READING INSTRUCTIONS

REPORT: DOE Environmental Requirements (pp. 1 - 82)

Skim Introduction
See Appendix & Figure 1

REPORT: DOE EIA Procedure and Requirements in Malaysia (pp. 83 - 138)

Skim pp. 8-14 (pp. 96-102)
See Table 2B on p. 18 (p. 106)
See Figure 4 on pp. 46-49 (pp. 134-137)

Environmental Requirements:

A Guide For Investors

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INTRODUCTION

1. In the promotion of environmentally sound and sustainable development, the Government of Malaysia has established the necessary legal and institutional arrangements such that environmental factors are considered at the early stages of project planning. With reference to the licensing requirements for establishment of business/industry in the country, environmental requirements and assessment constitute the second level of approval that need to be obtained after a business or industry has been registered.

2. Before a business can legally start operating, businesses are required to comply with some form of licensing, which could be a general licence, an industry/sector specific licence or activity specific licence. Business licences are required by the legislation and administered by various government agencies, statutory bodies and local authorities. Business licences includes registrations, approvals, licences and permits. The compliance requirements vary by industry, business activity and location. Business licences can be categorized into 3 different logical groups, namely:

   (a) **General licences** - are licences that are required and shall be applicable once the investor has decided to incorporate a company and starts to employ staff. List of General licences, which may applicable to any business, include:
   - ✓ Company Registration
   - ✓ Company and Employees Income Tax Registration
   - ✓ Employees Provident Fund
   - ✓ Social Security Organisation
   - ✓ Human Resources Development Fund

   (b) **Sector Industry Specific licences** - are licences unique to a particular industry or sector that is specified by the Government. This involves major policies that controlled the development of certain industries or sectors in line with the development policy of the country. Examples of Sector/Industry Specific licences are:

- ✓ Manufacturing licence
- ✓ Telecommunication licence
- ✓ Broadcasting licence
- ✓ Oil Exploration licence

(c) **Activity Specific licences -** are licences that regulate particular activity and could be applicable to one or more Industries or Sectors. This category of licence requires investor to comply with sets of specific guidelines designed to protect the interest of the citizen, employment, safety of workers, environment and general public. Examples of Activity Specific Licences are:

- ✓ Certificate of Fitness for Certified Machinery
- ✓ Approval for Expatriate Post
- ✓ Approval to install/resite/alter Air Pollution Control Equipment (bag filter and chimney)
- ✓ Building Plan Approval
- ✓ Sales Tax Licence

The above information is a general guide towards making the initial steps, decision and planning for the intended business by potential investors and business owners. Investors can obtain further and specific information on “Business in Malaysia" from Business Licensing Electronic Support System (BLESS) Portal (www.bless.gov.my). BLESS provides information and facilities for companies to apply licences or permits to start operating business in Malaysia. [*Note: To date, for the initial implementation (Phase 1), BLESS only covers application of business licences for the Manufacturing, Construction and Hotel Sectors and with manufacturing, construction and hotel facilities located within the Klang Valley*].

3. Environmental assessment is an important technique for ensuring that the likely impacts on the environment of proposed development are fully understood and taken into account before such development is allowed to go ahead. In Malaysia, Environmental Impact Assessment (EIA) is required for activities prescribed under the Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 1987. Those industrial activities that are not subject to the mandatory EIA requirements are nevertheless subject to various regulations under the Environmental Quality Act, 1974 (EQA).

4. The set of guidelines, which is intended primarily for investors or project proponents and their consultants, sets out Malaysia's environmental policy objectives, and explains the environmental requirements for planning of industrial development projects in Malaysia. It also provides information on the relevant legislation and describes procedures for obtaining appropriate approvals from the Department of Environment, the regulatory agency which administers the EQA of 1974.

NATIONAL POLICY ON THE ENVIRONMENT

5. The National Policy on the Environment which integrates the three elements of sustainable development: economic, social and cultural development and environmental conservation was formulated and approved in 2002. The Policy aims at continued economic, social and cultural progress and enhancement of the quality of life of Malaysians through environmentally sound and sustainable development. It is based in eight (8) inter-related and mutually supporting principles set to harmonize economic development goals with environmental imperatives:-

    (a) Stewardship of the Environment
    (b) Conservation of the Nature's Vitality and Diversity
    (c) Continuous Improvement in the Quality of the Environment
    (d) Sustainable Use of Natural Resources
    (e) Integrated Decision-making
    (f) Role of the Private Sector
    (g) Commitment and Accountability
    (h) Active Participation in the International Community

6. In keeping abreast with the country's rapid economic development and to meet with the nation's aspiration for an improved quality of life, the National Policy on the Environment serves as an important guide to all stakeholders to ensure that the environment is clean, safe, healthy and productive.

ENVIRONMENTAL QUALITY ACT, 1974

7. The legislation that is related to the prevention, abatement, control of pollution and enhancement of the environment in Malaysia is the Environmental Quality Act, 1974. The Act restricts the discharge of wastes into the environment in contravention of the **acceptable conditions**. To date **38 sets** of Regulations and Orders as per ***Appendix A*** have been introduced and enforced. The Director General of Environmental Quality has been appointed by the Minister to administer this Act and any regulations and orders made thereunder.

ENVIRONMENTAL REQUIREMENTS

8. Under the Environmental Quality Act (EQA), 1974 and the Regulations thereunder, industrial activities are required to obtain the following approvals from the Director General of Environmental Quality prior to project implementation:

   (a) **Environmental Impact Assessment reports** - under Section 34A of the EQA, 1974 (**for prescribed activities**);

   (b) **Site suitability evaluation** (**for non-prescribed activities**);

   (c) **Written permission to construct** - under Section 19 of the EQA, 1974 (**for prescribed premises-scheduled wastes treatment and disposal facilities, crude palm oil mills and raw natural rubber processing mills**);

   (d) **Written approval for installation of incinerator, fuel burning equipment and chimney** – under Environmental Quality (Clean Air) Regulation, 1978, EQA, 1974; and

   (e) **License to use and occupy prescribed premises and prescribed conveyances** - under Section 18 of the EQA, 1974.

9. **Figure 1** outlines the application procedure for environmental requirements in Malaysia.

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR PRESCRIBED ACTIVITIES

A. Prescribed Activities

10. All prescribed activities need to obtain EIA approval from the Director General of Environment prior to the giving of approval by the relevant Federal or State Government authority for the implementation of the project. The Approving Authority is the Government Authority that has the task of deciding, whether or not a project should proceed.

11. Every industrial proposal should be examined by the investor to see whether an environmental impact assessment (EIA) needs to be conducted. A prospective investor should therefore first of all determine whether or not a proposed venture is categorised as 'prescribed activity' as stipulated in the Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 1987, (***Appendix B***).

12. If the proposed venture is categorised as a 'prescribed activity' under the Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 1987 (***Appendix B***), an EIA study needs to be conducted and the EIA report has to be submitted to the Director General of Environmental Quality for approval. The project is not allowed to proceed unless approval of the EIA report has been granted.

13. Due to the sensitivity of the project and polluting potential (significant impacts) from the construction and/or operations, some of the prescribed activities have been required to go through the Detailed EIA Procedures which involves public participation. Those activities are as in ***Appendix C***.

B. EIA Study and Report

14. An EIA Study has to be conducted by competent individuals who are registered with the Department of Environment under the EIA Consultant Registration Scheme. The DOE will reject EIA reports which are conducted by individuals who are not registered with the Department. As such, the project proponent or EIA study team leader has to ensure that all members in the EIA study team are registered with the Department of Environment. The list of registered EIA Consultants (including Subject Consultants and Assistant Consultants) is available at the Department of Environment website (www.doe.gov.my). Details on the registration scheme are also available at the website (EIA Consultant Registration Guidance Document).

15. The preparation of EIA reports by registered EIA consultants shall be in accordance with the guidelines prescribed by the Director General of Environment and other relevant guidelines published by other agencies. "A Handbook of Environmental Impact Assessment Guidelines" (fourth edition) 2007 has been prepared to assist project proponents understand the objectives of EIA, procedures for carrying out EIA studies and guidelines on preparation of EIA reports. Subsequently EIA Guidelines for specific activities were developed and published by the Department of Environment (list in ***Appendix D***). The handbook can be obtained from the headquarters of the Department of Environment, Putrajaya, the State Offices of the Department of Environment and the office of the representative of the Department of Environment at the Malaysian Industrial Development Authority (MIDA). Addresses and telephone numbers of these offices are as per ***Appendix E***.

C. EIA Procedure

16. There are two EIA procedures adopted in Malaysia, namely the Preliminary EIA and the Detailed EIA, that can be described as follows:

    (a) Preliminary EIA

    Preliminary EIA is assessment of impacts due to those activities that are prescribed. The Preliminary EIA report is reviewed by a Technical Committee consisting of the Department of Environment State Offices and other relevant government agencies.

The procedure for Preliminary EIA is as shown in ***Appendix F1***. The number of Preliminary EIA report to be submitted to the Department of Environment State Offices for review is 12 copies, and 3 copies plus 2 softcopies of the Executive Summary of the Preliminary EIA report, to the Department of Environment Headquarters and relevant State Office.

(b) Detailed EIA

Detailed EIA is a procedure undertaken for those projects with major/significant impacts to the environment. The procedure for Detailed EIA is as shown in ***Appendix F2.*** The Detailed EIA involves EIA report display for the public and affected community to comment. Activities which need to go through the Detailed EIA procedure, are listed in ***Appendix C***. Notwithstanding the list in ***Appendix C***, the Director General of Environment may request a Detailed EIA for other prescribed activities as he deems necessary. For projects which have been determined to require a Detailed EIA, the project initiator must submit the terms of reference (TOR) for DOE's approval, in accordance to the format outlined in specific EIA guidelines. The number of copies of TOR to be submitted to the Department of Environment is 35 copies. The number of Detailed EIA report to be submitted to the Department of Environment Headquarters for review is 50 copies.

17. For an industrial project, the EIA generally would assist in determining site suitability as well as the necessary environmental control and mitigation measures. The objectives of EIA are summarised as follows:
    - ✓ To examine and select the best from the project options available;
    - ✓ To identify, predict and assess significant residual environmental impacts;
    - ✓ To recommend and incorporate into the project plan, appropriate abatement and mitigating measures; and
    - ✓ To identify the environmental costs and benefits of the project to the community.

SITE SUITABILITY EVALUATION FOR NON-PRESCRIBED ACTIVITIES

18. One of the most important procedures which have an immediate bearing on the period of processing and condition of approval on environmental ground is the SITE SUITABILITY for the proposed project. Irrespective of whether the proposed industrial activity is going to be sited within an industrial estate or otherwise, it should be developed and managed with environmentally sound control measures. Therefore, all potential industrial sites for the establishment of new industrial activities which are NOT subject to EIA Order, 1987, particularly the Small and Medium Scale Industries (SMIs), are advised to refer to the Department of Environment for consideration and advice on site suitability.

19. In considering the suitability, the site is evaluated in terms of its compatibility with respect to the gazetted structure/local plans, surrounding landuse, provision of set-backs or buffer zones, the capacity of the area to receive additional pollution load, and waste disposal requirements. Details on the appropriate buffer zone with respect to a specific category of industry can be obtained from 'Guidelines for the Siting and Zoning of Industries' prepared by DOE. An outline of the guidelines is given in ***Appendix G***.

20. For potentially hazardous* type of industries, the project proponent may be required to submit a RISK ASSESSMENT study to the Department of Environment as part of the site consideration, in accordance with the *EIA Guidelines For Risk Assessment 2004, established by the DOE. [Note: *Hazardous Industry: Any industry or installation which has the potential for causing injury threat to health, death and damage to property or the environment].*

21. The Term of Reference for the preparation of an EIA report for proposed industrial projects located within gazetted and EIA approved industrial estates is as in ***Appendix H***. The scopes to be studied in the EIA report are not restricted to the information in this Appendix. The EIA report has to be more specific in terms of the proposed site and project.

WRITTEN PERMISSION

22. Any person intending to carry out activities as listed below shall obtain prior written permission from the Director General of Environmental Quality:-
    Construction on any land or any building; or carrying out works that would cause the land or building to become prescribed premises as stipulated under Section 19 of the Environmental Quality Act, 1974:-

    (a) scheduled wastes treatment and disposal facilities
    (b) crude palm oil mills
    (c) raw natural rubber processing mills

23. Such application has to be accompanied by a prescribed fee.

WRITTEN APPROVAL

24. Applicants intending to carry out activities as listed below shall obtain prior written approval from the Director-General of Environment Quality:

    (a) New installation near dwelling area as detailed out in Regulation 4 and First Schedule of the Environmental Quality (Clean Air) Regulations 1978.

    (b) Any erection (including incinerators), installation, resiting or alteration of fuel burning equipment that is rated to consume pulverised fuel or solid fuel at 30 kg or more per hour, or liquid or gaseous fuel at 15 kg or more per hour as stipulated in Regulations 36 and 38 of the Environmental Quality (Clean Air) Regulations 1978 **(*Appendix I)***.

    (c) Any erection, installation, resiting, or alteration of any chimney from or through which air impurities may be emitted or discharged, respectively

25. No fee imposed for the application of written approval.

LICENCE TO OCCUPY PRESCRIBED PREMISES AND PRESCRIBED CONVEYANCES

26. A licence is required to occupy and operate prescribed premises namely as below:
    (a) crude palm oil mills,
    (b) raw natural rubber processing mills, and
    (c) treatment and disposal facilities of scheduled wastes

27. Application shall be made after obtaining written permission and written approval. Licensing fee will be charged for every licence issued for palm oil, raw natural rubber processing mills and facilities for treatment and disposal of schedule waste, and prescribed conveyances.

28. Starting from 15 August 2005, licence is required to use prescribed conveyances as stipulated in the Environmental Quality (Prescribed Conveyance) (Scheduled Wastes) Order 2005. Conveyance which is categorized as prescribed conveyance namely: any vehicle or ship of any description which is:-
    (a) propelled by a mechanism contained within itself;
    (b) constructed or adapted to be used on land or water; and
    (c) used for the movement, transfer, placement or deposit of scheduled wastes.

29. Applications for the licence shall be made after obtaining written permission and/ or written approval.

NOTIFICATION FOR A NEW SOURCE OF SEWAGE, INDUSTRIAL EFFLUENTS AND LEACHATE DISCHARGE OR RELEASE

30. Starting from October 2009:-

    (a) no person shall, without prior written notification to the Director General, discharge or release or permit the discharge or release of **sewage** onto or into any soil, or any inland waters or Malaysian waters. The written notification to the Director General shall be in the form as specified in the First Schedule of the Environmental Quality (Sewage) Regulations, 2009 (P.U.(A) 432/2009).

(b) no person shall, without prior written notification to the Director General, carry out any work on any solid waste transfer station or landfill, or construct on any land any facility or building that may result in a new source of **leachate** discharge or release. The written notification to the Director General shall be accompanied by the information as as specified in the First Schedule of the Environmental Quality (Control of Pollution From Solid Waste Transfer Station And Landfill) Regulations, 2009 (P.U.(A) 433/2009).

(c) no person shall, without prior written notification to the Director General-

- carry out any work on any premises that may result in a new source of discharge of **industrial effluent or mixed effluent**;
- construct on any land, building or facility designed or used for a purpose that may cause the land or building or facility to result in a new source of discharge of industrial effluent or mixed effluent;
- make or cause or permit to be made any change of, to, or in any plant, machine, or equipment used or installed at the premises that causes a material change in the quantity or quality of the discharge or release from an existing source; or
- carry out upgrading work of an existing industrial effluent treatment system that may result in a material change in the quantity and quality of the discharge or release.

The written notification to carry out any work, construction, or upgrading, or to make any change shall be submitted to the Director General in the form as specified in the Second Schedule of the (Industrial Effluent) Regulations, 2009 (P.U.(A) 434/2009).

GASEOUS EMISSION

31. For industries emitting gaseous and air emission, they are required to comply with the following air emission standards for the control of air pollution and gaseous emissions:-

    (a) Stack Gas Emission Standards from Environmental Quality (Clean Air) Regulations 1978 ***(Appendix J1)***

    (b) Recommended Malaysian Air Quality Guidelines (Ambient Standards) ***(Appendix J2)***

32. All industrial projects subject to EIA shall be designed and operated using Best Available Techniques (BAT) in achieving a high and acceptable level of protection for the environment.

SEWAGE, INDUSTRIAL EFFLUENT AND LEACHATE DISCHARGE

33. Industries discharging sewage, industrial effluent and leachate are required to comply with the following relevant discharge limits as stipulated in their respective regulations:-

    (a) Sewage discharge standards. ***(Appendix K1)***

    (b) Industrial effluent discharge limits. ***(Appendix K2)***

    (c) Leachate discharge standards ***(Appendix K3)***

CONTROL USE OF OZONE DEPLETING SUBSTANCES (ODS)

34. ODS are categorised as environmental hazardous substance under the Environmental Quality Act, 1974 (Amendment) 1996. These substances are listed as per ***Appendix L***. New investments relating to the use of these substances are prohibited. Existing industries are encouraged to develop and use substitutes and to change their ODS dependent processes as soon as possible.

SCHEDULED WASTES MANAGEMENT

35. Malaysia has developed a comprehensive set of legal provisions related to the management of toxic and hazardous wastes. The regulation was based on the cradle to grave principle. A facility which generates, stores, transports, treats or disposes scheduled waste is subject to the following regulations:

    (a) Environmental Quality (Scheduled Wastes) Regulations 2005;
    (b) Environmental Quality (Prescribed Conveyance) (Scheduled Wastes) Order 2005;
    (c) Environmental Quality (Prescribed Premises) (Scheduled Wastes Treatment and Disposal Facilities) Order 1989;
    (d) Environmental Quality (Prescribed Premises) (Scheduled Waste Treatment and Disposal Facilities) Regulations 1989;
    (e) Customs (Prohibition of Export) Order (Amendment)(No. 2) 1993, and;
    (f) Customs (Prohibition of Import) Order (Amendment)(No. 2) 1993.

36. A summary of the environmental requirements on scheduled wastes is given in ***Appendix M*** and the list of scheduled wastes is as per ***Appendix N***.

INCENTIVES FOR THE STORAGE, TREATMENT AND DISPOSAL OR TOXIC AND HAZARDOUS WASTES

37. To encourage proper industrial waste management, the following incentives are currently available:

    (a) Pioneer Status incentive for 5 years to companies which are principally engaged in an integrated operation for the storage, treatment and disposal of toxic and hazardous wastes;

    (b) As a further incentive for both the above categories of companies, the Government also extends the current import duty and sales tax exemption scheme for machinery, equipment, raw materials and components.

38. All facilities for storage, treatment and disposal of toxic and hazardous wastes must be approved by the Department of Environment before the application is made for the incentives.

INCENTIVES FOR THE INSTALLATION OF POLLUTION CONTROL EQUIPMENT

39. Under Income Tax Act 1967, Income Tax (Qualifying Plant Allowances) (Control Equipment) Rules 1998, the Government has provided special capital allowance incentive for the Companies which install pollution control equipment in the setting up of the plants. This allowance is at initial rate 40% and an annual rate of 20% for the qualifying plants stipulate under Schedule 3 of Income Tax Act 1997.

CONCLUSION

40. Investors are advised to consult the Department of Environment for further clarification of the requirements. They may do so by contacting the officers in the DOE Headquarters, DOE State Offices and/or to the DOE representative at MIDA. A checklist and a summary of approvals issued by the Department of Environment are given in ***Appendices O*** and ***P*** respectively. Investors are advised to provide complete information to avoid any delay in processing.

41. Investors are also encouraged to give attention to some of the following aspects of pollution control during the early planning stage of their projects:

    - look into pollution control measures as early as at the pre-feasibility study stage;
    - find possible modifications in the process line that can minimise waste generation;
    - pollution prevention to be viewed as important as production process;

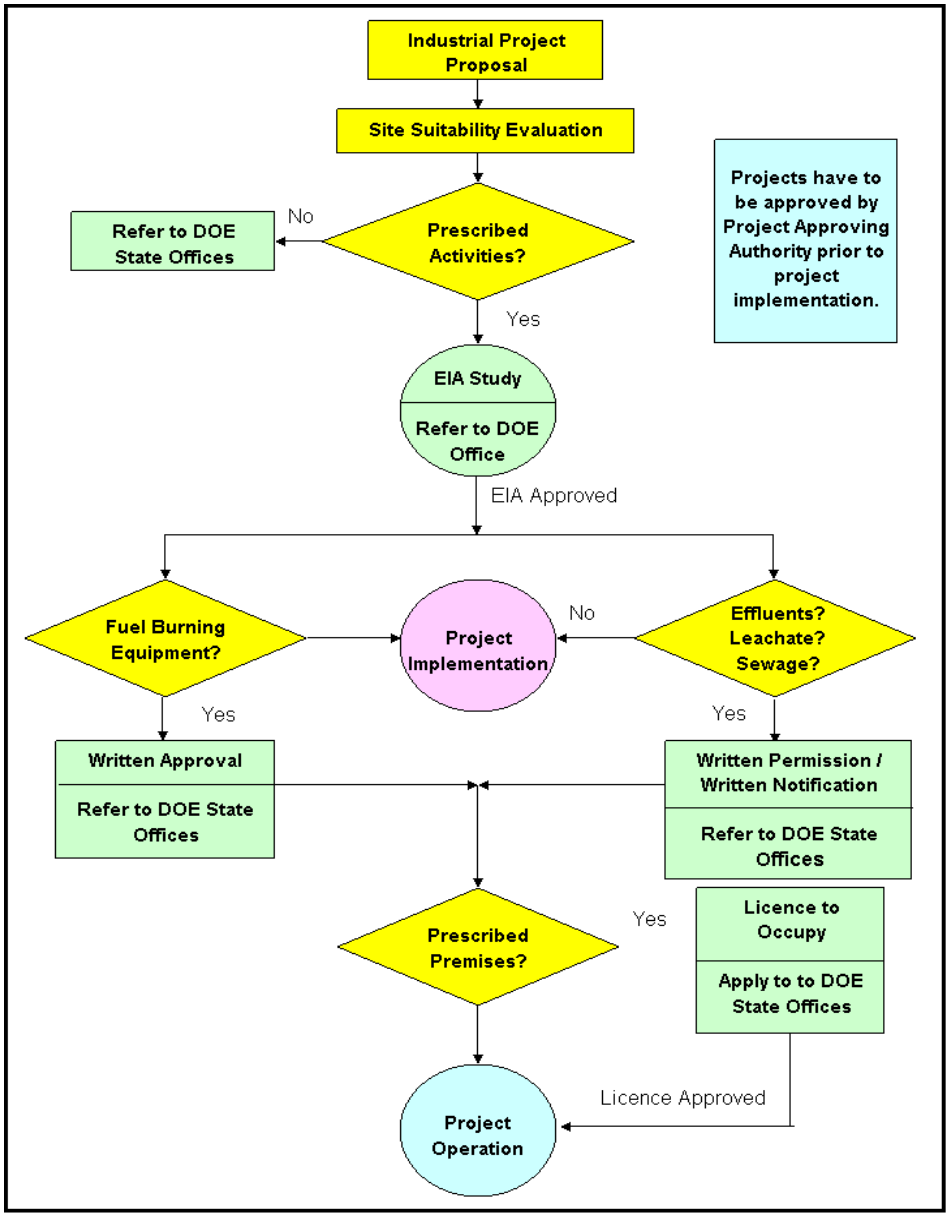
- engage in cleaner production; and
- consider recycling option as far as possible.

42. In conclusion, investors should be aware that environmental issues are now a growing concern all over the world. Today, the public demands a better quality of life and environment. Therefore, investors should not only work towards complying with the law but also to fulfil their public obligations.

Department of Environment
Malaysia

Figure 1

APPLICATION PROCEDURE FOR ENVIRONMENTALREQUIREMENTS IN MALAYSIA



STEP 1

- **Site Suitability Evaluation** (for non-Prescribed Activities).
- **EIA Approval** (for Prescribed Activities).

STEP 2

Activities subject to air and water pollution control:

- **Written Permission** (Air).
- **Written Notification** (Sewage, Industrial Effluent, Leachate).
- **Written Approval** (Prescribed Premises: Crude Palm Oil Mills, Raw Natural Rubber Mills, Scheduled Wastes Facilities)

STEP 3

Licence to occupy:

- Crude Palm Oil Mills.
- Raw Natural Rubber Factories.
- Scheduled Waste Treatment and Disposal Activities
- Prescribed Conveyance


APPENDICES
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APPENDIX A

LIST OF REGULATIONS AND ORDERS ENFORCED UNDER THE ENVIRONMENTAL QUALITY ACT, 1974 BY THE DEPARTMENT OF ENVIRONMENT

NO.	REGULATIONS/ORDER	P.U.(A)	EFFECTIVE DATE OF ENFORCEMENT
1.	Environmental Quality (Prescribed Premises)(Crude Palm Oil) Regulations 1977	342	1st July, 1977
2.	Environmental Quality (Licensing) Regulations 1977	198	1st October, 1977
3.	Environmental Quality (Clean Air) Regulations 1978	280	1st October, 1978
4.	Environmental Quality (Compounding of Offences) Rules 1978	281	1st October, 1978
5.	Environmental Quality (Prescribed Premises)(Raw Natural Rubber) Regulations 1978	338	1st December, 1978
6.	*Environmental Quality (Sewage and Industrial Effluents) Regulations 1979 *(Revoked by PU(A) 432/2009)*	12	1st January 1981
7.	Environmental Quality (Control of Lead Concentration in Motor Gasoline) Regulations 1985	296	1st August, 1986
8.	Environmental Quality (Motor Vehicles Noise) Regulations 1987	244	1st July, 1987
9.	Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 1987	362	1st April, 1988
10.	Environmental Quality (Scheduled Wastes) Regulations 1989 *(Revoked by PU(A) 294/2005)*	139	1st May, 1989

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NO.	REGULATIONS/ORDER	P.U.(A)	EFFECTIVE DATE OF ENFORCEMENT
11.	Environmental Quality (Prescribed Premises)(Scheduled Wastes Treatment And Disposal Facilities) Order 1989	140	1st May, 1989
12.	Environmental Quality (Prescribed Premises)(Scheduled Wastes Treatment And Disposal Facilities) Regulations 1989	141	1st May, 1989
13.	Environmental Quality (Prescribed Premises) (Crude Palm Oil) Order 1977	199	1st July, 1978
14.	Environmental Quality (Prescribed Premises) (Raw Natural Rubber) Order 1978	250	1st April, 1979
15.	Environmental Quality (Delegation of Powers on Marine Pollution Control) Order 1993	276	24th September, 1993
16.	Environmental Quality (Prohibition on the use of Chlorofluoro-carbons and other Gases as Propellants and Blowing Agents) Order 1993	434	25th October, 1993
17.	Environmental Quality (Delegation of Powers on Marine Pollution Control) Order 1994	537	18th December, 1994
18.	Environmental Quality (Prohibition on the Use of Controlled Substance in Soap, Synthetic Detergent and other Cleaning Agents) Order 1995	115	15th April, 1995
19.	Environmental Quality (Control of Emission from Diesel Engines) Regulations 1996	429	1st September, 1996
20.	Environmental Quality (Control of Emission from Petrol Engines) Regulations 1996	543	1st November, 1996

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NO.	REGULATIONS/ORDER	P.U.(A)	EFFECTIVE DATE OF ENFORCEMENT
21.	Environmental Quality (Refrigerant Management) Regulations 1999	451	1st January, 2000
22.	Environmental Quality (Halon Management) Regulations 1999	452	1st Jan, 2000
23.	Environmental Quality (Delegation of Powers) Order 1999 *(Revoked by PU(A) 365/2005)*	501	15th November, 1999
24.	Environmental Quality (Compounding of Offences)(Open Burning) Rules 2000	310	21st August, 2000
25.	Environmental Quality (Delegation Of Powers)(Investigation of Open Burning) Order 2000	311	21st August, 2000.
26.	Environmental Quality (Delegation of Power) (Halon Management) Order 2000	490	29th December 2000
27.	Environmental Quality (Delegation of Powers) (Perbadanan Putrajaya) Order 2002	233	2nd June 2002
28.	Environmental Quality (Appeal Board) Regulations 2003	115	21st April 2003
29.	Environmental Quality (Declared Activities) (Open Burning) Order 2003	460	1st January 2004
30.	Environmental Quality (Control of Emissions From Motorcycles) Regulations 2003	464	1st January 2004

APPENDIX A

NO.	REGULATIONS/ORDER	P.U.(A)	EFFECTIVE DATE OF ENFORCEMENT
31.	Environmental Quality (Dioxin and Furan) Regulations 2004	104	1st May 2004
32.	Environmental Quality (Prescribed Conveyance) (Scheduled Wastes) Order 2005	293	15th August 2005
33.	Environmental Quality (Scheduled Wastes) Regulations 2005	294	15th August 2005
34.	Environmental Quality (Delegation of Powers) Order 2005	365	2nd September 2005
35.	Environmental Quality (Control of Petrol And Diesel Properties) Regulations 2007	145	1st April 2007
36.	Environmental Quality (Sewage) Regulations 2009.	432	10th December 2009
37.	Environmental Quality (Control of Pollution From Solid Waste Transfer Station and Landfill) Regulations 2009	433	10th December 2009
38.	Environmental Quality (Industrial Effluent) Regulations 2009;	434	10th December 2009

APPENDIX B

LIST OF PRESCRIBED ACTIVITIES
[EXTRACT FROM THE ENVIRONMENTAL QUALITY (PRESCRIBED ACTIVITIES) (ENVIRONMENTAL IMPACT ASSESSMENT) ORDER 1987]

1. Agriculture

(a) Land development schemes covering an area of 500 hectares or more to bring forest land into agriculture production.

(b) Agriculture programmes necessitating the resettlement of 100 families or more.

(c) Development of agricultural estates covering an area of 500 hectares or more involving changes in type of agricultural use.

2. Airport

(a) Construction of airports (having an airstrip of 2,500 meters or longer).

(b) Airstrip development in state and national parks.

3. Drainage And Irrigation

(a) Construction of dams and man-made lakes and artificial enlargement of lakes with surface areas of 200 hectares or more.

(b) Drainage of wetland, wild-life habitat or of virgin forest covering an area of 100 hectares or more.

(c) Irrigation schemes covering an area of 5,000 hectares or more.

4. Land Reclamation

Coastal reclamation involving an area of 50 hectares or more.

5. Fisheries

(a) Construction of fishing harbours.

(b) Harbour expansion involving an increase of 50 per cent or more in fish landing capacity per annum.

(c) Land based aquaculture projects accompanied by clearing of mangrove swamp forests covering an area of 50 hectares or more.

6. Forestry

(a) Conversion of hill forest land to other land use covering an area of 50 hectares or more.

(b) Logging or conversion of forest land to other land use within the catchments area of reservoirs used for municipal water supply, irrigation or hydropower generation or in areas adjacent to state and national parks and national marine parks.

(c) Logging covering an area of 500 hectares or more.

(d) Conversion of mangrove swamps for industrial, housing or agricultural use covering an area of 50 hectares or more.

(e) Clearing of mangrove swamps in islands adjacent to national marine parks.

7. Housing

Housing development covering an area of 50 hectares or more.

8. Industry

(a) Chemical -Where production capacity of each product or of combined products is greater than 100 tonnes / day.

(b) Petrochemicals -All sizes.

(c) Non-ferrous -Primary smelting:

		Aluminium	-all sizes
		Copper	-all sizes
		Others	-producing 50 tonnes/day and above of product.
(d)	Non-Metallic	- Cement	- for clinker through put of 30 tonnes/hour and above.
		- Lime	- 100 tonnes/day and above burnt lime rotary kiln or 50 tonnes/day and above vertical kiln.
(e)	Iron and Steel	- Require iron ore as raw materials for production greater than 100 tonnes/ day; or Using scrap iron as raw materials for production greater than 200 tonnes/day	
(f)	Shipyards	- Dead Weight Tonnage greater than 5000 tonnes.	
(g)	Pulp and Paper Industry	- Production capacity greater than 50 tonnes/day.	

9. Infrastructure

(a) Construction of hospitals with out fall into beachfronts used for recreational purposes.

(b) Industrial estate development for medium and heavy industries covering an area of 50 hectares or more.

(c) Construction of expressways.

(d) Construction of national highways.

(e) Construction of new townships.

10. Ports

(a) Construction of ports

(b) Port expansion involving an increase of 50 per cent or more in handling capacity per annum.

11. Mining

(a) Mining of minerals in new areas where the mining lease covers a total area in excess of 250 hectares.

(b) Ore processing, including concentrating for aluminium, copper, gold or tantalum.

(c) Sand dredging involving an area of 50 hectares or more.

12. Petroleum

(a) Oil and gas fields development.

(b) Construction of off-shore and on-shore pipelines in excess of 50 kilometres in length.

(c) Construction of oil and gas separation, processing, handling, and storage facilities.

(d) Construction of oil refineries.

(e) Construction of product depots for the storage of petrol, gas or diesel (excluding service stations) which are located within 3 kilometres of any commercial, industrial or residential areas and which have a combined storage capacity of 60,000 barrels or more.

13. Power Generation And Transmission

(a) Construction of steam generated power stations burning fossil fuels and having a capacity of more than 10 megawatts.

(b) Dams and hydroelectric power schemes with either or both of the following:

(i) dams over 15 meters high and ancillary structures covering a total area in excess of 40 hectares;

(ii) reservoirs with a surface area in excess of 400 hectares.

(c) Construction of combined cycle power stations.

(d) Construction of nuclear-fueled power stations.

APPENDIX B

14. Quarries

Proposed quarrying of aggregate, limestone, silica quartzite, sandstone, marble and decorative building stone within 3 kilometres of any existing residential, commercial or industrial areas, or any area for which a licence, permit or approval has been granted for residential, commercial or industrial development.

15. Railways

(a) Construction of new routes.

(b) Construction of branch lines.

16. Transportation

Construction of Mass Rapid Transport projects.

17. Resort And Recreational Development

(a) Construction of coastal resort facilities or hotels with more than 80 rooms.

(b) Hill station resort or hotel development covering an area of 50 hectares or more.

(c) Development of tourist or recreational facilities in national parks.

(d) Development of tourist or recreational facilities or islands in surrounding waters which are gazetted as national marine parks.

18. Waste Treatment And Disposal

(a) Toxic and Hazardous Waste
- (i) Construction of incineration plant
- (ii) Construction of recovery plant (off-site)
- (iii) Construction of wastewater treatment plant (off-site)
- (iv) Construction of secure landfill facility
- (v) Construction of storage facility (off-site)

(b) Municipal Solid Waste

(i) Construction of incineration plant
(ii) Construction of composting plant
(iii) Construction of recovery/recycling plant
(iv) Construction of municipal solid waste landfill facility

(c) Municipal Sewage

(i) Construction of wastewater treatment plant
(ii) Construction of marine out fall.

19. Water Supply

(a) Construction of dams, impounding reservoirs with a surface area of 200 hectares or more.

(b) Groundwater development for industrial, agricultural or urban water supply of greater than 4,500 cubic meters per day.

APPENDIX C

LIST OF PRESCRIBED ACTIVITIES WHICH REQUIRED DETAILED EIA PROCEDURES

1. Iron and steel Industry.
2. Pulp and paper mills.
3. Cement plant.
4. Construction of coal fired power plant.
5. Construction of dams and hydroelectric power schemes.
6. Land reclamation.
7. Incineration plant (scheduled waste & solid waste).
8. Sanitary landfill.
9. Project involving land clearing where 50% of the area or more having slopes exceeding 25 degrees (except quarry).
10. Logging involving an area exceeding 500 hectares.
11. Development of tourist or recreational facilities on islands in surrounding waters which are gazetted as national marine parks.
12. Construction of recovery plant (off-site) for lead-acid battery wastes.
13. Scheduled wastes recovery or treatment facility generating significant amount of wastewater which is located upstream of public water supply intake.
14. Non ferrous – primary smelting.

APPENDIX D

LIST OF GUIDELINES (DEPARTMENT OF ENVIRONMENT)

1. *A Handbook of EIA Guidelines (latest edition 2007).*
2. *EIA Guidelines for Coastal Resort Development Projects (latest edition 2007).*
3. *Guidelines for Petrochemical Industries (latest edition 2008).*
4. *Guidelines for Industrial Estate Development (latest edition 2007).*
5. Penilaian Kesan Kepada Alam Sekeliling Bagi Pembangunan Padang Golf 1994.
6. *Guidelines for Groundwater and/Or Surface Water Supply Projects 1995*
7. *Guidelines for Thermal Power Generation and/Or Transmission Projects 1995 (latest edition) 2009.*
8. *EIA Guidelines for Drainage and/Or Irrigation Projects 1995.*
9. *EIA Guidelines for Fishing Harbours and/Or Land Based Aquaculture Projects 1995.*
10. *EIA Guidelines for Dam and/Or Reservoir Projects 1995.*
11. *EIA Guidelines for Mines and Quarries (latest edition) 2009.*
12. *EIA Guidelines for Development of Resort and Hotel Facilities in Hill Station (latest edition) 2009.*
13. *EIA Guidelines for Development of Tourist and Recreational Facilities in National Parks (latest edition 2008).*
14. *EIA Guidelines for Development of Tourist and Recreational on Island in Marine Parks (latest edition 2008).*
15. *EIA Guidelines for Industrial Projects (latest edition 2007).*
16. *EIA Guidelines For Municipal Solid Waste And Sewage Treatment And Disposal Projects (latest edition 2007)*
17. *EIA Guidelines for Toxic and Hazardous Waste Treatment and Disposal Projects (latest edition 2007).*
18. *EIA Guidelines for Petroleum Industries (latest edition 2008).*
19. *EIA Guidelines for Forestry 1998.*
20. *EIA Guidelines for Coastal and Land Reclamation (latest edition 2008).*
21. *EIA Guidelines for Housing and Township Development Project 2003.*
22. *EIA Guidelines for Agriculture 2003.*
23. *EIA Guidelines for Risk Assessment 2004.*
24. *Guidelines for the Siting and Zoning of Industries (latest edition 2008).*
25. *Guidelines for Prevention and Control of Soil Erosion and Siltation in Malaysia (latest edition 2008).*
26. *Environmental Requirements: A Guide for Investors (latest edition 2008).*

APPENDIX D

EIA Guidance Documents (*refer to www.doe.gov.my)*

1. *Sand Mining/Dredging*
2. *Housing Development*
3. *Coastal Reclamation*
4. *Construction of Scheduled Wastes Recovery Plant (Off-Site)*
5. *Establishment of Industries Located Within Gazetted and EIA Approved Industrial Sites.*

APPENDIX E

LIST OF DEPARTMENT OF ENVIRONMENT OFFICES

HEAD OFFICE

Director General
Department of Environment
Level 1-4, Podium 2 & 3
Wisma Sumber Asli
No. 25, Perisaran Perdana, Precinct 4
Federal Government Administrative Center
62574 PUTRAJAYA
Tel: 03-88712000
Fax: 03-8889987
Website: www.doe.gov.my

STATE & BRANCH OFFICE

PERLIS

Director
Department of Environment Perlis Head Office
Level 2, Bangunan KWSP
Jalan Bukit Lagi
01000 KANGAR
Tel: 04-9793100
Fax: 04-9772822

KEDAH

Director
Department of Environment Kedah Head Office
1st Floor, Menara Zakat
Jalan Teluk Wanjah
05200 ALOR SETAR
Tel: 04-7332832
Fax: 04-7337530

Head
Department of Environment (Langkawi Branch)
No. 2&3 Tingkat Atas
Lorong Tiram 2
Pusat Mas Jalan Kelibang
07000 KUAH, LANGKAWI
Tel: 04-9664633/9665315
Fax: 04-9663950

Head
Department of Environment (Sungai Petani Branch)
1st Floor, No. 7 & 8, Jalan Bank
09000 SUNGAI PETANI
Tel: 04-4235633
Fax: 04-4232832

Head
Department of Environment (Kulim Branch)
Lot 6, KHTP Administrative Center
Kulim Hi-Tech Park
09000 KULIM
Tel: 04-4037675
Fax: 04-4036496

PERAK

Director
Department of Environment Perak Head Office
9th Floor, Bangunan Seri Kinta
Jalan Sultan Idris Shah
30000 IPOH
Tel: 05-2542744
Fax: 05-2558595

Head
Department of Environment (Taiping Branch)
Tingkat 4 Bangunan Majlis Perbandaran Taiping
Jalan Kota, **34000 TAIPING**
Tel: 05-8060858
Fax: 05-8060875

Head
Department of Environment (Teluk Intan Branch)
No 1, Medan Sri Intan
Jalan Sekolah, **36000 TELUK INTAN**
Tel: 05-6214498

Head
Department of Environment (Gopeng Branch)
Pusat pengujian Asap Kenderaan
PT2055 & PT2056
Kawasan Perindustrian Gopeng
31500 GOPENG.
Tel : 05 3541 572
Fax: 05 3541 577

SELANGOR

Director
Department of Environment Selangor Head Office
12th Floor, Wisma Sunwaymas,
Jalan Tengku Ampuan Zabedah C9/C
Seksyen 9,
40010 SHAH ALAM
Tel: 03-55194787
Fax: 03-55194788

Head
Department of Environment (Gombak Branch)
Jalan SBC 8, Taman Sri Gombak
68100 BATU CAVES
Tel: 03-61869487
Fax: 03-61869873

Head
Department of Environment (Kajang Branch)
3rd Floor, Kompleks Perhentian Kajang
Jalan Reko, **43000 KAJANG**
Tel: 03-87376100

Fax: 03-8737511

Head
Department of Environment (Sabak Bernam Branch)
No.12, Jalan Gemilang
Taman Gemilang
43500 SUNGAI BESAR
Tel: 03-32244240
Fax: 03-32243280

APPENDIX E

LIST OF DEPARTMENT OF ENVIRONMENT OFFICES

Head
Department of Environment (Sepang Branch)
No. B28-1 & B28-2
Jalan 7, Bandar Baru Salak Tinggi
43900 SEPANG
Tel: 03-87061340
Fax: 03-87061336

KUALA LUMPUR

Director
Department of Environment Kuala Lumpur Head Office
1st Floor, Wisma SCA
No.3, Jalan Sungai Besi
57100 KUALA LUMPUR
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Fax: 03-92216437

NEGERI SEMBILAN

Director
Department of Environment Negeri Sembilan Head Office
5th Floor, Arab Malaysian Business Centre
Jalan Pasar
70200 SEREMBAN
Tel: 06 - 7649017, 7649018, 7672461
Fax: 06 – 7649019

Head
Department of Environment (Kuala Pilah Branch)
No.564, 1st Floor
Bangunan Wisma Kuala Pilah
Jalan Perpateh
72000 KUALA PILAH
Tel: 06-4816288
Fax: 06-4816310

MELAKA

Director
Department of Environment Melaka Head Office
2nd Floor, Bangunan Graha Maju
Jalan Graha Maju
75300 MELAKA
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Fax: 06-2847845

JOHOR

Director
Department of Environment Johor Head Office
Level 1 &2, Bangunan Hasil
Jalan Padi Emas 1, Bandar Baru Uda
81200 JOHOR BAHRU
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Fax: 07-2356071/2356051

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Department of Environment (Muar Branch)
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Wisma Sg. Abong
84000 MUAR
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Fax: 06-9556128

Head
Department of Environment (Batu Pahat Branch)
7-03, Tingkat 7
Wisma Sin Long
No. 9, Jalan Zabedah
83000 BATU PAHAT
Tel: 07-4388491
Fax: 07-4388492

Head
Department of Environment (Kluang Branch)
Tingkat 8, Bangunan Wisma Bunga
No. 11, Jalan Lambak
86000 KLUANG
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Fax: 07-7767493

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81620 KOTA TINGGI
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Fax: 07-8266366

SARAWAK

Director
Department of Environment Sarawak Head Office
Level 7-9, Bangunan Wisma STA
No. 26, Jalan Datuk Abang Abdul Rahim
93450 KUCHING
Tel: 082-482535 /339535
Fax: 082-480863

Head
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No.131 Tingkat 5, Grand Merdin
Jalan Kpg Nyabor,
96000 SIBU
Tel : 084-349720/334790
Fax : 084-334934

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Tingkat 2, Bangunan BDA
No.1 Jalan Tg Kidurong
97012 BINTULU
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Fax : 086-312958

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Tingkat 8, Plaza Yu Lan
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98000 MIRI
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Fax : 085-428994

APPENDIX E

LIST OF DEPARTMENT OF ENVIRONMENT OFFICES

SABAH

Director
Department of Environment Sabah Head Office
Aras 4, Blok A
Kompleks Pentadbiran Kerajaan Persekutuan Sabah
Jalan UMS-Sulaman, Likas
88450 KOTA KINABALU
Tel : 088-488172 / 488169 / 488166
Fax : 088-488177

Head
Department of Environment (Sipitang Branch)
Lot 21 & 22
Pusat Membeli-belah Sipitang
89850 SIPITANG
Tel : 087-822601 / 822603
Fax : 087-822627

Head
Department of Environment (Sandakan Branch)
Tingkat 2, Wisma Saban
Lot 1 & 2, Megah Light Industrial Estate
Bt. 7, Jalan Lubuk
90000 SANDAKAN
Tel : 089-674653 / 674745
Fax : 089-671384

Head
Department of Environment (Tawau Branch)
TB 4415/6/7, Tingkat 2
Lot 6,7 & 8
Lorong Sabindo Square
P/S 60630, **91013 TAWAU**
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Fax : 089-767250

PAHANG

Director
Department of Environment Pahang Head Office
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Jalan Telok Sisek
25662 KUANTAN
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Fax : 5162075

Head
Department of Environment (Rompin Branch)
Lot No. PT 859, No. 3, Jalan Syed Osman
26800 KUALA ROMPIN
Tel : 09-414 5522 / 23
Fax : 09-414 5524

Head
Department of Environment (Temerloh Branch)
NO. 12 & 14, Jalan Pak Sako 3 Bangunan Sri Semantan
28000 TEMERLOH
Tel : 09-296 4688 / 3603
Fax: 09-296 5198

Head
Department of Environment (Cameron Highlands Branch)
RL C3 SHG 3, 4, 6, 8, 10 Taman Royal Lily
39000 TANAH RATA
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Fax: 05-4915323

F.T. LABUAN

Director
Department of Environment Labuan Head Office
4th Floor, Block 4
Kompleks Ujana Kewangan
87007 W.P. LABUAN
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Fax: 087-408774

PENANG

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Department of Environment Pulau Pinang Head Office
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Wisma Persekutuan,Seberang Perai Utara,
13200 KEPALA BATAS
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Fax : 04-3316078

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Unit 4.3 Kompleks Mayang Mall
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Fax : 04- 6430692

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Department of Environment Terengganu Head Office
Wisma Alam Sekitar
Off Jalan Sultan Omar**,**
20300KUALA TERENGGANU
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Fax : 09-6227877/6226877

APPENDIX E

LIST OF DEPARTMENT OF ENVIRONMENT OFFICES

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24000 KEMAMAN
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Fax: 09-8502421

KELANTAN

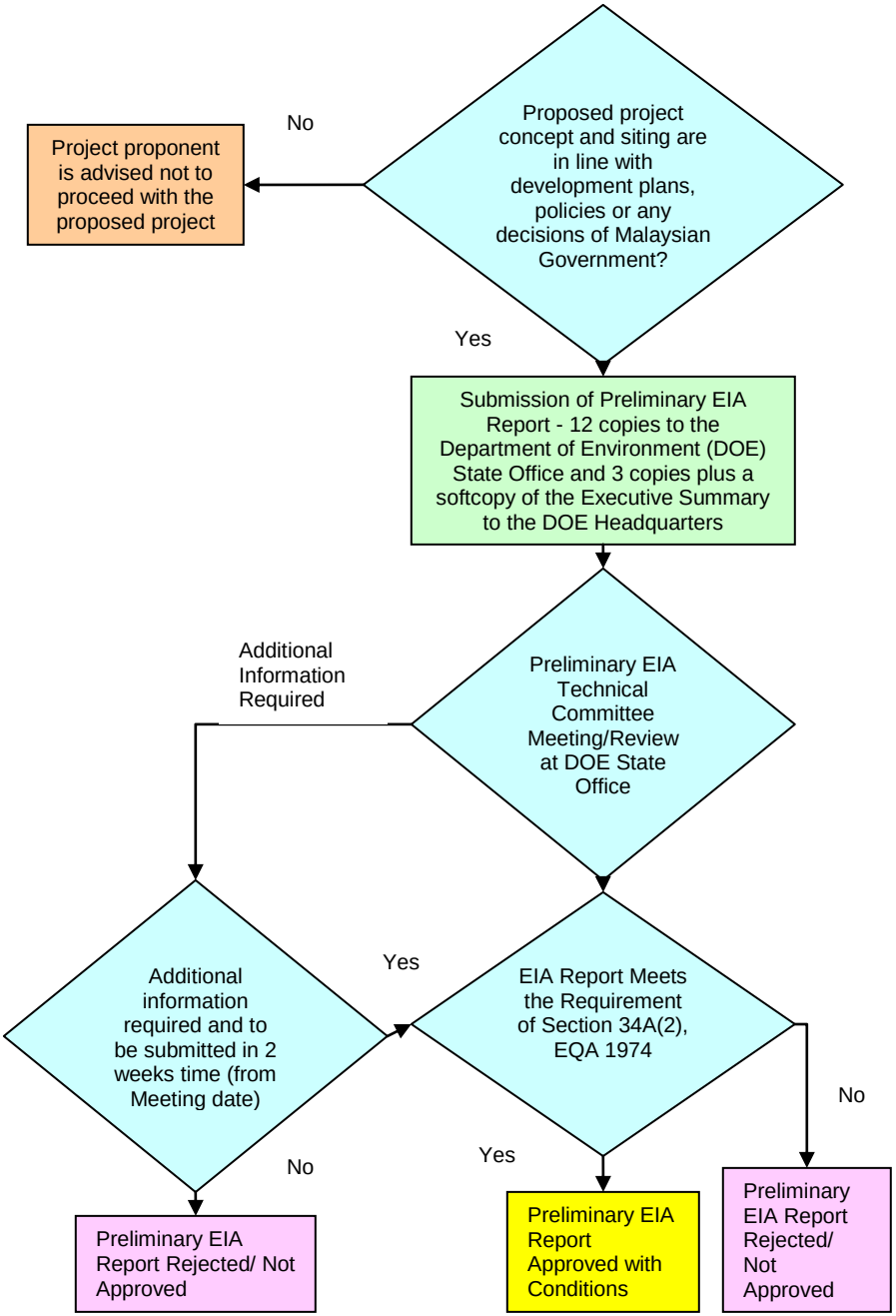
Director
Department of Environment Kelantan Head Office
Lot 322 -324, Seksyen 27
Jalan Sri Cemerlang
15300 KOTA BHARU
Tel : 09-7414888
Fax : 09- 7479014

Environmental Institute of Malaysia (EiMAS)

Director
Environmental Institute of Malaysia (EiMAS)
Department of Environment
Kampus Universiti Kebangsaan Malaysia
Beg Berkunci No 24
43600 BANGI
Tel: 03-8926 1500
Fax: 03-8926 1700

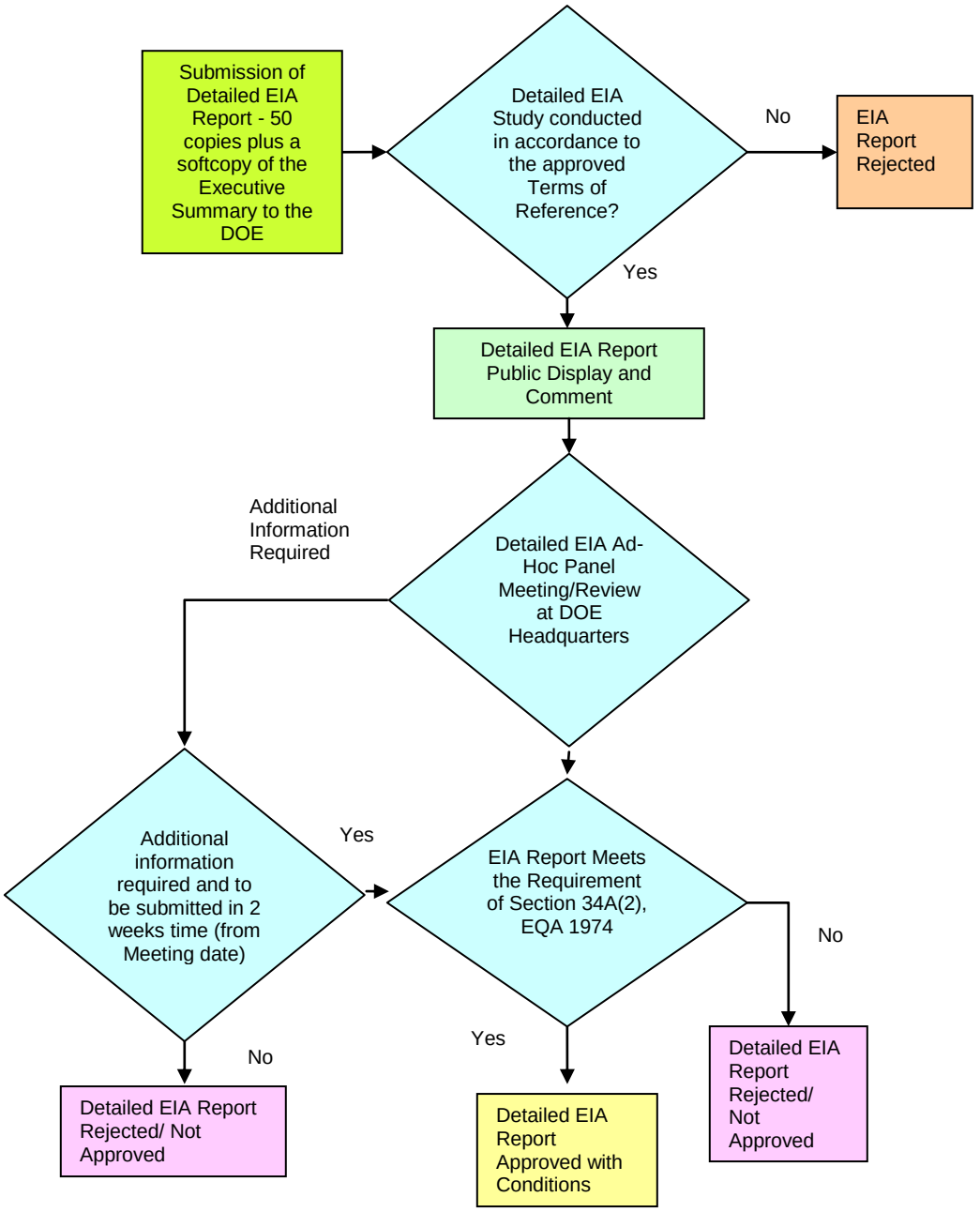
APPENDIX F1

The Procedure for Preliminary EIA



APPENDIX F2

The Procedure for Detailed EIA



Guidelines for the Siting and Zoning Of Industries

Table 1: TABLE OF SUMMARY ON THE SITING AND ZONING OF INDUSTRIES

INDUSTRIES	DESCRIPTIONS AND STANDARD REQUIREMENTS	BUFFER ZONE
Light Type A	• Industries shall not generate excessive noise. • Industries shall not accommodate stacks or chimneys thus producing no gaseous emissions. • Industries shall not discharge industrial effluent apart from sewage and kitchen waters and non-toxic solid wastes. • Industries shall not use any raw materials which are toxic and hazardous and therefore will not produce any scheduled wastes. • Industries shall have height restrictions determined by the Local Authority. • Industries shall use electricity and gas as fuels. • Industries shall not use any radioactive material and scheduled wastes. *Note: Light industries (Type A) shall not produce any industrial emissions and significant discharges.*	**30 m**
Light Type B	• Industries shall not generate excessive noise. • Industries shall not accommodate stacks or chimneys thus producing no gaseous emissions. • Industries shall not use any raw materials or produce any scheduled wastes. • Industries shall have height restrictions determined by the Local Authority. • Industries shall produce industrial effluent that can be treated on site before being discharged to meet Standard A or B of the Environmental Quality (Sewage and Industrial Effluent) Regulation 1979 depending on the site. • Compatibility in industrial mixing, eg. Between food based industries and leather-based industries. • Industries shall not use any radioactive materials or scheduled wastes. *Note: Industrial Effluent discharge and gaseous emissions shall meet the relevant Environmental Quality Regulations as stipulated in the Environmental Quality Act, 1974*.	**50 m**

APPENDIX G

Guidelines for the Siting and Zoning Of Industries

Table 1: TABLE OF SUMMARY ON THE SITING AND ZONING OF INDUSTRIES

INDUSTRIES	DESCRIPTIONS AND STANDARD REQUIREMENTS	BUFFER ZONE
Medium	• These industries could generate significant noise from machineries, generators etc but which could be controlled to meet the level not exceeding 65dB (A) Leq at the factory boundary, and not exceeding 55 and 45 dB(A) Leq at the residential/buffer zone boundary during day and night time respectively. • Industries could emit some gaseous emission but which can be controlled to comply with the Environmental Quality (Clean Air) Regulation 1978. • The industries could produce some industrial effluent that can be treated on site before being discharged to meet the Environmental Quality (Sewage and Industrial Effluent) Regulation 1979, standard A or B depending on the site. • These industries could use toxic and hazardous raw materials in its productions. • The industries could produce scheduled wastes but which can be treated on site to comply with the Environmental Quality (Scheduled Wastes) Regulation (Amendment) 2007 or disposed off from their premises. • These industries could produce fumes and odors that can possibly affect the workers health and the neighbouring plant, but for which design solutions are available for prevention and shall comply with the Environment Quality (Clean Air) Regulation 1978. • The stack height shall conform to the production capacity of the specific plant to be based on air quality modeling and simulation with the DOE approval. • The industries shall be located in designated industrial estates or zones with good compatibility within the industrial estates and zones to ensure good industrial mixing. • These industries shall not use any radioactive materials. *Note: All discharges and emissions shall meet the relevant Environmental Quality Regulations stipulated in the Environmental Quality Act, 1974*.	**250 m**

APPENDIX G

Guidelines for the Siting and Zoning Of Industries

Table 1: TABLE OF SUMMARY ON THE SITING AND ZONING OF INDUSTRIES

INDUSTRIES	DESCRIPTIONS AND STANDARD REQUIREMENTS	BUFFER ZONE
Heavy	• Heavy industries must be sited in designated industrial estates or designated industrial zones with sufficient buffer zones from residential areas, livestock farm, agricultural farms, recreation areas and tourist designated areas. A minimum distance from the fence of the industry to the nearest residential area is 500 meters, to be finalised by the EIA Report. • These industries could generate excessive noise from its operations but for which design solutions are incorporated in the form of appropriate high technologies to reduce the noise level generated to a level to meet the WHO recommended level of not greater that 65 dB(A) at the factory boundary and not exceeding 55 and 45 dB(A) at the residential/buffer zone boundary during day and night time respectively. • These industries could produce gaseous emissions at rates, volumes and concentrations that will require detailed engineering design incorporated into the operation and control mechanisms and other mitigation measures to reduce these emissions to comply with the Environmental Quality (Clean Air) Regulation 1978. • Stack heights shall be determined by detailed air quality modelling and simulations within the EIA Report. • These industries could produce industrial effluent at rates, volumes and concentrations that will require detailed engineering design incorporated into the operation and control mechanisms to meet the Environmental Quality (Sewage and Industrial Effluent) Regulation 1979 and/or to dispose such wastes to the Central Treatment Facilities. • The industries could use radioactive materials and scheduled wastes which are toxic and hazardous for which pollution control technology, design solution and mitigation measures shall meet the necessary approvals. • These industries could generate scheduled wastes which cannot be treated on-site or which exceed the levels recommended in the Environmental Quality (Scheduled Wastes) Regulation (Amendment) 2007.	**500 m**

APPENDIX G

Guidelines for the Siting and Zoning Of Industries

Table 1: TABLE OF SUMMARY ON THE SITING AND ZONING OF INDUSTRIES

INDUSTRIES	DESCRIPTIONS AND STANDARD REQUIREMENTS	BUFFER ZONE
	The scheduled wastes generation to the acceptable level or they can be disposed for treatment at a centralized scheduled wastes treatment plant, or recycled within its premise, or sold to other parties for the purpose of recycling. • Siting within an industrial estate or zones should take into consideration the compatibility in industrial mixing. • Hot water discharges shall be supported by thermal plume modelling and simulations to be clearly presented in the EIA Report. *Note: All discharges and emissions shall meet the relevant Environmental Quality Regulations as stipulated in the Environmental Quality Act, 1974 and using appropriate control measures.*	
Special	• Industries that by their process description and plant outputs are involved in the manufacturing of products that are generally accepted as being categorized as high technology based products. • Industries that utilize high/advanced and clean technology in their process and control mechanisms, as verified by EIA documents, and backed up by examples of parent plants or other plants operating elsewhere. • Industries that will eliminate or minimize emissions, wastewater discharges and schedule waste production. • Industries shall be located within designated special industries zones, being compatible with the neighbouring plants, which are designed to be environmentally friendly. *Note: Near-zero emissions and discharges shall be achieved by incorporating clean technologies.*	**200 m**

APPENDIX H

GUIDANCE DOCUMENT FOR THE PREPARATION OF ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REPORT

ESTABLISHMENT OF INDUSTRIES LOCATED WITHIN GAZETTED AND EIA APPROVED INDUSTRIAL SITES

INTRODUCTION

1. This document is prepared as a guidance to investors, project proponents and environmental consultants in defining the key issues and outlining the scope in the preparation of an environmental (EIA) impact assessment study for the establishment of industries located within gazetted and EIA approved industrial areas.

2. This document is also intended to complement other guidance given in the following guidelines where terms and procedures are defined:

   a. A Handbook of Environmental Impact Assessment Guidelines;
   b. Guidelines for the Siting and Zoning of Industries;
   c. Environmental Impact Assessment Guidelines for Industrial Projects.
   d. Environmental Impact Assessment Guidelines for Risk Assessment.

CATEGORIES OF INDUSTRIAL SECTOR – PRESCRIBED ACTIVITIES

3. All industrial sector projects as listed below are prescribed activities under the Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 1987 (EIA Order, 1987) and are subject to an EIA study:

Activity 8. Industry

(a) Chemical - *Where production capacity of each product or of combined products is greater than 100 tonnes/day*.

(b) Petrochemicals - *All sizes.*

(c) Non-ferrous - *Primary smelting*:

Aluminium -all size
Copper - all sizes
Others - producing 50 tonnes/day and above of product.

(d) Non-Metallic - *Cement - for clinker through put of 30 tonnes/hour and above.*

- *Lime - 100 tonnes/day and above burnt lime rotary kiln or 50 tonnes/day and above vertical kiln.*

(e) Iron and Steel - *Require iron ore as raw materials for production greater than 100 tonnes /day;*
or
Using scrap iron as raw materials for production greater than 200 tonnes/day

(f) Shipyards - *Dead Weight Tonnage greater than 5000 tonnes.*

(g) Pulp and Paper Industry - *Production capacity greater than 50 tonnes/day.*

4. Due to the sensitivity of the project and polluting potential from the operations, proposal for Iron and steel mills and Pulp and paper industries have been required to go through the Detailed EIA Procedures which involves public participation.

SUMMARY OF RELEVANT ENVIRONMENTAL REGULATIONS

5. The Environmental Quality Act 1974 and its accompanying regulations call for environmental impact assessment, pollution control assessment, monitoring and self-enforcement. In addition to the requirement for an EIA for prescribed activities, various provisions under specific regulations relating to industry are as below:

A. Written Permission

Any person intending to carry out activities as listed below must obtain prior written permission from the Director-General of Environmental Quality:

i. Construction of any building or carrying out of any work that may result in a new source of effluent or discharge as stipulated under Regulation 4, Environmental Quality (Sewage and Industrial Effluents) Regulations 1979; ***(not applicable - revoked by Regulations PU(A) 432/2009, 433/2009 and 434/2009)***

ii. *Construction on any land or any building; or carrying out work that would cause the land or building to become prescribed premises (crude palm oil mills, raw natural rubber processing mills, and treatment and disposal facilities of scheduled wastes), as stipulated under Section 19 of the Environmental Quality Act, 1974.*

** Such application has to be accompanied by a prescribed fee.*

B. *Written approval*

Applicants intending to carry out activities as listed below shall obtain prior written approval from the Director-General of Environment Quality:

i. *New installation near dwelling area as detailed out in Regulation 4 and First Schedule of the Environmental Quality (Clean Air) Regulations 1978.*

ii. *Any erection (including incinerators), installation, resiting or alteration of fuel burning equipment that is rated to consume pulverised fuel or solid fuel at 30 kg or more per hour, or liquid or gaseous fuel at 15 kg or more per hour as stipulated in Regulations 36 and 38 of the Environmental Quality (Clean Air) Regulations 1978.*

iii. *Any erection, installation, resiting, or alteration of any chimney from or through which air impurities may be emitted or discharged, respectively.*

** No fee imposed for the application of written approval.*

C. *Gaseous Emmission And Effluent Standards* *Industries are required to comply with both air emission and effluent discharge standards which are regarded as acceptable conditions allowed in Malaysia, as stipulated in the Environmental Quality (Clean Air) Regulations 1978 and the Environmental Quality (Sewage and Industrial Effluents) Regulations 1979* ***(revoked by Regulations PU(A) 432/2009, 433/2009 and 434/2009)***

Air emission and effluent discharge standards are as per ***Appendix J*** *and K respectively.*

D. *Control On Ozone Depleting Substances*

Control On Ozone Depleting Substances (ODS) are categorised as environmentally hazardous substances under the Environmental Quality (Refrigerant Management) Regulations 1999 and the Environmental Quality (Halon Management) Regulations 1999. New investments relating to the use of these substances are prohibited.

APPENDIX H

E. Scheduled Wastes Management

A comprehensive set of legal provisions related to the management of toxic and hazardous wastes were developed based on the "cradle to grave principle"; whereby toxic and hazardous waste generators are responsible for their wastes throughout their disposal process. A facility which generates, stores, transports, treats or disposes scheduled waste is subject to the main following regulations:

i) Environmental Quality (Scheduled Wastes) Regulations 2005;
ii) Environmental Quality (Prescribed Conveyance)(Scheduled Wastes) Order 2005;
iii) Environmental Quality (Prescribed Premises) (Scheduled Wastes Treatment and Disposal Facilities) Order 1989;
iv) Environmental Quality (Prescribed Premises) (Scheduled Waste Treatment and Disposal Facilities) Regulations 1989;
v) Customs (Prohibition of Export) Order 2008, and;
vi) Customs (Prohibition of Import) Order 2008.

SITE SELECTION

6. One of the most important factors in obtaining environmental approval is the site suitability of the proposed project. Site suitability is evaluated based on the compatibility of the project with respect to the gazetted structure or local plans, surrounding land-use, provision of set-backs or buffer zones, the capacity of the area to receive additional pollution load, and waste disposal requirements.

7. Details on the appropriate buffer zone with r espect to a specific category of industry can be obtained from "*Guidelines for the Siting and Zoning of Industries*". An outline of the guidelines is given in **Appendix E**. For potentially hazardous* industries, the project proponent may be required to submit a Risk Assessment to the DOE as part of the site consideration.

   - *Hazardous industry: Any industry or installation which has the potential for causing injury threat to health, death, and damage to property or the environment.*

8. Based on the above factors, industries are advised to locate project activities within gazetted and EIA approved industrial sites. This is to ensure proper planning has been taken into consideration which leads to less environmental problems in the future, especially during operation.

APPENDIX H

PROJECT OPTIONS

9. For industrial sector, project alternatives should include appropriate alternative technologies and operating methods covering:

   i. ***Sources and supply of raw materials*** including proximity, sustainability, transport routes and means etc.

   ii. ***Process options***: in respect of the technologies available in relation to "Best Available Technologies" of integrated pollution control and cost, hazard potential of alternatives (i.e. relative hazards of the raw materials and intermediates required/produced) and beneficial components such as energy recovery/waste minimization.

   iii. ***Treatment and disposal systems***: including options for treatment of airborne emissions, liquid effluents, solid wastes and scheduled wastes (including sale or beneficial utilization)

KEY ISSUES AND SCOPE

10. In preparing an EIA report for the establishment of industries located within gazetted and EIA approved industrial sites, the project proponent and EIA consultant shall be able to identify key issues related to the industrial activities being proposed. Below are the key issues and information to be made available to the assessor of the EIA report:

    (a) Existing Environment

    Since the industrial activity proposed is to be located within gazetted and EIA approved industrial site, the explanation and description on the existing environment shall cover the existing air quality conditions at the industrial site and noise level conditions

    (b) Layout Plan
    Complete layout plan among other include where appropriate of:

    - Reception area with weighbridge and laboratory unit for sampling purposes.
    - Special raw materials reception area and adjacent storage area.
    - Plant buildings, machinery, and related infrastructure.
    - Truck cleaning area.
    - Bund walls and drainage systems isolating handling/storage/cleaning and operational areas.

- Emergency on-site storage pond for liquid wastes.
- Lined storm water retention pond/ storm water system as a contingency for excessive runoff from contaminated areas.
- Floor linings of adequate design, incorporating a surface concrete layer, usually underlying a sand layer and a final PVC layer.
- Roofing of potentially contaminated areas and storage areas with separate drainage.
- Processing/manufacturing areas.
- Storage areas for residual wastes and scheduled wastes.
- Wastewater treatment systems (if any).
- Good ventilation systems.
- Fire-fighting system, sprinkler systems and facilities.
- Security fencing, boundary fencing and controlled access.

(c) Landuse map

A clear cadastral map showing the site location of the proposed project site and a description of the surrounding industrial activities. This is to ensure that the location of the proposed site is compatible with the industrial activities within the gazetted industrial site.

(d) Project Concept and Components

A clear description on the project concept and project components.

(e) Process Description

A comprehensive flow chart of the process production and detailed explanation on the process including criterias involved and the maximum capacity.

(f) Physical and Chemical Characteristic of the Raw Materials

Chemical or Material Safety data sheets of the raw materials used in the process.

(g) Mass Balance Calculation

Every single process should be attached with mass balance calculations which means the quantification of total materials into and out of a process with the difference between inputs and outputs being accounted for as a release to the environment or as part of the facility's waste.

(h) Potential Significant Impacts

Based on the critical issues perform in the industrial process and type of industries, the impact analysis should be mentioned in the EIA report among others are:

- Gaseous emissions from the stack; ambient and ground level concentration;
- Discharge of process effluent in terms of the quality and quantity;
- Accidental spills and leakages;
- Noise emissions;
- Health and safety;
- Management of scheduled wastes;
- Transportation of raw materials and products;
- Risk.

Each key issue should be addressed in terms of predicted impacts, proposed mitigation and residual impacts. Rate each key issue by magnitude and duration.

Predictions of impacts are normally based on commonly used methodologies and models. The significance of the predicted adverse impacts can be evaluated based on one or more of the following:

- comparison of laws, regulations or accepted national or international standards
- consistency with the pre-set policy objects (such as land use, economic development, and others)

(i) Pollution Control – Mitigation and Abatement Measures

Mitigation of impacts is the stage to determine possible preventative, remedial or compensatory measures for each of the adverse impacts evaluated as significant. Mitigation measures shall take into account, but not limited to, the following:

(a) Adequate buffer zones;
(b) Adequate air pollution controls, and comprehensive wastewater treatment systems;
(c) Need for separate drainage systems for spillage;
(d) Storage and handling of raw materials and products;
(e) Alternative process technology and raw materials which are safer and more environment friendly;
(f) Minimization of wastes e.g by closed loop processing;
(g) Recycling and recovery of wastes.

Mitigation measures should be described and mapped for each adverse impact, according to specifications and location. Mitigation should be specific to the impact and linked to the activity by schedule of occurrence.

Commitments from project proponents to adopt significant pollution control equipment can reduce negative impacts on environment. All the design measures which have been adopted into the project plan should be discussed in the EIA report. The pollution control technology chosen by the project proponent must be able to meet the relevant emission standards stipulated under the Environmental Quality Act, 1974 and other subsequent guidelines ie. Recommended Ambient Air Quality Standards.

The Emergency Response Plan (ERP) will be prepared by the proponent or his operator prior to start-up of the facility. In essence, the risk assessment report should provide an outline ERP indicating all issues that must be addressed by the ERP itself and specify minimum levels of safety provisions needed at the facility. Person involved in the recovery of hazardous wastes must be capable and adequately trained.

(j) Residual Impacts

Potential environmental impacts may remain after mitigating measures have been adapted in to a project plan. These are described as residual impacts which generally require further studies during the detailed assessment stage. The residual wastes (highly toxic and dangerous) produced from the recovery process shall be disposed at the Central Waste Treatment and Disposal Facility, licensed from DOE. The residual waste cannot be recovered at all.

(k) Monitoring

The project proponent should describe the monitoring program needed which includes the monitoring program for ambient air quality, gas and hazardous emissions from the stacks, sewage (effluent), noise, scheduled waste analysis plan and products must be taken into account including the objective, target and compliance with applicable regulations.

APPENDIX H

CONCLUSIONS

11. Project proponents are encouraged to give attention to the following aspects of pollution control during the early planning stage of their projects:
    (a) Look into pollution control measures as early as at the pre-feasibility study stage. The pollution control technology chosen by the project proponent must be able to meet the relevant emission standards stipulated under the Environmental Quality Act, 1974;
    (b) Find possible modifications in the process line that can minimise waste generation;
    (c) Pollution prevention to be viewed as important as production process;
    (d) Engage in cleaner production; and
    (e) Consider recycling option as far as possible.

    In conclusion, project proponents and EIA Consultants should be aware that environmental issues are now a growing concern all over the world. Today, the public demands a better quality of life and environment. Therefore, investors should not only work towards complying with the law but also to fulfil their public obligations.

ENVIRONMENTAL QUALITY (CLEAN AIR) REGULATIONS 1978 P.U.(A) 280

New Installations Within Residential Areas Not Permitted Without Prior Approval (Regulation 4)

- Any equipment, plant or facility that may discharge or emit smoke as dark as or darker than shade No. 1 on a Ringelmann Chart.

- Any equipment, plant or facility used for the purpose of heating or generating of power that is rated to consume;

    (i) pulverized fuel;
    (ii) any solid fuel at 20 kilograms or more per hour; or
    (iii) any liquid or gaseous matter at 10 kilograms or more per hour.

- Any equipment, plant or facility that emits any solid particle exceeding 0.5 kilograms per hour.

- Any equipment, plant used for grain milling or polishing and consumes 1.5kw and above.

- Any wood working machinery that consumers 0.75kw and above.

APPENDIX I

- Any equipment plant or facility used in the manufacture, packing or repacking of paints, varnishes, lacquers and all pesticides listed in the First Schedule of the Pesticides Act, 1974.

- Any equipment or facility used in the manufactures, packing or repacking of industrial chemicals, in the process of which mercury, antimony, arsenic, cadmium, zinc, lead, copper or any compound thereof is emitted.

- Any equipment, plant or facility used in the manufacture, packing or repacking of fish manure or animal feed or fertilizer.

- Any equipment or plant in the manufacture of asbestos-containing products.

APPENDIX J1

STACK GAS EMISSION STANDARDS
[Extract from Environment Quality (Clean Air) Regulations 1978]

Pollution	Emission Sources	Standards
1. Dark Smoke*		
	(1.1) Solid Fuel Equipment to Facilities	Ringlemann Chart No.2
	(1.2) Equipment using other types of fuel	Ringlemann Chart No.1
2. Dust	(2.1) Facilities used for the heating of metal other than Cold Blast Foundry Cupola	0.2 gm/Nm^3
	(2.2) Facilities discharging dust containing asbestos and free silica	0.12 gm/Nm^3
	(2.3) Portland Cement Manufacturing:	
	(2.3.1) Kiln	0.2 gm/Nm^3
	(2.3.2) Clinker, cooler, grinder, others	0.1 gm/Nm^3
	(2.4) Asphalt concrete/bituminous mixing plant:	
	(2.4.1) Stationary Plant	0.3 gm/Nm^3
	(2.4.2) Mobile Plant	0.4 gm/Nm^3
	(2.5) Other source	0.4 gm/Nm^3
3. Metal and Metallic Compound		
3.1 Mercury	Industry	0.01 gm/Nm^3
3.2 Cadmium	Industry	0.015 gm/Nm^3
3.3 Lead	Industry	0.025 gm/Nm^3
3.4 Antimony	Industry	0.025 gm/Nm^3
3.5 Arsenic	Industry	0.025 gm/Nm^3
3.6 Zinc	Industry	0.1 gm/Nm^3
3.7 Copper	Industry	0.1 gm/Nm^3

APPENDIX J1

Pollution	Emission Sources	Standards
4. Gases		
(a) Acid Gases	Sulphuric Acid Manufacturing	3.5 gm of SO_3/Nm^3 and no persistent mist
(b) Sulphuric Acid Mist or SO_3	Any sources other than (a)	0.2 gm of SO_3/Nm^3 and no persistent mist
(c) Chlorine gas	Any source	0.2 gm of HCl/ Nm^3
(d) HCl	Any source	0.2 gm of HCl/ Nm^3
(e) Fluorine, Hydrofluoric acid, inorganic compound	Aluminium manufacturing from alumina	0.2 gm of Hydrofluoric acid / Nm^3
(f) - do -	Any source other than (e)	0.10 gm of Hydrofluoric acid / Nm^3
(g) Hydrogen Sulphide	Any source	5 ppm (Vol%)
(h) NO_x	Acid Nitric manufacturing	1.7 gm of SO_3/Nm^3 and Substantially Colourless
(i) SO_x	Any source other than (h)	2.0 gm SO_3/ Nm^3

- Allowable to exceed both standards not longer than 5 minutes in any period of one hour and 15 minutes in any period of 24 hours.
- Note: All industrial projects subject to EIA shall be designed and operated using Best Available Techniques (BAT) in achieving a high and acceptable level of protection for the environment.

APPENDIX J2

RECOMMENDED MALAYSIAN AIR QUALITY GUIDELINES (Ambient Standards) (at 25^0Celsius and 101.13 kPa)

Pollutant and Method	Averaging Time	Malaysia Guidelines	
		(ppm)	(*ug*/m_3)
Ozone AS 2524	1 Hour 8 Hour	0.10 0.06	200 120
Carbon # Monoxide AS2695	1 Hour 8 Hour	30 9	35 10
Nitrogen Dioxide AS 2447	1 Hour	0.17	320
Sulfur Dioxide AS 2523	10 Minute 1 Hour 24 Hour	0.19 0.13 0.04	500 350 105
Particles TSP AS 2724.3	24 Hour 1 Year		260 90
PM_{10} AS 2724.6	24 Hour 1 Year		150 50
Lead AS 2800	3 Month		1.5

Recommended Malaysian Secondary Guidelines

Pollutant and Method	Averaging Time	Malaysia Guidelines (mg/m2/day)
Dustfall AS 2724.1	1 year	133

#mg/m^3

APPENDIX K1

Extracted from Environmental Quality (Sewage) Regulations 2009 (PU(A) 432)

SECOND SCHEDULE
(Regulation 7)
ACCEPTABLE CONDITIONS OF SEWAGE DISCHARGE OF STANDARDS A AND B

(i) New sewage treatment system

	Parameter	Unit	Standard	
			A	B
	(1)	(2)	(3)	(4)
(a)	Temperature	°C	40	40
(b)	pH Value	-	6.0-9.0	5.5-9.0
(c)	BOD5 at 20°C	mg/L	20	50
(d)	COD	mg/L	120	200
(e)	Suspended Solids	mg/L	50	100
(f)	Oil and Grease	mg/L	5.0	10.0
(g)	Ammonical Nitrogen (enclosed water body)	mg/L	5.0	5.0
(h)	Ammonical Nitrogen (river)	mg/L	10.0	20.0
(i)	Nitrate – Nitrogen (river)	mg/L	20.0	50.0
(j)	Nitrate – Nitrogen (enclosed water body)	mg/L	10.0	10.0
(k)	Phosphorous (enclosed water body)	mg/L	5.0	10.0

Note : Standard A is applicable to discharges into any inland waters within catchment areas listed in the Third Schedule, while Standard B is applicable to any other inland waters or Malaysian waters.

(ii) Existing sewage treatment system (approved before January 1999)

This category refers to all sewerage treatment systems which were approved before the Guidelines for Developers: Sewerage Treatment Vol. IV, 2nd edition and were enforced by the Department of Sewerage Service, Ministry of Housing and Local Government, beginning January 1999. Below are the acceptable conditions for sewerage discharge according to type of sewage treatment systems:

			Type of Sewage Treatment System									
		Communal Septic Tank	Imhoff Tank		Aerated Lagoon				Oxidation Pond		Mechanical System	
	Parameter	**Unit**	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(a)	BOD_5 at 20^0C	mg/L	200	200	175	175	100	100	120	120	60	60
(b)	COD	mg/L	-	-	-	-	300	300	360	360	180	240
(c)	Suspended Solids	mg/L	180	180	150	150	120	120	150	150	100	120
(d)	Oil and Grease	mg/L	-	-	-	-	-	-	-	-	20	20
(e)	Ammoniacal Nitrogen	mg/L	-	-	100	100	80	80	70	70	60	60

Note :

1. Standard A is applicable to discharge into any inland waters within catchment areas listed in the Third Schedule, while Standard B is applicable to any other inland water or Malaysian waters.

2. These standards are applicable to the sewerage treatment systems that may have been constructed prior to 1999 based upon approval given by other agency, other than the Department of Sewerage Services, Ministry of Housing and Local Government.

(iii) Existing sewage treatment system (approved after January 1999)

All sewerage treatment systems which were approved after the Guidelines for Developers: Sewerage Treatment Vol. IV, 2nd edition and were enforced by the Department of Sewerage Service, Ministry of Housing and Local Government, beginning January 1999 and up to date of coming into operation of these Regulations.

		Standard	
Parameter	***Unit***	**A**	**B**
(a) BOD_5 at 20°C	mg/L	20	50
(b) COD	mg/L	120	200
(c) Suspended Solids	mg/L	50	100
(d) Oil and Grease	mg/L	20	20
(e) Ammoniacal Nitrogen	mg/L	50	50

Note:

Standard A is applicable to discharge into any inland waters within catchment areas listed in the Third Schedule, while Standard B is applicable to any other inland waters or Malaysian waters.

APPENDIX K2

Extracted from Environmental Quality (Industrial Effluents) Regulations 2009 (PU (A) 434)

FIFTH SCHEDULE
[Paragraph 11(1) (a)]

ACCEPTABLE CONDITIONS FOR DISCHARGE OF INDUSTRIAL EFFLUENT FOR MIXED EFFLUENT OF STANDARDS A AND B

	Parameter	Unit	Standard	
			A	B
	(1)	(2)	(3)	(4)
(i)	Temperature	˚C	40	40
(ii)	pH Value	-	6.0-9.0	5.5-9.0
(iii)	BOD_5 at 20˚C	mg/L	20	40
(iv)	Suspended Solids	mg/L	50	100
(v)	Mercury	mg/L	0.005	0.05
(vi)	Cadmium	mg/L	0.01	0.02
(vii)	Chromium, Hexavalent	mg/L	0.05	0.05
(viii)	Chromium, Trivalent	mg/L	0.20	1.0
(ix)	Arsenic	mg/L	0.05	0.10
(x)	Cyanide	mg/L	0.05	0.10
(xi)	Lead	mg/L	0.10	0.5
(xii)	Copper	mg/L	0.20	1.0
(xiii)	Manganese	mg/L	0.20	1.0
(xiv)	Nickel	mg/L	0.20	1.0
(xv)	Tin	mg/L	0.20	1.0
(xvi)	Zinc	mg/L	2.0	2.0
(xvii)	Boron	mg/L	1.0	4.0
(xviii)	Iron (Fe)	mg/L	1.0	5.0
(xix)	Silver	mg/L	0.1	1.0
(xx)	Aluminium	mg/L	10	15
(xxi)	Selenium	mg/L	0.02	0.5
(xxii)	Barium	mg/L	1.0	2.0
(xxiii)	Fluoride	mg/L	2.0	5.0
(xxiv)	Formaldehyde	mg/L	1.0	2.0
(xxv)	Phenol	mg/L	0.001	1.0
(xxvi)	Free Chlorine	mg/L	1.0	2.0
(xxvii)	Sulphide	mg/L	0.50	0.50
(xxviii)	Oil and Grease	mg/L	1.0	10
(xxix)	Ammoniacal Nitrogen	mg/L	10	20
(xxx)	Colour	ADMI*	100	200

ADMI- American Dye Manufactures Institute

APPENDIX K2

Extracted from Environmental Quality (Industrial Effluents) Regulations 2009 (PU(A) 434)

SEVENTH SCHEDULE
(Regulation 12)

ACCEPTABLE CONDITIONS FOR DISCHARGE OF INDUSTRIAL EFFLUENT CONTAINING CHEMICAL OXYGEN DEMAND (COD) FOR SPECIFIC TRADE OR INDUSTRY SECTOR

(1) Trade/Industry	(2) Unit	(3) Standard	(4) Standard
(a) Pulp and paper industry			
(i) Pulp mill	mg/L	80	350
(ii) Paper mill (recycled)	mg/L	80	250
(iii) Pulp and paper mill	mg/L	80	300
(b) Textile industry	mg/L	80	250
(c) Fermentation and distillery industry	mg/L	400	400
(d) Other industries	mg/L	80	200

EIGTH SCHEDULE
(Regulation 13)

ACCEPTABLE CONDITIONS FOR DISCHARGE OF MIXED EFFLUENT CONTAINING CHEMICAL OXYGEN DEMAND (COD)

(1) Unit	(2) Standard A	(3) Standard B
mg/L	80	200

APPENDIX K2

NINTH SCHEDULE
(Regulation 14)

LIST OF PARAMETERS FOR DISCHARGE OF INDUSTRIAL EFFLUENT OR MIXED EFFLUENT WHICH BEST MANAGEMENT PRACTICE TO BE ADOPTED

(i) Nitrate Nitrogen
(ii) Sulphate
(iii) Chloride
(iv) Cobalt
(v) Detergent, Anionic
(vi) Molybdenum
(vii) Phosphate(as P)
(viii) Polychlorinated Biphenyls
(ix) Beryllium
(x) Vanadium
(xi) Pesticides, fungicides, herbicides, rodenticides, fumigants or any other biocides or any other chlorinated hydrocarbons
(xii) Any substance that either by itself or in combination or by reaction with other waste may give rise to any gas, fume or odour or substance which causes or is likely to cause pollution
(xiii) Total Organic Carbon
(xiv) Whole Effluent Toxicity (WET)
(xv) Dioxin
(xvi) Endocrine disruptors

APPENDIX K3

Environmental Quality (Control of Pollution From Solid Waste Transfer Station and Landfill) Regulations 2009 (PU(A) 433)

SECOND SCHEDULE
(Regulation 13)
ACCEPTABLE CONDITIONS FOR DISCHARGE OF LEACHATE

	Parameter (1)	Unit (2)	Standard (3)
(i)	Temperature	˚C	40
(ii)	pH Value	-	6.0-9.0
(iii)	BOD_5 at 20˚C	mg/L	20
(iv)	COD	mg/L	400
(v)	Suspended Solids	mg/L	50
(vi)	Ammoniacal Nitrogen		5
(vii)	Mercury	mg/L	0.005
(viii)	Cadmium	mg/L	0.01
(ix)	Chromium, Hexavalent	mg/L	0.05
(x)	Chromium, Trivalent	mg/L	0.20
(xi)	Arsenic	mg/L	0.05
(xii)	Cyanide	mg/L	0.05
(xiii)	Lead	mg/L	0.10
(xiv)	Copper	mg/L	0.20
(xv)	Manganese	mg/L	0.20
(xvi)	Nickel	mg/L	0.20
(xvii)	Tin	mg/L	0.20
(xviii)	Zinc	mg/L	2.0
(xix)	Boron	mg/L	1.0
(xx)	Iron (Fe)	mg/L	5.0
(xxi)	Silver	mg/L	0.10
(xxii)	Selenium	mg/L	0.02
(xxiii)	Barium	mg/L	1.0
(xxiv)	Fluoride	mg/L	2.0
(xxv)	Formaldehyde	mg/L	1.0
(xxvi)	Phenol	mg/L	0.001
(xxvii)	Sulphide	mg/L	0.50
(xxiii)	Oil and Grease	mg/L	5.0
(xxix)	Colour	ADMI*	100

ADMI- American Dye Manufactures Institute

SCHEDULE
(Regulation 2) Refrigerant Environmentally Hazardous Substances

Group	Chemical Formula	Substance
1	$CFCl_3$	Trichhlorofluoromethane (CFC – 11)
	CF_2Cl_2	Dicholorodifluoromethane (CFC – 12)
	$C_2F_3Cl_3$	Trichlorotrifluoroethane (CFC – 113)
	$C_2F_4Cl_2$	Dichlorotetrafluoethane (CFC – 114)
	C_2F_5Cl	Chloropentafluoroethane (CFC – 115)

SCHEDULE 1 (Regulation 2) List of Halon

Group	Chemical Formula	Common Name
Bromochlorodifluoromethane	CF_2BRC_1	Halon 1211
Bromotrifluoromethane	CF_3Br	Halon 1301
Dibromotetrafluorothane	$C_2F_4Br_2$	Halon 2402

APPENDIX M

A SUMMARY OF ENVIRONMENTAL REQUIREMENTS ON SCHEDULED WASTES

I **Control of Scheduled Wastes – Section 34B, Environmental Quality Act 1974. Prohibition against placing, deposit, etc. of scheduled wastes.**

1. No person shall –

   (a) place, deposit or dispose of, or cause or permit to place, deposit or disposed of, except at prescribed premises only, any scheduled wastes on land or into Malaysian waters;

   (b) receive or send, or cause or permit to be received or sent any scheduled wastes in or out of Malaysia; or

   (c) transit or cause or permit the transit of scheduled wastes, without any prior written approval of the Director General.

2. The Director General may grant the written approval either subject to conditions or unconditionally.

3. For the purpose of this Act, any act of receiving or sending, or transit of any scheduled wastes with an approval obtained through falsification, misrepresentation or fraud or which does not conform in a material way with the relevant documents in such as may be prescribed, shall be an offence.

4. Any person who contravenes this section shall be guilty of an offence and shall on conviction be punished with imprisonment for a term not exceeding five years and shall also be liable to a fine not exceeding five hundred thousand Ringgit (RM 500,000.00).

II **Environmental Quality (Schedules Wastes) Regulations 2005**

1. The Environmental Quality (Scheduled Wastes) Regulations 2005 came into force since 15 August 2005, and is replacing the Environmental Quality (Scheduled Wastes) Regulations 1989. In 20 March 2007, the Environmental Quality (Scheduled Wastes) Regulations 2005 are then amended in the First Schedule, in relation to the particular appearing against code SW 104, by inserting after the word “containing” the words “aluminium”.

2. Under these new regulations, scheduled wastes listed in the First Schedule are divided into 5 categories as per Appendix L. Waste generators should determine whether their wastes are classified under scheduled wastes. New generators of scheduled wastes are required to notify the Department of Environment within one month from the date of generation of wastes.

3. Scheduled wastes can be stored, recovered and treated within the premises of the waste generators. Such activities do not require licensing by the Department of Environment. A waste generator may store scheduled wastes generated by him for 180 days or less after its generation provided that the quantity of scheduled wastes accumulated on site shall not exceed 20 metric tonnes. However, waste generators may apply to the Director General in writing to store more than 20 metric tonnes of scheduled wastes. The containers that are used to store scheduled wastes shall be clearly labelled with the date when the scheduled wastes are first generated, name, address and telephone number of the waste generator.

4. Land farming, incineration, disposal and off-site facilities for recovery, storage and treatment can only be carried out at prescribed premises licensed by the Department of Environment. However with the signing of the concession agreement between the Government of Malaysia and Kualiti Alam Sdn. Bhd, all off-site treatment and disposal (incineration, wastewater treatment, storage and secure landfill) of scheduled wastes is not allowed. The agreement is from 18 December 1995 to 18 December 2010.

5. On-site incineration of scheduled wastes is not encouraged. If it is deemed necessary, application for the installation of such incinerator must strictly adhered to the Guidelines On the Installation of On-site Incinerator for the Disposal of Scheduled Wastes in Malaysia" (published by the Department of Environment), including carrying out a detailed environmental impact assessment and display of the EIA report for public comments.

6. Waste generators shall also keep an up to-date inventory of scheduled wastes generated, treated and disposed off. Proper labelling, containers and storage areas as well as prohibition of storage of incompatible waste are also required by law.

7. In the case of transporting the scheduled waste from the waste generator to the treatment and disposal facilities, the transporting of waste shall conform to the consignment note system whereby the movement of waste is monitored until it reaches the approved destination. It is the responsibility of a waste generator to monitor and ensure that the waste transported from his factory reaches the approved destination. The waste generator is responsible to inform the transport contractor regarding the nature of the waste and what actions to be taken during accidents to minimise damage to human life and the environment. Schedule wastes transporters should also be licensed by the Department of Environment.

8. Every waste generator shall ensure that all his employees involved in the identification, handling, labelling, transportation, storage and spill response of scheduled wastes, attend training programme.

III Environmental Quality (Prescribed Premises)(Scheduled Wastes Treatment and Disposal Facilities) Order 1989

There are six types of premises prescribed under the Order that require written permission and a licence from the Department of Environment. The premises include:

a. Land treatment facilities such as sludge farming of oily wastes or sludges;
b. Off-site recovery facilities such as solvent recycling plant;
c. Off-site treatment facilities such as centralised physical/chemical wastewater treatment plant;
d. Scheduled wastes incinerators;
e. Off-site storage facilities including the premises of waste transport contractors; and
f. Secure landfills designated for the disposal of scheduled wastes.

IV Environmental Quality (Prescribed Premises) (Scheduled Wastes Treatment and Disposal Facilities) Regulations 1989

1. These regulations list the procedures for licence application, renewal and ownership transfer as well as requirements for record keeping and submission to the Department of Environment. Every owner or occupier of prescribed premises is responsible to keep accurate an up-to-date records of wastes handled and to submit these record within 14 days at the end of every period of 3 months to the Department of Environment.

2. Offences under these Regulations can be compounded up to a maximum of RM2, 000.00 or offenders can be prosecuted in court and the maximum penalty is RM50, 000.00 or imprisonment for a period not exceeding 2 years or both and to a further fine not exceeding RM1000.00 per day for every day the offence is continued.

APPENDIX N

FIRST SCHEDULE ENVIRONMENTAL QUALITY (SCHEDULED WASTES) REGULATIONS 2005

SW 1	**Metal and metal-bearing wastes**
SW 101	Waste containing arsenic or its compound
SW 102	Waste of lead acid batteries in whole or crushed form
SW 103	Waste of batteries containing cadmium and nickel or mercury or lithium
SW 104	Dust, slag, dross or ash containing aluminium, arsenic, mercury, lead, cadmium, chromium, nickel, copper, vanadium, beryllium, antimony, tellurium, thallium or selenium excluding slag from iron and steel factory
SW 105	Galvanic sludges
SW 106	Residues from recovery of acid pickling liquor
SW 107	Slags from copper processing for further processing or refining containing arsenic,lead or cadmium
SW 108	Leaching residues from zinc processing in dust and sludges form
SW 109	Waste containing mercury or its compound
SW 110	Waste from electrical and electronic assemblies containing components such as accumulators, mercury-switches, glass from cathode-ray tubes and other activated glass or polychlorinated biphenyl-capacitors, or contaminated with cadmium, mercury, lead, nickel, chromium, copper, lithium, silver, manganese or polychlorinated biphenyl
SW 2	**Wastes containing principally inorganic constituents which may contain metals and organic materials**
SW 201	Asbestos wastes in sludges, dust or fibre forms
SW 202	Waste catalysts
SW 203	Immobilized scheduled wastes including chemically fixed, encapsulated, solidified or stabilized sludges.

SW 204	Sludges containing one or several metals including chromium, copper, nickel, zinc, lead, cadmium, aluminium, tin, vanadium and beryllium
SW 205	Waste gypsum arising from chemical industry or power plant
SW 206	Spent inorganic acids
SW 207	Sludges containing fluoride
SW 3	**Wastes containing principally organic constituents which may contain metals and inorganic materials**
SW 301	Spent organic acids with pH less or equal to 2 which are corrosive or hazardous
SW 302	Flux waste containing mixture of organic acids, solvents or compounds of ammonium chloride
SW 303	Adhesive or glue waste containing organic solvents excluding solid polymeric materials
SW 304	Press cake from pre-treatment of glycerol soap lye
SW 305	Spent lubricating oil
SW 306	Spent hydraulic oil
SW 307	Spent mineral oil-water emulsion
SW 308	Oil tanker sludges
SW 309	Oil-water mixture such as ballast water
SW 310	Sludge from mineral oil storage tank
SW 311	Waste of oil or oily sludge
SW 312	Oily residue from automotive workshop, service station oil or grease interceptor
SW 313	Oil contaminated earth from re-refining of used lubricating oil

SW 314	Oil or sludge from oil refinery plant maintenance operation
SW 315	Tar or tarry residues from oil refinery or petrochemical plant
SW 316	Acid sludge
SW 317	Spent organometallic compounds including tetraethyl lead, tetramethyl lead and organotin compounds
SW 318	Waste, substances and articles containing or contaminated with polychlorinated biphenyls (PCB) or polychlorinated triphenyls (PCT)
SW 319	Waste of phenols or phenol compounds including chlorophenol in the form of liquids or sludges
SW 320	Waste containing formaldehyde
SW 321	Rubber or latex wastes or sludges containing organic solvents or heavy metals
SW 322	Waste of non-halogenated organic solvents
SW 323	Waste of halogenated organic solvents
SW 324	Waste of halogenated or unhalogenated non-aqueous distillation residues arising from organic solvents recovery process
SW 325	Uncured resin waste containing organic solvents or heavy metals including epoxy resin and phenolic resin
SW 326	Waste of organic phosphorus compound
SW 327	Waste of thermal fluids (heat transfer) such as ethylene glycol
SW 4	**Wastes which may contain either inorganic or organic constituents**
SW 401	Spent alkalis containing heavy metals
SW 402	Spent alkalis with pH more or equal to 11.5 which are corrosive or hazardous
SW 403	Discarded drugs containing psychotropic substances or containing substances that are toxic, harmful, carcinogenic, mutagenic or teratogenic

SW 404	Pathogenic wastes, clinical wastes or quarantined materials
SW 405	Waste arising from the preparation and production of pharmaceutical product
SW 406	Clinker, slag and ashes from scheduled wastes incinerator
SW 407	Waste containing dioxins or furans
SW 408	Contaminated soil, debris or matter resulting from cleaning-up of a spill of chemical, mineral oil or scheduled wastes
SW 409	Disposed containers, bags or equipment contaminated with chemicals, pesticides, mineral oil or scheduled wastes
SW 410	Rags, plastics, papers or filters contaminated with scheduled wastes
SW 411	Spent activated carbon excluding carbon from the treatment of potable water and processes of the food industry and vitamin production
SW 412	Sludges containing cyanide
SW 413	Spent salt containing cyanide
SW 414	Spent aqueous alkaline solution containing cyanide
SW 415	Spent quenching oils containing cyanides
SW 416	Sludges of inks, paints, pigments, lacquer, dye or varnish
SW 417	Waste of inks, paints, pigments, lacquer, dye or varnish
SW 418	Discarded or off-specification inks, paints, pigments, lacquer, dye or varnish products containing organic solvent
SW 419	Spent di-isocyanates and residues of isocyanate compounds excluding solid polymeric material from foam manufacturing process
SW 420	Leachate from scheduled waste landfill
SW 421	A mixture of scheduled wastes
SW 422	A mixture of scheduled and non-scheduled wastes

SW 423	Spent processing solution, discarded photographic chemicals or discarded photographic wastes
SW 424	Spent oxidizing agent
SW 425	Wastes from the production, formulation, trade or use of pesticides, herbicides or biocides
SW 426	Off-specification products from the production, formulation, trade or use of pesticides, herbicides or biocides
SW 427	Mineral sludges including calcium hydroxide sludges, phosphating sludges, calcium sulphite sludges and carbonates sludges
SW 428	Wastes from wood preserving operation using inorganic salts containing copper, chromium or arsenic of fluoride compounds or using compound containing chlorinated phenol or creosote
SW 429	Chemicals that are discarded or off-specification SW 430 Obsolete laboratory chemicals
SW 431	Waste from manufacturing or processing or use of explosives
SW 432	Waste containing, consisting of or contaminated with peroxides

SW 5 Other wastes

SW 501	Any residues from treatment or recovery of scheduled wastes

APPENDIX O

CHECKLIST OF ACTIVITIES, PROJECTS OR INSTALLATIONS WHICH REQUIRE APPROVAL FROM THE DOE

	Activities/ Installation	Licences or approvals	Tick appropriate required boxes
I.	**Industrial or Project Site Planning Stage**		
(1)	Prescribed Activities	Site Suitability Evaluation	☐
		EIA Report preparation and approval	☐
(2)	Non-Prescribed Activities	Site Suitability Evaluation	☐
II.	**Prior To Construction Stage**		
(3)	Premise which generates industrial effluent, sewage, lechate	Written Notification to construct	☐
(4)	Raw palm oil and raw natural rubber mills	Written Permission to construct (for palm oil and rubber mill, scheduled waste treatment facilities)	☐
(5)	Fuel Burning Equipment		
	Boilers	Installation approval	☐
	Incinerators	Installation approval	☐
	Generator Set	Installation approval	☐
	Furnaces	Installation approval	☐
	Ovens	Installation approval	☐
	Dryers	Installation approval	☐
	Chimney/ outlet / vent discharge air impurities	Installation approval	☐
(6)	Installation of Air Pollution Control and Wastewater Treatment System	Prior to consultation with DOE	☐
(7)	A facility that generates scheduled wastes	Consultation with DOE on waste management	☐
III.	**Prior to Operational Stage**		
(8)	Palm Oil, Natural Rubber Processing Mills, Scheduled Waste Treatment and Disposal Facilities, Prescribed Conveyance.	License to occupy and use	☐
(9)	New additional source of discharge as a result of expansion of industrial activity (increase production capacity) for existing industry	Permission to dispose new or additional sources of discharges	☐

APPENDIX P

SUMMARY OF APPROVALS ISSUED BY THE DEPARTMENT OF ENVIRONMENT

TYPE OF APPLICATION	PROCESSING FEE	LEGISLATION	APPLICATION CENTRE	TIME TAKEN FOR APPROVAL	MAIN TERMS/ CONDITIONS FOR APPLICATION/ SUPPORTING DOCUMENT
1. Preliminary Site Suitability Assessment	-	All Industries/ activities / project referred to DOE	DOE State Offices	2 weeks	**Form** Preliminary screening form for new industries AS PAT form. Compatibility of industries with the surrounding land use and the land use planning. **Information required** • Information on the industry, site, raw materials, products and inventory of materials stored on the premises.
2. Environmental Impact Assessment (EIA)	-	Section 34A, Environmental Quality Act, 1974 (Act 127) Environmental Quality (Prescribed Activities) (EIA) Order, 1987	Preliminary EIA DOE State Offices Detailed EIA DOE Headquarters	Preliminary EIA 5 weeks Detailed EIA 12 weeks (including public display and comments)	EIA report which meets DOE's requirements (Section 34A). Site selection is important and is evaluated in terms of its compatibility with respect to the gazetted structure/local plans, surrounding landuse, provision of set-backs or buffer zones, the capacity of the area to receive additional pollution load, and waste disposal requirements. Risk analysis shall be included for projects involved with handling of dangerous and hazardous goods.

APPENDIX N

TYPE OF APPLICATION	PROCESSING FEE	LEGISLATION	APPLICATION CENTRE	TIME TAKEN FOR APPROVAL	MAIN TERMS/ CONDITIONS FOR APPLICATION/ SUPPORTING DOCUMENT
3. Written Permission **To construct any building which will result in a new source of effluent discharge?** **To increase production capacity which will cause material change in quality/ quality of effluent**	Palm Oil Palm, Rubber Mill and other Industries RM100.00 Treatment and disposal facilities of scheduled wastes RM1000.00	Environmental Quality Regulation:- i. Crude Palm Oil), 1977. ii. Raw Natural Rubber, 1978 iii. Scheduled Wastes Treatment and Disposal, Order 1989.	DOE State Offices	3 weeks	Able to treat the effluent discharged to the standard required under the regulations. **Information required** Information on the site, industries, raw materials, products, design of the treatment systems and the quality/quality of effluent. **Forms** AS 3 - Palm Oil Mill AS 6 - Rubber Mill AS 9 - Industries other than Palm Oil and Rubber Mill Off-site treatment facilities AS 10 - Land treatment facilities AS 11 - Off-site recovery facilities AS 12 - Secure landfill AS 13 - Off-site storage facilities AP/E/INC - Scheduled waste incinerators.

TYPE OF APPLICATION	PROCESSING FEE	LEGISLATION	APPLICATION CENTRE	TIME TAKEN FOR APPROVAL	MAIN TERMS/ CONDITIONS FOR APPLICATION/ SUPPORTING DOCUMENT
4. Written Notification **(i) To construct or carry out any work on any premises that may result a new sources of discharge of industrial effluent or mixed effluent.** **(ii) To construct any transfer stations and landfills** **(iii) To construct any premises that may result a new sources of discharge sewage (other than any housing or commercial development or both having a population less than 150)**	- - -	Environmental Quality Regulations 2009:- (i) Industrial Effluent,2009 (ii) Control of Pollution From Solid Waste Transfer Station and Landfill, 2009. (iii) Sewage, 2009.	DOE State Offices		Able to treat the effluent discharge to the standard required under the regulations. **<u>Information required</u>** Information on the site, raw materials, products, design of the treatment systems and the quality / quantity of effluents. **<u>Forms</u>** (i) <u>Second Scheduled</u> Sub-regulation 4(2) – Notification For New or Altered Sources of Discharge of Industrial Effluent or Mixed. (ii) <u>Third Scheduled</u> Written Declaration on design and Construction or Industrial Effluent Treatment System (iii) <u>First Scheduled</u> Written Notification of New Sources of Leachate Discharge (iv) <u>First Scheduled</u> Notification For New Sources of Sewage Discharge or Release.

APPENDIX N

TYPE OF APPLICATION	PROCESSING FEE	LEGISLATION	APPLICATION CENTRE	TIME TAKEN FOR APPROVAL	MAIN TERMS/ CONDITIONS FOR APPLICATION/ SUPPORTING DOCUMENT
5. Written Approval **To install, resite or alter fuel burning equipment, incinerator or chimney.**		Environmental Quality (Clean Air) Regulations, 1978	DOE State Offices	3 weeks	Able to comply with the emission standard under the regulations. **<u>Information required</u>** Information on the equipment, fuel/ combustion materials, design of the equipment, heights of the chimney and quantity and quality of the emission. **<u>Forms</u>** AP/E/2/INC - Incinerator AP/E/1/86 - Fuel Burning Equipment AP/E/3P/82 – Generator AS16D-1 Scrubber AS16D-2 Cyclone AS16D-3 Bag filter

APPENDIX N

TYPE OF APPLICATION	PROCESSING FEE	LEGISLATION	APPLICATION CENTRE	TIME TAKEN FOR APPROVAL	MAIN TERMS/ CONDITIONS FOR APPLICATION/ SUPPORTING DOCUMENT
6. Licence to Occupy and Use the Prescribed Premises	Processing Fee for all prescribed premises RM100.00 Effluent Related Fee for palm oil mill and rubber mill Calculated based on the quantity and quality of effluent.	Environmental Quality Act, 1974 (Act 127) Environmental Quality (Prescribed Premises) (Crude Palm Oil) Regulations, 1977 Environmental Quality (Prescribed Premises) (Raw Natural Rubber) Regulations 1978 Environmental Quality (Licensing) Regulations, 1977 Environmental Quality (Prescribed Premises) (Scheduled Wastes Treatment and Disposal Facilities) Regulations (Amendment) 2006.	DOE State Offices	**Palm Oil Mill** (Validity 1st July-30th June). Processing period for : Licence renewal 1 week for application by post. Instant approval when submitting the application in-person at DOE State Offices. New licence 2 weeks. **Rubber Mill** (Validity 1st April 30th March) Processing period for: Licence renewal 1 week for application by post.Instant approval when submitting the application in-person at DOE State Offices.	**Form** AS 1 -for all licence applications AS 3 & 4 - Palm Oil Mill **Form** AS 1 -for all licence applications AS 6 & 7 - Rubber Mill

APPENDIX N

TYPE OF APPLICATION	PROCESSING FEE	LEGISLATION	APPLICATION CENTRE	TIME TAKEN FOR APPROVAL	MAIN TERMS/ CONDITIONS FOR APPLICATION/ SUPPORTING DOCUMENT
				<u>New licence</u> 2 weeks. Scheduled Waste Treatment and Disposal Facilities (Validity 1st May – 30th April) Processing period for: <u>Licence renewal</u> 1 week for application by post. Instant approval when submitting the application in-person at DOE State Offices. <u>New licence</u> 2 weeks.	Obtain EIA approval for scheduled wastes treatment and disposal facilities. The facilities have been constructed. **<u>Form</u>** AS 1 - for all licence applications
7. Disposal of spoil/ dredged material at sea	-		DOE State Offices	5 weeks	Environmental Assessment Report on the suitability of the proposed disposal site at sea, prior to the coordinates given by the Marine Department and comments form Fisheries Department

APPENDIX N

TYPE OF APPLICATION	PROCESSING FEE	LEGISLATION	APPLICATION CENTRE	TIME TAKEN FOR APPROVAL	MAIN TERMS/ CONDITIONS FOR APPLICATION/ SUPPORTING DOCUMENT
8. Special Management of Scheduled Wastes	RM 300.00	Environmental Quality Act, 1974 (Act 127) Environmental Quality (Scheduled Wastes) Regulations (Amendment 2007)	DOE Head Quarters	8 weeks	Application has to comply with the criteria as per the Guidelines for Special Management of Scheduled Wastes. Waste generators may be allowed to send scheduled wastes generated from their particular facility or process to facilities other than at the prescribed premises, prior to approval from the DOE.
9. Export of Scheduled Wastes	-	Environmental Quality Act, 1974 (Act 127) Environmental Quality (Scheduled Wastes) Regulations (Amendment 2007) Custom (Prohibition on Export) Order (Amendment 2006) Basel Convention on the Transboundary Movements of Hazardous Wastes.	DOE Head Quarters	Notification to importing/ transit countries – 3 weeks. Consent from the importing / transit countries – depending on the time taken by each country to review such application. Final approval from DOE (Export Permit) prior to the consent from importing/ transit countries – 3 weeks.	Form. AS15. Export (Rev. 2006), with the checklist of documents to be submitted to the DOE, among others:- Bank Guarantee of RM 25,000.00 Insurance Coverage Agreement between waste generator and the final receiver in the importing country. Agreement between waste generator and transporters in Malaysia Details on the licensed recovery facility / final receiver in importing country.

APPENDIX N

TYPE OF APPLICATION	PROCESSING FEE	LEGISLATION	APPLICATION CENTRE	TIME TAKEN FOR APPROVAL	MAIN TERMS/ CONDITIONS FOR APPLICATION/ SUPPORTING DOCUMENT
10. Import of Scheduled Wastes	-	Environmental Quality Act, 1974 (Act 127) Environmental Quality (Scheduled Wastes) Regulations (Amendment) 2007 Custom (Prohibition on Import) Order (Amendment) 2005 Basel Convention on the Transboundary Movements of Hazardous Wastes.	DOE Head Quarters	Application from the local importer and a letter of notification from exporting country 3 weeks. Final approval from DOE (Import Permit) and consent to the exporting country – 3 weeks	**Form** AS 14. Import. Bank Guarantee of RM 10,000.00 Agreement between final receiver in Malaysia with waste generator in exporting country.

ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

PROCEDURE AND REQUIREMENTS IN MALAYSIA

Department of Environment
Ministry of Natural Resources & Environment
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PREFACE

Environmental Impact Assessment (EIA) has been acknowledged as a useful tool which incorporates environmental factors in making a decision regarding new development. EIA has been mandatory for particular projects since 1 April 1988. This booklet summarizes the EIA procedure as an aid to environmental planning of new projects or the expansion of existing ones. It contains information on the EIA process which required proponents of particular projects, classified as `prescribed activities' to submit to the Director General of Environmental Quality before the project is approved by the relevant approval authority. It also provides information on the nineteen categories of activities prescribed. Its contents are intended primarily for decision makers, project proponents as well as consultants preparing EIA reports.

I. ENVIRONMENTAL IMPACT ASSESSMENT

What is Environmental Impact Assessment (EIA)?

EIA is a study to identify, predict, evaluate and communicate information about the impacts on the environment of a proposed project and to detail out the mitigating measures prior to project approval and implementation.

Why do we need EIA?

EIA is essentially a planning mechanism for preventing environmental problems due to an action. It ensures that the potential problems are foreseen and addressed at an early stage in the project planning and design. Thus this will avoid costly mistakes in project implementation, either because of the environmental damages that are likely to arise during project implementation, or because of modifications that may be required subsequently in order to make the action environmentally acceptable.

EIA when integrated into the existing planning and decision-making structure, provides additional information towards a better decision-making.

What to Consider Prior to EIA Study?

Project Concept

Project proponent must make sure that the concept of the proposed project does not contradict any development plans, policies or any decisions of the Government of Malaysia prior to the EIA Study, namely (but not limited to the following):-

(i) National Physical Plan.
(ii) Structure Plan.
(iii) Local Plan.
(iv) Regional Plan (inter-state planning).
(v) Agreement between the Government of Malaysia and Kualiti Alam Sdn Bhd. on the disposal of scheduled wastes in Malaysia.

(vi) Agreement between the Government of Malaysia and Pantai Medivest Sdn. Bhd., Faber Mediserve Sdn. Bhd. and Radicare Sdn. Bhd. on the disposal of clinical wastes from Government Hospitals.

(vii) Guidelines on Highland Development (*Garispanduan Pembangunan Di Kawasan Tanah Tinggi*).

(viii) Guidelines on Siting and Zoning of Industries.

Site selection

The criteria for selecting a new site normally include engineering, environmental and economic aspects. Usually, some of these criteria limit the choice of potential sites to a given few. These sites are then investigated further for their suitability through site visits and analysis of existing information. During this stage, measures to protect the environment and resolve socio economic issues are also considered. Where the project is situated on private/ individual land or near waterways, and alternative users will be affected by the project, the issue of compensation and offset investment should be addressed in the EIA.

Project proponent is encouraged not to select site which is located in or adjacent to Environmentally Sensitive Areas (ESA), as defined in National Physical Plan (April 2005). ESA shall be integrated in the planning and management of land use and natural resources to ensure sustainable development. The management of ESA shall be guided by the following criteria:-

- ESA Rank 1 – No development, agriculture or logging shall be permitted except for low-impact nature tourism, research and education.

- ESA Rank 2 – No development or agriculture. Sustainable logging and low-impact nature tourism may be permitted subject to local constraints.

- ESA Rank 3 – Controlled development where the type and intensity of the development shall be strictly controlled depending on the nature of the constraints.

Source: National Physical Plan (26 April 2005)

The areas defined as environmentally sensitive as demarcated in IP8 of the National Physical Plan are:-

- ESA Rank 1
    - All Protected Areas (refer to National Physical Plan), potential Protected Areas, wetlands and turtle landing sites.
    - Catchment of existing and proposed dams.
    - All areas above 1000 m contour.

- ESA Rank 2
    - All other forests, corridors, corridors linking important Protected Areas, buffer zone around Rank 1 areas.
    - All areas between 300m- 1000 m contour.

- ESA Rank 3
    - All marine park islands, buffer zone around Rank 2 areas.
    - Catchment for water intakes and groundwater extraction (wellfields).
    - All areas between 150m-300m contour, all areas with erosion risk above 150 ton/ha/yr, all areas experiencing critical or significant coastal erosion.

Source: National Physical Plan (26 April 2005)

Furthermore, under the NPP20 of the National Physical Plan, sensitive coastal ecosystems shall be protected and used in a sustainable manner. One of the measures to be undertaken is that coastal reclamation for future urban expansion shall not be carried out except for the development of ports, marinas and jetties. The areas defined as sensitive coastal ecosystem as demarcated in IP10 of the National Physical Plan are mangrove forests, marine parks, critical coastal erosion areas (category 1) and turtle landing site.

The EIA documents the site selection process. However, in certain instances, for large or sensitive projects, the Project Proponent may wish to confirm the site is acceptable to the authorities and public prior to commencing detailed feasibility and EIA studies. In this instance a formal documented *Site Search Report* detailing the environmental, engineering and economic initial assessment of the sites and their ranking can provide a useful decision tool.

Some general criteria relevant to all projects are as below:-

- *Buffers*: Appropriate buffer zones should be included with respect to a specific category of development projects ie. industrial projects, solid waste handling and disposal facilities (landfills, incinerators, composting plants, etc), toxic and hazardous wastes treatment and disposal facilities, with potential to give rise to air including odour problems, water and noise pollution and solid and toxic waste problems. DOE's *"Guidelines for the Siting and Zoning of Industries"* (latest revision) can be used as a general guide, subject to the findings of the EIA. Extensive control problems will be expected in many cases and bushes, trees, banks etc can provide barriers to neighbours and improve aesthetics.

- *Air pollution:* siting in areas where air pollution from emissions will seriously affect local communities should be avoided. Locate to minimize air pollution and odour impact from point and fugitive sources. Where emissions of carcinogenic or mutagenic substances is possible due account should be made for health risks.

- *Proximity:* The facility should be distant to sensitive potential receptors of impacts such as schools, places of worship, nursing homes, hospitals.

- *Water Pollution:* Siting a facility along water courses can cause their eventual degradation, and affect critical beneficial uses downstream such a public water supply intake, fisheries or basic riverine livelihood. Water catchment areas should be avoided.

- *Geology/Hydrology:* Siting of facilities (eg industries, scheduled wastes facilities, solid wastes landfills) should have due regard for their potential to contaminate groundwater reserves.

- *Risks of Toxic Clouds, Fire and Explosion:* Locate so that the outer hazard distances coincide with the outer boundary of the buffer zone and human settlements.

- *Waste Disposal/Raw Materials* site near to sources of principle raw materials and ensure availability of adequate waste disposal facilities.

- *Social/Cultural:* Avoid populated areas, parks and scenic areas. Public participation and local interest groups consultation to gain local acceptance and an assessment of the impact on cultural resources would be necessary.

- *Access*: Good all weather access roads should be avoided. For easy entry and exit of raw material, product and waste transportation vehicle (or equivalent rail or deep water sea access as appropriate). Utilization of secondary roadways or streets is undesirable because of noise impacts and traffic congestion on routes not designed for heavy truck use.

- *Noise*: Secluded locations are best if feasible. If not, suitable buffers and distances from human dwellings must be kept.

- *Land Value:* Land value and property value are likely to be affected by the placement of industrial facilities in a given area. The type of land use along roadways leading to the site entrance and the degree of residential development in the vicinity need to be considered.

- *Ecology:* Avoid unique habitat areas. Siting the plant near or in ecologically or environmentally sensitive habitats (e.g mangroves, estuaries, wetlands, coral reefs) can cause irreversible damage to these habitats.

Legal Requirement

In Malaysia, EIA is required under section 34A, Environmental Quality Act, 1974 (**Appendix 1**), which specifies the legal requirements in respect of EIA for Prescribed Activities:

- It empowers the Minister of Natural Resources and Environment after due consultation, to prescribe any activity which may have significant environmental impact as a “Prescribed Activity”.

- The section further requires the Project Proponent of a Prescribed Activity to submit a report (the EIA) to the Director General of Environmental Quality before approval for the proposed activity is granted by the relevant approving authority.

- The EIA report must:
    - be in accordance with the guidelines issued by the DOE;
    - contain an assessment of the impact of the Prescribed Activity on the environment; and
    - detail the proposed measures that shall be instituted to prevent, reduce or control adverse impacts on the environment.

Which activities are subject to EIA?

Activities subject to EIA are prescribed under Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order, 1987 (**Appendix 2**).

Who can conduct EIA study?

An EIA Study has to be conducted by competent individuals who are registered with the Department of Environment under the EIA Consultant Registration Scheme. The DOE will reject EIA reports which are conducted by individuals who are not registered with the Department. As such, the project proponent or EIA study team leader has to ensure that all members in the EIA study team are registered with the Department of Environment. The list of registered EIA Consultants (including Subject Consultants and Assistant Consultants) is available at the Department of Environment website (www.doe.gov.my). Details on the registration scheme is also available at the website (EIA Consultant Registration Guidance Document).

How to conduct EIA?

In the preparation of EIA reports, project proponents and EIA consultants may refer to "A Handbook of Environmental Impact Assessment Guidelines" (Fourth Edition) 2007 and EIA Guidelines for specific activities published by the Department of Environment and

other relevant guidelines published by other agencies. The list of these Guidelines is at **Appendix 3.**

Project Approving Authority

All prescribed activities need to obtain EIA approval from the Director General of Environment prior to the giving of approval by the relevant Federal or State Government authority for the implementation of the project.

The Approving Authority is the Government Authority that has the task of deciding, whether or not a project should proceed. The authorities include the following:

- The National Development Planning Committee for Federal Government sponsored projects.
- The respective State Planning Authorities for State Government sponsored projects.
- The Regional Development Authorities for the State Executive Committee (EXCO).
- Ministry of International Trade and Industry (MITI) (with due reference to the Malaysia Industrial Development Authority (MIDA)) - for industrial projects.

II. THE EIA PROCEDURE IN MALAYSIA

The Principal Stages of the EIA Process

The EIA Process in Malaysia is designed to follow the **Integrated Project Planning Concept** as shown in **Figure 1.** The features of the concept include the following:

1. At the onset, during the project identification stage, the need to conduct an EIA study is determined. At this stage, the project proponent has to confirm that the project concept is in line with any development plans, policies and decisions of the Government of Malaysia, prior to EIA study.

2. If the project requires EIA, screening of project options in respect of alternative sites and process/design variants with the aim of selecting the optimum site and design concept based on economic, engineering, social and environmental criteria, is done in parallel with the Pre-feasibility Study for the project.

   The Scoping exercise, which could also be conducted in parallel with the site selection and project options assessment or immediately thereafter, usually during Pre-feasibility, determines the level and scope of EIA studies required.

   The EIA study covering detailed identification of potential impacts, baseline surveys and data gathering, prediction and evaluation of impacts including, if appropriate, risk assessment, mitigation and abatement of impacts and Environmental Monitoring and Auditing (EM&A) requirements.

3. The EIA report is reviewed simultaneously with the Pre-feasibility and Feasibility reports respectively, before a final decision on the project is made. Review and decision on approval of the EIA by DOE followed by issued of approval conditions, requirement for further study or rejection of the EIA.

4. Detailed design of mitigation measures and preparation of Environmental Management Planning (EMP) which refines the

recommendations on mitigation and Environmental Monitoring & Audit in the EIA into an effective environmental protection strategy that demonstrates compliance to the terms of the EIA's approval.

5. During project construction, the mitigating measures and EMP for construction must be implemented.

6. Throughout project operation, the environmental monitoring and auditing are carried out to ensure effectiveness of the mitigating measures.

This concept is recommended to be followed to minimize project delay and improve project planning. EIA studies undertaken late in a project cycle do not assist in project planning.

Timing of Environmental Inputs

Figure 1 also indicates the approximate timings within the project cycle for each environmental activity defined above. Ideally, the scheduling should follow this format with environmental considerations integrated at the earliest opportunity. **Figure 2** shows the sequence of activities generally required for planning approval and compliance with environmental approval conditions in more detail and indicates who is responsible for various activities.

Table 1 shows the role and interest of various Group/Agencies in the EIA Process

Table 1: Role and Interest of various Group/Agencies in the EIA Process

Group	Role	Interest
Project Initiator	Plan, develop and/or manage the key sector development project	Mainly economic (case of private sector) but also socio-economic (in case of public sector development)
Project investor (leading agency and purchasers of land)	Investment in key sector projects	How impacts affect the viability of the project and liabilities to be incurred
Department of Environment (DOE)	Decision on EIA report	Extent of impacts the project has on land use and adjacent development
JPBD	Zoning and land use	Extent of impact the project has on land use and adjacent developments
Other Government Agencies (DID, JKR, Fisheries, Agriculture, Health, Sewerage Services, DOSH, etc)	Relevant inputs in respective areas of expertise	Implications of the proposed project on other projects or activities in which they have interest or wish to promote
Approving Authority	Project Approval	Impacts are to be within acceptable levels with no significant residual effects
Local Authorities	Zoning and development control	Extent of impact the project has on land use and adjacent developments
Local Community	Relevant inputs for protection of local interests	Impacts of project and how they affect the quality of life

EIA Procedure

There are two EIA procedures adopted in Malaysia, namely the Preliminary EIA and the Detailed EIA, that can be described as follows:

- **Preliminary EIA**

  Preliminary EIA is assessment of impacts due to those activities that are prescribed.

  The Preliminary EIA report is reviewed by a Technical Committee consisting of the Department of Environment State Offices and other relevant government agencies. The procedure for Preliminary EIA is as shown in **Figure 3**.

  The number of Preliminary EIA report to be submitted to the Department of Environment State Offices for review is 12 copies, and 3 copies plus a softcopy of the Executive Summary of the Preliminary EIA report to the Department of Environment Headquarters.

- **Detailed EIA**

  Detailed EIA is a procedure undertaken for those projects with major/significant impacts to the environment. The procedure for Detailed EIA is as shown in **Figure 4.**

  The Detailed EIA involves EIA report display for the public and affected community to comment. Activities which need to go through the Detailed EIA procedure, are listed in **Appendix 4.** Notwithstanding the list in **Appendix 4**, the Director General of Environment may request a Detailed EIA for other prescribed activities as he deems necessary.

  Terms of Reference

  A Terms of Reference (TOR) for EIA must be submitted by project proponent for project which requires Detailed EIA. The TOR has to be project-related and site-specific, and based on the Guidance Document prepared by DOE **(Appendix 5).**

Environmental data collections required, assessment procedures to be used, and appropriate methodologies for impact prediction and assessment must be outlined in the TOR. The TOR should also be prepared in consultation with relevant agencies. The TOR will be reviewed by DOE with the assistance of an ad-hoc EIA Review Panel.

The number of copies of TOR to be submitted to the Department of Environment is 35 copies.

Detailed EIA

Detailed EIA is carried out based on specific terms of reference issued by an ad hoc Review Panel appointed by the Director General. The EIA Report is reviewed by the ad hoc Review Panel chaired by the Director General. The Department of Environment maintains a list of experts who may be called upon to sit as members of any Review. The selection of the experts depends on the areas of environmental impacts to be reviewed.

The number of Detailed EIA report to be submitted to the Department of Environment Headquarters for review is 50 copies.

III. THE REVIEW PROCESS

Time taken for EIA Review

The period allocated for a review of a Preliminary EIA report is 5 weeks while that for a Detailed EIA report is 12 weeks.

How are EIA Reports Processed and Concluded?

Preliminary EIA Reports are processed and concluded by the Department of Environment State Offices including projects within the Exclusive Economic Zone (EEZ).

Detailed EIA Reports and projects involving more than one state are processed at the Department of Environment Headquarters.

Preliminary EIA Reports

The organizational structure of the Preliminary EIA Report processing and approval procedure set-up at the Department of Environment State Offices is headed by the State Director. He is responsible for approving or rejecting an EIA Report. One-Stop Agency meetings with other relevant agencies or departments are held in the review process, where comments and verifications from relevant agencies or departments are sought.

Detailed EIA Reports

The organisational structure of the Detailed EIA Report processing and approval procedure set-up is headed by the Director General of Environmental Quality who is responsible for approving or rejecting the EIA report. He is assisted by the Director of Assessment Division, who also functions as Secretary to the Detailed EIA ad hoc Review Panel.

The Chairman of this panel is the Director General of Environmental Quality. The Detailed EIA Review Panel's main task is to critically review Detailed EIA Reports and formulate recommendations to the relevant project approving authority. The Detailed EIA Review Panel is established on an ad hoc basis specifically for a particular project.

The panel comprises independent members of relevant disciplines, from different organisations such as Universities and Non-Governmental organisations. Detailed EIA Reports are also displayed at all Department of Environment Offices, as well as public and university libraries for public comments. The public are widely notified through the mass media when and where the Detailed EIA Reports are available for review and comment.

Consultation

Although there is no requirement for notification and a project proponent is under no formal obligation to consult the Department of Environment about his proposal before submission of his EIA Report, there are practical reasons for doing so. The Department of Environment and other relevant departments often possess useful information in particular, data on environmental quality, local problems, as well as aspects of the project most likely to be of concerned and requiring emphasis in the EIA Report. It would be beneficial for all concerned if Project Approving Authorities can advise potential project proponents as soon as a project is proposed to check with the Department of Environment to ascertain if EIA is required. By doing this the issues of timing and delay can be avoided.

IV. ACTIVITIES SUBJECT TO EIA

Prescribed Activities

The Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 1987 which is made under powers conferred by section 34A of the Environmental Quality Act, 1974 specifies those activities that are subject to EIA. Nineteen categories of activities are prescribed and these include those related to: agriculture, airport, drainage and irrigation, land reclamation, fisheries, forestry, housing, industry, infrastructure, ports, mining, petroleum, power generation, quarries, railways, transportation, resort and recreational development, waste treatment disposal, and water supply.

Many of the activities related to these nineteen categories are defined in terms of project size (as area), capacity (quantum) while others are not defined by any unit of measure.

Hence, to assist project initiators or project approving authorities to make quick decisions on whether a proposed activity is subject to the Act or otherwise, three simple checklists have been prepared as follows:

a) Activities defined by quantum (Table 2a)

b) Activities defined by project size (table 2b); and

c) Activities not defined by unit of measure (Table 2c)

Table 2a

Malaysia: Summary of Activities Subject to Environmental Impact Assessment (Activities Defined by Quantum)

Quantum	Unit	Activity	Number
60,000	Barrel	Construction of product depots for the storage of petrol, gas or diesel.	12(e)
5,000	Tonnes	Shipyards - Dead weight tonnage greater than 5,000 tonnes.	8(f)
4,500	Cubic meters/ day	Groundwater development for industrial, agricultural urban water supply of greater than 4,500 cubic metres per day	19(b)
200	Tonnes/ day	Iron and steel industries using scrap iron as raw materials for production greater than 200 tonnes/day.	8(e)
100	Family	Agricultural programmes necessitating Resettlement of 100 families or more.	1(b)
100	Tonnes/ day	Chemical - Where production capacity of each product or of combined products is greater than 100 tonnes/day.	8(a)
100	Tonnes/ day	Lime production industries - 100 tonnes/ day and above burnt lime rotary kiln.	8(d)
100	Tonnes/ day	Iron and steel industries using iron ore as raw materials for production greater than 100 tonnes/day.	8(e)
50	Tonnes/ day	Non ferrous industries other than aluminium and copper.	8(c)
50	Tonnes/ day	Lime production industries - 50 tonnes/ day and above vertical kiln.	8(d)
50	Tonnes/ day	Pulp and paper industry - Production capacity greater than 50 tonnes/day.	8(g)
30	Tonnes/ day	Cement industries-for clinker throughput of 30 tonnes/hour and above.	8(d)
10	Megaw atts	Construction of steam generated power stations burning fossil fuels and having a capacity of more than 10 megawatts	13(a)

Table 2b

Malaysia: Summary of Activities Subject to Environmental Impact Assessment (Activities Defined by Project Size)

Project Size	Unit	Activity	Number
5,000	Hectare	Irrigation schemes covering an area of 5,000 hectares or more.	3(c)
500	Hectare	Land development schemes covering an area of 500 hectares or more to bring forest land into agriculture production.	1(a)
500	Hectare	Development of agricultural estates covering an area of 500 hectares or more involving changes in types of agricultural use.	1(c)
500	Hectare	Logging covering an area of 500 hectares or more.	6(c)
400	Hectare	Construction of dams and hydroelectric power scheme reservoirs with a surface area in excess of 400 hectares.	13(b)ii
250	Hectare	Mining of mineral in new areas where the mining lease covers a total area in excess of 250 hectares.	11(a)
200	Hectare	Construction of dams and man-made lakes and artificial enlargement of lakes with surface areas of 200 hectares or more.	3(a)
200	Hectare	Construction of dams or impounding reservoirs with a surface area of 200 hectares or more.	19(a)
100	Family	Agricultural programmes necessitating resettlement of 100 families or more.	1(b)
100	Hectare	Drainage of wetland, wild-life habitat or of virgin forest covering an area of 100 hactares or more.	3(b)
80	Room	Construction of coastal resort facilities or hotels with more than 80 rooms.	17(a)

Table 2b (continuation)

Project Size	Unit	Activity	Number
50	Hectare	Coastal reclamation involving an area of 50 hectares or more.	4
50	Hectare	Land-based aquaculture projects accompanied by clearing of mangrove swamp forests covering an area of 50 hectares or more.	5(c)
50	Hectare	Conversion of hill forest land to other land use covering an area of 50 hectares or more.	6(a)
50	Hectare	Conversion of mangrove swamps for industrial, housing or agricultural use covering an area of 50 hectares or more.	6(d)
50	Hectare	Housing development covering an area of 50 hectares or more.	7
50	Hectare	Industrial estate development for medium and heavy industries covering an area of 50 hectares or more.	9(b)
50	Hectare	Sand dredging involving an area of 50 hectares or more.	11(c)
50	Hectare	Hill station resort or hotel development covering an area of 50 hectares or more.	17(b)
50	Kilometre	Construction of off-shore and on-shore pipelines in excess of 50 kilometres in length.	12(b)
40	Hectare	Construction of dams and hydroelectric power schemes with dams over 15 meters high and ancillary structures covering a total area of 40 hectares.	13(b)i
2.5	Kilometre	Construction of airports (having an airstrip of 2,500 metres or longer).	2(a)

Table 2c

Malaysia: Summary of Activities Subject to Environmental Impact Assessment (Activities Not Defined by Unit of Measure)

Prescribed Activity	Activity	Number
AIRPORT	• Airstrip development in state and national parks.	2(b)
FISHERIES	• Construction of fishing harbours.	5 (a)
	• Harbour expansion involving an increase of 50 per cent or more in fish landing capacity per annum.	5 (b)
FORESTRY	• Logging or conversion of forest land to other land use within the catchment area of reservoirs used for municipal water supply, irrigation or hydropower generation or in areas adjacent to state and national parks and national marine parks.	6 (b)
	• Clearing of mangrove swamps on islands adjacent to national marine parks.	6 (e)
INDUSTRY	• Petrochemicals industries – all sizes.	8(b)
	• Primary smelting of aluminium and copper-all sizes.	8(c)
INFRASTRUCTURE	• Construction of hospitals with outfall into beachfronts used for recreational purposes.	9(a)
	• Construction of expressways.	9(c)
	• Construction of national highways.	9(d)
	• Construction of new townships.	9(e)

Table 2c (continuation)

Prescribed Activity	Activity	Number
PORTS	• Construction of ports. • Port expansion involving an increase of 50 per cent or more in handling capacity per annum	10(a) 10(b)
MINING	• Ore processing including concentrating for aluminium, copper, gold or tantalum.	11(b)
PETROLEUM	• Oil and gas fields development. • Construction of oil and gas separation, processing, handling and storage facilities. • Construction of oil refineries.	12(a) 12(c) 12(d)
POWER GENERATION AND TRANSMISSIONS	• Construction of combined cycle power stations. • Construction of nuclear-fueled power stations.	13(c) 13(d)
QUARRIES	• Proposed quarrying of aggregate, limestone, silica, quartzite, sandstone, marble and decorative building stone within 3 kilometres of any existing residential, commercial or industrial areas, or any area for which a licence, permit or approval has been granted for residential, commercial or industrial development.	14
RAILWAYS	• Construction of new routes. • Construction of branch lines.	15(a) 15(b)
TRANSPORTATION	• Construction of Mass Rapid Transport projects.	16

Table 2c (continuation)

Prescribed Activity	Activity	Number
RESORT AND RECREATIONAL DEVELOPMENT	• Development of tourist or recreational facilities in national parks.	17(c)
	• Development of tourist or recreational facilities on islands in surrounding waters which are gazetted as national marine parks.	17(d)
WASTE TREATMENT AND DIS-POSAL		
Toxic and Hazardous Waste	• Construction of incineration plant.	18(a)i
	• Construction of recovery plant (off-site).	18(a)ii
	• Construction of wastewater treatment plant (off-site).	18(a)iii
	• Construction of secure landfil facility.	18(a)iv
	• Construction of storage facility (off-site).	18(a)v
Municipal Solid Waste	• Construction of incineration plant.	18(b)i
	• Construction of composting plant.	18(b)ii
	• Construction of recovery/recycling plant.	18(b)iii
	• Construction of municipal solid waste landfill facility.	18(b)iv
Municipal Sewage	• Construction of wastewater treatment plant.	18(c)i
	• Construction of marine outfall.	18(c)ii

V. CONCLUSION

The EIA is an important phase in the process of deciding about the final shape of a proposed project. It helps officials make decisions about a project and it helps the project proponents achieve their aims successfully:

- A project that has been designed to suit the local environment is more likely to be completed on time and within budget, and is more likely to avoid difficulties along the way.

- A project that conserves the natural resources it relies upon will continue to be sustained by the environment for years to come.

- A project that yields its benefits without causing serious environmental problems is more likely to bring credit and recognition to its proponents.

In summary, an Environmental Impact Assessment:

- predicts the likely environmental impacts of projects;

- finds ways to reduce unacceptable impacts and to shape the project so that it suits the local environment in a sustainable manner; and

- presents these predictions and options to decision-makers.

ENVIRONMENTAL QUALITY ACT, 1974 (AMENDMENT, 1985) SECTION 34A

The Environmental Quality (Amendment) Act 1985, amended the Environmental Quality Act, 1974. Amendments include the insertion of section 34A which requires any person intending to carry out any prescribed activity to submit report on the impact on the environment to the Director of Environmental Quality for examination. The Amendment act was gazetted on 9 January 1986 and section 34A reads as follow:

"34A (1) The Minister, after consultation with the Council, may by order prescribe any activity which have significant environment impact as prescribed activity.

(2) Any person intending to carry out any of the prescribed activities shall, before any approval for the carrying out of such activity is granted by the relevant approving authority, submit a report to the Director General. The report shall be in accordance with the guidelines prescribed by the Director General and shall contain an assessment of the impact such activity will have or is likely to have on the environment and the proposed measures that shall be undertaken to prevent, reduce or control the adverse impact on the environment.

(3) If the Director General on examining the report and after making such inquiries as he considers necessary, is of the opinion that the report satisfies the requirements of subsection (2) and that the measures to be undertaken to prevent, reduce or control the adverse impact on the environment are adequate, he shall approve the report, with or without conditions attached thereto, and shall inform the person intending to carry out the prescribed activity and the relevant approving authorities accordingly.

(4) If the Director General, on examining the report and after making such inquiries as he considers necessary, is of the opinion that the report does not satisfy the requirements of subsection (2) or that the measures to be undertaken to prevent, reduce or control the adverse impact on the

environment are inadequate, he shall nor approve the report and shall give his reasons therefore and shall inform the person intending to carry out the prescribed activity and the relevant approving authorities accordingly. Provide that where such report is not approved it shall not preclude such person from revising and re-submitting the revised report to the Director General for the approval.

(5) The Director General may if he considers it necessary require more than one report to be submitted to him for his approval.

(6) Any person intending to carry out a prescribed activity shall not carry out such activity until the report required under this section to be submitted to the Director General has been submitted and approved.

(7) If the Director General approves the report, the person carrying out the prescribed activity, in the course of carrying out such activity, shall provide sufficient proof that the conditions attached to the report (if any) are being complied with and that the proposed measures to be taken to prevent, reduce or control the adverse impact on the environment are being incorporated into the design, construction and operation of the prescribed activity.

(8) Any person who contravenes this section shall be guilty of an offence and shall be liable to a fine not exceeding one hundred thousand ringgit or to imprisonment for a period not exceeding five years or both and to a further fine one thousand ringgit for every day that the offence is continued after a notice by the Director General requiring him to comply with the act specified therein has been served upon him".

ENVIRONMENTAL QUALTIY (PRESCRIBED ACTIVITIES) (ENVIRONMENTAL IMPACT ASSESSMENT) ORDER 1987*

In exercise of the powers conferred by section 34A of the Environmental Quality Act 1974, the Minister, after consultation with the Environmental Quality Council, makes the following order.

1. Citation and commencement

This order may be cited as the **Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 1987** and shall come into force on the 1st April 1988.

2. Prescribed activities

The activities specified in the Schedule are prescribed to be prescribed activities.

3. Order not applicable to Sabah and Sarawak in certain prescribed activities

This Order shall not apply in respect of-

(a) the prescribed activities [except item 7(viii)] listed in the First Schedule of the Conservation of Environment)Prescribed Activities) Order 1999 published under the Second Supplementary of the Sabah Government *Gazette* on the 30 August 1999; and

(b) the prescribed activities listed in the First Schedule of the Natural Resources and Environment (Prescribed Activities) Order 1994 published under Part II of the Sarawak Government *Gazette* on 18 August 1994

4. Items in the Schedule still applicable to Sabah and Sarawak

Notwithstanding paragraph 3, the prescribed activities listed as Items 2, 5(a) and (b), 8, 9, 10, 12, 13(a), (c) and (d), 15, 16 and 18 in the Schedule shall continue to apply in respect of the State of Sabah and Sarawak.

SCHEDULE

1. AGRICULTURE:

(a) Land development schemes covering an area of 500 hectares or more to bring forest land into agricultural production.

(b) Agricultural programmes necessitating the resettlement of 100 families or more.

(c) Development of agricultural estates covering an area of 500 hectares or more involving changes in types of agricultural use.

2. AIRPORT:

(a) Construction of airports (having an airstrip of 2,500 metres or longer).

(b) Airstrip development in state and national parks.

3. DRAINAGE AND IRRIGATION:

(a) Construction of dams and man-made lakes and artificial enlargement of lakes with surface areas of 200 hectares or more.

(b) Drainage of wetland, wild-life habitat or of virgin forest covering an area of 100 hectares or more.

(c) Irrigation schemes covering an area of 5,000 hectares or more.

4. LAND RECLAMATION:

Coastal reclamation involving an area of 50 hectares or more.

5. FISHERIES:

(a) Construction of fishing harbours.

(b) Harbour expansion involving an increase of 50 percent or more in fish landing capacity per annum.

(c) Land based aquaculture projects accompanied by clearing of mangrove swamp forest covering an area of 50 hectares or more.

6. FORESTRY:

(a) Conversion of hill forest land to other land use covering an area of 50 hectares or more.

(b) Logging or conversion of forest land to other land use within the catchment area of reservoirs used for municipal water supply, irrigation or hydro-power generation or in areas adjacent to state and national parks and national marine parks.

(c) Logging covering an area of 500 hectares or more.

(d) Conversion of mangrove swamps for industrial, housing or agricultural use covering an area of 50 hectares or more.

(e) Clearing of mangrove swamps on islands adjacent to national marine parks.

7. HOUSING:

Housing development covering an area of 50 hectares or more.

8. INDUSTRY:

(a)	Chemicals	-	Where production capacity of each product or of combined products is greater than 100 tonnes/day.
(b)	Petrochemicals	-	All sizes.
(c)	Non-ferrous	-	Primary smelting: Aluminium - all sizes Copper - all sizes Others - producing 50 tonnes/day and above of product
(d)	Non-metallic	-	Cement - for clinker throughput of 30 tonnes/hour and above. Lime - 100 tonnes/day and above burnt lime rotary kiln or 50 tonnes/day and above vertical kiln.
(e)	Iron and steel	-	Require iron one as raw materials for production greater than 100 tonnes/day; or - Using scrap iron as raw materials for production greater than 200 tonnes/day.
(f)	Shipyards	-	Dead weight tonnage greater than 5,000 tonnes.
(g)	Pulp and paper industry	-	Production capacity greater than 50 tonnes/day.

9. INFRASTRUCTURE:

(a) Construction of hospitals with outfall into beachfronts used for recreational purposes.

(b) Industrial estate development for medium and heavy industries covering an area of 50 hectares or more

(c) Construction of expressways

(d) Construction of national highways

(e) Construction of new townships

10. PORTS:

(a) Construction of ports.

(b) Port expansion involving an increase of 50 percent or more in handling capacity per annum.

11. MINING:

(a) Mining of minerals in new areas where the mining lease covers a total area in excess of 250 hectares.

(b) Ore processing, including concentrating for aluminium, copper, gold or tantalum.

(c) Sand dredging involving an area of 50 hectares more.

12. PETROLEUM:

(a) Oil and gas fields development

(b) Construction of off-shore and on-shore pipelines in excess of 50 kilometres in length.

(c) Construction of oil and gas separation, processing, handling and storage facilities.

(d) Construction of oil refineries.

(e) Construction of product depots for the storage of petrol, gas or diesel (excluding service stations) which are located within 3 kilometres of any commercial, industrial or residential areas and which have a combined storage capacity of 60,000 barrels or more.

13. POWER GENERATION AND TRANSMISSION:

(a) Construction of steam generated power stations burning fossil fuels and having a capacity of more than 10 megawatts.

(b) Dams and hydro-electric power schemes with either or both of the following:

(i) dams over 15 metres high and ancillary structures covering a total area in excess of 40 hectares;

(ii) reservoirs with a surface area in excess of 400 hectares.

(c) Construction of combined cycle power stations.

(d) Construction of nuclear-fueled power stations.

14. QUARRIES:

Proposed quarrying of aggregate, limestone, silica, quartzite, sand-stone, marble and decorative building stone within 3 kilometres of any existing residential, commercial or industrial areas, or any area for which a licence, permit or approval has been granted for residential, commercial or industrial development.

15. RAILWAYS:

(a) Construction of new routes.

(b) Construction of branch lines.

16. TRANSPORTATION:

Construction of Mass Rapid Transport projects.

17. RESORT AND RECREATIONAL DEVELOPMENT

(a) Construction of coastal resort facilities or hotels with more than 80 rooms.

(b) Hill station resort or hotel development covering an area of 50 hectares or more.

(c) Development of tourist or recreational facilities in national parks.

(d) Development of tourist or recreational facilities on islands in surrounding waters which are gazetted as national marine park.

18. WASTE TREATMENT AND DISPOSAL:

(a) Toxic and Hazardous Waste:-

(i) Construction of incineration plant.
(ii) Construction of recovery plant (off - site).
(iii) Construction of wastewater treatment plant (off-site).

(iv) Construction of secure landfill facility.
(v) Construction of storage facility (off - site)

(b) Municipal Solid Waste:-

(i) Construction of incineration plant.
(ii) Construction of composting plant.
(iii) Construction of recovery/recycling plant.
(iv) Construction of municipal solid waste landfill facility.

(c) Municipal Sewage:-

(i) Construction of wastewater treatment plant.
(ii) Construction of marine outfall.

19. WATER SUPPLY:

(a) Construction of dams or impounding reservoirs with a surface area of 200 hectares or more.

(b) Groundwater development for industrial, agricultural or urban water supply of greater than 4,500 cubic metres per day.

Made the 30th September 1987.

DATUK AMAR STEPHEN K.T. YONG
Minister of Science, Technology and Environment

Department of Environment's Publications on EIA

1. A Handbook Of EIA Guidelines.
2. EIA Guidelines For Coastal Resort Development Projects.
3. EIA Guidelines For Petrochemical Industries.
4. EIA Guidelines For Industrial Estate Development.
5. *Penilaian Kesan Kepada Alam Sekeliling Bagi Pembangunan Padang Golf .*
6. EIA Guidelines For Groundwater And/Or Surface Water Supply Projects.
7. EIA Guidelines For Thermal Power Generation And/Or Transmission Projects.
8. EIA Guidelines For Drainage And/Or Irrigation Projects.
9. EIA Guidelines For Fishing Harbours And/Or Land Based Aquaculture Projects.
10. EIA Guidelines For Dam And/Or Reservoir Projects
11. EIA Guidelines For Mines And Quarries.
12. EIA Guidelines For Development Of Resort And Hotel Facilities In Hill Station.
13. EIA Guidelines For Development Of Tourist And Recreational Facilities In National Parks.
14. EIA Guidelines For Development Of Tourist And Recreational On Island In Marine Parks.
15. EIA Guidelines For Industrial Projects.
16. EIA Guidelines For Municipal Solid Waste And Sewage Treatment And Disposal Projects.
17. EIA Guidelines For Toxic And Hazardous Waste Treatment And Disposal Projects.
18. EIA Guidelines For Petroleum Industries.
19. EIA Guidelines For Forestry.
20. EIA Guidelines For Coastal And Land Reclamation.
21. EIA Guidelines For Housing And Township Development Project.
22. EIA Guidelines For Agriculture.
23. EIA Guidelines For Risk Assessment.

APPENDIX 4

List of Prescribed Activities Which Require Detailed EIA

1. Iron and steel industry.
2. Pulp and paper mills.
3. Cement plant.
4. Construction of coal fired power plant.
5. Construction of dams for water supply and hydroelectric power schemes.
6. Land reclamation.
7. Incineration plant (scheduled wastes & solid wastes).
8. Construction of municipal solid waste landfill facility (including municipal solid waste transfer station).
9. Project involving land clearing where 50% of the area or more having slopes exceeding 25 degrees (except quarry).
10. Logging covering an area exceeding 500 hectares or more.
11. Development of tourist or recreational facilities on islands in surrounding waters which are gazetted as national marine parks.
12. Construction of recovery plant (off-site) for lead-acid battery wastes
13. Scheduled wastes recovery or treatment facility generating significant amount of wastewater which is located upstream of public water supply intake.

APPENDIX 5

GENERAL GUIDANCE ON THE PREPARATION OF

TERMS OF REFERENCE FOR DETAILED ENVIRONMENTAL IMPACT ASSESSMENT REPORT

INTRODUCTION

1. For projects which have been determined by the Department of Environment (DOE) to go through the detailed environmental impact assessment (EIA) procedure, the project proponent must submit the terms of reference (TOR) in accordance to the format outlined in specific EIA guidelines.

2. A project proponent must make sure that the proposed project concept and project location do not contradict any development plans, policies or any decisions of the Government of Malaysia prior to the submission of the TOR for the Detailed EIA report, namely (but not limited to the following):-

   (i) National Physical Plan.
   (ii) Structure Plan.
   (ix) Local Plan.
   (x) Agreement between the Government of Malaysia and Kualiti Alam Sdn Bhd. on the disposal of scheduled wastes in Malaysia.
   (xi) Agreement between the Government of Malaysia and Pantai Medivest Sdn. Bhd., Faber Mediserve Sdn. Bhd. and Radicare Sdn. Bhd. on the disposal of clinical wastes from Government Hospitals.
   (xii) Guidelines on Highland Development (*Garispanduan Pembangunan Di Kawasan Tanah Tinggi*).
   (xiii) Guidelines on Siting and Zoning of Industries.

3. The TOR or scoping exercise will identify key issues and further outline the environmental data collection that are required, determine the assessment techniques to be used and identify the appropriate methodologies for impact

prediction and assessment. Thus this procedure is a vital stage in the detailed EIA procedure.

SUBMISSION OF TOR

4. The DOE has revised the existing procedure for the submission of TOR as shown in the flowchart in Annex 1.

OBJECTIVE

5. A significant number of TOR received by DOE for the Detailed EIA report did not focus on key issues related to the specific project, resulting in poorly focused analysis and, time and effort wasted in the overall EIA procedures.

6. Therefore, this document is prepared as a general guidance to project proponents in submitting a **project-related and site-specific TOR** for the purpose of Panel Review process. This is crucial as it helps both parties in appreciating the real, critical and sensitive issues of the projects to be focused on in the Detailed EIA study.

7. The key aspect during the scoping process is to ensure the environmental impact assessment is at the appropriate level of detail, corresponding with the scale and significance of the proposed activity. Scoping will ensure that the critical issues are fully addressed.

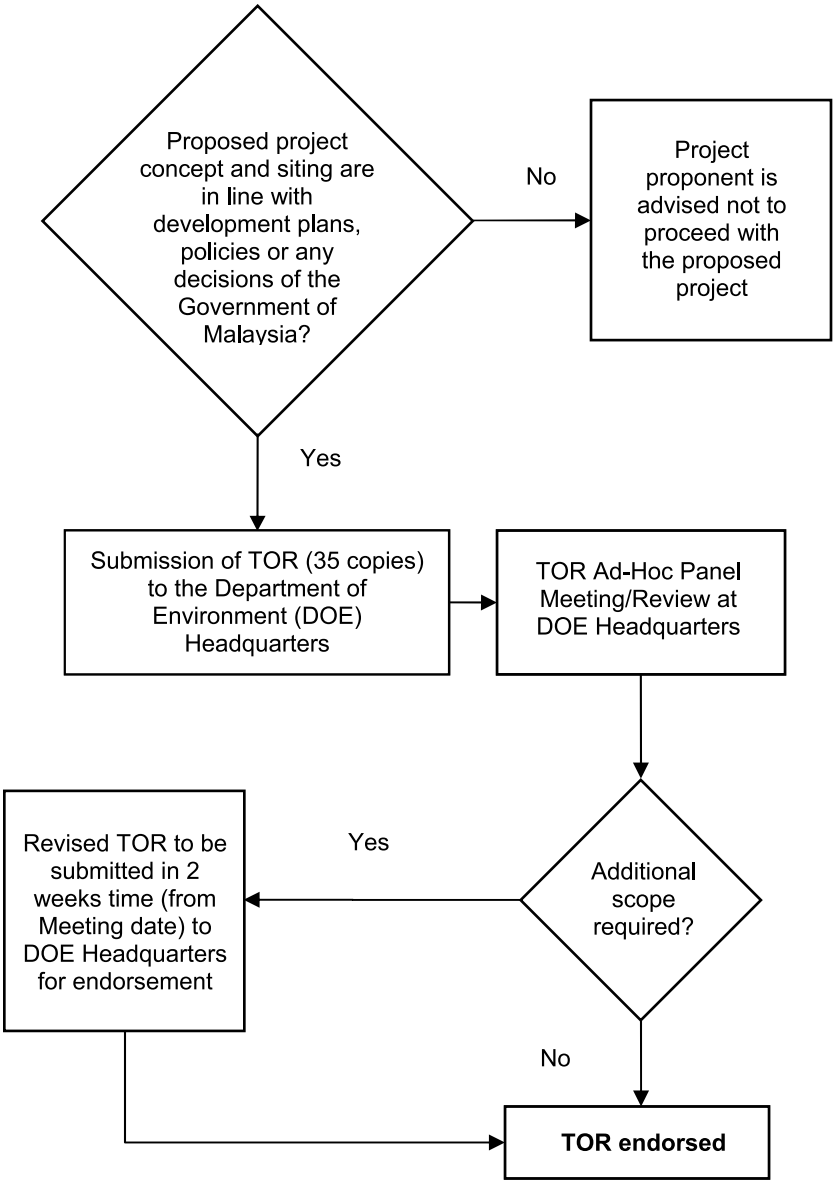
TERMS OF REFERENCE (TOR)

8. In preparing a project-related and site-specific TOR for the Detailed EIA study, the project proponent and EIA consultant shall be able to identify key issues related to the project being proposed.

9. The contents of TOR shall be as in Annex 2.

Annex 1

Procedure for the Submision of TOR



Annex 2

CONTENTS OF TERMS OF REFERENCE FOR DETAILED EIA REPORT

No	Contents	Description
1	Project Proponent	Include contact details (complete address, phone and fax numbers) of the appropriate and responsible person(s) to whom enquiries regarding EIA should be directed
2	List of Consultants/ Study Team	Details of each individuals (must be registered with DOE) who will carry out the EIA study, which include:- • DOE Registration number. • Academic background. • Experience. • Area of study. • Declaration (signatures). The EIA consultant team is to be lead by a Team/Project leader/ manager who is responsible for the EIA report. Include contact details (complete address, phone and fax numbers) of the appropriate and responsible person(s) to whom enquiries regarding EIA should be directed
3	Statement of Need	The statement of need for a project should be clearly established early in the project planning. The basis and rationale for the proposal would reflect the objective of a project and provide direction during planning. A statement of need also highlights the various benefits of the proposed project.
4	Project Description/ Concept	The project concept must not contradict any development plans, policies or decisions of the Government of Malaysia. A description of the project must be given, including a description of the preferred project option including:-

No	Contents	Description
		• Clear description of the proposed project concept, project size, project components, process technologies and development phases including future phase. • Clear, coloured and readable maps, diagrams and photographs sufficient to enable panel reviewers to clearly understand the nature of the project and the location of all the project components. The location maps should include general location, specific location, project boundaries and project site/ layout plan. • A clear and readable flow chart of the process production and explanation on the process including criteria involved and the maximum capacity, for industrial-based projects.
4	Project Options	A brief discussion on the project options of how the reasonable options were selected and provide the basis for the elimination or options determined to be not reasonable.
5	Description of Existing Environment	The description of the existing environment should identify as appropriate: • The conditions of the physico-chemical, biological and human environment prior to implementation of the project. • The spatial boundaries within which the environment has been considered. • Environmental sensitive areas of special or unique scientific, socio-economic or cultural value that may be affected by the proposed project. The area to be studied (zone of impact) will invariably need to extend beyond the immediate project boundaries as ecological effects can be fairly widespread.

No	Contents	Description
6	Baseline information on the proposed location	Outline the sampling methodologies, sampling locations, monitoring stations and sampling parameters in the collection of baseline information.
7	Project Location and Existing Landuse	The location of the project must be in accordance to the Guidelines on Siting and Zoning for Industries published by DOE; development plans such as the National Physical Plan, Structural Plan and Local Plan; and other relevant guidelines or requirements from other agencies. Description of the project location shall include:- • Exact location of proposed project with clear coordinates. • Existing land use and constraints. • Distance of the proposed project site to any environmentally sensitive receptors and areas. • Macro scale maps (1:50,000 & 1:25,000), plans, photographs or satellite images, clearly identifying the location of the proposed project location. • The landuse map must be clear, readable and in coloured form. An updated satellite image to indicate the recent existing environment may be used. The coverage of the landuse map must be at least within 5 km radius (interval of 250m). For large scale project such as the construction of dams or impounding reservoirs, the coverage of the landuse map may be beyond 5 km radius depending on the catchment area. • Other types of map to be produced in the TOR to describe the existing environment depends on the key and critical issues of the proposed project. They are cadastral map, topography and geological map, bathymetry map, hydrological map, coral population map and etc.

No	Contents	Description
8	Potential Significant Impacts	• Based on the critical issues of the proposed project, briefly describe the potential significant impacts to be studied and criteria that may be used for impact analysis. • Outline the methodologies on the impact analysis/ assessment.
9	Mitigation and Abatement Measures	Based on the prediction of impacts to be studied, define the areas of the proposed project activities to be focused when discussing mitigation and abatement measures at these stages:- • Pre-construction (including feasibility studies and design); • Construction; and • Post-construction (including operation and maintenance)
10	Residual Impacts	Outline potentially significant environmental impacts which may remain after mitigating measures have been applied (long term effects), to be studied in the EIA.
11	Environmental Management Plan (EMP)	Briefly describe the components to be addressed in the Environmental Management Plan.

Note: Please submit **35 copies** of the Terms of Reference to:

Director General
Department of Environment
Ministry of Natural Resources & Environment
Level 1-4, Podium 2 & 3, Wisma Sumber Asli
No. 25, Persiaran Perdana, Precinct 4
62574 PUTRAJAYA

(Attn. to: Director of Assessment Division)

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For further information and enquiries, you may contact the following offices:

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Fax : 04-3316078

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Fax : 05-2558595

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Jalan Telok Wanjah
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Fax : 04-7337530

Director
Department of Environment Negeri Sembilan
Tingkat 5, Wisma Arab Malaysian Business Centre
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Tingkat 2, Bangunan Graha Maju
Jalan Graha Maju
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Department of Environment Federal Territory of Kuala Lumpur
Tkt. 1, Wisma SCA
No.3, Jalan Sungai Besi
57100 KUALA LUMPUR
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Fax : 03-92216437

Director
Department of Environment Kelantan
Lot 322-324 Seksyen 27
Jalan Sri Cemerlang
15300 KOTA BAHRU
Tel : 09-7479010
Fax : 09-7479014

Director
Department of Environment Federal Territory of Labuan
Tkt.4, Blok 4, Kompleks Ujana Kewangan
87007 WILAYAH PERSEKUTUAN LABUAN
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Director
Department of Environment Perlis
Tkt. 2, Bangunan KWSP
Jalan Bukit Lagi
01000 KANGAR
Tel : 04-9793100
Fax : 04-9772822

Figure 1: The Project Cycle and Integration of Environmental Activities

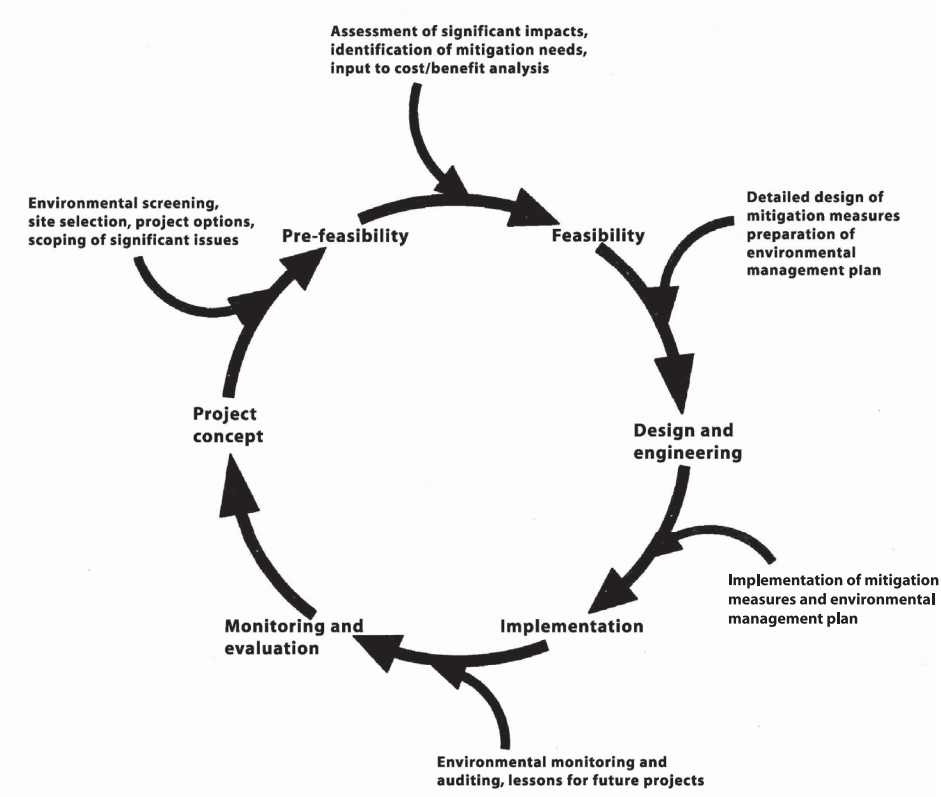
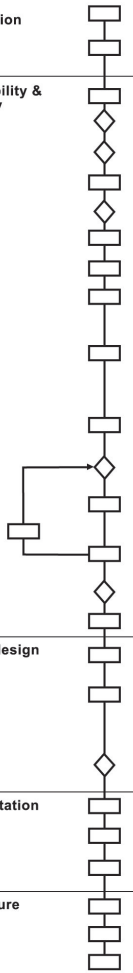


Figure 2: Sequence Of Activities Required For Planning Approval And Compliance With Environmental Approval Conditions And Indicates Who Is Responsible For Various Activities.



STAGE	ACTION	BY WHOM
Project identification	Reconnaissance survey	Project Proponent (PP)
	Consultation with DOE/MIDA	PP
Pre-feasibility & Feasibility	Identification of site(s)/Project Options	PP
	Screening of Site selection	PP & EIA Consultant
	Scoping EIA	PP & EIA Consultant
	Conceptual Plan(s)	Project consultant appointed by PP
	Selection of option	PP
	EIA Study	EIA Consultant
	Submission of EIA to DOE for approval	PP
	Application to Approval Authority for project approval, and to Land Office (LO) for conversion, if necessary	PP
	DOE & Land Office sends EIA and land Conversion submission,respectively, to various public sector agencies for comments	DOE (for EIA) LO (for land conversion)
	Comments compiled, and recommendations made	DOE & LO
	Decision on EIA	DOE
	PP informed of EIA approval/conditions	DOE
	Key issues EIA (if necessary)	EIA Consultant
	Recommendations made to Approval Authority	LO
	Decision on project	Approval Authority
	PP informed of project approval	Approval Authority
Detailed design	Detailed layout and engineering design	PP
	Submission to LO, JPBD and various agenciec (e.g. JKR, JPS, DOE, TNB,MOH, Bomba, etc) for approval	PP
	Approval of detailed layout by referred agencies	Individual agencies referred to
Implementation	Contruction	PP
	Operation	PP
	Environmental Monitoring and Auditing (EM &A)/ Reporting	PP/DOE/Consultant
Post-closure	Decommisioning	PP
	Ongoing EM & A (as necessary)	PP/DOE/Consultant
	Post Closure Landuse Plan	PP

FIGURE 3

Figure 3 :The Procedure for Preliminary EIA

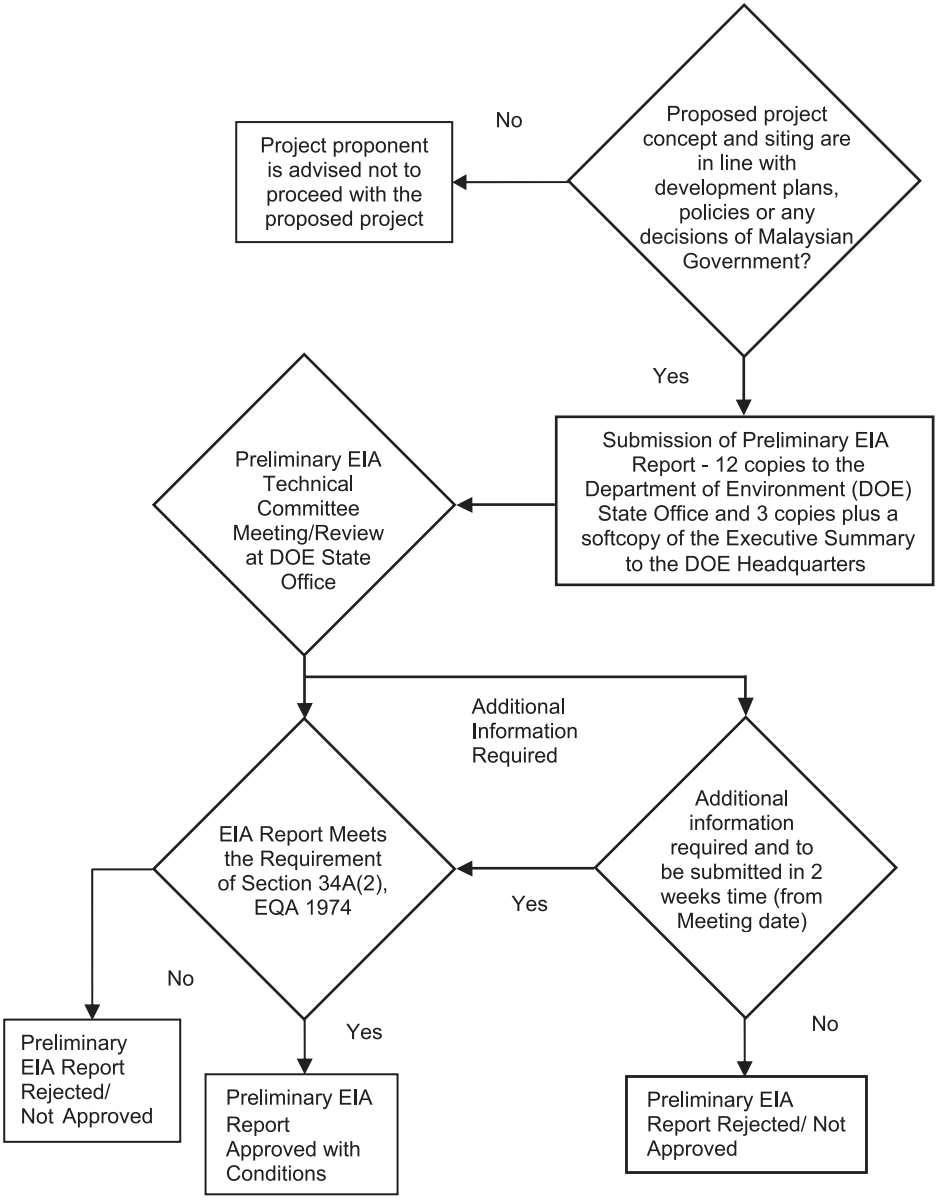


Figure 4: The Procedure for Detailed EIA