

Laporan Tahunan 2016

Annual Report



Jabatan Alam Sekitar, Kementerian Sumber Asli dan Alam Sekitar
Department of Environment Ministry of Natural Resources & Environment



Laporan Tahunan 2016

Annual Report



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SINGKATAN ABBREVIATIONS

| | | |
|---|---------|---|
| Bank Pembangunan Asia | ADB | Asian Development Bank |
| Tahun Alam Sekitar ASEAN | AEY | ASEAN Environment Year |
| Akta Kualiti Alam Sekeliling | AKAS | Environmental Quality Act |
| Mesyuarat Menteri-Menteri ASEAN Mengenai Alam Sekitar | AMME | ASEAN Ministerial Meeting on the Environment |
| Pertubuhan Negara-Negara Asia Tenggara | ASEAN | Association of South East Asian Nations |
| Pegawai Kanan Alam Sekitar ASEAN | ASOEN | ASEAN Senior Officials on the Environment |
| Area Watch and Sanction Inspection | AWASI | Area Watch and Sanction Inspection |
| Buangan Terjadual | BT | Scheduled Wastes |
| Brunei–Indonesia–Malaysia–Filipina | BIMP | Brunei–Indonesia–Malaysia–Philippines |
| Keperluan Oksigen Biokimia | BOD | Biochemical Oxygen Demand |
| Bahan Pemusnah Ozon | BPO | Ozone Depleting Substances |
| Udara Bersih | CA | Clean Air |
| Pusat bagi Alam Sekitar, Teknologi dan Pembangunan Malaysia | CETDEM | Centre For Environmental, Technology and Development Malaysia |
| Kloroflourokarbon | CFC | Chlorofluorocarbon |
| Majlis Industri Kimia Malaysia | CICM | Chemical Industries Council of Malaysia |
| Pusat Pengurusan Pantai | CMC | Coastal Management Centre |
| Badan Penyelaras Mengenai Laut Asia Timur | COBSEA | Co-ordinating Body for the Seas of East Asia |
| Keperluan Oksigen Kimia | COD | Chemical Oxygen Demand |
| Kelapa Sawit Mentah | CPO | Crude Palm Oil |
| Desibel | DB | Decibel (s) |
| Jabatan Alam Sekitar | DOE | Department of Environment |
| Sistem Pengurusan Dokumen | DOKUMAS | Document Management System |
| Kawasan Pertumbuhan ASEAN Timur | EAGA | East ASEAN Growth Area |
| Escherichia coli | E.COLI | Escherichia coli |
| Zon Ekonomi Eksklusif | EEZ | Exclusive Economic Zone |
| Penilaian Kesan Kepada Alam Sekeliling | EIA | Environmental Impact Assessment |
| Persatuan Perlindungan Alam Sekitar Malaysia | EPSM | Environment Protection Society of Malaysia |
| Unit Perancang Ekonomi | EPU | Economic Planning Unit |
| Majlis Kualiti Alam Sekeliling | EQC | Environmental Quality Council |
| Laporan Kualiti Alam Sekeliling | EQR | Environmental Quality Report |
| Pesuruhjaya Ekonomi & Sosial Asia Pasifik | ESCAP | Economic & Social Commission for Asia and the Pacific |
| Institut Alam Sekitar Malaysia | EIMAS | Environment Institute of Malaysia |
| Ahli Mesyuarat Kerajaan Negeri | EXCO | Executive Councillors |
| Persatuan Pekilang-Pekilang Malaysia | FMM | Federation of Malaysian Manufacturers |
| Persatuan Pertubuhan Pengguna-Pengguna Malaysia | FOMCA | Federation of Malaysian Consumer's Association |
| Institut Penyelidikan Hutan Malaysia | FRIM | Forest Research Institute of Malaysia |
| Gabungan Persatuan-Persatuan Perdagangan Getah Malaysia | FRTM | Federation of Rubber Trade Association of Malaysia |
| Kemudahan Alam Sekitar Global | GEF | Global Environment Facility |

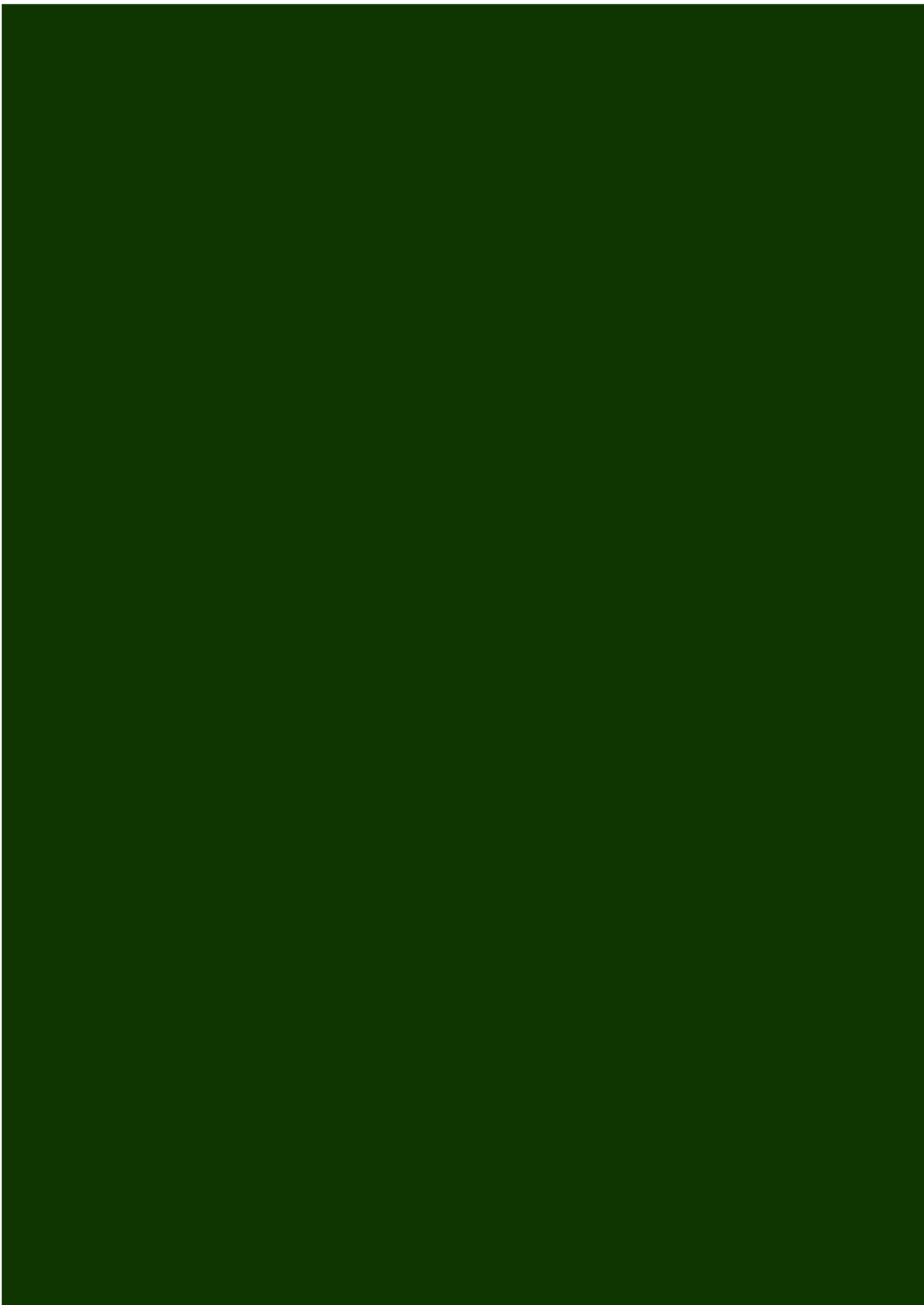
SINGKATAN ABBREVIATIONS

| | | |
|---|-----------|--|
| Sistem Maklumat Geografik | GIS | Geographical Information System |
| Hidro Klorofluorokarbon | HCFC | Hydro Chlorofluorocarbon |
| Pengurusan Zon Pantai Bersepadu | ICZM | Integrated Coastal Zone Management |
| Unit Asap Hartridge | HSU | Hartridge Smoke Unit |
| Institut Diplomasi & Hal Ehwai Luar | IDHL | Institute of Diplomacy & Foreign Relations |
| Indeks Kualiti Air Negara | IKAN | National Water Quality Index |
| Organisasi Maritim Antarabangsa | IMO | International Maritime Organisation |
| Sistem Rujukan Antarabangsa Untuk Suer-Sumber Maklumat Mengenai Alam Sekitar | INFOTERRA | International Referral System for Sources of Environmental Information |
| Institut Tadbiran Awam Negara | INTAN | National Institute of Public Administration |
| Program Antarabangsa mengenai Keselamatan Bahan Kimia | IPCS | International Programme on Chemical Safety |
| Pendaftaran Antarabangsa bagi Bahan Kimia yang Berpotensi Berbahaya | IRPTC | International Register of Potentially Toxic Chemicals |
| Institut Kajian Strategik dan Antarabangsa | ISIS | Institute of Strategic and International Studies |
| Agensi Kerjasama Antarabangsa Jepun | JICA | Japan International Co-operation Agency |
| Jabatan Perkhidmatan Awam | JPA | Public Service Department |
| Jabatan Pengairan dan Saliran Malaysia | JPS | Department of Irrigation and Drainage Malaysia |
| Kementerian Sains, Teknologi & Inovasi | MOSTI | Ministry of Science, Technology and Innovation |
| Kumbahan & Effluen-Effluen Perindustrian | KEEP | Sewage & Industrial Effluents |
| Kilang Kelapa Sawit Mentah | KKSM | Crude Palm Oil Mill |
| Penyaman Udara Kenderaan | MAC | Mobile Air Conditioning |
| Pusat Remote Sensing Malaysia | MACRES | Malaysian Remote Sensing Agency |
| Minggu Alam Sekitar Malaysia | MASM | Malaysia Environment Week |
| Menteri dan Ahli Majlis Mesyuarat Kerajaan Negeri yang Bertanggungjawab ke atas Alam Sekitar | MEXCOE | Ministers and State Executive Councillors Responsible for Environmental Matters |
| Dewan Perdagangan dan Industri Antarabangsa Malaysia | MICCI | Malaysian International Chamber of Commerce and Industry |
| Institut Penyelidikan Ekonomi Malaysia | MIER | Malaysian Institute of Economic Research |
| Institut Teknologi Nuklear Malaysia | MINT | Malaysia Institute of Nuclear Technology |
| Persatuan Pemasang Kenderaan Bermotor Ma- laysia | MMVAA | Malaysian Motor Vehicle Assemblers' Association |
| Persatuan Pencinta Alam Malaysia | MNS | Malaysian Nature Society |
| Kementerian Perdagangan Antarabangsa Dan Industri | MITI | Ministry of International Trade and Industry |
| Pertubuhan Kelapa Sawit Malaysia | MPOA | Malaysian Palm Oil Association |
| Kementerian Pertanian | MOA | Ministry of Agriculture |
| Kementerian Kesihatan | MOH | Ministry of Health |
| Kementerian Pembangunan Sumber Manusia | MOHR | Ministry of Human Resources |
| Kementerian Pengangkutan | MOT | Ministry of Transport |
| Memorandum Persefahaman | MOU | Memorandum of Understanding |
| Majlis Pengeluar-Pengeluar Getah Malaysia | MRPC | Malaysia Rubber Products Manufacturers' Council |

SINGKATAN ABBREVIATIONS

| | | |
|---|-------------------|---|
| Jawatankuasa Bersama Malaysia-Singapura Mengenai Alam Sekitar | MSJCE | Malaysia – Singapore Joint Committee on the Environment |
| Pertubuhan Bukan Kerajaan | NGO | Non-Governmental Organisation |
| Kementerian Sumber Asli Dan Alam Sekitar | NRE | Ministry of Natural Resources and Environment |
| Amoniakal Nitrogen | NH ₃ N | Ammoniacal Nitrogen |
| Pertubuhan Kerjasama Ekonomi dan Pembangunan | OECD | Organisation for Economic Co-operation and Development |
| Pertubuhan Kerjasama Alam Sekitar bagi Laut Asia Timur | PEMSEA | Partnership in Environmental Management for the Seas of East Asia |
| Kebenaran Maklumat Awal | PIC | Prior Informed Consent |
| Persatuan Pekilang-Pekilang Minyak Kelapa Sawit Malaysia | POMA | Palm Oil Millers' Association |
| Institut Penyelidikan Minyak Kelapa Sawit | PORIM | Palm Oil Research Institute of Malaysia |
| Ringgit Malaysia | RM | Ringgit Malaysia |
| Institut Penyelidikan Getah Malaysia | RRIM | Rubber Research Institute of Malaysia |
| Urusetia Konvensyen BASEL | SBC | Secretariat for BASEL Convention |
| Agensi Pembangunan Antarabangsa Sweden | SIDA | Swedish International Development Agency |
| Institut Standard dan Penyelidikan Industri Malaysia | SIRIM | Standards Industrial Research Institute of Malaysia |
| Udara Bersih | UB | Clean Air |
| Universiti Islam Antarabangsa | UIA | International Islamic University |
| Universiti Kebangsaan Malaysia | UKM | National University of Malaysia |
| Universiti Malaya | UM | University of Malaya |
| Persidangan Bangsa-Bangsa Bersatu Mengenai Alam Sekitar dan Pembangunan | UNCED | United Nations Conference on Environment and Development |
| Program Pembangunan Bangsa-Bangsa Bersatu | UNPD | United Nations Development Programme |
| Program Alam Sekitar Bangsa-Bangsa Bersatu | UNEP | United Nations Environment Programme |
| Universiti Tenaga Malaysia | UNITEN | University of Tenaga Malaysia |
| Unit Perancang Ekonomi | UPE | Economic Planning Unit |
| Universiti Putra Malaysia | UPM | University of Putra Malaysia |
| Universiti Sains Malaysia | USM | University of Science Malaysia |
| Yang Berhormat | Y.B. | The Honourable |
| Polis Diraja Malaysia | PDRM | Royal Malaysian Police |
| Kandungan Organik Meruap | VOCs | Volatile Organic Compounds |
| Wilayah Kualiti Air | WQR | Water Quality Region |







PRAKATA

Foreword

Jabatan Alam Sekitar dengan sukacitanya membentangkan Laporan Tahunan 2016 yang merangkumi pencapaian dan pelaksanaan program pada tahun tersebut.

Selari dengan visi Jabatan ini, "Pemuliharaan Alam Sekitar Untuk Kesejahteraan Rakyat" dan misi "Memastikan Pembangunan Lestari di dalam Proses Memajukan Negara", JAS meneruskan mandat yang diberi untuk mentadbir Akta Kualiti Alam Sekeliling, 1974.

Penekanan yang berterusan diberikan dalam usaha mencegah dan mengawal pencemaran air, pencemaran udara dan pengurusan buangan terjadual. Dalam usaha mempertingkatkan lagi penguatkuasaan alam sekitar, pendekatan *Guided Self-Regulation* (GSR) dilaksanakan sebagai pelengkap (complement) bagi kaedah *Command and Control* (CAC).

Dengan kaedah GSR, JAS memainkan peranan dengan memberikan tunjuk ajar dan latihan melalui program pensijilan kepada *regulated communities* (komuniti yang dikawal) seperti pihak industri, pihak pemaju dan penggerak projek, jururunding, agensi kerajaan dan sebagainya bagi mencapai pematuhan Akta Kualiti Alam Sekeliling 1974.

Penilaian Kesan Kepada Alam Sekeliling (EIA) masih menjadi strategi asas pencegahan yang dikuatkuasakan oleh Jabatan ini bagi mengurangkan kesan kepada alam sekeliling dari projek pembangunan.

Selaras dengan pindaan Perintah Kualiti Alam Sekeliling (Aktiviti Yang Ditetapkan) (Penilaian Kesan Kepada Alam Sekeliling) 2015, satu garis panduan baharu bertajuk *Environmental Impact Assessment Guideline In Malaysia* telah diterbitkan yang digunakan sebagai panduan bagi penyediaan TOR dan Laporan EIA Jadual Pertama dan Jadual Kedua. Garis panduan ini turut memperjelaskan

The Department of Environment gladly presents the 2014 Annual Report which provides an account of its achievements and program implementations in that year.

In line with the department's vision, 'Environmental Conservation for the Well-being of the People and mission 'To Ensure Sustainable Development in the Process of Nation Building', DOE continues its mandate to administer the Environmental Quality Act (EQA), 1974.

Continued emphasis is given to the prevention and controlling of water pollution, air pollution and scheduled waste management. In order to enhance environmental enforcement, the Guided Self-Regulation (GSR) approach is implemented as a complement to the Command and Control (CAC) method.

With the GSR approach, DOE plays a role by providing guidance and training through a certification program to regulated communities such as industries, developers and project proponents, consultants, government agencies and others to achieve compliance with the Environmental Quality Act 1974.

Environmental Impact Assessment (EIA) continued to be the main preventive strategy enforced by the DOE to mitigate all environmental impacts from development projects.

In accordance with the Amendment of the Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015, a new guidelines *Environmental Impact Assessment Guideline In Malaysia* was published which was used as a guide for the preparation of the TOR and EIA Reports for First and Second Schedule. This guideline also outlines the

tanggungjawab dan tindakan bagi penyediaan Laporan EIA, format, spesifikasi dan aliran proses bagi penilaian Laporan EIA

responsibilities and actions for the preparation of EIA Reports, formats, specifications and process flows for the assessment of EIA Reports.

Pada tahun 2016 juga, satu inisiatif penambahbaikan telah dilaksanakan oleh Kementerian Sumber Asli dan Alam Sekitar dalam usaha untuk memberi kesedaran alam sekitar kepada orang awam secara berterusan, dengan penjenamaan semula Minggu Alam Sekitar Malaysia (MASM) kepada Hari Alam Sekitar Negara (HASN).

In 2016, the Ministry of Natural Resources and Environment has implemented improvement initiative in order to provide continuous environmental awareness to the public with the rebranding of the Malaysian Environment Week (MASM) to the National Environment Day (HASN).

Sambutan HASN pada tahun 2016 telah dianjurkan secara serentak di seluruh Negara. HASN Peringkat Kebangsaan buat julung kalinya pada tahun 2016 telah diadakan di Kuching, Sarawak dengan tema 'Alam Sekitar Tanggungjawab Bersama'.

The celebration of HASN in 2016 has been organized simultaneously throughout the country. The National level celebration of HASN 2016 was held in Kuching, Sarawak with the theme 'Environment is Our Responsibility'.

Saya ingin mengambil kesempatan ini untuk merakamkan penghargaan kepada semua pihak yang telah memberikan sokongan dan komitmen mereka kepada Jabatan Alam Sekitar dalam melaksanakan tugas murni untuk alam sekitar yang lestari, sihat dan kualiti hidup yang lebih baik.

I would like to take this opportunity to express our gratitude to all those who have given their support and commitment to the Department of Environment in carrying out its duties for a sustainable, healthy and better quality of life.

Alam Sekitar, Tanggungjawab Bersama

Environment, Our Shared Responsibility

Ketua Pengarah Kualiti Alam Sekeliling Malaysia
Director-General of Environmental Quality Malaysia



**DATO' DR. AHMAD KAMARULNAJUIB CHE
IBRAHIM**



VISI / Vision

Pemuliharaan Alam Sekitar Untuk Kesejahteraan Rakyat
Environmental Conservation For The Well-being Of The People



MISI / Mission

Memastikan Pembangunan Lestari Di Dalam Proses Memajukan Negara
To ensure Sustainable Development In The Process Of Nation Building



**STRATEGI /
STRATEGIES**

1

Pembangunan Lestari Melalui Pemuliharaan Sumber Semulajadi
Sustainable Development Through Conservation Of Resources

2

Kerjasama Antara Agensi Dan Persekutuan Negeri
Inter-Agency And Federal-State Cooperation

3

Penyertaan Awam Dalam Pengurusan Alam Sekitar
Public Participation In Environmental Management

4

Kerjasama Dan Hubungan Dua Hala, Serantau Dan Antarabangsa
Bilateral, Regional And International Cooperation

5

Promosi Pendidikan Dan Kesedaran Alam Sekitar
Promotion Of Environmental Education And Awareness

6

Pencegahan Dan Kawalan Pencemaran
Pollution Prevention And Control

7

Integrasi Faktor Alam Sekitar Dalam Perancangan Pembangunan
Integration Of Environmental Factors In Development Planning



Bab
Chapter

1

AKTIVITI MAJLIS KUALITI ALAM SEKELILING (EQC) BAGI TAHUN 2016

ENVIRONMENTAL QUALITY COUNCIL (EQC) ACTIVITIES FOR YEAR 2016

Dalam tahun 2016, Majlis Kualiti Alam Sekeliling (EQC) telah bermesyuarat sebanyak 3 kali:

- i) Mesyuarat EQC Bilangan Ke 119 telah diadakan pada 12 April 2016;
- ii) Mesyuarat EQC Bilangan Ke 120 telah diadakan pada 28 Julai 2016 dan
- iii) Mesyuarat EQC Khas Isu Pencemaran Sungai Semenyih telah diadakan pada 24 Oktober 2016.

Perlantikan ahli-ahli EQC bagi penggal ke 15 telah dibuat oleh YB Menteri Sumber Asli Dan Alam Sekitar. Tempoh penggal bermula pada 1 April 2015 dan tamat pada 31 Mac 2018. Pengerusi bagi EQC untuk penggal ke 15 adalah YBhg. Prof. Dato' Dr. Mazlin Mokhtar, Timbalan Naib Canselor (Penyelidikan dan Inovasi), Universiti Kebangsaan Malaysia. Senarai ahli-ahli EQC penggal ke 15 adalah seperti di Jadual 1.1 JAS.

Satu Sesi Dialog telah diadakan di antara YB Dato Sri Dr. Haji Wan Junaidi Bin Tuanku Jaafar, Menteri Sumber Asli & Alam Sekitar bersama ahli-ahli EQC, sebelum berlangsungnya Mesyuarat EQC Ke 119. Sesi dialog ini telah diadakan di Jabatan Alam Sekitar, Putrajaya. Melalui sesi dialog ini, perbincangan telah diadakan berkenaan hala tuju Majlis untuk penggal ini.

Mesyuarat telah membincangkan dan memperakukan beberapa cadangan yang dikemukakan untuk pertimbangan. Antara kertas kerja yang dibentangkan dalam tahun 2016 adalah seperti berikut:-

Perbincangan EQC ke 119

1. *Lessons from the Bauxite Mining Impacts: Environmental Risk Management* (Akademi Sains Malaysia)
2. Draf Peraturan-Peraturan Kualiti Alam Sekeliling (Kawalan Pencemaran Minyak) 201x (JAS)
3. Hasil Kajian Semula Indeks Pencemar Udara (IPU) (DOE)
4. Hari Alam Sekitar Negara (HASN)

The Environmental Quality Council (EQC) had 3 meetings in 2016. The meetings were held as follows:-

- i) the 119th EQC meeting was held on 12 April 2016;
- ii) the 120th EQC meeting was held on 28 July 2016, and
- iii) the EQC Ad Hoc meeting on Sungai Semenyih Pollution Issue was held on 24 October 2016.

The appointment for EQC members for the 15th term was made by the Minister of Natural Resources and Environment for the period from 1st April 2015 till 31st March 2018. The Chairman appointed for the 15 term is YBhg. Prof. Dato' Dr. Mazlin Mokhtar, Deputy Vice Chancellor, Research & Innovation Affairs, The National University of Malaysia. The latest EQC Members for 15th term is as stated on Table 1.1 DOE.

Prior to the 119th EQC Meeting, there was a dialogue held between YB Dato Sri Dr. Haji Wan Junaidi Bin Tuanku Jaafar, Minister of Natural Resources and Environment and the EQC Members, at Department of Environment, Putrajaya. Through this dialogue, the council had a further discussion with the Minister on the direction for this term.

The council had deliberated and endorsed matters presented at the meetings. Among the papers brought for their attention in year 2016 were as follow:-

119th EQC Discussion

1. *Lessons from the Bauxite Mining Impacts: Environmental Risk Management* (Akademi Sains Malaysia)
2. Draft Regulations Environmental Quality (Oil Pollution Control) 201x (DOE)
3. Review of Air Pollution Index (API) (DOE)
4. National Environmental Day (DOE)

Perbincangan EQC ke 120

1. *Responsible Care Programme / Global Product Stewardship (PETRONAS)*
2. *Sustaining Green Environment Through Green Hotel Initiative – (The Frangipani Langkawi Resort & Spa)*
3. Halatuju Baharu JAS :Pelaksanaan Penguatkuasaan Melalui Pematuhan Kendiri (*Guided-Self Regulation – GSR*) – (JAS)
4. Halatuju Pengurusan Buangan Elektrik Dan Elektronik Dari Isi Rumah (*Household E-Waste*) di Malaysia- (JAS)

120th EQC Discussion

1. *Responsible Care Programme / Global Product Stewardship (PETRONAS)*
2. *Sustaining Green Environment through Green Hotel Initiative – (The Frangipani Langkawi Resort & Spa)*
3. *DOE Way Forward : Enforcement thru Guided Self Regulation (GSR) (DOE)*
4. *Way forward of Household E-Waste Management in Malaysia (DOE)*

Perbincangan Mesyuarat EQC Khas Isu Pencemaran Sungai Semenyih

1. Tindakan Perundangan Bagi Isu Pencemaran di Sungai Semenyih.
2. Cadangan Penyelesaian Bagi Mencegah Pencemaran Yang Menjejaskan Operasi Loji Air.

EQC Ad Hoc meeting on Sungai Semenyih Pollution Issue

1. *Legislative Action for Pollution Issues in Sungai Semenyih.*
2. *Proposed Solutions to Prevent Pollution Affecting Water Plant Operation.*

Jadual 1.1 JAS : Majlis Kualiti Alam Sekeliling Penggal ke-15
 Table 1.1 DOE : Environmental Quality Council 15th Term

| Bil | Perwakilan | Nama |
|-----|--|---|
| 1 | Pengerusi EQC EQC Chairman | YBhg. Prof. Dato' Dr. Mazlin Mokhtar |
| 2 | Wakil Menteri Kementerian Sumber Asli dan Alam Sekitar Representative for Minister, Ministry of Natural Resources and the Environment | YBhg. Dato' Sri Azizan Bin Ahmad |
| 3 | Wakil Menteri Kementerian Sains, Teknologi dan Inovasi Representative for Minister, Ministry of Science, Technology and Innovation | Dr. Zulkifli Mohamed Hashim |
| 4 | Wakil Menteri Kementerian Perdagangan Antarabangsa dan Industri Representative for Minister, Ministry of Trade & Industry | Tuan Haji Zakaria Jaafar |
| 5 | Wakil Menteri Kementerian Perdagangan Dalam Negeri Koperasi dan Kepenggunaan Representative for Minister, Ministry of Domestic Trade, Corporation & Consumerism | Cik Fatimah Nazaliza binti Mohd. Nasir |
| 6 | Wakil Menteri Kementerian Pertanian dan Industri Asas Tani Representative for Secretary-General, Ministry of Agriculture and Agro-Base Industries | YBhg. Datuk Ahmad bin Loman |
| 7 | Wakil Menteri Kementerian Sumber Manusia Representative for Minister, Ministry of Human Resources | Tuan Haji Saiful Azhar Mohd Said |
| 8 | Wakil Menteri Kementerian Pengangkutan Representative for Minister, Ministry of Transport | Encik Misrun Timin |
| 9 | Wakil Menteri Kementerian Perumahan dan Kerajaan Tempatan Representative for Minister, Ministry of Urban Wellbeing, Housing and Local Government | Encik Ismail Bin Mokhtar |
| 10 | Wakil Menteri Kementerian Tenaga, Teknologi Hijau dan Air Representative for Minister, Ministry of Energy, Green Technology and Water | Puan Rogayah binti Kadari |
| 11 | Wakil Menteri Kementerian Kesihatan Malaysia Representative for Minister, Ministry of Health | YBhg. Datuk Dr. Lokman Hakim bin Sulaiman |
| 12 | Wakil Kerajaan Negeri Sabah Representative from the Sabah Government | Datu Rosmadi Datu Sulai |
| 13 | Ahli Giliran Alternate Member | Datuk Yabi Yangkat |
| 14 | Wakil Kerajaan Negeri Sarawak Representative from the Sarawak Government | YBhg. Datu Sudarsono Osman |
| 15 | Ahli Giliran Alternate Member | Encik Peter Sawal |
| 16 | Wakil Industri Petroleum Representative from the Petroleum Industry | Mohamed Amin B Abdullah |

Jadual 1.1 JAS : Majlis Kualiti Alam Sekeliling Penggal ke-15 (Sambungan)
 Table 1.1 DOE : Environmental Quality Council 15th Term (Continued)

| Bil | Perwakilan | Nama |
|-----|---|--|
| 17 | Ahli Giliran Alternate Member | Cik Lee Tzee Wan |
| 18 | Wakil Industri Kelapa Sawit Representative from the Oil Palm Industry | YBhg. Prof. Emeritus Dato' Dr. Makhdzir Mardan |
| 19 | Ahli Giliran Alternate Member | Dr. Ruslan Abdullah |
| 20 | Wakil Persekutuan Pekilang-Pekilang Malaysia (FMM) Representative from the Federation of Malaysian Manufacturers | YBhg. Dato' Hj. Mizanur Rahman Ghani |
| 21 | Ahli Giliran Alternate Member | Encik K.N. Gobinathan |
| 22 | Wakil Industri Getah Representative from the Rubber Industry | Encik Lim Sum Teck |
| 23 | Ahli Giliran Alternate Member | Encik Chin Hon Meng |
| 24 | Wakil Kakitangan Akademik Representative from the Academic Staff of the Universities or Colleges in Malaysia | Dr. Subramaniam Karuppannan |
| 25 | Ahli Giliran Alternate Member | - |
| 26 | Wakil Pertubuhan Yang Berpengalaman Mengenai Alam Sekitar Representative from the registered Societies knowledgeable and having interests in matters pertaining to the environment | Encik Gobinathan Kumaran Nair |
| 27 | Ahli Giliran Alternate Member | Puan Geetha P.Kumaran |
| 28 | Wakil Pertubuhan Yang Berpengalaman Mengenai Alam Sekitar Representative from the registered Societies knowledgeable and having interests in matters pertaining to the environment | YBhg. Dato' Dr. Dionysius S.K Sharma |
| 29 | Ahli Giliran Alternate Member | Dr Sundari Ramakrishna |

