup>8</sup> Based on this approach, this investigation has involved a study of the statute law (including subordinate legislation), international covenants, legal foundations, and the relevant literature.

## **I.7 Structure of the Report**

Chapter I of this report describe the background, the definitions employed, current problems, scope of the study, the research methodology, and the structure of the

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<sup>8</sup> J.J.H. Bruggink, as interpreted by B.Arief Sidharta, "*Refleksi Tentang Hukum*", Citra Aditya Bakti, Bandung, 1996, p. 168., et.seq.<sup>i</sup>

report. Chapter II presents a description of the laws and regulations governing the management of industrial waste, which is divided into laws and regulations, program and policies, and statutory agencies. Chapter III discusses in detail the provisions governing the stages involved in the management of hazardous and/or toxic waste, export-import, licensing system, law enforcement, and future development. The study concludes with chapter IV, which consists of conclusions and recommendations.

## **Chapter II**

### **Laws and Regulations, Policies and Statutory Agencies concerned with Industrial Waster Management and Recycling**

#### **II.1 Laws and Regulations**

The management of waste in Indonesia is governed by the Environmental Management Law (Number 23 of 1997), which was enacted to provide a platform for the protection of the environment. The Environmental Management Law is supported by various ancillary regulations governing waste management as the Law consists only of general, rather than detailed and specific, provisions. Besides these ancillary regulations, there are also relevant regulations in other sectors, such as the trade and industry sector, which must be considered when discussing industrial waste management. The question of hazardous and/or toxic waste management is specifically dealt with by Government Regulation Number 18 of 1999.

#### **II.2 General Environmental Law**

##### **II.2.1 The Environmental Management Law (Number 23 of 1997)**

The Environmental Management Law (Number 23 of 1997) was enacted to supersede Law Number 4 of 1982 on fundamental provisions concerning environmental management. In the elucidation to the Environmental Management Law, it is stated that it codifies the legal norms prevailing in the environmental field, and shall provide the benchmark for assessing and updating all laws and regulations affecting the environmental field. Thus, we may say that the Environmental Management Law

indirectly harmonizes all of the legal provisions governing the environmental field in Indonesia.<sup>9</sup>

### **II.2.1.a General**

Nevertheless, it must be admitted that the provisions contained in the Environmental Management Law are of a highly generalized nature. It deals with the foundations, scope and objectives of environment management; the rights, obligations and roles of the public; the powers involved in environmental management; environmental conservation; the procedures involved in environmental management; oversight and supervision; administrative sanctions, environmental audits, resolving environmental problems; resolving environmental disputes both in and out of court; strict/absolute liability; statutory bars on the bringing of claims/actions; the standing of members of the public/environmental organizations in bringing actions; investigations; and criminal provisions. This covers all aspects associated with environmental management in general.

### **II.2.1.b Waste**

As regards the connection with industrial waste, as stated in chapter I, the Environmental Management Law defines waste in general and hazardous and/or toxic waste in particular. More specific provisions on what constitutes hazardous and/or toxic waste are found in Government Regulation Number 18 of 1999 on the management of hazardous and/or toxic waste.

Further provisions in the Environmental Management Law concerning waste and matters connected with industry are to be found in Chapter V on the environmental conservation and chapter IV on environmental management procedures. A number of

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<sup>9</sup> General Elucidation n the Environmental Management Law

articles in the Environmental Management Law specifically deal with the management of industrial waste. Article 15(1) reads as follows: “Every business and/or activities plan that could possibly produce major and significant impacts on the environment must be accompanied by an environmental impact assessment”. While this provision does not directly refer to the management of industrial waste, it nevertheless requires the conducting of environmental impact assessment (Indonesian acronym: AMDAL).

### **II.2.1.c Environmental Impact Assessment**

An environmental impact assessment is defined in the Environmental Management Law as a study on the major and significant impacts of a planned operation and/or activity on the environment, which is necessary for the purpose of taking a decision on whether such operation and/or activity should proceed. An environmental impact assessment constitutes a requirement for the issuing of a business and/or activities license, and simultaneously serves as a study on the feasibility of the project. Article 18(1) of the Environmental Management Law reads as follows: “Every operation and/or activity that produces a major and significant impact on the environment must be accompanied by an environmental impact assessment before a permit may be issued allowing such operation and/or activity to proceed.” The aspect of waste management is of the utmost importance in the development of an industrial project and, accordingly, the appropriateness of the waste management arrangements forms one of the aspects covered by an environmental impact assessment.

Article 16 of the Environmental Management Law expressly refers to the obligation of an entrepreneur or firm to properly manage industrial waste: “Every principal responsible for a business and/or activity shall be required to properly manage the waste produced by the said business and/or activity.”

The definition of “management” given in this article states that it consists of a series of activities involving the storage, collection, transportation, recycling, and processing, including the disposal, of the said waste. No distinction is made between hazardous and/or toxic waste and non-hazardous and/or toxic waste in this article, so that it applies to all types of waste that come within the definition of its definition. With regard to the management of hazardous and/or toxic waste, further and more detailed provisions are set out in Government Regulation Number 18 of 1999.

Another important aspect covered by the Environmental Management Law is the question of licensing. In the case of waste management, there are, broadly speaking, two types of license that are required: a business license and a waste disposal license.

The general regulations on the handling of waste are also connected to the rules on environmental impact statement set out in Government Regulation Number 27 of 1999 on environmental impact analyses. In accordance with the provisions contained in the Environmental Management Law, an environmental impact statement is the most important of the requirements for obtaining a license. Article 2(1) of the Environmental Management Law states that an environmental impact analysis should be carried out as part of the feasibility study on a business operation or activity, and that the drawing up of an environmental impact statement, including the cost thereof, is the responsibility of the promoters (articles 17 and 37). The relationship between waste management and the environmental impact statement requirement is discussed in more detail in Chapter III hereof.

## **II.2.2 Government Regulation Number 18 Of 1999 On The Management Of Hazardous And Toxic Waste And Government Regulation Number 85 Of**

## **1999 On The Amendment Of Government Regulation Number 18 Of 1999 On The Management Of Hazardous And/Or Toxic Waste**

This Government Regulation is an ancillary regulation for the Environmental Management Law and contains much more detailed provisions on the management of hazardous and/or toxic waste. It is intended to cover all activities involved in the management of hazardous and/or toxic waste, including the production, collection, transportation, recycling, processing and disposal. In line with its title, the regulation only applies to hazardous and/or toxic waste, and excludes non-hazardous and/or toxic waste. This regulation included the subject of identification of waste, waste management actors, waste management activity, general guideline, and sanctions. Moreover in the Government Regulation No. 85 of 1999 as an amendment of the earlier regulation amend the article 6,7, and 8 with the subject regarding to characteristic identification on waste and variety of waste based on the source.

### **II.2.3 Other Regulations**

#### **II.2.3.a Government Regulation Number 82 Of 2001 On Water Quality Management And Water Pollution Control**

General regulations concerned with the management of industrial waste are also to be found in Government Regulation Number 82 of 2001 on water quality management and water pollution control. In connection with the management of waste, this Government Regulation provides for the setting of waste water quality standards to serve as parameters in assessing pollution levels and the types of pollutants found in waste water that is discharged into water sources as a result of a particular operation and/or activity (article 1(15)). The minister sets national wastewater quality standards, while

wastewater the governor sets quality standards at the local level. This must be based upon, but may be more stringent than, the national wastewater quality standards (article 21). A water quality standard sets the parameters for life, substances, energy forms or other components that should be present in water, and/or the content of pollutants in the water (article 1(9)). With regard to the discharge of waste water into the soil or water sources, this Government Regulation sets the requirements for such discharge, and provides that every operation and/or activity that will result in the discharge of waste into water or water sources must be accompanied by a written license from the relevant regency/municipality issued based upon an environmental impact statement (article 40). However, this does not cover solid waste and/or gases that may not be discharged into water (article 42). In order to obtain the aforesaid license, the promoter of the operation and/or activity must submit an application to the regent/mayor a minimum of ninety (90) days prior to the commencement of the activity and/or operation. Such application must be preceded by a study on the likely effects of the proposed discharges (article 41). The requirements attached to the license must refer to the following:

- a. The obligation to process the waste;
- b. The quality and volume of the wastewater that may be discharged into environmental media;
- c. The requirements for the discharge of wastewater;
- d. The requirements for emergency response infrastructure and procedures;
- e. The requirements for monitoring waste water flow and quality;
- f. Such other requirements as may be established following an examination of the environmental impact analysis.

- g. A prohibition on uncontrolled or unplanned discharge;
- h. A prohibition on diluting wastewater in order to comply with the established content requirements;
- i. The obligation to conduct self-monitoring and to report the results of self-monitoring (article 38).

The aforesaid Government Regulation also places an obligation on the principal of every operation and/or activity to submit reports on compliance with the requirements of licenses for the discharge of waste water into the soil and into water or water sources. The said reports must be submitted once every three months to the governor, regent and mayor, with copies being forwarded to the minister (article 34). Sanctions may be imposed on any person who violates the law by causing pollution or environmental damage that could injure other people or damage the environment. Should such injury or damage occur, those responsible may be ordered to pay damages and/or take specific remedial measures (article 50).

#### **1.2.3.b Government Regulation Number 19 of 1999 on marine pollution**

Another regulation that is concerned with waste management in general is Government Regulation number 19 of 1999 on marine pollution. This Government Regulation provides for the protection of seawater quality based on seawater standards, criteria for assessing marine damage, and marine quality status (article 2 and 3). Seawater quality standards and the criteria for assessing marine damage are set by the minister (article 4), while marine quality status is determined by the provincial governor (article 5). Liquid and solid waste originating from operations being conducted at sea must be managed and disposed of in a liquid and/or solid waste treatment facility in accordance

with the provisions of the laws and regulations governing the disposal of waste (article 12). This Government Regulation also places obligations on promoters to restore seawater quality if the activities and/or operations involved result in pollution and damage to the marine environment (article 16). The Regulation uses the term “Dumping” to describe the disposal of the waste residue of a particular operation and/or activity, and/or of surplus or out-of-date things at sea (article 1(10)).

The Government Regulation does not have anything specific to say about the obligation on the principals responsible for the activities and/or operations to prepare an environmental impact statement. However, article 18 deals specifically with dumping at sea, and requires the principal to obtain a license from the minister (article 18). This is follow-on from the Environmental Management Law, which states that every act of waste disposal must be accompanied by a license from the minister. While the Government Regulation does not explicitly require an environmental impact statement for dumping, such a statement will nevertheless be an implicit requirement for the granting of a license. Without such a study, therefore, it will be impossible to obtain a license.

### **I.2.3.c Government Regulation Number 41 of 1999 on air pollution**

This is the last regulation that deals with the general issue of waste management, referring this time specifically to air pollution. Government Regulation Number 41 of 1999 seeks to control air pollution by setting national air quality standards (article 4). With regard to the management of industrial waste, the primary focus here is emissions produced by industry. An emission is defined by the Regulation as a substance, form of energy and/or other component that is produced by a particular activity and which enters, or is discharged into, the air and which and/or does not have the potential to act as a

pollutant (article 1(9)). The industrial sector is one of the major fixed (non-vehicular) sources of emissions. A “fixed source” is defined as one that is located in one place (article 1 (14)). The promoter of an activity that results in emissions into the air is required to:

- a. Comply with ambient air quality standards, emission quality standards, and nuisance standards set for that type of activity and/or operation;
- b. Prevent and/or take action to prevent air pollution resulting from the activity and/or operation;
- c. Provide correct and accurate information to the public in the context of controlling air pollution in the vicinity of the operation and/or activity (article 21).

With regard to fixed sources, the promoter has an obligation to satisfy the emission and/or nuisance quality standards set in his license (article 22). In addition, every business that is required to possess an environmental impact statement is prohibited from discharging emissions that exceed the maximum set as part of the license (article 23). The promoter is also responsible for taking remedial measures should pollution occur (Article 25).

### **II.3 Sectoral Environmental Law**

Sectoral aspects must, of course, be taken into consideration when discussing Indonesian environmental law. These aspects are important as they provide examples of specific regulations governing the management of waste in the industrial sector. Thus, in this section, we will look at the regulations issued under the Industrial Sector Law, and discuss in greater detail the prevailing regulations in the mining sector.

#### **II.3.1 Industrial Sector:**

The Industrial Sector Law (Number 5 of 1984), does not contain any specific and express provisions dealing with the disposal of hazardous and/or toxic waste. However, article 15 deals with this aspect indirectly, and reads as follows:

- (1) In accordance with the industrial activities license issued pursuant to article 13(1) hereof, an industrial company shall be required to ensure the safety of equipment, processes and the outcome of production, including its transportation;
- (2) The government shall promote this end by providing guidance and advice, and supervising all aspects concerned with the safety of equipment, processes and the outcome of production, including its transportation;
- (3) .....
- (4) .....

Elucidation on article 15

Section (1) .....

Section (2) .....

With regard to promotion through the provision of guidance and advice, the government furnishes occupational health and safety guidelines in connection with the use of equipment, raw materials and production outcomes, including their transportation.

By transportation is meant the transportation of raw materials and hazardous production outcomes.

Besides .....

Section (3)

Section (4)

Regulations on the management of hazardous and/or toxic waste in the industrial sector are also to be found in moi1 Decree No. 12/M/SK/I/1978 on the prevention and tackling of environmental pollution from industrial operations, which contains the following provisions:

Article 3:

- (1) For the purpose of obtaining a business license, a principal shall be required to submit:
  - (a) A comprehensive description of the technological processes involved in the manufacturing process for the purpose of allowing an evaluation of the technology;
  - (b) A list of all hazardous substances that will be used in the production percent and that are available or stored within or in the vicinity of the industrial plant;
  - (c) A list of all types of hazardous substances, and the quantities involved, that will be disposed of, and the quantities that will be discharged into the environment whether in solid, liquid or gaseous form;
  - (d) The methods of disposal and the neutralization processes for the hazardous substances that will be discharged into the environment, as referred to above.
- (2) Criteria

.....

Article 4:

- (1) In order to avoid the possibility of pollution as a result of the discharge of a hazardous substance, an industrialist using the said hazardous substance shall be required to draw up an emergency plan;
- (2) The said emergency plan must set out the actions that will be taken to limit, clean up and neutralize the pollution from hazardous substances, and be submitted to, and approved by, the director general.

#### **II.4 Provincial Environmental Law (PEL)**

With regard to the handling of industrial waste, the role of local legislation (at both the provincial and regency/municipality levels) is very important. This is due to the fact that various powers have been delegated to the regions, particularly in the area of monitoring and supervision. Article 22 of the Environmental Management Law states that the minister may delegate supervisory powers to the regions. Local governments also possess powers to impose sanctions, including serving compulsion orders in respect of particular firms and/or operations for the purpose of preventing or stopping pollution (article 25). Besides the Environmental Management Law, Government Regulation Number 82 of 2001 on water pollution requires license applications to be submitted to the local regency/municipality government, and provides that an Environmental Impact Statement must be submitted before a license may be issued (article 40). We shall look at two East Java regulations that deal with industrial waste management (East Java has been selected for representative purposes):

- a. **East Java Gubernatorial Decree Number 413 of 1987 on water quality classification and standards in East Java.**

The Gubernatorial Decree establishes a water quality classification scheme: “A” for drinking water, “B” for water designated for household use which must be treated before drinking, “C” for aquaculture and animal husbandry, “D” for agricultural, industrial and urban uses, and “E” for miscellaneous uses (article 2). The detailed breakdown of each category is set out in the appendices to the Gubernatorial Decree. There are no specific provisions governing the disposal or processing of waste due to the fact that the Decree is only intended to set general water quality standards for the purpose of maintaining waste quality and preventing pollution. “Water quality” is defined by this decree as the level of polluting materials or substances found in water and the effect this has on the water’s ability to function in accordance with its classification (Article 1 paragraph C). The Gubernatorial Decree also provides that the local environmental management agency (BAPEDALDA) shall designate the agencies/institutions authorized to conduct supervision and monitoring (article 7).

**b. East Java Gubernatorial Decree Number 414 of 1987 on the waste water classifications and quality standards in East Java.**

This Gubernatorial Decree specifically deals with waste water. “WASTE Water Quality” is defined by cumulative limits for polluting materials and/or substances in water (article 1 paragraph e). From this article, it will be clear that this Gubernatorial Decree represents a follow-up on the Gubernatorial Decree on the setting of water quality standards. The classification scheme for waste water established by Gubernatorial Decree 414 consists of 4 categories: Category I covers waste water released into Category B water sources, Category II covers waste water released into Category C water sources, Category III covers waste water released into Category D water sources, while Category IV covers waste water released into Category E water sources. Detailed descriptions of

the four waste water categories are given in the appendices to the Decree. In order to discharge waste water under this Decree, the set minimum quality limits must be complied with and the discharge must not result in a decline in the quality of the water into which the discharge is made (article 3). The quality and quantity of the waste water to be discharged must be stated in the environmental management plan for the operation or activity (article 3). This Gubernatorial Decree also requires the company's principal to report to the governor once per month on the results of water quality analyses conducted by a government laboratory designated by the government. Should the company be established under the foreign investment legislation, then such reports are submitted to the local investment board (article 5). Monitoring and supervision over the implementation of the Gubernatorial Decree is the responsibility of the local environmental management agency (article 6).

## **II.5 Government Policies And Programs Connected With Waste**

### **II.5.1 National Medium-Term Development Plan 2004-2009**

Under Republic of Indonesia Presidential Decree Number 7 of 2005 on the National Medium-Term Development Plan 2004-2009, special attention is paid to waste management in Part IV of the Plan (Improving Public Welfare), and in particular in chapter 32 on Improving Natural Resources Management and Conserving the Environment.

This details the main problems facing the natural resources management and environment sectors as a “high level of pollution and lack of integrated and systematic waste management.” It then goes on to give a number of reasons for these problems, including (1) the unregulated disposal of waste so as to give rise to ground and water

pollution, leachate, and threats to public health; (2) lack of integration between related sectors in the management of household, agricultural and industrial waste; (3) heavy industrialization is giving rise to worsening air quality in the country's cities; (4) the lack of a specific regulation for managing and controlling emissions from both the industrial and transportation sectors, without which it will be impossible to improve air quality; (5) the failure to properly and seriously address the problem of hazardous and/or toxic waste from the industrial sector; (6) the fact that there is only one hazardous and/or toxic waste processing facility in the country, which is located in Cibinong and managed by the private sector; (7) the high costs and complexity involved in the processing of hazardous and/or toxic waste, and the fact that public lacks awareness of the adverse impacts of waste in general, and hazardous and/or toxic waste in particular, on the environment.

The plan then goes on to set out a number of targets relevant to the medium-term improvement in the management of industrial waste, namely: (1) to improve surface water quality (rivers, lakes, etc.), and the quality of ground water, accompanied by cross-sectoral and integrated control and monitoring; (2) to control coastal and marine pollution through an integrated approach involving land conservation in areas with coastal and maritime ecosystems; (3) to improve air quality in urban areas through management improvements and the introduction of environmentally friendly modes of transportation; (4) to improve waste management in urban areas by positioning environmental protection as one of the principal policy determinants; and (5) to improve the hazardous and/or toxic waste management system and services for potential polluters.

Based on these targets, the medium-term policies adopted in the environmental sphere are as follows: (1) to prioritize sustainable development and incorporate this principle in the overall development paradigm; (2) to improve coordination in

environmental management between the center and the regions; (3) to increase efforts to ensure legal harmonization in the environmental field and consistent law enforcement against polluters; and (4) to increase the efforts to control the adverse environmental impacts of development.

Based on these policies, a number of special programs were developed to control pollution and environmental damage. These programs are designed to improve environmental quality and prevent environmental damage and pollution in respect of the soil, fresh water, the sea, and the air so that the public can enjoy a clean and healthy environment. Among the activities contained in these programs that are relevant to industrial waste management are the following:

1. Monitoring air and ground water quality in urban and industrial areas, surface water quality in rivers flowing through heavily populated or industrial areas, rivers crossing provincial boundaries, and the water quality in coastal areas in a coordinated and sustained manner involving all relevant sectors and regions;
2. Monitoring compliance with waste water, emission and hazardous and/or toxic waste standards set by point sources and non-point sources;
3. Upgrading environmental laboratory facilities at the provincial level and ambient air quality monitoring facilities in major cities and provincial capitals.
4. Issuing regulations, technical guidelines, and environmental quality standards to control pollution and environmental damage, and prosecuting all cases of pollution and environmental damage to the full extent of the law;
5. Familiarizing the use of clean and eco-efficient technology in the industry and transportation sectors;

6. Improving the role of the public and the information sector, in particular scavengers in separating trash and hazardous and/or toxic waste (reduce, reuse and recycle);
7. Developing a system and mechanisms for the processing of hazardous and/or toxic waste, and establishing at least one hazardous and/or toxic waste processing facility;
8. Developing a system of incentives and disincentives in respect of activities that have the potential to pollute the environment, such as industrial and mining operations;
9. Developing and applying various instruments for managing the environment, including spatial planning, environmental impact assessment, and licensing;
10. Integrating environmental costs into production costs, including the introduction of progressive taxes on natural resources and environmental benefits.
11. Developing and promoting environmentally friendly technology, including traditional technology for the processing of natural resources and waste, and environmentally friendly industrial technology.

The above medium-term plans were then further spelled out by the Office of the State Minister for the Environment in its strategic plan, which is discussed in the next section.

#### **II.5.2 2005-2009 Strategic Plan of the Office of the State Minister for the Environment**

The 2005-2009 Strategic Plan of the Office of the State Minister for the Environment contains various policies connected with waste management. Among these are the following:

1. The first target is to “reduce the level of pollution (water, air, atmospheric, sea and land)” through policy designed to “improve control over environmental pollution so as to encourage the polluters to comply with quality standards, use environmentally friendly raw materials, and improve the capacity of local governments in preventing air pollution”. This target is to be achieved through the Environmental Damage and Pollution Control Program, which consists of six activities connected with industrial waste management, namely:
  - a. Controlling water pollution caused by the industrial and services sectors (Prokasih and Superkasih programs) with the performance indicators employed being as follows: (1) involving 620 factories and 220 hotels and hospitals in the effort to reduce waste water pollution; and (2) monitoring water quality in 22 rivers.
  - b. controlling pollution from small enterprises, with the performance indicator employed being a reduction in pollution from centers of small industry through improving the capacity of small industries in Sumatra and Java, with priority in this regard being given to the tanning, tahu, tempe, tapioca and electroplating industries.
  - c. Properly managing hazardous and/or toxic waste from the mining, energy, oil and gas, manufacturing and agro industry sectors, with the following performance indicators being employed: (1) the putting in place of policies (legislation, regulations and guidelines) on the management of hazardous and/or toxic waste; (2) timely and effective responses to pressing cases involving hazardous and/or toxic waste and substances; and (3) the application of an effective licensing and

monitoring system for the management of hazardous and/or toxic waste and substances.

- d. Effectively responding to incidents of pollution, with the following performance indicators being employed: existence of an emergency response system; maps and criteria identifying potential pollution, and SOPs for restoring/rehabilitating that which has been contaminated;
  - e. Strategic the capacity of local governments and improving inter-institutional and international collaboration in the handling of hazardous and/or toxic waste and substances;
  - f. Developing standardization, technology and clean production methods, with the performance indicators being as follows: the introduction of standards governing environmental management (standard testing methods, testing institutes, competent personnel and service providers, environmental management system, clean production methods, environmentally friendly technology, ecolabeling);
2. Another relevant target is target No. 4 on “improving compliance on the part of those involved in development so as to ensure the maintenance of environmental functions” through “enforcing the law against polluters and those responsible for damaging the environment”. This involves two programs, namely:
- a. The Pollution and Environmental Damage Control Program involves three activities in this regard: enforcement of the criminal and administrative law in the environmental sphere; making proper use of the civil law and out-of-court settlement mechanisms; and fully resolving complaints and disputes in the environmental sphere.

- b. The second relevant program is the capacity-building program for natural resources and environmental management in connection with the formulation and drafting of laws and regulations, as well as international agreements. One of the performance indicators for this activity is the enactment of new legislation, including a Waste Management Law and the amendment of Law Number 23 of 1997.

The attached matrices (appendix) set out the work plans for the management of industrial waste during the 2005 – 2009 period at the national level and in Sumatra, Java and Kalimantan.

## **II.6 Institutions With Responsibilities (Duties And Functions) Connected With The Management Of Industrial Waste (Center And The Regions)**

In general, the responsibility for managing industrial waste in Indonesia under Government Regulation Number 18 of 1999 on the management of hazardous and/or toxic waste was vested in those agencies that were responsible for environmental protection under the auspices of the Office of the State Minister for the Environment, with the primary powers in this regard being vested in BAPEDAL (Environmental Management Agency). Since then, BAPEDAL has been absorbed into the Office of the State Minister for the Environment by virtue of Presidential Decree Number 2 of 2002. Accordingly, BAPEDAL's powers in this regard are now vested in the Office of the State Minister for the Environment. The merger of these two institutions has had no effect on the directives already issued by BAPEDAL and these are still in effect. However, the merger does mean that the powers previously vested in BAPEDAL have now been transferred to the Office of the State Minister for the Environment. When BAPEDAL was still an independent entity, the Directorate for Hazardous and/or toxic waste

Management was the organ primarily responsible for hazardous and/or toxic waste management. Now, however, this responsibility is vested in the Deputy for Hazardous and/or toxic waste and Substances at the Office of the State Minister for the Environment.

At the local level, regional governments are also involved in the management of hazardous and/or toxic waste. This involvement is provided for by BAPEDAL Directive Kep-02/Bapedal/01/1998 on procedures for supervising the management of hazardous and/or toxic waste in the regions, which sets out the following stipulations:

1. The scope of the supervision conducted by regency/municipality governments over the management of hazardous and/or toxic waste includes the following (article 2):
  - a. Socializing the regulations on hazardous and/or toxic waste management;
  - b. Identifying those industries and firms that produce hazardous and/or toxic waste;
  - c. Identifying those firms that use hazardous and/or toxic waste;
  - d. Identifying those firms that process and dispose of hazardous and/or toxic waste;
  - e. Assisting BAPEDAL in monitoring firms that have been given licenses to manage hazardous and/or toxic waste by BAPEDAL on two occasions per year (Appendix: printers, workshops/garages, film processors, recyclers of used lubricants, tanneries, type C and D hospitals, laboratories, processors of out-of-date pesticides, and laundries and dry cleaning establishments).
  - f. Issuing first and second warnings, and imposing sanctions on firms in paragraph e above which have failed to comply with the regulations.
  - g. Reporting to BAPEDAL the locations of any sites used for the disposal of hazardous and/or toxic waste that fail to comply with the requirements.

2. The scope of the supervision conducted by provincial governments over the management of hazardous and/or toxic waste is as follows (article 3):
  - a. Monitoring producers of hazardous and/or toxic waste that has the potential to produce pollution affecting two or more regencies/municipalities.
  - b. Coordinating the socialization of the regulations on the management of hazardous and/or toxic waste among the officers of local Environmental Management Agencies (BAPEDALDA) at the regency/municipality levels.
  - c. The Regional Environmental Management Agency (BAPEDAL WILAYAH) is responsible for monitoring producers of hazardous and/or toxic waste that has the potential to cause pollution in a neighboring province.
3. The supervision to be conducted by the Regional Environmental Management Agency (BAPEDAL WILAYAH) covers the following areas (article 4):
  - a. Coordinating the socialization of the regulations on hazardous and/or toxic waste management;
  - b. Coordinating the provision of technical guidance, laboratory services and explanations on the hazardous and/or toxic waste management guidelines/manuals.
  - c. Coordinating the provision of technical advice and explanations to local government officials on how to fill in the application forms for hazardous and/or toxic waste processing licenses;
  - d. Assisting BAPEDAL (the Directorate) in monitoring the entry of hazardous and/or toxic waste into local ports based on requests from the Director General of Customs and Excise.

4. Supervision over the management of hazardous and/or toxic waste in Java and Kalimantan is the responsibility of Bapedal (Article 5(2));
5. Local governments and the Regional Environmental Management Agency are required to report on their activities to Bapedal c/o the Directorate for Hazardous and/or toxic waste Management at least once every six months (article 5).

Besides the provisions described above, there is also what is known as the “Hazardous and Toxic Waste Management Partnership Program” (KENDALI B3), which was established by Bapedal Directive No. 03/Bapedal/01/1998. This Directive also governs the role of local governments as one of the parties responsible for putting the hazardous and toxic waste program into effect. The Hazardous and toxic waste Management Partnership Program is a joint program involving Bapedal, local governments and firms for the purpose of ensuring that hazardous and/or toxic waste is managed in a correct manner (article 1(4)). In greater detail, the aforementioned Directive provides as follows:

1. The objectives of the Hazardous and toxic waste Management Partnership Program are as follows (Article 2(2)):
  - a. To control pollution;
  - b. To control the release of hazardous and/or toxic waste into the environment without processing;
  - c. To encourage the minimizing of hazardous and/or toxic waste by reducing such waste at source, reuse, and recycling;
  - d. To ensure a good quality environment;

- e. To ensure compliance with the legislation and regulations governing the management of hazardous and/or toxic waste.
2. The participants in the Hazardous and toxic waste Management Partnership Program are:
    - a. The priority firms that produce hazardous and/or toxic waste in each province as identified by a Bapedal Directive;
    - b. Those firms that produce hazardous and/or toxic waste who wish to participate in the Hazardous and toxic waste Management Partnership Program either individually or as part of a group;
    - c. Firms that produce hazardous and/or toxic waste, which have been proposed, by Bapedal, or the local government based on the public interest.
  3. The body responsible for the implementation of the Hazardous and toxic waste Management Partnership Program is the Directorate of Hazardous and/or toxic waste Management, which is assisted by local governments for monitoring, identification and evaluation purposes.
  4. The stages involved in the Hazardous and toxic waste Management Partnership Program are as follows:
    - a. Determining Hazardous and toxic waste Management Partnership Program participants, which is carried out in line with the following stages: identification, completion of questionnaire, field visit, and final confirmation as participant.
    - b. Furnishing of explanations on the Hazardous and toxic waste Management Partnership Program and the Presidential Regulation on waste management

- c. Signing of declaration by participating firm to the effect that it will manage its hazardous and/or toxic waste in compliance with the regulations
  - d. Provision of technical assistance to participant (in Java and Kalimantan, this is provided by Bapedal, while outside these areas it is provided by the Regional Environmental Management Agency) for a period of 60 days from the signing of the declaration.
  - e. Monitoring by Bapedal and the local government after that 60 day period has expired.
  - f. Evaluation and monitoring once a year by Bapedal and the Regional Environmental Management Agency, once a year by the Provincial Environmental Management Agency, and two time per year by the Regency/Municipality Environmental Management Agency.
  - g. Following the evaluation of the program:
    - i. A compliant firm will be awarded for its efforts;
    - ii. A firm that is still having problems will be provided with further assistance and guidance;
    - iii. A firm that is not managing its hazardous and/or toxic waste in compliance with the regulations will be subjected to legal sanctions and have its name informed to the media.
5. Reporting: Reports are submitted twice per year by the chief executives of regencies/municipalities to the director of BAPEDAL through the provincial governor.

## **II.7 National Standardization and Methods of Testing for Hazardous and/or toxic waste**

According to the Elucidation on article 6 of Government Regulation Number 85 of 1999 on the amendment of Government Regulation Number 18 of 1999 on the management of hazardous and/or toxic waste and Substances, the following stages are involved in the identification of hazardous and/or toxic waste:

- a. Comparing the waste with the list of hazardous and/or toxic waste set out in appendix I (tables 1, 2 and 3) of the Government Regulation. If it matches, then the waste in question is hazardous and/or toxic waste;
- b. If the waste in question does not match any of the substances listed in the appendix, then the characteristics of the waste are inspected. Under article 1 of Government Regulation 85 of 1999 on the amendment of article 7 of Government Regulation Number 18 of 1999, the characteristics of the waste are tested to identify whether it is explosive, inflammable, radioactive, toxic, likely to result in infection and/or corrosive. If it fulfills any of these characteristics, then it will be classified as hazardous and/or toxic waste;
- c. Should the waste fail to satisfy any of the characteristics set out above, there is one final test for determining the nature of the waste. This is a toxicology test to determine whether the waste is acute or chronic in nature (article 1 of Government Regulation 85/1999 on the amendment of article 7 of Government Regulation Number 18 of 1999).

Article 1 of Government Regulation Number 85 of 1999 on the amendment of article 7 of Government Regulation Number 18 of 1999 also deals with the sources of waste:

a. Hazardous and toxic waste from specific sources:

This consists of hazardous and toxic waste that is an unwanted byproduct of an industrial process or activity that can be specifically identified as hazardous and/or toxic waste based on its chemical content;

b. Hazardous and/or toxic waste from non-specific sources

This generally consists of hazardous and/or toxic waste that does not originate from a primary process but rather from equipment maintenance, washing, prevention of corrosion, packaging, etc.

c. Hazardous and/or toxic waste originating from out-of-date chemicals, spillages, used packaging, and discarded products that do not satisfy the specifications.

This consists of products that do not satisfy the specifications or cannot be reused/recycled and therefore have to be disposed of as hazardous and/or toxic waste that requires special treatment in the same way as other hazardous and/or toxic waste. The same applies to the packaging of hazardous and/or toxic waste and out-of-date chemicals.

In other regulations, particularly those dealing with water, sea water and air pollution, national standardization in identifying waste is undertaken through the application of national quality standards, such as in Government Regulation Number 19 of 1999 on water pollution, Government Regulation Number 82 of 2001 on the control of water pollution, and Government Regulation Number 41 of 1999 on the control of air pollution. These quality standards are also set out in ministerial regulations, which

constitute technical regulations in the pollution field. Detailed provisions on the methods to be employed in identifying what is used in the case of water pollution are set out in State Minister for the Environment Decree No. 110/ 2003 on guidelines for determining pollution in water sources. This provides for two methods of determining water pollution levels, namely, the Mass Balance and the Streeter-Phelps methods (article 2). Other methods may also be used, but only after approval has been obtained from the agency responsible (article 4). In the case of the coal industry, water pollution levels are measured in accordance with State Minister for the Environment Decree Number 113/2003 wastewater quality standards for the coal industry. Article 3 of State Minister of the Environment Decree on guidelines for determining water quality, states that the methods to be used in determining water quality are the STORET or pollution index methods (article 2). Other methods may also be used, but only after approval has been obtained from the agency responsible (article 3).

It will thus be seen from the above description that the identification methods and standards applied in each sector are different.

## **Chapter III**

### **General Regulations governing Related Parties and Licensing in the Waste**

#### **Management Field in Indonesia**

#### **III.1 Waste Producers**

##### **III.1.1 Definition**

The Environmental Management Law does not provide a clear definition of what constitutes a producer of waste. However, article 16(1) states that every principal responsible for a business and/or activity shall be required to properly manage the waste produced by the said business and/or activity. Based on this article, it may be concluded that every principal responsible for a business and/or an activity constitutes a waste producer where such business and/or activity leads to the production of waste. This will become clearer if we refer back to the definition of waste given in article 1, which provides that waste is the unwanted byproduct of an operation and/or activity. However, a more specific definition of a waste producer is given in Government Regulation Number 18 of 1999 on the management of hazardous and/or toxic waste (article 1 (5)), which defines a producer of hazardous and/or toxic waste as a person whose business and/or activities produce hazardous and/or toxic waste. This definition only applies to a producer of hazardous and/or toxic waste, while a producer of ordinary waste is not specifically defined. However, if we look at the components of the definition, it will be seen that the only difference concerns that substance or nature of the waste that is produced (as between hazardous and/or toxic waste and non-hazardous and/or toxic waste), and does not refer to the nature of the waste producer – the nature of the producer is the same in both cases in that he produces waste. Thus, the definition given in Government Regulation Number 18 of 1999 can clearly also be applied, *mutatis*

mutandis, to a producer of non-hazardous and/or toxic waste. The production of the waste is the first step in a series of activities involving the management of the waste. Thus, the application of the provisions on waste management starts with the waste producer.

### **III.1.2 Responsibility for Waste**

The series of activities involved in processing both hazardous and/or toxic waste and non-hazardous and/or toxic waste, according to Elucidation on article 16 of the Environmental Management Law, include the following: storage, collection, transportation, recycling/reuse, processing, and disposal. Every principal in a business, and particularly a waste producer, is required to reduce, process and/or dispose of waste (article 9(1)). The term “reduce”, as used in this article, means reducing the amount and the hazardous and/or toxic character of the waste that has been produced by a certain activity (article 1(4)). Waste reduction must be undertaken by every principal responsible for a business and/or activity that produces waste. This is provided for by article 9(4) of the Environmental Management Law, which only permits the delegation of processing and disposal work to third parties. Thus, waste reduction continues to be the duty of the principal responsible for the business and/or activity. Waste reduction may also be categorized as an effort to minimize the amount of waste produced by a particular plant/factory/industry.

The processing and disposal of hazardous and/or toxic waste may be delegated to third parties if the waste producer does not possess the technology or resources necessary for processing it (article 9(4) of Government Regulation Number 18 of 1999). However, this does not eliminate the obligation of the waste producer to have the waste processed (article 9(5)). As regards the storage of waste prior to its delivery to the processor or

recycler/reuser, the waste producer may store it for a period of up to 90 days. However, should less than 50 kg of waste per day be produced, then the waste producer store it for more than 90 days with the approval of the authorized agencies (article 10).

Besides being responsible for processing and/or storing waste, a waste producer must also properly keep documents detailing the type, characteristics and date of production/delivery of the waste (which are then handed over to the transporter of the waste), and the name of waste transportation firm. Records of the waste must be maintained at each stage of the waste management process. This is a logical consequence of the principle that waste must be capable of <sup>10</sup>being tracked from the time of production until the time of final disposal. The function of these records is to enable inventories to be taken of the amount of waste produced and to serve as reference material in policy-making (article 11(3)). The records must be furnished to the government (Office of the State Minister for the Environment), with copies being provided to the local government (regency/municipality).

The waste producer is liable for any pollution caused by the waste that it has produced (article 58) following spillage or discharge. This liability is accompanied by an onus on the waste producer to establish an emergency response system and to familiarize the local community with how it operates (article 58). In addition, waste producer must provide reports on the emergency response system to the Office of the State Minister for the Environment and/or provincial governor and/or local regency/mayor (article 58). With regard to occupational health and safety, the principal must arrange for periodic checks on workers' health (article 52).

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<sup>10</sup>Elucidation on Government Regulation Number 18 of 1999

Local government plays a role in supervising the response to and management of accidents (article 59). This is primarily the responsibility of reGENCY/municipality governments, but may also be carried out by the provincial government should the reGENCY/municipality government lack the capacity.

## **III.2 Waste Collection**

### **III.2.1 Definition**

Government Regulation Number 18 of 1999 defines a waste collector as a firm that collects hazardous and/or toxic waste for the purpose of storing it prior to its sending to a processing and/or reuse/recycling and/or disposal facility (article 1 paragraph 6). The collection of waste represents the next link in the waste management chain after its production. The purpose of collection is to enable the hazardous and/or toxic waste to be stored temporarily prior to being sent for reuse/recycling and/or processing and/or disposal (article 1 paragraph 13). From this definition it will be seen that a waste collector is not a waste producer, and only collects and stores waste before it is sent on for recycling, processing or disposal. Thus, the waste collector is not responsible for processing the waste. Nevertheless, the waste collector must maintain records showing the type, characteristics and quantity of waste at the time of receipt from the waste producer, and at the time of delivery for recycling, processing and/or disposal. In addition, these records must also state the name of the waste transportation firm who hauls the waste to the recycling, processing and/or disposal location (article 13). The said records are then forwarded to the Office of the State Minister for the Environment with copies to the relevant agencies and the relevant reGENCY/municipality administration.

### **III.2.2 Responsibilities of waste collector**

A waste collector has various responsibilities in respect of the hazardous and/or toxic waste that has been collected. In respect of waste the nature and characteristics have not been identified, the waste collector must have tests conducted by a government-designated laboratory (article 1 of Bapedal Directive Kep-01/Bapedal/09/1995). After tests have been conducted and the type of waste identified, this must then be reported to the Office of the State Minister for the Environment. Meanwhile, separate reports on all waste collected by a waste collector from a waste producer must be submitted to the BAPEDAL with copies to the regency/municipality and provincial administrations (article 6).

A waste collector is only permitted to store hazardous and/or toxic waste for a maximum period of 90 days. After this, it must be delivered to the recycling, processing and/or final disposal location. The waste collector is liable in respect of any damage caused by the waste that has been collected (article 14 of Government Regulation Number 18 of 1999). A waste collector is also liable for dealing with the aftermath of an accident and any pollution caused by spillage or discharge of the waste (article 58), while article 60 expressly states that a waste collector must make good any damage caused by pollution or its activities. In addition to these provisions, a waste collector must also comply with the following requirements:

- a. Have regard to the characteristics of the hazardous and/or toxic waste being handled;
- b. Possess laboratory facilities that are capable of ascertaining the characteristics of hazardous and/or toxic waste, save as regards the toxicology aspects;
- c. Possess the necessary equipment for dealing with accidents;

- d. Possess watertight buildings constructed of suitable materials in line with the characteristics of hazardous and/or toxic waste;
- e. The collection site is not prone to flooding (article 30).

The waste collector is must also establish an emergency response system for the purpose of responding to accidents and preventing pollution. Such emergency response system must be familiarized to the surrounding community. Should an accident or pollution occur, the waste collector must report on this to the Office of the State Minister for the Environment and/or provincial governor and/or local regent/mayor (article 58). With regard to occupational health and safety, the principal for the business and/or activity must arrange for periodic checks on workers' health (article 52).

### **III.3 Waste transportation firm**

#### **III.3.1 Definition**

Under Government Regulation Number 18 of 1999, a waste transportation firm is defined as a firm that transports waste (article 1 paragraph 7). The transportation of waste is the third stage in the series of activities involved in waste management. WASTE transportation may also be carried out by the waste producer on its own behalf, in which case the waste producer will also be required to comply with the requirements binding on waste transportation firms (article 15). Thus, if the production, transportation and collection of waste is carried out by the same firm, special attention must be had to the different requirements governing each of these activities. In general, waste transportation involves the haulage of the waste from the waste producer and/or waste collector to the reuser/recycler, processor and/or disposer. Transportation may involve various modes, but must be carried out using special equipment (Article 32).

### **III.3.2 Responsibilities of waste transportation firm**

A waste transportation firm is liable for dealing with the results of an accident or pollution arising out of the transportation of hazardous and/or toxic waste. The waste transportation firm must also have an emergency response system in place to deal with any emergencies and this must be familiarized to the community (article 58). In addition to these responsibilities, the waste transportation firm must also possess the required hazardous and/or toxic waste documentation providing information on the nature of the waste being transported. This requirement is governed by BAPEDAL Directive No. Kep-02/BAPEDAL/09/1995, which defines the hazardous and/or toxic waste documentation as a dispatch note provided at the time the hazardous and/or toxic waste is delivered for transportation from the waste producer to a storage place removed from the waste producer's plant, and/or for collection, and/or for transportation and/or for processing, and/or for recycling, and/or for final disposal (article 1). The hazardous and/or toxic waste documentation must contain the following information:

- a. The name and address of the waste producer or waste collector;
- b. The date of delivery of the hazardous and/or toxic waste;
- c. The name and address of the waste transportation firm;
- d. The destination of the waste;
- e. The nature, quantity, composition and characteristics of the hazardous and/or toxic waste (Elucidation on article 16 of Government Regulation Number 18 of 1999).

If the waste is to be transported using differing modes of transportation, the documentation must be handed by one transporter to the next (article 5). The hazardous

and/or toxic waste documentation must be in septuplicate (7) copies should the transportation only involve one mode of transportation, and consist of eleven (11) copies should the transportation consist of more than one mode of transportation. The details on the use of each copy are provided in the attachment to BAPEDAL Directive Number Kep-02/BAPEDAL/09/1995 (appended hereto).

With regard to export and import of hazardous and/or toxic waste, the Environmental Management Law expressly places a prohibition on the importation of hazardous and/or toxic waste, and this is affirmed by Government Regulation Number 18 of 1999 (article 53). However, cross-border transportation may still be permitted in the case of transit and exportation. In the transportation of hazardous and/or toxic waste through the territory of Indonesia for transit purposes, special written approval must be granted by the Office of the State Minister for the Environment, while in the case of the exportation of hazardous and/or toxic waste, written consent must be obtained from the destination country (article 53). The prohibition on the importation of hazardous and/or toxic waste is due to the very limited laboratory capacity in Indonesia for ascertaining the nature of the waste, a lack of technology and limited processing capacity (Elucidation on article 53). The prohibition on importation only applies to hazardous and/or toxic waste, and not to non-hazardous and/or toxic waste.

### **III.4 Reuse/Recycling**

#### **III.4.1 Definition**

Article 1 of Government Regulation Number 18 of 1999 defines a reuser as a firm that makes use of hazardous and/or toxic waste. Reuse or recycling may be undertaken by the waste producer or by a firm that operates in the field of waste recycling (article 18). A waste recycler that also produces, collects and/or transports waste must also

comply with the requirements applicable to waste producers, waste collectors and waste transportation firms (article 19). A waste user is permitted to store hazardous and/or toxic waste for up to 90 days (article 20). Recycling, reprocessing and reuse all come within the definition of waste use by a waste user (article 33).

#### **III.4.2 Responsibilities of a waste user**

A waste user must possess the required documentation or records on the waste being used. These records and documentation must cover the following areas:

- a. Source of the hazardous and/or toxic waste;
- b. The type, characteristics and quantity of the hazardous and/or toxic waste being collected;
- c. The type, characteristics and quantity of the hazardous and/or toxic waste being used, and the products produced;
- d. The name of the waste transportation firm which transported the hazardous and/or toxic waste from the waste producer and/or waste collector (article 21).

The said records and documentation are then forwarded to the Office of the State Minister for the Environment with copies to the relevant agencies and the relevant reGENCY/municipality administration.

A waste transportation firm is liable for dealing with the results of an accident or pollution arising out of the transportation of hazardous and/or toxic waste. The waste transportation firm must also have an emergency response system in place to deal with any emergencies and this must be familiarized to the community (article 58). The waste user is also liable for immediately taking action of deal with pollution or environmental damage caused by its activities (article 60).

### **III.5 Processing and Disposal**

Processing and disposal are the two final links in the waste management chain of activities. Government Regulation Number 18 of 1999 defines a waste processor as a firm that operates hazardous and/or toxic waste processing facilities (article 1). A license is required for hazardous and/or toxic waste processing and disposal activities. The procedures for obtaining this are set out in BAPEDAL Directive Number Kep-68/BAPEDAL/05/1994. This provides that an application is submitted to BAPEDAL and must be accompanied by a full and accurate written statement of proposed activities (article 2). Verification in the field is then carried out. The license must be issued within a period of thirty days from the date of receipt of the application (article 8). The application, meanwhile, shall contain the following information:

- a. Information on the applicant and the applicant's company;
- b. Information on the location of the processing and/or disposal facility;
- c. Information on the processing and disposal of the hazardous and/or toxic waste, including the type of processing, the processing specifications, the quantity and characteristics of the waste being processed, drainage channels, equipment for preventing polluting discharges and emissions, and emergency response system.
- d. The following documentation: deed of incorporation, location permit, IMB, HO permit, environmental impact analysis approval, location map, description of processes and materials, specifications of waste processing equipment, and quantity and characteristics of hazardous and/or toxic waste being processed.

This Directive (BAPEDAL Directive Number Kep-03/BAPEDAL/09/1995) sets out a number of technical requirements governing the processing of hazardous and/or toxic waste. These cover the following aspects:

- a. Location of waste processing facility;
- b. The waste processing facility itself;
- c. The handling of hazardous and/or toxic waste prior to processing;
- d. The processing of the hazardous and/or toxic waste; and
- e. The handling of the processed hazardous and/or toxic waste.

Location of hazardous and/or toxic waste processing facility: the Directive provides that a hazardous and/or toxic waste processing facility may be located in an area where hazardous and/or toxic waste is produced or outside such an area. In the former case, the site must not be prone to flooding and there must be a distance of at least 50 meters between the facility and public facilities, while in the latter case the following requirements apply:

- a. The location of the hazardous and/or toxic waste processing facility must not be prone to flooding;
- b. There must be a minimum distance between the facility and a main highway/toll road of 150 meters, and 50 meters in the case of minor roads;
- c. There must be a minimum distance of 300 meters between the facility and residential areas, commercial centers, hospitals, healthcare facilities, social centers, hotels, restaurants, religious facilities, and educational facilities;

- d. There must be a minimum distance of 300 meters between the facility and the high-tide line, rivers, ponds, lakes, wetlands, springs and public wells;
- e. There must be a minimum distance of 300 meters between the facility and protected areas (nature resources, protected forests, etc).

Hazardous and/or toxic waste facility: The provisions governing the operation of a hazardous and/or toxic waste facility cover the following aspects:

- a. Security system;
- b. Fire-prevention system;
- c. Spillage prevention system;
- d. Emergency prevention/fail-safe system
- e. Equipment testing system;
- f. Employee training.

Waste Processing: The provisions governing the operation of waste processing cover the following areas:

- a. The chemical and physical processing of hazardous and/or toxic waste;
- b. Stabilization/solidification processing: TCLP quality standard table (results of extraction/leaching);
- c. Incineration (thermal treatment); destruction and elimination efficiency formula, DRE Incinerator quality standards (destruction and elimination efficiency), air emission quality standards for incinerators, and liquid waste quality standards for the processing of hazardous and/or toxic waste.

With regard to hazardous and/or toxic waste symbols and labeling, this is provided for in detail by BAPEDAL Directive Number Kep-05/BAPEDAL/09/1995), which stipulates that every form of packaging for hazardous and/or toxic waste must bear a special label and symbol stating its characteristics. Should the waste possess more than two characteristics, then a test shall be carried out to determine the dominant characteristic.

Under Government Regulation Number 18 of 1999, a waste disposal firm is defined as a firm that disposes of hazardous and/or toxic waste (article 1). With regard to the disposal of processed waste, separate requirements are set out in BAPEDAL Directive Number Kep-04/BAPEDAL/09/1995 for former processing areas and former disposal areas. These requirements include the following:

- I. The disposal of processed hazardous and/or toxic waste means its disposal by dumping where this is intended to be the final stage in the management of the hazardous and/or toxic waste based on its characteristics (Article 1).
- II. The appendix to this Directive covers the following aspects:
  - a. Procedures and requirements for dumping hazardous and/or toxic waste:
    - i. Choice of landfill location;
    - iii. Requirements concerning the design of the hazardous and/or toxic waste landfill based on the characteristics of the waste and the dump site (Category I Secure Landfill Double Liner, Category II Secure Landfill Single Liner, and Category III Landfill Clay Liner);
    - iv. Requirements for the construction and installation of landfill components;
    - v. Requirements for landfill equipment and facilities;

- vi. Treatment of hazardous and/or toxic waste prior to dumping;
  - vii. Types of hazardous and/or toxic waste that may be disposed of in landfills.
  - viii. Requirements for leaching management system (TCLP test quality standards (results of extraction/leaching));
  - ix. Requirements for ground and surface water monitoring system.
- b. Requirements for former processing and former disposal locations.

### **III.6 Indonesian Licensing System**

For firms that wish to operate in the industrial sector, there are a number of licenses that must be obtained, namely: an in-principle license, a nuisance license<sup>11</sup>, location license and building construction license. These are all issued by the local government. In addition, the firm must also have a business license. When submitting its application, the applicant is required to enclose an environmental feasibility certificate issued by the Office of the State Minister for the Environment (article 7). Should the activities in question involve the handling of hazardous and/or toxic waste either as part of the core business or as a side product (w1 produced by the firm's commercial operations), then a separate license, know as a w1 management license, is required. The actual type of waste management license issued will depend on the type of handling that will be carried out, e.g., storage, use, transportation, processing or disposal.

For the purposes of this report, we shall only concern ourselves with hazardous and/or toxic waste management licenses and environmental impact statements (Indonesian acronym: AMDAL) as prerequisites for the granting of such licenses.

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<sup>11</sup> The granting of Nuisance Licenses are governed by the Hinder Ordonnantie (HO), which was enacted by the Netherlands Indies administration. A Nuisance License is required in order to operate a place of

### III.6.1 Environmental Impact Statement

An Environmental Impact Statement (Indonesian acronym: AMDAL) is defined by the Environmental Management Law as a study into the major and significant impacts on the environment of a planned operation and/or activity, and which needs to be undertaken for determining whether the said operation and/or activity should be allowed to proceed (article 1 paragraph 21). The conducting of an Environmental Impact Statement is a precondition for the granting of a license in accordance with article 18 of the Environmental Management Law, which states that every operation and/or activity that is likely to give rise to major and significant impacts on the environment must be accompanied by an Environmental Impact Statement before a license may be issued for the said operation and/or activity. More detailed provisions on the requirement for an Environmental Impact Statement are set out in Government Regulation Number 27 of 1999 on Environmental Impact Statements. A “major and significant impact” is defined in this Government Regulation as a fundamental change to the environment resulting from a particular operation and/or activity (article 1(2)). The types of operations and/or activities that may give rise to such a fundamental environmental change are enumerated as follows <sup>12</sup>:

- a. A change in the lie of the land or the landscape;
- b. Exploitation of both renewable and non-renewable natural resources;
- c. Processes and activities that have the potential to give rise to the squandering, pollution or destruction of environmental resources, or to the degradation of such resources.

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business that could give rise to hazards, damage or other nuisances. These licenses are issued by regency/municipality governments, and by the Jakarta Special District administration in the nation’s capital.

- d. Processes and activities whose outcomes have the potential to affect the natural, manmade or socio-cultural environment.
- e. Processes and activities whose outcomes have the potential to affect the environmental sustainability of natural resources' conservation and/or the protection of cultural resources;
- f. The introduction of non-native plants, animals or organisms;
- g. The production and use of biological and non-biological materials;
- h. The application of technology that have the potential to exert a major influence of the environment;
- i. Activities that involve high levels of risk and/or have the potential to affect national defense capabilities (article 3);

More information on the types of activities that must be accompanied by an Environmental Impact Statement are to be found in Environment Minister's Decree Number 17 of 2001. An application for a license must enclose a certificate issued by the Office of the State Minister for the Environment confirming the environmental feasibility of the operation/activity (article 7). The Environmental Impact Statement itself consists of a number of different documents: the Environmental Impact Analysis (Indonesian acronym: ANDAL), which is a detailed and in-depth study on the major and significant impacts of the proposed operation and/or activity (article 1(4)), the Environmental Management Plan (Indonesian acronym: RKL) – a plan setting out the actions that will be taken to manage the major and significant impacts on the environment that will arise as a result of the proposed operation and/or activity (article 1(5)); and the Environmental

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<sup>12</sup> More detailed can be found on the mimisterial environment decree No 17 tahun 2001

Monitoring Plan (Indonesian acronym: RPL) setting out the actions that will be taken to monitor the environment and the effects upon it of the proposed operation and/or activity (article 1(6)).

The firm's Environmental Management Plan (Indonesian acronym: RKL) and Environmental Monitoring Plan (Indonesian acronym: RPL) are incorporated into the business license if the environmental impact statement is accepted. The environmental management plan and environment management plan are extremely important as regards the management of non-hazardous and/or toxic waste as there are no special licenses or preconditions required for the handling of such w1, unlike in the case of hazardous and/or toxic waste, which requires a special license that is separate from the business license. Accordingly, the environmental management plan and environmental monitoring plan are the only guidelines required for the handling of non-hazardous and/or toxic waste.

The overall environmental impact statement is based on studies on the economic, social and environmental impacts of a particular commercial activity. With regard to the impacts on the environment, the environmental conditions and the relevant regulations, for example, quality standards in the area where operations are to be undertaken must be taken into consideration.

#### **III.6.1.a Environmental Impact Statement Appraisal Committees**

The appraisal of Environmental Impact Statements is carried out by bodies known as Environmental Impact Statement Appraisal Committees. The Environmental Impact Statement Appraisal Committee at the central level is set up by the minister, while in the provinces they are set up by the provincial governors (article 8). At the central level the Environmental Impact Statement Appraisal Committee comes under the

auspices of the Office of the State Minister for the Environment, while in the provinces the Environmental Impact Statement Appraisal Committee come under the auspices of the relevant agency or the local Environmental Management Agency (Indonesian acronym: Bapedalda) (article 8(2)). The Environmental Impact Statement Appraisal Committee at the national level has to power to appraise:

- a. An operation and/or activity that is strategic in nature and/or concerns national defense and security;
- b. An operation and/or activity that is located in the territory of more than one (1) province;
- c. An operation and/or activity that is located in an area that is being disputed with another sovereign state;
- d. An operation and/or activity that is located in a maritime area; and
- e. An operation and/or activity that straddles the border between the Republic of Indonesia and another sovereign state (article 11).

At the provincial level, the Environmental Impact Statement Appraisal Committees are authorized to appraise all operations and/or activities that do not fall within any of the above areas.

### **III.6.1.b Environmental Impact Statement Terms of Reference**

In drawing up an Environmental Impact Statement, it is necessary to first set the terms of reference for the project (article 1(3)). These will be decided on by the promoters of the project and in accordance with the guidelines set by the Office of the State Minister for the Environment through the Environmental Impact Statement Appraisal Committee at the national level and the governor through the provincial

Environmental Impact Statement Appraisal Committee (article 15). The terms of reference drawn up by the promoters are then studied by the Environmental Impact Statement Appraisal Committee together with the promoters so as to arrive at an agreement on their final form. This decision must be arrived at within 75 days of the receipt of the promoters' terms of reference by the Environmental Impact Statement Appraisal Committee. An Environmental Impact Statement Appraisal Committee is required to reject any terms of reference that fail to comply with the relevant spatial plans. Should a response not be received to the promoters' proposed terms of reference within 75 days, then the said terms of reference will be deemed to have been accepted by the Environmental Impact Statement Appraisal Committee (article 16).

After the terms of reference have been accepted, the next step is for the promoters to conduct an Environmental Impact Analysis (ANDAL) and draw up the Environmental Management Plan (RKL) and Environmental Monitoring Plan (RPL) (article 17). After these documents have been prepared, they are submitted to the Environmental Impact Statement Appraisal Committee for approval, with the Committee being required to arrive at a decision within a period of 75 days. Should a decision not be handed down by the Committee within this period, the documents shall be deemed to have been approved (article 20). Meanwhile, should the documents be rejected by the Environmental Impact Statement Appraisal Committee, they will then be returned to the promoters for improvement (article 21). The Environmental Impact Statement Appraisal Committee may reject the promoters' Environmental Impact Statement if the Committee feels that:

- a. The major and significant impacts that are likely to arise as a result of the operation and/or activity are incapable of being successfully managed using the available technology; or

- b. The cost of managing the negative major and significant impacts of the project will be greater than the potential benefits of the project. In such a case, the responsible agency will decide that the operation and/or activity in question in question is not environmentally feasible (article 22).

### **III.6.2 Management of hazardous and toxic waste**

In this section, we will discuss how the Environmental Impact Statement requirements relate to the management of hazardous and toxic waste. Article 20 of the Environmental Management Law states that in the absence of a license it is prohibited for any person to dispose of waste in any “environmental medium”. The power to issue a license and to designate the places where waste may be disposed of is vested in the State Minister for the Environment (article 20). More detailed provisions concerning the licensing regime for the disposal of hazardous and toxic waste are set out in Government Regulation Number 18 of 1999.

#### **III.6.2.a Licenses for the storage, collection, transportation, use, processing and/or disposal of hazardous and toxic waste**

The licensing system governing actors on waste management is covered in a general way by article 18 of the Environmental Management Law, which requires that the promoters of every operation and/or activity that has to potential to produce major and significant impacts on the environment to produce an Environmental Impact Statement (AMDAL) in order to obtain a license allowing them to engage in such operations and/or activities. Storage, collector, transporter, user, processor, and disposer of waste became bonded with that article as a requirement to a. Furthermore, article 40(1)(a) o Government Regulation Number 18 of 1999 states that all those involved in the storage, collection, use, processing and/or disposal of hazardous and toxic waste must

possess a license for their operations issued by the responsible agency (Office of the State Minister for the Environment).

While this provision does not expressly refer to a “waste producer”, it does refer to a firm that stores waste, which may also be assumed to be a producer of waste. This may be seen from the definition of waste storage given in article 1(12), which reads as follows: “Waste storage refers to the temporary storage of hazardous and toxic waste by a firm that produces and/or collects and/or uses and/or processes and/or disposes of hazardous and toxic waste. Based on this definition, we may conclude that a producer of waste also engages in the storage of waste and thus requires a license for its operations. Thus, a producer of waste needs a license, while a separate license is also needed for the storage of waste.

In order to obtain a license, the Environmental Impact Statement (AMDAL) must be submitted at the same time as the writing application to the Office of the State Minister for the Environment (article 44). The license application must contain the following information:

- a. Government-approved deed of incorporation;
- b. Name and address of the firm submitting the application;
- c. Proposed operations;
- d. Location of proposed operations;
- e. Name and address of principals responsible for operations;
- f. Materials and processes to be employed;
- g. Specifications of waste processing equipment;

- h. Quantity and characteristics of the hazardous and toxic waste that will be stored, collected, used, transported, processed and/or disposed of;
- i. Detailed description of drainage channels, waste processing, and temporary containment measures prior to processing, and final disposal after processing.
- j. Pollution-prevention equipment for liquid waste, emissions, and hazardous and toxic waste processing equipment (article 40).

Should the application be rejected by Bapedal on account of technical deficiencies, the applicant shall be given a period of 10 days to make these good (article 4). Should the technical requirements have been fulfilled, then the Office of the State Minister for the Environment will conduct a field study (article 4(2)). Should all the documentation and the findings of the field study be satisfactory, the State Minister for the Environment will then issue a license, which action must be informed to the public at large (article 41). With regard to a processing site license and a disposal license, the relevant issuing authority is the Regency/Municipality Land Office. The proposal must be in compliance with the local spatial plan, be accompanied by a recommendation from the head of the relevant agencies (article 42). Should a waste producing firm also process waste, and the place of processing is removed from the firm's principal operations, then the firm will be bound by the provisions on waste processing set out in Government Regulation Number 18 of 1999. However, if the processing site forms part of the firm's main plant, then the firm will only require an Environmental Management Plan (RPL) and Environmental Monitoring Plan (RKL)(article 46).

With regard to the length of time required for the issuance of a license, the regulations are contradictory. Under Government Regulation 18 of 1999, a license must be issued within 45 days from the date of receipt of the license application (article 44).

However, under BAPEDAL De1 No. Kep-68/BAPEDAL/05/1994, the timeframe is set at 30 days from the date of receipt of the application (article 8). All costs arising out of a license application, including the cost of the technical feasibility studies, are borne by the applicant (article 61).

### **III.6.2.b Transportation of Waste**

There is a major difference to be found in this area as Government Regulation Number 18 of 1999 provides that licenses for the transportation of waste are to be issued by the Minister of Transportations based upon recommendations from the State Minister for the Environment (article 40). There is no requirement under Government Regulation Number 18 of 1999 for an applicant for a waste transportation license to possess an Environmental Impact Statement (AMDAL).

### **III.6.2.c Use of Waste as Principal Activity**

In the case of those firms whose principal activities involve the use of waste, the power to grant licenses is vested in the authorized agencies based upon the recommendation of the State Minister for the Environment (article 40). An applicant for a license to use waste is required to first produce an Environmental Impact Statement (article 43). However, if the use of waste forms part of the firm's principal operations, then it is sufficient to produce an Environmental Management Plan (RKL) and Environment Monitoring Plan (RPL) (article 46).

## **III.7 Importing and Exporting Non-Hazardous and/or toxic waste**

As has been explained earlier, the importation of hazardous and/or toxic waste is prohibited. Thus, this section will concern itself with the procedures governing the import and export of non-hazardous and/or toxic waste. These procedures are set out in

detail in Minister of Industry and Trade Decree Number 288/MPP/Kep/7/1997 on general export procedures, and Minister of Industry and Trade Decree Number 229/MPP/Kep/7/1997 on general import procedures.

### **III.7.1 Exporting Non-hazardous and/or toxic waste**

In the export sphere, the relevant provision is Minister of Industry and Trade Decree Number 228/MPP/Kep/7/1997. This categorizes exporters as general and registered exporters. A general exporters is defined as an individual or firm that engages in the export trade, while a registered exporter is defined as an individual or firm that is registered with the Minister of Industry and Trade for the export of particular types of goods in accordance with the prevailing regulations (article 1 (b) and (c)). The Minister of Industry and Trade Decree also divides export goods into the following three categories (article 1(e), (f), and (g)):

- a. Regulated goods: These may only be exported by registered exporters;
- b. Monitored goods: These may only be exported with the approval of the Minister of Industry and Trade or an authorized officer;
- c. Prohibited goods: These may not be exported in any circumstances.
- d. Unregulated goods: These are all goods not covered by paragraphs (a), (b) and (c).

The requirements for becoming an exporters are set out in article 2, which states that the export trade may be engaged in by an individual or firm that possesses:

- a. A commercial trading permit (SIUP); or
- b. A permit from a line department/non-departmental government institution in accordance with the provisions of the laws and regulations in effect; and

c. A company registration certificate (TDP).

An exporter that wishes to export regulated goods must satisfy all of the requirements applicable to a general exporters, and in addition be registered with the Directorate of International Trade at the Ministry of Industry and Trade (article 2(2)). Meanwhile, an exporter that wishes to export monitored goods must not only satisfy all of the requirements applicable to a general exporters, but must also receive approval from the Director of Exports at the Ministry of Industry and Trade having taking into consideration advice from the Director of Technical Promotion at the Ministry of Industry and Trade and/or other relevant agencies/departments (Article 2(2)).

### **III.7.2 Importing Non-hazardous and/or toxic waste**

The general provisions governing the importation of non-hazardous and/or toxic waste are set out in Minister of Industry and Trade Decree Number 229/MPP/Kep/7/1997 on general import procedures. Waste may only be imported by firms that have been issued with an importer's certificate (API), temporary importer's certificate (APIS) or restricted importer's certificate (APIT) (see Article 1). More detailed provisions governing the importation of non-hazardous and/or toxic waste are set out in Minister of Industry and Trade Decree Number 230/MPP/Kep/7/1997 on regulated imports, as amended by Minister of Industry and Trade Decree Number 411/MPP/Kep/9/1998, Minister of Industry and Trade Decree Number 111/MPP/Kep/1/1998 and Minister of Industry and Trade Decree Number 231/MPP/Kep/7/1997 (Decree Number 231/97) on procedures for the importation of waste. As a result of the prohibition imposed by Minister of Industry and Trade Decree Number 520/MPP/Kep/8/2003 on the importation of hazardous and/or toxic waste, all references in the earlier Decrees regarding the importation of hazardous and/or toxic waste have been repealed. However, the

procedures set out in the above Minister of Industry and Trade Decrees regarding the importation of non-hazardous and/or toxic waste are still applicable.

Under Minister of Industry and Trade Decree Number 231/97, importers are divided into categories – general importers (IU) and production importers (IP). A general importer is defined as an importer that is registered with the Directorate General of International trade, and has been granted approval to import waste, while a production importer is defined as an importer that is registered with the Directorate General of International Trade and which has been granted approval to import non-hazardous and/or toxic waste solely for production purposes (article 1). Thus, the distinction between the two depends on the use to which the imported waste is to be put. Under article 2, only those goods stipulated in the appendix to Minister of Industry and Trade Decree 231/97 (attached hereto) may be imported.

Meanwhile, Minister of Industry and Trade Decree Number 230/97 sets out various requirements for registration as a general importer, including the obligation to submit an application to the Director General of International Trade accompanied by the following documents:

- a. Commercial trading permit (SIUP);
- b. General Importer's Certificate (API-U);
- c. Company Registration Certificate (TDP);
- d. Tax File Number (NPWP);
- e. Proof of ownership/control of warehouse/store registered with line departments/non-departmental government agency (article 7).

In order to be registered as a production importer, the company must submit an application to the Director General of International Trade attaching the following documents:

- a. Industrial enterprise permit/industrial enterprise certificate or equivalent document from a line department/non-departmental government institution;
- b. Production Importer's Certificate (API-P) or Restricted Importer's Certificate (APIT);
- c. Company Registration Certificate (TDP);
- d. Tax File Number (NPWP);
- e. Proof of ownership of waste processing facility, including storage warehouse registered with the relevant line department/non-departmental government institution;
- f. A recommendation from the relevant line department/non-departmental government institution to the effect that the producer requires the imported waste for production purposes (article 8).

The said application shall be approved or rejected, as the case may be, within not more than seven (7) days counting from the date of receipt of the full and complete application (article 9). The quantity and type of the waste that may be imported by either a general importer or a production importer is determined by the Director General of International Trade on an annual basis (Article 10).

With regard to the shipping/transportation of the goods to a destination country, Minister of Industry and Trade Decree Number 231/1997 provides that the following documents must be provided:

- a. Name and address of the overseas exporter;
- b. Description of the type of waste, HS number and name normally used in the trade;
- c. Quantity in weight/volume terms;
- d. Name and address of recipient/importer;
- e. Recycling/processing methods to be employed.
- f. Shipping schedule.

Other documents on importation procedures should also be attached (article 7(2)). Inspection of the quantity and type of waste must be carried out at the port of loading and a certificate issued (article 8(1)). A surveyor as referred to this section of the Decree means a surveyor licensed by the government in the place of shipping to carry out survey work in the exporting country and/or in a transit country (article 1). Meanwhile, the certificate referred to means a certificate which states that the waste does not violate Indonesia's environmental legislation (article 8(2)). Thus, the function of the surveyor is to verify that the type and quantity of the waste that is being sent to Indonesia is in line with what is stated in the shipping documents. This also applies to waste that is to be transshipped (article 8(3) and (5)). All costs associated with the survey must be borne by either the importer or exporter depending on the agreement between the parties (Article 8(4)). Should the surveyor find any inconsistencies between the goods that have been loaded and the documentation, then the goods must be returned to the exporting country at the cost and liability of the importer. Should the waste not be returned to the exporting country within the timeframe provide for in the Customs and Excise Regulations, then the Minister of Industry and Trade, or an authorized officer, may suspend or revoke the license of the general importer or production importer (Article 12). Inspection by a

surveyor does nothing to reduce the powers of the Directorate General of Customs and Excise to conduct a customs inspection (article 8(9)).

The general or production importer is required to report on the handling of the importation process (until such time as the waste is in the importer's warehouse) to the Director General of International Trade, with copies to the Office of the State Minister for the Environment and the Directorate General of Metal, Machine and Chemical Industries (article 9). Should the importer fail to submit such reports, it shall be subject to the imposition of sanctions by the Minister of Industry and Trade, with the said sanctions ranging from a warning to the revocation of the importer's license (article 10). In addition, the Minister of Industry and Trade may revoke the permit of a:

General importer of waste if:

1. It imports waste whose character or quantity is not in accordance with what has been agreed to by the Director General of International Trade;
2. It sends the waste to a third country rather than the exporting country;

Production Importer of non-hazardous and/or toxic waste if:

1. It sells the waste that it has imported or purchases imported waste from another production importer of non-hazardous and/or toxic waste;
2. It imports waste whose character or quantity is not in accordance with what has been agreed to by the Director General of International Trade;
3. It sends the waste to a third country rather than the exporting country;

Under the Environmental Management Law, sanctions may be imposed on a general or production importer if its activities result in pollution or environmental damage (article

12). These may include an order to pay damages, make good the damage, or criminal sanctions.

### **III.8 Law Enforcement**

Law Number 23 of 1997 sets up a hierarchical concept of law enforcement ranging from administrative measures, accompanied by civil remedies, to criminal sanctions as a last resort. The availability of administrative sanctions is also intended as a preventative measure to avoid damage to the environment, while criminal sanctions are designed to serve as repressive instruments and give rise to a deterrent effect as regards the possibility of similar violations occurring in the future. The decision to resort to the criminal law is governed by the principle of “subsidiarity”, that is to say, the criminal law will only be mobilized if all else fails, including administrative sanctions, civil actions, and alternative methods of dispute resolution. The criminal law will also be employed where the violation committed is of an extremely serious nature, the damage caused is very serious, or the activities in question have given rise to public unrest.

#### **III.8.1 Administrative Sanctions**

The imposition of administrative sanctions is provided for by the Environmental Management Law. These sanctions include the revocation of license and the right of the government to require compulsory audits (articles 25, 26, and 28). An environmental audit is defined by article 1(23) of the Environmental Management Law as “a process of evaluating what has been undertaken by the principal of the business and/or to evaluate compliance with the law and/or the policies/standards that have been set by the principal of the business and/or the activities in question.” An environmental audit is carried out for the purpose of encouraging proper business practices and/or the undertaking of operations in the proper way (article 28). If a particular activity and/or operation is found

to involve non-compliance, the relevant minister may order the principal of the business and/or person responsible for the activity to carry out an environmental audit (article 29). If the principal of the business and/or person responsible for the activity fails to comply with the minister's order, then the minister may appoint a third party to carry out the environmental audit at the cost of the principal of the business and/or person responsible for the activity.

There are various administrative actions that may be taken by the government depending on the degree of non-compliance. These are as follows:<sup>13</sup>

- a. Government enforcement or coercive measures;
- b. Fines
- c. Closure of place of business
- d. Halting work of company's machinery
- e. Revoking the firm's license based on the following process: warning, enforcement measures, closure and fine.

The monitoring of compliance with the legislation and technical and administrative requirements by a producer, user, collector, transporter, processor, or disposer of w1 and the emergency response system is the responsibility of both the Office of the State Minister for the Environment and the local administration (article 47). Supervision over the handling of hazardous and/or toxic waste is carried out by the regency/municipality administration (Article 2 of BAPEDAL

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<sup>13</sup> Rangkuti, S.S., *Perkembangan Hukum Lingkungan di Indonesia*, Airlangga University Press, Surabaya: 1996, pp. 192-193.

Directive Number Kep-02/BAPEDAL/01/1998), and involves the following actions:

- a. Disseminating information on the legislation and regulations governing the handling of hazardous and/or toxic waste;
- b. Taking inventories of companies that produce hazardous and/or toxic waste;
- c. Taking inventories of companies that utilize hazardous and/or toxic waste;
- d. Taking inventories of companies that process and store hazardous and/or toxic waste;
- e. Assisting BAPEDAL in conducting two inspections per year of firms that have been granted licenses to handle hazardous and/or toxic waste by BAPEDAL ((Appendix: printers, workshops/garages, film processors, recyclers of used lubricants, tanneries, type C and D hospitals, laboratories, processors of out-of-date pesticides, and laundries and dry cleaning establishments).
- f. Serving reprimands/first and subsequent warning letters, and imposing sanctions on the types of firms listed in paragraph e above in cases of non-compliance;
- g. Reporting to BAPEDAL on the location of hazardous and/or toxic waste storage and disposal sites that fail to comply with the regulations.

The supervision over the handling of hazardous and/or toxic waste that is carried out by the provincial government involves the following (Article 3):

- a. Monitoring producers of hazardous and/or toxic waste whose operations have the potential to cause pollution affecting more than one municipality/regency;

- b. Coordinating the dissemination of information on the regulations governing the handling of hazardous and/or toxic waste to the local environmental management agencies (Indonesian acronym: Bapedalda) at the regency/municipality level within the province;
- c. The regional environmental management agency is responsible for monitoring producers of hazardous and/or toxic waste whose operations have the potential to cause pollution affecting more than one municipality/regency.

The supervision conducted by the regional environmental management agency covers the following areas (article 4):

- a. Coordinating the dissemination of information on the handling of hazardous and/or toxic waste;
- b. Coordinating the provision of technical advice, laboratory services and explanations on the guidelines for the handling of hazardous and/or toxic waste;
- c. Coordinating the provision of technical advice and explanations on how to fill out the application forms for local government hazardous and/or toxic waste management licenses, and assisting the local environmental management agency (Directorate) in monitoring the entry of hazardous and/or toxic waste into local ports pursuant to requests from Customs and Excise.

In general, the above powers of monitoring and supervision at the local level cover all stages in the waste management process. Supervision and monitoring is carried out by officers equipped with IDs issued by Office of the State Minister for the Environment.

These inspectors have the following powers:

- a. To enter into sites and premises where hazardous and/or toxic waste is produced, utilized, stored, processed or disposed of;
- b. To take samples of hazardous and/or toxic waste for laboratory analysis;
- c. To seek explanations in connection with the handling of hazardous and/or toxic waste;
- d. To take photographs to complement their inspection reports (article 48);

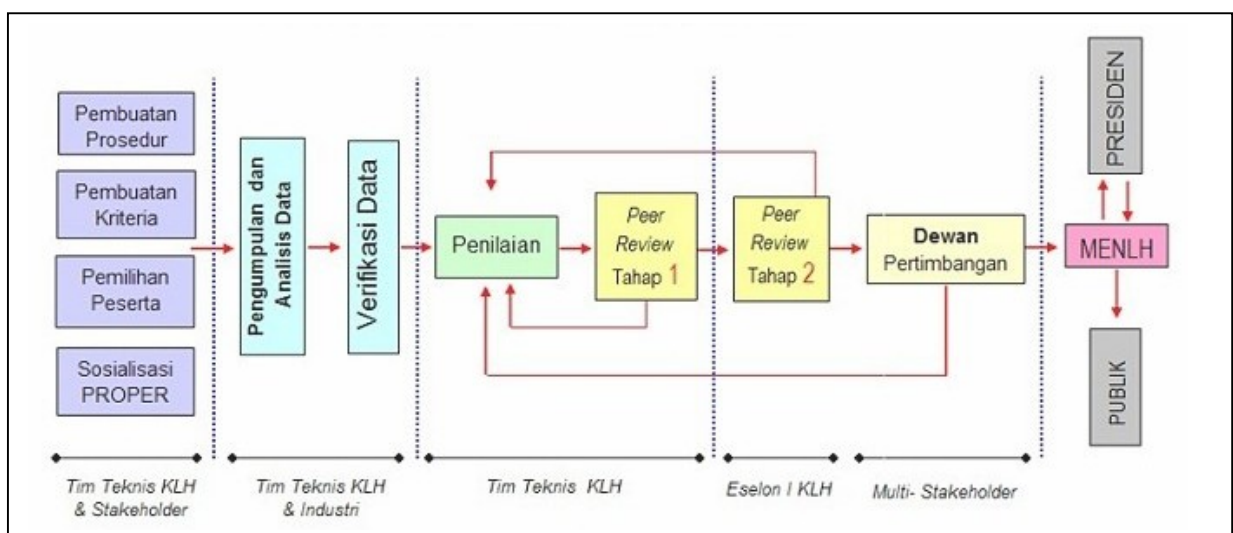
During inspections, a producer of hazardous and/or toxic waste is required to cooperate and assist the inspector in the performance of his duty (article 49). The inspector's findings are then reported to the minister for evaluation at least once per year as part of the process of establishing w1 processing policies (article 51). The provisions governing hazardous and/or toxic waste inspections cover all stages in the management process, including storage, collection, transportation, processing, utilization and disposal. Accordingly, the provisions governing the powers of local governments in this regard apply to all stages in the w1 management process.

Also as part of law enforcement in the administrative sphere, the Office of the State Minister for the Environment as one of the institutions responsible for the handling of hazardous and/or toxic waste, has designed a program (PROPER) to appraise the performance of firms operating in the w1 field. This program represents one method of law enforcement that uses a punishment and rewards approach. One of the objectives of the ROPER program is to ensure good performance by companies through providing awards in the form of "green rankings" for companies that perform well. Good performance for the purposes of PROPER is appraised using the following criteria:

1. Compliance with the water pollution prevention regulations;

2. Compliance with the air pollution prevention regulations;
3. Compliance with the hazardous and/or toxic waste handling regulations;
4. Compliance with the terms of the firm's environmental impact statement;
5. Environmental management system;
6. Use and management of resources
7. Community development, participation and relations.

The criteria employed in a PROPER appraisal do not specifically include a appraisal in respect of reducing, reusing and recycling of w1. However, the criteria for



assessing compliance in the handling of hazardous and/or toxic waste already indirectly encompass recycling.

### III.8.2 Civil Remedies

Besides the imposition of administrative sanctions, the Environmental Management Law also provides a range of civil remedies at the disposal of the state. The provisions governing these are set out in Chapter VII on the resolution of environmental

disputes. The efforts involved in this regard are divided into two parts, namely, out-of-court settlements, and in-court settlements. Out-of-court settlements are intended to bring about an agreement on the amount and form of the compensation that will be provided, and/or specific things that must be undertaken in order to ensure that an envisaged negative environmental impact will not occur, or will not reoccur (article 31). As part of the effort to arrive at an out-of-court settlement, a third party (such as an arbitrator or mediator) may be involved, or the services of a dispute resolution agency set up by the community and/or government may be employed (article 33). Should an out-of-court settlement be arrived at, the public courts may only be resorted to where such out-of-court settlement proves to be unsuccessful (Article 30). With regard to an in-court settlement, a number of models may be employed for the bringing of actions, and these are provided for in paragraph 4 on the rights of the community and environmental organizations to bring civil actions. This paragraph states that not only members of the community may bring representative actions, but so also may environmental organizations and government agencies. Thus, this Environmental Management Law confers legal standing on all three groups of potential plaintiffs (article 38). An action may be brought if it is found that the public have suffered as a result of pollution and/or environmental destruction of such gravity that it fundamentally affects the lives of the people (articles 37 and 38). The conferring of legal standing on government agencies and environmental organizations allows them to sue for the purpose of upholding environmental sustainability (article 38). The bringing of such an action is limited to demanding that a particular action be undertaken. There is no right to claim damages, save in respect of normal court costs and expenditure (article 38). By expenditure is meant outlays by the environmental organizations or government agency as part of their

efforts to restore the polluted/damaged environment. In the case of environmental organizations, in order to sue the following requirements must be satisfied:

- a. The organization must be incorporated as a legal entity or be registered as a foundation;
- b. The statutes of the environmental organization must clearly state that the purpose of its establishment was to promote environmental interests;
- c. The organization has been carrying out activities in line with its statutes (article 38).

Members of the public may bring environmental actions based on the class-action mechanism in respect of environmental problems that have prejudiced the well-being of the community (article 37). Further provisions concerning the procedures for bringing class actions are set out in the Supreme Court Rules. Meanwhile, the procedures for the bringing of a normal civil action are set out in article 39.

In the case of civil remedies available in respect of environmental pollution or damage, besides the question of compensation, the issue of strict liability is also of significance. In this regard, article 35 of the Environmental Management Law reads as follows:

- (1) In giving effect to the provisions of the civil law in the environmental field, besides seeking compensation regard should also be had to strict liability. In this regard the Environmental Management Law provides in article 35 that the principal of the business and/or person responsible for an activity in a case where the business and/or the activity has produced a major and significant negative impact on the environment using hazardous and/or toxic waste, and/or produced hazardous and/or toxic waste w1, shall be strictly liable for the damage that

results and shall be required to pay damages immediately upon producing the damage and/or pollution.

The term “strict liability” means liability without fault. In other words, the polluter will be liable for the damage it causes whether or not it was at fault. In a claim for damages brought on foot of the commission of an unlawful act, it is generally necessary to prove the elements of causation, damage and fault. However, under the principle of strict liability, there is no onus on the plaintiffs to prove the element of fault. Thus, in accordance with this principle, every principal of the business and/or person responsible for the activity must pay damages/compensation for any pollution that results from his operations even if he has exercised the utmost prudence. The imposition of strict liability represents an example of *lex specialis*, or specialized law that takes precedence over *lex generalis* or general law.<sup>14</sup> The Environmental Management Law provides for strict liability in the following cases:

1. Operations and activities that produce major and significant impacts on the environment;
2. Operations and<sup>15</sup> activities that use hazardous and/or toxic waste
3. Operations and activities that produce hazardous and/or toxic waste.

Point 3 shows the relationship between the handling of w1 and the application of strict liability.

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<sup>14</sup> Application of Strict Liability in the Environmental Field, ICEL, p. 15

<sup>15</sup> Ibid, p. 48

### **III.8.3 Criminal Sanctions**

The third element involved in environmental law enforcement is resort to the criminal law. This is governed by Chapters VIII (investigations) to IX (criminal sanctions) of the Environmental Management Law.

The provisions on criminal sanctions contained in Law Number 23 of 1997 may be said to be quite comprehensive as besides imposing criminal liability on natural persons, it also imposes such liability of legal persons (corporations).

The following articles set out the penalties for both individual and corporate polluters:

#### Article 41:

- (1) Whosoever knowingly and unlawfully performs an act that results in environmental pollution and/or damage shall be liable to a term of imprisonment of not more than ten (10) years and a fine of not more than five hundred million rupiah (Rp 500,000,000);
- (2) Should the crime established by section (1) above result in the death of or serious injury to a person, the perpetrator shall be liable to a term of imprisonment of not more than fifteen (15) years, and a fine of not more than seven hundred and fifty million rupiah (Rp 750,000,000).

#### Article 42

- (1) Whosoever negligently performs an act that results in environmental pollution and/or damage shall be liable to a term of imprisonment of not more than three (3) years and a fine of not more than one hundred million rupiah (Rp 100,000,000);
- (2) Should the crime established by section (1) above result in the death of or serious injury to a person, the perpetrator shall be liable to a term of imprisonment of not

more than five (5) years, and a fine of not more than one hundred and fifty million rupiah (Rp 150,000,000).

Articles 41 and 42 establish substantive offenses so that the focus rests primarily on the results produced by the acts in question.

#### Article 43

- (1) Whosoever, by violating a provision of the laws and regulations in effect, deliberately releases or discharges a hazardous and/or toxic substance, form of energy and/or other component onto or into the soil, air or into surface water, or imports, exports, trades in, transports, or stores such materials and/or substances, or operates a dangerous installation in circumstances where he knows or should know that such action could give rise to environmental pollution and/or damage, or endanger public health or the lives of human beings, shall be liable to a term of imprisonment of not more than six (6) years and a fine of not more than three hundred million rupiah (Rp 300,000,000).
- (2) Whosoever deliberately furnishes false or misleading information, or conceals or destroys any documents or other information sources that are required in connection with an act as referred to in section (1) above, where he knows or should know that such action could give rise to environmental pollution and/or damage, or endanger public health or the lives of human beings, shall be liable to a term of imprisonment of not more than six (6) years and a fine of not more than three hundred million rupiah (Rp 300,000,000).
- (3) Should the offenses established by sections (1) and (2) above result in the death of or serious injury to a person, the perpetrator shall be liable to a term of

imprisonment of not more than nine (9) years, and a fine of not more than four hundred and fifty million rupiah (Rp 450,000,000).

#### Article 44

- (1) Whosoever, in violation of the provisions of the laws and regulations in effect, negligently commits an act as described in article 43 hereof shall be liable to a term of imprisonment of not more than three (3) years and a fine of not more than one hundred million rupiah (Rp 100,000,000).
- (2) Should the offense established by sections (1) above result in the death of or serious injury to a person, the perpetrator shall be liable to a term of imprisonment of not more than five (5) years, and a fine of not more than one hundred and fifty million rupiah (Rp 150,000,000).

Articles 43 and 44 above set up procedural offenses so that the focus results primarily with the nature of the unlawful acts.

#### Article 45

Should a criminal offense established by this Chapter be perpetrated by or on behalf of a legal person, corporation, association, foundation or other organization, the applicable fines shall be increased by one-third.

#### Article 46

- (1) Should a criminal offense established by this Chapter be perpetrated by or on behalf of a legal person, corporation, association, foundation or other organization, the criminal prosecution shall be brought against, and punishment and other measures as referred to in article 47 hereof imposed, both on the legal person, corporation, association, foundation or other organization, and upon those

who directed the performance of the criminal act, or who served as the principal in the performance of the said criminal act, or on both such persons.

- (2) Should a criminal offense established by this Chapter be perpetrated by or on behalf of a legal person, corporation, association, foundation or other organization by persons, either based on a relationship of employment or other relationship, who are acting within the ambit of the said legal person, corporation, association, foundation or other organization, the criminal prosecution shall be brought against, and punishment imposed upon, those who gave the orders or acted as the principals without regard to whether those persons, based on a relationship of employment or other relationship, were acting jointly or severally.
- (3) Should a criminal prosecution be brought against a legal person, corporation, association, foundation or other organization, the summons to appear in court shall be address to the company principals at their places of residence or their places of employment.
- (4) Should a criminal prosecution be brought against a legal person, corporation, association, foundation or other organization and the said legal person, corporation, association, foundation or other organization is not represented by its principal, the judge hearing the case may order the principal to appear in court.

Articles 43 and 46 set up corporate crimes so that the legal subject is the corporation or company.

Article 47

Besides being subject to the criminal provisions contained in the Criminal Code and this Law, the perpetrator of an environmental crime may also be subject to the following disciplinary measures:

- a. Forfeiture of proceeds/profits obtained as a result of the commission of the crime;
- b. The closure of all or part of the company; and/or
- c. Making good the results produced by the crime; and/or
- d. Making good that which was unlawfully neglected; and/or
- e. Negating the effects of unlawful neglect; and/or the placing of the company under corporate probation for a maximum period of three (3) years.

### **III.9 Future Prospects**

#### **III.9.1 Domestic Waste Bill**

The deliberation of a Domestic Waste Management Bill is currently being prioritized by the House of Representatives (DPR), and includes a prohibition on the importation of garbage (domestic waste) into Indonesia (article 7(1)). Thus, in the future garbage is also likely to be included in the types of waste that it is prohibited to import into Indonesia.

#### **III.9.2 Amendments of Environment Management Act**

The revision of the new environment management act (EMA) is already in the discussion for about 5 years, the main idea is to improve the :

- a. Environment planning
- b. Capacity strengthening
- c. Democratization of decentralization
- d. System of permit and monitoring
- e. Community empowering

- f. Developing the voluntary compliance system
- g. Strengthening the law enforcement institution
- h. Law enforcement aspect through the administration, civil remedies, and criminal sanction.

The progress of this revision is still on going in the Ministry of Environment office.

## Chapter IV

### Conclusions

- I. The handling of industrial waste in Indonesia is governed by various legislative and regulatory provisions. At the national level in general, the principal piece of legislation is the Environmental Management Law (Law Number 23 of 1997), plus its ancillary regulations. In addition, specific provisions governing the management of waste in the industrial sector are to be found in the Industrial Sector Law. For the purposes of this study, “industry” is defined as economic activities that involve the processing of unprocessed materials, raw materials, semi-finished products and/or finished products into goods that have added value for their users, including design and construction activities, and industrial engineering. Regulations governing the management of industrial waste are also to be found at the local level, and include instruments issued by both provincial and regency/municipality governments.
- II. In general, the legislation and regulations on industrial waste may be divided into two categories – those that regulate the handling of hazardous and/or toxic waste and those that regulate the handling of non-hazardous and/or toxic waste. Those regulations governing the handling of hazardous and/or toxic waste cover the entire chain of activities starting with production and continuing up through collection, transportation, processing, utilization, and disposal. In the elucidation on Government Regulation Number 18 of 1999, it is stated that the principles governing the management of industrial waste are as follows:
  - a. The hierarchy involved in the processing of the waste produced by each production unit should be kept to a minimum, and if possible eliminated

altogether. This may be done by reducing sources through waste processing, waste substitution, more efficient operations, and the use of clean technology. If hazardous and/or toxic waste is still produced, then every effort should be made to utilize it wherever possible.

- b. The utilization of hazardous and/or toxic waste involves recycling, recovery and reuse.
- c. The cost of waste processing may be reduced through reduced production and greater utilization of waste.
- d. Supervision and monitoring over the handling of waste is carried out based on a manifest (documentation) system covering all stages from collection up to dumping.

Thus it will be seen that the principles of reduce, reuse and recycle are of the utmost importance. However, the putting into effect of these three principles is not fully guaranteed by the legislation and regulations. For example, Government Regulation Number 18 of 1999 on waste management states that a producer of waste is required to reduce waste production (article 9), while article 33 states that the utilization of waste involves recovery, reuse and recycling. However, no special efforts are required by the legislation and regulations to ensure that these principles are adhered to in practice.

Neither is there a rewards and punishment system in place that could support the level of adherence to the three principles. For example, there is a government program called PROPER (run by the Office of the State Minister for the Environment) that attempts to support the three principles. One of the objectives

of this program is to improve the awareness of the business community about the need to comply with environmental law, including the principles governing the management of hazardous and/or toxic waste. This program encourages compliance through a voluntary system, with the Office of the State Minister for the Environment presenting awards to firms that strive to give effect to environmental management principles. As part of the appraisal of a firm's compliance, one of the aspects evaluated is adherence to the 3Rs (reduction, reuse and recycling) in the management of hazardous and/or toxic waste. Firms that apply these principles to the management of hazardous and/or toxic waste are awarded gold status, the highest award available under the PROPER program. However, there are no more tangible incentives, such as, for example, tax incentives, that could encourage more enterprises to apply the 3Rs. In addition, the consumerist nature of Indonesian people, the vast majority of whom could in no wise be categorized as "green consumers", adds to the lack of effectiveness of the program in achieving its goals. Neither is the obligation to apply the 3Rs contained in Government Regulation Number 18 of 1999 accompanied by sanctions. Thus, it is little more empty words.

- III. In general, the regulation of industrial waste management is centralized in nature, with the institution responsible for such regulation being the Office of the State Minister for the Environment. However, Government Regulation Number 18 of 1999 states that the powers to monitor and supervise the management of hazardous and/or toxic waste may be delegated to the provincial and regency/municipality governments. Further provisions on this are to be found in BAPEDAL Directive Number Kep-02/BAPEDAL/01/1998, which states that the

provincial governments have the power to conduct supervision over the producers of industrial waste that has the potential to result in pollution that affects more than one regency, and to coordinate their efforts to disseminate information on hazardous and/or toxic waste management regulations with the local environmental management agencies at the regency/municipality level (article 3).

Regency/municipality governments have the power to conduct supervision over the dissemination of information on the regulations, and the listing of firms that produce, utilize, process or dispose of hazardous and/or toxic waste. The regency/municipality governments are also entitled to issue reprimands to firms that violate the regulations and to report disposal locations that fail to comply with the requirements (article 2).

- IV. All activities involving hazardous and/or toxic waste, from production up to disposal, require special licenses from the Office of the State Minister for the Environment. These licenses are separate from the business licenses issued by the relevant ministers, such as the Minister of Industry and the Minister of Mines and Energy. In order to obtain a license, an Environmental Impact Statement must first be submitted. This is a study into the major and significant impacts of the operations or activity for which a license is sought. Such a study must be submitted in order to obtain licenses for the storing, collection, utilization, processing, transportation and/or disposal of hazardous and/or toxic waste.
- V. The effectiveness of the laws and regulations governing industrial waste may be seen from a comparison between the SLHI for 2002 and that for 2004. In 2002, a total of 24,000 tons<sup>16</sup> of hazardous and/or toxic waste were processed by PPLI,

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<sup>16</sup> 2002 SLHI, Office of the State Minister for the Environment, p. 86

while in 2004 this figure had increased to 74,059 tons<sup>17</sup>. Based on this comparison, it will be seen that the awareness of industry of the need to process hazardous and/or toxic waste has increased. Despite this, a number of major cases of non-compliance have come to public attention, including that of Freeport, NMR, and NNT. Problems are also evident from the 2004-2009 Long-Term National Development Plan, particularly Chapter 32 on the improved management of natural resources and environment functions. This chapter recognizes the high level of pollution in the country and the failure to ensure integrated and systematic waste management. This is due to a number of factors:

- (1) garbage management and processing is not carried out in a systematic manner, with garbage being merely dumped, thus giving rise to soil and water pollution, leaching, and public health threats;
- (2) the management of liquid waste from households, agriculture and industry lacks integration as between the related sectors;
- (3) heavy industrialization is leading to worsening air quality, particularly in urban areas;
- (4) better regulation is required governing emissions in both the industrial and transportation sector if air quality is to be improved;
- (5) hazardous and/or toxic waste is not being seriously handled, particularly in the case of hazardous and/or toxic waste emanating from industry.
- (6) there is only one facility for processing hazardous and/or toxic waste in the entire country (located in Cibinong), and this is privately owned.

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<sup>17</sup> 2004 SLHI, Office of the State Minister for the Environment, p. 200

(7) The high cost and complexity of processing hazardous and/or toxic waste, and a lack of awareness of the importance of processing such waste, serves as another obstacle to the efforts to reduce the negative impacts of hazardous and/or toxic waste on the environment.

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