



KEMENTERIAN EKONOMI
JABATAN PERANGKAAN MALAYSIA

B23

BANCI EKONOMI *ECONOMIC CENSUS* **2023**



PERBELANJAAN PERLINDUNGAN ALAM SEKITAR
ENVIRONMENTAL PROTECTION EXPENDITURE

JABATAN PERANGKAAN MALAYSIA
DEPARTMENT OF STATISTICS MALAYSIA



**KEMENTERIAN EKONOMI
JABATAN PERANGKAAN MALAYSIA**

BANCI EKONOMI

ECONOMIC CENCUS

2023

PERBELANJAAN PERLINDUNGAN ALAM SEKITAR

ENVIRONMENTAL PROTECTION EXPENDITURE

Pemakluman

Malaysia buat julung kalinya telah menduduki tangga pertama (1) di peringkat global dalam laporan dwi-tahunan *Open Data Inventory (ODIN) 2024/25* yang dikeluarkan oleh *Open Data Watch (ODW)*, mengatasi 197 negara lain. Pencapaian ini merupakan lonjakan ketara daripada kedudukan ke-67 dalam penilaian ODIN 2022/23.

OpenDOSM NextGen adalah medium yang menyediakan katalog data dan visualisasi bagi memudahkan pengguna menganalisis pelbagai data dan boleh diakses melalui portal <https://open.dosm.gov.my>.

Announcement

Malaysia, for the first time, ranked as number one (1) globally in the biennial Open Data Inventory (ODIN) 2024/25 report released by Open Data Watch (ODW), surpassing 197 other countries. This achievement marks a significant leap from its 67th position in the ODIN 2022/23 assessment.

OpenDOSM NextGen is a medium that provides data catalogue and visualisations to facilitate users' analysis and can be accessed through <https://open.dosm.gov.my>.

JABATAN PERANGKAAN MALAYSIA
DEPARTMENT OF STATISTICS MALAYSIA

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"Sumber: Jabatan Perangkaan Malaysia"

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KATA PENGANTAR

Penerbitan Banci Ekonomi 2023 - Perbelanjaan Perlindungan Alam Sekitar membentangkan statistik perbelanjaan perlindungan alam sekitar bagi tahun rujukan 2022. Sektor yang diliputi adalah Pertanian; Perlombongan & pengkuarian; Pembuatan; Pembinaan dan Perkhidmatan. Konsep dan definisi yang digunakan dalam banci ini berasaskan kepada *Environmental Expenditure Statistics: Industry Data Collection Handbook (2005)* oleh Eurostats, *Classification of Environmental Protection Activities and Expenditure (CEPA 2000)* yang diterbitkan oleh Statistical Office of the European Communities dan *Glossary of Statistical Terms* oleh Organisation for Economic Co-operation and Development (OECD).

Statistik yang dilaporkan dalam penerbitan ini merangkumi perbelanjaan modal dan operasi bagi pengurusan pencemaran, pengurusan sisa, penilaian dan caj alam sekitar, perlindungan hidupan liar & habitat serta perbelanjaan lain untuk perlindungan alam sekitar. Statistik ini digunakan sebagai sumber rujukan oleh agensi kerajaan, ahli ekonomi, ahli akademik, sektor swasta dan individu.

Penerbitan ini terdiri daripada tiga bahagian. Bahagian pertama memaparkan penemuan utama dan ringkasan penemuan perbelanjaan perlindungan alam sekitar. Jadual statistik terperinci dipaparkan di bahagian kedua, manakala bahagian ketiga pula menerangkan aspek teknikal antaranya skop dan liputan, konsep dan definisi serta pemboleh ubah utama bagi membantu pengguna memahami dengan lebih baik statistik yang diterbitkan.

Jabatan Perangkaan Malaysia merakamkan setinggi-tinggi penghargaan atas kerjasama dan sumbangan semua pihak yang terlibat dalam penyediaan penerbitan ini. Setiap maklum balas dan cadangan untuk penambahbaikan penerbitan ini pada masa akan datang amatlah dihargai.

DATO' SRI DR. MOHD UZIR MAHIDIN

Ketua Perangkawan Malaysia

Disember 2025

PREFACE

The publication of Economic Census 2023 - Environmental Protection Expenditure presents statistics on the environmental protection expenditure for the reference year 2022. The sectors covered Agriculture; Mining & quarrying; Manufacturing; Construction and Services. The concepts and definitions used in this census are based on the Environmental Expenditure Statistics: Industry Data Collection Handbook (2005) by Eurostats, the Classification of Environmental Protection Activities and Expenditure (CEPA 2000) by Statistical Office of the European Communities and the Glossary of Statistical Terms by Organisation for Economic Co-operation and Development (OECD).

The statistics reported in this publication include capital and operating expenditure for pollution management, waste management, environmental assessment and charges, protection of wildlife & habitat and other environmental protection expenditure. These statistics are useful as a source of reference for government agencies, economists, academicians, private sectors and individuals.

This publication consists of three parts. The first part presents the main findings and summary of findings on environmental protection expenditure. The detailed statistical tables are shown in the second part, while the third part describes technical aspects such as scope and coverage, concepts and definitions and key variables to help users better understand the published statistics.

Department of Statistics Malaysia gratefully acknowledges the co-operation and contribution of all parties involved in the preparation of this publication. Every feedback and suggestion for improving future publication is highly appreciated.

DATO' SRI DR. MOHD UZIR MAHIDIN

Chief Statistician, Malaysia

December 2025





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BAHAGIAN PART 1

PENEMUAN UTAMA & RINGKASAN PENEMUAN

MAIN FINDINGS & SUMMARY OF FINDINGS





KEMENTERIAN EKONOMI
JABATAN PERANGKAAN MALAYSIA

PERBELANJAAN PERLINDUNGAN ALAM SEKITAR

JUMLAH

2022 : 3,688.9 5.4%
2015 : 2,551.3

MODAL

2022 : 714.0 1.7%
2015 : 803.4

OPERASI

2022 : 2,974.9 7.9%
2015 : 1,747.9

SEKTOR

Pembuatan

6.5%
2022 : 2,921.3
2015 : 1,876.6

Perkhidmatan

5.2%
2022 : 413.4
2015 : 289.3

Pertanian

0.6%
2022 : 48.6
2015 : 46.4

Perlombongan & pengkuarian

0.4%
2022 : 171.3
2015 : 176.5

Pembinaan

2.7%
2022 : 134.3
2015 : 162.5

JENIS PERBELANJAAN



Pengurusan Pencemaran

6.0%
2022 : 2,512.0
2015 : 1,668.1



Pengurusan Sisa

5.0%
2022 : 1,060.7
2015 : 755.5



Perbelanjaan Lain untuk Perlindungan Alam Sekitar

2.0%
2022 : 54.6
2015 : 62.7



Penilaian & Caj Alam Sekitar

0.8%
2022 : 53.6
2015 : 56.7



Perlindungan Hidupan Liar & Habitat

0.6%
2022 : 8.0
2015 : 8.4

Nota :
Unit : RM juta
 : CAGR

Sumber: Banci Ekonomi 2023 - Perbelanjaan Perlindungan Alam Sekitar, Jabatan Perangkaan Malaysia (DOSM)



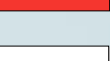
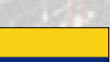
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KEMENTERIAN EKONOMI
JABATAN PERANGKAAN MALAYSIA

PERBELANJAAN PERLINDUNGAN
ALAM SEKITAR

NEGERI	2022 (RM juta)	2015 (RM juta)	CAGR (%)
 Selangor	995.6	399.0	14.0
 Johor	876.0	415.4	11.2
 Pahang	328.8	72.9	24.0
 Sarawak	258.8	459.0	-7.9
 Pulau Pinang	213.9	231.0	-1.1
 Terengganu	203.9	322.4	-6.3
 W.P. Kuala Lumpur	184.1	190.7	-0.5
 Kedah	151.5	90.6	7.6
 Sabah	132.0	83.5	6.8
 Perak	123.3	70.6	8.3
 Melaka	106.7	85.5	3.2
 Negeri Sembilan	83.1	66.6	3.2
 Kelantan	18.4	27.5	-5.5
 Perlis	9.5	8.6	1.5
 W.P. Labuan	2.8	2.0	4.9
 W.P. Putrajaya	0.3	26.0	-46.3

Sumber: Banci Ekonomi 2023 - Perbelanjaan Perlindungan Alam Sekitar, Jabatan Perangkaan Malaysia (DOSM)





MINISTRY OF ECONOMY
DEPARTMENT OF STATISTICS MALAYSIA

ENVIRONMENTAL PROTECTION EXPENDITURE

TOTAL

2022 : 3,688.9

2015 : 2,551.3

5.4%

CAPITAL

2022 : 714.0

2015 : 803.4

1.7%

OPERATING

2022 : 2,974.9

2015 : 1,747.9

7.9%

SECTOR

Manufacturing

6.5%

2022 : 2,921.3

2015 : 1,876.6

Services

5.2%

2022 : 413.4

2015 : 289.3

Agriculture

0.6%

2022 : 48.6

2015 : 46.4

Mining & quarrying

0.4%

2022 : 171.3

2015 : 176.5

Construction

2.7%

2022 : 134.3

2015 : 162.5

TYPE OF EXPENDITURE



Pollution Management

6.0%

2022 : 2,512.0

2015 : 1,668.1



Waste Management

5.0%

2022 : 1,060.7

2015 : 755.5



Other Environmental Protection Expenditure

2.0%

2022 : 54.6

2015 : 62.7



Environmental Assessment & Charges

0.8%

2022 : 53.6

2015 : 56.7



Protection of Wildlife & Habitat

0.6%

2022 : 8.0

2015 : 8.4

Notes :

Unit : RM million

5.4% 1.7% 7.9% 6.5% 0.6% 5.2% 0.4% 2.7% 6.0% 5.0% 2.0% 0.8% 0.6%

Source: Economic Census 2023 - Environmental Protection Expenditure, Department of Statistics Malaysia (DOSM)



@StatsMalaysia

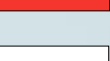
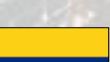


20 Oktober 2016 - 2030



MINISTRY OF ECONOMY
DEPARTMENT OF STATISTICS MALAYSIA

ENVIRONMENTAL PROTECTION
EXPENDITURE

STATE	2022 (RM million)	2015 (RM million)	CAGR (%)
 Selangor	995.6	399.0	14.0
 Johor	876.0	415.4	11.2
 Pahang	328.8	72.9	24.0
 Sarawak	258.8	459.0	-7.9
 Pulau Pinang	213.9	231.0	-1.1
 Terengganu	203.9	322.4	-6.3
 W.P. Kuala Lumpur	184.1	190.7	-0.5
 Kedah	151.5	90.6	7.6
 Sabah	132.0	83.5	6.8
 Perak	123.3	70.6	8.3
 Melaka	106.7	85.5	3.2
 Negeri Sembilan	83.1	66.6	3.2
 Kelantan	18.4	27.5	-5.5
 Perlis	9.5	8.6	1.5
 W.P. Labuan	2.8	2.0	4.9
 W.P. Putrajaya	0.3	26.0	-46.3

Source: Economic Census 2023 - Environmental Protection Expenditure, Department of Statistics Malaysia (DOSM)



1. PENGENALAN

Penerbitan Perbelanjaan Perlindungan Alam Sekitar 2023 membentangkan statistik perbelanjaan perlindungan alam sekitar bagi tahun rujukan 2022. Perbelanjaan meliputi perbelanjaan operasi dan modal bertujuan untuk pencegahan, pengurangan dan penghapusan pencemaran atau mana-mana kerosakan alam sekitar lain yang timbul daripada proses pengeluaran dan penggunaan barangan/ perkhidmatan. Data ini diperolehi daripada Banci Ekonomi 2023 yang meliputi sektor Pertanian, Perlombongan & pengkuarian, Pembuatan, Pembinaan dan Perkhidmatan.

2. PROFIL PERTUBUHAN PERBELANJAAN PERLINDUNGAN ALAM SEKITAR

2.1 BILANGAN PERTUBUHAN

Bilangan pertubuhan yang melaporkan perbelanjaan perlindungan alam sekitar pada 2022 adalah 12,595 pertubuhan, iaitu 1.2 peratus daripada jumlah pertubuhan yang aktif. Sektor Pembuatan mencatatkan bilangan pertubuhan tertinggi iaitu 7,468 pertubuhan, diikuti oleh Pembinaan, 2,203 pertubuhan dan Perkhidmatan, 1,693 pertubuhan. Sektor Pembuatan merekodkan Kadar Pertumbuhan Tahunan Kompaun (CAGR) terbesar iaitu 15.3 peratus.

Jadual 1: Bilangan Pertubuhan mengikut Sektor, 2015 dan 2022

Sektor	2022	2015	CAGR
Pertanian	970	747	3.8%
Perlombongan & pengkuarian	261	199	4.0%
Pembuatan	7,468	2,752	15.3%
Pembinaan	2,203	1,304	7.8%
Perkhidmatan	1,693	4,349	-12.6%
Jumlah	12,595	9,351	4.3%

2.2 SAIZ PERTUBUHAN

Pertubuhan bersaiz kecil mencatatkan bilangan tertinggi iaitu 7,044 pertubuhan atau 55.9 peratus. Ini diikuti oleh pertubuhan bersaiz sederhana (16.7%), besar (14.9%) dan mikro (12.5%). Pertubuhan bersaiz kecil merekodkan CAGR tertinggi iaitu 11.9 peratus.

Paparan 1: Bilangan Pertubuhan yang Melaporkan Perbelanjaan Perlindungan Alam Sekitar mengikut Saiz Pertubuhan, 2015 dan 2022

Besar	Sederhana	Kecil	Mikro
2022 : 1,875 2015 : 2,196 CAGR : -2.2%	2022 : 2,106 2015 : 1,650 CAGR : 3.5%	2022 : 7,044 2015 : 3,216 CAGR : 11.9%	2022 : 1,570 2015 : 2,289 CAGR : -5.2%

2.3 TARAF SAH

Syarikat sendirian berhad merekodkan bilangan pertubuhan tertinggi iaitu 10,451 pertubuhan dengan kadar pertumbuhan 9.0 peratus. Ini diikuti hak milik perseorangan, 1,483 pertubuhan dan perkongsian, 350 pertubuhan.

Paparan 2: Bilangan Pertubuhan Perlindungan Alam Sekitar mengikut Taraf Sah, 2015 dan 2022

Syarikat sendirian berhad	Hak milik perseorangan	Perkongsian	Syarikat awam berhad	Lain-lain*
2022 : 10,451 2015 : 5,719 CAGR : 9.0%	2022 : 1,483 2015 : 2,910 CAGR : -9.2%	2022 : 350 2015 : 418 CAGR : -2.5%	2022 : 242 2015 : 275 CAGR : -1.8%	2022 : 69 2015 : 29 CAGR : 13.2%

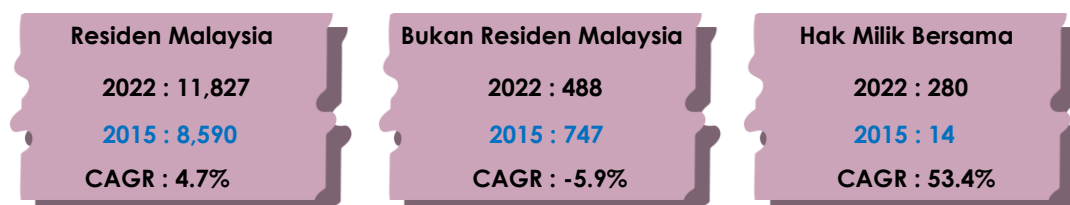
Nota:

*Perkongsian Liabiliti Terhad, Syarikat Koperasi, Perbadanan Awam dan Pertubuhan persendirian yang tidak mencari keuntungan

2.4 HAK MILIK

Pertubuhan milikan Residen Malaysia merekodkan bilangan pertubuhan tertinggi bagi perbelanjaan perlindungan alam sekitar iaitu 11,827 pertubuhan dengan CAGR 4.7 peratus. Ini diikuti pertubuhan milikan Bukan Residen Malaysia 488 pertubuhan (CAGR: -5.9%) dan Hak Milik Bersama 280 pertubuhan (CAGR: 53.4%).

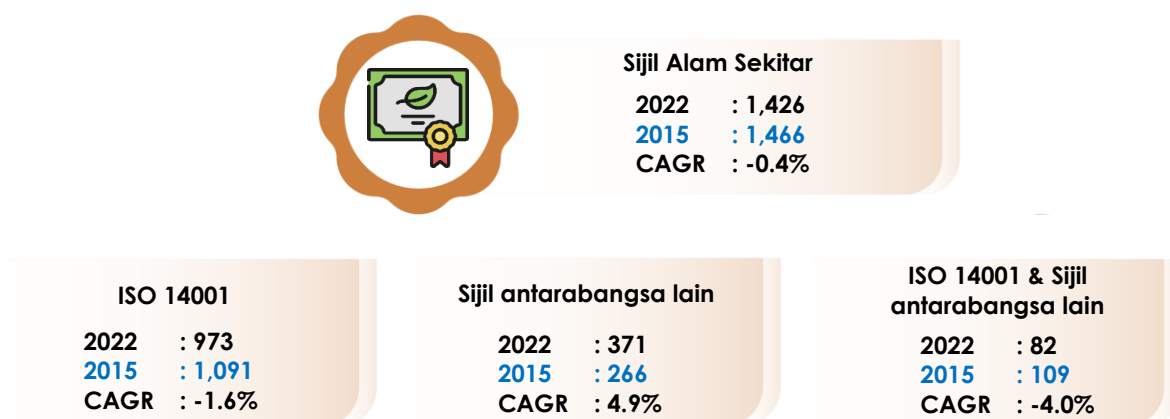
Paparan 3: Bilangan Pertubuhan Perlindungan Alam Sekitar mengikut Hak Milik, 2015 dan 2022



2.5 PEMILIKAN SIJIL ALAM SEKITAR

Sejumlah 1,426 pertubuhan atau 11.3 peratus daripada keseluruhan pertubuhan yang melaporkan Perbelanjaan Perlindungan Alam Sekitar memiliki pensijilan alam sekitar pada 2022. Jumlah ini merangkumi 973 pertubuhan dengan pensijilan ISO 14001, 371 pertubuhan dengan pensijilan antarabangsa lain serta 82 pertubuhan memiliki kedua-dua pensijilan ISO 14001 dan pensijilan antarabangsa lain.

Paparan 4: Bilangan Pertubuhan yang mempunyai Sijil Alam Sekitar, 2015 dan 2022

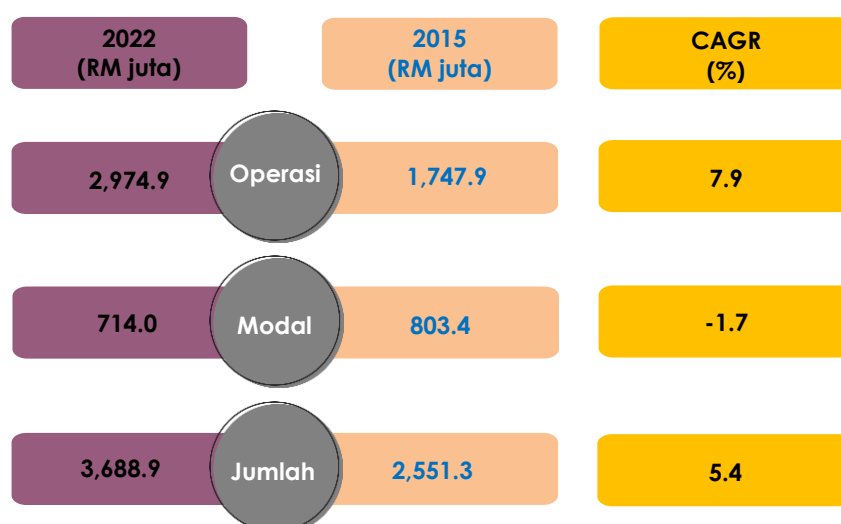


3. PERBELANJAAN PELINDUNGAN ALAM SEKITAR

3.1 PRESTASI KESELURUHAN

Perbelanjaan perlindungan alam sekitar pada 2022 direkodkan sebanyak RM3,688.9 juta berbanding RM2,551.3 juta pada 2015 dengan CAGR 5.4 peratus. Perbelanjaan operasi kekal menjadi penyumbang utama iaitu 80.6 peratus dengan CAGR 7.9 peratus kepada RM2,974.9 juta. Manakala, perbelanjaan modal mencatatkan RM714.0 juta dengan CAGR menurun 1.7 peratus.

Paparan 5: Jumlah Perbelanjaan Perlindungan Alam Sekitar, 2015 dan 2022



3.2 PERBELANJAAN PERLINDUNGAN ALAM SEKITAR MENGIKUT JENIS PERBELANJAAN

Pengurusan pencemaran mencatatkan perbelanjaan tertinggi iaitu RM2,512.0 juta atau 68.1 peratus. Ini diikuti dengan perbelanjaan pengurusan sisa sebanyak RM1,060.7 juta (28.8%), perbelanjaan lain untuk perlindungan alam sekitar (RM54.6 juta; 1.5%), perbelanjaan penilaian dan caj alam sekitar (RM53.6 juta; 1.4%) dan perlindungan hidupan liar & habitat (RM8.0 juta; 0.2%).

[Paparan 6]

Paparan 6: Perbelanjaan Perlindungan Alam Sekitar mengikut Jenis Perbelanjaan, 2015 dan 2022

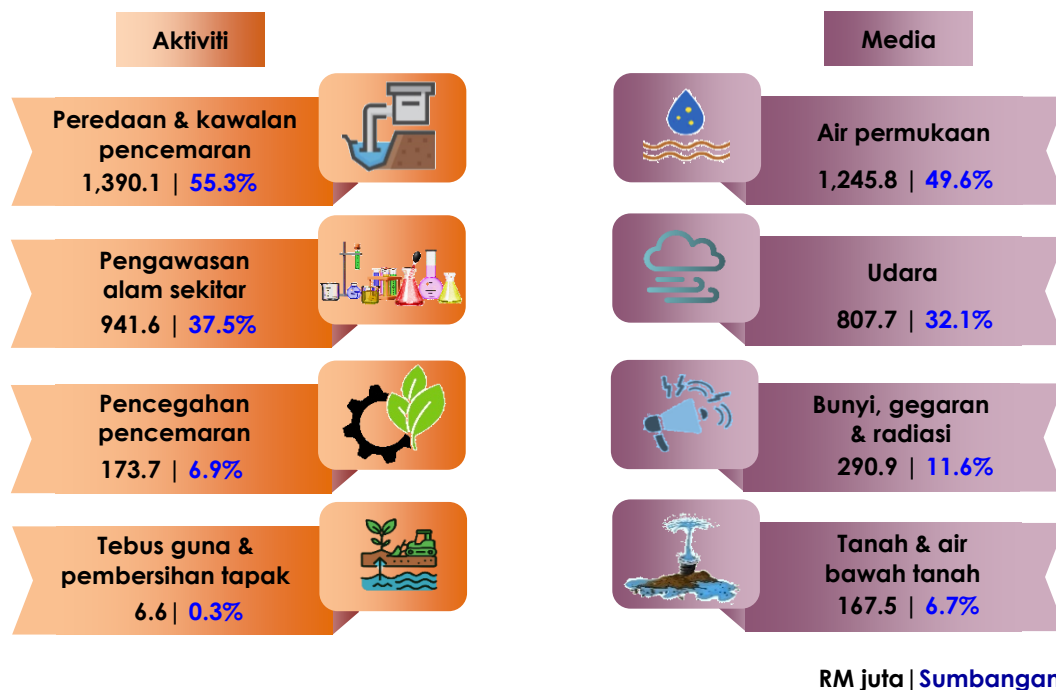
 Pengurusan pencemaran	 Pengurusan sisa	 Perbelanjaan lain untuk perlindungan alam sekitar	 Penilaian dan caj alam sekitar	 Perlindungan hidupan liar & habitat
2022 : 2,512.0 2015 : 1,688.1 CAGR : 6.0%	2022 : 1,060.7 2015 : 755.5 CAGR : 5.0%	2022 : 54.6 2015 : 62.7 CAGR : -2.0%	2022 : 53.6 2015 : 56.7 CAGR : -0.8%	2022 : 8.0 2015 : 8.4 CAGR : -0.6%

(RM juta)

3.3 PERBELANJAAN PENGURUSAN PENCEMARAN MENGIKUT AKTIVITI DAN MEDIA

Perbelanjaan pengurusan pencemaran dikategorikan mengikut jenis aktiviti dan media. Bagi jenis aktiviti, peredaan & kawalan pencemaran merupakan penyumbang utama iaitu sebanyak 55.3 peratus (RM1,390.1 juta). Ini diikuti oleh pengawasan alam sekitar 37.5 peratus (RM941.6 juta) dan pencegahan pencemaran 6.9 peratus (RM173.7 juta). Manakala, media air permukaan merekodkan perbelanjaan tertinggi iaitu RM1,245.8 juta atau 49.6 peratus. Ini diikuti dengan RM807.7 juta (32.1%) yang dibelanjakan bagi media udara dan RM290.9 juta (11.6%) dibelanjakan untuk media bunyi, gegaran dan radiasi. **[Paparan 7]**

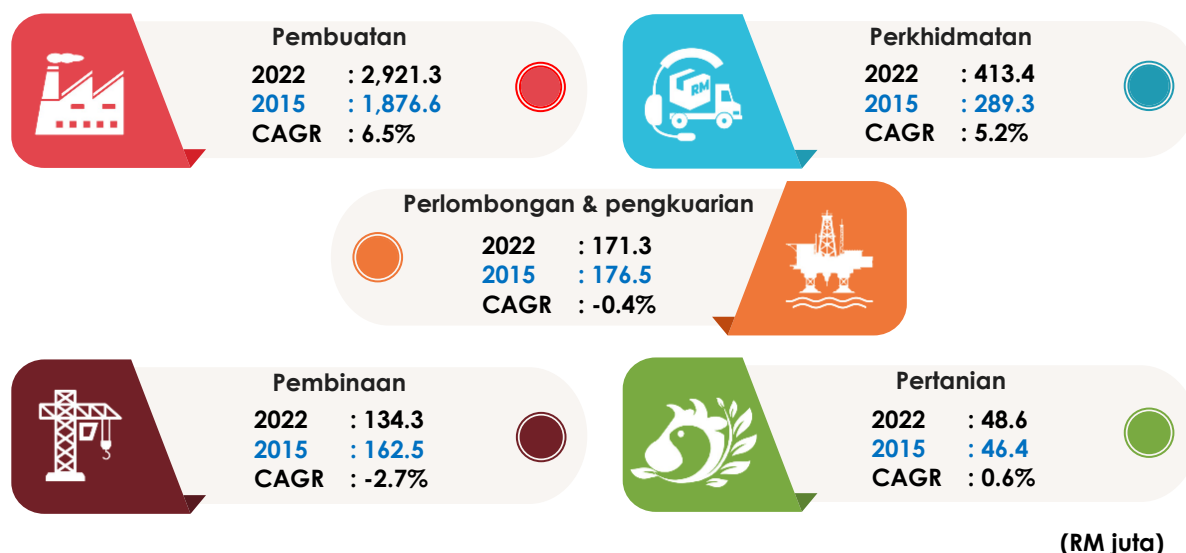
Paparan 7: Perbelanjaan Pengurusan Pencemaran mengikut Aktiviti dan Media, 2022



3.4 PERBELANJAAN PERLINDUNGAN ALAM SEKITAR MENGIKUT SEKTOR

Sektor Pembuatan merupakan penyumbang terbesar perbelanjaan perlindungan alam sekitar pada 2022 iaitu RM2,921.3 juta atau 79.2 peratus. Ini diikuti oleh sektor Perkhidmatan dengan RM413.4 juta (11.2%) dan Perlombongan & pengkuarian RM171.3 juta (4.6%).

Paparan 8: Perbelanjaan Perlindungan Alam Sekitar mengikut Sektor, 2015 dan 2022



Pengurusan pencemaran merupakan perbelanjaan utama bagi semua sektor dan menyumbang lebih 50 peratus kecuali sektor Perkhidmatan (49.5%). Manakala, perbelanjaan pengurusan sisa pula merupakan perbelanjaan kedua terbesar bagi semua sektor.

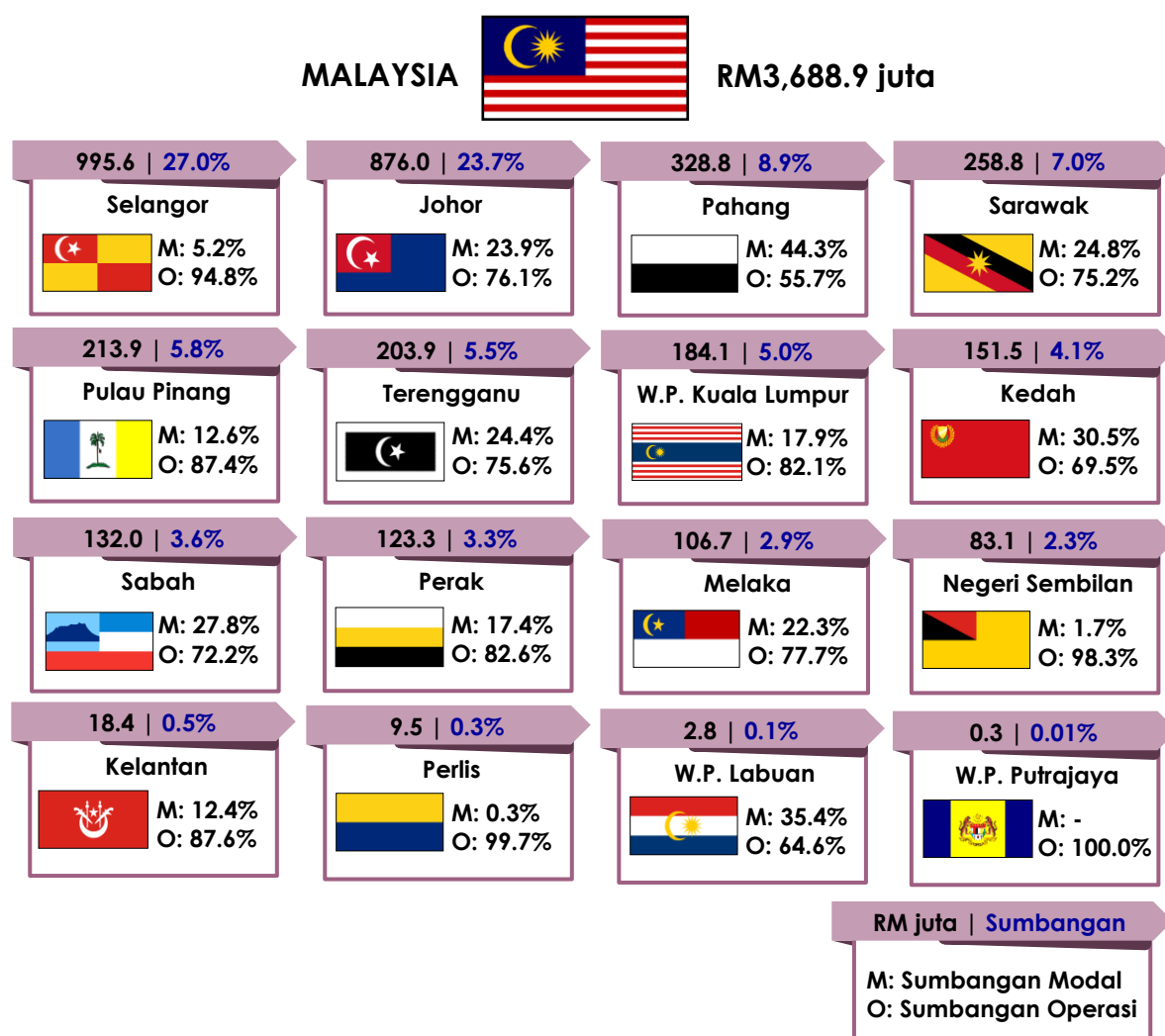
Carta 1: Jenis Perbelanjaan Perlindungan Alam Sekitar mengikut Sektor, 2022



3.5 PERBELANJAAN PERLINDUNGAN ALAM SEKITAR MENGIKUT NEGERI

Selangor mencatatkan perbelanjaan alam sekitar tertinggi iaitu RM995.6 juta, menyumbang 27.0 peratus. Ini diikuti oleh Johor (RM876.0 juta; 23.7%), Pahang (RM328.8 juta; 8.9%), Sarawak (RM258.8 juta; 7.0%) dan Pulau Pinang (RM213.9 juta; 5.8%). Jumlah yang dibelanjakan oleh lima negeri ini menyumbang kepada 72.5 peratus daripada keseluruhan perbelanjaan yang direkodkan pada 2022. **[Paparan 9]**

Paparan 9: Perbelanjaan Perlindungan Alam Sekitar mengikut Negeri, 2022



4. PERTUBUHAN MILIKAN WANITA

Sejumlah 695 pertubuhan milikan wanita melaporkan perbelanjaan perlindungan alam sekitar berjumlah RM50.4 juta, mewakili 1.4 peratus daripada keseluruhan perbelanjaan.

Sektor Pembuatan merekodkan bilangan pertubuhan milikan wanita tertinggi dengan 352 pertubuhan dan perbelanjaan perlindungan alam sekitar bernilai RM31.9 juta. Ini diikuti dengan sektor Perkhidmatan (205 pertubuhan; RM7.6 juta) dan sektor Pertanian (88 pertubuhan; RM6.8 juta).

Dari segi saiz pertubuhan, pertubuhan milikan wanita bersaiz kecil mencatatkan bilangan tertinggi iaitu 381 pertubuhan. Ini diikuti oleh mikro (128 pertubuhan), sederhana (117 pertubuhan) dan besar (69 pertubuhan). Walau bagaimanapun,

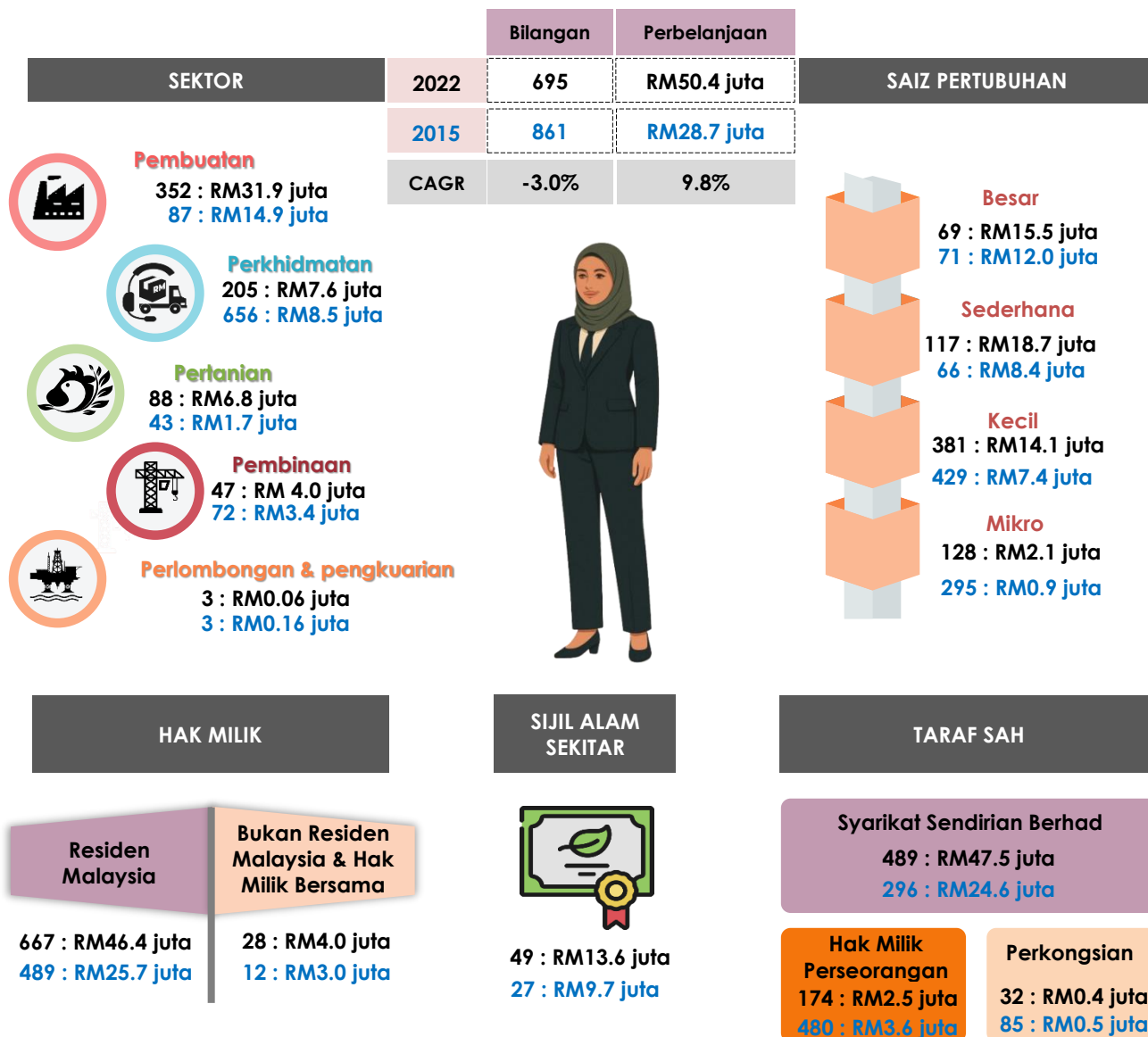
trend perbelanjaan adalah berbeza apabila pertubuhan milikan wanita bersaiz sederhana merekodkan nilai perbelanjaan tertinggi iaitu RM18.7 juta. Ini diikuti dengan pertubuhan bersaiz besar (RM15.5 juta), kecil (RM14.1 juta) dan mikro (RM2.1 juta).

Selain itu, majoriti pertubuhan milikan wanita yang melaporkan perbelanjaan perlindungan alam sekitar adalah Residen Malaysia iaitu 667 pertubuhan (96.0%) dengan perbelanjaan sebanyak RM46.4 juta. Baki 28 pertubuhan pula dimiliki oleh Bukan Residen Malaysia dan Hak Milik Bersama dengan jumlah perbelanjaan RM4.0 juta.

Di samping itu, sebahagian besar pertubuhan milikan wanita berstatus Syarikat Sendirian Berhad (489 pertubuhan) dengan nilai perbelanjaan perlindungan alam sekitar RM47.5 juta, manakala Hak Milik Perseorangan ialah 174 pertubuhan atau RM2.5 juta.

Sementara itu, 49 pertubuhan milikan wanita melaporkan mempunyai pensijilan alam sekitar dengan nilai perbelanjaan RM13.6 juta. **[Paparan 10]**

Paparan 10: Statistik Perbelanjaan Perlindungan Alam Sekitar bagi Pertubuhan Milikan Wanita, 2015 dan 2022



Nota:

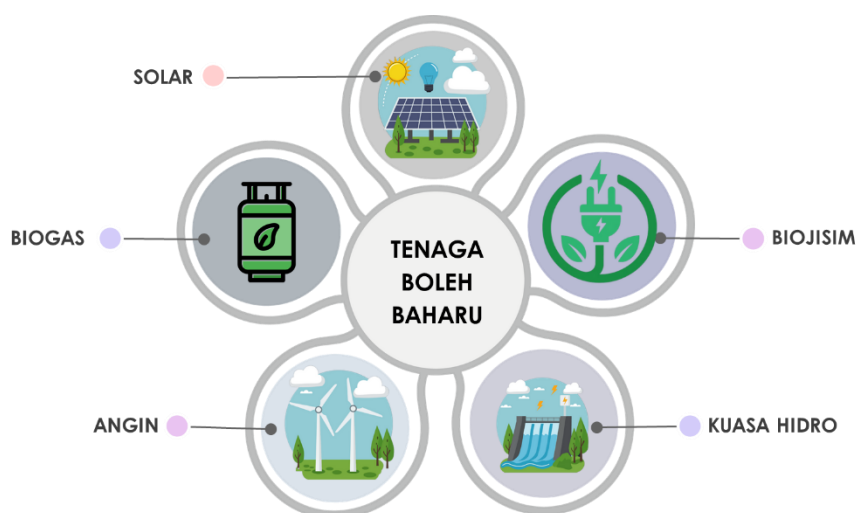
Bilangan pertubuhan : Perbelanjaan
2022
2015

TENAGA BOLEH BAHARU DI MALAYSIA: NAFAS BAHARU UNTUK ALAM SEKITAR

Nurul Alyana Fadzil, Mahadi Mohd Nor, Nazira Abdullah,
Syed Ibrahim Mohd Jamaluddin, Zainol Jamil
Bahagian Perangkaan Pertanian dan Alam Sekitar

Tenaga Boleh Baharu (TBB) semakin mendapat perhatian sebagai pemacu utama dalam usaha Malaysia memperluas penjanaan tenaga elektrik yang rendah karbon. Peralihan daripada bahan api fosil kepada sumber TBB bukan sahaja berperanan mengurangkan pelepasan karbon malah turut menyumbang kepada kelestarian alam sekitar. Sumber TBB seperti solar, biogas, biojisim, angin dan hidrokuasa merupakan alternatif lestari yang berasaskan sumber semula jadi dan sentiasa diperbaharui. Selain menyokong pemuliharaan alam sekitar, sumber ini turut berperanan penting dalam memacu pertumbuhan ekonomi negara¹.

Paparan 1: Sumber Tenaga Boleh Baharu



Malaysia masih bergantung tinggi kepada sumber tenaga fosil untuk penjanaan elektrik negara dengan arang batu menyumbang kira-kira 43.6 peratus, gas asli sekitar 36.9 peratus dan bahan api fosil tidak ditentukan mencatatkan 0.6 peratus. Secara keseluruhan, sumber fosil ini merangkumi kira-kira 81.1 peratus daripada keseluruhan penjanaan elektrik negara². Penjanaan elektrik menggunakan kuasa angin masih belum dilaksanakan secara komersial di Malaysia disebabkan oleh faktor kelajuan angin yang rendah dan tidak konsisten secara purata kelajuan angin bulanan yang dicatatkan di Malaysia adalah 1.5 hingga 4.5 meter per saat³.

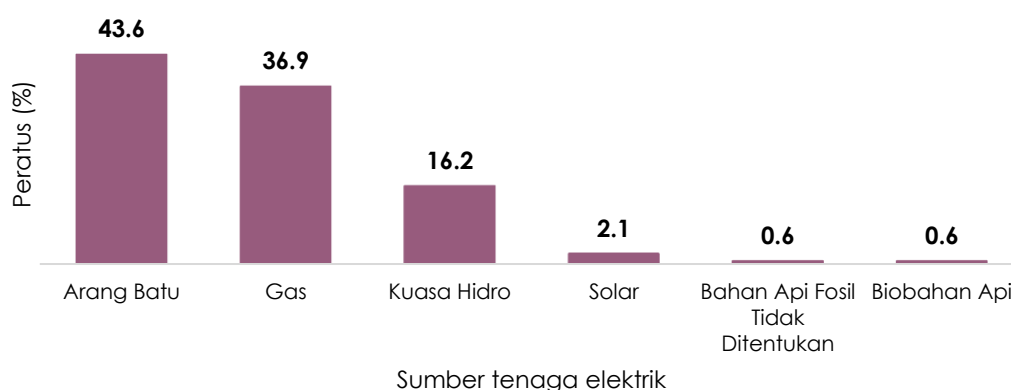
¹ Laporan Tahunan SEDA 2023

² <https://lowcarbonpower.org/region/Malaysia>

³ Tenaga Boleh Diperbaharui Bagi Penjanaan Tenaga Elektrik di Malaysia: Satu Kajian Literatur

Ini menunjukkan Malaysia masih sangat bergantung kepada bahan api fosil manakala sumber tenaga berkarbon rendah hanya menyumbang sebahagian kecil dalam campuran elektrik negara⁴. Ini bukan sahaja berisiko dari segi keterbatasan sumber tetapi turut membawa implikasi serius terhadap alam sekitar.

Carta 1: Penjanaan Elektrik mengikut Sumber, Malaysia, 2024



Sumber : <https://lowcarbonpower.org/region/Malaysia>

Selain daripada sumber semakin berkurang, Malaysia juga terdedah kepada risiko kenaikan harga bahan api global yang boleh menjejaskan kestabilan harga elektrik serta ekonomi negara. Dalam menghadapi cabaran ini, TBB semakin mendapat perhatian dan menekankan keperluan mendesak untuk mempercepatkan peralihan kepada tenaga yang lebih mesra alam. Malaysia bertekad mencapai sasaran sifar bersih pelepasan karbon menjelang 2050 dengan memfokuskan usaha penyahkarbonan kepada sektor tenaga yang merupakan penyumbang terbesar kepada pelepasan karbon negara⁵.

Pada 2023, pelepasan karbon dioksida (CO₂) Malaysia meningkat sebanyak 3.3 peratus kepada 283.3 juta tan dengan purata setiap rakyat Malaysia menyumbang 8.3 tan CO₂ setahun. Kadar ini lebih tinggi berbanding kebanyakan negara di Asia Tenggara⁶. Jika corak ini berterusan, ia bukan sahaja menjejaskan komitmen Malaysia terhadap pengurangan pelepasan CO₂ tetapi turut meningkatkan kesan perubahan iklim seperti banjir, cuaca ekstrem dan pencemaran udara.

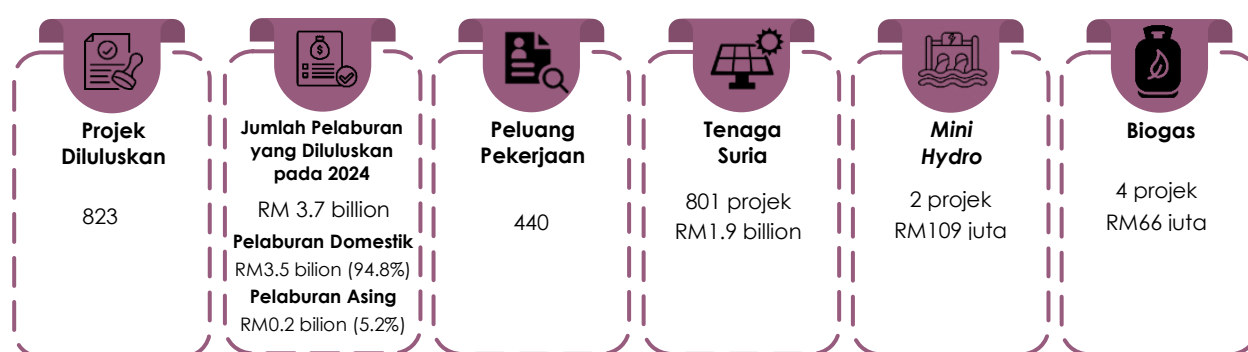
⁴ <https://lowcarbonpower.org/region/Malaysia>

⁵ <https://www.buletintv3.my/nasional/kerajaan-komited-capai-sasaran-pelepasan-karbon-sifar-bersih-menjelang-2050-pm/>

⁶ CO₂ emissions went up in Malaysia

Kerajaan Malaysia telah memperkenalkan beberapa dasar utama bagi mengurangkan kebergantungan negara terhadap bahan api fosil dan mempercepatkan peralihan kepada sumber tenaga bersih. Antaranya termasuk *National Renewable Energy Policy and Action Plan (2009)* telah menjadi asas penting kepada pembangunan TBB di Malaysia⁷. Seterusnya, *Renewable Energy Transition Roadmap (RETR 2035)* turut berfungsi sebagai kerangka strategik nasional yang digubal bagi mencapai sasaran 31.0 peratus TBB dalam campuran kapasiti terpasang negara menjelang tahun 2025 serta memacu agenda penyahkarbonan sektor elektrik menjelang tahun 2035⁸.

Paparan 2: Projek Tenaga Boleh Baharu yang Diluluskan pada 2024



Sumber : Malaysian Investment Development Authority (MIDA)

Malaysia memiliki kelebihan geografi dan sumber semula jadi yang sesuai bagi pembangunan TBB. Cahaya matahari yang konsisten sepanjang tahun menjadikan tenaga solar sebagai salah satu sumber paling berpotensi⁹. Begitu juga dengan sumber hidro berskala kecil yang boleh dimanfaatkan di kawasan pedalaman manakala hasil pertanian dan perhutanan membuka peluang untuk pengembangan tenaga biojisim¹⁰.

Penggunaan teknologi baharu seperti sistem penyimpanan tenaga, grid pintar dan kecekapan tenaga dapat mengoptimumkan penggunaan TBB¹¹. Sektor tenaga bersih juga berpotensi membuka peluang ekonomi baharu khususnya dalam industri hijau, mewujudkan pekerjaan berkemahiran tinggi serta menarik pelaburan asing.

⁷ *National Renewable Energy Policy and Action Plan (2009)*

⁸ *Malaysia Renewable Energy Roadmap : Pathway Towards Low Carbon Energy System*

⁹ <https://www.tnb.com.my/assets/newsclip/25122023e4.pdf>

¹⁰ Tenaga Boleh Diperbaharui Bagi Penjanaaan Tenaga Elektrik di Malaysia: Satu Kajian Literatur

¹¹ <https://www.tnb.com.my/assets/newsclip/23012025b.pdf>

Ini menjadikan TBB bukan sahaja penting dari sudut kelestarian alam sekitar tetapi juga sebagai pemacu kepada pertumbuhan ekonomi negara.

Di samping itu, Malaysia turut menzahirkan komitmen untuk mengurangkan intensiti karbon sebanyak 45.0 peratus menjelang tahun 2030 dan mencapai sifar bersih karbon menjelang tahun 2050 yang disokong oleh rangka dasar yang keajaiban termasuk Dasar Perubahan Iklim Negara (DPIN) 2.0, Pelan Hala Tuju Peralihan Tenaga Negara (NETR) serta pelaksanaan mekanisme cukai karbon yang dijadualkan bermula pada 2026¹².

Bagi memperkukuh lagi penjanaan elektrik rendah karbon, Malaysia wajar mencontohi negara-negara yang telah mencapai kejayaan ketara dalam pembangunan TBB, contohnya Lebanon memperoleh hampir satu pertiga bekalan elektrik daripada tenaga solar manakala France dan Slovakia menjana lebih separuh tenaga elektrik melalui nuklear. Ini menunjukkan bahawa Malaysia berpotensi untuk memperluas penggunaan tenaga solar serta meneroka pembangunan tenaga nuklear bagi memenuhi permintaan elektrik bersih sambil mengurangkan kebergantungan kepada bahan api fosil¹³.

Seiring dengan itu, masyarakat juga memainkan peranan dalam menyokong peralihan tenaga, sama ada melalui penggunaan tenaga cekap di rumah, penggunaan kenderaan elektrik atau sokongan terhadap dasar hijau kerajaan¹⁴. TBB berpotensi menjadi "nafas baharu" yang menjamin kelestarian alam sekitar, keselamatan tenaga yang stabil serta kesejahteraan generasi masa hadapan melalui kecekapan teknologi, sokongan dasar kerajaan dan kesedaran masyarakat. Pembangunan TBB bukan sahaja membantu mengurangkan pelepasan karbon malah turut membuka peluang ke arah pembangunan ekonomi hijau yang lebih inklusif, berdaya tahan dan mampan. Selain itu, TBB juga memainkan peranan penting sebagai pemacu dalam peralihan menuju masa depan yang lebih selamat dan sejahtera.

Penafian:

Pandangan yang dinyatakan adalah pandangan penulis dan tidak mewakili pandangan DOSM.

¹² <https://www.buletintv3.my/nasional/pm-tegaskan-komitmen-malaysia-tangani-perubahan-iklim/>

¹³ <https://lowcarbonpower.org/region/Malaysia>

¹⁴ <https://www.bernama.com/bm/news.php?id=2361560>

1. INTRODUCTION

The Environmental Protection Expenditure 2023 publication presents statistics on environmental protection expenditure for the reference year 2022. The expenditure covers operation and capital expenditure aimed at the prevention, reduction and elimination of pollution or any other environmental damage arising from the production and use of goods/ services. These data were obtained from the Economic Census 2023 which covers the Agriculture, Mining & quarrying, Manufacturing, Construction and Services sectors.

2. ESTABLISHMENT PROFILE OF ENVIRONMENTAL PROTECTION EXPENDITURE

2.1 NUMBER OF ESTABLISHMENTS

The number of establishments reporting environmental protection expenditure in 2022 were 12,595 establishments, which is 1.2 per cent of the total active establishments. Manufacturing sector recorded the highest number of establishments with 7,468 establishments, followed by Construction, 2,203 establishments and Services, 1,693 establishments. Manufacturing sector recorded the highest Compound Annual Growth Rate (CAGR) of 15.3 per cent.

Table 1: Number of Establishments by Sector, 2015 and 2022

Sectors	2022	2015	CAGR
Agriculture	970	747	3.8%
Mining & quarrying	261	199	4.0%
Manufacturing	7,468	2,752	15.3%
Construction	2,203	1,304	7.8%
Services	1,693	4,349	-12.6%
Total	12,595	9,351	4.3%

2.2 SIZE OF ESTABLISHMENT

Small size establishments recorded the highest number at 7,044 establishments or 55.9 per cent. This was followed by medium size establishments (16.7%), large (14.9%) and micro (12.5%). Small size establishments recorded the highest CAGR at 11.9 per cent.

Exhibit 1: Number of Establishments Reported Environmental Protection Expenditure by Size of Establishment, 2015 and 2022

Large	Medium	Small	Micro
2022 : 1,875 2015 : 2,196 CAGR : -2.2%	2022 : 2,106 2015 : 1,650 CAGR : 3.5%	2022 : 7,044 2015 : 3,216 CAGR : 11.9%	2022 : 1,570 2015 : 2,289 CAGR : -5.2%

2.3 LEGAL STATUS

Private limited company recorded the highest number of establishments at 10,451 establishments with a growth rate of 9.0 per cent. This was followed by individual proprietorships, 1,483 establishments and partnerships, 350 establishments.

Exhibit 2: Number of Environmental Protection Establishment by Legal Status, 2015 and 2022

Private limited company	Individual proprietorship	Partnership	Public limited company	Other*
2022 : 10,451 2015 : 5,719 CAGR : 9.0%	2022 : 1,483 2015 : 2,910 CAGR : -9.2%	2022 : 350 2015 : 418 CAGR : -2.5%	2022 : 242 2015 : 275 CAGR : -1.8%	2022 : 69 2015 : 29 CAGR : 13.2%

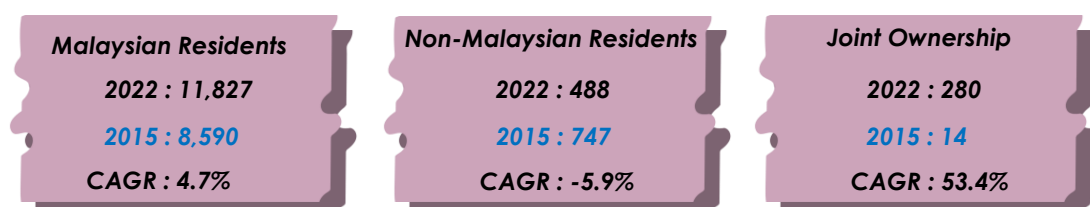
Notes:

* Limited Liability Partnership, Cooperative Company, Public Corporation and Private Non-Profit Organisation

2.4 OWNERSHIP

Establishment owned by Malaysian Resident recorded the highest number of establishments for environmental protection expenditure with 11,827 establishments with a CAGR of 4.7 per cent. This was followed by establishment owned by Non-Malaysian Residents with 488 establishments (CAGR: -5.9%) and Joint Ownership with 280 establishments (CAGR: 53.4%).

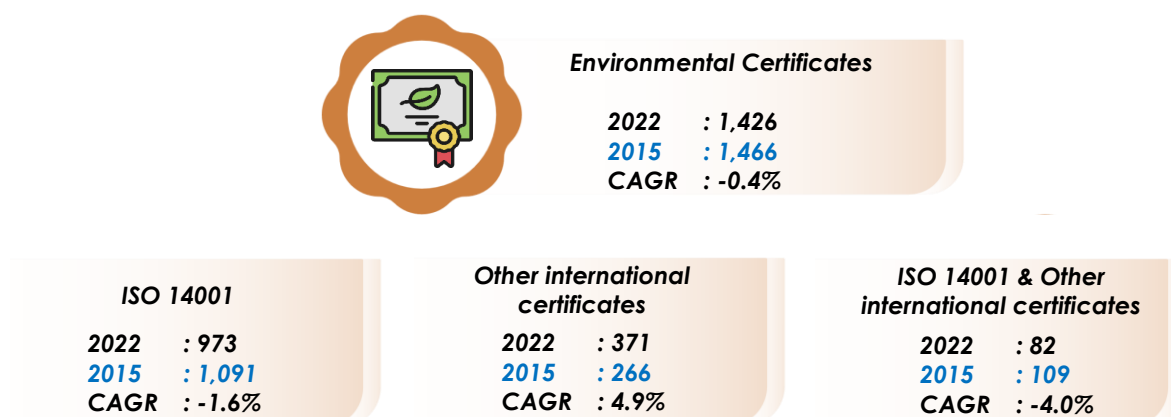
Exhibit 3: Number of Environmental Protection by Establishment Ownership, 2015 and 2022



2.5 OWNERSHIP OF ENVIRONMENTAL CERTIFICATES

A total of 1,426 establishments or 11.3 per cent from the overall establishments that reported Environmental Protection Expenditure attained environmental certification in 2022. This comprised of 973 establishments with ISO 14001 certificates, 371 establishments with other international certificates and 82 establishments with both ISO 14001 and other international certificates.

Exhibit 4: Number of Establishments with Environmental Certificates, 2015 and 2022

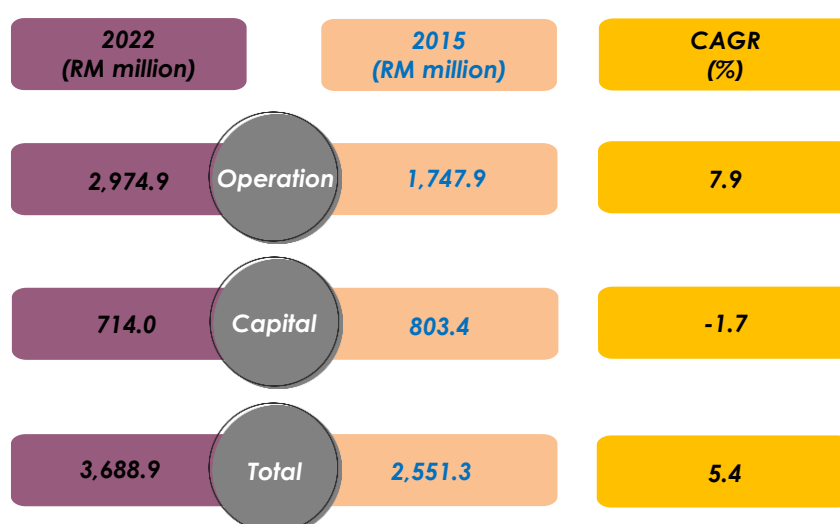


3. ENVIRONMENTAL PROTECTION EXPENDITURE

3.1 OVERALL PERFORMANCE

Environmental protection expenditure in 2022 recorded RM3,688.9 million as compared to RM2,551.3 million in 2015 with CAGR of 5.4 per cent. Operating expenditure remained as the main contributor at 80.6 per cent with a CAGR of 7.9 per cent to RM2,974.9 million. Meanwhile, capital expenditure recorded RM714.0 million with a declining CAGR of 1.7 per cent.

Exhibit 5: Total Environmental Protection Expenditure, 2015 and 2022



3.2 ENVIRONMENTAL PROTECTION EXPENDITURE BY TYPE OF EXPENDITURE

Pollution management recorded the highest expenditure at RM2,512.0 million or 68.1 per cent. This was followed by waste management expenditure at RM1,060.7 million (28.8%), other environmental protection expenditure (RM54.6 million; 1.5%), environmental assessment and charges expenditure (RM53.6 million; 1.4%) and protection of wildlife & habitat (RM8.0 million; 0.2%).

[Exhibit 6]

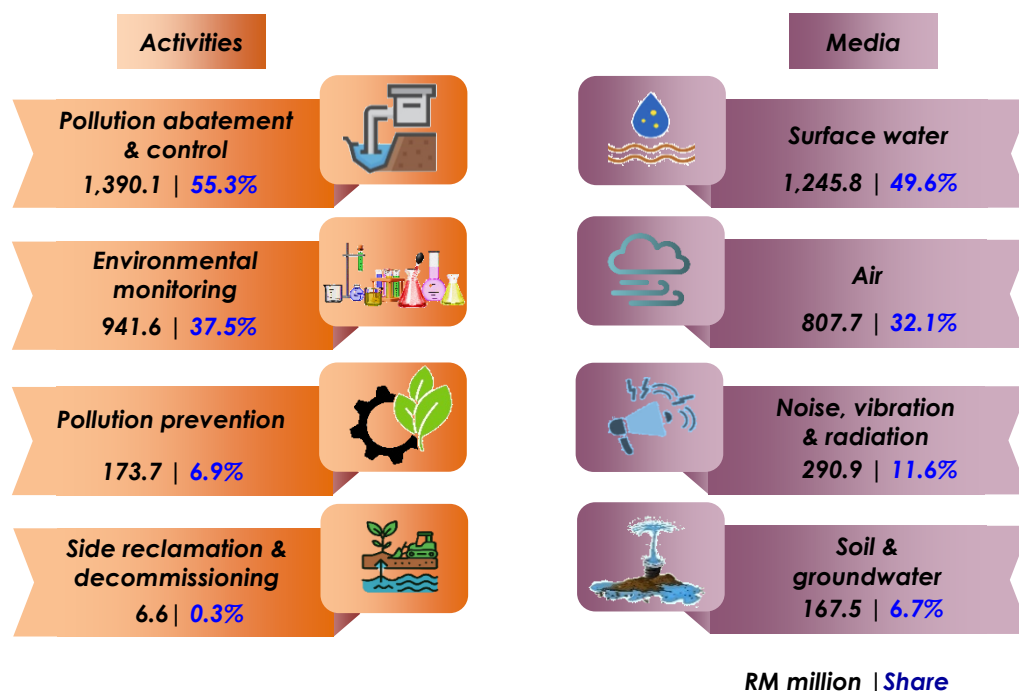
Exhibit 6: Environmental Protection Expenditure by Type of Expenditure, 2015 and 2022

 Pollution management		 Waste management		 Other environmental protection expenditure		 Environmental assessment & charges		 Protection of wildlife & habitat	
2022	: 2,512.0	2022	: 1,060.7	2022	: 54.6	2022	: 53.6	2022	: 8.0
2015	: 1,688.1	2015	: 755.5	2015	: 62.7	2015	: 56.7	2015	: 8.4
CAGR	: 6.0%	CAGR	: 5.0%	CAGR	: -2.0%	CAGR	: -0.8%	CAGR	: -0.6%

(RM million)

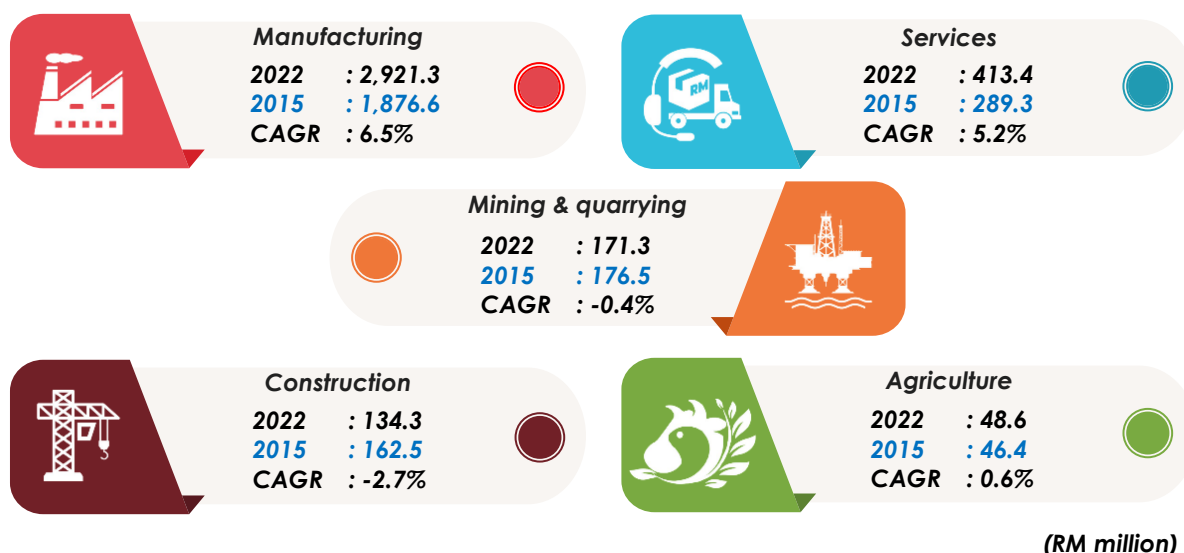
3.3 POLLUTION MANAGEMENT EXPENDITURE BY ACTIVITIES AND MEDIA

Pollution management expenditure is categorised into types of activity and media. In terms of types of activity, pollution abatement & control was the main contributor with a share of 55.3 per cent (RM1,390.1 million). This was followed by environmental monitoring 37.5 per cent (RM941.6 million) and pollution prevention 6.9 per cent (RM173.7 million). Meanwhile, surface water media recorded the highest expenditure at RM1,245.8 million or 49.6 per cent. This was followed by RM807.7 million (32.1%) spent on air media and RM290.9 million (11.6%) spent on noise, vibration and radiation media. **[Exhibit 7]**

Exhibit 7: Pollution Management Expenditure by Activities and Media, 2022

3.4 ENVIRONMENTAL PROTECTION EXPENDITURE BY SECTOR

Manufacturing sector constituted the largest share of environmental protection expenditure in 2022 at RM2,921.3 million or 79.2 per cent. This was followed by the Services sector with RM413.4 million (11.2%) and Mining & quarrying RM171.3 million (4.6%).

Exhibit 8: Environmental Protection Expenditure by Sector, 2015 and 2022

Pollution management was the main expenditure for all sectors and contributed more than 50 per cent except for Services sector (49.5%). Meanwhile, waste management expenditure was the second largest expenditure for all sectors.

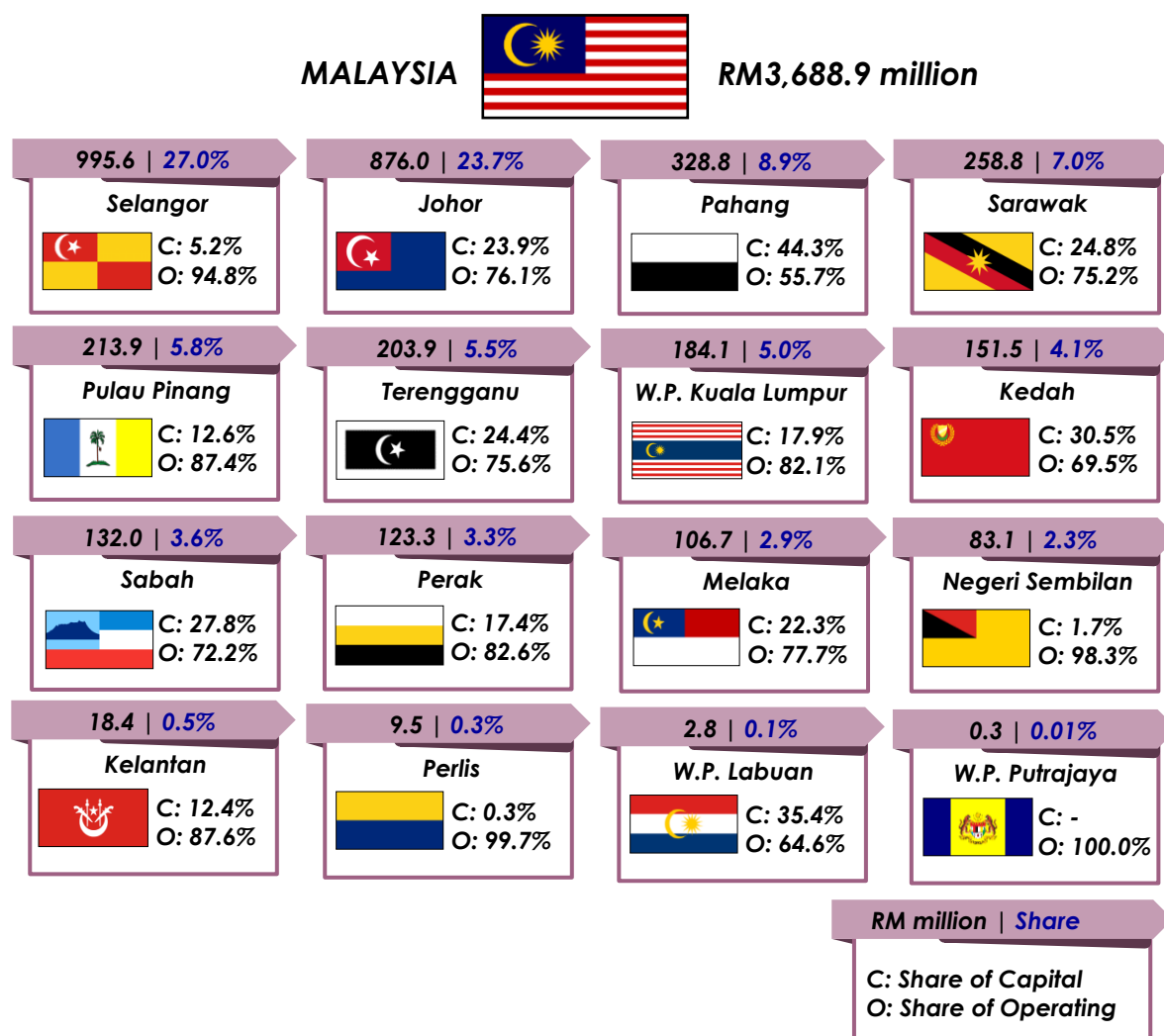
Chart 1: Type of Environmental Protection Expenditure by Sector, 2022



3.5 ENVIRONMENTAL PROTECTION EXPENDITURE BY STATE

Selangor recorded the highest environmental protection expenditure at RM995.6 million, contributing 27.0 per cent. This was followed by Johor (RM876.0 million; 23.7%), Pahang (RM328.8 million; 8.9%), Sarawak (RM258.8 million; 7.0%) and Pulau Pinang (RM213.9 million; 5.8%). The amount spent by these five states accounted for 72.5 per cent of the total expenditure recorded in 2022.

[Exhibit 9]

Exhibit 9: Environmental Protection Expenditure by State, 2022

4. WOMEN-OWNED ESTABLISHMENTS

A total of 695 women-owned establishments reported environmental protection expenditure amounting to RM50.4 million, representing 1.4 per cent of the total expenditure.

The Manufacturing sector recorded the highest number of women-owned establishment with 352 establishments and environmental protection expenditure of RM31.9 million. This was followed by the Services sector (205 establishments; RM7.6 million) and Agriculture sector (88 establishments; RM6.8 million).

In terms of establishment size, small-sized women-owned establishments recorded the highest number with 381 establishments. This was followed by micro (128 establishments), medium (117 establishments) and large (69 establishments).

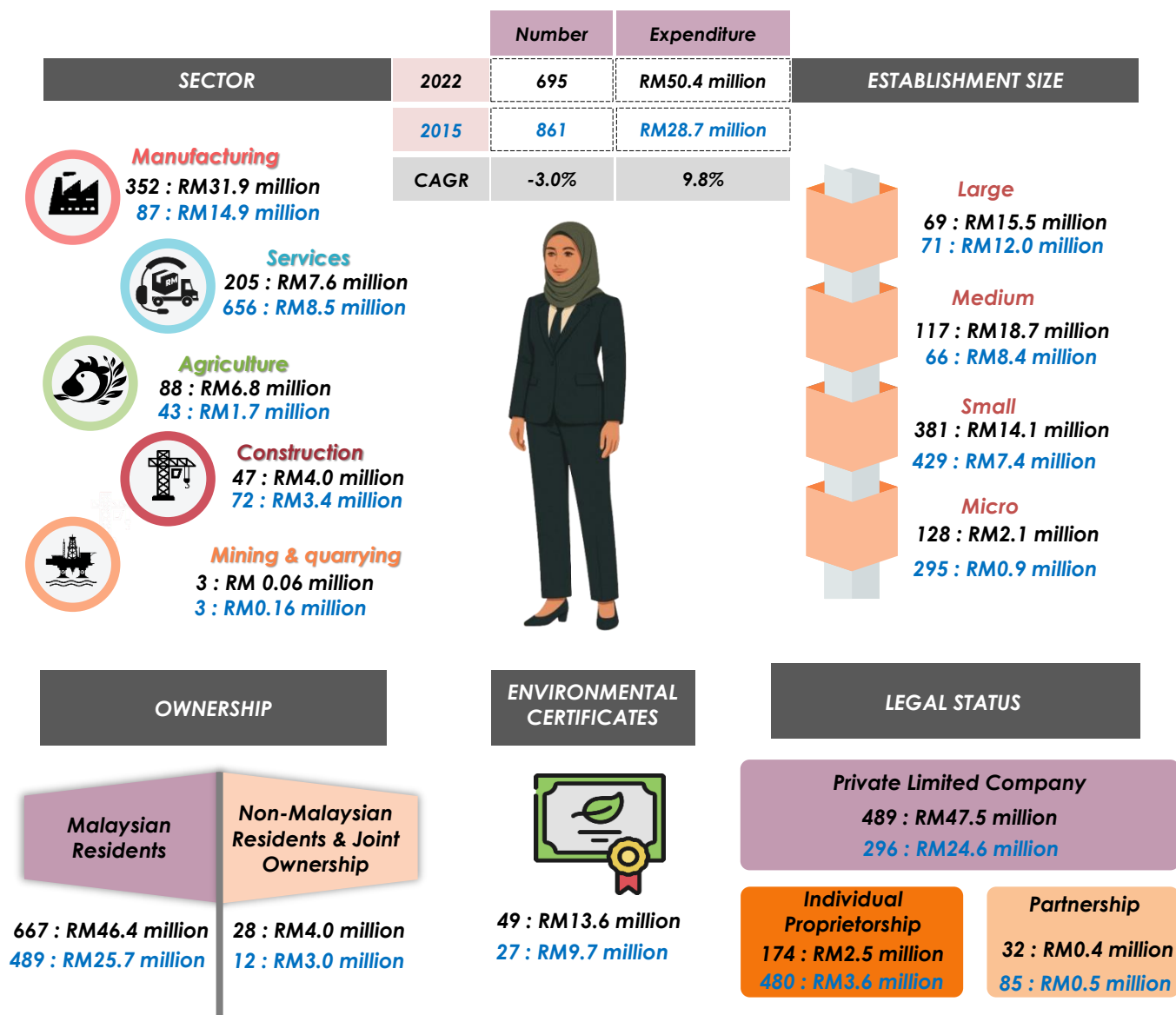
However, the expenditure trend differed as medium-sized women-owned establishment recorded the highest expenditure at RM18.7 million. This was followed by large size establishment (RM15.5 million), small (RM14.1 million) and micro (RM2.1 million).

Besides, the majority of women-owned establishment reporting environmental protection expenditure were Malaysian Residents comprising 667 establishments (96.0%) with the expenditure of RM46.4 million. The remaining 28 establishments were Non-Malaysian Residents & Joint Ownership with a total expenditure of RM4.0 million.

Other than that, most of the women-owned establishments were Private Limited Companies (489 establishments) with environmental protection expenditure of RM47.5 million, while Individual Proprietorships accounted for 174 establishments or RM2.5 million.

Meanwhile, 49 women-owned establishments reported having environmental certifications with expenditure amounting to RM13.6 million. **[Exhibit 10]**

Exhibit 10: Environmental Protection Expenditure Statistics for Women-owned Establishments, 2015 and 2022



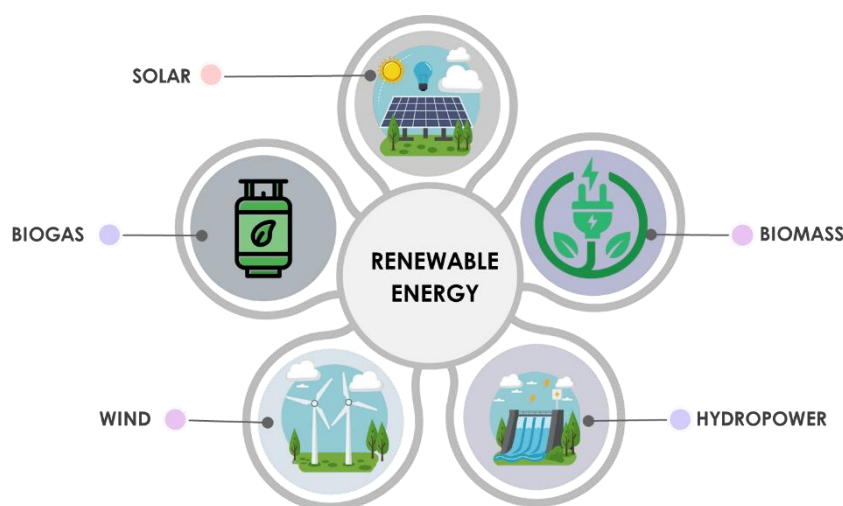
Notes :
Number of Establishment : Expenditure
2022
2015

RENEWABLE ENERGY IN MALAYSIA: A NEW BREATH FOR THE ENVIRONMENT

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 Syed Ibrahim Mohd Jamaluddin, Zainol Jamil
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Renewable Energy (RE) is increasingly gaining attention as a key driver in Malaysia's efforts to expand low-carbon electricity generation. The transition from fossil fuels to RE sources not only plays a role in reducing carbon emissions but also contributes to environmental sustainability. RE sources such as solar, biogas, biomass, wind and hydropower are sustainable alternatives derived from natural resources that are continuously replenished. In addition to supporting to environmental conservation, these sources also play a role in driving the country's economic growth¹.

Exhibit 1: Sources of Renewable Energy



Malaysia still heavily relies on fossil energy sources for the country's electricity generation with coal contributing about 43.6 per cent, natural gas around 36.9 per cent and unspecified fossil fuels recording 0.6 per cent. Overall, these fossil sources comprise about 81.1 per cent of the country's total electricity generation². Electricity generation using wind power has not yet been commercially implemented in Malaysia due to low and inconsistent wind speed factor with the average monthly wind speed recorded in Malaysia between 1.5 to 4.5 meter per second³.

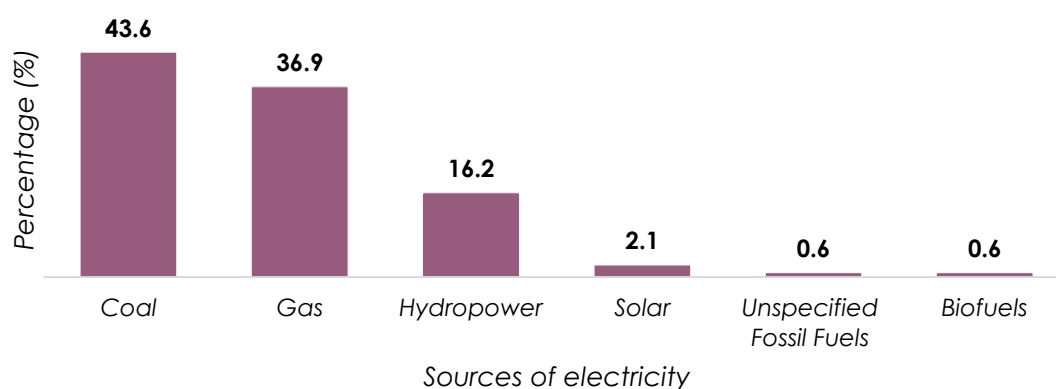
¹ Laporan Tahunan SEDA 2023

² <https://lowcarbonpower.org/region/Malaysia>

³ Tenaga Boleh Diperbaharui Bagi Penjanaian Tenaga Elektrik di Malaysia: Satu Kajian Literatur

This indicates that Malaysia remains highly dependent on fossil fuels while low-carbon energy sources contribute only a small portion to the national electricity mix⁴. This is not only risky in terms of resource limitations but also poses serious implications towards the environment.

Chart 1: Electricity Generation by Sources, Malaysia, 2024



Sources : <https://lowcarbonpower.org/region/Malaysia>

Apart from depleting resources, Malaysia is also exposed to the risk of rising global fuel prices which could affect the stability of electricity prices and the national economy. In facing this challenge, RE is increasingly gaining attention and underlines the urgent need to accelerate the transition to more environmentally friendly energy. Malaysia is determined to achieve a net zero carbon emissions target by 2050 by focusing decarbonisation efforts on the energy sector which is the largest contributor to the nation's carbon emissions⁵.

In 2023, Malaysia's carbon dioxide (CO₂) emissions increased by 3.3 per cent to 283.3 million tonnes with an average Malaysian contributing 8.3 tonnes of CO₂ per year. This rate is higher compared to most countries in Southeast Asia⁶. If this trend continues, it will not only undermine Malaysia's commitment towards reduction of CO₂ emission but also amplify the impacts of climate change such as floods, extreme weather and air pollution.

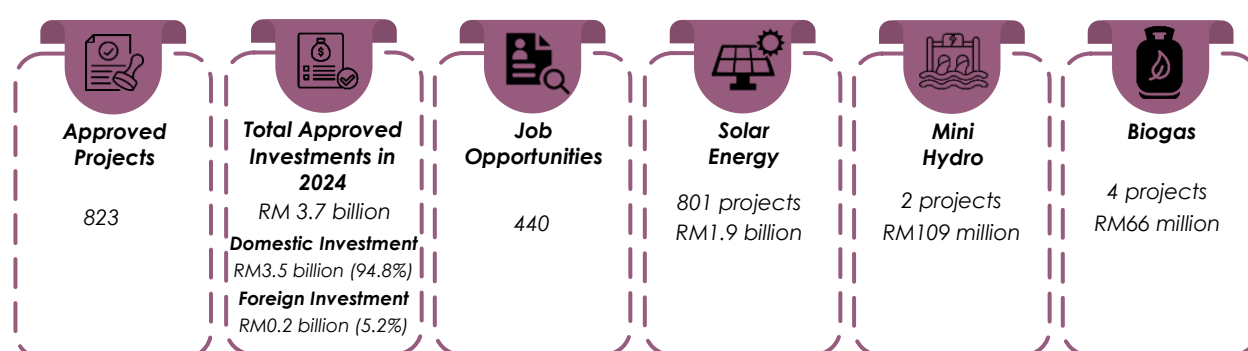
⁴ <https://lowcarbonpower.org/region/Malaysia>

⁵ <https://www.buletintv3.my/nasional/kerajaan-komited-capai-sasaran-pelepasan-karbon-sifar-bersih-menjelang-2050-pm/>

⁶ CO₂ emissions went up in Malaysia

The Malaysian government has introduced several key policies to reduce the country's dependence on fossil fuels and accelerate the transition to clean energy sources. Among them, the National Renewable Energy Policy and Action Plan (2009) has served an important foundation for the development of renewable energy in Malaysia⁷. Subsequently, the Renewable Energy Transition Roadmap (RETR 2035) was formulated as a national strategic framework to achieve the target of 31.0 per cent RE in the country's installed capacity mix by 2025 and to drive the electricity sector's decarbonisation agenda by 2035⁸.

Exhibit 2: Renewable Energy Projects Approved in 2024



Sources : Malaysian Investment Development Authority (MIDA)

Malaysia has geographical advantages and natural resources that are suitable for the development of RE. Consistent sunlight throughout the year makes solar energy as one of the most potential sources⁹. Likewise, small-scale hydro resources can be utilised in rural areas, while agricultural and forestry products create opportunities for the expansion of biomass energy¹⁰.

The use of new technologies such as energy storage systems, smart grids and energy efficiency can optimise the utilisation of RE¹¹. The clean energy sector also has the potential to create new economic opportunities, particularly in green industries, the creation of high-skilled jobs and attracting foreign investment.

⁷ National Renewable Energy Policy and Action Plan (2009)

⁸ Malaysia Renewable Energy Roadmap : Pathway Towards Low Carbon Energy System

⁹ <https://www.tnb.com.my/assets/newsclip/25122023e4.pdf>

¹⁰ Tenaga Boleh Diperbaharui Bagi Penjanaan Tenaga Elektrik di Malaysia: Satu Kajian Literatur

¹¹ <https://www.tnb.com.my/assets/newsclip/23012025b.pdf>

This makes RE not only important from an environmental perspective but also a driver of the nation's economic growth.

In addition, Malaysia has also expressed its commitment to reducing carbon intensity by 45.0 per cent by 2030 and achieving net-zero carbon by 2050 supported by a strong policy framework that include the National Climate Change Policy (NCCP) 2.0, the National Energy Transition Roadmap (NETR) as well as the planned implementation of a carbon tax mechanism scheduled to begin 2026¹².

To further strengthen low-carbon electricity generation, Malaysia should emulate countries that have achieved significant success in developing RE for example Lebanon derives almost a third of its electricity supply from solar energy while France and Slovakia generate more than half of their electricity from nuclear. This shows that Malaysia has the potential to expand the use of solar energy adaption and explore the development of nuclear energy to meet the demand for clean electricity while reducing dependence on fossil fuels¹³.

Alongside with these efforts, the community also plays an important role in supporting the transition, whether through the efficient energy at home, the use of electric vehicles or support for government green policies¹⁴. RE has the potential to be a "new breath" that ensures environmental sustainability, stable energy security and the well-being of future generations with technological efficiency, government policy support and community awareness. The development of RE will not only help reduce carbon emissions but also creates opportunities for a more inclusive, resilient and sustainable green economy ultimately. In addition, RE also serves as a key driver of Malaysia's transition towards a more secure and prosperous future.

Disclaimer:

The views expressed in this article are those of the authors and do not represent the views of DOSM.

¹² <https://www.buletintv3.my/nasional/pm-tegaskan-komitmen-malaysia-tangani-perubahan-iklim/>

¹³ <https://lowcarbonpower.org/region/Malaysia>

¹⁴ <https://www.bernama.com/bm/news.php?id=2361560>

BAHAGIAN **2** JADUAL PART TABLES



A

STATISTIK MENGIKUT NEGERI
STATISTICS BY STATES



Jadual 1: Bilangan Pertubuhan dan Pecahan Perbelanjaan Perlindungan Alam Sekitar mengikut Negeri, 2022

Table 1: Number of Establishments and Share of Environmental Protection Expenditure by States, 2022

Negeri <i>States</i>	Pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Establishments with environmental protection expenditure</i>		Perbelanjaan perlindungan alam sekitar <i>Environmental protection expenditure</i>				
	Bilangan <i>Number</i>	Peratus <i>Per cent</i>	Jumlah <i>Total</i>	Perbelanjaan modal <i>Capital expenditure</i>		Perbelanjaan operasi <i>Operating expenditure</i>	
			(RM'000)	(RM'000)	%	(RM'000)	%
Jumlah <i>Total</i>	12,595	100.0	3,688,863	713,954	19.4	2,974,909	80.6
Johor	1,453	11.5	876,012	209,782	23.9	666,230	76.1
Kedah	296	2.4	151,454	46,142	30.5	105,312	69.5
Kelantan	39	0.3	18,435	2,288	12.4	16,147	87.6
Melaka	151	1.2	106,694	23,811	22.3	82,882	77.7
Negeri Sembilan	309	2.5	83,068	1,406	1.7	81,663	98.3
Pahang	274	2.2	328,843	145,814	44.3	183,029	55.7
Pulau Pinang	608	4.8	213,867	26,916	12.6	186,951	87.4
Perak	489	3.9	123,326	21,485	17.4	101,841	82.6
Perlis	23	0.2	9,547	28	0.3	9,519	99.7
Selangor	7,603	60.4	995,649	51,726	5.2	943,923	94.8
Terengganu	226	1.8	203,934	49,806	24.4	154,128	75.6
Sabah	573	4.5	132,048	36,674	27.8	95,374	72.2
Sarawak	346	2.7	258,780	64,113	24.8	194,667	75.2
W.P. Kuala Lumpur	189	1.5	184,083	32,976	17.9	151,107	82.1
W.P. Labuan	10	0.1	2,789	988	35.4	1,801	64.6
W.P. Putrajaya	6	0.0	335	-	-	335	100.0

Jadual 1.1: Bilangan Pertubuhan dan Jenis Perbelanjaan Perlindungan Alam Sekitar mengikut Negeri, 2022

Table 1.1: Number of Establishments and Type of Environmental Protection Expenditure by States, 2022

Negeri <i>States</i>	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Number of establishments with environmental protection expenditure</i>	Perbelanjaan perlindungan alam sekitar <i>Environmental protection expenditure</i>					
		Jumlah <i>Total</i>	Pengurusan pencemaran <i>Pollution management</i>	Perlindungan hidupan liar & habitat <i>Protection of wildlife & habitat</i>	Penilaian dan caj alam sekitar <i>Environmental assessment and charges</i>	Pengurusan sisa <i>Waste management</i>	Perbelanjaan lain untuk perlindungan alam sekitar <i>Other environmental protection expenditure</i>
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah <i>Total</i>	12,595	3,688,863	2,511,953	8,018	53,626	1,060,705	54,561
Johor	1,453	876,012	658,800	1,331	5,890	197,965	12,026
Kedah	296	151,454	104,867	42	1,073	40,036	5,436
Kelantan	39	18,435	12,547	846	1,113	3,910	19
Melaka	151	106,694	64,369	-	369	41,794	163
Negeri Sembilan	309	83,068	45,714	224	3,067	33,898	166
Pahang	274	328,843	161,935	19	1,126	165,527	236
Pulau Pinang	608	213,867	121,763	51	2,706	78,532	10,814
Perak	489	123,326	91,033	308	2,295	27,948	1,743
Perlis	23	9,547	5,921	-	21	3,579	26
Selangor	7,603	995,649	789,766	24	7,240	197,315	1,303
Terengganu	226	203,934	155,375	124	1,462	43,618	3,355
Sabah	573	132,048	87,888	2,490	5,635	24,790	11,245
Sarawak	346	258,780	144,906	981	14,678	92,000	6,215
W.P. Kuala Lumpur	189	184,083	66,107	1,579	6,925	107,656	1,816
W.P. Labuan	10	2,789	909	-	-	1,880	-
W.P. Putrajaya	6	335	53	-	26	256	-

Jadual 1.2: Bilangan Pertubuhan dan Jenis Perbelanjaan Modal Perlindungan Alam Sekitar mengikut Negeri, 2022

Table 1.2: Number of Establishments and Type of Capital Expenditure on Environmental Protection by States, 2022

Negeri <i>States</i>	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Number of establishments with environmental protection expenditure</i>	Perbelanjaan perlindungan alam sekitar <i>Environmental protection expenditure</i>					
		Jumlah <i>Total</i>	Pengurusan pencemaran <i>Pollution management</i>	Perlindungan hidupan liar & habitat <i>Protection of wildlife & habitat</i>	Penilaian dan caj alam sekitar <i>Environmental assessment and charges</i>	Pengurusan sisa <i>Waste management</i>	Perbelanjaan lain untuk perlindungan alam sekitar <i>Other environmental protection expenditure</i>
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah <i>Total</i>	12,595	713,954	488,997	730	5,422	216,832	1,973
Johor	1,453	209,782	169,572	136	137	39,828	110
Kedah	296	46,142	43,230	-	103	2,458	350
Kelantan	39	2,288	1,854	419	12	3	-
Melaka	151	23,811	23,631	-	17	132	32
Negeri Sembilan	309	1,406	442	-	-	961	3
Pahang	274	145,814	6,656	-	19	139,107	31
Pulau Pinang	608	26,916	22,585	31	331	3,943	27
Perak	489	21,485	19,341	72	336	1,278	458
Perlis	23	28	24	-	4	1	-
Selangor	7,603	51,726	44,502	-	401	6,763	60
Terengganu	226	49,806	49,759	-	18	29	-
Sabah	573	36,674	33,120	72	285	2,484	713
Sarawak	346	64,113	57,299	-	3,758	2,866	190
W.P. Kuala Lumpur	189	32,976	16,892	-	-	16,084	-
W.P. Labuan	10	988	92	-	-	896	-
W.P. Putrajaya	6	-	-	-	-	-	-

Jadual 1.3: Bilangan Pertubuhan dan Jenis Perbelanjaan Operasi Perlindungan Alam Sekitar mengikut Negeri, 2022
Table 1.3: Number of Establishments and Type of Operating Expenditure on Environmental Protection by States, 2022

Negeri <i>States</i>	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Number of establishments with environmental protection expenditure</i>	Perbelanjaan perlindungan alam sekitar <i>Environmental protection expenditure</i>					
		Jumlah <i>Total</i>	Pengurusan pencemaran <i>Pollution management</i>	Perlindungan hidupan liar & habitat <i>Protection of wildlife & habitat</i>	Penilaian dan caj alam sekitar <i>Environmental assessment and charges</i>	Pengurusan sisa <i>Waste management</i>	Perbelanjaan lain untuk perlindungan alam sekitar <i>Other environmental protection expenditure</i>
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah <i>Total</i>	12,595	2,974,909	2,022,956	7,289	48,204	843,873	52,587
Johor	1,453	666,230	489,229	1,195	5,753	158,138	11,916
Kedah	296	105,312	61,637	42	970	37,578	5,086
Kelantan	39	16,147	10,693	427	1,101	3,907	19
Melaka	151	82,882	40,738	-	352	41,662	131
Negeri Sembilan	309	81,663	45,272	224	3,067	32,937	163
Pahang	274	183,029	155,279	19	1,107	26,420	205
Pulau Pinang	608	186,951	99,179	21	2,375	74,589	10,787
Perak	489	101,841	71,692	235	1,959	26,671	1,285
Perlis	23	9,519	5,897	-	17	3,579	26
Selangor	7,603	943,923	745,263	24	6,839	190,553	1,243
Terengganu	226	154,128	105,617	124	1,444	43,588	3,355
Sabah	573	95,374	54,768	2,418	5,350	22,306	10,531
Sarawak	346	194,667	87,607	981	10,920	89,133	6,025
W.P. Kuala Lumpur	189	151,107	49,215	1,579	6,925	91,573	1,816
W.P. Labuan	10	1,801	817	-	-	984	-
W.P. Putrajaya	6	335	53	-	26	256	-

Jadual 1.4: Bilangan Pertubuhan dan Perbelanjaan Pengurusan Pencemaran mengikut Aktiviti dan Negeri, 2022
Table 1.4: Number of Establishments and Pollution Management Expenditure by Activity and States, 2022

Negeri <i>States</i>	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Number of establishments with environmental protection expenditure</i>	Perbelanjaan pengurusan pencemaran <i>Expenditure for pollution management</i>				
		Jumlah <i>Total</i>	Pengawasan alam sekitar <i>Environmental monitoring</i>	Tebus guna & pembersihan tapak <i>Site reclamation & decommissioning</i>	Peredaan & kawalan pencemaran <i>Pollution abatement & control</i>	Pencegahan pencemaran <i>Pollution prevention</i>
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah <i>Total</i>	12,595	2,511,953	941,586	6,566	1,390,094	173,706
Johor	1,453	658,800	55,592	1,138	588,495	13,576
Kedah	296	104,867	15,678	1,320	78,074	9,795
Kelantan	39	12,547	6,568	-	5,906	73
Melaka	151	64,369	31,069	-	21,287	12,012
Negeri Sembilan	309	45,714	13,087	208	29,710	2,709
Pahang	274	161,935	20,560	45	134,163	7,168
Pulau Pinang	608	121,763	55,818	10	49,787	16,148
Perak	489	91,033	24,315	3,375	43,447	19,897
Perlis	23	5,921	252	5	5,658	6
Selangor	7,603	789,766	556,744	87	203,468	29,468
Terengganu	226	155,375	56,440	215	66,643	32,077
Sabah	573	87,888	30,900	108	46,992	9,889
Sarawak	346	144,906	31,816	56	99,567	13,467
W.P. Kuala Lumpur	189	66,107	42,015	-	16,832	7,259
W.P. Labuan	10	909	714	1	32	162
W.P. Putrajaya	6	53	18	-	35	-

Jadual 1.5: Bilangan Pertubuhan dan Perbelanjaan Pengurusan Pencemaran mengikut Jenis Media dan Negeri, 2022

Table 1.5: Number of Establishments and Pollution Management Expenditure by Type of Media and States, 2022

Negeri States	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Media				
		Jumlah Total	Udara Air	Air permukaan Surface water	Tanah dan air bawah tanah Soil and groundwater	Bunyi, gegaran dan radiasi Noise, vibration and radiation
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah Total	12,595	2,511,953	807,657	1,245,825	167,529	290,942
Johor	1,453	658,800	116,934	525,214	10,702	5,950
Kedah	296	104,867	36,519	59,680	4,886	3,781
Kelantan	39	12,547	2,876	9,540	40	90
Melaka	151	64,369	54,684	7,248	1,240	1,197
Negeri Sembilan	309	45,714	10,698	30,988	3,218	810
Pahang	274	161,935	40,675	111,337	6,693	3,229
Pulau Pinang	608	121,763	31,566	86,528	1,647	2,021
Perak	489	91,033	33,975	41,262	14,537	1,259
Perlis	23	5,921	1,193	4,379	30	319
Selangor	7,603	789,766	249,092	196,732	97,577	246,365
Terengganu	226	155,375	89,529	48,852	13,038	3,957
Sabah	573	87,888	54,967	25,404	6,100	1,418
Sarawak	346	144,906	76,019	65,900	2,183	805
W.P. Kuala Lumpur	189	66,107	8,126	32,683	5,608	19,690
W.P. Labuan	10	909	791	72	22	24
W.P. Putrajaya	6	53	14	7	7	26

Jadual 1.6: Bilangan Pertubuhan yang mempunyai Pensijilan Alam Sekitar mengikut Negeri, 2022

Table 1.6: Number of Establishments with Environmental Certification by States, 2022

Negeri <i>States</i>	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Number of establishments with environmental protection expenditure</i>	Pertubuhan yang mempunyai pensijilan alam sekitar <i>Establishments with environmental certification</i>			
		Jumlah <i>Total</i>	ISO 14001 <i>ISO 14001</i>	Lain-lain sijil antarabangsa <i>Other international certification</i>	ISO 14001 dan lain-lain sijil antarabangsa <i>ISO 14001 and other international certification</i>
Jumlah <i>Total</i>	12,595	1,426	973	371	82
Johor	1,453	248	196	39	13
Kedah	296	66	48	10	8
Kelantan	39	13	6	7	-
Melaka	151	40	30	6	4
Negeri Sembilan	309	54	45	8	1
Pahang	274	64	39	24	1
Pulau Pinang	608	125	123	1	1
Perak	489	76	50	20	6
Perlis	23	3	2	1	-
Selangor	7,603	348	318	16	14
Terengganu	226	48	22	18	8
Sabah	573	197	34	148	15
Sarawak	346	123	44	68	11
W.P. Kuala Lumpur	189	17	12	5	-
W.P. Labuan	10	4	4	-	-
W.P. Putrajaya	6	-	-	-	-

B

STATISTIK MENGIKUT SEKTOR
STATISTICS BY SECTOR



Jadual 2: Bilangan Pertubuhan dan Pecahan Perbelanjaan Perlindungan Alam Sekitar mengikut Sektor, 2022

Table 2: Number of Establishments and Share of Environmental Protection Expenditure by Sector, 2022

Sektor Sector	Pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Establishments with environmental protection expenditure		Perbelanjaan perlindungan alam sekitar Environmental protection expenditure				
	Bilangan Number	Peratus Per cent	Jumlah Total	Perbelanjaan modal Capital expenditure		Perbelanjaan operasi Operating expenditure	
			(RM'000)	(RM'000)	%	(RM'000)	%
Jumlah Total	12,595	100.0	3,688,863	713,954	19.4	2,974,909	80.6
Pertanian Agriculture	970	7.7	48,575	13,490	27.8	35,085	72.2
Perlombongan & pengkuarian Mining & quarrying	261	2.1	171,305	42,976	25.1	128,329	74.9
Pembuatan Manufacturing	7,468	59.3	2,921,250	559,928	19.2	2,361,322	80.8
Pembinaan Construction	2,203	17.5	134,334	16,389	12.2	117,946	87.8
Perkhidmatan Services	1,693	13.4	413,399	81,171	19.6	332,228	80.4
Bekalan elektrik, gas, wap & pendingin udara Electricity, gas, steam & air conditioning supply	57	3.4	27,905	16,131	57.8	11,775	42.2
Bekalan air, pembetulan, pengurusan sisa & aktiviti pemulihan Water supply, sewerage, waste management & remediation activities	193	11.4	228,361	54,514	23.9	173,847	76.1
Pengangkutan & penyimpanan Transportation & storage	483	28.5	70,123	4,784	6.8	65,339	93.2
Lain-lain perkhidmatan Other services	960	56.7	87,010	5,742	6.6	81,268	93.4

Jadual 2.1: Bilangan Pertubuhan dan Jenis Perbelanjaan Perlindungan Alam Sekitar mengikut Sektor, 2022
 Table 2.1: Number of Establishments and Type of Environmental Protection Expenditure by Sector, 2022

Sektor Sector	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Perbelanjaan perlindungan alam sekitar Environmental protection expenditure					
		Jumlah Total	Pengurusan pencemaran Pollution management	Perlindungan hidupan liar & habitat Protection of wildlife & habitat	Penilaian dan caj alam sekitar Environmental assessment and charges	Pengurusan sisa Waste management	Perbelanjaan lain untuk perlindungan alam sekitar Other environmental protection expenditure
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah Total	12,595	3,688,863	2,511,953	8,018	53,626	1,060,705	54,561
Pertanian Agriculture	970	48,575	25,053	2,616	4,831	13,935	2,140
Perlombongan & pengkuarian Mining & quarrying	261	171,305	102,538	197	7,723	57,913	2,934
Pembuatan Manufacturing	7,468	2,921,250	2,078,051	3,408	31,905	762,932	44,954
Pembinaan Construction	2,203	134,334	101,653	33	1,164	30,650	835
Perkhidmatan Services	1,693	413,399	204,658	1,764	8,004	195,276	3,698
Bekalan elektrik, gas, wap & pendingin udara Electricity, gas, steam & air conditioning supply	57	27,905	23,344	1,453	387	2,662	60
Bekalan air, pembetungan, pengurusan sisa & aktiviti pemulihan Water supply, sewerage, waste management & remediation activities	193	228,361	86,956	3	3,123	137,133	1,147
Pengangkutan & penyimpanan Transportation & storage	483	70,123	51,815	18	3,352	13,835	1,102
Lain-lain perkhidmatan Other services	960	87,010	42,544	290	1,142	41,646	1,389

Jadual 2.2: Bilangan Pertubuhan dan Jenis Perbelanjaan Modal Perlindungan Alam Sekitar mengikut Sektor, 2022

Table 2.2: Number of Establishments and Type of Capital Expenditure on Environmental Protection by Sector, 2022

Sektor Sector	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Perbelanjaan perlindungan alam sekitar Environmental protection expenditure					
		Jumlah Total	Pengurusan pencemaran Pollution management	Perlindungan hidupan liar & habitat Protection of wildlife & habitat	Penilaian dan caj alam sekitar Environmental assessment and charges	Pengurusan sisa Waste management	Perbelanjaan lain untuk perlindungan alam sekitar Other environmental protection expenditure
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah Total	12,595	713,954	488,997	730	5,422	216,832	1,973
Pertanian Agriculture	970	13,490	11,399	535	231	1,177	147
Perlombongan & pengkuarian Mining & quarrying	261	42,976	38,433	-	3,909	217	416
Pembuatan Manufacturing	7,468	559,928	369,275	136	1,109	188,051	1,357
Pembinaan Construction	2,203	16,389	11,574	31	166	4,619	-
Perkhidmatan Services	1,693	81,171	58,317	28	6	22,768	53
Bekalan elektrik, gas, wap & pendingin udara Electricity, gas, steam & air conditioning supply	57	16,131	16,077	-	-	54	-
Bekalan air, pembetungan, pengurusan sisa & aktiviti pemulihan Water supply, sewerage, waste management & remediation activities	193	54,514	35,691	-	-	18,823	-
Pengangkutan & penyimpanan Transportation & storage	483	4,784	3,051	-	-	1,733	-
Lain-lain perkhidmatan Other services	960	5,742	3,497	28	6	2,159	53

Jadual 2.3: Bilangan Pertubuhan dan Jenis Perbelanjaan Operasi Perlindungan Alam Sekitar mengikut Sektor, 2022
Table 2.3: Number of Establishments and Type of Operating Expenditure on Environmental Protection by Sector, 2022

Sektor Sector	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Perbelanjaan perlindungan alam sekitar Environmental protection expenditure					
		Jumlah Total	Pengurusan pencemaran Pollution management	Perlindungan hidupan liar & habitat Protection of wildlife & habitat	Penilaian dan caj alam sekitar Environmental assessment and charges	Pengurusan sisa Waste management	Perbelanjaan lain untuk perlindungan alam sekitar Other environmental protection expenditure
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah Total	12,595	2,974,909	2,022,956	7,289	48,204	843,873	52,587
Pertanian Agriculture	970	35,085	13,654	2,081	4,600	12,757	1,993
Perlombongan & pengkuarian Mining & quarrying	261	128,329	64,105	197	3,813	57,696	2,518
Pembuatan Manufacturing	7,468	2,361,322	1,708,776	3,272	30,796	574,881	43,597
Pembinaan Construction	2,203	117,946	90,079	3	998	26,031	835
Perkhidmatan Services	1,693	332,228	146,342	1,736	7,998	172,507	3,645
Bekalan elektrik, gas, wap & pendingin udara Electricity, gas, steam & air conditioning supply	57	11,775	7,267	1,453	387	2,608	60
Bekalan air, pembetungan, pengurusan sisa & aktiviti pemulihan Water supply, sewerage, waste management & remediation activities	193	173,847	51,264	3	3,123	118,310	1,147
Pengangkutan & penyimpanan Transportation & storage	483	65,339	48,763	18	3,352	12,102	1,102
Lain-lain perkhidmatan Other services	960	81,268	39,047	262	1,136	39,487	1,336

Jadual 2.4: Bilangan Pertubuhan dan Perbelanjaan Pengurusan Pencemaran mengikut Aktiviti dan Sektor, 2022
 Table 2.4: Number of Establishments and Pollution Management Expenditure by Activity and Sector, 2022

Sektor Sector	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Perbelanjaan pengurusan pencemaran Pollution management expenditure				
		Jumlah Total	Pengawasan alam sekitar Environmental monitoring	Tebus guna & pembersihan tapak Site reclamation & decommissioning	Peredaan & kawalan pencemaran Pollution abatement & control	Pencegahan pencemaran Pollution prevention
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah Total	12,595	2,511,953	941,586	6,566	1,390,094	173,706
Pertanian Agriculture	970	25,053	12,720	1,654	7,359	3,321
Perlombongan & pengkuarian Mining & quarrying	261	102,538	30,275	1,164	49,468	21,631
Pembuatan Manufacturing	7,468	2,078,051	703,390	3,137	1,241,225	130,298
Pembinaan Construction	2,203	101,653	78,119	267	19,380	3,887
Perkhidmatan Services	1,693	204,658	117,082	344	72,663	14,569
Bekalan elektrik, gas, wap & pendingin udara Electricity, gas, steam & air conditioning supply	57	23,344	16,709	-	2,341	4,294
Bekalan air, pembetungan, pengurusan sisa & aktiviti pemulihan Water supply, sewerage, waste management & remediation activities	193	86,956	66,138	5	17,131	3,682
Pengangkutan & penyimpanan Transportation & storage	483	51,815	8,936	103	40,639	2,137
Lain-lain perkhidmatan Other services	960	42,544	25,300	236	12,552	4,457

Jadual 2.5: Bilangan Pertubuhan dan Perbelanjaan Pengurusan Pencemaran mengikut Jenis Media dan Sektor, 2022
 Table 2.5: Number of Establishments and Pollution Management Expenditure by Type of Media and Sector, 2022

Sektor Sector	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Media				
		Jumlah Total	Udara Air	Air permukaan Surface water	Tanah dan air bawah tanah Soil and groundwater	Bunyi, gegaran dan radiasi Noise, vibration and radiation
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah Total	12,595	2,511,953	807,657	1,245,825	167,529	290,942
Pertanian Agriculture	970	25,053	1,465	15,385	6,915	1,288
Perlombongan & pengkuarian Mining & quarrying	261	102,538	43,662	42,925	8,499	7,451
Pembuatan Manufacturing	7,468	2,078,051	690,984	1,053,185	139,209	194,672
Pembinaan Construction	2,203	101,653	39,290	28,563	4,126	29,673
Perkhidmatan Services	1,693	204,658	32,254	105,766	8,780	57,857
Bekalan elektrik, gas, wap & pendingin udara Electricity, gas, steam & air conditioning supply	57	23,344	15,034	6,431	344	1,535
Bekalan air, pembetungan, pengurusan sisa & aktiviti pemulihan Water supply, sewerage, waste management & remediation activities	193	86,956	8,409	76,650	1,150	747
Pengangkutan & penyimpanan Transportation & storage	483	51,815	4,153	8,101	923	38,638
Lain-lain perkhidmatan Other services	960	42,544	4,659	14,585	6,363	16,937

Jadual 2.6: Bilangan Pertubuhan yang mempunyai Pensijilan Alam Sekitar mengikut Sektor, 2022

Table 2.6: Number of Establishments with Environmental Certification by Sector, 2022

Sektor Sector	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Pertubuhan yang mempunyai pensijilan alam sekitar Establishments with environmental certification			
		Jumlah Total	ISO 14001 ISO 14001	Lain-lain sijil antarabangsa Other international certification	ISO 14001 dan lain-lain sijil antarabangsa ISO 14001 and other international certification
Jumlah Total	12,595	1,426	973	371	82
Pertanian Agriculture	970	275	40	223	12
Perlombongan & pengkuarian Mining & quarrying	261	23	14	7	2
Pembuatan Manufacturing	7,468	973	800	118	55
Pembinaan Construction	2,203	27	16	11	-
Perkhidmatan Services	1,693	128	103	12	13
Bekalan elektrik, gas, wap & pendingin udara Electricity, gas, steam & air conditioning supply	57	7	7	-	-
Bekalan air, pembetungan, pengurusan sisa & aktiviti pemulihan Water supply, sewerage, waste management & remediation activities	193	23	19	4	-
Pengangkutan & penyimpanan Transportation & storage	483	61	48	2	11
Lain-lain perkhidmatan Other services	960	37	29	6	2

C

STATISTIK MENGIKUT TARAF SAH
STATISTICS BY LEGAL STATUS



Jadual 3: Bilangan Pertubuhan dan Pecahan Perbelanjaan Perlindungan Alam Sekitar mengikut Taraf Sah, 2022

Table 3: Number of Establishments and Share of Environmental Protection Expenditure by Legal Status, 2022

Taraf sah <i>Legal status</i>	Pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Establishments with environmental protection expenditure</i>		Perbelanjaan perlindungan alam sekitar <i>Environmental protection expenditure</i>				
	Bilangan <i>Number</i>	Peratus <i>Per cent</i>	Jumlah <i>Total</i>	Perbelanjaan modal <i>Capital expenditure</i>		Perbelanjaan operasi <i>Operating expenditure</i>	
			(RM'000)	(RM'000)	%	(RM'000)	%
Jumlah <i>Total</i>	12,595	100.0	3,688,863	713,954	19.4	2,974,909	80.6
Hak milik perseorangan <i>Individual proprietorship</i>	1,483	11.8	42,552	4,249	10.0	38,303	90.0
Perkongsian <i>Partnership</i>	350	2.8	5,573	181	3.3	5,391	96.7
Perkongsian liabiliti terhad <i>Limited liabilities partnership</i>	29	0.2	1,623	55	3.4	1,568	96.6
Syarikat sendirian berhad <i>Private limited company</i>	10,451	83.0	3,528,361	689,276	19.5	2,839,085	80.5
Syarikat awam berhad <i>Public limited company</i>	242	1.9	109,837	20,152	18.3	89,685	81.7
Syarikat koperasi <i>Co-operative</i>	8	0.1	33	2	4.6	31	95.4
Perbadanan awam <i>Public corporation</i>	22	0.2	801	39	4.9	761	95.1
Pertubuhan persendirian yang tidak mencari keuntungan <i>Private non-profit making organisation</i>	10	0.1	84	-	-	84	100.0

Jadual 3.1: Bilangan Pertubuhan dan Jenis Perbelanjaan Perlindungan Alam Sekitar mengikut Taraf Sah, 2022

Table 3.1: Number of Establishments and Type of Environmental Protection Expenditure by Legal Status, 2022

Taraf sah <i>Legal status</i>	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Number of establishments with environmental protection expenditure</i>	Perbelanjaan perlindungan alam sekitar <i>Environmental protection expenditure</i>					
		Jumlah <i>Total</i>	Pengurusan pencemaran <i>Pollution management</i>	Perlindungan hidupan liar & habitat <i>Protection of wildlife & habitat</i>	Penilaian dan caj alam sekitar <i>Environmental assessment and charges</i>	Pengurusan sisa Waste management	Perbelanjaan lain untuk perlindungan alam sekitar <i>Other environmental protection expenditure</i>
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah <i>Total</i>	12,595	3,688,863	2,511,953	8,018	53,626	1,060,705	54,561
Hak milik perseorangan <i>Individual proprietorship</i>	1,483	42,552	34,771	30	194	5,399	2,157
Perkongsian <i>Partnership</i>	350	5,573	4,541	245	89	522	175
Perkongsian liabiliti terhad <i>Limited liabilities partnership</i>	29	1,623	1,366	-	-	257	-
Syarikat sendirian berhad <i>Private limited company</i>	10,451	3,528,361	2,400,962	5,700	46,230	1,024,900	50,570
Syarikat awam berhad <i>Public limited company</i>	242	109,837	70,180	2,042	6,889	29,106	1,621
Syarikat koperasi <i>Co-operative</i>	8	33	4	-	-	27	2
Perbadanan awam <i>Public corporation</i>	22	801	128	1	224	415	32
Pertubuhan persendirian yang tidak mencari keuntungan <i>Private non-profit making organisation</i>	10	84	1	-	-	80	3

Jadual 3.2: Bilangan Pertubuhan dan Jenis Perbelanjaan Modal Perlindungan Alam Sekitar mengikut Taraf Sah, 2022
Table 3.2: Number of Establishments and Type of Capital Expenditure on Environmental Protection by Legal Status, 2022

Taraf sah <i>Legal status</i>	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Number of establishments with environmental protection expenditure</i>	Perbelanjaan perlindungan alam sekitar <i>Environmental protection expenditure</i>					
		Jumlah <i>Total</i>	Pengurusan pencemaran <i>Pollution management</i>	Perlindungan hidupan liar & habitat <i>Protection of wildlife & habitat</i>	Penilaian dan caj alam sekitar <i>Environmental assessment and charges</i>	Pengurusan sisa Waste management	Perbelanjaan lain untuk perlindungan alam sekitar <i>Other environmental protection expenditure</i>
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah <i>Total</i>	12,595	713,954	488,997	730	5,422	216,832	1,973
Hak milik perseorangan <i>Individual proprietorship</i>	1,483	4,249	2,746	14	135	1,130	224
Perkongsian <i>Partnership</i>	350	181	142	-	5	35	-
Perkongsian liabiliti terhad <i>Limited liabilities partnership</i>	29	55	-	-	-	55	-
Syarikat sendirian berhad <i>Private limited company</i>	10,451	689,276	474,473	447	1,722	210,921	1,714
Syarikat awam berhad <i>Public limited company</i>	242	20,152	11,607	268	3,556	4,686	36
Syarikat koperasi <i>Co-operative</i>	8	2	2	-	-	-	-
Perbadanan awam <i>Public corporation</i>	22	39	28	-	5	6	-
Pertubuhan persendirian yang tidak mencari keuntungan <i>Private non-profit making organisation</i>	10	-	-	-	-	-	-

Jadual 3.3: Bilangan Pertubuhan dan Jenis Perbelanjaan Operasi Perlindungan Alam Sekitar mengikut Taraf Sah, 2022
Table 3.3: Number of Establishments and Type of Operating Expenditure on Environmental Protection by Legal Status, 2022

Taraf sah <i>Legal status</i>	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Number of establishments with environmental protection expenditure</i>	Perbelanjaan perlindungan alam sekitar <i>Environmental protection expenditure</i>					
		Jumlah <i>Total</i>	Pengurusan pencemaran <i>Pollution management</i>	Perlindungan hidupan liar & habitat <i>Protection of wildlife & habitat</i>	Penilaian dan caj alam sekitar <i>Environmental assessment and charges</i>	Pengurusan sisa <i>Waste management</i>	Perbelanjaan lain untuk perlindungan alam sekitar <i>Other environmental protection expenditure</i>
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah <i>Total</i>	12,595	2,974,909	2,022,956	7,289	48,204	843,873	52,587
Hak milik perseorangan <i>Individual proprietorship</i>	1,483	38,303	32,025	16	60	4,269	1,934
Perkongsian <i>Partnership</i>	350	5,391	4,400	245	84	487	175
Perkongsian liabiliti terhad <i>Limited liabilities partnership</i>	29	1,568	1,366	-	-	202	-
Syarikat sendirian berhad <i>Private limited company</i>	10,451	2,839,085	1,926,489	5,253	44,509	813,979	48,856
Syarikat awam berhad <i>Public limited company</i>	242	89,685	58,573	1,774	3,333	24,420	1,585
Syarikat koperasi <i>Co-operative</i>	8	31	2	-	-	27	2
Perbadanan awam <i>Public corporation</i>	22	761	100	1	219	409	32
Pertubuhan persendirian yang tidak mencari keuntungan <i>Private non-profit making organisation</i>	10	84	1	-	-	80	3

Jadual 3.4: Bilangan Pertubuhan dan Perbelanjaan Pengurusan Pencemaran mengikut Aktiviti dan Taraf Sah, 2022

Table 3.4: Number of Establishments and Pollution Management Expenditure by Activity and Legal Status, 2022

Taraf sah <i>Legal status</i>	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Number of establishments with environmental protection expenditure</i>	Perbelanjaan pengurusan pencemaran <i>Pollution management expenditure</i>				
		Jumlah <i>Total</i>	Pengawasan alam sekitar <i>Environmental monitoring</i>	Tebus guna & pembersihan tapak <i>Site reclamation & decommissioning</i>	Peredaan & kawalan pencemaran <i>Pollution abatement & control</i>	Pencegahan pencemaran <i>Pollution prevention</i>
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah <i>Total</i>	12,595	2,511,953	941,586	6,566	1,390,094	173,706
Hak milik perseorangan <i>Individual proprietorship</i>	1,483	34,771	30,666	160	2,546	1,399
Perkongsian <i>Partnership</i>	350	4,541	4,208	1	122	210
Perkongsian liabiliti terhad <i>Limited liabilities partnership</i>	29	1,366	1,343	-	-	23
Syarikat sendirian berhad <i>Private limited company</i>	10,451	2,400,962	881,176	6,382	1,348,507	164,897
Syarikat awam berhad <i>Public limited company</i>	242	70,180	24,095	24	38,885	7,176
Syarikat koperasi <i>Co-operative</i>	8	4	4	-	-	-
Perbadanan awam <i>Public corporation</i>	22	128	94	-	34	-
Pertubuhan persendirian yang tidak mencari keuntungan <i>Private non-profit making organisation</i>	10	1	-	-	-	1

Jadual 3.5: Bilangan Pertubuhan dan Perbelanjaan Pengurusan Pencemaran mengikut Jenis Media dan Taraf Sah, 2022
Table 3.5: Number of Establishments and Pollution Management Expenditure by Type of Media and Legal Status, 2022

Taraf sah <i>Legal status</i>	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Number of establishments with environmental protection expenditure</i>	Media				
		Jumlah <i>Total</i>	Udara <i>Air</i>	Air permukaan <i>Surface water</i>	Tanah dan air bawah tanah <i>Soil and groundwater</i>	Bunyi, gegaran dan radiasi <i>Noise, vibration and radiation</i>
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah <i>Total</i>	12,595	2,511,953	807,657	1,245,825	167,529	290,942
Hak milik perseorangan <i>Individual proprietorship</i>	1,483	34,771	11,446	6,136	5,405	11,783
Perkongsian <i>Partnership</i>	350	4,541	1,432	981	690	1,438
Perkongsian liabiliti terhad <i>Limited liabilities partnership</i>	29	1,366	495	55	277	540
Syarikat sendirian berhad <i>Private limited company</i>	10,451	2,400,962	781,653	1,199,137	154,566	265,606
Syarikat awam berhad <i>Public limited company</i>	242	70,180	12,621	39,468	6,549	11,542
Syarikat koperasi <i>Co-operative</i>	8	4	-	-	4	-
Perbadanan awam <i>Public corporation</i>	22	128	10	47	39	33
Pertubuhan persendirian yang tidak mencari keuntungan <i>Private non-profit making organisation</i>	10	1	-	1	-	-

Jadual 3.6: Bilangan Pertubuhan yang mempunyai Pensijilan Alam Sekitar mengikut Taraf Sah, 2022
 Table 3.6: Number of Establishments with Environmental Certification by Legal Status, 2022

Taraf sah <i>Legal status</i>	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Number of establishments with environmental protection expenditure</i>	Pertubuhan yang mempunyai pensijilan alam sekitar <i>Establishments with environmental certification</i>			
		Jumlah <i>Total</i>	ISO 14001 <i>ISO 14001</i>	Lain-lain sijil antarabangsa <i>Other international certification</i>	ISO 14001 dan lain-lain sijil antarabangsa <i>ISO 14001 and other international certification</i>
Jumlah <i>Total</i>	12,595	1,426	973	371	82
Hak milik perseorangan <i>Individual proprietorship</i>	1,483	17	3	5	9
Perkongsian <i>Partnership</i>	350	2	1	1	0
Perkongsian liabiliti terhad <i>Limited liabilities partnership</i>	29	-	-	-	-
Syarikat sendirian berhad <i>Private limited company</i>	10,451	1309	929	312	68
Syarikat awam berhad <i>Public limited company</i>	242	92	37	51	4
Syarikat koperasi <i>Co-operative</i>	8	-	-	-	-
Perbadanan awam <i>Public corporation</i>	22	6	3	2	1
Pertubuhan persendirian yang tidak mencari keuntungan <i>Private non-profit making organisation</i>	10	-	-	-	-

D

STATISTIK MENGIKUT HAK MILIK
STATISTICS BY OWNERSHIP



Jadual 4: Bilangan Pertubuhan dan Pecahan Perbelanjaan Perlindungan Alam Sekitar mengikut Hak Milik, 2022

Table 4: Number of Establishments and Share of Environmental Protection Expenditure by Ownership, 2022

Hak milik <i>Ownership</i>	Pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Establishments with environmental protection expenditure</i>		Perbelanjaan perlindungan alam sekitar <i>Environmental protection expenditure</i>				
	Bilangan <i>Number</i>	Peratus <i>Per cent</i>	Jumlah <i>Total</i>	Perbelanjaan modal <i>Capital expenditure</i>		Perbelanjaan operasi <i>Operating expenditure</i>	
			(RM'000)	(RM'000)	%	(RM'000)	%
Jumlah <i>Total</i>	12,595	100.0	3,688,863	713,954	19.4	2,974,909	80.6
Residen Malaysia <i>Malaysian Residents</i>	11,827	93.9	2,535,359	398,073	15.7	2,137,286	84.3
Bukan Residen Malaysia <i>Non-Malaysian Residents</i>	488	3.9	829,426	202,341	24.4	627,085	75.6
Hak Milik Bersama <i>Joint Ownership</i>	280	2.2	324,079	113,541	35.0	210,538	65.0

Jadual 4.1: Bilangan Pertubuhan dan Jenis Perbelanjaan Perlindungan Alam Sekitar mengikut Hak Milik, 2022
Table 4.1: Number of Establishments and Type of Environmental Protection Expenditure by Ownership, 2022

Hak milik Ownership	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Perbelanjaan perlindungan alam sekitar Environmental protection expenditure					
		Jumlah Total	Pengurusan pencemaran Pollution management	Perlindungan hidupan liar & habitat Protection of wildlife & habitat	Penilaian dan caj alam sekitar Environmental assessment and charges	Pengurusan sisa Waste management	Perbelanjaan lain untuk perlindungan alam sekitar Other environmental protection expenditure
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah Total	12,595	3,688,863	2,511,953	8,018	53,626	1,060,705	54,561
Residen Malaysia Malaysian Residents	11,827	2,535,359	1,797,595	5,196	35,200	650,217	47,152
Bukan Residen Malaysia Non-Malaysian Residents	488	829,426	487,521	1,282	15,691	320,814	4,117
Hak Milik Bersama Joint Ownership	280	324,079	226,837	1,541	2,736	89,674	3,292

Jadual 4.2: Bilangan Pertubuhan dan Jenis Perbelanjaan Modal Perlindungan Alam Sekitar mengikut Hak Milik, 2022
Table 4.2: Number of Establishments and Type of Capital Expenditure on Environmental Protection by Ownership, 2022

Hak milik Ownership	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Perbelanjaan perlindungan alam sekitar Environmental protection expenditure					
		Jumlah Total	Pengurusan pencemaran Pollution management	Perlindungan hidupan liar & habitat Protection of wildlife & habitat	Penilaian dan caj alam sekitar Environmental assessment and charges	Pengurusan sisa Waste management	Perbelanjaan lain untuk perlindungan alam sekitar Other environmental protection expenditure
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah Total	12,595	713,954	488,997	730	5,422	216,832	1,973
Residen Malaysia Malaysian Residents	11,827	398,073	325,652	730	1,486	68,382	1,823
Bukan Residen Malaysia Non-Malaysian Residents	488	202,341	58,843	-	3,936	139,412	150
Hak Milik Bersama Joint Ownership	280	113,541	104,502	-	-	9,039	-

Jadual 4.3: Bilangan Pertubuhan dan Jenis Perbelanjaan Operasi Perlindungan Alam Sekitar mengikut Hak Milik, 2022
Table 4.3: Number of Establishments and Type of Operating Expenditure on Environmental Protection by Ownership, 2022

Hak milik Ownership	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Perbelanjaan perlindungan alam sekitar Environmental protection expenditure					
		Jumlah Total	Pengurusan pencemaran Pollution management	Perlindungan hidupan liar & habitat Protection of wildlife & habitat	Penilaian dan caj alam sekitar Environmental assessment and charges	Pengurusan sisa Waste management	Perbelanjaan lain untuk perlindungan alam sekitar Other environmental protection expenditure
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah Total	12,595	2,974,909	2,022,956	7,289	48,204	843,873	52,587
Residen Malaysia Malaysian Residents	11,827	2,137,286	1,471,943	4,466	33,714	581,835	45,328
Bukan Residen Malaysia Non-Malaysian Residents	488	627,085	428,678	1,282	11,755	181,403	3,967
Hak Milik Bersama Joint Ownership	280	210,538	122,335	1,541	2,736	80,635	3,292

Jadual 4.4: Bilangan Pertubuhan dan Perbelanjaan Pengurusan Pencemaran mengikut Aktiviti dan Hak Milik, 2022
Table 4.4: Number of Establishments and Pollution Management Expenditure by Activity and Ownership, 2022

Hak milik <i>Ownership</i>	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Number of establishments with environmental protection expenditure</i>	Perbelanjaan pengurusan pencemaran <i>Pollution management expenditure</i>				
		Jumlah <i>Total</i>	Pengawasan alam sekitar <i>Environmental monitoring</i>	Tebus guna & pembersihan tapak <i>Site reclamation & decommissioning</i>	Peredaan & kawalan pencemaran <i>Pollution abatement & control</i>	Pencegahan pencemaran <i>Pollution prevention</i>
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah <i>Total</i>	12,595	2,511,953	941,586	6,566	1,390,094	173,706
Residen Malaysia <i>Malaysian Residents</i>	11,827	1,797,595	798,047	5,369	872,106	122,074
Bukan Residen Malaysia <i>Non-Malaysian Residents</i>	488	487,521	94,502	38	360,254	32,728
Hak Milik Bersama <i>Joint Ownership</i>	280	226,837	49,037	1,160	157,735	18,905

Jadual 4.5: Bilangan Pertubuhan dan Perbelanjaan Pengurusan Pencemaran mengikut Jenis Media dan Hak Milik, 2022
Table 4.5: Number of Establishments and Pollution Management Expenditure by Type of Media and Ownership, 2022

Hak milik Ownership	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Media				
		Jumlah Total	Udara Air	Air permukaan Surface water	Tanah dan air bawah tanah Soil and groundwater	Bunyi, gegaran dan radiasi Noise, vibration and radiation
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah Total	12,595	2,511,953	807,657	1,245,825	167,529	290,942
Residen Malaysia Malaysian Residents	11,827	1,797,595	520,107	851,330	144,302	281,856
Bukan Residen Malaysia Non-Malaysian Residents	488	487,521	208,725	267,671	3,221	7,903
Hak Milik Bersama Joint Ownership	280	226,837	78,825	126,823	20,006	1,183

Jadual 4.6: Bilangan Pertubuhan yang mempunyai Pensijilan Alam Sekitar mengikut Hak Milik, 2022
Table 4.6: Number of Establishments with Environmental Certification by Ownership, 2022

Hak milik <i>Ownership</i>	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Number of establishments with environmental protection expenditure</i>	Pertubuhan yang mempunyai pensijilan alam sekitar <i>Establishments with environmental certification</i>			
		Jumlah <i>Total</i>	ISO 14001 <i>ISO 14001</i>	Lain-lain sijil antarabangsa <i>Other international certification</i>	ISO 14001 dan lain-lain sijil antarabangsa <i>ISO 14001 and other international certification</i>
Jumlah <i>Total</i>	12,595	1,426	973	371	82
Residen Malaysia <i>Malaysian Residents</i>	11,827	1,087	692	336	59
Bukan Residen Malaysia <i>Non-Malaysian Residents</i>	488	220	199	8	13
Hak Milik Bersama <i>Joint Ownership</i>	280	119	82	27	10

E

STATISTIK MENGIKUT SAIZ PEKERJA
STATISTICS BY EMPLOYMENT SIZE



Jadual 5: Bilangan Pertubuhan dan Pecahan Perbelanjaan Perlindungan Alam Sekitar mengikut Saiz Pekerja, 2022
 Table 5: Number of Establishments and Share of Environmental Protection Expenditure by Employment Size, 2022

Saiz pekerja <i>Employment size</i>		Pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Establishments with environmental protection expenditure</i>		Perbelanjaan perlindungan alam sekitar <i>Environmental protection expenditure</i>				
				Jumlah <i>Total</i>		Perbelanjaan modal <i>Capital expenditure</i>		Perbelanjaan operasi <i>Operating expenditure</i>
		Bilangan <i>Number</i>	Peratus <i>Per cent</i>	(RM'000)	(RM'000)	%	(RM'000)	%
Jumlah <i>Total</i>		12,595	100.0	3,688,863	713,954	19.4	2,974,909	80.6
Kurang daripada <i>Less than</i>	5	1,476	11.7	37,464	1,710	4.6	35,754	95.4
	5 - 29	5,736	45.5	273,592	51,251	18.7	222,341	81.3
	30 - 75	1,813	14.4	303,175	22,130	7.3	281,045	92.7
	76 - dan lebih <i>and above</i>	3,570	28.3	3,074,633	638,863	20.8	2,435,770	79.2

Jadual 5.1: Bilangan Pertubuhan dan Jenis Perbelanjaan Perlindungan Alam Sekitar mengikut Saiz Pekerja, 2022
Table 5.1: Number of Establishments and Type of Environmental Protection Expenditure by Employment Size, 2022

Saiz pekerja Employment size		Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Perbelanjaan perlindungan alam sekitar Environmental protection expenditure						
			Jumlah Total	Pengurusan pencemaran Pollution management	Perlindungan hidupan liar & habitat Protection of wildlife & habitat	Penilaian dan caj alam sekitar Environmental assessment and charges	Pengurusan sisa Waste management	Perbelanjaan lain untuk perlindungan alam sekitar Other environmental protection expenditure	
			(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	
Jumlah Total		12,595	3,688,863	2,511,953	8,018	53,626	1,060,705	54,561	
Kurang daripada Less than		5	1,476	37,464	20,983	44	857	14,011	1,568
5 - 29		5,736	273,592	225,453	400	1,470	27,374	18,895	
30 - 75		1,813	303,175	214,462	869	2,412	71,441	13,992	
76 - dan lebih and above		3,570	3,074,633	2,051,055	6,705	48,887	947,879	20,106	

Jadual 5.2: Bilangan Pertubuhan dan Jenis Perbelanjaan Modal Perlindungan Alam Sekitar mengikut Saiz Pekerja, 2022
Table 5.2: Number of Establishments and Type of Capital Expenditure on Environmental Protection by Employment Size, 2022

Saiz pekerja Employment size			Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Perbelanjaan perlindungan alam sekitar Environmental protection expenditure					
				Jumlah Total	Pengurusan pencemaran Pollution management	Perlindungan hidupan liar & habitat Protection of wildlife & habitat	Penilaian dan caj alam sekitar Environmental assessment and charges	Pengurusan sisa Waste management	Perbelanjaan lain untuk perlindungan alam sekitar Other environmental protection expenditure
				(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah Total			12,595	713,954	488,997	730	5,422	216,832	1,973
Kurang daripada Less than									
5 - 29			1,476	1,710	920	28	307	406	50
30 - 75			5,736	51,251	46,342	31	333	4,437	109
76 - dan lebih and above			1,813	22,130	16,678	-	413	4,449	590
			3,570	638,863	425,058	671	4,369	207,541	1,224

Jadual 5.3: Bilangan Pertubuhan dan Jenis Perbelanjaan Operasi Perlindungan Alam Sekitar mengikut Saiz Pekerja, 2022
 Table 5.3: Number of Establishments and Type of Operating Expenditure on Environmental Protection by Employment Size, 2022

Saiz pekerja Employment size		Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Perbelanjaan perlindungan alam sekitar Environmental protection expenditure					
			Jumlah Total	Pengurusan pencemaran Pollution management	Perlindungan hidupan liar & habitat Protection of wildlife & habitat	Penilaian dan caj alam sekitar Environmental assessment and charges	Pengurusan sisa Waste management	Perbelanjaan lain untuk perlindungan alam sekitar Other environmental protection expenditure
			(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah Total		12,595	2,974,909	2,022,956	7,289	48,204	843,873	52,587
Kurang daripada Less than								
5 - 29		1,476	35,754	20,064	16	550	13,605	1,518
30 - 75		5,736	222,341	179,112	370	1,137	22,937	18,785
76 - dan lebih and above		1,813	281,045	197,784	869	1,999	66,992	13,401
		3,570	2,435,770	1,625,997	6,034	44,519	740,338	18,883

Jadual 5.4: Bilangan Pertubuhan dan Perbelanjaan Pengurusan Pencemaran mengikut Aktiviti dan Saiz Pekerja, 2022
 Table 5.4: Number of Establishments and Pollution Management Expenditure by Activity and Employment Size, 2022

Saiz pekerja Employment size		Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Perbelanjaan pengurusan pencemaran Pollution management expenditure				
			Jumlah Total	Pengawasan alam sekitar Environmental monitoring	Tebus guna & pembersihan tapak Site reclamation & decommissioning	Peredaan & kawalan pencemaran Pollution abatement & control	Pencegahan pencemaran Pollution prevention
			(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah Total		12,595	2,511,953	941,586	6,566	1,390,094	173,706
Kurang daripada Less than	5	1,476	20,983	16,230	77	3,175	1,502
	5 - 29	5,736	225,453	164,458	174	54,468	6,353
	30 - 75	1,813	214,462	162,660	292	45,324	6,186
	76 - dan lebih and above	3,570	2,051,055	598,237	6,024	1,287,128	159,666

Jadual 5.5: Bilangan Pertubuhan dan Perbelanjaan Pengurusan Pencemaran mengikut Jenis Media dan Saiz Pekerja, 2022

Table 5.5: Number of Establishments and Pollution Management Expenditure by Type of Media and Employment Size, 2022

Saiz pekerja <i>Employment size</i>		Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Number of establishments with environmental protection expenditure</i>	Media					
			Jumlah <i>Total</i>	Udara <i>Air</i>	Air permukaan <i>Surface water</i>	Tanah dan air bawah tanah <i>Soil and groundwater</i>	Bunyi, gegaran dan radiasi <i>Noise, vibration and radiation</i>	
			(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	
Jumlah <i>Total</i>		12,595	2,511,953	807,657	1,245,825	167,529	290,942	
Kurang daripada <i>Less than</i>		5	1,476	20,983	7,389	3,588	2,867	7,139
5 - 29		5,736	225,453	112,572	24,548	27,365	60,968	
30 - 75		1,813	214,462	56,472	79,483	28,791	49,716	
76 - dan lebih <i>and above</i>		3,570	2,051,055	631,224	1,138,206	108,505	173,119	

F

STATISTIK MENGIKUT SAIZ OUTPUT
STATISTICS BY OUTPUT SIZE



Jadual 6: Bilangan Pertubuhan dan Pecahan Perbelanjaan Perlindungan Alam Sekitar mengikut Saiz Output, 2022

Table 6: Number of Establishments and Share of Environmental Protection Expenditure by Output Size, 2022

Saiz output Output size		Pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Establishments with environmental protection expenditure		Perbelanjaan perlindungan alam sekitar Environmental protection expenditure				
		Bilangan Number	Peratus Per cent	Jumlah Total	Perbelanjaan modal Capital expenditure		Perbelanjaan operasi Operating expenditure	
(RM'000)				(RM'000)	(RM'000)	%	(RM'000)	%
Jumlah Total		12,595	100.0	3,688,863	713,954	19.4	2,974,909	80.6
Kurang daripada Below								
	300	508	4.0	12,274	882	7.2	11,391	92.8
	300 - < 3,000	5,316	42.2	123,413	6,900	5.6	116,513	94.4
	3,000 - < 20,000	3,062	24.3	274,772	25,709	9.4	249,063	90.6
	20,000 - dan lebih and above	3,709	29.4	3,278,405	680,463	20.8	2,597,942	79.2

Jadual 6.1: Bilangan Pertubuhan dan Jenis Perbelanjaan Perlindungan Alam Sekitar mengikut Saiz Output, 2022
 Table 6.1: Number of Establishments and Type of Environmental Protection Expenditure by Output Size, 2022

Saiz output Output size		Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Perbelanjaan perlindungan alam sekitar Environmental protection expenditure						
			Jumlah Total	Pengurusan pencemaran Pollution management	Perlindungan hidupan liar & habitat Protection of wildlife & habitat	Penilaian dan caj alam sekitar Environmental assessment and charges	Pengurusan sisa Waste management	Perbelanjaan lain untuk perlindungan alam sekitar Other environmental protection expenditure	
(RM'000)			(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	
Jumlah Total		12,595	3,688,863	2,511,953	8,018	53,626	1,060,705	54,561	
Kurang daripada Below		300	508	12,274	6,692	37	201	4,578	766
300 - < 3,000		5,316	123,413	104,140	58	513	13,977	4,724	
3,000 - < 20,000		3,062	274,772	215,132	959	3,628	35,581	19,472	
20,000 - dan lebih and above		3,709	3,278,405	2,185,989	6,965	49,284	1,006,570	29,598	

Jadual 6.2: Bilangan Pertubuhan dan Jenis Perbelanjaan Modal Perlindungan Alam Sekitar mengikut Saiz Output, 2022

Table 6.2: Number of Establishments and Type of Capital Expenditure on Environmental Protection by Output Size, 2022

Saiz output <i>Output size</i>		Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Number of establishments with environmental protection expenditure</i>	Perbelanjaan perlindungan alam sekitar <i>Environmental protection expenditure</i>						
			Jumlah <i>Total</i>	Pengurusan pencemaran <i>Pollution management</i>	Perlindungan hidupan liar & habitat <i>Protection of wildlife & habitat</i>	Penilaian dan caj alam sekitar <i>Environmental assessment and charges</i>	Pengurusan sisa <i>Waste management</i>	Perbelanjaan lain untuk perlindungan alam sekitar <i>Other environmental protection expenditure</i>	
(RM'000)			(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	
Jumlah <i>Total</i>		12,595	713,954	488,997	730	5,422	216,832	1,973	
Kurang daripada <i>Below</i>		300	508	882	465	28	112	239	39
300 - < 3,000		5,316	6,900	4,851	31	169	1,828	22	
3,000 - < 20,000		3,062	25,709	19,064	166	449	5,851	180	
20,000 - dan lebih <i>and above</i>		3,709	680,463	464,618	505	4,692	208,915	1,732	

Jadual 6.3: Bilangan Pertubuhan dan Jenis Perbelanjaan Operasi Perlindungan Alam Sekitar mengikut Saiz Output, 2022
Table 6.3: Number of Establishments and Type of Operating Expenditure on Environmental Protection by Output Size, 2022

Saiz output Output size		Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Perbelanjaan perlindungan alam sekitar Environmental protection expenditure					Perbelanjaan lain untuk perlindungan alam sekitar Other environmental protection expenditure
			Jumlah Total	Pengurusan pencemaran Pollution management	Perlindungan hidupan liar & habitat Protection of wildlife & habitat	Penilaian dan caj alam sekitar Environmental assessment and charges	Pengurusan sisa Waste management	
(RM'000)			(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah Total		12,595	2,974,909	2,022,956	7,289	48,204	843,873	52,587
Kurang daripada Below	300	508	11,391	6,227	9	89	4,339	727
	300 - < 3,000	5,316	116,513	99,290	27	345	12,149	4,702
	3,000 - < 20,000	3,062	249,063	196,068	793	3,179	29,730	19,292
	20,000 - dan lebih and above	3,709	2,597,942	1,721,370	6,459	44,592	797,654	27,865

Jadual 6.4: Bilangan Pertubuhan dan Perbelanjaan Pengurusan Pencemaran mengikut Aktiviti dan Saiz Output, 2022
 Table 6.4: Number of Establishments and Pollution Management Expenditure by Activity and Output Size, 2022

Saiz output Output size		Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Perbelanjaan pengurusan pencemaran Environmental protection expenditure				
			Jumlah Total	Pengawasan alam sekitar Environmental monitoring	Tebus guna & pembersihan tapak Site reclamation & decommissioning	Peredaan & kawalan pencemaran Pollution abatement & control	Pencegahan pencemaran Pollution prevention
(RM'000)			(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah Total		12,595	2,511,953	941,586	6,566	1,390,094	173,706
Kurang daripada Below		300					
		508	6,692	3,468	61	2,355	807
	300 - < 3,000	5,316	104,140	96,609	112	3,374	4,046
	3,000 - < 20,000	3,062	215,132	156,877	363	50,080	7,812
	20,000 - dan lebih and above	3,709	2,185,989	684,632	6,031	1,334,285	161,041

Jadual 6.5: Bilangan Pertubuhan dan Perbelanjaan Pengurusan Pencemaran mengikut Jenis Media dan Saiz Output, 2022

Table 6.5: Number of Establishments and Pollution Management Expenditure by Type of Media and Size Output, 2022

Saiz output Output size		Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Media				
			Jumlah Total	Udara Air	Air permukaan Surface water	Tanah dan air bawah tanah Soil and groundwater	Bunyi, gegaran dan radiasi Noise, vibration and radiation
(RM'000)			(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah Total		12,595	2,511,953	807,657	1,245,825	167,529	290,942
Kurang daripada Below	300	508	6,692	3,305	496	803	2,088
	300 - < 3,000	5,316	104,140	35,478	9,293	18,726	40,642
	3,000 - < 20,000	3,062	215,132	72,803	22,184	29,489	90,655
	20,000 - dan lebih and above	3,709	2,185,989	696,071	1,213,851	118,510	157,557



**STATISTIK MENGIKUT SAIZ
HARTA TETAP**

*STATISTICS BY SIZE OF FIXED
ASSETS*



Jadual 7: Bilangan Pertubuhan dan Pecahan Perbelanjaan Perlindungan Alam Sekitar mengikut Saiz Harta Tetap, 2022

Table 7: Number of Establishments and Share of Environmental Protection Expenditure by Size of Fixed Assets, 2022

Saiz harta tetap Fixed assets size		Pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Establishments with environmental protection expenditure		Perbelanjaan perlindungan alam sekitar Environmental protection expenditure				
				Jumlah Total		Perbelanjaan modal Capital expenditure		Perbelanjaan operasi Operating expenditure
		Bilangan Number	Peratus Per cent	(RM'000)	(RM'000)	%	(RM'000)	%
Jumlah Total		12,595	100.0	3,688,863	713,954	19.4	2,974,909	80.6
Kurang daripada Below	50	837	6.6	91,092	12,148	13.3	78,944	86.7
	50 - < 100	971	7.7	20,392	2,932	14.4	17,461	85.6
	100 - < 200	1,659	13.2	37,360	3,184	8.5	34,177	91.5
	200 - < 500	2614	20.8	92,522	5,184	5.6	87,338	94.4
	500 - < 1,000	1,217	9.7	73,432	3,528	4.8	69,904	95.2
	1,000 - < 5,000	2,045	16.2	290,702	41,005	14.1	249,697	85.9
	5,000 - < 10,000	817	6.5	198,193	48,953	24.7	149,240	75.3
	10,000 - < 50,000	1,534	12.2	564,585	84,579	15.0	480,007	85.0
	50,000 - < 100,000	364	2.9	253,886	23,542	9.3	230,344	90.7
	100,000 - < 200,000	236	1.9	275,890	30,980	11.2	244,911	88.8
	200,000 - dan lebih and above	301	2.4	1,790,809	457,922	25.6	1,332,887	74.4

Jadual 7.1: Bilangan Pertubuhan dan Jenis Perbelanjaan Perlindungan Alam Sekitar mengikut Saiz Harta Tetap, 2022
 Table 7.1: Number of Establishments and Type of Environmental Protection Expenditure by Size of Fixed Assets, 2022

Saiz harta tetap <i>Fixed assets size</i>		Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Number of establishments with environmental protection expenditure</i>	Perbelanjaan perlindungan alam sekitar <i>Environmental protection expenditure</i>					
			Jumlah <i>Total</i>	Pengurusan pencemaran <i>Pollution management</i>	Perlindungan hidupan liar & habitat <i>Protection of wildlife & habitat</i>	Penilaian dan caj alam sekitar <i>Environmental assessment and charges</i>	Pengurusan sisa <i>Waste management</i>	Perbelanjaan lain untuk perlindungan alam sekitar <i>Other environmental protection expenditure</i>
(RM'000)			(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah <i>Total</i>		12,595	3,688,863	2,511,953	8,018	53,626	1,060,705	54,561
Kurang daripada <i>Below</i>	50	837	91,092	53,353	291	499	35,699	1,249
	50 - < 100	971	20,392	16,434	38	94	3,564	263
	100 - < 200	1,659	37,360	29,645	6	225	5,514	1,971
	200 - < 500	2614	92,522	81,700	-	227	8,406	2,189
	500 - < 1,000	1,217	73,432	58,473	372	448	11,415	2,723
	1,000 - < 5,000	2,045	290,702	201,102	1,242	3,910	67,235	17,212
	5,000 - < 10,000	817	198,193	138,673	475	2,551	49,088	7,406
	10,000 - < 50,000	1,534	564,585	380,470	1,818	16,289	158,245	7,762
	50,000 - < 100,000	364	253,886	169,390	1,083	5,365	76,202	1,846
	100,000 - < 200,000	236	275,890	154,718	197	2,976	113,139	4,860
200,000 - dan lebih <i>and above</i>	301	1,790,809	1,227,994	2,497	21,041	532,199	7,079	

Jadual 7.2: Bilangan Pertubuhan dan Jenis Perbelanjaan Modal Perlindungan Alam Sekitar mengikut Saiz Harta Tetap, 2022
Table 7.2: Number of Establishments and Type of Capital Expenditure on Environmental Protection by Size of Fixed Assets, 2022

Saiz harta tetap <i>Fixed assets size</i>		Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Number of establishments with environmental protection expenditure</i>	Perbelanjaan perlindungan alam sekitar <i>Environmental protection expenditure</i>					Perbelanjaan lain untuk perlindungan alam sekitar <i>Other environmental protection expenditure</i>
			Jumlah <i>Total</i>	Pengurusan pencemaran <i>Pollution management</i>	Perlindungan hidupan liar & habitat <i>Protection of wildlife & habitat</i>	Penilaian dan caj alam sekitar <i>Environmental assessment and charges</i>	Pengurusan sisa Waste management	
(RM'000)			(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah <i>Total</i>		12,595	713,954	488,997	730	5,422	216,832	1,973
Kurang daripada <i>Below</i>	50	837	12,148	11,400	192	118	426	12
	50 - < 100	971	2,932	2,749	31	49	76	27
	100 - < 200	1,659	3,184	2,193	-	107	873	11
	200 - < 500	2,614	5,184	4,091	-	49	470	574
	500 - < 1,000	1,217	3,528	2,630	1	83	784	30
	1,000 - < 5,000	2,045	41,005	33,466	258	438	6,626	217
	5,000 - < 10,000	817	48,953	47,115	57	105	1,601	74
	10,000 - < 50,000	1,534	84,579	63,537	89	170	20,444	339
	50,000 - < 100,000	364	23,542	21,532	103	27	1,631	249
	100,000 - < 200,000	236	30,980	14,313	-	107	16,329	230
	200,000 - dan lebih <i>and above</i>	301	457,922	285,971	-	4,168	167,572	211

Jadual 7.3: Bilangan Pertubuhan dan Jenis Perbelanjaan Operasi Perlindungan Alam Sekitar mengikut Saiz Harta Tetap, 2022
Table 7.3: Number of Establishments and Type of Operating Expenditure on Environmental Protection by Size of Fixed Assets, 2022

Saiz harta tetap <i>Fixed assets size</i>		Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Number of establishments with environmental protection expenditure</i>	Perbelanjaan perlindungan alam sekitar <i>Environmental protection expenditure</i>					
			Jumlah <i>Total</i>	Pengurusan pencemaran <i>Pollution management</i>	Perlindungan hidupan liar & habitat <i>Protection of wildlife & habitat</i>	Penilaian dan caj alam sekitar <i>Environmental assessment and charges</i>	Pengurusan sisa Waste management	Perbelanjaan lain untuk perlindungan alam sekitar <i>Other environmental protection expenditure</i>
(RM'000)			(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah <i>Total</i>		12,595	2,974,909	2,022,956	7,289	48,204	843,873	52,587
Kurang daripada <i>Below</i>	50	837	78,944	41,953	99	382	35,273	1,238
	50 - < 100	971	17,461	13,685	7	45	3,488	236
	100 - < 200	1,659	34,177	27,452	6	119	4,641	1,960
	200 - < 500	2,614	87,338	77,609	-	178	7,936	1,615
	500 - < 1,000	1,217	69,904	55,844	372	365	10,631	2,693
	1,000 - < 5,000	2,045	249,697	167,636	984	3,472	60,609	16,995
	5,000 - < 10,000	817	149,240	91,558	418	2,446	47,486	7,332
	10,000 - < 50,000	1,534	480,007	316,933	1,729	16,120	137,801	7,424
	50,000 - < 100,000	364	230,344	147,858	980	5,338	74,571	1,597
	100,000 - < 200,000	236	244,911	140,405	197	2,869	96,809	4,630
200,000	- dan lebih <i>and above</i>	301	1,332,887	942,023	2,497	16,872	364,627	6,868

Jadual 7.4: Bilangan Pertubuhan dan Perbelanjaan Pengurusan Pencemaran mengikut Aktiviti dan Harta Tetap, 2022

Table 7.4: Number of Establishments and Pollution Management Expenditure by Activity and Fixed Assets, 2022

Saiz harta tetap Fixed assets size		Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Perbelanjaan pengurusan pencemaran Environmental protection expenditure				
			Jumlah Total	Pengawasan alam sekitar Environmental monitoring	Tebus guna & pembersihan tapak Site reclamation & decommissioning	Peredaan & kawalan pencemaran Pollution abatement & control	Pencegahan pencemaran Pollution prevention
(RM'000)			(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah Total		12,595	2,511,953	941,586	6,566	1,390,094	173,706
Kurang daripada Below	50	837	53,353	40,698	66	11,086	1,503
	50 - < 100	971	16,434	9,668	-	5,085	1,681
	100 - < 200	1,659	29,645	27,063	62	1,563	956
	200 - < 500	2,614	81,700	76,642	167	2,989	1,902
	500 - < 1,000	1,217	58,473	54,322	11	2,598	1,543
	1,000 - < 5,000	2,045	201,102	138,709	387	50,840	11,166
	5,000 - < 10,000	817	138,673	74,109	1,637	51,019	11,908
	10,000 - < 50,000	1,534	380,470	147,447	1,306	194,301	37,418
	50,000 - < 100,000	364	169,390	83,822	1,187	74,889	9,491
	100,000 - < 200,000	236	154,718	63,317	226	61,255	29,921
	200,000 - dan lebih and above	301	1,227,994	225,790	1,518	934,471	66,216

Jadual 7.5: Bilangan Pertubuhan dan Perbelanjaan Pengurusan Pencemaran mengikut Jenis Media dan Harta Tetap, 2022

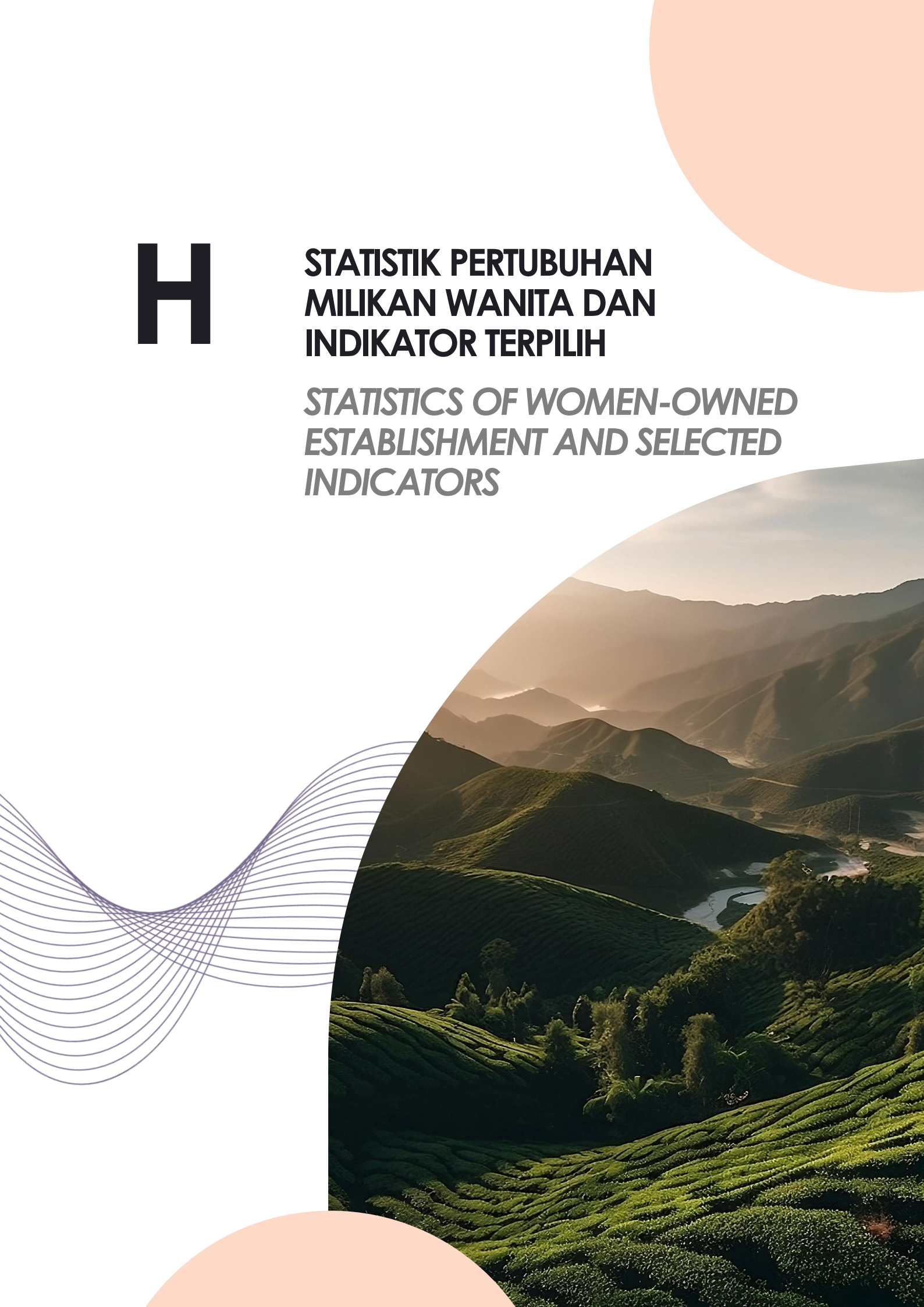
Table 7.5: Number of Establishments and Pollution Management Expenditure by Type of Media and Fixed Assets, 2022

Saiz harta tetap <i>Fixed assets size</i>		Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Number of establishments with environmental protection expenditure</i>	Media				
			Jumlah <i>Total</i>	Udara <i>Air</i>	Air permukaan <i>Surface water</i>	Tanah dan air bawah tanah <i>Soil and groundwater</i>	Bunyi, gegaran dan radiasi <i>Noise, vibration and radiation</i>
(RM'000)			(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah <i>Total</i>		12,595	2,511,953	807,657	1,245,825	167,529	290,942
Kurang daripada <i>Below</i>	50	837	53,353	10,816	37,962	1,838	2,738
	50 - < 100	971	16,434	5,431	3,959	2,625	4,420
	100 - < 200	1,659	29,645	11,339	3,302	5,071	9,933
	200 - < 500	2,614	81,700	29,453	8,157	14,078	30,013
	500 - < 1,000	1,217	58,473	23,155	4,787	8,602	21,930
	1,000 - < 5,000	2,045	201,102	88,027	31,460	27,382	54,233
	5,000 - < 10,000	817	138,673	78,194	21,475	14,675	24,328
	10,000 - < 50,000	1,534	380,470	123,777	157,716	33,585	65,391
	50,000 - < 100,000	364	169,390	43,485	83,073	23,856	18,976
	100,000 - < 200,000	236	154,718	47,422	84,826	10,957	11,513
200,000	- dan lebih <i>and above</i>	301	1,227,994	346,558	809,110	24,860	47,467

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**STATISTIK PERTUBUHAN
MILIKAN WANITA DAN
INDIKATOR TERPILIH**

*STATISTICS OF WOMEN-OWNED
ESTABLISHMENT AND SELECTED
INDICATORS*



Jadual 8: Bilangan Pertubuhan Milikan Wanita dan Pecahan Perbelanjaan Perlindungan Alam Sekitar mengikut Sektor, 2022

Table 8: Number of Women-Owned Establishments and Share of Environmental Protection Expenditure by Sector, 2022

Sektor <i>Sector</i>	Pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Establishments with environmental protection expenditure</i>		Perbelanjaan perlindungan alam sekitar <i>Environmental protection expenditure</i>				
	Bilangan <i>Number</i>	Peratus <i>Per cent</i>	Jumlah <i>Total</i>	Perbelanjaan modal <i>Capital expenditure</i>		Perbelanjaan operasi <i>Operating expenditure</i>	
			(RM'000)	(RM'000)	%	(RM'000)	%
Jumlah <i>Total</i>	695	100.0	50,421	8,163	16.2	42,259	83.8
Pertanian <i>Agriculture</i>	88	12.7	6,813	4,633	68.0	2,180	32.0
Perlombongan & pengkuarian <i>Mining & quarrying</i>	3	0.4	62	-	-	62	100.0
Pembuatan <i>Manufacturing</i>	352	50.6	31,907	1,704	5.3	30,203	94.7
Pembinaan <i>Construction</i>	47	6.8	3,993	1,511	37.8	2,482	62.2
Perkhidmatan <i>Services</i>	205	29.5	7,647	315	4.1	7,332	95.9

Jadual 8.1: Bilangan Pertubuhan Milikan Wanita dan Jenis Perbelanjaan Perlindungan Alam Sekitar mengikut Sektor, 2022
 Table 8.1: Number of Women-Owned Establishments and Type of Environmental Protection Expenditure by Sector, 2022

Sektor Sector	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Perbelanjaan perlindungan alam sekitar Environmental protection expenditure					
		Jumlah Total	Pengurusan pencemaran Pollution management	Perlindungan hidupan liar & habitat Protection of wildlife & habitat	Penilaian dan caj alam sekitar Environmental assessment and charges	Pengurusan sisa Waste management	Perbelanjaan lain untuk perlindungan alam sekitar Other environmental protection expenditure
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah Total	695	50,421	32,121	41	588	16,719	952
Pertanian Agriculture	88	6,813	4,768	16	105	1,823	100
Perlombongan & pengkuarian Mining & quarrying	3	62	3	-	3	55	-
Pembuatan Manufacturing	352	31,907	22,566	10	297	8,514	520
Pembinaan Construction	47	3,993	3,045	-	20	916	11
Perkhidmatan Services	205	7,647	1,739	14	163	5,410	321

Jadual 8.2: Bilangan Pertubuhan Milikan Wanita dan Pecahan Perbelanjaan Perlindungan Alam Sekitar mengikut Taraf Sah, 2022

Table 8.2: Number of Women-Owned Establishments and Share of Environmental Protection Expenditure by Legal Status, 2022

Taraf sah <i>Legal status</i>	Pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Establishments with environmental protection expenditure</i>		Perbelanjaan perlindungan alam sekitar <i>Environmental protection expenditure</i>				
	Bilangan <i>Number</i>	Peratus <i>Per cent</i>	Jumlah <i>Total</i>	Perbelanjaan modal <i>Capital expenditure</i>		Perbelanjaan operasi <i>Operating expenditure</i>	
				(RM'000)	%	(RM'000)	%
Jumlah <i>Total</i>	695	100.0	50,421	8,163	16.2	42,259	83.8
Hak milik perseorangan <i>Individual proprietorship</i>	174	25.0	2,527	622	24.6	1,905	75.4
Perkongsian <i>Partnership</i>	32	4.6	399	32	8.0	367	92.0
Syarikat sendirian berhad <i>Private limited company</i>	489	70.4	47,496	7,509	15.8	39,987	84.2

Jadual 8.3: Bilangan Pertubuhan Milikan Wanita dan Jenis Perbelanjaan Perlindungan Alam Sekitar mengikut Taraf Sah, 2022
Table 8.3: Number of Women-Owned Establishments and Type of Environmental Protection Expenditure by Legal Status, 2022

Taraf sah <i>Legal status</i>	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar <i>Number of establishments with environmental protection expenditure</i>	Perbelanjaan perlindungan alam sekitar <i>Environmental protection expenditure</i>					
		Jumlah <i>Total</i>	Pengurusan pencemaran <i>Pollution management</i>	Perlindungan hidupan liar & habitat <i>Protection of wildlife & habitat</i>	Penilaian dan caj alam sekitar <i>Environmental assessment and charges</i>	Pengurusan sisa <i>Waste management</i>	Perbelanjaan lain untuk perlindungan alam sekitar <i>Other environmental protection expenditure</i>
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah <i>Total</i>	695	50,421	32,121	41	588	16,719	952
Hak milik perseorangan <i>Individual proprietorship</i>	174	2,527	1,391	1	87	569	478
Perkongsian <i>Partnership</i>	32	399	318	-	3	45	33
Syarikat sendirian berhad <i>Private limited company</i>	489	47,496	30,412	40	498	16,105	441

Jadual 8.4: Bilangan Pertubuhan Milikan Wanita dan Pecahan Perbelanjaan Perlindungan Alam Sekitar mengikut Hak Milik, 2022

Table 8.4: Number of Women-Owned Establishments and Share of Environmental Protection Expenditure by Ownership, 2022

Hak milik Ownership	Pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Establishments with environmental protection expenditure		Perbelanjaan perlindungan alam sekitar Environmental protection expenditure				
	Bilangan Number	Peratus Per cent	Jumlah Total	Perbelanjaan modal Capital expenditure		Perbelanjaan operasi Operating expenditure	
			(RM'000)	(RM'000)	%	(RM'000)	%
Jumlah Total	695	100.0	50,421	8,163	16.2	42,259	83.8
Residen Malaysia Malaysian residents	667	96.0	46,448	7,735	16.7	38,713	83.3
Bukan residen Malaysia Non-Malaysian residents	15	2.2	3,471	418	12.1	3,053	87.9
Hak milik bersama Joint ownership	13	1.9	502	9	1.8	493	98.2

Jadual 8.5: Bilangan Pertubuhan Milikan Wanita dan Jenis Perbelanjaan Perlindungan Alam Sekitar mengikut Hak Milik, 2022
 Table 8.5: Number of Women-Owned Establishments and Type of Environmental Protection Expenditure by Ownership, 2022

Hak milik Ownership	Bilangan pertubuhan yang mempunyai perbelanjaan perlindungan alam sekitar Number of establishments with environmental protection expenditure	Perbelanjaan perlindungan alam sekitar Environmental protection expenditure					
		Jumlah Total	Pengurusan pencemaran Pollution management	Perlindungan hidupan liar & habitat Protection of wildlife & habitat	Penilaian dan caj alam sekitar Environmental assessment and charges	Pengurusan sisa Waste management	Perbelanjaan lain untuk perlindungan alam sekitar Other environmental protection expenditure
		(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah Total	695	50,421	32,121	41	588	16,719	952
Residen Malaysia Malaysian residents	667	46,448	30,894	41	524	14,042	947
Bukan residen Malaysia Non-Malaysian residents	15	3,471	997	-	63	2,409	3
Hak milik bersama Joint ownership	13	502	231	-	-	268	3

Jadual 8.6: Bilangan Pertubuhan Milikan Wanita yang mempunyai Pensijilan Alam Sekitar, 2022

Table 8.6: Number of Women-Owned Establishments with Environmental Certification, 2022

Sijil Certificate	Bilangan pertubuhan yang mempunyai pensijilan alam sekitar Number of establishments with environmental certificate	Pertubuhan milikan wanita yang mempunyai pensijilan alam sekitar Women-owned establishments with environmental certification	
		Bilangan Number	Peratus Per cent
Jumlah Total	1,426	49	100.0
ISO 14001 ISO 14001	973	34	69.4
Lain-lain sijil antarabangsa Other international certification	371	13	26.5
ISO 14001 dan lain-lain sijil antarabangsa ISO 14001 and other international certification	82	2	4.1

Jadual 8.7: Bilangan Pertubuhan Milikan Wanita dan Perbelanjaan Perlindungan Alam Sekitar mengikut Saiz Pertubuhan dan Sektor, 2022
Table 8.7: Number of Women-Owned Establishments and Environmental Protection Expenditure by Establishment Size and Sector, 2022

Sektor Sector	Besar Large		PKS SMEs							
	Bilangan Numbers	Jumlah Total	Bilangan Numbers	Jumlah Total	Mikro Micro	Kecil Small		Sederhana Medium		
						Bilangan Numbers	Jumlah Total	Bilangan Numbers	Jumlah Total	Bilangan Numbers
					(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)	(RM'000)
Jumlah Total	69	15,541	626	34,881	128	2,133	381	14,052	117	18,696
Pertanian Agriculture	9	6,407	79	406	21	94	42	155	16	157
Perlombongan & pengkuarian Mining & quarrying	-	-	3	62	-	-	3	62	-	-
Pembuatan Manufacturing	43	3,841	309	28,066	24	825	222	11,130	63	16,110
Pembinaan Construction	3	2,266	44	1,727	7	151	24	1,082	13	494
Perkhidmatan Services	14	3,026	191	4,620	76	1,062	90	1,623	25	1,935

Jadual 9: Bilangan Pertubuhan dan Perbelanjaan Perlindungan Alam Sekitar mengikut Saiz Pertubuhan dan Sektor, 2022
Table 9: Number of Establishments and Environmental Protection Expenditure by Establishment Size and Sector, 2022

Sektor Sector	Besar Large		PKS SMEs							
	Bilangan Numbers	Jumlah Total	Bilangan Numbers	Jumlah Total	Mikro Micro	Kecil Small		Sederhana Medium		
						Bilangan Numbers	Jumlah Total	Bilangan Numbers	Jumlah Total	
		(RM'000)		(RM'000)			(RM'000)		(RM'000)	(RM'000)
Jumlah Total	1,875	2,635,238	10,720	1,053,625	1,570	37,929	7,044	500,614	2,106	515,082
Pertanian Agriculture	297	32,293	673	16,282	144	727	262	4,467	267	11,088
Perlombongan & pengkuarian Mining & quarrying	60	157,111	201	14,194	19	6,228	129	3,575	53	4,391
Pembuatan Manufacturing	1,141	2,127,552	6,327	793,698	305	9,454	4,725	417,644	1,297	366,600
Pembinaan Construction	110	55,567	2,093	78,768	702	10,257	1,143	46,893	248	21,617
Perkhidmatan Services	267	262,715	1,426	150,684	400	11,262	785	28,035	241	111,386

Jadual 10: Perbelanjaan Perlindungan Alam Sekitar mengikut Sektor, 2010, 2015 & 2022

Table 10: Environmental Protection Expenditure by Sector, 2010, 2015 & 2022

Sektor Sector	2010		2015		2022	
	(RM'000)	%	(RM'000)	%	(RM'000)	%
Jumlah <i>Total</i>	2,108,623	100.0	2,551,327	100.0	3,688,863	100.0
Pertanian <i>Agriculture</i>	36,579	1.7	46,423	1.8	48,575	1.3
Perlombongan & pengkuarian <i>Mining & quarrying</i>	217,467	10.3	176,509	6.9	171,305	4.6
Pembuatan <i>Manufacturing</i>	1,703,558	80.8	1,876,599	73.6	2,921,250	79.2
Pembinaan <i>Construction</i>	97,890	4.6	162,459	6.4	134,334	3.6
Perkhidmatan <i>Services</i>	53,129	2.5	289,337	11.3	413,399	11.2

Jadual 11: Peratusan Perbelanjaan Perlindungan Alam Sekitar oleh Pertubuhan kepada Keluaran Dalam Negeri Kasar, 2017-2022
Table 11: Percentage of Environmental Protection Expenditure by Establishments to Gross Domestic Product, 2017-2022

Sektor Sector	2017	2018	2019	2020	2021	2022*
	(RM juta) (RM million)	(RM juta) (RM million)	(RM juta) (RM million)	(RM juta) (RM million)	(RM juta) (RM million)	(RM juta) (RM million)
Perbelanjaan alam sekitar Environmental expenditure	2,593	2,696	2,885	2,973	3,116	3,689
Keluaran Dalam Negeri kasar Gross Domestic Product	1,372,310	1,447,760	1,512,738	1,418,491	1,548,701	1,794,893
Peratusan (%) Percentage	0.19	0.19	0.19	0.21	0.20	0.21

Nota:
 * Data Banci/ Cencus data

**BAHAGIAN
PART**

3

**NOTA TEKNIKAL
TECHNICAL NOTES**



1. PENDAHULUAN

Penerbitan Banci Ekonomi 2023 - Perbelanjaan Perlindungan Alam Sekitar memaparkan statistik perbelanjaan perlindungan alam sekitar bagi tahun rujukan 2022. Perbelanjaan ini meliputi perbelanjaan operasi dan modal bertujuan untuk pencegahan, pengurangan dan penghapusan pencemaran atau mana-mana kemusnahan lain alam sekitar yang timbul daripada proses pengeluaran atau penggunaan barangan/ perkhidmatan. Ini termasuk perbelanjaan bagi aktiviti pengurusan pencemaran; pengurusan sisa; penilaian dan caj alam sekitar; perlindungan hidupan liar & habitat serta perbelanjaan lain perlindungan alam sekitar.

2. OBJEKTIF

Objektif utama banci adalah mengumpul maklumat yang komprehensif mengenai pertumbuhan dan profil pertumbuhan. Modul Seksyen F (Perbelanjaan Perlindungan Alam Sekitar) dimasukkan untuk mengumpul statistik perbelanjaan alam sekitar oleh pertumbuhan meliputi perbelanjaan modal dan operasi.

3. KUASA PERUNDANGAN

Banci ini dilaksanakan di bawah **Akta Perangkaan 1965 (Disemak-1989)**. Seksyen 5 di bawah akta ini menghendaki mana-mana pertumbuhan yang beroperasi di Malaysia untuk memberi maklumat sebenar atau anggaran terbaik kepada Jabatan. Mengikut akta ini, kandungan soal selidik yang diterima adalah sulit dan hanya angka agregat diterbitkan.

4. SKOP DAN LIPUTAN

Banci ini meliputi pertumbuhan berdaftar dengan Suruhanjaya Syarikat Malaysia (SSM) dan beroperasi pada tahun 2022 bagi semua sektor yang diliputi dalam Banci Ekonomi 2023 seperti:

- i. pertanian;
- ii. perlombongan & pengkuarian;
- iii. pembuatan;
- iv. bekalan elektrik, gas, wap & pendingin udara;

- v. bekalan air; pembetulan, pengurusan sisa & aktiviti pemulihan;
- vi. pembinaan;
- vii. pengangkutan & penyimpanan;
- viii. penginapan;
- ix. aktiviti perkhidmatan makanan & minuman;
- x. maklumat & komunikasi;
- xi. aktiviti hartanah;
- xii. aktiviti profesional, saintifik & teknikal;
- xiii. pendidikan;
- xiv. aktiviti kesihatan kemanusiaan & kerja sosial;
- xv. kesenian, hiburan & rekreasi;
- xvi. aktiviti pentadbiran & khidmat sokongan; dan
- xvii. aktiviti perkhidmatan lain.

Liputan industri 5 digit berdasarkan Piawaian Klasifikasi Industri Malaysia Ver.1.0 (MSIC 2008).

5. KAEDAH PENGUMPULAN

Banci ini secara umumnya dijalankan dengan menggunakan tiga kaedah pengumpulan data iaitu kaedah atas talian melalui portal e-BE; kutipan data melalui e-mel, pos, faks dan telefon; dan kutipan data secara bersemuka.

6. UNIT PELAPOR

Unit pelapor bagi banci ini ialah **pertubuhan**. Sesebuah pertubuhan secara ideal ditakrifkan sebagai satu unit ekonomi yang bergiat di bawah satu hak milik atau penguasaan tunggal, iaitu di bawah satu entiti yang sah. Ia menjalankan satu jenis subsektor ekonomi utama di satu tempat/ lokasi fizikal. Setiap pertubuhan diberikan klasifikasi industri berdasarkan aktiviti utamanya dan bukannya mengikut aktiviti syarikat induk.

Setiap cawangan daripada organisasi yang mempunyai beberapa cawangan di lokasi yang berbeza dari segi konsep dianggap sebagai pertubuhan yang berlainan. Pertubuhan berkenaan diminta memberikan penyata yang berasingan bagi setiap kegiatannya dari segi nilai. Walau bagaimanapun, dari segi praktis

akaun biasanya disediakan secara berpusat kerana kesukaran untuk memperoleh data yang berasingan bagi setiap unit atau cawangan. Entiti atau 'enterprise' ini akan dianggap sebagai satu unit pelapor dan dibenarkan mengemukakan soal selidik yang menggabungkan semua unit atau cawangannya.

7. TAHUN BANCİ

Tahun banci adalah merujuk kepada tahun pelaksanaan banci.

8. TAHUN RUJUKAN

Tahun rujukan bagi banci ini adalah tahun takwim 2022. Pertubuhan yang mempunyai tahun kewangan yang berbeza daripada tahun takwim diminta menyediakan laporan mengikut tahun perakaunan atau kewangan yang meliputi sekurang-kurangnya enam (6) bulan dalam tahun rujukan.

9. KONSEP DAN DEFINISI

9.1 Perbelanjaan perlindungan alam sekitar¹

Perbelanjaan ini merujuk kepada semua perbelanjaan modal dan perbelanjaan operasi dan baik pulih oleh pertubuhan selaras dengan pematuhan alam sekitar, konvensyen atau perjanjian secara sukarela. Ia termasuk perbelanjaan untuk:

- a. Perbelanjaan pengurusan pencemaran meliputi pengawasan alam sekitar; tebus guna & pembersihan tapak; peredaan & kawalan pencemaran dan pencegahan pencemaran;
- b. Perlindungan hidupan liar & habitat;
- c. Penilaian dan caj alam sekitar;
- d. Pengurusan sisa; dan
- e. Perbelanjaan lain untuk perlindungan alam sekitar termasuk program dan latihan, kempen kesedaran, kursus dan sumbangan.

¹ Konsep dan definisi berdasarkan kepada *Environmental Expenditure Statistics: Industry Data Collection Handbook 2005* oleh Eurostats, *Environmental Protection Expenditures in the Business Sector* yang diterbitkan oleh Statistics Canada dan CEPA 2000

9.2 Perbelanjaan modal

Termasuk segala perbelanjaan melibatkan pemasangan, pembinaan, pembinaan semula, lanjutan, pemulihan, penyesuaian atau pemodenan berkaitan peralatan dan kelengkapan berbentuk harta modal, di mana tujuan utama adalah untuk mengumpul, merawat, memantau dan mengawal, mengurangkan, mencegah, atau menghapuskan pencemaran atau degradasi lain persekitaran yang terhasil daripada aktiviti operasi pertubuhan. Perbelanjaan ini tidak termasuk mana-mana peruntukan untuk liabiliti persekitaran akan datang.

9.3 Perbelanjaan operasi

Perbelanjaan operasi meliputi kos buruh, bayaran sewa, penggunaan bahan & tenaga, penyelenggaraan dan pembaikan, serta pembelian perkhidmatan, di mana tujuan utama adalah untuk mengumpul, merawat, memantau dan mengawal, mengurangkan, mencegah, atau menghapuskan pencemaran atau degradasi lain persekitaran yang terhasil daripada aktiviti operasi pertubuhan. Ia termasuk kos dalaman (kos operasi dan penyelenggaraan peralatan perlindungan alam sekitar serta caj alam sekitar), kos perkhidmatan yang diberikan oleh entiti luar, caj untuk rawatan air sisa dan pengumpulan sisa; kos sistem kawalan, pemantauan, penyelidikan makmal, pengurusan dan lain-lain.

9.4 Media alam sekitar²

Media alam sekitar merujuk kepada komponen abiotik alam semula jadi iaitu udara, air dan tanah. Media alam sekitar yang diliputi dalam Banci Ekonomi 2023, Perbelanjaan Perlindungan Alam Sekitar ini adalah udara, air permukaan, tanah, air bawah tanah serta bunyi, gegaran dan radiasi.

² Konsep dan definisi berdasarkan kepada *Glosary of Statistical terms by the Organisation for Economic Co-operation and Development (OECD)*

9.5 Perbelanjaan pengurusan pencemaran mengikut aktiviti

a. Pengawasan alam sekitar

Pendekatan yang sistematik untuk memerhati, mengkaji dan memantau alam sekitar. Ia melibatkan pengumpulan sampel dan spesimen dari udara, air dan tanah untuk menentukan samada apa-apa faktor fizikal atau biologi yang memberi kesan negatif terhadap ekosistem semula jadi dan habitat. Perbelanjaan ini melibatkan kos berkaitan perkakasan, buruh dan perkhidmatan yang dibelanjakan bagi memenuhi peraturan dan konvensyen untuk mengawasi bahan cemar yang dilepaskan oleh pertubuhan. Contoh: Pemasangan alat pemantauan (CEMS) dan pH meter.

b. Tebus guna & pembersihan tapak

Tebus guna tapak adalah bertujuan untuk memulihkan tapak kepada keadaan stabil yang menghampiri keadaan asal. Pembersihan tapak adalah proses penyingkiran struktur dan kemudahan projek selepas pertubuhan menghentikan operasi. Pembersihan diperlukan untuk menghilangkan bahan kimia atau bahan berbahaya kepada alam sekitar untuk menjadikan tapak industri selamat dan estetik. Perbelanjaan ini melibatkan aktiviti pemulihan dan pembersihan bagi kerosakan alam sekitar yang disebabkan oleh pertubuhan. Tidak termasuk penalti/ kompaun yang dikenakan kerana kerosakan alam sekitar atau sebarang tanggungan kepada alam sekitar pada masa hadapan. Contoh: Pemulihan tapak pelupusan (*landfill*) dijadikan taman rekreasi.

c. Peredaan & kawalan pencemaran

Aktiviti ini bertujuan untuk pengurangan dan penghapusan pencemaran atau gangguan yang timbul daripada sisa pengeluaran atau penggunaan barangan dan perkhidmatan. Perbelanjaan ini meliputi kos perkakasan/ kemudahan yang dipasang untuk mengekang atau mengurangkan pelepasan bahan cemar.

Contoh: Pemasangan cerobong asap, *waste water treatment plant* dan *noise boundary wall*.

d. Pencegahan pencemaran

Aktiviti pencegahan pencemaran adalah termasuk pengubahsuaian ke atas kaedah pengeluaran, teknologi, proses operasi, peralatan (atau sebahagian daripadanya) yang direka untuk mencegah atau mengurangkan pencemaran yang terhasil di peringkat sumber, sekali gus mengurangkan kesan alam sekitar yang berkaitan dengan pelepasan pencemaran di hujung-paip. Perbelanjaan meliputi pembelian teknologi dan peralatan yang mengurangkan atau menghapuskan pencemaran dan sisa yang bukan diujung paip atau timbunan sebelum pencemaran atau bahan buangan terhasil. Contoh: Penggunaan *silencer* untuk generator dan mengguna peralatan teknologi hijau.

9.6 Perlindungan hidupan liar & habitat

Aktiviti ini bagi melindungi spesies haiwan dan tumbuhan liar dan memulihara habitat hidupan liar, terutamanya spesies yang terpelihara. Perbelanjaan bagi mematuhi peraturan dan konvensyen bagi melindungi hidupan liar dan habitat dari mana-mana kesan operasi/ aktiviti pertubuhan. Contoh: Menyediakan laluan khas bagi hidupan liar (*wildlife crossing*) di lebuh raya.

9.7 Perbelanjaan penilaian alam sekitar

Ini merujuk kepada perbelanjaan bagi menilai impak alam sekitar (EIA) daripada program/ aktiviti pertubuhan termasuk kos perundangan dan perundangan yang berkaitan. Bayaran perundangan dan audit dalam operasi semasa serta kos lain untuk mendapatkan sijil alam sekitar.

9.8 Caj alam sekitar

Caj alam sekitar adalah caj yang mesti dibayar untuk penggunaan sumber asli dan juga untuk kerugian yang disebabkan oleh pencemaran alam

sekitar. Contoh: Perbelanjaan bagi permit, yuran, denda, penalti atau pampasan kerosakan yang dibayar kepada agensi kerajaan atau individu dan caj lain yang dibayar kepada badan-badan yang mengawal selia untuk membenarkan operasi dijalankan di pertubuhan ini.

9.9 Perbelanjaan pengurusan sisa

Perbelanjaan ini merujuk kepada kos yang terlibat dalam aktiviti dan tindakan yang diperlukan untuk menguruskan sisa yang terhasil daripada operasi pengeluaran produk bermula dari penghasilan sisa hingga pelupusan akhir. Ini termasuk pengumpulan, penyimpanan, pengangkutan, rawatan dan pelupusan sisa bersama-sama dengan pemantauan dan peraturan.

a. Sisa pepejal tidak berbahaya

Sisa pepejal tidak berbahaya merujuk kepada bahan sekerap atau benda lebihan lain yang tidak dikehendaki atau keluaran yang ditolak yang timbul daripada penggunaan apa-apa proses dan benda yang perlu dilupuskan. Rujuk kepada Akta 672 - Akta Pengurusan Sisa Pepejal dan Pembersihan Awam 2007.

b. Sisa terjadual (pepejal/ cecair)

Sisa terjadual ialah sisa toksik dan/ atau sisa berbahaya kecuali patogenik, kuarantin dan sisa boleh letup yang termasuk dalam kategori sisa yang tersenarai dalam Jadual Pertama Peraturan Kualiti Alam Sekeliling (Buangan Terjadual) 2005.

9.10 Perbelanjaan lain untuk perlindungan alam sekitar

Perbelanjaan lain untuk perlindungan alam sekitar termasuk kempen kesedaran alam sekitar, kursus, seminar dan bengkel alam sekitar. Sumbangan kepada sekolah, universiti dan agensi berkaitan bagi menjalankan aktiviti kesedaran untuk melindungi alam sekitar seperti Hari Bumi, Hari Hijau, program kitar semula, menanam pokok bakau dan program

pemuliharaan hidupan liar di zoo atau menjadikan sungai sebagai sungai angkat untuk memantau kebersihan.

Bekerjasama dengan agensi kerajaan dan swasta atau orang ramai melaksanakan aktiviti membersihkan kawasan hutan simpan dan sebagainya. Tidak termasuk pembersihan yang dilakukan di kawasan pertubuhan.

9.11 Pensijilan alam sekitar

a. ISO 14001

Merupakan piawaian pengurusan alam sekitar di peringkat antarabangsa. Ia menyediakan satu set keperluan standard bagi sistem pengurusan alam sekitar (EMS). Ia juga menyediakan rangka kerja bagi pengurusan alam sekitar amalan terbaik untuk organisasi bantuan untuk mencegah pencemaran, mengurangkan kesan alam sekitar, mematuhi undang-undang alam sekitar dan membangunkan perniagaan dengan cara yang mampan.

b. Pensijilan antarabangsa lain

- **ISO 14004** menyediakan panduan mengenai pembangunan, pelaksanaan, penyelenggaraan dan penambahbaikan sistem pengurusan alam sekitar serta diselaraskan dengan sistem pengurusan yang lain. Garis panduan dalam ISO 14004 adalah terpakai kepada mana-mana organisasi, tanpa mengira saiz, jenis, lokasi atau tahap matang. Walaupun garis panduan ISO 14004 adalah selaras dengan model sistem pengurusan alam sekitar ISO 14001, ia tidak bertujuan untuk memenuhi keperluan ISO 14001.
- **Forest Stewardship Council (FSC)** adalah pensijilan secara sukarela, ia bertujuan memastikan produk hutan diurus secara bertanggungjawab dan memberi manfaat kepada alam sekitar, sosial dan ekonomi. Terdapat 2 jenis sijil iaitu pengurusan hutan dan penjagaan rantaian yang melibatkan pengurusan pengeluaran produk hutan sehingga kepada pengguna akhir.

- **Roundtable on Sustainable Palm Oil (RSPO)** adalah satu jaminan proses pengeluaran minyak kelapa sawit yang mampan kepada pelanggan dan penghasilan komoditi yang tidak menyebabkan kerosakan kepada alam sekitar atau bahaya kepada masyarakat.

Satu set kriteria alam sekitar dan sosial yang mesti dipatuhi oleh syarikat untuk mendapatkan *Certified Sustainable Palm Oil (CSPO)*. Ia boleh membantu untuk mengurangkan kesan negatif daripada ladang kelapa sawit terhadap alam sekitar dan masyarakat di kawasan-kawasan pengeluaran minyak sawit.

- **Malaysian Timber Certification Scheme (MTCS)** adalah sijil yang dikeluarkan oleh Majlis Pensijilan Kayu Malaysia (MTCC). Ia merupakan skim sukarela yang memperuntukan penilaian bebas mengenai amalan pengurusan hutan, untuk memastikan pengurusan ladang hutan dan hutan semulajadi Malaysia yang mampan, dan juga untuk memenuhi permintaan bagi produk kayu disahkan.

10. KADAR PERTUMBUHAN TAHUNAN KOMPAUN

Pengiraan Kadar Pertumbuhan Tahunan Kompaun (r) adalah berdasarkan formula berikut:

$$Y_t = Y_0(1 + r)^t$$

Di mana r ,

$$r = \left[e^{\frac{1}{t} \ln \left(\frac{Y_t}{Y_0} \right)} - 1 \right] \times 100$$

Di mana;

Y_t = Nilai pada tahun semasa

Y_0 = Nilai pada tahun sebelum

t = Bilangan tahun, $Y_t - Y_0$

r = Kadar pertumbuhan tahunan

9. SIMBOL DAN SINGKATAN

Simbol dan huruf ringkas berikut telah digunakan di dalam keseluruhan penerbitan:

&	dan
%	peratus
-	tiada
>	lebih daripada
<	kurang daripada
0	kurang daripada 0.5
0.0	0.0 kurang daripada 0.05
RM	Ringgit Malaysia
W.P.	Wilayah Persekutuan
CAGR	Kadar Pertumbuhan Tahunan Kompaun

10. PEMBUNDARAN

Jumlah bagi komponen mungkin berbeza dengan jumlah besar dalam jadual penerbitan disebabkan oleh pembundaran.

1. INTRODUCTION

The *Economic Census 2023 Publication – Environmental Protection Expenditure* presents statistics on environmental protection expenditure for the reference year 2022. This expenditure covers operating and capital expenditures aimed for prevention, reduction and elimination of pollution or any others environmental destruction arising from the process of production or the use of goods/ services. This includes expenditure of pollution management activity; waste management; environmental assessment and charges; protection of wildlife & habitat and other environmental protection expenditure.

2. OBJECTIVE

The main objective of the census is to collect comprehensive information on the growth and profile of establishments. Section F Module (Environmental Protection Expenditure) is included to collect environmental expenditure statistics by establishments, covering capital and operating expenditures.

3. LEGAL AUTHORITY

This census was conducted under the provisions of the **Statistics Act 1965 (Revised-1989)**. Section 5 of the act required any operating establishment in Malaysia to furnish the correct information or their best estimate to the Department. The act stipulates that the contents of the individual returns received are confidential and only aggregated figures are published.

4. SCOPE AND COVERAGE

This census covered establishments that were registered with Companies Commission of Malaysia (SSM) operating in 2022 for all sectors covered in the *Economic Census 2023* as follows:

- i. agriculture;
- ii. mining & quarrying;
- iii. manufacturing;
- iv. electricity, gas, steam & air conditioning supply;
- v. water supply; sewerage, waste management & remediation activities;

- vi. construction;
- vii. transportation & storage;
- viii. accommodation;
- ix. food & beverage service activities;
- x. information & communication;
- xi. real estate activities;
- xii. professional, scientific & technical activities;
- xiii. education;
- xiv. human health & social work activities;
- xv. arts, entertainment & recreation;
- xvi. administrative & support service activities; and
- xvii. other service activities.

Industry coverage is 5 digit based on the Malaysia Standard Industrial Classification Ver.1.0 (MSIC 2008).

5. METHOD OF DATA COLLECTION

This census was generally conducted through three methods of data collection, namely, online method through the e-BE portal; data collection via e-mail, post, fax and telephone; and face-to-face data collection.

6. REPORTING UNIT

The reporting unit used in the census was **establishment**. An establishment is defined as an economic unit that engaged in one activity, under a single legal entity and operating in a single physical location. Each establishment was assigned to an industry classification based on its principal activity.

Each branch of a multi-branch organisation at a different location was conceptually treated as a different establishment. The establishment was requested to give separate returns for each activity in terms of value. However, if in practice, the accounts were centrally kept such that it was not possible to obtain separate data for each individual unit or branch. That entity or enterprise was treated as a single reporting unit and allowed to submit a consolidated questionnaire covering all units or branches.

7. CENSUS YEAR

Census year refers to the year in which a census was conducted

8. REFERENCE YEAR

The reference year of this census was the calendar year 2022. Establishments whose accounting year differed from the calendar year were requested to report according to the accounting year or financial year covering at least six months in the reference year.

9. CONCEPTS AND DEFINITIONS

9.1 Environmental protection expenditure¹

This expenditure refers to all capital expenses and operating & repair expenditures incurred by businesses in order to comply with environmental regulations, conventions or voluntary agreements. They consist of expenditures for:

- a. Expenditure for pollution management covered environmental monitoring; site reclamation & decommissioning; pollution abatement & control and pollution prevention;
- b. Protection of wildlife & habitat;
- c. Environmental assessment and charges;
- d. Waste management; and
- e. Other environmental protection expenditure include programme and training, awareness campaigns, courses and donation.

9.2 Capital expenditure

Environmental capital expenditure involved installment, construction, re-construction, continuation, recovery, adjustment or modernisations related to capital form of equipments and tools, where the main purposes are to collect, treat, observe and control, reduce, prevent, or eliminate pollution or environmental degradation that resulted from establishments' activities.

¹ Concepts and definitions are based on the Environmental Expenditure Statistics: Industry Data Collection Handbook 2005 by the Eurostat, Environmental Protection Expenditures in the Business Sector published by the Statistics Canada and CEPA 2000

This expenditure does not include any provisions for future environmental liability.

9.3 Operating expenditure

Environmental operating expenditure includes labour cost; rental; the use of materials & energy; maintenance and repair; and where the main purposes are to collect, treat, monitor and control, reduce, prevent, or eliminate pollution or environmental degradation that resulted from establishments' activities. It includes internal costs (including operating cost and maintenance of environmental protection equipment and environmental charges), cost of services provided by external entities, charges for wastewater treatment and waste collection; control system cost, monitoring, lab researches, management and others.

9.4 Environmental media²

Environmental media refer to the abiotic components of the natural environment, namely air, water, and soil. The environmental media covered in the Economic Census 2023, Environmental Protection Expenditure include air, surface water, soil, groundwater, as well as noise, vibration, and radiation.

9.5 Expenditure for pollution management by activity

a. Environmental monitoring

A systematic approach to observing, studying and monitoring the environment. It involves collection of samples and specimens from air, water and land to determine whether any physical or biological factors have a negative impact on natural ecosystem and habitat. This expenditure refers to costs related to equipments, labour and services spent to comply with regulations and convention to monitor contaminants released by establishments. Example: Install monitoring tools (CEMS) and pH meter.

² Concepts and definitions are based on the Glossary of Statistical Terms by the Organisation for Economic Co-operation and Development (OECD)

b. Site reclamation & decommissioning

Site reclamation aims to rehabilitate site to stable condition that approximates to the original condition. Site decommissioning is a process of removal of structure and project's facilities after establishments stop their operations. This is needed to remove chemical or harmful substances to the environment to make the industrial site more safe and aesthetic. This expenditure involved recovery and cleaning activities for environmental damages caused by establishments. Excludes penalties/ compounds imposed due to environmental damages or any liability to the environment in the future. Example: Recovery of landfill for recreational park.

c. Pollution abatement & control

These activities aimed in reducing or eliminating pollution or disturbance arises from waste production or uses of goods and services. This expenditure covers cost of equipments/ facilities installed to restrain or reduce the release of contaminants. Example: Installation of smoke chimney, wastewater treatment plant and noise boundary wall

d. Pollution prevention

Pollution prevention activities include modification of production methods, technologies, operation processes, equipments (or part thereof) which is designed to prevent or minimize pollution at source level, thereby reducing the environmental impact associated with the end-pipe pollution discharge. Expenditure includes purchases of technologies and equipments that reduces or eliminates pollution and waste at the source instead of at the end-of-pipe or stack before the pollution or waste is created. Example: The use of silencer for generator and use of green-technology equipment.

9.6 Protection of wildlife & habitat

These activities involved practices of protecting animal species and wild plants and conserving habitat for wildlife, especially on conservation-dependent species. Expenditure in compliance with laws and convention to protect wildlife and habitat from the outcome of establishment's operation/ activities. Example: Provide a specific route for wildlife (wildlife crossing) at the highway.

9.7 Environmental assessment expenditure

This refers to expenditure to evaluate environmental impact (EIA) of establishment's programs/ activities including related legal and consultation costs. Legal and audit fees in current operations and other cost incurred prior environmental certificates.

9.8 Environmental charges

Environmental charges are charges that needed to be paid for using of natural resources as well as for losses caused by environmental pollution. Example: Expenditure for permits, fees, fines, penalties or damage compensation paid by government agencies or individuals and other charges paid to regulatory body to allow operations to be carried out by establishments.

9.9 Waste management expenditure

This expenditure refers to cost incurred in activities and actions required to manage waste generated from production of products operations; begins from producing waste until final disposal. Includes collection, storage, transportation, treatment and disposal of waste along with monitoring and regulation.

a. Non-hazardous solid waste

Non-hazardous solid waste refers to any scrap material or unwanted surplus substance or rejected products arising from the application of any process and substance required to be disposed. Refer to Act 672-Solid Waste and Public Cleansing Management Act 2007.

b. Scheduled waste (solid/ liquid)

Scheduled waste refers to toxic waste and/ or hazardous waste, except pathogenic, quarantined and flammable which is included in the waste category listed in the First Schedule Environmental Quality Regulation (Scheduled Waste) 2005.

9.10 Other environmental expenditure

Other environmental expenditure includes environmental awareness campaign, courses, seminar and environmental workshop. Contribution to schools, universities and related agencies to carried out awareness activities to protect the environment such as Earth Day, Green Day, recycling programme, mangrove trees' planting and conservation programme at zoo or using rivers as a medium to monitor cleaning.

Collaboration with government and private agencies or the public to carry out cleaning of reserved forest and others. Excludes cleaning done in the establishments area.

9.11 Environmental certification**a. ISO 14001**

An international standard environmental management. It provides a set of standard requirements for environmental management system (EMS). This also provides a framework for best practices of environmental management to aid the organisations to prevent pollution, reduce environmental impact, comply with environmental laws and develop businesses in a sustainable manner.

b. Other international certification

- **ISO 14004** provides guidance on the development, implementation, maintenance and improvement of environmental management system and their co-ordination with other management systems. The guidelines in this document are intended applicable to any

organisation, regardless of size, type, location or maturity level. Although ISO 14004 guideline is aligned with ISO 14001 environmental management system model, it is not intended to meet the requirements of ISO 14001.

- **Forest Stewardship Council (FSC)** is a voluntary certification, which aims to ensure the forest products are being managed responsibly and beneficially to environment, social and economy. There are 2 types of certificates; forest management and chain-of-custody which involved the management of production for forest products all the way to the end user.
- **Roundtable on Sustainable Palm Oil (RSPO)** is a guarantee of sustainable palm oil production process and commodity production that does not bring any damage to the environment and harm to the community.

A set of environmental criteria and social that need to be complied by establishments to obtain Certified Sustainable Palm Oil (CSPO). It is to help in reducing the negative impact from oil palm plantations to the environment and communities around the producers of palm oil.

- **Malaysian Timber Certification Scheme (MTCS)** is a certificate issued by Malaysian Timber Certification Council (MTCC). It is a voluntary scheme that provides an independent assessment about practices on forest management, to ensure a sustainable management of forests and natural forests, as well as to meet the demand for certified timber products.

10. COMPOUND ANNUAL GROWTH RATE

The Compound Annual Growth Rate (r) is calculated based on formula of:

$$Y_t = Y_0 (1 + r)^t$$

Where r ,

$$r = \left[e^{\frac{1}{t} \ln \left(\frac{Y_t}{Y_0} \right)} - 1 \right] \times 100$$

Where;

Y_t = Value at current year

Y_0 = Value at previous year

t = Number of years, $Y_t - Y_0$

r = Annual growth rate

11. SYMBOLS AND ABBREVIATIONS

The following symbols and notations have been used throughout the publication:

&	and
%	per cent
-	nil
>	more than
<	less than
0	less than 0.5
0.0	less than 0.05
RM	Ringgit Malaysia
W.P.	Wilayah Persekutuan
CAGR	Compound Annual Growth Rate

12. ROUNDING

The sum of components may not add up to the totals in the tables presented in this publication due to rounding.

LAMPIRAN APPENDIX



**CLASSIFICATION OF ENVIRONMENTAL PROTECTION ACTIVITIES
AND EXPENDITURE (CEPA 2000)**

1. PROTECTION OF AMBIENT AIR AND CLIMATE

- 1.1 Prevention of pollution through in-process modifications
 - 1.1.1 for the protection of ambient air
 - 1.1.2 for the protection of climate and ozone layer
- 1.2 Treatment of exhaust gases and ventilation air
 - 1.2.1 for the protection of ambient air
 - 1.2.2 for the protection of climate and ozone layer
- 1.3 Measurement, control, laboratories and the like
- 1.4 Other activities

2. WASTEWATER MANAGEMENT

- 2.1 Prevention of pollution through in-process modifications
- 2.2 Sewerage networks
- 2.3 Wastewater treatment
- 2.4 Treatment of cooling water
- 2.5 Measurement, control, laboratories and the like
- 2.6 Other activities

3. WASTE MANAGEMENT

- 3.1 Prevention of pollution through in-process modifications
- 3.2 Collection and transport
- 3.3 Treatment and disposal of hazardous waste
 - 3.3.1 Thermal treatment
 - 3.3.2 Landfill
 - 3.3.3 Other treatment and disposal
- 3.4 Treatment and disposal of non-hazardous waste
 - 3.4.1 Incineration
 - 3.4.2 Landfill
 - 3.4.3 Other treatment and disposal
- 3.5 Measurement, control, laboratories and the like
- 3.6 Other activities

**4. PROTECTION AND REMEDIATION OF SOIL, GROUNDWATER
AND SURFACE WATER**

- 4.1 Prevention of pollutant infiltration
- 4.2 Cleaning up of soil and water bodies
- 4.3 Protection of soil from erosion and other physical degradation
- 4.4 Prevention and remediation of soil salinity
- 4.5 Measurement, control, laboratories and the like
- 4.6 Other activities

5. NOISE AND VIBRATION ABATEMENT (excluding workplace protection)

- 5.1 Preventive in-process modifications at the source
 - 5.1.1 Road and rail traffic
 - 5.1.2 Air traffic
 - 5.1.3 Industrial and other noise
- 5.2 Construction of anti-noise/vibration facilities
 - 5.2.1 Road and rail traffic
 - 5.2.2 Air traffic
 - 5.2.3 Industrial and other noise
- 5.3 Measurement, control, laboratories and the like
- 5.4 Other activities

6. PROTECTION OF BIODIVERSITY AND LANDSCAPES

- 6.1 Protection and rehabilitation of species and habitats
- 6.2 Protection of natural and semi-natural landscapes
- 6.3 Measurement, control, laboratories and the like
- 6.4 Other activities

7. PROTECTION AGAINST RADIATION (excluding external safety)

- 7.1 Protection of ambient media
- 7.2 Transport and treatment of high level radioactive waste
- 7.3 Measurement, control, laboratories and the like
- 7.4 Other activities

8. RESEARCH AND DEVELOPMENT

- 8.1 Protection of ambient air and climate
 - 8.1.1 Protection of ambient air
 - 8.1.2 Protection of atmosphere and climate
- 8.2 Protection of water
- 8.3 Waste
- 8.4 Protection of soil and groundwater
- 8.5 Abatement of noise and vibration
- 8.6 Protection of species and habitats
- 8.7 Protection against radiation
- 8.8 Other research on the environment

9. OTHER ENVIRONMENTAL PROTECTION ACTIVITIES

- 9.1 General environmental administration and management
 - 9.1.1 General administration, regulation and the like
 - 9.1.2 Environmental management
- 9.2 Education, training and information
- 9.3 Activities leading to indivisible expenditure
- 9.4 Activities not elsewhere classified



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