



KEMENTERIAN EKONOMI
JABATAN PERANGKAAN MALAYSIA

B//23

BANCI EKONOMI *ECONOMIC CENSUS* **2023**



PERLOMBONGAN DAN PENGKUARIAN
MINING AND QUARRYING

JABATAN PERANGKAAN MALAYSIA
Department of Statistics Malaysia



KEMENTERIAN EKONOMI
JABATAN PERANGKAAN MALAYSIA

BANCI EKONOMI
ECONOMIC CENSUS
2023

PERLOMBONGAN DAN PENGKUARIAN
MINING AND QUARRYING

Pemakluman

Jabatan Perangkaan Malaysia (DOSM) telah melancarkan OpenDOSM NextGen sebagai medium yang menyediakan katalog data dan visualisasi bagi memudahkan pengguna menganalisis pelbagai data dan boleh diakses melalui portal <https://open.dosm.gov.my>.

DOSM sedang menjalankan Banci Pertanian pada tahun 2024. Sila layari <https://www.myagricensus.gov.my> untuk maklumat lanjut. Tema adalah "Banci Pertanian, Kunci Kemajuan Pertanian".

Kerajaan Malaysia telah mengisytiharkan Hari Statistik Negara (MyStats Day) pada 20 Oktober setiap tahun. Tema sambutan MyStats Day adalah "Statistik Nadi Kehidupan". DOSM menyambut ulang tahun ke 75 Jubli Intan pada tahun 2024.

Announcement

The Department of Statistics Malaysia (DOSM) has launched OpenDOSM NextGen as a medium that provides a catalogue of data and visualisations to facilitate users' analysis of various data and can be accessed through <https://open.dosm.gov.my>.

DOSM is conducting the Agricultural Census in 2024. Please visit <https://www.myagricensus.gov.my> for more information. The theme is "Agriculture Census, Key to Agricultural Development".

The Government of Malaysia has declared National Statistics Day (MyStats Day) on October 20th each year. MyStats Day theme is "Statistics is the Essence of Life". DOSM commemorates its 75th Diamond Jubilee in 2024.

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“Sumber: Jabatan Perangkaan Malaysia”

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Penerbitan Banci Ekonomi 2023 sektor Perlombongan dan pengkuarian membentangkan statistik yang diperoleh daripada Banci Ekonomi 2023 bagi tahun rujukan 2022. Banci ini meliputi semua pertubuhan berdaftar yang terlibat dalam aktiviti ekonomi termasuk di dalam sektor Perlombongan dan pengkuarian. Pertubuhan dikelaskan mengikut Piawaian Klasifikasi Industri Malaysia (MSIC) 2008 Versi 1.0, berdasarkan *International Standard Industrial Classification of All Economic Activities (ISIC)*, Revision 4, 2008. Banci terdahulu telah dijalankan pada tahun 2016, bagi tahun rujukan 2015.

Statistik utama berkaitan dengan bilangan pertubuhan, output kasar, input perantaraan, nilai ditambah, pekerja, gaji & upah dan harta tetap dilaporkan dalam penerbitan ini di peringkat nasional dan negeri. Selain itu, statistik mengenai pemilikan wanita turut dipaparkan. Statistik ini boleh digunakan oleh agensi kerajaan, ahli ekonomi, ahli akademik, pihak swasta serta individu bagi tujuan membuat perancangan dan penggubalan dasar, analisis ekonomi, unjuran dan dapat membantu merancang pembangunan perniagaan.

Penerbitan ini dibahagikan kepada empat bahagian. Bahagian pertama memaparkan sorotan utama statistik untuk sektor Perlombongan dan pengkuarian, diikuti ringkasan penemuan dalam bahagian kedua. Seterusnya, bahagian ketiga memaparkan jadual statistik terperinci, manakala bahagian keempat merangkumi aspek teknikal, termasuk skop dan liputan, konsep dan definisi, serta pemboleh ubah utama.

Jabatan Perangkaan Malaysia (DOSM) merakamkan setinggi-tinggi penghargaan atas kerjasama semua pihak yang telah menyediakan data yang diperlukan dan menyumbang kepada kejayaan penerbitan ini. Setiap maklum balas dan cadangan ke arah menambah baik laporan pada masa hadapan adalah amat dihargai.

DATO' SRI DR. MOHD UZIR MAHIDIN

Ketua Perangkawan Malaysia

Julai 2024

The Economic Census 2023 Mining and quarrying sector publication presents the statistics obtained from the Economic Census 2023 for the reference year 2022. The census covered all registered establishments engaged in economic activities including Mining and quarrying sector. The establishments are classified according to Malaysia Standard Industrial Classification (MSIC) 2008 Version 1.0, following the International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4, 2008. The previous census was conducted in 2016, for the reference year of 2015.

Key statistics pertaining to number of establishments, gross output, intermediate input, value added, persons engaged, salaries & wages and fixed assets are reported in this publication at national and state level. Additionally, statistics women ownership are also presented. These statistics can be used by government agencies, economists, academicians, private sectors and individuals for planning and formulating policies, economic analysis, projections and assisting in business development planning.

The publication is divided into four parts. The first part displays the main highlights of statistics for the Mining and quarrying sector, followed by a summary of findings in the second part. Meanwhile, the third part provides detailed statistical tables, while the fourth part covers technical aspects, including scope and coverage, concepts and definitions, and explanations of key variables.

The Department of Statistics Malaysia (DOSM) gratefully acknowledges the cooperation of all parties who have provided the required data and contributed to the success of this publication. Every feedback and suggestion towards improving future reports is highly appreciated.

DATO' SRI DR. MOHD UZIR MAHIDIN

Chief Statistician Malaysia

July 2024

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SOROTAN UTAMA

MAIN HIGHLIGHTS

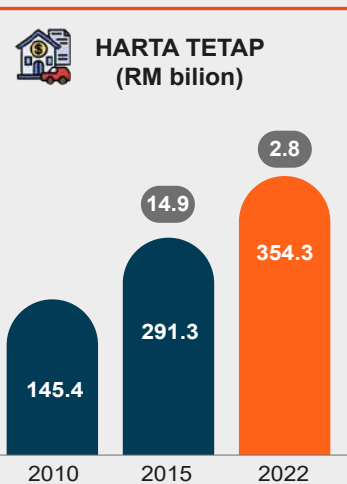
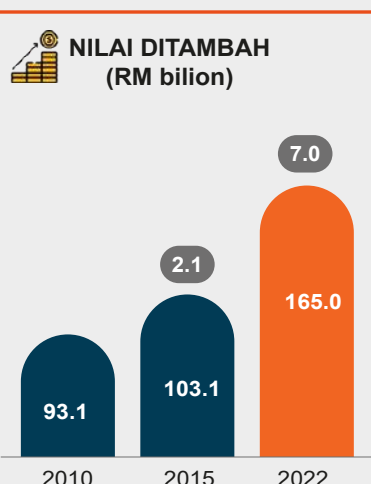
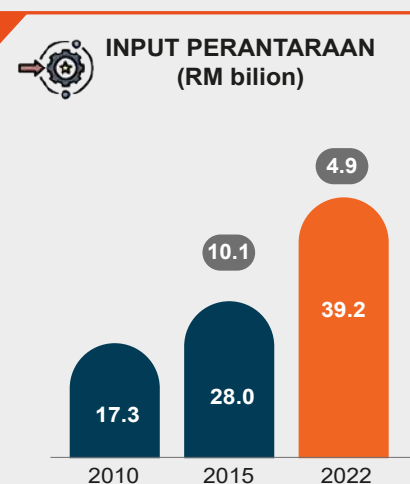
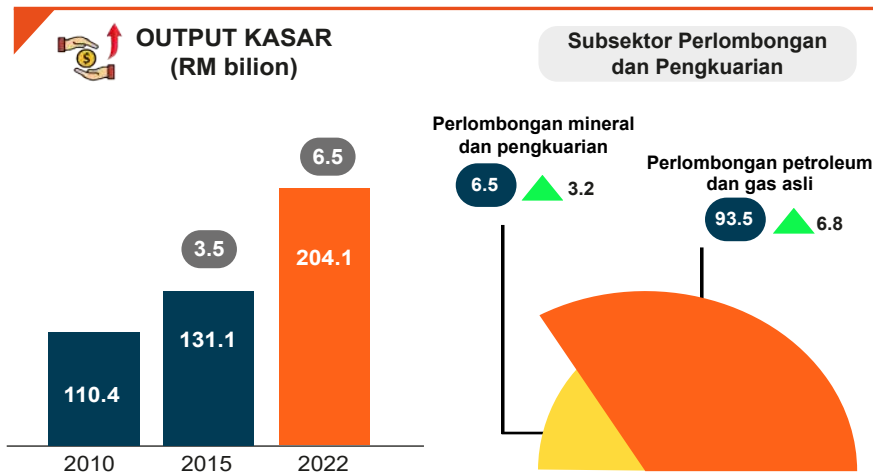
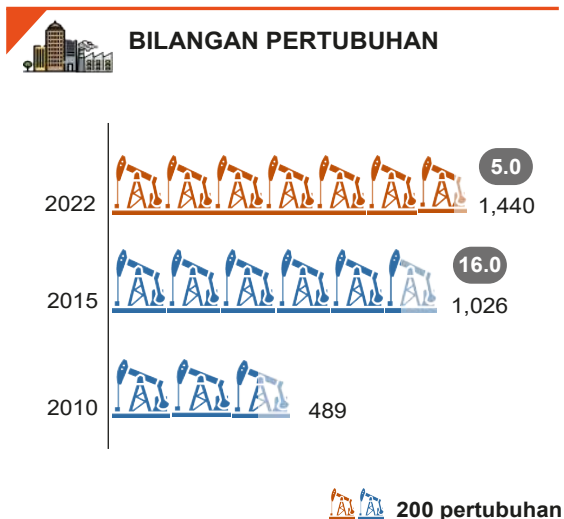


BAHAGIAN 1
PART **1**

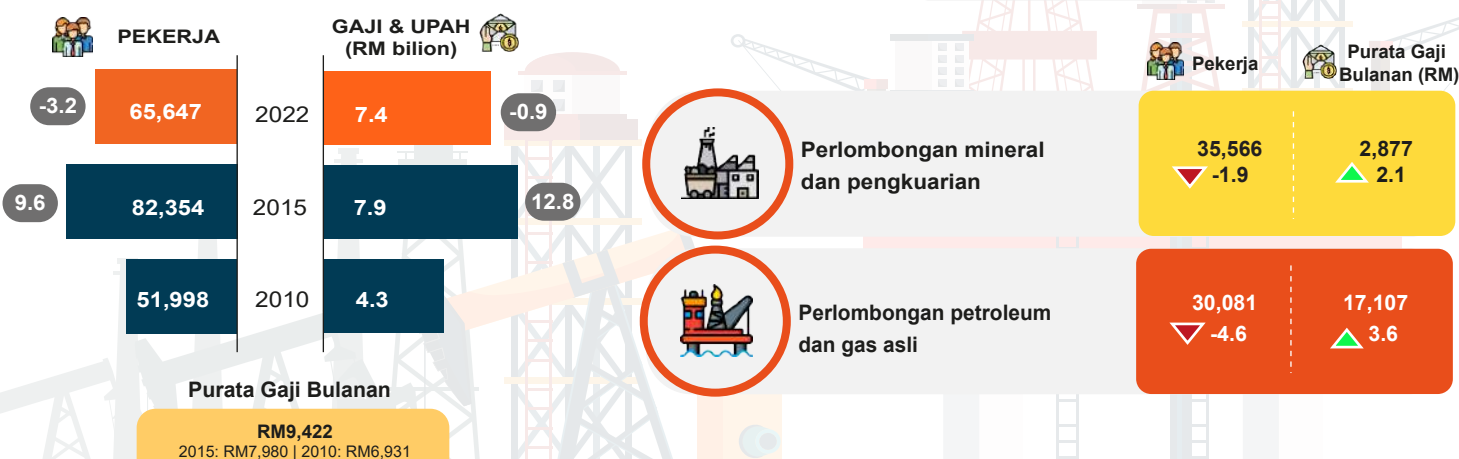
BANCI EKONOMI 2023 PERLOMBONGAN DAN PENGKUARIAN

STATISTIK UTAMA

Sektor Perlombongan dan pengkuarian mencapai RM204.1 bilion nilai output kasar, menunjukkan peningkatan tahunan sebanyak 6.5 peratus pada tahun 2022



PEKERJA DAN GAJI & UPAH



Nota:
▲ Kadar Pertumbuhan Tahunan (CAGR)
● Peratusan Sumbangan

BANCI EKONOMI 2023 PERLOMBONGAN DAN PENGKUARIAN

STATISTIK UTAMA NEGERI

		OUTPUT KASAR	INPUT PERANTARAAN	NILAI DITAMBAH	PEKERJA	GAJI & UPAH	HARTA TETAP
Johor		RM2.64b	RM1.56b	RM1.07b	4,431	RM0.16b	RM0.65b
Kedah		RM0.12b	RM0.07b	RM0.05b	483	RM0.01b	RM0.04b
Kelantan		RM0.55b	RM0.28b	RM0.27b	1,963	RM0.06b	RM0.27b
Melaka		RM0.13b	RM0.08b	RM0.06b	477	RM0.01b	RM0.08b
Negeri Sembilan		RM0.40b	RM0.22b	RM0.18b	1,561	RM0.05b	RM0.12b
Pahang		RM1.96b	RM1.06b	RM0.91b	4,312	RM0.14b	RM0.70b
Pulau Pinang		RM0.76b	RM0.39b	RM0.37b	1,603	RM0.06b	RM0.47b
Perak		RM1.70b	RM0.89b	RM0.81b	5,105	RM0.17b	RM1.07b
Perlis		RM0.06b	RM0.03b	RM0.02b	203	RM0.01b	RM0.01b
Selangor		RM5.13b	RM2.75b	RM2.38b	12,316	RM0.49b	RM0.90b
Terengganu		RM1.23b	RM0.60b	RM0.62b	1,731	RM0.10b	RM1.21b
Sabah		RM47.92b	RM7.05b	RM40.87b	5,246	RM0.75b	RM61.71b
Sarawak		RM73.98b	RM11.52b	RM62.47b	12,309	RM1.88b	RM102.97b
Wilayah Persekutuan*		RM8.91b	RM4.11b	RM4.80b	4,599	RM0.51b	RM4.51b
Supra		RM58.67b	RM8.54b	RM50.12b	9,308	RM2.99b	RM179.64b

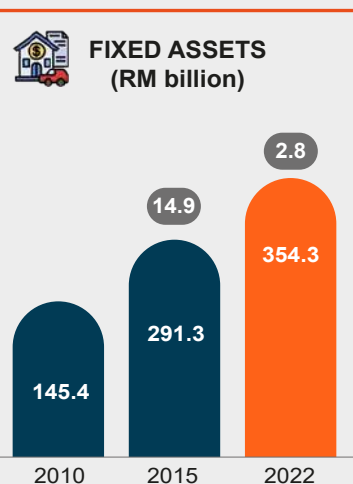
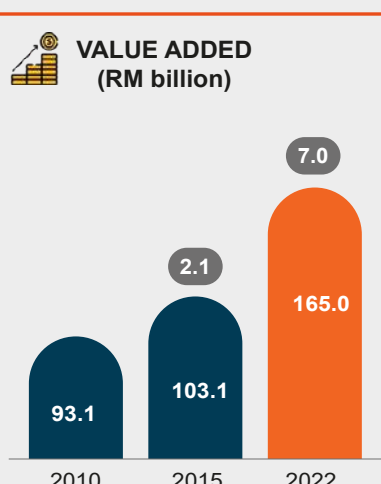
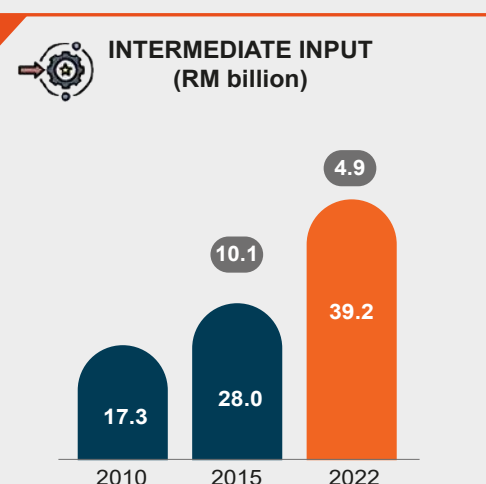
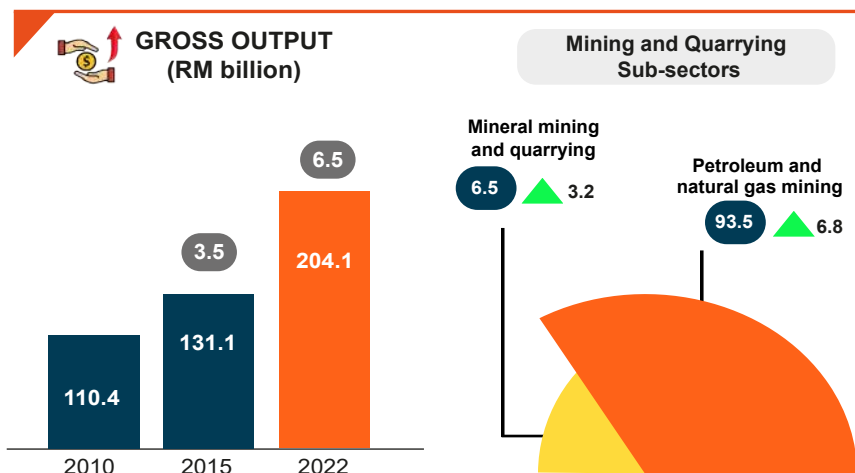
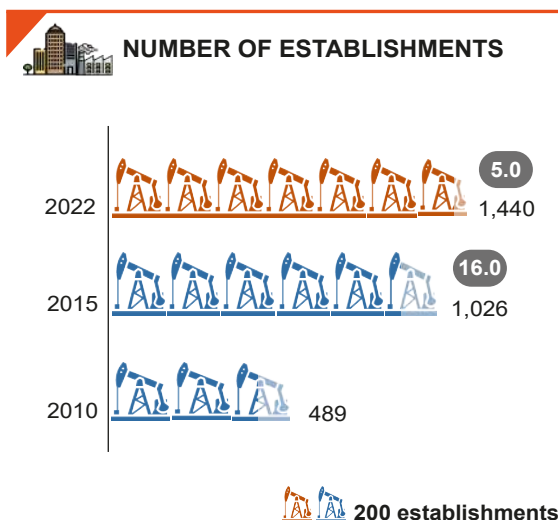
Nota: * Termasuk W.P. Kuala Lumpur dan W.P. Labuan

Nota: b: bilion

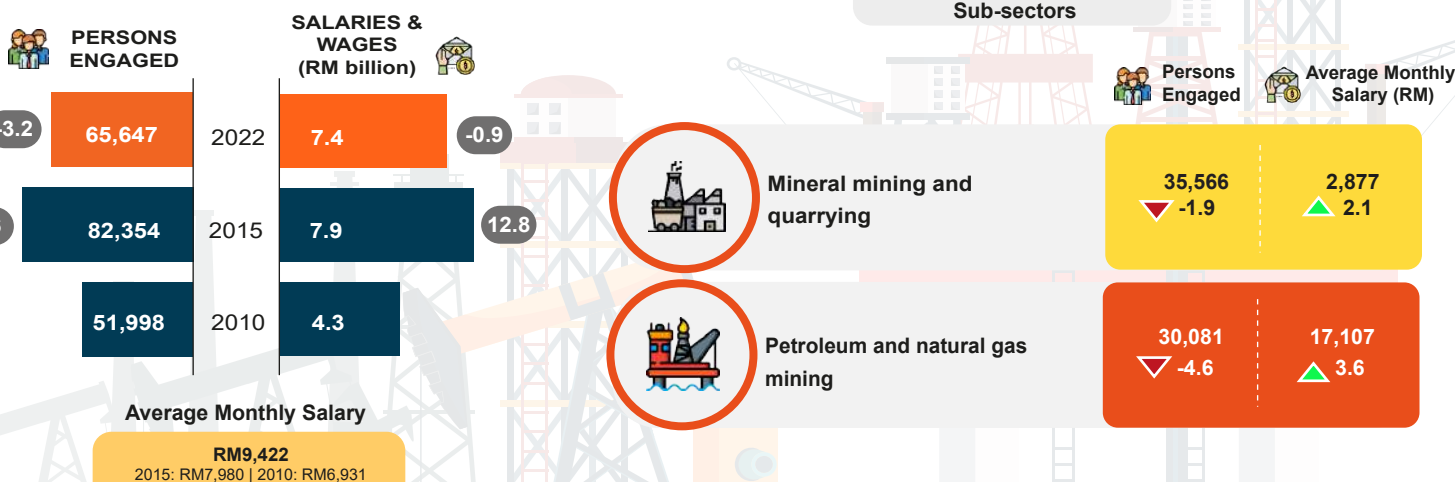
ECONOMIC CENSUS 2023 MINING AND QUARRYING SECTOR

KEY STATISTICS

The Mining and quarrying sector reached RM204.1 billion of gross output value, reflecting an annual increase of 6.5 per cent in 2022



PERSONS ENGAGED AND SALARIES & WAGES



Note:
 Compound Annual Growth Rate (CAGR)
 Percentage Share



ECONOMIC CENSUS 2023 MINING AND QUARRYING SECTOR

STATES KEY STATISTICS

		GROSS OUTPUT 	INTERMEDIATE INPUT 	VALUE ADDED 	PERSONS ENGAGED 	SALARIES & WAGES 	FIXED ASSETS
Johor		RM2.64b	RM1.56b	RM1.07b	4,431	RM0.16b	RM0.65b
Kedah		RM0.12b	RM0.07b	RM0.05b	483	RM0.01b	RM0.04b
Kelantan		RM0.55b	RM0.28b	RM0.27b	1,963	RM0.06b	RM0.27b
Melaka		RM0.13b	RM0.08b	RM0.06b	477	RM0.01b	RM0.08b
Negeri Sembilan		RM0.40b	RM0.22b	RM0.18b	1,561	RM0.05b	RM0.12b
Pahang		RM1.96b	RM1.06b	RM0.91b	4,312	RM0.14b	RM0.70b
Pulau Pinang		RM0.76b	RM0.39b	RM0.37b	1,603	RM0.06b	RM0.47b
Perak		RM1.70b	RM0.89b	RM0.81b	5,105	RM0.17b	RM1.07b
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Supra		RM58.67b	RM8.54b	RM50.12b	9,308	RM2.99b	RM179.64b

Note: * Including W.P. Kuala Lumpur and W.P. Labuan

Note: b: billion

Source: Economic Census 2023, Mining and Quarrying
Department of Statistics Malaysia (DOSM)

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RINGKASAN PENEMUAN

*SUMMARY OF
FINDINGS*



BAHAGIAN 2
PART **2**

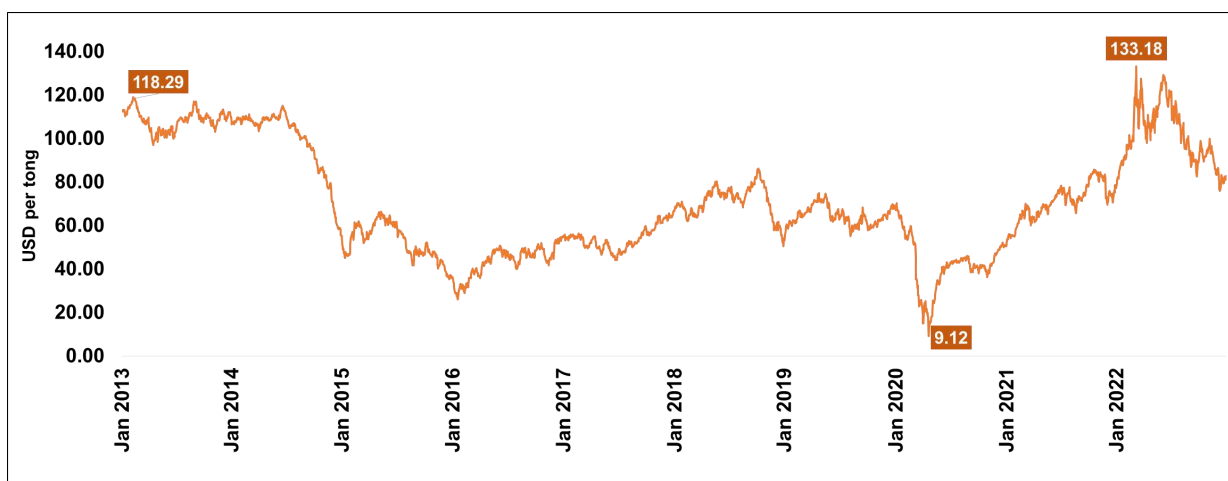
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1. Pengenalan

Ekonomi dunia menghadapi pelbagai cabaran dan peluang pada tahun 2022. Meskipun serata dunia sedang mengalami pemulihan daripada COVID-19, kesannya tidak sekata di mana terdapat rantau yang mengalami pertumbuhan pesat manakala yang selainnya berhadapan dengan kemelesetan.

Selain itu, dunia turut berdepan dengan kemelut pergolakan geopolitik, terutamanya pencerobohan Rusia ke atas Ukraine pada Februari 2022. Pergolakan ini menyebabkan krisis kemanusiaan yang semakin membimbangkan serta menjejaskan rantai bekalan pelbagai komoditi penting, terutamanya yang telah memberi kesan kepada harga minyak mentah Brent. Harga minyak telah melonjak dari harga terendah pada USD9.12 per tong pada April 2020 hingga harga tertinggi pada USD133.18 per tong pada Mac 2022 (**Carta 1**). Oleh itu, kos pengeluaran telah meningkat merentasi pelbagai sektor ekonomi yang telah memberi kesan kepada kebanyakan negara, termasuk Malaysia.

Carta 1: Harga Minyak Mentah Brent Harian (USD per tong), 2013 - 2022



Sumber: U.S. Energy Information Administration

Seperti negara-negara lain, Malaysia turut menghadapi cabaran ekonomi pada ketika itu. Dari segi pertumbuhan ekonomi, ekonomi Malaysia mencatatkan peningkatan ketara sebanyak 8.9 peratus pada tahun 2022 berbanding 3.3 peratus pada tahun sebelumnya. Sektor Perlombongan dan pengkuarian pula mencatatkan pertumbuhan sebanyak 3.5 peratus pada tahun 2022, meningkat daripada 0.9 peratus pada tahun sebelumnya. Prestasi ini didorong terutamanya oleh subsektor Perlombongan petroleum dan gas asli, yang menyumbang sebanyak 93.5 peratus daripada jumlah RM190.8 bilion. Peningkatan prestasi dalam sektor Perlombongan dan pengkuarian ini menggariskan kepentingan berterusan industri petroleum dan gas asli kepada pembangunan ekonomi Malaysia.

Bagi mendapatkan pemahaman yang lebih baik terhadap struktur ekonomi bagi tahun 2022, Jabatan Perangkaan Malaysia (DOSM) telah menjalankan Banci Ekonomi 2023. Inisiatif ini bertujuan untuk mendapatkan gambaran yang lebih mendalam mengenai pertumbuhan ekonomi dan mengenal pasti sebarang ketidakseimbangan yang memerlukan perhatian serta memberikan gambaran yang lebih jelas tentang keadaan ekonomi negara. Data yang dikumpul daripada banci ini berfungsi sebagai asas penting bagi Kerajaan, pelabur dan penyelidik untuk membuat keputusan yang lebih baik dan pembentukan strategi dan dasar yang berkesan untuk menggerakkan ekonomi negara ke hadapan.

Laporan ini membentangkan statistik bagi sektor Perlombongan dan pengkuarian yang diperoleh daripada Banci Ekonomi 2023 bagi tahun rujukan 2022. Statistik utama yang diliputi dalam laporan ini terdiri daripada output kasar, input perantaraan, nilai ditambah, pekerja, gaji & upah dan harta tetap. Liputan Banci Ekonomi 2023 bagi sektor Perlombongan dan pengkuarian merangkumi 56 industri berdasarkan Piawaian Klasifikasi Industri Malaysia (MSIC) 2008 Versi 1.0. Sektor Perlombongan dan pengkuarian terdiri daripada dua subsektor iaitu Perlombongan petroleum & gas asli dan Perlombongan mineral & pengkuarian.

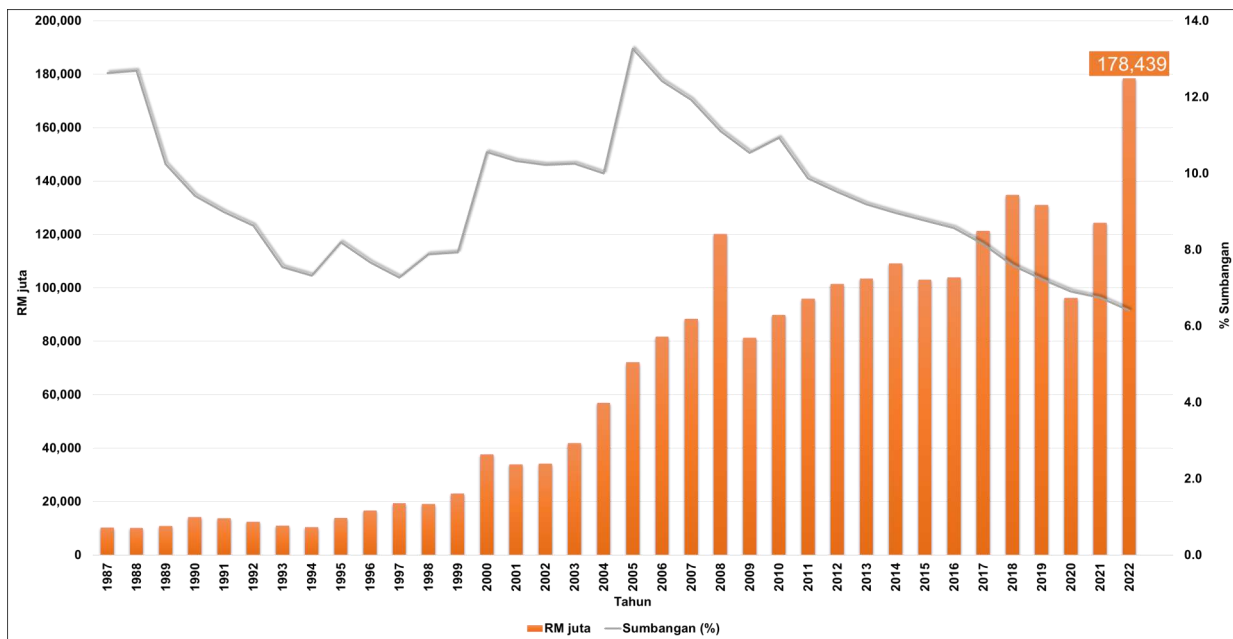
2. Prestasi Sektor Perlombongan dan Pengkuarian

Selepas kemerdekaan, aktiviti perlombongan di Malaysia diperluaskan kepada pengestrakan mineral seperti emas, bauksit, dan bijih besi. Sementara itu, pengeluaran timah yang merupakan salah satu jenis perlombongan terawal yang beroperasi di negara ini, merosot pada tahun 1980-an disebabkan oleh kejatuhan harga global dan kekurangan deposit yang mudah diakses. Selain itu, tumpuan diberikan kepada pengeluaran petroleum dan gas asli bernilai tinggi berlaku selaras dengan Akta Perlombongan Petroleum 1966 (Akta 95). Sejak itu, aktiviti ini terus berkembang dan kemudiannya menjadi salah satu kawasan strategik untuk pembangunan ekonomi negara.

Pada pertengahan tahun 2010-an, Malaysia muncul sebagai pengeluar bauksit yang signifikan, terutamanya di negeri Pahang. Peningkatan mendadak dalam pengeluaran bauksit ini didorong oleh peningkatan permintaan global untuk mineral tersebut, terutamanya dari China, yang telah menjadi pengguna bauksit terbesar di dunia seiring dengan industri aluminiumnya yang berkembang pesat untuk memenuhi keperluan ekonomi yang sedang membangun. Walau bagaimanapun, perkembangan pesat dalam perlombongan bauksit ini menimbulkan kebimbangan alam sekitar yang serius. Sebagai tindak balas, kerajaan kemudiannya mengenakan larangan sementara ke atas perlombongan bauksit dari Januari 2016 hingga Mac 2019 untuk menangani isu-isu alam sekitar ini.

Dalam beberapa tahun kebelakangan ini, sektor Perlombongan dan pengkuarian telah memainkan peranan penting dalam memacu pertumbuhan ekonomi Malaysia secara keseluruhan, seperti yang ditunjukkan oleh sumbangan besarnya kepada Keluaran Dalam Negeri Kasar (KDNK) negara. Sektor Perlombongan dan pengkuarian mencatatkan pertumbuhan sebanyak 3.5 peratus pada tahun 2022, meningkat daripada 0.9 peratus pada tahun sebelumnya. Pada masa yang sama, seperti di **Carta 2**, sektor ini menjana KDNK sebanyak RM178.4 bilion pada harga semasa pada tahun 2022, menunjukkan peningkatan yang signifikan kepada 43.5 peratus berbanding tahun sebelumnya.

Carta 2: Sumbangan Sektor Perlombongan dan Pengkuarian kepada Ekonomi Malaysia, 1987 - 2022



Sumber: Jabatan Perangkaan Malaysia (DOSM)

Sektor Perlombongan dan pengkuarian di Malaysia mencapai nilai output kasar yang memberangsangkan sebanyak RM204.1 bilion pada tahun 2022, menunjukkan peningkatan tahunan 6.5 peratus berbanding RM131.1 bilion pada tahun 2015. Pertumbuhan positif ini menunjukkan daya tahan sektor ini dan permintaan yang kukuh terhadap sumber asli negara. Seiring dengan peningkatan output kasar, nilai input perantara juga meningkat 4.9 peratus setahun kepada RM39.2 bilion, menunjukkan peningkatan kecekapan operasi dan pelaburan dalam sektor ini. Peningkatan output dan input ini menghasilkan nilai tambah yang signifikan, RM165.0 bilion pada tahun 2022, meningkat 7.0 peratus setahun berbanding tahun 2015. Walau bagaimanapun, bilangan pekerja dalam sektor ini berkurang daripada 82,354 orang pada tahun 2015 kepada 65,647 orang pada tahun 2022. Pengurangan guna tenaga ini berkaitan dengan peningkatan automasi dan kemajuan teknologi. Selaras dengan pengurangan bilangan pekerja, jumlah gaji dan upah menurun kepada RM7.4 bilion seperti yang ditunjukkan dalam **Paparan 1**.

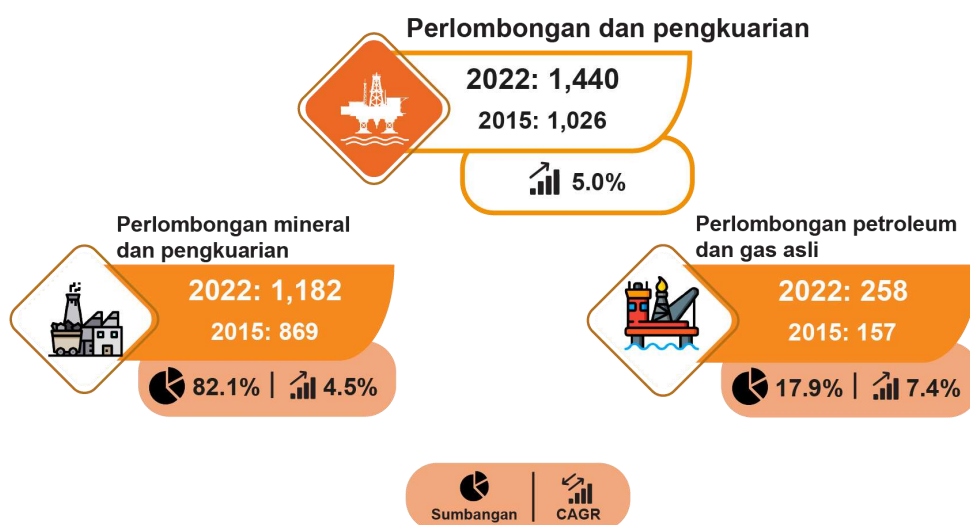
Paparan 1: Statistik Utama Sektor Perlombongan dan Pengkuarian, 2015 dan 2022

	2015	2022	CAGR 2022/2015
 Bilangan Pertubuhan	1,026	1,440	5.0%
 Output Kasar	RM131.1 bilion	RM204.1 bilion	6.5%
 Input Perantaraan	RM28.0 bilion	RM39.2 bilion	4.9%
 Nilai Ditambah	RM103.1 bilion	RM165.0 bilion	7.0%
 Pekerja	82,354	65,647	-3.2%
 Gaji & Upah	RM7.9 bilion	RM7.4 bilion	-0.9%
 Harta Tetap	RM291.3 bilion	RM354.3 bilion	2.8%

3. Bilangan Pertubuhan

Sektor Perlombongan dan pengkuarian merekodkan purata pertumbuhan tahunan sebanyak 5.0 peratus, mencapai jumlah 1,440 pertubuhan pada tahun 2022. Daripada jumlah ini, subsektor Perlombongan mineral dan pengkuarian merupakan penyumbang utama dengan 82.1 peratus atau 1,182 pertubuhan, diikuti dengan subsektor Perlombongan petroleum dan gas asli iaitu sebanyak 258 pertubuhan atau 17.9 peratus pada tahun 2022. Kedua-dua subsektor ini mencatatkan peningkatan purata pertumbuhan tahunan bagi tempoh 2015 hingga 2022, dengan subsektor Perlombongan petroleum dan gas asli meningkat kepada 7.4 peratus, manakala subsektor Perlombongan mineral dan pengkuarian meningkat sebanyak 4.5 peratus seperti yang ditunjukkan dalam **Paparan 2**.

Paparan 2: Bilangan Pertubuhan mengikut Subsektor, 2015 dan 2022



4. Output Kasar

Output kasar sektor Perlombongan dan pengkuarian merekodkan nilai purata pertumbuhan tahunan 6.5 peratus bagi tempoh 2015 ke 2022, dengan nilai RM131.1 bilion pada tahun 2015 kepada RM204.1 bilion pada tahun 2022. Peningkatan ini disokong terutamanya oleh subsektor Perlombongan petroleum dan gas asli yang menyumbang 93.5 peratus daripada jumlah keseluruhan, dengan nilai RM190.8 bilion pada tahun 2022. Sementara itu, subsektor Perlombongan mineral dan pengkuarian turut menunjukkan peningkatan kepada 3.2 peratus dengan output kasar sebanyak RM13.3 bilion seperti di **Paparan 3**.

Paparan 3: Output Kasar mengikut Subsektor, 2015 dan 2022

	Output Kasar (RM bilion)		Sumbangan (%)		CAGR (%)
	2015	2022	2015	2022	2022/2015
 Perlombongan dan pengkuarian	131.1	204.1	100	100	6.5
 Perlombongan petroleum dan gas asli	120.4	190.8	91.9	93.5	6.8
 Perlombongan mineral dan pengkuarian	10.7	13.3	8.1	6.5	3.2

5. Input Perantaraan

Sektor Perlombongan dan pengkuarian mencatatkan nilai purata pertumbuhan tahunan 4.9 peratus berjumlah RM39.2 bilion pada 2022, berbanding RM28.0 bilion pada 2015. Prestasi ini disumbangkan oleh subsektor Perlombongan petroleum dan gas asli yang meningkat kepada 5.6 peratus dengan nilai RM31.5 bilion, berbanding RM21.6 bilion pada 2015. Sementara itu, subsektor Perlombongan mineral dan pengkuarian turut meningkat kepada 2.5 peratus dengan nilai RM7.7 bilion pada tahun 2022 seperti di **Paparan 4**. Peningkatan dalam input perantaraan ini sebahagian besarnya dipengaruhi oleh kenaikan harga pengeluaran tempatan dan harga minyak mentah global.

Paparan 4: Input Perantaraan mengikut Subsektor, 2015 dan 2022

	Input Perantaraan (RM bilion)		Sumbangan (%)		CAGR (%)
	2015	2022	2015	2022	2022/2015
 Perlombongan dan pengkuarian	28.0	39.2	100	100	4.9
 Perlombongan petroleum dan gas asli	21.6	31.5	77.0	80.5	5.6
 Perlombongan mineral dan pengkuarian	6.4	7.7	23.0	19.5	2.5

6. Nilai Ditambah

Pertumbuhan nilai ditambah sektor ini kekal positif, 7.0 peratus dengan RM165.0 bilion pada 2022 walaupun input perantaraan meningkat. Peningkatan ini dipacu oleh subsektor Perlombongan petroleum dan gas asli yang menyumbang hampir dua pertiga daripada jumlah keseluruhan dengan nilai RM159.3 bilion (sumbangan: 96.6%). Subsektor ini menunjukkan pertumbuhan yang lebih baik iaitu 7.1 peratus (2015: RM98.8 bilion). Subsektor Perlombongan mineral dan pengkuarian mencatatkan RM5.7 bilion (sumbangan: 3.4%), dengan pertumbuhan tahunan sebanyak 4.3 peratus berbanding RM4.2 bilion pada 2015 seperti di **Paparan 5**.

Paparan 5: Nilai Ditambah mengikut Subsektor, 2015 dan 2022

	Nilai Ditambah (RM bilion)		Sumbangan (%)		CAGR (%)
	2015	2022	2015	2022	2022/2015
 Perlombongan dan pengkuarian	103.1	165.0	100	100	7.0
 Perlombongan petroleum dan gas asli	98.8	159.3	95.9	96.6	7.1
 Perlombongan mineral dan pengkuarian	4.2	5.7	4.1	3.4	4.3

7. Pekerja dan Gaji & Upah

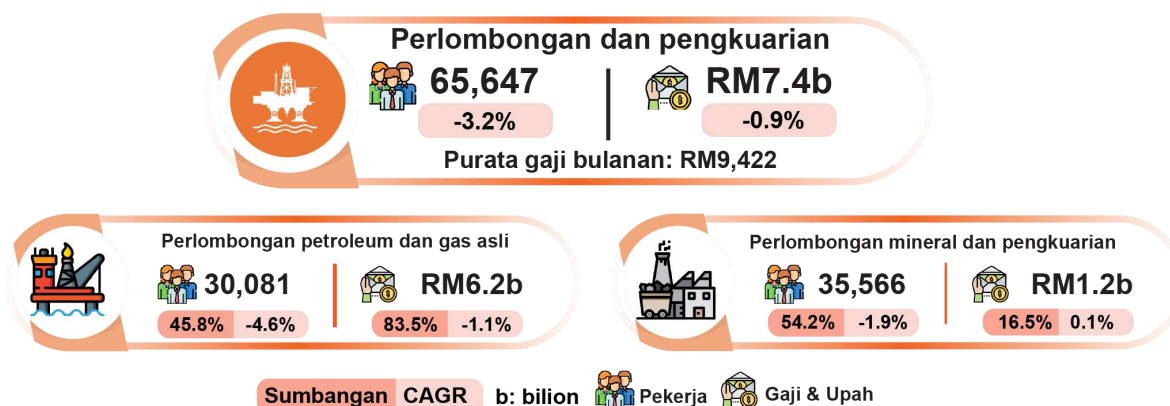
7.1 Pekerja dan Gaji & Upah mengikut Subsektor

Nilai purata pertumbuhan tahunan bagi bilangan pekerja sektor ini menurun 3.2 peratus kepada 65,647 orang pada 2022 berbanding 82,354 orang pada 2015. Lebih separuh pekerja tertumpu kepada subsektor Perlombongan mineral dan pengkuarian dengan sumbangan sebanyak 54.2 peratus atau seramai 35,566 orang seperti di **Paparan 6**. Sementara itu, bilangan pekerja bagi subsektor Perlombongan petroleum dan gas asli merangkumi 45.8 peratus dengan jumlah 30,081 orang pada 2022.

Selari dengan penurunan bilangan pekerja, jumlah gaji & upah untuk sektor Perlombongan dan pengkuarian juga menurun 0.9 peratus dengan jumlah RM7.4 bilion pada 2022, berbanding RM7.9 bilion pada 2015. Jumlah gaji & upah yang lebih rendah ini adalah disebabkan oleh subsektor Perlombongan petroleum dan gas asli yang menyusut 1.1 peratus dengan jumlah RM6.2 bilion (sumbangan: 83.5%).

Purata gaji & upah dalam sektor Perlombongan dan pengkuarian kekal tertinggi dalam sektor ekonomi kepada RM9,422 sebulan pada tahun 2022 berbanding RM7,980 sebulan yang dicatatkan pada tahun 2015.

Paparan 6: Pekerja dan Gaji & Upah mengikut Subsektor, 2022



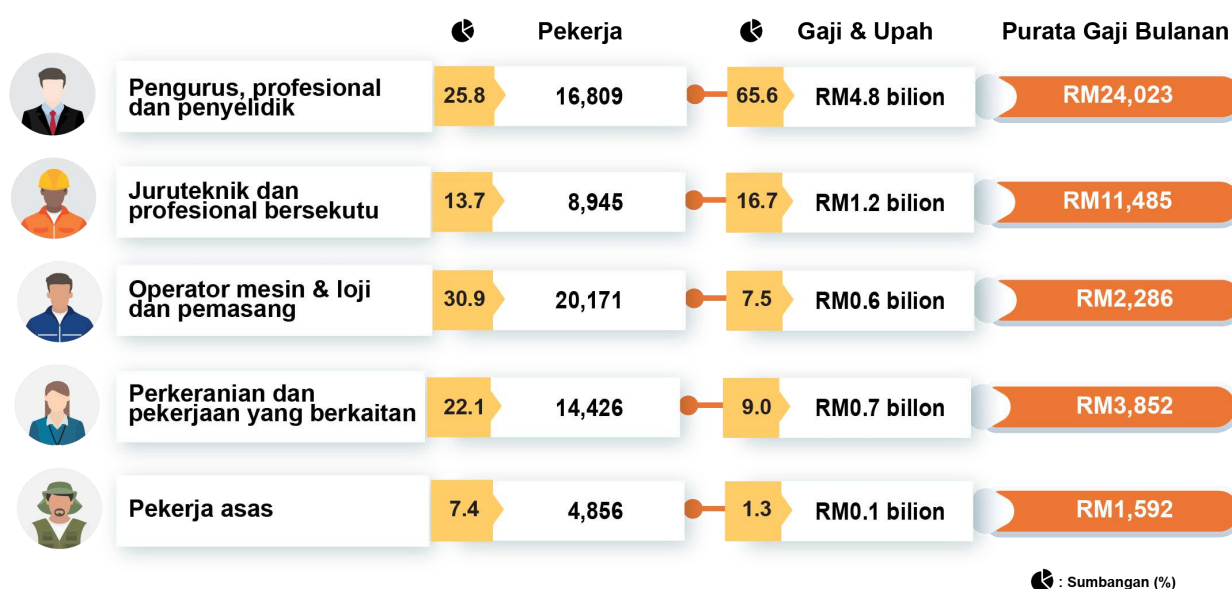
7.2 Pekerja Bergaji Sepenuh Masa dan Gaji & Upah mengikut Kategori Pekerja

Secara keseluruhannya, sektor Perlombongan dan pengkuarian didominasi oleh pekerja bergaji sepenuh masa seramai 65,207 orang. Operator mesin, loji dan pemasangan mendominasi pasaran tenaga kerja dengan sumbangan sebanyak 30.9 peratus dengan jumlah 20,171 orang. Bagi kategori pengurus, profesional dan penyelidik mewakili 16,809 orang (sumbangan: 25.8%) manakala perkeranian dan pekerjaan yang berkaitan merangkumi 22.1 peratus atau 14,426 orang. Ketiga-tiga kategori ini mewakili 78.8 peratus dengan jumlah 51,406 orang (**Paparan 7**).

Operator mesin & loji dan pemasang mencatatkan bilangan pekerja yang paling ramai. Namun, dari segi gaji & upah, kategori pengurus, profesional dan penyelidik merekodkan gaji & upah tertinggi dengan nilai RM4.8 bilion (sumbangan: 65.6%). Diikuti juruteknik dan profesional bersekutu, dengan nilai yang disumbang RM1.2 bilion (sumbangan: 16.7%) dan seterusnya perkeranian dan pekerjaan yang berkaitan RM0.7 bilion (sumbangan: 9.0%).

Purata gaji bulanan tertinggi diterima oleh kategori pengurus, profesional dan penyelidik dengan nilai RM24,023. Ini diikuti oleh kategori juruteknik dan profesional bersekutu (RM11,485) serta perkeranian dan pekerjaan yang berkaitan (RM3,852).

Paparan 7: Pekerja Bergaji Sepenuh Masa dan Gaji & Upah mengikut Kategori Pekerja, 2022



7.3 Pekerja Bergaji Sepenuh Masa dan Gaji & Upah mengikut Kategori Kemahiran

Pekerja separuh mahir merekodkan bilangan pekerja tertinggi dengan jumlah 34,597 orang (sumbangan: 53.1%) diikuti dengan pekerja mahir seramai 25,754 orang (sumbangan: 39.5%) dan pekerja berkemahiran rendah dengan jumlah 4,856 orang (sumbangan: 7.4%).

Gaji & upah pekerja mahir mencatatkan lebih daripada dua pertiga jumlah sumbangan bersamaan 82.2 peratus dengan nilai RM6.1 bilion, manakala kategori pekerja separuh mahir dan berkemahiran rendah menerima bayaran sebanyak RM1.3 bilion pada 2022.

Pekerja mahir menerima purata gaji & upah tertinggi dengan nilai RM19,668 sebulan. Ini diikuti pekerja separuh mahir sebanyak RM2,939 dan pekerja berkemahiran rendah menerima RM1,592 (**Paparan 8**).

Paparan 8: Pekerja Bergaji Sepenuh Masa dan Gaji & Upah mengikut Kategori Kemahiran, 2022

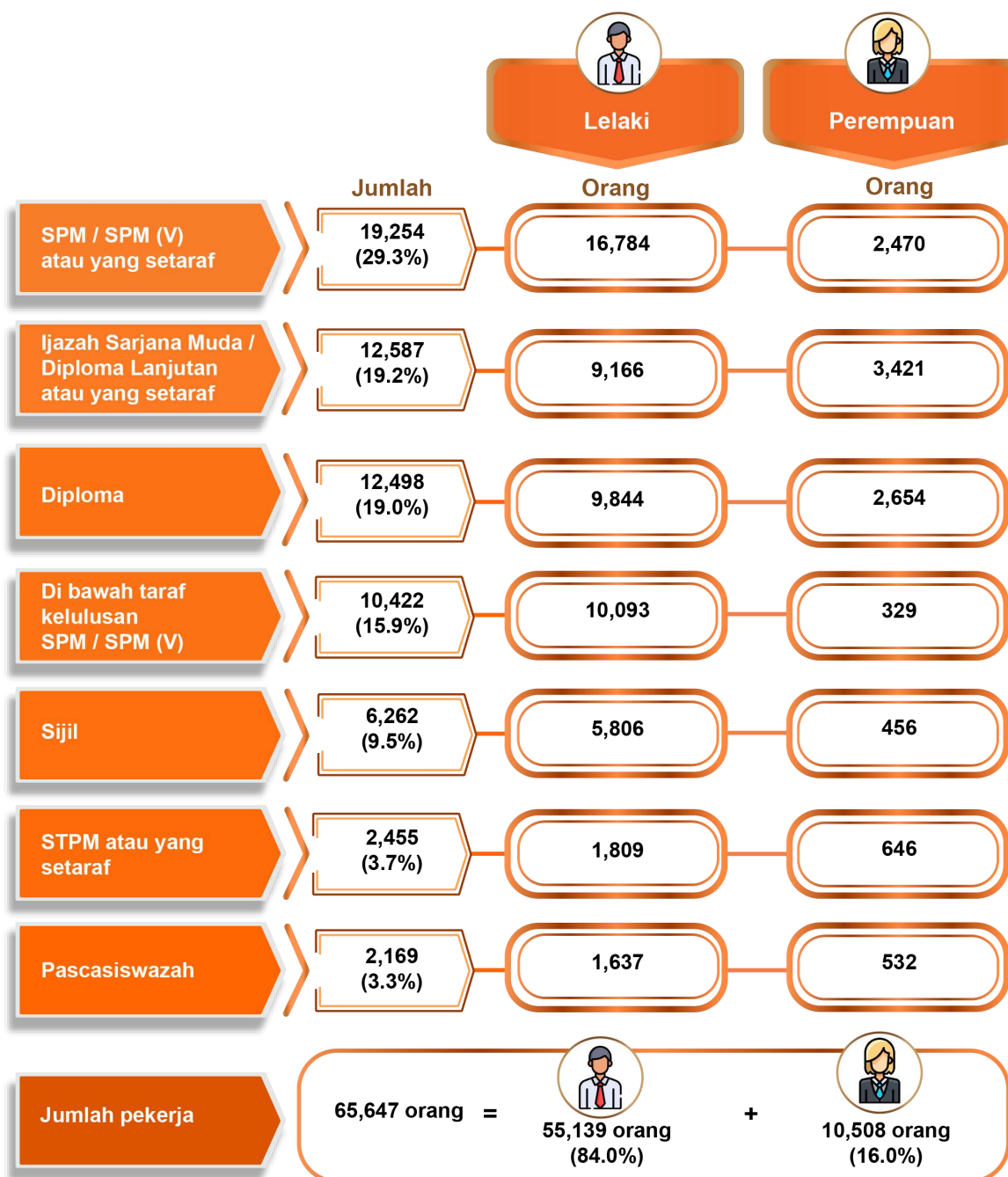


7.4 Pekerja mengikut Sijil Tertinggi Diperoleh

Pekerja berkelulusan SPM / SPM (V) atau yang setaraf mencatatkan jumlah pekerja tertinggi iaitu seramai 19,254 orang dengan sumbangan 29.3 peratus. Ini diikuti oleh pekerja yang berkelulusan ijazah sarjana muda / diploma lanjutan atau yang setaraf iaitu 12,587 orang (sumbangan: 19.2%) dan pekerja berkelulusan diploma merekodkan jumlah ketiga tertinggi bagi sektor ini dengan 12,498 orang (sumbangan: 19.0%) seperti di **Paparan 9**.

Lelaki merupakan penyumbang terbesar sebanyak 84.0 peratus merangkumi 55,139 orang, manakala perempuan menyumbang sebanyak 16.0 peratus dengan 10,508 orang.

Paparan 9: Pekerja mengikut Sijil Tertinggi Diperoleh, 2022



?: Sumbangan

8. Harta Tetap

Harta tetap sektor Perlombongan dan pengkuarian merekodkan nilai purata pertumbuhan tahunan 2.8 peratus bagi tempoh tahun 2015 ke 2022, dengan nilai RM291.3 bilion pada tahun 2015 kepada RM354.3 bilion pada tahun 2022. Peningkatan ini terutamanya disokong oleh subsektor Perlombongan petroleum dan gas asli yang menyumbang 98.6 peratus daripada jumlah keseluruhan, dengan nilai RM349.3 bilion pada tahun 2022. Sementara itu, subsektor Perlombongan mineral dan pengkuarian turut menunjukkan pertumbuhan tahunan 0.5 peratus dengan harta tetap sebanyak RM5.0 bilion seperti di **Paparan 10**.

Paparan 10: Harta Tetap mengikut Subsektor, 2015 dan 2022

	Harta Tetap (RM bilion)		Sumbangan (%)		CAGR (%)
	2015	2022	2015	2022	2022/2015
 Perlombongan dan pengkuarian	291.3	354.3	100	100	2.8
 Perlombongan petroleum dan gas asli	286.4	349.3	98.3	98.6	2.9
 Perlombongan mineral dan pengkuarian	4.8	5.0	1.7	1.4	0.5

9. Pertubuhan Milikan Wanita

Bilangan pertubuhan milikan wanita dalam sektor Perlombongan dan pengkuarian secara keseluruhannya merekodkan 12 pertubuhan dengan sumbangan 0.01 peratus pada tahun 2022. Pertubuhan ini menyumbang RM24.3 juta nilai output kasar dengan nilai ditambah berjumlah RM11.1 juta. Sementara itu, terdapat 176 orang pekerja di pertubuhan ini seperti di **Paparan 11**.

Paparan 11: Statistik Utama bagi Pertubuhan Milikan Wanita, 2022

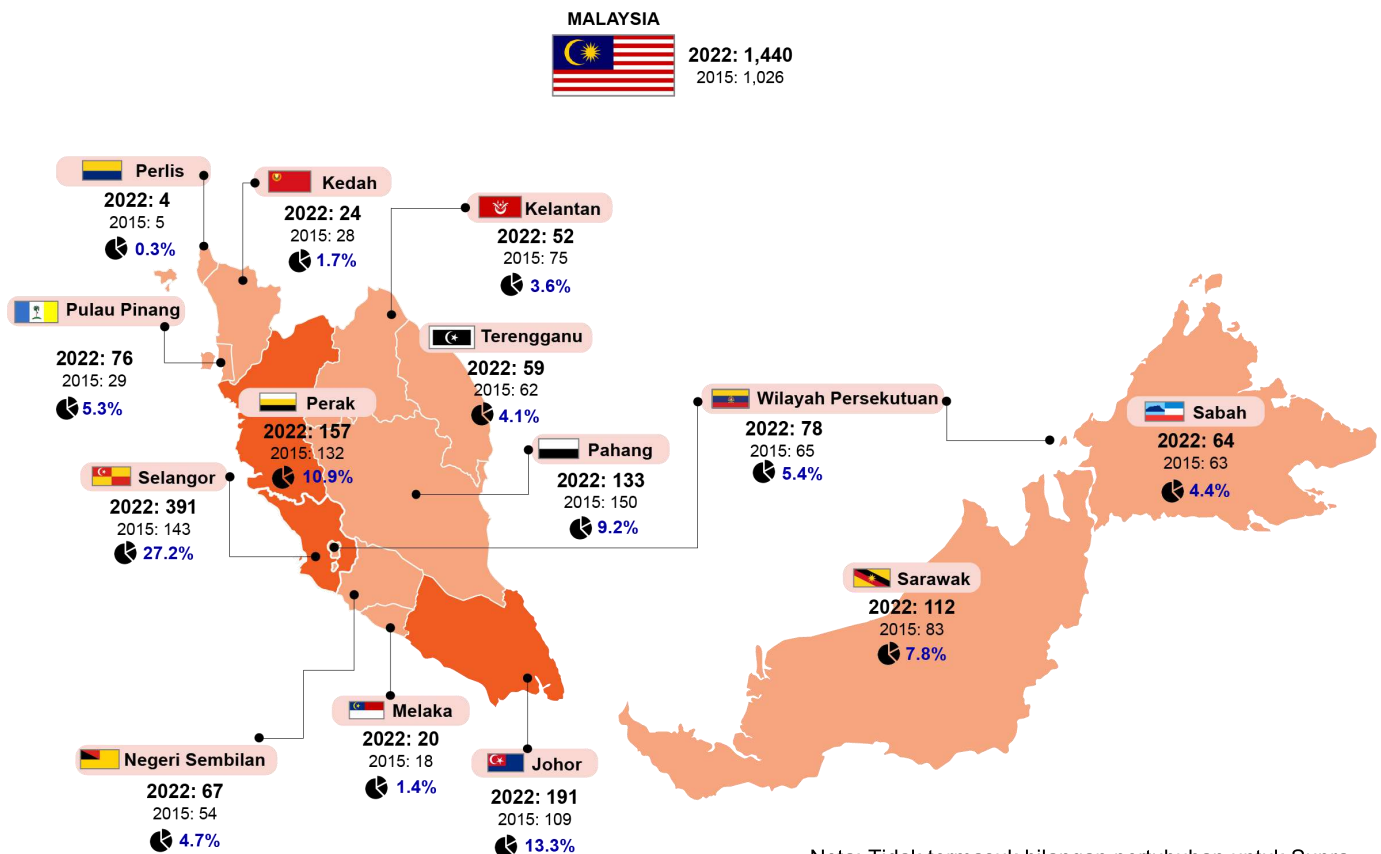
 Perlombongan dan Pengkuarian	Nilai Pertubuhan Milikan Wanita	Nilai Sektor	Sumbangan Sektor
 Bilangan Pertubuhan	12	1,440	0.01%
 Output Kasar	RM24.3 juta	RM204.1 bilion	0.0001%
 Input Perantaraan	RM13.2 juta	RM39.2 bilion	0.0003%
 Nilai Ditambah	RM11.1 juta	RM165.0 bilion	0.0001%
 Pekerja	176	65,647	0.003%
 Gaji & Upah	RM5.4 juta	RM7.4 bilion	0.001%
 Harta Tetap	RM8.9 juta	RM354.3 bilion	0.00002%

10. Prestasi mengikut Negeri

10.1 Bilangan Pertubuhan mengikut Negeri

Selangor mencatatkan bilangan pertubuhan tertinggi iaitu sebanyak 391 pertubuhan (sumbangan: 27.2%), diikuti oleh Johor 191 pertubuhan (sumbangan: 13.3%) dan Perak 157 pertubuhan (sumbangan: 10.9%) seperti di **Paparan 12**. Gabungan ketiga-tiga negeri ini mewakili lebih separuh daripada jumlah keseluruhan pertubuhan (sumbangan: 51.3%) dalam sektor Perlombongan dan pengkuarian.

Paparan 12: Bilangan Pertubuhan mengikut Negeri, 2015 dan 2022



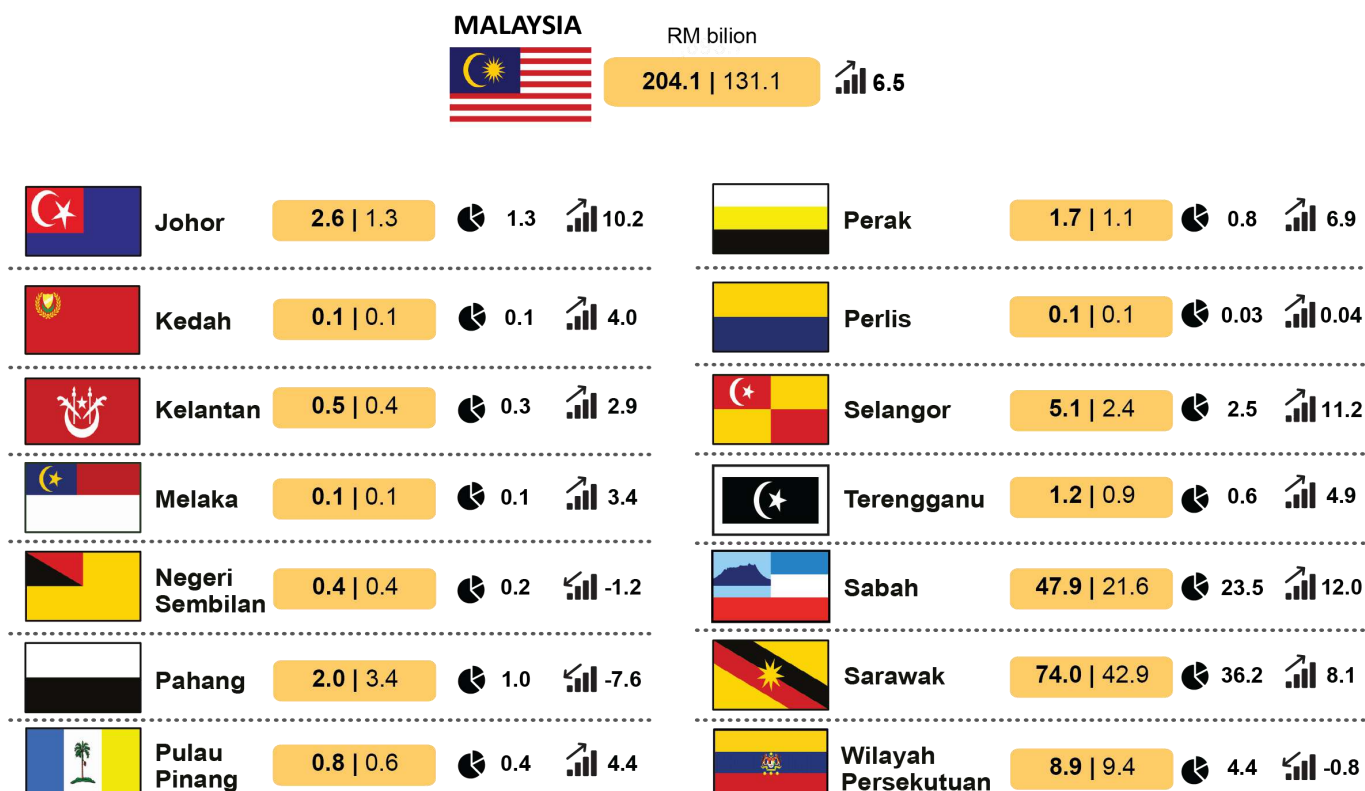
Sumbangan 2022

10.2 Output Kasar mengikut Negeri

Sarawak terus mendominasi sektor Perlombongan dan pengkuarian dengan nilai output kasar sebanyak RM74.0 bilion yang menyumbang 36.2 peratus. Ini diikuti Sabah menyumbang 23.5 peratus dengan output kasar sebanyak RM47.9 bilion. Seterusnya, Wilayah Persekutuan dan Selangor masing-masing menyumbang RM8.9 bilion (sumbangan: 4.4%) dan RM5.1 bilion (sumbangan: 2.5%). Secara kolektif, empat negeri ini menyumbang 66.6 peratus daripada jumlah keseluruhan, dengan nilai RM135.9 bilion.

Selain itu, nilai purata pertumbuhan tahunan yang positif bagi tempoh tahun 2015 ke 2022 turut dilihat di Sabah, 12.0 peratus, Selangor 11.2 peratus, Johor 10.2 peratus dan Sarawak sebagai penyumbang utama turut menunjukkan peningkatan 8.1 peratus. Sementara itu, Pahang mengalami penurunan kepada 7.6 peratus dengan jumlah keseluruhan sebanyak RM2.0 bilion berbanding RM3.4 bilion pada 2015 (**Paparan 13**).

Paparan 13: Output Kasar mengikut Negeri, 2015 dan 2022



Nota: Tidak termasuk output kasar untuk Supra

2022 | 2015

RM bilion



Kadar pertumbuhan tahunan (%)



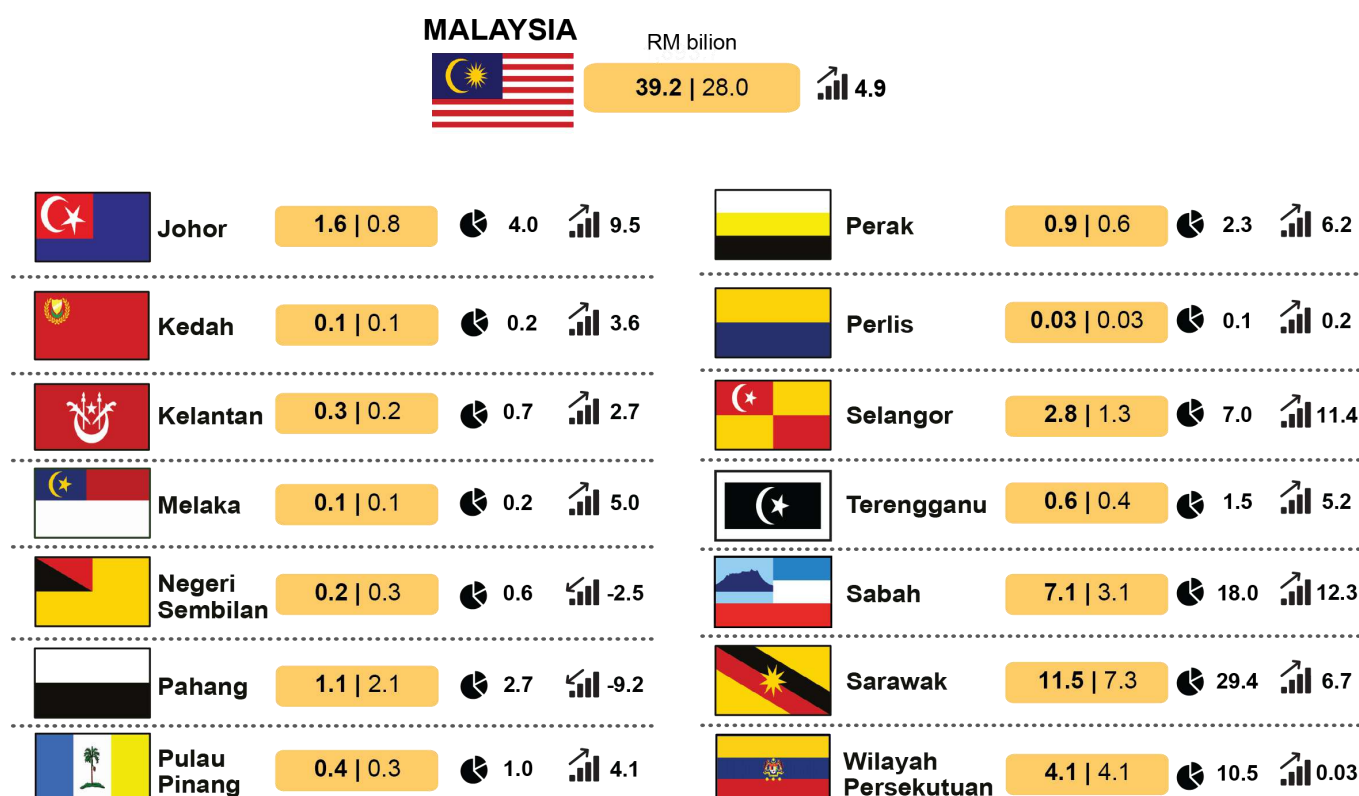
Sumbangan (%)

10.3 Input Perantaraan mengikut Negeri

Sarawak memegang sumbangan tertinggi dalam input perantaraan yang mewakili 29.4 peratus daripada jumlah keseluruhan RM11.5 bilion, dengan peningkatan purata pertumbuhan tahunan 6.7 peratus berbanding banci sebelumnya (2015: RM7.3 bilion). Ini diikuti oleh Sabah, dengan sumbangan 18.0 peratus, menunjukkan peningkatan 12.3 peratus kepada RM7.1 bilion. Seterusnya, Selangor dengan sumbangan 7.0 peratus, mencatatkan RM2.8 bilion pada tahun 2022. Ketiga-tiga negeri ini menyumbang 54.4 peratus daripada jumlah input perantaraan dalam sektor Perlombongan dan pengkuarian.

Sabah mencatatkan pertumbuhan tahunan tertinggi bagi tempoh tahun 2015 ke 2022 dengan 12.3 peratus, mencapai RM7.1 bilion pada 2022, naik berbanding RM3.1 bilion pada 2015. Selangor turut merekodkan pertumbuhan dua digit, 11.4 peratus berbanding RM1.3 bilion yang direkodkan pada 2015 seperti di **Paparan 14**. Sarawak sebagai penyumbang utama menunjukkan peningkatan 6.7 peratus (2015: RM7.3 bilion). Sebaliknya, Pahang mengalami penurunan dalam input perantaraan sebanyak 9.2 peratus, berjumlah RM1.1 bilion pada 2022 (2015: RM2.1 bilion), sejajar dengan penurunan dalam output kasar.

Paparan 14: Input Perantaraan mengikut Negeri, 2015 dan 2022



Nota: Tidak termasuk input perantaraan untuk Supra

2022 | 2015

RM bilion



Kadar pertumbuhan tahunan (%)



Sumbangan (%)

10.4 Nilai Ditambah mengikut Negeri

Selaras dengan prestasi output kasar, Sarawak menyumbang nilai tambah tertinggi sebanyak RM62.5 bilion yang mewakili 37.9 peratus pada tahun 2022. Ini diikuti oleh Sabah dengan RM40.9 bilion (sumbangan: 24.8%) dan Wilayah Persekutuan dengan RM4.8 bilion (sumbangan: 2.9%). Ketiga-tiga negeri ini menyumbang 65.5 peratus kepada sektor Perlombongan dan pengkuarian berjumlah RM108.1 bilion.

Sabah mencatatkan pertumbuhan tahunan dua digit bagi tempoh tahun 2015 ke 2022 sebanyak 12.0 peratus, meningkat kepada RM40.9 bilion pada tahun 2022 berbanding RM18.5 bilion pada tahun 2015. Diikuti Johor yang menunjukkan pertumbuhan 11.3 peratus daripada RM0.5 bilion pada tahun 2015 kepada RM1.1 bilion. Sarawak sebagai penyumbang utama juga menunjukkan pertumbuhan 8.4 peratus, bertumbuh daripada RM 35.6 bilion pada 2015 seperti di **Paparan 15**.

Paparan 15: Nilai Ditambah mengikut Negeri, 2015 dan 2022



Nota: Tidak termasuk nilai ditambah untuk Supra

2022 | 2015

RM bilion



Kadar pertumbuhan tahunan (%)



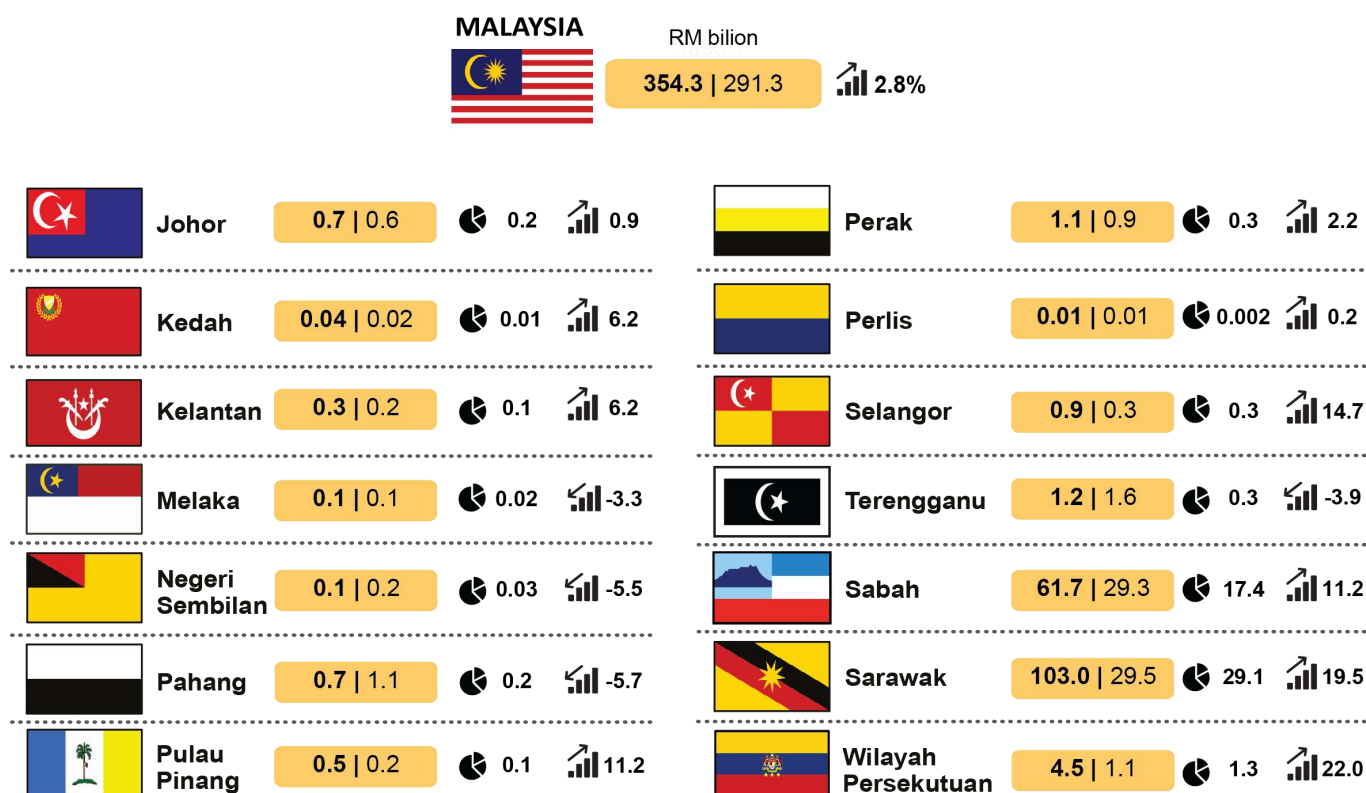
Sumbangan (%)

10.5 Harta Tetap mengikut Negeri

Sarawak mendominasi sektor Perlombongan dan pengkuarian dengan nilai harta tetap sebanyak RM103.0 bilion (sumbangan: 29.1%). Diikuti oleh Sabah dengan RM61.7 bilion, menyumbang 17.4 peratus. Seterusnya, Wilayah Persekutuan dengan RM4.5 bilion, menyumbang 1.3 peratus. Secara kolektif, tiga negeri ini menyumbang 47.7 peratus daripada jumlah keseluruhan, dengan nilai RM169.2 bilion.

Selain itu, nilai purata pertumbuhan tahunan yang signifikan bagi tempoh tahun 2015 ke 2022 turut dilihat di Sarawak sebagai penyumbang utama dengan 19.5 peratus. Selain itu, Wilayah Persekutuan menunjukkan pertumbuhan tahunan, 22.0 peratus, Selangor 14.7 peratus, Sabah 11.2 peratus dan Pulau Pinang 11.2 peratus. Sementara itu, Pahang mengalami penurunan kepada 5.7 peratus dengan jumlah keseluruhan sebanyak RM0.7 bilion berbanding RM1.1 bilion pada tahun 2015 (**Paparan 16**).

Paparan 16: Harta Tetap mengikut Negeri, 2015 dan 2022



Nota: Tidak termasuk harta tetap untuk Supra

2022 | 2015 RM bilion

 Kadar pertumbuhan tahunan (%)

 Sumbangan (%)

Pengeluaran Minyak Mentah dan Gas Asli di Malaysia: Trend dan Faktor yang Mempengaruhi

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Jabatan Perangkaan Malaysia.

1. Pendahuluan

Malaysia, sebuah negara di Asia Tenggara, memegang peranan penting dalam industri minyak dan gas asli global. Sejak penemuan medan minyak komersial pertama pada tahun 1910, negara secara konsisten meningkatkan kapasiti pengeluarannya, menjadi pemain utama di rantau ini. PETRONAS melaporkan sepuluh penemuan hidrokarbon di Malaysia sepanjang 2022, menunjukkan kejayaan berterusan dalam penerokaan sumber ini.

Subsektor minyak dan gas memainkan peranan penting dalam ekonomi Malaysia, menyumbang utama kepada Keluaran Dalam Negeri Kasar (KDNK), eksport dan hasil kerajaan. Berdasarkan *ISEAS Perspective 2022/21*, Malaysia merupakan pengeluar minyak kedua terbesar di Asia Tenggara dan pengeksport ketiga terbesar bagi gas asli cecair (LNG) di dunia. Pada penghujung tahun 2022, negara memiliki rizab minyak sebanyak 6.9 billion tong minyak setara dan gas asli berjumlah 32.1 trilion kaki padu. Pada tahun 2023, minyak mentah menyumbang kira-kira 6 peratus kepada keseluruhan ekonomi, bernilai RM97.5 bilion (DOSM, 2024). Eksport minyak mentah dan kondensat merekodkan RM31.9 bilion, manakala eksport LNG berjumlah RM59.6 bilion pada tahun 2023.

Ketidakpastian global, termasuk ketegangan geopolitik dan keadaan kewangan yang goyah, memberi bayangan kepada prospek ekonomi untuk 2024, seperti yang diketengahkan oleh Forum Ekonomi Dunia. Persekitaran yang mencabar ini secara langsung memberi kesan kepada pengeluaran dan trajektori ekonomi minyak mentah dan gas asli. Konflik Rusia-Ukraine, misalnya, telah mengakibatkan turun naik yang ketara dalam pasaran LNG global, mendorong harga ke tahap yang belum pernah berlaku sebelum ini.

Walaupun banyak negara sedang berusaha untuk mengurangkan kebergantungan terhadap bahan api fosil kepada peralihan kepada sumber tenaga boleh diperbaharui, permintaan global untuk minyak mentah masih berterusan. Sebagai ekonomi kecil dan terbuka, Malaysia tidak terkecuali terkesan dengan trend global ini. Artikel ini mengupas trend dan faktor khusus yang membentuk landskap pengeluaran minyak mentah dan gas asli di Malaysia.

2. Trend Minyak Mentah dan Gas Asli Malaysia (2015 - 2023)

2.1 Pengeluaran Minyak Mentah dan Gas Asli

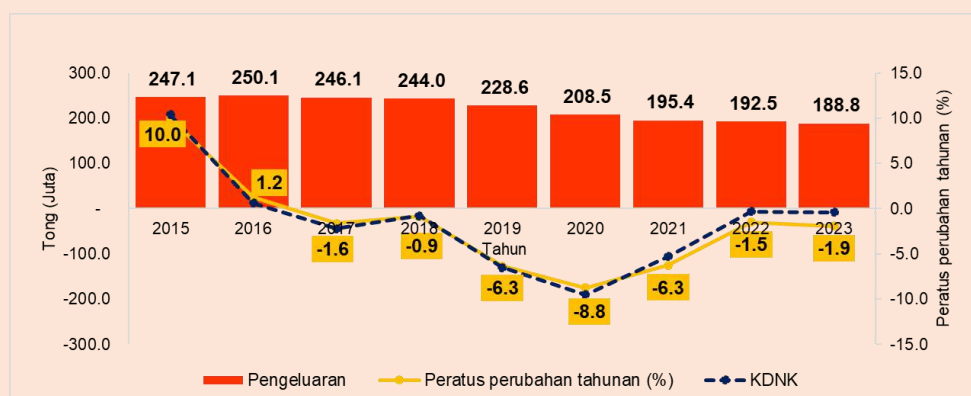
Subsektor minyak dan gas Malaysia sedang melalui tempoh peralihan. Ketika pengeluaran minyak mentah masih stabil, gas asli muncul sebagai pemacu pertumbuhan utama. Kejayaan dalam mengurus peralihan ini, mengadaptasi dengan trend tenaga global, dan memanfaatkan kemajuan teknologi adalah penting bagi Malaysia dalam mengekalkan kedudukannya sebagai pemain utama dalam pasaran tenaga global.

Pengeluaran minyak mentah telah menunjukkan trend penurunan selepas mencatatkan pertumbuhan yang signifikan sebanyak 10.0 peratus pada 2015 (**Carta 3**). Trend penurunan ini terus menyusut pada 2020, mencapai negatif 8.8 peratus, berikutan pandemik Coronavirus-19 pada tahun tersebut.

2.1.1 Minyak Mentah dan Kondensat

Sejarah Malaysia dalam pengeluaran minyak dan gas yang kukuh kini berada di persimpangan. Walaupun negara telah mencapai kejayaan dalam sektor ini, namun sejak beberapa tahun kebelakangan ini menunjukkan pengeluaran minyak mentah yang stagnan, menggambarkan potensi berada di kemuncak kapasiti, yang mana pengeluaran dijangka akan menurun selepasnya. Trend ini semakin meruncing disebabkan pandemik COVID-19, dengan pengeluaran minyak mentah masih berusaha untuk kembali pulih kepada pra-pandemik. Kejatuhan dalam pengeluaran minyak ini selari dengan trend penurunan dalam KDNK Malaysia dari tahun 2015 hingga 2023 seperti di **Carta 3**.

Carta 3: Pengeluaran, Peratus Perubahan Tahunan dan KDNK Minyak Mentah dan Kondensat, 2015 - 2023

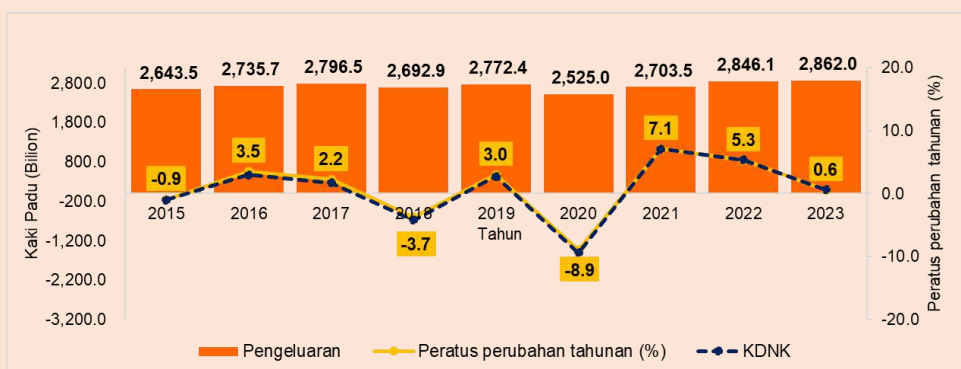


Sumber: Jabatan Perangkaan Malaysia (DOSM)

2.1.2 Gas Asli

Pengeluaran minyak mentah di Malaysia mengalami kemerosotan, industri gas asli menunjukkan pengukuhan dan pertumbuhan, terutamanya dalam tempoh pasca COVID-19. Trend positif ini dipacu oleh pengeluaran gas asli yang mencatatkan peningkatan yang signifikan daripada 2,525.0 bilion kaki padu pada tahun 2020 kepada 2,863.0 bilion kaki padu pada tahun 2023 seperti yang ditunjukkan dalam **Carta 4**. Pertumbuhan ini juga seiring dengan peningkatan dalam KDNK Malaysia, yang mana menggambarkan potensi manfaat ekonomi yang memberi keutamaan kepada pembangunan gas asli. Ini memberikan peluang strategik kepada Malaysia untuk mengimbangi penurunan pengeluaran minyak mentah dengan mengalihkan fokus dan pelaburan ke arah industri ini.

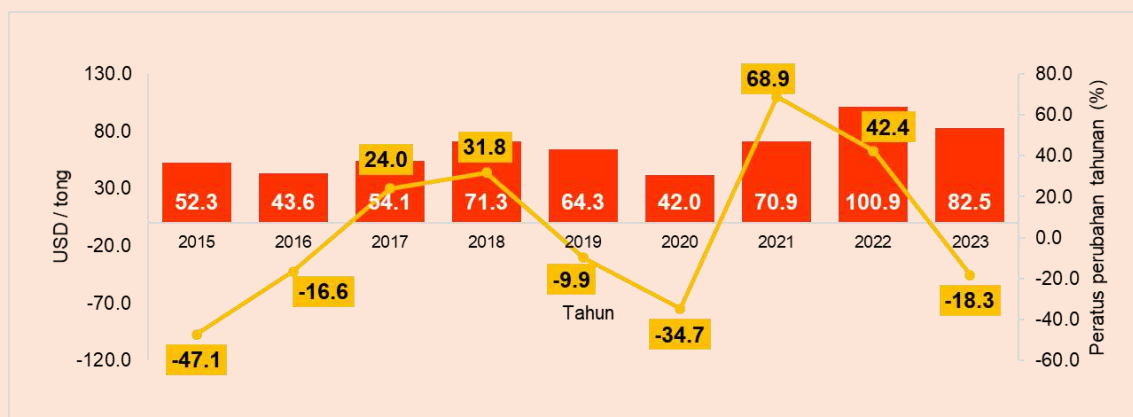
Carta 4: Pengeluaran, Peratus Perubahan Tahunan dan KDNK Gas Asli, 2015 - 2023



Sumber: Jabatan Perangkaan Malaysia (DOSM)

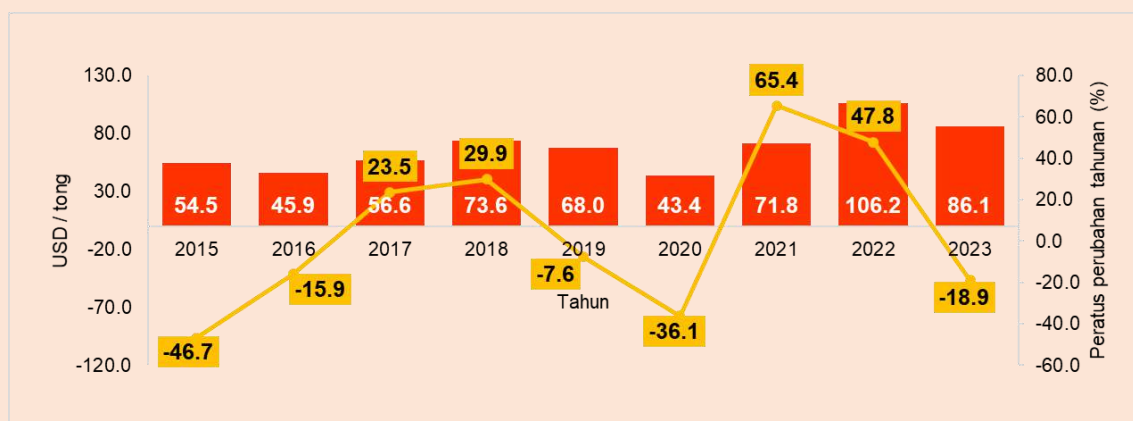
2.2 Harga Minyak Mentah dan Gas Asli

Brent, dihasilkan di Wilayah Laut Utara United Kingdom di Eropah Utara, berfungsi sebagai penanda aras global utama bagi dagangan minyak. Kemudahan penyimpanan yang luas, pasaran yang besar dan kandungan sulfurnya yang lebih tinggi menjadikannya bahan mentah yang digunakan secara meluas untuk pengeluaran minyak diesel. **Carta 5** memaparkan pergerakan harga Brent dari tahun 2015 hingga 2023. Carta ini menunjukkan turun naik harga bagi tempoh tersebut dengan harga tertinggi direkodkan pada 2022 iaitu USD100.9 per tong dengan pertumbuhan sebanyak 42.4 peratus. Sebaliknya, harga terendah dicatatkan pada tahun 2020 iaitu USD42.0 per tong, menunjukkan penyusutan 34.7 peratus.

Carta 5: Harga Brent Minyak Mentah, 2015 - 2023

Sumber: Jabatan Perangkaan Malaysia (DOSM)

Di Malaysia, harga minyak mentah diukur menggunakan Purata Harga 'Lifting' Berpemberat atau *Weighted Average Lifting Price* (WALP). **Carta 6** menunjukkan trend harga minyak mentah dan kondensat di Malaysia dari tahun 2015 hingga 2023. Harga minyak mentah melonjak dua digit sehingga 65.4 peratus, mencecah USD71.8 per tong pada 2021. Ini selepas merekodkan harga terendah pada 2020 bernilai USD43.4 per tong, dengan penurunan 36.1 peratus kesan daripada pandemik COVID-19. Harga tertinggi yang pernah direkodkan sejak tahun 2015 adalah USD106.2 per tong pada tahun 2022, mencatatkan pertumbuhan 47.8 peratus.

Carta 6: Harga WALP Minyak Mentah, 2015 - 2023

Sumber: Jabatan Perangkaan Malaysia (DOSM)

New York Mercantile Exchange (NYMEX) berfungsi sebagai platform dagangan global untuk gas asli dengan dirujuk sebagai *Henry Hub*. Terletak di pantai Teluk Louisiana, *Henry Hub* merupakan hab saluran paip yang bertindak sebagai titik pergerakan untuk kontrak niaga hadapan gas asli NYMEX. **Carta 7** memaparkan pergerakan harga NYMEX dari tahun 2015 hingga 2023. Pada tempoh 2015 hingga 2020, purata harga NYMEX dicatatkan dalam lingkungan USD2.0 sehingga USD3.2 per juta Btu. Harga terendah direkodkan pada tahun 2022, pada paras USD2.0 per juta Btu, penyusutan 20.7 peratus berikutan COVID-19. Seterusnya, harga melonjak ketara sehingga 91.6 peratus kepada USD3.9 per juta Btu pada tahun 2021. Harga tertinggi dicatatkan pada 2022, mencecah USD6.5 per juta Btu, menunjukkan peningkatan 65.8 peratus.

Carta 7: Harga NYMEX Gas Asli Cecair, 2015 - 2023



Sumber: Jabatan Perangkaan Malaysia (DOSM)

2.3 Faktor Mempengaruhi Trend Pengeluaran dan Harga Minyak Mentah dan Gas Asli

Antara faktor yang mempengaruhi pengeluaran dan trend harga minyak mentah dan gas asli ialah:

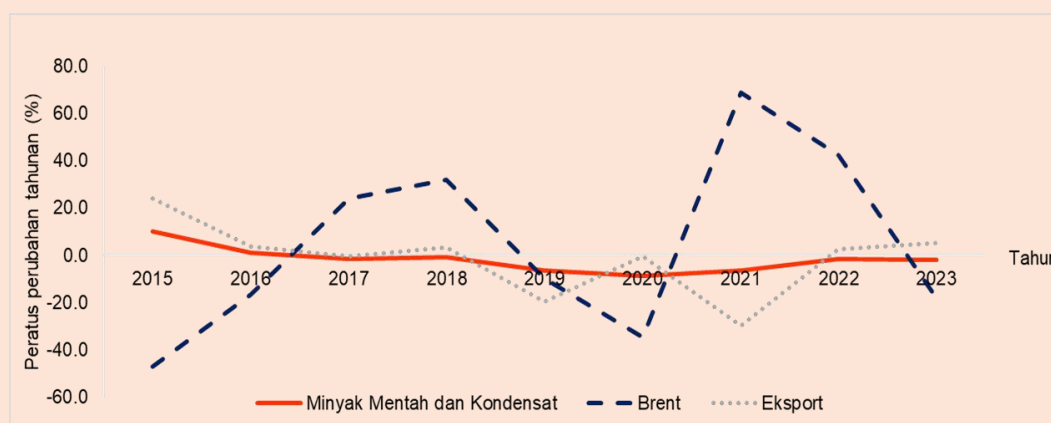
a. Harga sebagai Daya Penggerak

Harga adalah salah satu mekanisma penting dalam membentuk landskap ekonomi global. Turun naik harga minyak dunia global secara langsung mempengaruhi kebolehpayaan ekonomi dalam aktiviti penerokaan dan pengeluaran di Malaysia. Maji, Saari, Habibullah dan Utit (2017) menyatakan bahawa impak penurunan harga minyak pada tahun 2015 hingga 2016 terhadap ekonomi Malaysia.

Satu faktor penting ialah kadar tukaran dolar Amerika (USD), kerana minyak antarabangsa kebanyakan didagangkan dalam USD. Apabila dolar Amerika stabil, maka harga minyak turut stabil dan menurun. Sebaliknya, apabila dolar Amerika lemah, harga minyak akan menunjukkan trend menaik (Rong, Yanhui, Kai, Jinhong, 2022). Di samping itu, keseimbangan antara penawaran dan permintaan turut mempengaruhi trend pengeluaran dan harga, yang mana apabila permintaan lebih tinggi berbanding penawaran akan menyebabkan kenaikan harga.

Situasi ini ditunjukkan dalam prestasi eksport Malaysia, yang mana harga minyak Brent yang lebih tinggi membawa kepada peningkatan pertumbuhan eksport, walaupun tahap pengeluaran menurun seperti yang ditunjukkan di **Carta 8**. Contohnya, pada tahun 2015, walaupun pengeluaran minyak mentah jatuh, namun nilai eksport meningkat dipengaruhi oleh kenaikan harga Brent pada masa tersebut. Kebanyakan negara pengeksport minyak yang lain lebih cenderung untuk mengekalkan harga minyak tinggi apabila susut nilai Dolar Amerika kerana dapat mengurangkan kerugian dalam hasil minyak mereka. Paras harga yang tinggi akan memberi manfaat kepada hasil eksport minyak kerana Malaysia merupakan pengeksport bersih kerana dijual pada nilai yang lebih tinggi. Selain itu, kenaikan ini juga mendorong syarikat minyak utama untuk melabur dalam aktiviti eksplorasi dan pengeluaran dalam negara (FORBES, 2024).

Carta 8: Pengeluaran, Harga Brent dan Eksport Minyak Mentah dan Kondensat, 2015 - 2023



Sumber: Jabatan Perangkaan Malaysia (DOSM)

b. Gangguan Tidak Dijangka

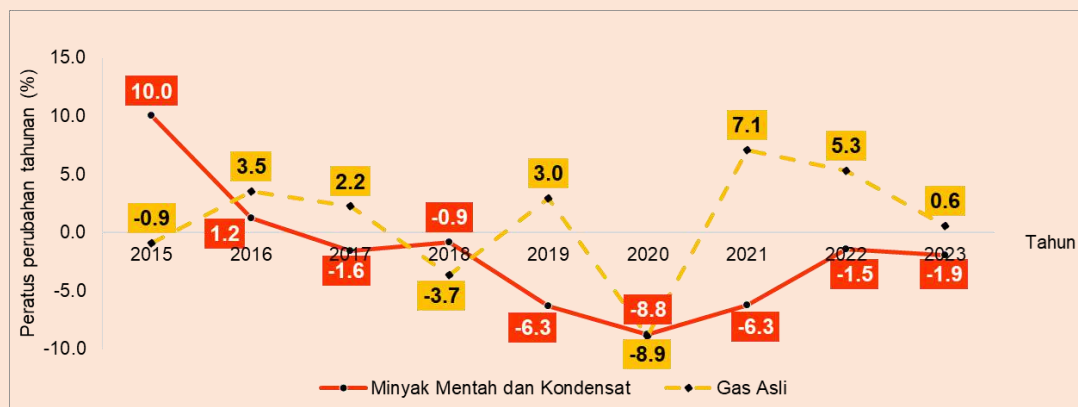
Faktor yang tidak dapat diramalkan seperti pandemik COVID-19 pada tahun 2020 telah memberikan impak yang besar kepada industri minyak dan gas. Industri mengalami kejatuhan harga untuk kali ketiga dalam tempoh 12 tahun selepas dua krisis terbesar sejak Perang Dunia Kedua dan kejatuhan harga penawaran pada 1986 (Qiang, Xuan, Rongrong, 2022). Namun, keadaan semasa tempoh pandemik tersebut agak unik kerana ia merupakan gabungan antara kejutan bekalan dan kejatuhan ketara serta tidak dijangkakan dalam permintaan komoditi, dengan krisis kesihatan global. Bukti trend pengeluaran dan harga dalam sektor minyak mentah dan gas asli bagi tahun 2020 dipaparkan di **Carta 3** hingga **7**.

Berikutan itu, untuk mengurangkan impak pasaran minyak yang lemah pada tempoh tersebut, banyak syarikat minyak dan gas antarabangsa, serta syarikat kimia telah bertindak pantas dengan mengurangkan perbelanjaan modal dan operasinya. Sebagai pemain utama dalam industri, PETRONAS turut mengikuti langkah yang sama dengan mengurangkan perbelanjaan modalnya dengan ketara sebanyak 21 peratus daripada RM50 bilion yang dirancang pada awalnya seperti dilaporkan oleh AEDS (2020). Ini secara langsung menunjukkan betapa seriusnya cabaran yang timbul ekoran pandemik tersebut.

c. Peralihan dan Diversifikasi Tenaga

Peralihan global ke arah sumber tenaga yang lebih mampan mendorong Malaysia untuk menyesuaikan dan mempelbagaikan portfolio tenaganya, yang mungkin akan memberi kesan yang signifikan kepada permintaan minyak dan gas masa hadapan. Malaysia secara progresif mempelbagaikan campuran tenaganya dengan menggabungkan pilihan tenaga boleh diperbaharui yang lebih luas seperti solar, angin dan tenaga hidro, dengan matlamat jangka panjang untuk mengurangkan kebergantungan kepada bahan api fosil. Walaupun menjadi pengeluar minyak utama, Malaysia secara berperingkat mengalihkan tumpuannya kepada gas asli, bahan api pembakaran yang mesra alam dengan permintaan domestik dan serantau yang kukuh. Peralihan ini dibuktikan dengan tumpuan strategik PETRONAS terhadap gas asli, dengan 70 peratus daripada pengeluaran semasa kepada gas asli. Malaysia mengambil kira keperluan untuk menyesuaikan diri dengan peralihan tenaga global dan sedang mengambil langkah proaktif untuk membangunkan sektor tenaga yang lebih mampan dan pelbagai. **Carta 9** menunjukkan pergerakan pengeluaran minyak mentah dan gas asli bagi tempoh 2015 hingga 2023. Pengeluaran gas asli dilihat meningkat dan semakin baik dalam tempoh tersebut.

Carta 9: Pengerakan Pengeluaran Minyak Mentah & Kondensat dan Gas Asli, 2015 - 2023



Sumber: Jabatan Perangkaan Malaysia (DOSM)

4. Penutup

Industri minyak dan gas merupakan sumber tenaga dan pendapatan yang penting bagi negara. Dengan sistem yang kian kompleks dan terdedah kepada pelbagai perkembangan global, perancangan perlu mengambil kira faktor jangka pendek dan panjang dalam memastikan kelestarian industri ini. Kebergantungan yang terlalu tinggi kepada hasil yang dijana daripada minyak semata-mata mengundang risiko terhadap ekonomi negara, terutamanya jika berlakunya ketidakpastian tidak dijangka seperti pandemik COVID-19.

Dengan peluncuran Pelan Hala Tuju Peralihan Tenaga Kebangsaan (NETR) sebagai penggerak kepada peralihan sektor tenaga, ia dapat mengurangkan kebergantungan ekonomi kepada pengeluaran minyak. Walau bagaimanapun, peralihan kepada ekonomi hijau turut berpotensi berhadapan pelbagai cabaran disebabkan oleh kebergantungan yang tinggi terhadap bahan api fosil seterusnya boleh melemahkan pertumbuhan ekonomi berikutan permintaan global yang beralih kepada sumber tenaga boleh diperbaharui. Oleh itu, bagi memastikan peralihan yang berkesan, negara perlu mempelbagaikan sumber tenaga, melabur dalam infrastruktur yang mampan, serta memastikan transisi yang adil dan saksama kepada industri berintensifkan karbon dan PMKS.

Penafian

Artikel ini merupakan pandangan peribadi penulis dan tidak mencerminkan pandangan Jabatan Perangkaan Malaysia (DOSM).

Rujukan

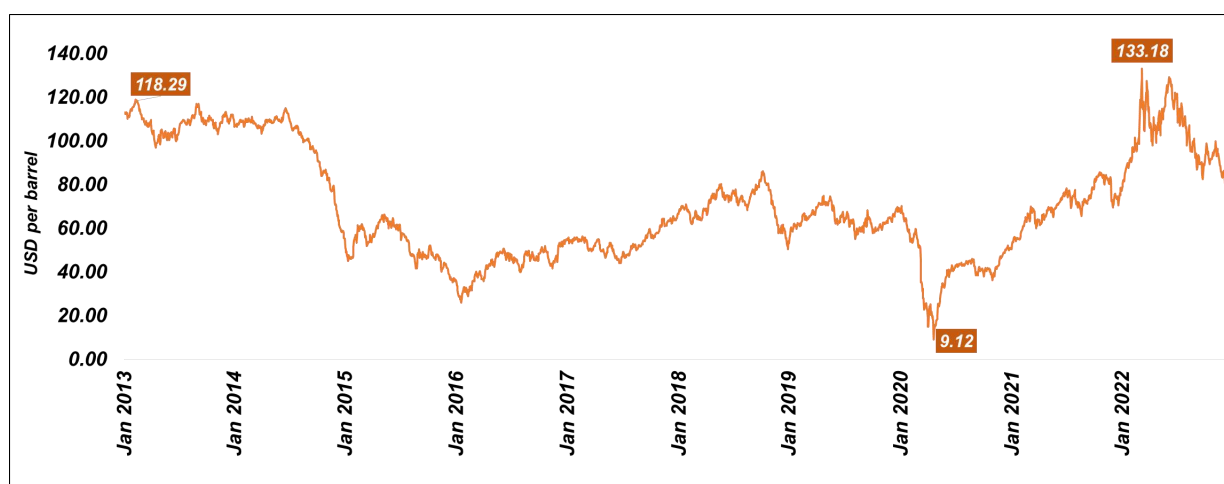
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1. Introduction

The world economy was marked by challenges and opportunities in 2022. While recovery from the COVID-19 pandemic continued in many parts of the globe, it was unevenly distributed, with some regions experiencing rapid growth while others faced setbacks.

Moreover, the world grappled with geopolitical turmoil, particularly with Russia's invasion of Ukraine in February 2022. The tension escalated into a costly humanitarian crisis and disrupted the supply chain of numerous essential commodities, particularly impacting Brent crude oil prices. The price surged from its lowest price of USD9.12 per barrel in April 2020 to its peak of USD133.18 per barrel in March 2022 (**Chart 1**). As such, production costs surged across various economic sectors, affecting many countries, including Malaysia.

Chart 1: Daily Brent Crude Oil Prices (USD per barrel), 2013 - 2022



Source: U.S. Energy Information Administration

Like other countries, Malaysia faced economic challenges during this period. In terms of economic growth, Malaysia's economy experienced a notable improvement of 8.9 per cent in 2022 as compared to the previous year of 3.3 per cent. The Mining and quarrying sector experienced a 3.5 per cent growth in 2022, up from 0.9 per cent the previous year. This performance was primarily driven by the Petroleum and natural gas mining sub-sector, which accounted for 93.5 per cent of the total RM190.8 billion. The improved performance in the Mining and quarrying sector underscores the continued importance of the petroleum and natural gas industry to Malaysia's economic development.

In order to gain a better understanding of the economic structure for the year of 2022, the Department of Statistics Malaysia (DOSM) has conducted the Economic Census 2023. This initiative aims to gain deeper insights into economic growth and identify any imbalances that require attention, providing a clearer picture of the country's economic conditions. The data collected from this census serves as a crucial foundation for the Government, investors, and researchers to make informed decisions as well as develop effective strategies and policies to drive the country's economy forward.

This report presents statistics on the Mining and quarrying sector obtained from the Economic Census 2023 for the reference year 2022. The key statistics covered in this report are gross output, intermediate input, value added, persons engaged, salaries and wages as well as fixed assets. Coverage of Economic Census 2023 for the Mining and quarrying sector was 56 industries according to Malaysia Standard Industrial Classification (MSIC) 2008 Version 1.0. Mining and quarrying sector comprises two sub-sectors namely Petroleum & natural gas mining and Mineral mining & quarrying.

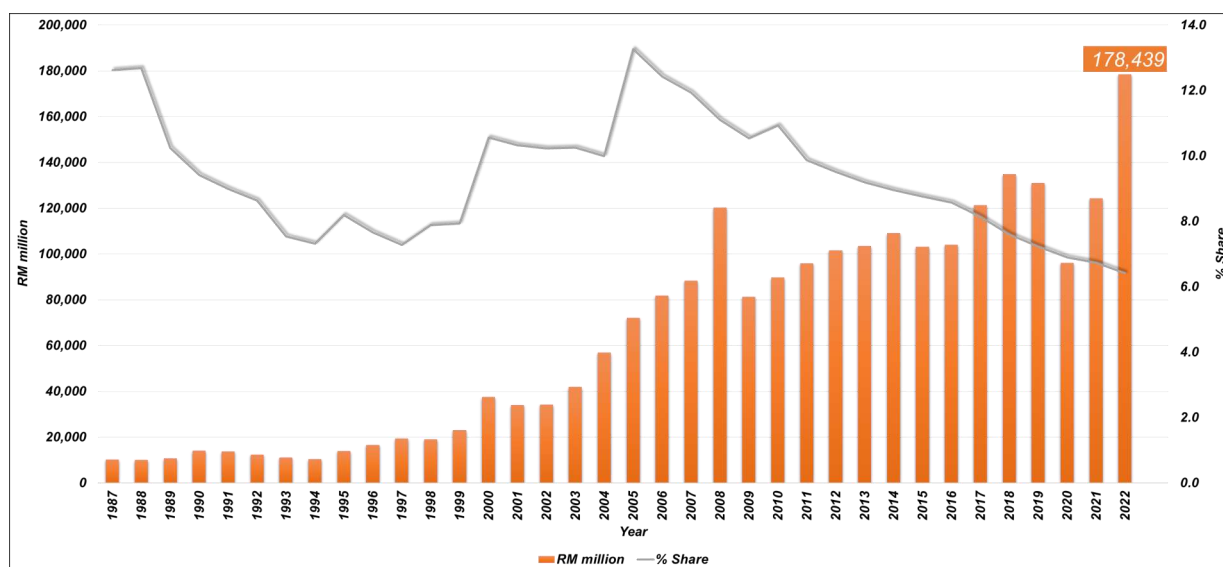
2. Performance of Mining and Quarrying Sector

Post-independence, activities of mining sector in Malaysia was expanded to minerals extractions such as gold, bauxite, and iron ore. In the meantime, tin mining which was one of the earliest type of mining operated in the country, declined in the 1980s due to falling global prices and depletion of accessible deposits. Meanwhile, the concentration on high-value petroleum and natural gas production took place in line with the Petroleum Mining Act 1966 (Act 95). Since then, this activity continue to expand and subsequently begin as one of the strategic area for country's economic development.

During the mid-2010s, Malaysia emerged as a significant producer of bauxite, particularly in the state of Pahang. The surge of bauxite production was largely driven by the growing global demand for the mineral, especially from China, which had become the world's largest bauxite consumer as its aluminum industry expanded rapidly to meet the needs of its booming economy. However, the rapid expansion in bauxite mining raised serious environmental concerns. In response, the government had imposed a temporary ban on bauxite mining from January 2016 to March 2019 to address these environmental issues.

*In recent years, the Mining and quarrying sector has played a pivotal role in propelling Malaysia's overall economic growth, as evidenced by its substantial contribution to the nation's Gross Domestic Product (GDP). The Mining and quarrying sector experienced a 3.5 per cent growth in 2022, up from 0.9 per cent in the previous year. In current term, as displayed in **Chart 2**, this sector generated a GDP of RM178.4 billion in 2022, reflecting a substantial 43.5 per cent increase compared to the previous year.*

Chart 2: Share of Mining and Quarrying Sector to Malaysia Economy, 1987 - 2022



Source: Department of Statistic Malaysia (DOSM)

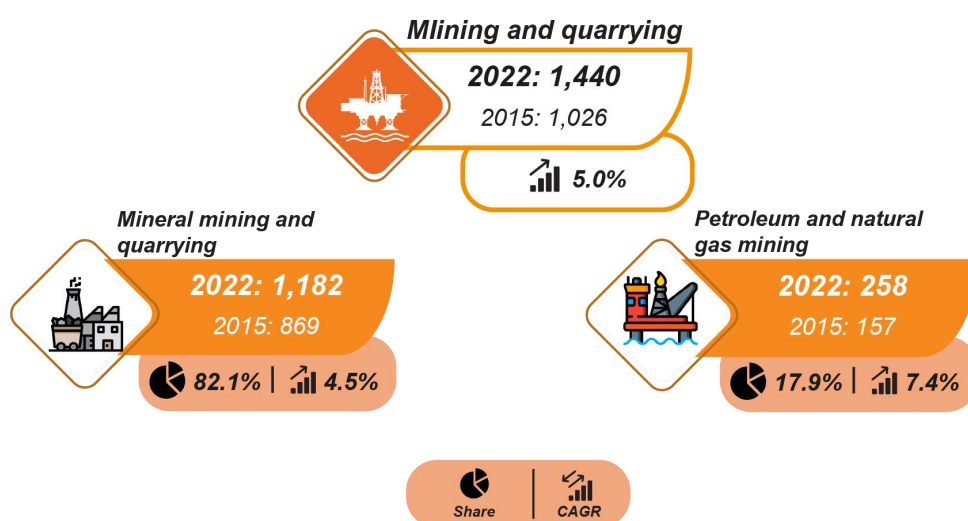
The Mining and quarrying sector in Malaysia achieved a remarkable gross output value of RM204.1 billion in 2022, reflecting an annual increase of 6.5 per cent compared to RM131.1 billion in 2015. This positive growth demonstrates the sector's resilience and the strong demand for the country's natural resources. Concurrently, with the expansion in gross output, the intermediate input value grew by 4.9 per cent annually to reach RM39.2 billion, indicating increase in operational efficiency and investments in this sector. The expansion in output and input resulted in a significant value added of RM165.0 billion in 2022, an increase of 7.0 per cent annually compared to 2015. However, the number of persons engaged in this sector declined from 82,354 persons in 2015 to 65,647 persons in 2022. The reduction in employment could be associated with the increment of automation and technological advancements. In line with reduction in the number of persons engaged, the total salaries and wages reduced to RM7.4 billion as shown in **Exhibit 1**.

Exhibit 1 : Principal Statistics of Mining and Quarrying Sector, 2015 and 2022

	2015	2022	CAGR 2022/2015
 Number of Establishments	1,026	1,440	5.0%
 Gross Output	RM131.1 billion	RM204.1 billion	6.5%
 Intermediate Input	RM28.0 billion	RM39.2 billion	4.9%
 Value Added	RM103.1 billion	RM165.0 billion	7.0%
 Persons Engaged	82,354	65,647	-3.2%
 Salaries & Wages	RM7.9 billion	RM7.4 billion	-0.9%
 Fixed Assets	RM291.3 billion	RM354.3 billion	2.8%

3. Number of Establishments

The Mining and quarrying sector recorded an average annual growth rate of 5.0 per cent, reaching 1,440 establishments in 2022. Out of this total, the Mineral mining and quarrying sub-sector was the main contributor with 82.1 per cent or 1,182 establishments, followed by the Petroleum and natural gas mining sub-sector with 258 establishments or 17.9 per cent in 2022. Both sub-sectors recorded increases in their average annual growth rates for the period 2015 to 2022, with the Petroleum and natural gas mining sub-sector growing by 7.4 per cent, while the Mineral mining and quarrying sub-sector expanded by 4.5 per cent as shown in **Exhibit 2**.

Exhibit 2 : Number of Establishments by Sub-sector, 2015 and 2022

4. Gross Output

The gross output of Mining and quarrying sector recorded annual growth by 6.5 per cent from 2015 to 2022, with value of RM131.1 billion in 2015 to RM204.1 billion in 2022. The growth was largely supported by the Petroleum and natural gas mining sub-sector which contributed 93.5 per cent of the total amount to RM190.8 billion in 2022. Meanwhile, Mineral mining and quarrying sub-sector also showed an escalation to 3.2 per cent with gross output of RM13.3 billion as depicted in **Exhibit 3**.

Exhibit 3: Gross Output by Sub-sector, 2015 and 2022

	Gross Output (RM billion)		Share (%)		CAGR (%)
	2015	2022	2015	2022	2022/2015
 Mining and quarrying	131.1	204.1	100	100	6.5
 Petroleum and natural gas mining	120.4	190.8	91.9	93.5	6.8
 Mineral mining and quarrying	10.7	13.3	8.1	6.5	3.2

5. Intermediate Input

Mining and quarrying sector recorded annual growth of 4.9 per cent, accounted to RM39.2 billion in 2022, as against RM28.0 billion in 2015. This performance was contributed by the Petroleum and natural gas mining sub-sector, which exhibited an augmentation of 5.6 per cent to RM31.5 billion, compared to RM21.6 billion in 2015. Meanwhile, Mineral mining and quarrying sub-sector also showed an escalation to 2.5 per cent with value of RM7.7 billion in 2022 as depicted in **Exhibit 4**. The increased in the intermediate input was largely due to the increased in local producer prices and global crude oil prices.

Exhibit 4: Intermediate Input by Sub-sector, 2015 and 2022

	Intermediate Input (RM billion)		Share (%)		CAGR (%)
	2015	2022	2015	2022	2022/2015
 Mining and quarrying	28.0	39.2	100	100	4.9
 Petroleum and natural gas mining	21.6	31.5	77.0	80.5	5.6
 Mineral mining and quarrying	6.4	7.7	23.0	19.5	2.5

6. Value Added

The growth in value added by this sector remained positive at 7.0 per cent, reaching RM165.0 billion in 2022 despite an increase in intermediate inputs. This increase was driven by the Petroleum and natural gas mining sub-sector, which contributed nearly two-thirds of the total at RM159.3 billion (share: 96.6%). This sub-sector showed an improve growth at 7.1 per cent (2015: RM98.8 billion). The Mineral mining and quarrying sub-sector recorded RM5.7 billion (share: 3.4%), with an annual growth rate of 4.3 per cent compared to RM4.2 billion in 2015 as depicted in **Exhibit 5**.

Exhibit 5: Value Added by Sub-sector, 2015 and 2022

	Value Added (RM billion)		Share (%)		CAGR (%)
	2015	2022	2015	2022	2022/2015
 Mining and quarrying	103.1	165.0	100	100	7.0
 Petroleum and natural gas mining	98.8	159.3	95.9	96.6	7.1
 Mineral mining and quarrying	4.2	5.7	4.1	3.4	4.3

7. Persons Engaged and Salaries & Wages

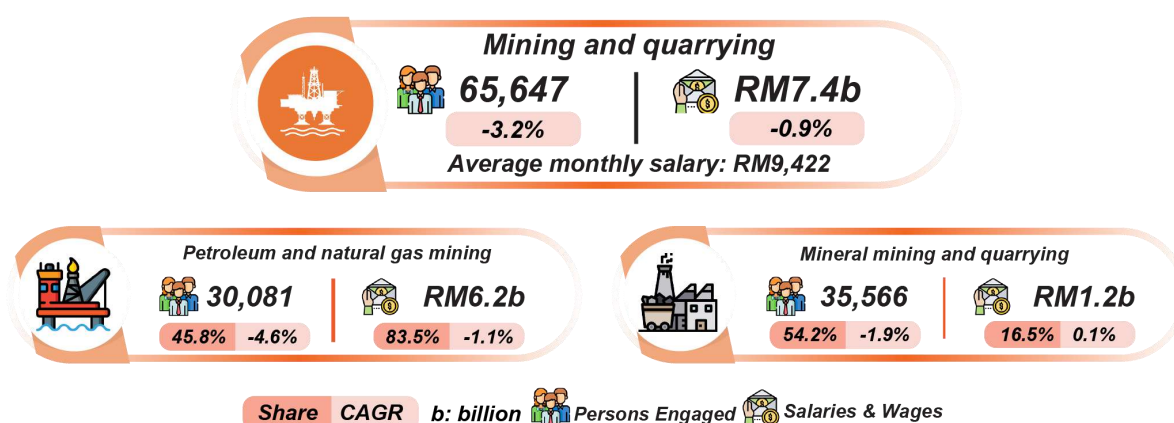
7.1 Persons Engaged and Salaries & Wages by Sub-sector

The value of annual growth by persons engaged in this sector declined by 3.2 per cent to 65,647 persons in 2022 as compared to 82,354 persons in 2015. More than half persons engaged were concentrated in Mineral mining and quarrying sub-sector with a share of 54.2 per cent or accounted for 35,566 persons as shown in **Exhibit 6**. Meanwhile, number of persons engaged in Petroleum and natural gas mining sub-sector encompassed 45.8 per cent with a total of 30,081 persons in 2022.

In line with the deterioration of persons engaged, total salaries & wages for Mining and quarrying sector also turned down by 0.9 per cent, recording RM7.4 billion in 2022 compared to RM7.9 billion in 2015. Lower salaries & wages was attributed to Petroleum and gas mining sub-sector which dropped by 1.1 per cent with a value of RM6.2 billion (share: 83.5%).

The average salary & wages in the Mining and quarrying sector remained the highest among all economic sectors soared to RM9,422 per month in 2022 as compared to RM7,980 per month in 2015.

Exhibit 6: Persons Engaged and Salaries & Wages by Sub-sector, 2022



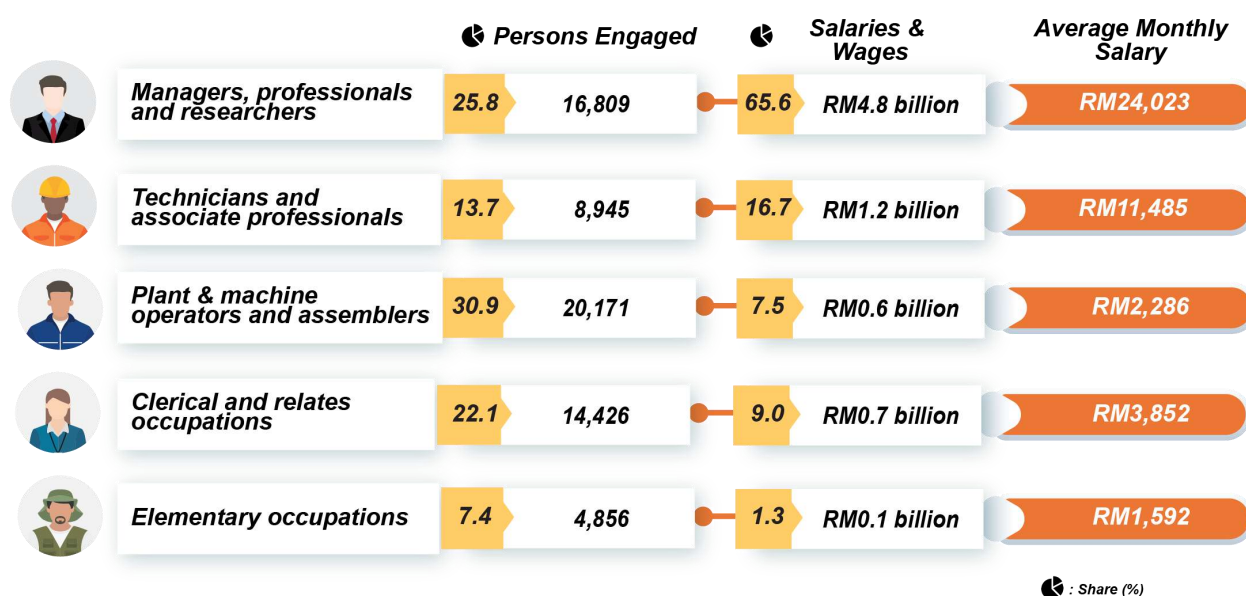
7.2 Full-time Paid Employees and Salaries & Wages by Category of Workers

In overall, Mining and quarrying sector is predominantly comprised of full-time paid employees with a total of 65,207 persons. The plant & machine operators and assemblers dominated the workforce with 30.9 per cent share with a total of 20,171 persons. The category of managers, professionals and researchers was 16,809 persons (share: 25.8%) while clerical and related occupations encompassed 22.1 per cent or 14,426 persons. These three categories represented 78.8 per cent with a total of 51,406 persons (**Exhibit 7**).

The plant & machine operators and assemblers recorded the most in number of persons engaged. However, in terms of salaries & wages, the category of managers, professionals, researchers recorded the highest salaries & wages with a value of RM4.8 billion (share: 65.6%). Following are technician & associate professionals, contributing a formidable RM1.2 billion (share: 16.7%), and subsequently, clerical and related occupations RM0.7 billion (share: 9.0%).

The highest average monthly salary was received by the managers, professionals and researchers category with a value of RM24,023. This was followed by technician & associate professionals (RM11,485) and clerical and related occupations (RM3,852).

Exhibit 7: Full-time Paid Employees and Salaries & Wages by Category of Workers, 2022



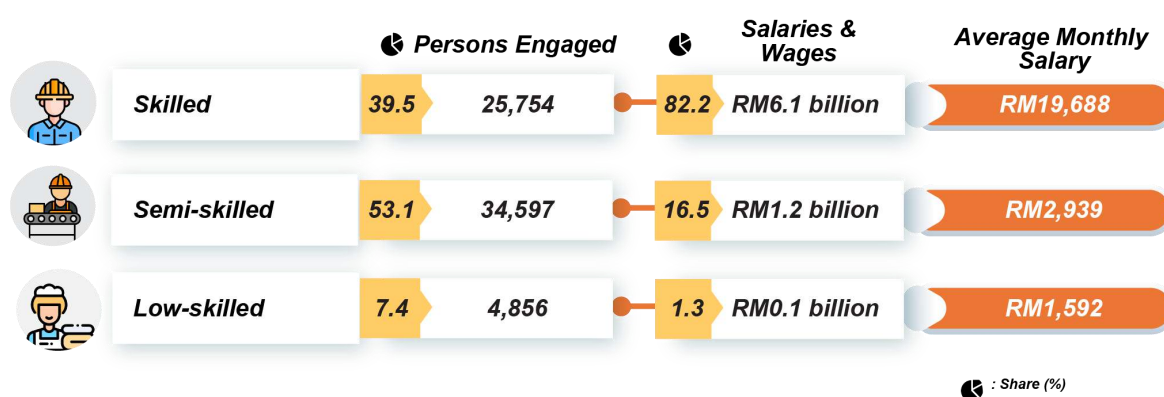
7.3 Full-time Paid Employees and Salaries & Wages by Category of Skills

Semi-skilled workers recorded the highest number of persons engaged with 34,597 persons (share: 53.1%), followed by skilled workers with 25,754 persons (share: 39.5%) and low-skilled workers with 4,856 persons (share: 7.4%).

Salaries & wages for skilled workers registered more than two-thirds of the total share equivalent to 82.2 per cent with a value of RM6.1 billion, while semi-skilled and low-skilled employees categories received a total of RM1.3 billion in 2022.

Skilled workers received the highest average monthly salary amounting to RM19,668 per month. This was followed by semi-skilled workers at RM2,939 and low-skilled workers received RM1,592 (**Exhibit 8**).

Exhibit 8: Full-time Paid Employees and Salaries & Wages by Category of Skills, 2022

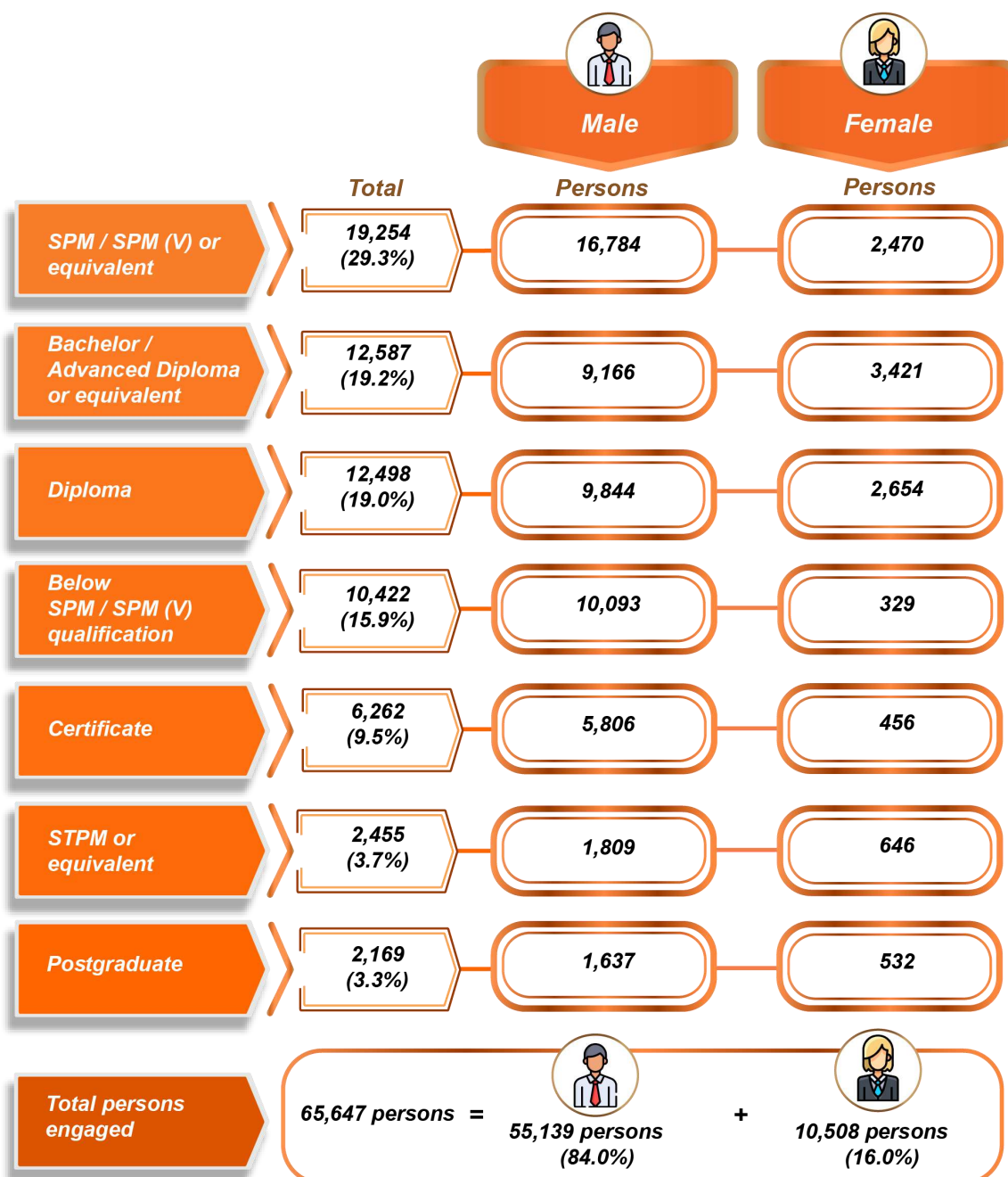


7.4 Persons Engaged by Highest Certificate Obtained

The persons engaged with SPM / SPM (V) or equivalent recorded the highest number by 19,254 persons with contribution of 29.3 per cent. This was followed by bachelor / advanced diploma or equivalent holder with a total of 12,587 persons (share: 19.2%) and diploma holder recorded the third highest for this sector with 12,498 persons (share: 19.0%) as depicted in **Exhibit 9**.

Males constituting a formidable cohort of 84.0 per cent comprised a commanding 55,139 persons, whereas females contributed 16.0 per cent with 10,508 persons.

Exhibit 9: Persons Engaged by Highest Certificate Obtained, 2022



?: Share

8. Fixed Assets

Fixed assets in the Mining and quarrying sector posted an annual growth rate of 2.8 per cent for the period from 2015 to 2022, with a value of RM291.3 billion in 2015 increasing to RM354.3 billion in 2022. This increase was mainly supported by the Petroleum and natural gas mining sub-sector, which contributed 98.6 per cent of the total, with a value of RM349.3 billion in 2022. Meanwhile, the Mineral mining and quarrying sub-sector also showed an annual growth of 0.5 per cent with a fixed assets of RM5.0 billion as depicted in Exhibit 10.

Exhibit 10: Fixed Assets by Sub-sector, 2015 and 2022

	Fixed Assets (RM billion)		Share (%)		CAGR (%)
	2015	2022	2015	2022	2022/2015
 Mining and quarrying	291.3	354.3	100	100	2.8
 Petroleum and natural gas mining	286.4	349.3	98.3	98.6	2.9
 Mineral mining and quarrying	4.8	5.0	1.7	1.4	0.5

9. Women-owned Establishments

The women-owned establishments in the Mining and quarrying sector as a whole recorded 12 establishments with a contribution of 0.01 per cent in 2022. These establishments contributed RM24.3 million of gross output with valued added amounting to RM11.1 million. Meanwhile, there was 176 persons engaged by these establishments as depicted in **Exhibit 11**.

Exhibit 11: Principal Statistics of Women-owned Establishments, 2022

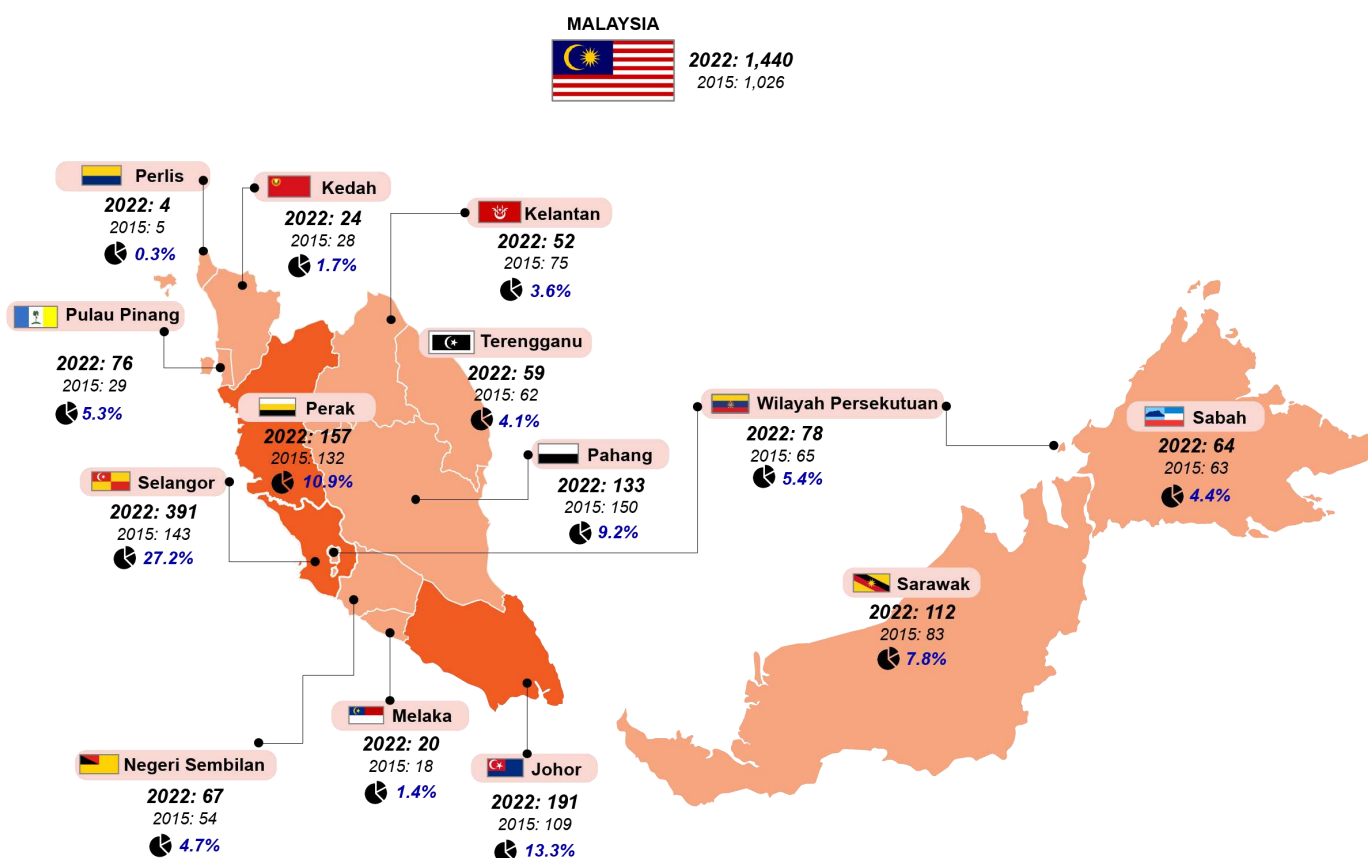
 Mining and Quarrying	Value of Women-owned Establishments	Value of Sector	Share of Sector
 Number of Establishments	12	1,440	0.01%
 Gross Output	RM24.3 million	RM204.1 billion	0.0001%
 Intermediate Input	RM13.2 million	RM39.2 billion	0.0003%
 Value Added	RM11.1 million	RM165.0 billion	0.0001%
 Persons Engaged	176	65,647	0.003%
 Salaries & Wages	RM5.4 million	RM7.4 billion	0.001%
 Fixed Assets	RM8.9 million	RM354.3 billion	0.00002%

10. Performance by State

10.1 Number of Establishments by State

Selangor recorded the highest number of establishments with a total of 391 establishments (share: 27.2%), followed by Johor 191 establishments (share: 13.3%) and Perak 157 establishments (share: 10.9%) as depicted in **Exhibit 12**. The combination of three states represented over half of the total number of establishments (share: 51.3%) in the Mining and quarrying sector.

Exhibit 12 : Number of Establishments by State, 2015 and 2022



Note: Excludes the number of establishments for Supra

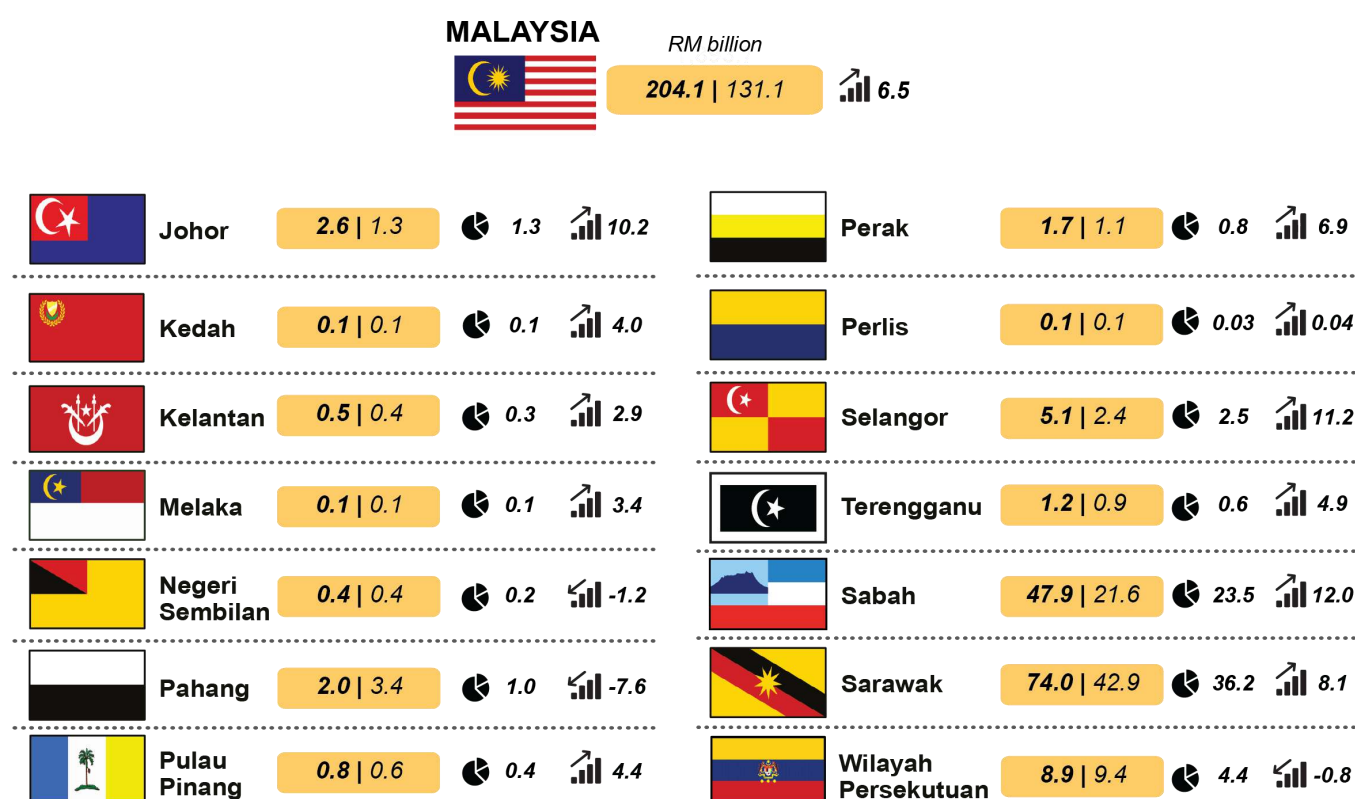
Sumbangan 2022

10.2 Gross Output Performance by State

Sarawak continued to dominate the Mining and quarrying sector with a gross output value totaling RM74.0 billion with share of 36.2 per cent. Following by Sabah contributed 23.5 per cent with a gross output of RM47.9 billion. Subsequently, Wilayah Persekutuan and Selangor, contributed RM8.9 billion (share: 4.4%) and RM5.1 billion (share: 2.5%) respectively. Collectively, these four states contributed 66.6 per cent of the total, amounting to RM135.9 billion.

Moreover, positive annual growth from 2015 to 2022 was also observed in Sabah, 12.0 per cent, Selangor 11.2 per cent, Johor 10.2 per cent and Sarawak as a main contributor also showed an increase of 8.1 per cent. Meanwhile, Pahang experienced a decline of 7.6 per cent, totaling RM2.0 billion as compared to RM3.4 billion in 2015 (**Exhibit 13**).

Exhibit 13: Gross Output by State, 2015 and 2022



Note: Excludes the gross output for Supra

2022 | 2015

RM billion

 Compound annual growth rate (%)

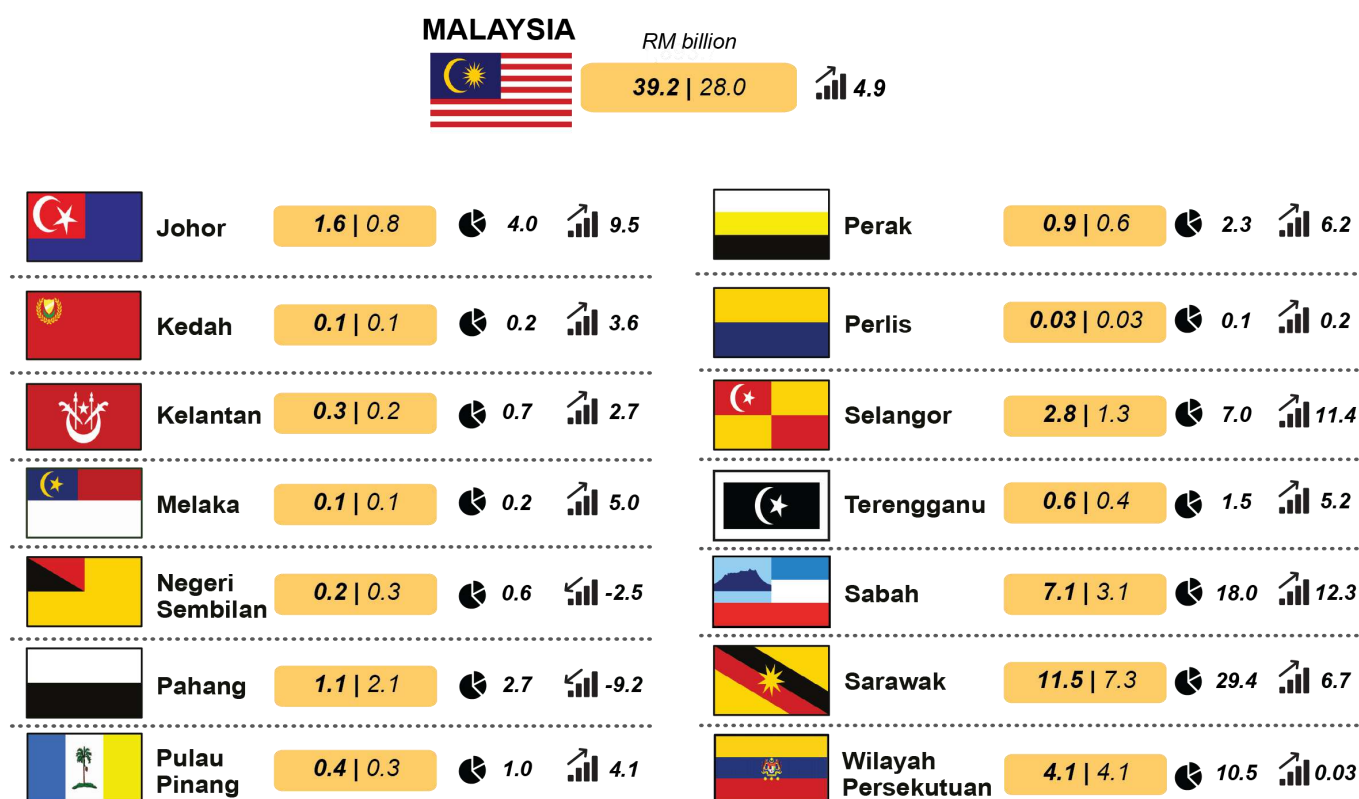
 Share (%)

10.3 Intermediate Input Performance by State

Sarawak possessed the highest contribution in intermediate input, representing 29.4 per cent of the total RM11.5 billion, with annual growth of 6.7 per cent compared to the previous census (2015: RM7.3 billion). This is followed by Sabah, with a contribution of 18.0 per cent, showing an increase of 12.3 per cent to RM7.1 billion. Next, Selangor with a contribution of 7.0 per cent, recording RM2.8 billion in 2022. These three states contribute 54.4 per cent of the total intermediate input in the Mining and quarrying sector.

Sabah recorded the highest annual growth from 2015 to 2022 by 12.3 per cent, reaching RM7.1 billion in 2022, up from RM3.1 billion in 2015. Selangor also posted double-digit growth of 11.4 per cent compared to RM1.3 billion recorded in 2015 as depicted in **Exhibit 14**. Sarawak as a main contributor showed an increase of 6.7 per cent (2015: RM7.3 billion). Conversely, Pahang show a decrease in intermediate input of 9.2 per cent, totaling RM1.1 billion in 2022 (2015: RM2.1 billion), in line with the decline in gross output.

Exhibit 14: Intermediate Input by State, 2015 and 2022



Note: Excludes the intermediate input for Supra

2022 | 2015 *RM billion*

 Compound annual growth rate (%)

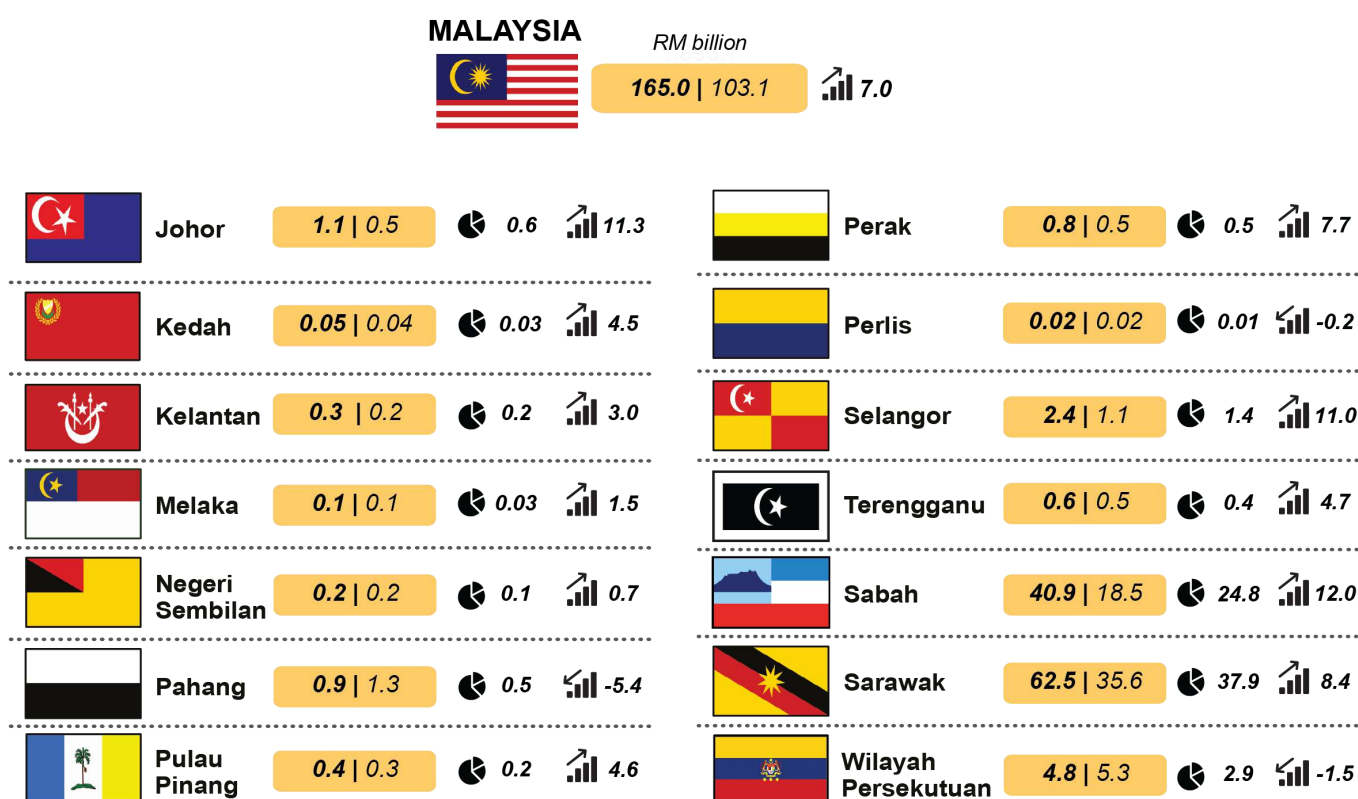
 Share (%)

10.4 Value Added Performance by State

Correspond to performance of gross output, Sarawak contributed the highest value added at RM62.5 billion accounted for 37.9 per cent in 2022, followed by Sabah with RM40.9 billion (share: 24.8%) and Wilayah Persekutuan with RM4.8 billion (share: 2.9%). These three states contributed 65.5 per cent to the Mining and quarrying sector's value added amounting to RM108.1 billion.

Sabah achieved double-digit annual growth from 2015 to 2022 by 12.0 per cent, rising to RM40.9 billion in 2022 from RM18.5 billion in 2015. Followed by Johor, showed a growth of 11.3 per cent from RM0.5 billion in 2015 to RM1.1 billion in 2022. Sarawak as a main contributor also showed a growth of 8.4 per cent, increase from RM35.6 billion in 2015 as in Exhibit 15.

Exhibit 15: Value Added by State, 2015 and 2022



Note: Excludes the value added for Supra

2022 | 2015

RM billion



Compound annual growth rate (%)



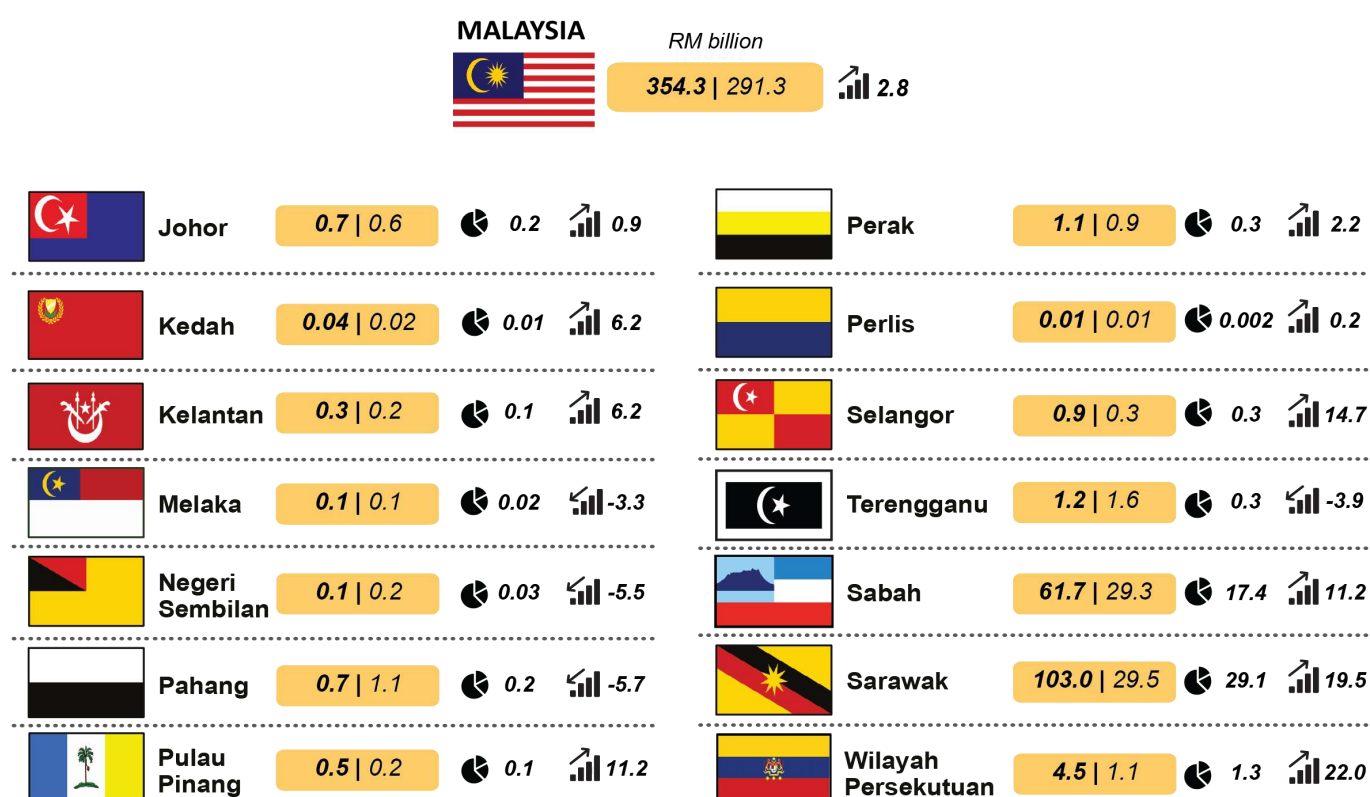
Share (%)

10.5 Fixed Assets Performance by State

Sarawak dominated the Mining and quarrying sector with fixed assets valued at RM103.0 billion (share: 29.1%). This is followed by Sabah with RM61.7 billion, contributing 17.4 per cent. Next, Wilayah Persekutuan with RM4.5 billion, contributing 1.3 per cent. Collectively, these three states account for 47.7 per cent of the total, amounting to RM169.2 billion.

Moreover, significant annual growth from 2015 to 2022 was observed in Sarawak, the major contributor, with 19.5 per cent. Additionally, Wilayah Persekutuan also showed annual growth at 22.0 per cent, Selangor 14.7 per cent, Sabah 11.2 per cent, and Penang 11.2 per cent. Meanwhile, Pahang experienced a decline to 5.7 per cent, with a total of RM0.7 billion as compared to RM1.1 billion in 2015 (**Exhibit 16**).

Exhibit 16: Fixed Assets by State, 2015 and 2022



Note: Excludes the fixed assets for Supra

2022 | 2015 RM billion

 Compound annual growth rate (%)

 Share (%)

Malaysia's Oil and Gas Production: Trends and Influences

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Industrial Production & Construction Statistics Division,
Department of Statistics Malaysia.

1. Introduction

Malaysia, a Southeast Asian country, holds a significant position in the global oil and natural gas industry. Since the discovery of its first commercial oil field in 1910, the country has steadily grown its production capacity, becoming a key player in the region. PETRONAS reported ten hydrocarbon discoveries in Malaysia during 2022, highlighting the country's continued exploration success.

The oil and gas sub-sector play a significant role in Malaysia's economy, contributing substantially to Gross Domestic Product (GDP), exports, and government revenue. According to ISEAS Perspective 2022/21, Malaysia is the second-largest oil producer in Southeast Asia and the third-largest exporter of liquefied natural gas (LNG) in the world. At the end of 2022, the country held oil reserves of 6.9 billion barrels of oil equivalent and natural gas reserves totalling 32.1 trillion cubic feet. In 2023, crude oil contributed approximately 6 per cent to the overall economy, valued at RM97.5 billion (DOSM, 2024). Exports of crude oil and condensate recorded RM31.9 billion, while LNG exports amounted to RM59.6 billion in 2023.

Global uncertainties, including geopolitical tensions and unstable financial conditions, casting a shadow on the economic outlook for 2024, as highlighted by the World Economic Forum. This challenging environment directly impacts the production and economic trajectory of crude oil and natural gas. The Russia-Ukraine conflict, for instance, has introduced significant volatility in the global LNG market, driving prices to unprecedented levels.

While many countries are striving to reduce the dependency on fossil fuels and transition towards renewable energy sources, global demand for crude oil persists. As a small and open economy, Malaysia is inevitably affected by these global trends. This article delves into the specific trends and factors shaping the landscape of crude oil and natural gas production within Malaysia.

2. Trends of Crude Oil and Natural Gas in Malaysia (2015 - 2023)

2.1 Crude Oil and Natural Gas Production

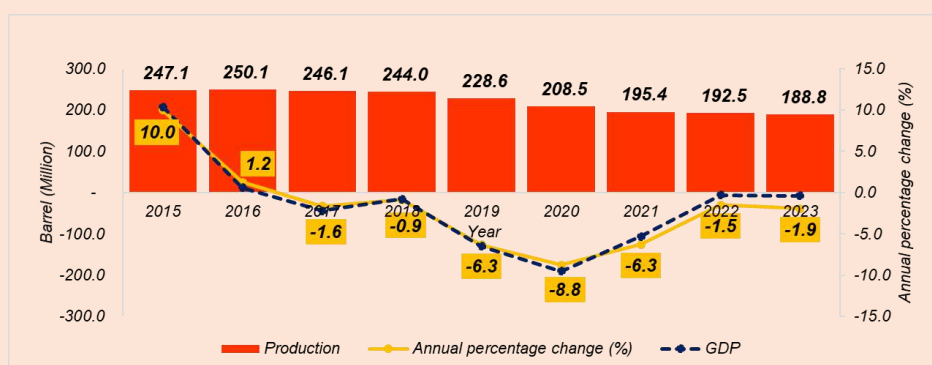
Malaysia's oil and gas sub-sector is navigating a period of transition. While crude oil production plateaus, natural gas is emerging as a key growth driver. Successfully managing this transition, adapting to global energy trends, and leveraging technological advancements will be essential for Malaysia to maintain its position as a significant player in the global energy market.

Crude oil production have shown a declining trend after recording a significant growth of 10.0 per cent in 2015 (**Chart 3**). This downward trend deteriorated further in 2020, reaching a negative 8.8 per cent, following the Coronavirus-19 pandemic that year.

2.1.1 Crude Oil and Condensate

Malaysia's long history of robust oil and gas production is at a crossroads. While the country has experienced success in this sector, recent years have revealed a plateauing of crude oil production, suggesting a potential peak in capacity, beyond which output is predicted to decline. This trend has been exacerbated by the COVID-19 pandemic, with crude oil production still struggling to recover to pre-pandemic levels. The decline in oil production has coincided with a broader downward trend in Malaysia's GDP from 2015 to 2023 as shown in **Chart 3**.

Chart 3: Production, Annual Percentage Change and GDP of Crude Oil and Condensate, 2015 - 2023

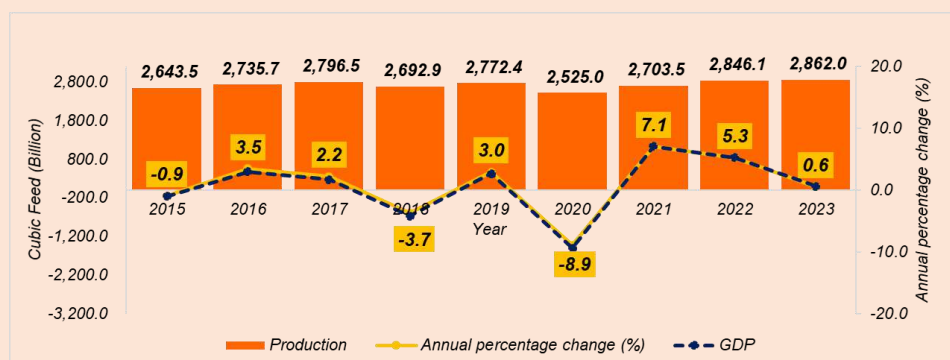


Source: Department of Statistics Malaysia (DOSM)

2.1.2 Natural Gas

The crude oil production in Malaysia has faltered, the natural gas industry is demonstrating resilience and grow, particularly in the post-COVID-19 period. This positive trend is highlighted by a significant increase in natural gas production from 2,525.0 billion cubic feet in 2020 to 2,863.0 billion cubic feet in 2023 as depicted in **Chart 4**. The growth aligns with a similar upward trajectory in Malaysia's GDP, underscoring the potential economic benefits of prioritising natural gas development. This presents a strategic opportunity for Malaysia to offset declining crude oil production by shifting focus and investment towards this promising industry.

Chart 4: Production, Annual Percentage Change and GDP of Natural Gas, 2015 - 2023



Source: Department of Statistics Malaysia (DOSM)

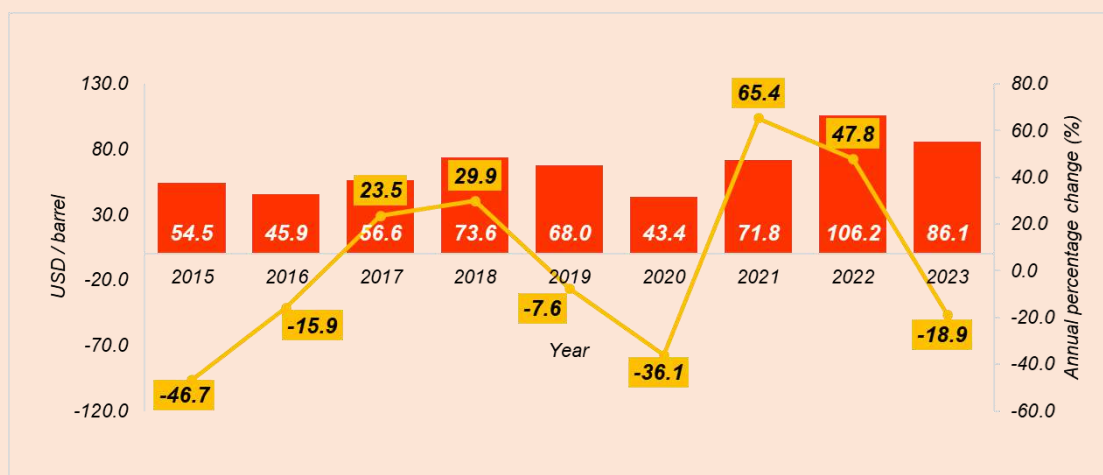
2.2 Crude Oil and Natural Gas Price

Brent, produced in the North Sea region of the United Kingdom, Northern Europe serves as a major global benchmark for oil trading. Its extensive storage and market reach, coupled with its higher sulphur content, make it a widely used in feedstock for diesel fuel production. **Chart 5** illustrates Brent crude oil price fluctuations from 2015 to 2023. The chart reveals significant price volatility during this period, with the highest price recorded in 2022 at USD100.9 per barrel, representing a growth of 42.4 per cent. Conversely, the lowest price was observed in 2020 at USD42.0 per barrel, marking a decline of 34.7 per cent.

Chart 5: Brent Crude Oil Price, 2015 - 2023

Source: Department of Statistics Malaysia (DOSM)

In Malaysia, crude oil prices are measured using the Weighted Average Lifting Price (WALP). **Chart 6** illustrates the price trend of Malaysia's crude oil and condensate from 2015 to 2023. The price for crude oil surged by double-digits, reaching 65.4 per cent, to hit USD71.8 per barrel in 2021. This followed a low record in 2020 of USD43.4 per barrel, with a decline of 36.1 per cent due to the impact of the COVID-19 pandemic. The highest price ever recorded since 2015 was USD106.2 per barrel in 2022, registering a growth of 47.8 per cent.

Chart 6: WALP Price of Crude Oil in Malaysia, 2015 - 2023

Source: Department of Statistics Malaysia (DOSM)

The New York Mercantile Exchange (NYMEX) serves as the global trading platform for natural gas, with prices referenced to the Henry Hub. Located on the Louisiana Gulf Coast, the Henry Hub is a pipeline hub that acts as the delivery point for NYMEX natural gas futures contracts. **Chart 7** depicts the price movements of NYMEX natural gas from 2015 to 2023. Between 2015 and 2020, the average NYMEX price fluctuated between USD2.0 and USD3.2 per million Btu. The lowest price during this period was recorded in 2020 at USD2.0 per million Btu, a decline of 20.7 per cent due to the COVID-19 pandemic. Subsequently, prices surged significantly by 91.6 per cent to USD3.9 per million Btu in 2021. The highest price was observed in 2022, reaching USD6.5 per million Btu, marking a 65.8 per cent increase. In 2023, the price fell to USD2.5 per million Btu, a decline of 60.8 per cent from the 2022 peak.

Chart 7: NYMEX of Liquefied Natural Gas Price, 2015 - 2023



Source: Department of Statistics Malaysia (DOSM)

2.3 Factors Influencing Crude Oil and Natural Gas Production and Price Trends

Several factors influence the production and price trends of crude oil and natural gas as below:

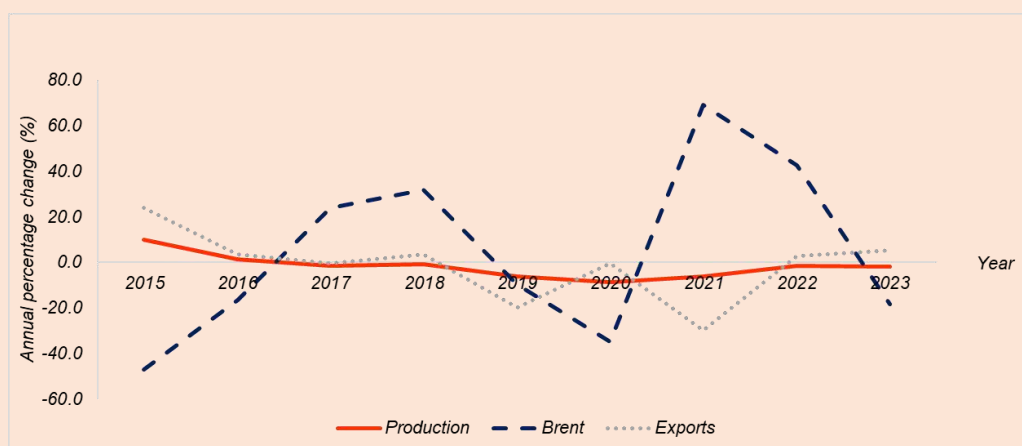
a. Price as a Driving Force

Price itself is a powerful mechanism shaping the global economic landscape. Fluctuations in global oil and gas prices directly impact the economic viability of exploration and production activities in Malaysia. Maji, Saari, Habibullah and Utit (2017) highlighted the impact of the 2015 until 2016 oil price decline on Malaysia's economy.

One important factor is the exchange rate of the US dollar (USD), as international oil is primarily traded in USD. If the US dollar is stable, oil prices tend to be stable and decrease. Conversely, a weakening US dollar can lead to rising oil prices (Rong, Yanhui, Kai, Jinhong, 2022). Additionally, the balance between supply and demand also affects production and prices, with higher demand relative to supply resulting in price increases.

This dynamic is reflected in Malaysia's export performance, where higher Brent oil prices have led to increase export growth, even as production levels declined as shown in **Chart 8**. For instance, in 2015, while crude oil production contracted, export value grew positively due to the rise in Brent prices at the time. Most other oil-exporting countries tend to maintain high oil prices when the US dollar weakens, as this helps preserve their oil revenues. These elevated price levels benefit the export earnings of Malaysia's oil industry, which is a net exporter, as the oil can be sold at a higher value. Furthermore, the higher prices also incentivise major oil companies to invest in exploration and production activities within the country (FORBES, 2024).

Chart 8: Production, Brent Price and Exports of Crude Oil and Condensate, 2015 - 2023



Source: Department of Statistics Malaysia (DOSM)

b. Unprecedented Disruption

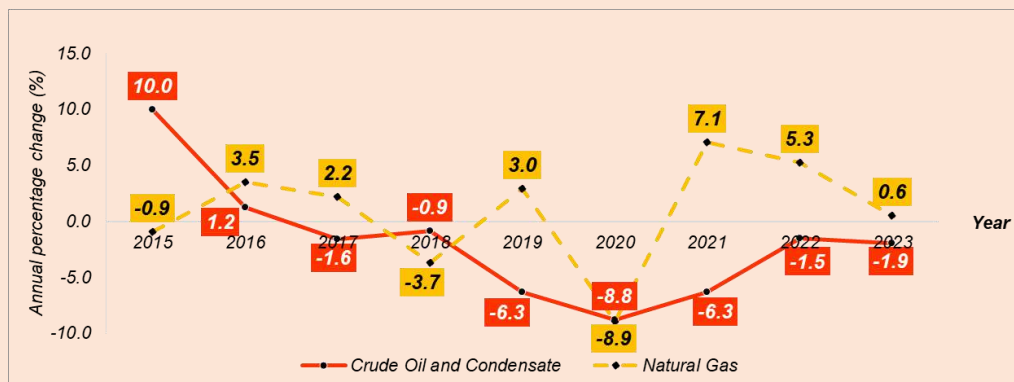
*An unpredictable factor like the COVID-19 pandemic in 2020 have had a profound impact on the oil and gas industry. The industry experienced its third price collapse in 12 years, following two major crises since World War II and the 1986 supply-driven price crash (Qiang, Xuan, Rongrong, 2022). However, the circumstances surrounding the pandemic were unique of which it was a combination of a supply shock with a significant and unexpected drop in commodity demand, coupled with a global health crisis. The evidence of the production and price trends in the crude oil and natural gas sector for 2020 is depicted in **Charts 3 to 7**.*

Consequently, to mitigate the impact of the weakened oil market during that period, many international oil and gas, as well as chemical companies acted swiftly by reducing capital and operational expenditures. As a major player in the industry, PETRONAS exemplified this trend by significantly cutting its capital expenditure to reduce 21 per cent from an initially planned RM50 billion as reported by AEDS (2020). It demonstrates the severity of the challenges posed by the pandemic.

c. Energy Transition and Diversification

*The global transition towards more sustainable energy sources is prompting Malaysia to adapt and diversify its energy portfolio, which may significantly impact future oil and gas demand. Malaysia is progressively diversifying its energy mix by incorporating a broader range of renewable energy options such as solar, wind, and hydropower, with the long-term aim of reducing its reliance on fossil fuels. Despite being a major oil producer, Malaysia is gradually shifting its focus towards natural gas, a cleaner-burning fuel with strong domestic and regional demand. This shift is evidenced by Petronas's strategic focus on gas, by 70 per cent of their current production being natural gas. Malaysia recognises the need to adapt to the global energy transition and is taking proactive steps to develop a more sustainable and diversified energy sector. **Chart 9** shows the movement of crude oil and natural gas production for the period from 2015 to 2023. The production of natural gas is seen to be increasing and encouraging during that period.*

Chart 9: Production of Crude Oil & Condensate and Natural Gas Transition, 2015 - 2023



Source: Department of Statistics Malaysia (DOSM)

4. Conclusion

The oil and gas industry is a vital source of energy and revenue for the country. With an increasingly complex system exposed to various global developments, planning must consider both short-term and long-term factors to ensure the industry's sustainability. Excessive dependence on oil revenue alone invites disaster for the national economy, especially if unexpected uncertainties like the COVID-19 pandemic occur again.

The launch of the National Energy Transition Roadmap (NETR) as a driver for the energy sector's transition can reduce the economy's reliance on oil production. However, the shift to a green economy also faces potential challenges due to the high dependence on fossil fuels, which could weaken economic growth as global demand shifts to renewable energy sources. Therefore, to ensure an effective transition, the country needs to diversify its energy sources, invest in sustainable infrastructure, and ensure a fair and equitable transition for carbon-intensive industries and SMEs.

Disclaimer

The article is an author's view and does not reflect the view of Department of Statistics Malaysia (DOSM).

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JADUAL STATISTIK

STATISTICAL TABLES



BAHAGIAN 3
PART **3**

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Jadual 1: Statistik utama mengikut sektor Perlombongan dan pengkuarian, 2010, 2015 dan 2022
Table 1: Principal statistics of Mining and quarrying sector, 2010, 2015 and 2022

	Tahun <i>Year</i>	Bilangan pertubuhan <i>Number of establishments</i>	Nilai output kasar <i>Value of gross output</i>	Nilai input perantaraan <i>Value of intermediate input</i>	Nilai ditambah <i>Value added</i>	Bilangan pekerja <i>Number of persons engaged</i>	Gaji & upah <i>Salaries & wages</i>	Nilai harta tetap <i>Value of fixed assets</i>
			(RM '000)	(RM '000)	(RM '000)		(RM '000)	(RM '000)
63	2022	1,440	204,139,150	39,160,994	164,978,156	65,647	7,394,555	354,348,718
	2015	1,026	131,067,003	28,007,653	103,059,350	82,354	7,870,014	291,283,150
	2010	489	110,435,338	17,336,873	93,098,466	51,998	4,319,005	145,440,726

Jadual 1.1: Statistik utama mengikut subsektor Perlombongan mineral dan pengkuarian, 2010, 2015 dan 2022

Table 1.1: Principal statistics of Mineral mining and quarrying sub-sector, 2010, 2015 and 2022

	Tahun	Bilangan pertubuhan	Nilai output kasar	Nilai input perantaraan	Nilai ditambah	Bilangan pekerja	Gaji & upah	Nilai harta tetap
	Year	Number of establishments	Value of gross output	Value of intermediate input	Value added	Number of persons engaged	Salaries & wages	Value of fixed assets
			(RM '000)	(RM '000)	(RM '000)		(RM '000)	(RM '000)
64	2022	1,182	13,320,142	7,653,170	5,666,973	35,566	1,219,477	5,013,322
	2015	869	10,667,232	6,440,997	4,226,235	40,656	1,209,811	4,839,680
	2010	402	4,495,997	2,806,981	1,689,016	19,297	485,743	1,847,985

Jadual 1.2: Statistik utama mengikut subsektor Perlombongan petroleum dan gas asli, 2010, 2015 dan 2022

Table 1.2: Principal statistics of Petroleum and natural gas mining sub-sector, 2010, 2015 and 2022

	Tahun <i>Year</i>	Bilangan pertubuhan <i>Number of establishments</i>	Nilai output kasar <i>Value of gross output</i>	Nilai input perantaraan <i>Value of intermediate input</i>	Nilai ditambah <i>Value added</i>	Bilangan pekerja <i>Number of persons engaged</i>	Gaji & upah <i>Salaries & wages</i>	Nilai harta tetap <i>Value of fixed assets</i>
			(RM '000)	(RM '000)	(RM '000)		(RM '000)	(RM '000)
69	2022	258	190,819,008	31,507,824	159,311,184	30,081	6,175,078	349,335,397
	2015	157	120,399,771	21,566,656	98,833,115	41,698	6,660,203	286,443,470
	2010	87	105,939,341	14,529,892	91,409,449	32,701	3,833,262	143,592,740

Jadual 2: Statistik utama sektor Perlombongan dan pengkuarian mengikut subsektor, 2022

Table 2: Principal statistics of Mining and quarrying sector by sub-sector, 2022

Sektor / Subsektor <i>Sector / Sub-sector</i>			Bilangan pertubuhan <i>Number of establishments</i>	Nilai output kasar <i>Value of gross output</i>	Nilai input perantaraan <i>Value of intermediate input</i>	Nilai ditambah <i>Value added</i>	Bilangan pekerja <i>Number of persons engaged</i>	Gaji & upah <i>Salaries & wages</i>	Nilai harta tetap <i>Value of fixed assets</i>
				(RM '000)	(RM '000)	(RM '000)		(RM '000)	(RM '000)
Jumlah <i>Total</i>			1,440	204,139,150	39,160,994	164,978,156	65,647	7,394,555	354,348,718
99	Perlombongan mineral dan pengkuarian <i>Mineral mining and quarrying</i>		1,182	13,320,142	7,653,170	5,666,973	35,566	1,219,477	5,013,322
	Perlombongan petroleum dan gas asli <i>Petroleum and natural gas mining</i>		258	190,819,008	31,507,824	159,311,184	30,081	6,175,078	349,335,397

Jadual 2.1: Statistik utama subsektor Perlombongan mineral dan pengkuarian mengikut kumpulan, 2022

Table 2.1: Principal statistics of Mineral mining and quarrying sub-sector by group, 2022

Subsektor / Kumpulan <i>Sub-sector / Group</i>	Bilangan pertubuhan <i>Number of establishments</i>	Nilai output kasar <i>Value of gross output</i>	Nilai input perantaraan <i>Value of intermediate input</i>	Nilai ditambah <i>Value added</i>	Bilangan pekerja <i>Number of persons engaged</i>	Gaji & upah <i>Salaries & wages</i>	Nilai harta tetap <i>Value of fixed assets</i>
		(RM '000)	(RM '000)	(RM '000)		(RM '000)	(RM '000)
Jumlah (A+B) <i>Total (A+B)</i>	1,182	13,320,142	7,653,170	5,666,973	35,566	1,219,477	5,013,322
A. Perlombongan mineral <i>Mineral mining</i>	224	4,110,568	2,253,524	1,857,045	8,397	303,877	1,499,575
Perlombongan batu arang <i>Coal mining</i>	10	775,286	477,342	297,944	1,660	71,879	382,789
Perlombongan bijih besi <i>Iron ore mining</i>	89	1,294,968	793,881	501,088	2,420	81,320	432,522
Perlombongan bijih timah* <i>Tin mining</i>	23	420,846	181,203	239,643	997	34,127	83,062
Perlombongan bauksit <i>Bauxite mining</i>	41	466,275	259,303	206,972	912	34,111	66,716
Perlombongan ilmenit <i>Ilmenite mining</i>	5	17,860	9,739	8,121	91	3,151	7,513
Perlombongan emas <i>Gold mining</i>	28	1,042,721	483,914	558,807	1,960	67,040	505,442
Pembilasan amang <i>Amang retreatment</i>	15	53,871	26,005	27,865	170	5,894	6,229
Perlombongan bijih logam bukan besi lain <i>Other non-ferrous metal ores mining</i>	13	38,741	22,137	16,605	187	6,354	15,302

*** Meliputi perlombongan kapal korek, pam kelikir, dedah dan bawah tanah; mendulang tidak diliputi**

Includes dredging, gravel pumping, open cast and underground mining; dulang washing is not covered

Jadual 2.1: Statistik utama subsektor Perlombongan mineral dan pengkuarian mengikut kumpulan, 2022 (samb.)
Table 2.1: Principal statistics of Mineral mining and quarrying sub-sector by group, 2022 (cont.)

Subsektor / Kumpulan <i>Sub-sector / Group</i>	Bilangan pertubuhan <i>Number of establishments</i>	Nilai output kasar <i>Value of gross output</i>	Nilai input perantaraan <i>Value of intermediate input</i>	Nilai ditambah <i>Value added</i>	Bilangan pekerja <i>Number of persons engaged</i>	Gaji & upah <i>Salaries & wages</i>	Nilai harta tetap <i>Value of fixed assets</i>
		(RM '000)	(RM '000)	(RM '000)		(RM '000)	(RM '000)
B. Pengkuarian <i>Quarrying</i>	958	9,209,574	5,399,646	3,809,928	27,169	915,600	3,513,747
Pengkuarian, pemotongan kasar bongkah batu dan batu bangunan seperti marmar, granit (dimension stone), batu pasir <i>Quarrying, rough trimming and sawing of monumental and building stone such as marble, granite (dimension stone), sandstone</i>	99	730,260	434,663	295,597	2,364	82,266	280,013
Pengkuarian, penghancuran dan pemecahan batu kapur <i>Quarrying, crushing and breaking of limestone</i>	75	1,144,616	647,814	496,802	3,829	121,373	778,194
Perlombongan kapur dan dolomit yang tidak dirawat <i>Mining of chalk and uncalcined dolomite</i>	3	13,349	8,248	5,101	59	1,445	3,821
Pengekstrakan pasir * <i>Sand extraction</i>	367	1,493,132	837,690	655,442	6,325	190,472	490,506
Pemecahan dan penghancuran batu dan kerikil <i>Breaking and crushing of stone and gravel</i>	186	3,145,635	1,914,689	1,230,946	7,836	286,071	930,567

* Termasuk pengekstrakan dan pengorekan bagi industri pasir, pasir untuk sektor pembinaan dan kerikil
Include extraction and dredging of industrial sand, sand for construction and gravel

Jadual 2.1: Statistik utama subsektor Perlombongan mineral dan pengkuarian mengikut kumpulan, 2022 (samb.)
Table 2.1: Principal statistics of Mineral mining and quarrying sub-sector by group, 2022 (cont.)

Subsektor / Kumpulan <i>Sub-sector / Group</i>	Bilangan pertubuhan <i>Number of establishments</i>	Nilai output kasar <i>Value of gross output</i>	Nilai input perantaraan <i>Value of intermediate input</i>	Nilai ditambah <i>Value added</i>	Bilangan pekerja <i>Number of persons engaged</i>	Gaji & upah <i>Salaries & wages</i>	Nilai harta tetap <i>Value of fixed assets</i>
		(RM '000)	(RM '000)	(RM '000)		(RM '000)	(RM '000)
Perlombongan tanah liat, refraktori tanah liat dan kaolin <i>Mining of clays, refractory clays and kaolin</i>	34	187,104	106,218	80,886	706	21,810	83,848
Pengkuarian, penghancuran dan pemecahan granit <i>Quarrying, crushing and breaking of granite</i>	89	2,050,898	1,220,194	830,704	4,346	158,796	843,014
Perlombongan dan pengkuarian lain t.t.t.l <i>Other mining and quarrying n.e.c.</i>	56	236,144	121,178	114,966	852	26,409	43,989
Aktiviti sokongan perlombongan dan pengkuarian lain <i>Support activities for other mining and quarrying</i>	49	208,435	108,952	99,483	852	26,958	59,794

Jadual 2.2: Statistik utama subsektor Perlombongan petroleum dan gas asli mengikut kumpulan, 2022

Table 2.2: Principal statistics of Petroleum and natural gas mining sub-sector by group, 2022

Subsektor / Kumpulan		Bilangan pertubuhan <i>Number of establishments</i>	Nilai output kasar <i>Value of gross output</i>	Nilai input perantaraan <i>Value of intermediate input</i>	Nilai ditambah <i>Value added</i>	Bilangan pekerja <i>Number of persons engaged</i>	Gaji & upah <i>Salaries & wages</i>	Nilai harta tetap <i>Value of fixed assets</i>
<i>Sub-sector / Group</i>			(RM '000)	(RM '000)	(RM '000)		(RM '000)	(RM '000)
Jumlah <i>Total</i>		258	190,819,008	31,507,824	159,311,184	30,081	6,175,078	349,335,397
70	Pengekstrakan petroleum mentah dan gas asli <i>Extraction of crude petroleum and natural gas</i>	31	176,186,250	24,804,970	151,381,281	16,846	5,141,666	342,397,508
	Aktiviti sokongan pengekstrakan petroleum dan gas asli <i>Support activities for petroleum and natural gas extraction</i>	227	14,632,758	6,702,854	7,929,903	13,235	1,033,412	6,937,889

Jadual 3: Statistik utama sektor Perlombongan dan pengkuarian mengikut negeri, 2022

Table 3: Principal statistics of Mining and quarrying sector by state, 2022

Negeri <i>State</i>	Bilangan pertubuhan <i>Number of establishments</i>	Nilai output kasar <i>Value of gross output</i>	Nilai input perantaraan <i>Value of intermediate input</i>	Nilai ditambah <i>Value added</i>	Bilangan pekerja <i>Number of persons engaged</i>	Gaji & upah <i>Salaries & wages</i>	Nilai harta tetap <i>Value of fixed assets</i>
		(RM '000)	(RM '000)	(RM '000)		(RM '000)	(RM '000)
Jumlah <i>Total</i>	1,440	204,139,150	39,160,994	164,978,156	65,647	7,394,555	354,348,718
Johor	191	2,636,411	1,564,872	1,071,539	4,431	160,523	652,599
Kedah	24	116,093	67,600	48,493	483	13,629	37,634
Kelantan	52	545,983	277,060	268,923	1,963	63,737	272,103
Melaka	20	132,733	77,085	55,648	477	13,145	76,742
Negeri Sembilan	67	396,544	220,131	176,412	1,561	47,247	121,336
Pahang	133	1,963,377	1,058,326	905,050	4,312	143,293	703,409
Pulau Pinang	76	763,168	392,438	370,730	1,603	63,762	468,399
Perak	157	1,696,129	889,930	806,199	5,105	169,038	1,070,433
Perlis	4	55,093	34,024	21,069	203	8,401	8,372
Selangor	391	5,134,754	2,751,980	2,382,774	12,316	485,813	899,013
Terengganu	59	1,226,133	604,046	622,087	1,731	96,008	1,205,565
Sabah	64	47,919,630	7,054,286	40,865,343	5,246	751,158	61,708,633
Sarawak	112	73,980,587	11,515,397	62,465,189	12,309	1,879,008	102,971,800
Wilayah Persekutuan*	78	8,906,997	4,111,887	4,795,110	4,599	509,850	4,513,121
SUPRA**	12	58,665,519	8,541,929	50,123,590	9,308	2,989,941	179,639,558

* Termasuk W.P. Kuala Lumpur dan W.P. Labuan / Included W.P. Kuala Lumpur and W.P. Labuan

** Merangkumi aktiviti pengeluaran yang melangkaui pusat kepentingan ekonomi utama bagi mana-mana negeri
Comprises of production activities that beyond the centre of predominant economic interest for any state

Jadual 4: Statistik utama sektor Perlombongan dan pengkuarian mengikut taraf sah, 2022

Table 4: Principal statistics of Mining and quarrying sector by legal status, 2022

Taraf sah <i>Legal status</i>	Bilangan pertubuhan <i>Number of establishments</i>	Nilai output kasar <i>Value of gross output</i>	Nilai input perantaraan <i>Value of intermediate input</i>	Nilai ditambah <i>Value added</i>	Bilangan pekerja <i>Number of persons engaged</i>	Gaji & upah <i>Salaries & wages</i>	Nilai harta tetap <i>Value of fixed assets</i>
		(RM '000)	(RM '000)	(RM '000)		(RM '000)	(RM '000)
Jumlah <i>Total</i>	1,440	204,139,150	39,160,994	164,978,156	65,647	7,394,555	354,348,718
Hak milik perseorangan <i>Individual proprietorship</i>	97	139,430	73,441	65,990	1,221	27,673	56,593
Perkongsian <i>Partnership</i>	25	57,037	29,290	27,747	346	7,155	16,632
Syarikat awam berhad <i>Public limited company</i>	9	40,314,597	4,972,798	35,341,799	3,229	1,099,229	51,570,560
Perbadanan awam <i>Public corporation</i>							
Syarikat sendirian berhad <i>Private limited company</i>	1,305	163,552,069	34,047,614	129,504,455	60,798	6,259,099	302,703,552
Perkongsian liabiliti terhad <i>Limited liabilities partnership</i>	4	76,017	37,851	38,166	53	1,399	1,381
Syarikat koperasi <i>Co-operative</i>							

Jadual 4.1: Statistik utama subsektor Perlombongan mineral dan pengkuarian mengikut taraf sah, 2022
Table 4.1: Principal statistics of Mineral mining and quarrying sub-sector by legal status, 2022

Taraf sah <i>Legal status</i>	Bilangan pertubuhan <i>Number of establishments</i>	Nilai output kasar <i>Value of gross output</i>	Nilai input perantaraan <i>Value of intermediate input</i>	Nilai ditambah <i>Value added</i>	Bilangan pekerja <i>Number of persons engaged</i>	Gaji & upah <i>Salaries & wages</i>	Nilai harta tetap <i>Value of fixed assets</i>
		(RM '000)	(RM '000)	(RM '000)		(RM '000)	(RM '000)
Jumlah <i>Total</i>	1,182	13,320,142	7,653,170	5,666,973	35,566	1,219,477	5,013,322
Hak milik perseorangan <i>Individual proprietorship</i>	97	139,430	73,441	65,990	1,221	27,673	56,593
Perkongsian <i>Partnership</i>	25	57,037	29,290	27,747	346	7,155	16,632
Syarikat awam berhad <i>Public limited company</i>	3	29,566	17,459	12,107	248	9,272	41,247
Perbadanan awam <i>Public corporation</i>							
Syarikat sendirian berhad <i>Private limited company</i>	1,053	13,018,092	7,495,129	5,522,963	33,698	1,173,978	4,897,468
Perkongsian liabiliti terhad <i>Limited liabilities partnership</i>	4	76,017	37,851	38,166	53	1,399	1,381
Syarikat koperasi <i>Co-operative</i>							

Jadual 4.2: Statistik utama subsektor Perlombongan petroleum dan gas asli mengikut taraf sah, 2022

Table 4.2: Principal statistics of Petroleum and natural gas mining sub-sector by legal status, 2022

Taraf sah <i>Legal status</i>	Bilangan pertubuhan <i>Number of establishments</i>	Nilai output kasar <i>Value of gross output</i>	Nilai input perantaraan <i>Value of intermediate input</i>	Nilai ditambah <i>Value added</i>	Bilangan pekerja <i>Number of persons engaged</i>	Gaji & upah <i>Salaries & wages</i>	Nilai harta tetap <i>Value of fixed assets</i>
		(RM '000)	(RM '000)	(RM '000)		(RM '000)	(RM '000)
Jumlah <i>Total</i>	258	190,819,008	31,507,824	159,311,184	30,081	6,175,078	349,335,397
Syarikat awam berhad <i>Public limited company</i>	6	40,285,031	4,955,339	35,329,692	2,981	1,089,957	51,529,313
Syarikat sendirian berhad <i>Private limited company</i>	252	150,533,977	26,552,485	123,981,492	27,100	5,085,121	297,806,084

Jadual 5: Statistik utama sektor Perlombongan dan pengkuarian mengikut hak milik, 2022

Table 5: Principal statistics of Mining and quarrying sector by ownership, 2022

Hak milik <i>Ownership</i>	Bilangan pertubuhan <i>Number of establishments</i>	Nilai output kasar <i>Value of gross output</i>	Nilai input perantaraan <i>Value of intermediate input</i>	Nilai ditambah <i>Value added</i>	Bilangan pekerja <i>Number of persons engaged</i>	Gaji & upah <i>Salaries & wages</i>	Nilai harta tetap <i>Value of fixed assets</i>
		(RM '000)	(RM '000)	(RM '000)		(RM '000)	(RM '000)
Jumlah <i>Total</i>	1,440	204,139,150	39,160,994	164,978,156	65,647	7,394,555	354,348,718
Residen Malaysia <i>Malaysian residents</i>	1,401	95,461,761	23,992,869	71,468,893	56,909	5,180,029	168,460,576
Bukan residen Malaysia <i>Non-Malaysian residents</i>	39	108,677,389	15,168,125	93,509,264	8,738	2,214,526	185,888,142
Hak milik bersama <i>Joint ownership</i>							

Jadual 5.1: Statistik utama subsektor Perlombongan mineral dan pengkuarian mengikut hak milik, 2022
Table 5.1: Principal statistics of Mineral mining and quarrying sub-sector by ownership, 2022

Hak milik <i>Ownership</i>	Bilangan pertubuhan <i>Number of establishments</i>	Nilai output kasar <i>Value of gross output</i>	Nilai input perantaraan <i>Value of intermediate input</i>	Nilai ditambah <i>Value added</i>	Bilangan pekerja <i>Number of persons engaged</i>	Gaji & upah <i>Salaries & wages</i>	Nilai harta tetap <i>Value of fixed assets</i>
		(RM '000)	(RM '000)	(RM '000)		(RM '000)	(RM '000)
Jumlah <i>Total</i>	1,182	13,320,142	7,653,170	5,666,973	35,566	1,219,477	5,013,322
Residen Malaysia <i>Malaysian residents</i>	1,170	12,379,695	7,212,309	5,167,386	33,769	1,155,994	4,494,920
Bukan residen Malaysia <i>Non-Malaysian residents</i>	12	940,447	440,861	499,586	1,797	63,482	518,401

Jadual 5.2: Statistik utama subsektor Perlombongan petroleum dan gas asli mengikut hak milik, 2022
Table 5.2: Principal statistics of Petroleum and natural gas mining sub-sector by ownership, 2022

Hak milik <i>Ownership</i>	Bilangan pertubuhan <i>Number of establishments</i>	Nilai output kasar <i>Value of gross output</i>	Nilai input perantaraan <i>Value of intermediate input</i>	Nilai ditambah <i>Value added</i>	Bilangan pekerja <i>Number of persons engaged</i>	Gaji & upah <i>Salaries & wages</i>	Nilai harta tetap <i>Value of fixed assets</i>
		(RM '000)	(RM '000)	(RM '000)		(RM '000)	(RM '000)
Jumlah <i>Total</i>	258	190,819,008	31,507,824	159,311,184	30,081	6,175,078	349,335,397
Residen Malaysia <i>Malaysian residents</i>	231	83,082,066	16,780,560	66,301,506	23,140	4,024,034	163,965,656
Bukan residen Malaysia <i>Non-Malaysian residents</i>	27	107,736,941	14,727,264	93,009,678	6,941	2,151,044	185,369,741
Hak milik bersama <i>Joint ownership</i>							

Jadual 6: Bilangan pekerja dan gaji & upah sektor Perlombongan dan pengkuarian mengikut kategori pekerja dan jantina, 2022
Table 6: Number of persons engaged and salaries & wages of Mining and quarrying sector by category of workers and sex, 2022

Kategori pekerja <i>Category of workers</i>	Bilangan pekerja <i>Number of persons engaged</i>			Gaji & upah <i>Salaries & wages</i> (RM '000)
	Jumlah <i>Total</i>	Lelaki <i>Male</i>	Perempuan <i>Female</i>	
Jumlah (A+B+C) <i>Total (A+B+C)</i>	65,647	55,139	10,508	7,394,555
A. Jumlah pemilik yang bekerja, rakan niaga yang aktif dan pekerja keluarga tanpa gaji <i>Total working proprietors, active business partners and unpaid family workers</i>	244	221	23	-
B. Jumlah pekerja bergaji (sepenuh masa) <i>Total paid employees (full-time)</i>	65,207	54,726	10,481	7,391,136
Pengurus <i>Managers</i>	7,998	6,350	1,648	2,925,684
Profesional <i>Professionals</i>	8,602	5,808	2,794	1,895,685
Penyelidik <i>Researchers</i>	209	183	26	24,213
Juruteknik dan profesional bersekutu <i>Technicians and associate professionals</i>	8,945	8,162	783	1,232,821
Pekerja sokongan perkeranian <i>Clerical support workers</i>	5,284	1,022	4,262	235,254
Pekerja perkhidmatan dan jualan <i>Services and sales workers</i>	464	330	134	15,755
Pekerja kemahiran dan pekerja pertukangan yang berkaitan <i>Craft and related trade workers</i>	8,678	8,578	100	415,756
Operator mesin & loji dan pemasang <i>Plant & machine operators, and assemblers</i>	20,171	19,831	340	553,216
Pekerja asas <i>Elementary occupations</i>	4,856	4,462	394	92,753
C. Jumlah pekerja bergaji (sambilan) <i>Total paid employees (part-time)</i>	196	192	4	3,419

Jadual 6.1: Bilangan pekerja dan gaji & upah subsektor Perlombongan mineral dan pengkuarian mengikut kategori pekerja dan jantina, 2022

Table 6.1: Number of persons engaged and salaries & wages of Mineral mining and quarrying sub-sector by category of workers and sex, 2022

Kategori pekerja <i>Category of workers</i>	Bilangan pekerja <i>Number of persons engaged</i>			Gaji & upah <i>Salaries & wages</i> (RM '000)
	Jumlah <i>Total</i>	Lelaki <i>Male</i>	Perempuan <i>Female</i>	
Jumlah (A+B+C) <i>Total (A+B+C)</i>	35,566	30,809	4,757	1,219,477
A. Jumlah pemilik yang bekerja, rakan niaga yang aktif dan pekerja keluarga tanpa gaji <i>Total working proprietors, active business partners and unpaid family workers</i>	244	221	23	-
B. Jumlah pekerja bergaji (se penuh masa) <i>Total paid employees (full-time)</i>	35,140	30,406	4,734	1,216,413
Pengurus <i>Managers</i>	3,113	2,787	326	304,856
Profesional <i>Professionals</i>	1,019	680	339	62,953
Penyelidik <i>Researchers</i>	154	139	15	11,828
Juruteknik dan profesional bersekutu <i>Technicians and associate professionals</i>	1,743	1,661	82	81,718
Pekerja sokongan perkeranian <i>Clerical support workers</i>	3,795	611	3,184	105,901
Pekerja perkhidmatan dan jualan <i>Services and sales workers</i>	400	308	92	12,831
Pekerja kemahiran dan pekerja pertukangan yang berkaitan <i>Craft and related trade workers</i>	2,100	2,026	74	62,473
Operator mesin & loji dan pemasang <i>Plant & machine operators, and assemblers</i>	18,598	18,325	273	493,465
Pekerja asas <i>Elementary occupations</i>	4,218	3,869	349	80,388
C. Jumlah pekerja bergaji (sambilan) <i>Total paid employees (part-time)</i>	182	182	-	3,064

Jadual 6.2: Bilangan pekerja dan gaji & upah subsektor Perlombongan petroleum dan gas asli mengikut kategori pekerja dan jantina, 2022
Table 6.2: Number of persons engaged and salaries & wages of Petroleum and natural gas mining sub-sector by category of workers and sex, 2022

Kategori pekerja <i>Category of workers</i>	Bilangan pekerja <i>Number of persons engaged</i>			Gaji & upah <i>Salaries & wages</i> (RM '000)
	Jumlah <i>Total</i>	Lelaki <i>Male</i>	Perempuan <i>Female</i>	
Jumlah (A+B+C) <i>Total (A+B+C)</i>	30,081	24,330	5,751	6,175,078
A. Jumlah pemilik yang bekerja, rakan niaga yang aktif dan pekerja keluarga tanpa gaji <i>Total working proprietors, active business partners and unpaid family workers</i>	-	-	-	-
B. Jumlah pekerja bergaji (sepenuh masa) <i>Total paid employees (full-time)</i>	30,067	24,320	5,747	6,174,723
Pengurus <i>Managers</i>	4,885	3,563	1,322	2,620,827
Profesional <i>Professionals</i>	7,583	5,128	2,455	1,832,732
Penyelidik <i>Researchers</i>	55	44	11	12,385
Juruteknik dan profesional bersekutu <i>Technicians and associate professionals</i>	7,202	6,501	701	1,151,104
Pekerja sokongan perkeranian <i>Clerical support workers</i>	1,489	411	1,078	129,352
Pekerja perkhidmatan dan jualan <i>Services and sales workers</i>	64	22	42	2,924
Pekerja kemahiran dan pekerja pertukangan yang berkaitan <i>Craft and related trade workers</i>	6,578	6,552	26	353,283
Operator mesin & loji dan pemasang <i>Plant & machine operators, and assemblers</i>	1,573	1,506	67	59,751
Pekerja asas <i>Elementary occupations</i>	638	593	45	12,365
C. Jumlah pekerja bergaji (sambilan) <i>Total paid employees (part-time)</i>	14	10	4	356

Jadual 7: Bilangan pekerja dan gaji & upah sektor Perlombongan dan pengkuarian mengikut kategori kemahiran dan jantina, 2022

Table 7: Number of persons engaged and salaries & wages of Mining and quarrying sector by category of skills and sex, 2022

Kategori kemahiran <i>Category of skills</i>	Bilangan pekerja <i>Number of persons engaged</i>			Gaji & upah <i>Salaries & wages</i> (RM '000)
	Jumlah <i>Total</i>	Lelaki <i>Male</i>	Perempuan <i>Female</i>	
Jumlah* <i>Total</i>	65,207	54,726	10,481	7,391,136
Mahir <i>Skilled</i>	25,754	20,503	5,251	6,078,403
Separuh mahir <i>Semi-skilled</i>	34,597	29,761	4,836	1,219,980
Berkemahiran rendah <i>Low-skilled</i>	4,856	4,462	394	92,753

*** Tidak termasuk pemilik yang bekerja dan rakan niaga yang aktif, pekerja keluarga tanpa gaji dan pekerja bergaji (sambilan)**

Excludes working proprietors and active business partners, unpaid family workers and paid employees (part-time)

Jadual 7.1: Bilangan pekerja dan gaji & upah subsektor Perlombongan mineral dan pengkuarian mengikut kategori kemahiran dan jantina, 2022

Table 7.1: Number of persons engaged and salaries & wages of Mineral mining and quarrying sub-sector by category of skills and sex, 2022

Kategori kemahiran <i>Category of skills</i>	Bilangan pekerja <i>Number of persons engaged</i>			Gaji & upah <i>Salaries & wages</i> (RM '000)
	Jumlah <i>Total</i>	Lelaki <i>Male</i>	Perempuan <i>Female</i>	
Jumlah* <i>Total</i>	35,140	30,406	4,734	1,216,413
Mahir <i>Skilled</i>	6,029	5,267	762	461,355
Separuh mahir <i>Semi-skilled</i>	24,893	21,270	3,623	674,670
Berkemahiran rendah <i>Low-skilled</i>	4,218	3,869	349	80,388

* Tidak termasuk pemilik yang bekerja dan rakan niaga yang aktif, pekerja keluarga tanpa gaji dan pekerja bergaji (sambilan)

Excludes working proprietors and active business partners, unpaid family workers and paid employees (part-time)

Jadual 7.2: Bilangan pekerja dan gaji & upah subsektor Perlombongan petroleum dan gas asli mengikut kategori kemahiran dan jantina, 2022
Table 7.2: Number of persons engaged and salaries & wages of Petroleum and natural gas mining sub-sector by category of skills and sex, 2022

Kategori kemahiran <i>Category of skills</i>	Bilangan pekerja <i>Number of persons engaged</i>			Gaji & upah <i>Salaries & wages</i> (RM '000)
	Jumlah <i>Total</i>	Lelaki <i>Male</i>	Perempuan <i>Female</i>	
Jumlah* <i>Total</i>	30,067	24,320	5,747	6,174,723
Mahir <i>Skilled</i>	19,725	15,236	4,489	5,617,048
Separuh mahir <i>Semi-skilled</i>	9,704	8,491	1,213	545,310
Berkemahiran rendah <i>Low-skilled</i>	638	593	45	12,365

* Tidak termasuk pemilik yang bekerja dan rakan niaga yang aktif, pekerja keluarga tanpa gaji dan pekerja bergaji (sambilan)
Excludes working proprietors and active business partners, unpaid family workers and paid employees (part-time)

Jadual 8: Bilangan pekerja sektor Perlombongan dan pengkuarian mengikut sijil tertinggi diperoleh dan jantina, 2022

Table 8: Number of persons engaged of Mining and quarrying sector by highest certificate obtained and sex, 2022

Kategori sijil <i>Category of certificate</i>	Bilangan pekerja <i>Number of persons engaged</i>		
	Jumlah <i>Total</i>	Lelaki <i>Male</i>	Perempuan <i>Female</i>
Jumlah <i>Total</i>	65,647	55,139	10,508
Pascasiswazah <i>Postgraduate</i>	2,169	1,637	532
Ijazah sarjana muda / Diploma lanjutan atau yang setaraf <i>Bachelor / Advanced Diploma or equivalent</i>	12,587	9,166	3,421
Diploma <i>Diploma</i>	12,498	9,844	2,654
STPM atau yang setaraf <i>STPM or equivalent</i>	2,455	1,809	646
Sijil <i>Certificate</i>	6,262	5,806	456
SPM / SPM (V) atau yang setaraf <i>SPM / SPM (V) or equivalent</i>	19,254	16,784	2,470
Di bawah taraf kelulusan SPM / SPM (V) <i>Below SPM / SPM (V) qualification</i>	10,422	10,093	329

Jadual 8.1: Bilangan pekerja dalam subsektor Perlombongan mineral dan pengkuarian mengikut sijil tertinggi diperoleh dan jantina, 2022

Table 8.1: Number of persons engaged of Mineral mining and quarrying sub-sector by highest certificate obtained and sex, 2022

Kategori sijil <i>Category of certificate</i>	Bilangan pekerja <i>Number of persons engaged</i>		
	Jumlah <i>Total</i>	Lelaki <i>Male</i>	Perempuan <i>Female</i>
Jumlah <i>Total</i>	35,566	30,809	4,757
Pascasiswazah <i>Postgraduate</i>	875	816	59
Ijazah sarjana muda / Diploma lanjutan atau yang setaraf <i>Bachelor / Advanced Diploma or equivalent</i>	3,258	2,690	568
Diploma <i>Diploma</i>	3,928	2,589	1,339
STPM atau yang setaraf <i>STPM or equivalent</i>	925	538	387
Sijil <i>Certificate</i>	2,764	2,526	238
SPM / SPM (V) atau yang setaraf <i>SPM / SPM (V) or equivalent</i>	14,440	12,575	1,865
Di bawah taraf kelulusan SPM / SPM (V) <i>Below SPM / SPM (V) qualification</i>	9,376	9,075	301

Jadual 8.2: Bilangan pekerja dalam subsektor Perlombongan petroleum dan gas asli mengikut sijil tertinggi diperoleh dan jantina, 2022

Table 8.2: Number of persons engaged of Petroleum and natural gas mining sub-sector by highest certificate obtained and sex, 2022

Kategori sijil <i>Category of certificate</i>	Bilangan pekerja <i>Number of persons engaged</i>		
	Jumlah <i>Total</i>	Lelaki <i>Male</i>	Perempuan <i>Female</i>
Jumlah <i>Total</i>	30,081	24,330	5,751
Pascasiswazah <i>Postgraduate</i>	1,294	821	473
Ijazah sarjana muda / Diploma lanjutan atau yang setaraf <i>Bachelor / Advanced Diploma or equivalent</i>	9,329	6,476	2,853
Diploma <i>Diploma</i>	8,570	7,255	1,315
STPM atau yang setaraf <i>STPM or equivalent</i>	1,530	1,271	259
Sijil <i>Certificate</i>	3,498	3,280	218
SPM / SPM (V) atau yang setaraf <i>SPM / SPM (V) or equivalent</i>	4,814	4,209	605
Di bawah taraf kelulusan SPM / SPM (V) <i>Below SPM / SPM (V) qualification</i>	1,046	1,018	28

Jadual 9: Bilangan pekerja dan gaji & upah sektor Perlombongan dan pengkuarian mengikut taraf kewarganegaraan dan jantina, 2022

Table 9: Number of persons engaged and salaries & wages of Mining and quarrying sector by citizenship and sex, 2022

Subsektor / Kumpulan Sub-sector / Group			Bilangan pekerja Number of persons engaged				Gaji & upah Salaries & wages (RM '000)		
			Jumlah Total	Lelaki Male	Perempuan Female				
					Warganegara Malaysia Malaysian citizens	Bukan warganegara Malaysia Non-Malaysian citizens		Warganegara Malaysia Malaysian citizens	Bukan warganegara Malaysia Non-Malaysian citizens
Jumlah Total			65,647	50,263	4,876	10,307	201	7,394,555	
Perlombongan mineral dan pengkuarian Mineral mining and quarrying			35,566	27,162	3,647	4,617	140	1,219,477	
Perlombongan petroleum dan gas asli Petroleum and natural gas mining			30,081	23,101	1,229	5,690	61	6,175,078	

Jadual 9.1: Bilangan pekerja dan gaji & upah subsektor Perlombongan mineral dan pengkuarian mengikut taraf kewarganegaraan dan jantina, 2022

Table 9.1: Number of persons engaged and salaries & wages of Mineral mining and quarrying sub-sector by citizenship and sex, 2022

Subsektor / Kumpulan Sub-sector / Group	Bilangan pekerja Number of persons engaged					Gaji & upah Salaries & wages (RM '000)
	Jumlah Total	Lelaki Male		Perempuan Female		
		Warganegara Malaysia Malaysian citizens	Bukan warganegara Malaysia Non-Malaysian citizens	Warganegara Malaysia Malaysian citizens	Bukan warganegara Malaysia Non-Malaysian citizens	
Jumlah Total	35,566	27,162	3,647	4,617	140	1,219,477
Perlombongan batu arang Mining of hard coal	1,660	1,457	43	156	4	71,879
Perlombongan bijih logam Mining of iron ore	2,420	1,688	406	326	-	81,320
Perlombongan bijih logam bukan besi Mining of non-ferrous metal ores	4,317	3,530	379	405	3	150,677
Pengkuarian batu, pasir, dan tanah liat Quarrying of stone, sand and clay	25,465	19,094	2,704	3,536	131	862,233
Perlombongan dan pengkuarian t.t.t.l Mining and quarrying n.e.c.	852	736	32	82	2	26,409
Aktiviti sokongan untuk perlombongan dan pengkuarian lain Support activities for other mining and quarrying	852	657	83	112	-	26,958

Jadual 9.2: Bilangan pekerja dan gaji & upah subsektor Perlombongan petroleum dan gas asli mengikut taraf kewarganegaraan dan jantina, 2022

Table 9.2: Number of persons engaged and salaries & wages of Petroleum and natural gas mining sub-sector by citizenship and sex, 2022

Subsektor / Kumpulan <i>Sub-sector / Group</i>	Bilangan pekerja <i>Number of persons engaged</i>					Gaji & upah <i>Salaries & wages</i> (RM '000)
	Jumlah <i>Total</i>	Lelaki <i>Male</i>		Perempuan <i>Female</i>		
		Warganegara Malaysia <i>Malaysian citizens</i>	Bukan warganegara Malaysia <i>Non-Malaysian citizens</i>	Warganegara Malaysia <i>Malaysian citizens</i>	Bukan warganegara Malaysia <i>Non-Malaysian citizens</i>	
Jumlah <i>Total</i>	30,081	23,101	1,229	5,690	61	6,175,078
Pengekstrakan petroleum mentah dan gas asli <i>Extraction of crude petroleum and natural gas</i>	16,846	12,111	460	4,217	58	5,141,666
Aktiviti sokongan pengekstrakan petroleum dan gas asli <i>Support activities for petroleum and natural gas extraction</i>	13,235	10,990	769	1,473	3	1,033,412

Jadual 10: Nilai harta tetap sektor Perlombongan dan pengkuarian mengikut jenis harta, 2022

Table 10: Value of fixed assets of Mining and quarrying sector by type of assets, 2022

(RM '000)						
Jenis harta	Nilai buku bersih seperti pada 01.01.2022	Perbelanjaan modal	Harta yang dijual dalam tahun 2022	Susut nilai semasa	Nilai buku bersih seperti pada 31.12.2022	Sewa yang dibayar dalam tahun 2022
<i>Type of assets</i>	<i>Net book value as at 01.01.2022</i>	<i>Capital expenditure</i>	<i>Assets sold during 2022</i>	<i>Current depreciation</i>	<i>Net book value as at 31.12.2022</i>	<i>Rent paid during 2022</i>
Jumlah (A+B) <i>Total (A+B)</i>	290,455,941	75,111,025	3,642,264	9,134,077	354,348,718	1,087,932
A. Harta tetap / Fixed assets	228,233,683	49,332,502	2,978,541	8,754,748	267,227,282	1,087,759
Tanah / Land	1,095,598	162,062	17,099	17,856	1,475,856	286,792
Bangunan dan binaan lain / Buildings and other construction	3,649,448	1,142,778	5,321	160,970	4,630,721	266,832
Tempat kediaman / Residential	241,007	24,539	648	5,972	259,480	58,603
Bukan tempat kediaman / Non-residential	2,489,337	327,354	2,888	132,083	2,685,557	206,987
Binaan lain kecuali pembangunan tanah <i>Other construction except land improvement</i>	919,104	790,885	1,785	22,915	1,685,685	1,241
Pembangunan tanah / Land improvement	50,606	3,630	-	8,671	45,565	-
Alat pengangkutan / Transport equipment	5,365,670	221,612	12,052	392,315	5,078,959	364,247
Kereta penumpang / Passenger cars	322,452	7,238	231	30,695	298,861	183
Kenderaan perdagangan / Commercial vehicles	1,173,989	34,821	8,367	143,591	1,058,906	19,078
Lain-lain / Others	3,869,229	179,553	15,099	218,029	3,721,192	344,986
Teknologi maklumat dan komunikasi <i>Information and communications technology</i>	3,326,453	1,576,232	164,997	158,278	4,581,883	2,688
Perkakasan komputer / Computer hardware	981,155	327,396	86,921	91,809	1,130,245	714
Perisian komputer / Computer software	1,272,509	70,485	273	63,227	1,281,543	1,617
Peralatan telekomunikasi / Telecommunications equipment	1,072,790	1,178,351	77,804	3,242	2,170,095	357
Jentera dan kelengkapan / Machinery and equipment	153,650,169	34,247,729	1,956,421	7,162,064	180,027,867	165,738
Perabot dan pemasangan / Furniture and fittings	905,043	184,760	1,478	60,329	1,029,405	1,461
Mencarigali mineral / Mineral exploration	60,190,696	11,793,699	821,173	794,264	70,357,026	-
B. Harta lain / Other assets	62,222,258	25,778,523	652,077	379,328	87,121,437	174

Jadual 10.1: Nilai harta tetap subsektor Perlombongan mineral dan pengkuarian mengikut jenis harta, 2022

Table 10.1: Value of fixed assets of Mineral mining and quarrying sub-sector by type of assets, 2022

(RM '000)						
Jenis harta	Nilai buku bersih seperti pada 01.01.2022	Perbelanjaan modal	Harta yang dijual dalam tahun 2022	Susut nilai semasa	Nilai buku bersih seperti pada 31.12.2022	Sewa yang dibayar dalam tahun 2022
<i>Type of assets</i>	<i>Net book value as at 01.01.2022</i>	<i>Capital expenditure</i>	<i>Assets sold during 2022</i>	<i>Current depreciation</i>	<i>Net book value as at 31.12.2022</i>	<i>Rent paid during 2022</i>
Jumlah (A+B) <i>Total (A+B)</i>	4,841,975	797,288	85,407	563,640	5,013,322	183,605
A. Harta tetap / Fixed assets	4,545,602	765,022	50,900	528,368	4,757,832	183,590
Tanah / Land	847,517	162,062	17,099	17,432	988,415	56,488
Bangunan dan binaan lain / Buildings and other construction	700,105	153,720	5,321	62,087	790,279	49,824
Tempat kediaman / Residential	29,884	4,962	648	4,713	29,915	1,275
Bukan tempat kediaman / Non-residential	509,482	40,210	2,888	40,192	509,649	47,308
Binaan lain kecuali pembangunan tanah <i>Other construction except land improvement</i>	160,739	108,549	1,785	17,182	250,716	1,241
Pembangunan tanah / Land improvement	43,034	3,630	-	8,671	37,993	-
Alat pengangkutan / Transport equipment	762,431	42,187	12,052	103,422	691,113	20,443
Kereta penumpang / Passenger cars	116,193	2,885	231	14,122	104,807	32
Kenderaan perdagangan / Commercial vehicles	609,030	34,059	8,271	83,454	553,418	18,814
Lain-lain / Others	37,207	5,243	3,549	5,845	32,888	1,597
Teknologi maklumat dan komunikasi <i>Information and communications technology</i>	141,577	23,215	416	18,195	146,247	53
Perkakasan komputer / Computer hardware	100,839	10,299	197	15,995	95,007	7
Perisian komputer / Computer software	5,848	230	185	1,176	4,720	-
Peralatan telekomunikasi / Telecommunications equipment	34,889	12,687	34	1,023	46,520	46
Jentera dan kelengkapan / Machinery and equipment	1,769,071	283,871	15,487	286,609	1,753,777	55,390
Perabot dan pemasangan / Furniture and fittings	176,421	23,684	526	24,675	174,913	1,392
Mencarigali mineral / Mineral exploration	105,446	72,651	-	7,278	175,095	-
B. Harta lain / Other assets	296,373	32,266	34,507	35,272	255,490	15

Jadual 10.2: Nilai harta tetap subsektor Perlombongan petroleum dan gas asli mengikut jenis harta, 2022

Table 10.2: Value of fixed assets of Petroleum and natural gas sub-sector by type of assets, 2022

(RM '000)						
Jenis harta	Nilai buku bersih seperti pada 01.01.2022	Perbelanjaan modal	Harta yang dijual dalam tahun 2022	Susut nilai semasa	Nilai buku bersih seperti pada 31.12.2022	Sewa yang dibayar dalam tahun 2022
<i>Type of assets</i>	<i>Net book value as at 01.01.2022</i>	<i>Capital expenditure</i>	<i>Assets sold during 2022</i>	<i>Current depreciation</i>	<i>Net book value as at 31.12.2022</i>	<i>Rent paid during 2022</i>
Jumlah (A+B) <i>Total (A+B)</i>	285,613,966	74,313,738	3,556,856	8,570,436	349,335,397	904,327
A. Harta tetap / Fixed assets	223,688,081	48,567,481	2,927,641	8,226,380	262,469,450	904,168
Tanah / Land	248,081	-	-	425	487,441	230,304
Bangunan dan binaan lain / Buildings and other construction	2,949,343	989,058	-	98,883	3,840,442	217,008
Tempat kediaman / Residential	211,123	19,577	-	1,259	229,565	57,328
Bukan tempat kediaman / Non-residential	1,979,854	287,144	-	91,891	2,175,908	159,679
Binaan lain kecuali pembangunan tanah Other construction except land improvement	758,365	682,337	-	5,733	1,434,969	-
Pembangunan tanah / Land improvement	7,572	-	-	-	7,572	-
Alat pengangkutan / Transport equipment	4,603,239	179,425	-	288,893	4,387,846	343,804
Kereta penumpang / Passenger cars	206,259	4,353	-	16,573	194,054	151
Kenderaan perdagangan / Commercial vehicles	564,959	762	96	60,137	505,488	264
Lain-lain / Others	3,832,022	174,310	11,550	212,184	3,688,304	343,389
Teknologi maklumat dan komunikasi Information and communications technology	3,184,877	1,553,017	164,581	140,083	4,435,636	2,635
Perkakasan komputer / Computer hardware	880,316	317,097	86,724	75,813	1,035,238	707
Perisian komputer / Computer software	1,266,660	70,255	88	62,051	1,276,823	1,617
Peralatan telekomunikasi / Telecommunications equipment	1,037,901	1,165,664	77,769	2,219	2,123,575	311
Jentera dan kelengkapan / Machinery and equipment	151,881,099	33,963,858	1,940,935	6,875,455	178,274,090	110,348
Perabot dan pemasangan / Furniture and fittings	728,621	161,076	952	35,655	854,492	69
Mencarigali mineral / Mineral exploration	60,085,249	11,721,048	821,173	786,987	70,181,930	-
B. Harta lain / Other assets	61,925,885	25,746,257	617,570	344,056	86,865,947	159

Table 11: Principal statistics of women-owned establishments Mining and quarrying sector by sub-sector, 2022

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NOTA TEKNIKAL

TECHNICAL NOTES



BAHAGIAN **4**

PART

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1. SKOP DAN LIPUTAN

Penerbitan ini menggunakan data daripada Banci Ekonomi 2023 (tahun rujukan 2022). Banci mengumpul maklumat daripada pertubuhan berdaftar dalam sektor Pertanian, Perlombongan & pengkuarian, Pembuatan, Pembinaan dan Perkhidmatan. Klasifikasi industri merujuk kepada Piawaian Klasifikasi Industri Malaysia (MSIC) 2008 Versi 1.0 yang selaras dengan *International Standard Industrial Classification of All Economic Activities (ISIC), Rev. 4, United Nations*. Liputan bagi keseluruhan sektor merangkumi 1,200 kategori industri seperti yang ditunjukkan pada **Jadual 1**.

Jadual 1 : Bilangan industri mengikut sektor

Sektor	Bilangan Industri
Pertanian*	142
Perlombongan dan pengkuarian	56
Pembuatan	259
Pembinaan	72
Perkhidmatan	645
Jumlah	1,174

Nota*: Usahawan dalam sektor Pertanian yang hanya berdaftar dengan agensi-agensi kerajaan yang berkaitan bagi maksud menerima bantuan TIDAK diliputi kecuali pengusaha kelapa sawit

Keseluruhan liputan banci bagi sektor Perlombongan dan pengkuarian terdiri daripada 56 industri di peringkat 5-digit. Industri ini dikelaskan mengikut Piawaian Klasifikasi Industri Malaysia (MSIC) 2008 Ver. 1.0. Senarai lengkap industri yang diliputi ditunjukkan di Lampiran Piawaian Klasifikasi Industri Malaysia (MSIC) 2008 Ver. 1.0.

2. SUMBER RANGKA STATISTIK

Sumber utama rangka statistik pertubuhan adalah daripada *Malaysia Statistical Business Register* (MSBR). MSBR adalah senarai pertubuhan/perusahaan yang beroperasi di Malaysia yang merangkumi Daftar Syarikat (ROC), Daftar Perniagaan (ROB) dan Perkongsian Liabiliti Terhad (LLP) yang berdaftar dengan Suruhanjaya Syarikat Malaysia (SSM) serta pertubuhan yang berdaftar dengan pihak berkuasa tempatan dan badan profesional. Senarai di MSBR dikemaskini secara berkala berdasarkan survei dan bancian yang dijalankan oleh Jabatan Perangkaan Malaysia (DOSM) dan sumber data pentadbiran daripada pelbagai agensi. Sumber utama data pentadbiran adalah daripada Suruhanjaya Syarikat Malaysia (SSM).

Selain itu, DOSM juga bekerjasama untuk mendapatkan maklumat terkini daripada agensi lain seperti Kumpulan Wang Simpanan Pekerja (KWSP), Jabatan Kastam Diraja Malaysia, Lembaga Hasil Dalam Negeri (LHDN), Pertubuhan Keselamatan Sosial (PERKESO), pihak berkuasa tempatan dan badan profesional. Rangka dikemaskini untuk mengambil kira pertubuhan baru dan sebarang perubahan yang berlaku kepada pertubuhan tersebut seperti tutup, tidak beroperasi, perubahan jenis aktiviti dan lokasi/alamat pos untuk memastikan maklumat yang terdapat dalam rangka adalah yang paling terkini.

3. JENIS AKTIVITI PERNIAGAAN

Jenis aktiviti perniagaan merujuk kepada aktiviti utama dan sekunder. Aktiviti utama merujuk kepada aktiviti yang mana pertubuhan menumpukan sebahagian besar sumbernya atau memberi sumbangan besar dari segi pendapatan. Aktiviti sekunder didefinisikan sebagai aktiviti sampingan kepada aktiviti utama. Klasifikasi industri bagi pertubuhan adalah berasaskan kepada aktiviti utama dan mengikut Piawaian Klasifikasi Industri Malaysia (MSIC) 2008 Versi 1.0 yang diselaraskan dengan *International Standard Industrial Classification of All Economic Activities (ISIC), Rev. 4, United Nations* dengan pengubahsuaian mengikut keperluan tempatan.

4. KONSEP DAN DEFINISI

Konsep dan definisi yang digunakan selari dengan *International Recommendations for Industrial Statistics, United Nations Statistical Division*. Takrif Perlombongan dan pengkuarian yang digunakan dalam banci ini adalah selaras dengan MSIC 2008 Versi 1.0.

4.1 Takrif Perlombongan dan pengkuarian

Perlombongan dan pengkuarian termasuk pengekstrakan mineral yang terjadi secara semulajadi seperti pepejal (batu arang dan bijih), cecair (petroleum) atau gas (gas asli). Pengekstrakan boleh dijalankan melalui pelbagai kaedah seperti perlombongan bawah tanah atau dedah, pengoperasian telaga, perlombongan dasar laut dan lain-lain. Sektor Perlombongan dan pengkuarian terdiri daripada 2 subsektor iaitu:

4.1.1. Perlombongan mineral dan pengkuarian

i. Perlombongan adalah ditakrifkan sebagai:

Pengekstrakan, pembersihan dan pemanfaatan mineral-mineral semulajadi, berbentuk pepejal seperti batu arang dan bijih, cecair seperti minyak mentah dan berbentuk gas seperti gas asli. Perlombongan termasuk lombong bawah tanah dan lombong permukaan, kuari dan telaga-telaga dan semua kegiatan tambahan untuk pembersihan dan pemanfaatan bijih dan mineral mentah lain seperti pemecahan, penapisan, pembasuhan, pembersihan, penggredan, pengilangan, pengapungan, peleburan, penggentelan, pengkacipan dan persiapan lain yang diperlukan bagi menyediakan bahan-bahan ini untuk membolehkannya dipasarkan. Aktiviti perlombongan juga dikelaskan kepada kumpulan berdasarkan mineral utama yang dikeluarkan.

ii. Pengkuarian merujuk kepada:

Aktiviti pengekstrakan dari lombong atau kuari dan pengorekan mendapan lanar (aluvium), pemecahan batu dan penggunaan garam paya. Produk ini digunakan dengan meluas dalam sektor pembinaan (cth. pasir, batu, dll.), pembuatan bahan mentah (cth. tanah liat, gipsum, kalsium, dll.), pembuatan bahan kimia, dll.

la termasuk pengkuarian, pemotongan kasar bongkah batu dan batu bangunan seperti marmar, granit, batu pasir, dll, pengkuarian, pemecahan dan pemotongan batu kapur, perlombongan gipsum dan anhidrit, perlombongan kapur dan dolomit, pengekstrakan dan pengorekan pasir industri, pasir untuk pembinaan dan kerikil, memecah dan menghancurkan batu dan kerikil, pengkuarian pasir dan perlombongan tanah liat, refraktori tanah liat dan kaolin.

la juga termasuk perlombongan mineral kimia dan baja, pengekstrakan tanah gambut, pengekstrakan garam, dan dll.

4.1.2. Perlombongan petroleum dan gas asli

Petroleum dan gas asli merujuk kepada:

Pengeluaran petroleum mentah, perlombongan dan pengekstrakan minyak daripada minyak batu syal dan pasir minyak dan pengeluaran gas asli dan perolehan semula cecair hidrokarbon. la termasuk keseluruhan aktiviti pengoperasian dan/atau pembangunan kelengkapan lapangan minyak dan gas, termasuklah aktiviti seperti penggerudian, penyiapan dan melengkapkan telaga, operasi pengasingan, pemisahan emulsi, peralatan penyahkelodak dan penyambungan aktiviti lapangan untuk petroleum mentah dan semua aktiviti dalam penyediaan minyak dan gas sehingga ke tempat penghantaran daripada pusat pengeluaran.

la juga termasuk aktiviti sokongan bagi pengekstrakan petroleum dan gas seperti perkhidmatan lapangan minyak dan gas, yang dibuat berdasarkan kontrak atau yuran, eksplorasi telaga minyak dan gas dan penggerudian ujian dan aktiviti penggerekkan (*boring*).

5. TAHUN BANCII

Merujuk kepada tahun pelaksanaan bancian dijalankan.

6. TAHUN RUJUKAN

Tahun rujukan bagi penerbitan 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.

7. KAEDAH PENGUMPULAN

Bancian ini secara umumnya dijalankan dengan menggunakan tiga (3) kaedah pengumpulan data seperti berikut:

7.1 Kaedah atas talian melalui portal e-BE

Kaedah ini menyasarkan responden yang telah menggunakan kaedah ini bagi survei rutin terdahulu.

7.2 Kaedah kutipan data melalui e-mel, pos, faks dan telefon

Kaedah ini menyasarkan responden yang pernah terlibat dengan survei rutin terdahulu. Responden diberi tempoh satu bulan untuk melengkapkan dan mengembalikan borang soal selidik tersebut kepada DOSM.

7.3 Kaedah kutipan data secara bersemuka

Kerja luar operasi di lapangan dijalankan untuk mendapatkan maklum balas daripada pertubuhan yang belum memberi jawapan dari kedua-dua kaedah di atas dan kaedah ini menyasarkan pertubuhan yang tidak pernah terlibat dengan survei rutin DOSM.

8. UNIT PELAPOR

Unit pelapor bagi Banci Ekonomi 2023 adalah 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.

9. PEMBOLEH UBAH UTAMA:

9.1 TARAF SAH

Taraf sah sesebuah pertubuhan telah ditakrifkan seperti berikut:

a. Hak milik perseorangan

Merujuk kepada perniagaan yang dimiliki dan dijalankan oleh orang perseorangan semata-mata untuk mendapatkan keuntungan sendiri. Pemilik mempunyai hak mutlak atas segala urusan pertubuhannya.

b. Perkongsian

Merujuk kepada sekumpulan individu yang telah bersetuju mengikat kontrak dan menjalankan perniagaan dengan matlamat untuk memperoleh keuntungan. Perniagaan tersebut diuruskan oleh kesemua mereka atau salah seorang daripada mereka yang bertindak mewakili semua pihak. Perkongsian perniagaan ini hendaklah mengandungi sekurang-kurangnya dua orang ahli dan tidak melebihi had maksimum dua puluh orang.

c. Perkongsian liabiliti terhad

Merujuk kepada perniagaan entiti yang dikawal selia di bawah Akta Perkongsian Liabiliti Terhad 2012. Ia memberi perlindungan liabiliti terhad kepada rakan-rakan kongsinya sama seperti liabiliti terhad yang dinikmati oleh pemegang saham sesebuah syarikat. Ia juga memberi fleksibiliti peraturan perniagaan dalaman melalui pengaturan perkongsian yang serupa dengan sesebuah perkongsian konvensional.

d. Syarikat sendirian berhad

Merupakan syarikat persendirian yang ditubuhkan bagi tujuan menjalankan perniagaan dengan matlamat untuk mencari keuntungan. Saham dipegang secara tertutup oleh pemegang-pemegang saham yang mempunyai kawalan terhadap operasi syarikat.

Ciri-ciri:

- i. Dikawal di bawah Akta Syarikat 1965 dan merupakan entiti yang sah terpisah daripada pemilik;
- ii. Dimiliki oleh 2 - 50 orang pemegang saham;
- iii. Pemilik syarikat mempunyai liabiliti terhad;
- iv. Pemegang saham yang memiliki 51 peratus atau lebih daripada jumlah saham syarikat berhak untuk mengawal syarikat tersebut. Saham syarikat boleh dijual beli tetapi tidak dilakukan di pasaran terbuka;
- v. Penjualan saham mesti dengan persetujuan pemegang saham yang lain;
- vi. Tidak disenaraikan di Bursa; dan
- vii. Jangka hayat perniagaan adalah panjang dan boleh dikenali perkataan Sendirian Berhad (Sdn. Bhd.) pada akhir nama syarikat.

e. Syarikat awam berhad

Syarikat awam berhad merupakan perniagaan yang ditubuhkan dengan tanggungan berhad, oleh sekurang-kurangnya dua orang untuk menjalankan perniagaan dengan tujuan untuk mencari keuntungan. Saham syarikat awam berhad ini dipegang secara terbuka dan bagi sesebuah syarikat yang disenaraikan di Bursa Malaysia, sahamnya boleh bertukar milik secara bebas.

Ciri-ciri:

- i. Dikawal di bawah Akta Syarikat 1965 dan merupakan entiti yang sah terpisah daripada pemilik;
- ii. Dimiliki oleh pemegang pemegang saham dan tiada had bagi pemilik saham berkenaan;
- iii. Pengurusan dan kawalan syarikat adalah di bawah tanggungjawab Lembaga Pengarah yang dilantik oleh pemegang saham; dan
- iv. Disenaraikan di Bursa Malaysia.

f. Syarikat koperasi

Koperasi adalah organisasi yang ditubuhkan untuk faedah bersama ahli dan didaftarkan di bawah Akta Koperasi 1993. Kumpulan wang yang ada adalah milik bersama untuk memenuhi keperluan ahli-ahlinya.

g. Perbadanan awam

Merupakan sebuah perbadanan yang ditubuhkan di bawah Akta Khas Parlimen atau Dewan Perundangan Negeri.

h. Pertubuhan persendirian tidak mencari keuntungan

Merujuk kepada syarikat tanpa saham yang ditubuhkan dengan tanggungan berhad. Kebanyakan syarikat ini terdiri daripada pertubuhan kebajikan, keagamaan, pendidikan, kesihatan, kebudayaan, rekreasi dan pertubuhan yang memberikan perkhidmatan sosial dan kemasyarakatan kepada isi rumah. Perkhidmatan diberikan secara percuma atau pada harga yang tidak melebihi kos perkhidmatan (subsidi). Sebarang keuntungan yang diperoleh dilabur semula ke dalam pertubuhan berkenaan.

9.2 STRUKTUR HAK MILIK

Hak milik sesebuah pertubuhan dikelaskan mengikut taraf residen pemilik/pemilik-pemilik modal berbayar yang terbesar (melebihi 50%) dan bukannya mengikut taraf kewarganegaraan mereka. Dalam kes di mana setiap pihak (Residen Malaysia dan Bukan Residen Malaysia) memegang bilangan saham yang sama banyak dalam perniagaan berkenaan, maka pertubuhan tersebut telah dikelaskan di bawah "Hak Milik Bersama".

Residen Malaysia ialah individu, syarikat atau organisasi lain yang lazimnya terletak di Malaysia untuk jangka masa sekurang-kurangnya satu tahun. Cawangan dan/atau anak syarikat asing yang didaftarkan/diperbadankan di Malaysia adalah dianggap sebagai Residen Malaysia.

Bukan Residen Malaysia ialah individu, syarikat atau organisasi lain yang lazimnya terletak di negara selain Malaysia. Cawangan dan anak syarikat milik Residen Malaysia di luar negara juga dianggap sebagai Bukan Residen Malaysia.

9.3 NILAI OUTPUT KASAR

Nilai output kasar **Perlombongan dan pengkuarian** ditakrifkan dengan memasukkan elemen berikut:

Nilai jualan mineral/ produk kuari/ produk pembuatan dan nilai kerja pembinaan

- + Nilai barangan yang dijual dalam keadaan yang sama seperti dibeli
- Kos barangan yang dijual dalam keadaan yang sama seperti yang dibeli
- + Perbelanjaan modal ke atas binaan sendiri
- + Pendapatan daripada perkhidmatan perindustrian yang diberikan kepada orang lain
- + Pendapatan daripada kerja perindustrian lain
- + Penerimaan bayaran daripada skrap, tenaga elektrik, produk sisa, dll. yang dijual kepada orang lain
- + Penerimaan komisen dan brokeraj
- + Semua nilai output lain (seperti penerimaan perkhidmatan bukan perindustrian, misalnya bayaran pengurusan, sewa harta, dll.)
- + Stok akhir barangan siap
- Stok awal barangan siap
- + Stok akhir barangan sedang diproses
- Stok awal barangan sedang diproses
- + Perbelanjaan penyelidikan dan pembangunan (Dalam)

9.4 NILAI INPUT PERANTARAAN

Nilai input perantaraan **Perlombongan dan pengkuarian** ditakrifkan dengan memasukkan unsur berikut:

Nilai bahan dan bekalan yang digunakan

- + Kos kerja perindustrian (memproses) yang dibuat oleh orang lain
- + Tenaga elektrik dan air yang dibeli
- + Nilai bahan pembakar, pelincir dan gas yang digunakan
- + Kos bahan yang digunakan bagi pembaikan dan penyelenggaraan harta tetap (termasuk pembayaran kepada pihak lain ke atas kerja ini)
- + Pembayaran terhadap perkhidmatan bukan perindustrian (termasuk bayaran bagi pengangkutan keluar barangan, perjalanan, pengurusan, bayaran perundangan, teknologi maklumat, pengiklanan, bank, pos, telekomunikasi, dll.)
- + Semua kos input lain (termasuk kos latihan dan nilai pakaian percuma yang disediakan kepada pekerja)

9.5 NILAI DITAMBAH

Nilai ditambah adalah perbezaan di antara output kasar dan input perantaraan. Ini hampir menyamai dengan keuntungan perniagaan, gaji dan upah, susut nilai dan cukai tidak langsung; campur faedah yang dibayar dan tolak faedah yang diterima.

9.6 PEKERJA

Bilangan pekerja merujuk kepada bilangan orang yang bekerja pada bulan Disember atau pada tempoh pembayaran gaji terakhir bagi tahun rujukan. Bilangan orang yang bekerja dikategorikan seperti berikut:

a. **Pemilik yang bekerja dan pekerja keluarga tanpa gaji**

i. **Pemilik yang bekerja dan rakan niaga yang aktif**

Kategori ini merujuk kepada semua pemilik perseorangan dan rakan niaga, sambilan atau sepenuh masa, yang bekerja dengan aktif dalam sesebuah pertubuhan itu. Justeru, ia tidak termasuk rakan niaga yang tidak aktif.

ii. **Pekerja keluarga tanpa gaji**

Kategori ini meliputi semua ahli isi rumah kepada pemilik pertubuhan yang melaksanakan kerja tertentu (sepenuh masa atau sambilan) dan bekerja sekurang-kurangnya satu pertiga daripada waktu bekerja biasa yang diamalkan oleh pertubuhan berkenaan tanpa mendapat bayaran secara tetap, sama ada dalam bentuk wang tunai atau harta benda bagi kerja yang dilakukan. Biasanya pekerja berkenaan mendapat makanan, tempat tinggal dan bantuan lain sebagai sebahagian daripada ahli isi rumah pemilik tersebut dan terus mendapatnya sama ada ia bekerja atau tidak dalam pertubuhan itu.

b. Pekerja bergaji (sepenuh masa)

Merujuk kepada semua pekerja bergaji (sepenuh masa) yang bekerja sekurang-kurangnya enam jam sehari dan/atau 20 hari sebulan. Pekerja bergaji (sepenuh masa) telah dikategorikan berdasarkan Piawaian Pengkelasan Pekerjaan Malaysia (MASCO) 2020 seperti berikut:

i. Pengurus, profesional dan penyelidik meliputi:

- **Pengurus**

Merujuk kepada mereka yang menggubal, menganalisa, merumus, mengarah dan memberi nasihat tentang dasar kerajaan, dan membuat, memansuhkan undang-undang, kaedah dan peraturan awam, dan mewakili serta bertindak bagi pihak kerajaan, dan memantau pentafsiran dan pelaksanaan dasar dan undang-undang kerajaan, atau menjalankan tugas yang seumpamanya bagi pihak pertubuhan berkepentingan khas, atau mengatur, memimpin, mengawal dan menyelaras dasar dan aktiviti perusahaan, organisasi, jabatan atau seksyen dalamannya; dan

- **Profesional**

Merujuk kepada mereka yang bertanggungjawab untuk meningkatkan ilmu pengetahuan sedia ada, mengaplikasikan konsep dan teori saintifik atau artistik, mengajar tentang perkara tersebut dengan cara bersistematik, atau terlibat dalam apa-apa gabungan tiga aktiviti di atas.

ii. Juruteknik dan profesional bersekutu

Merujuk kepada mereka yang melakukan tugas teknikal dan tugas yang berkaitan dengan penyelidikan dan pengaplikasian konsep sains atau seni dan kaedah operasi, dan peraturan kerajaan atau perniagaan.

iii. Perkeranian, pekerja perkhidmatan & jualan, kemahiran khas, operator mesin & loji dan pekerjaan yang berkaitan:

- **Pekerja sokongan perkeranian**

Merujuk kepada mereka yang merekod, mengurus, menyimpan dan mendapatkan maklumat yang berkaitan, dan menjalankan tugas-tugas perkeranian berhubung dengan operasi pentadbiran, pengendalian wang, urusan perjalanan, permintaan maklumat dan janji temu;

- **Pekerja perkhidmatan dan jualan**

Merujuk kepada mereka yang menyediakan perkhidmatan peribadi berkaitan dengan perjalanan, pengemasan, katering, penjagaan diri, atau perlindungan dari kebakaran dan undang-undang yang berkaitan, atau menunjuk cara dan menjual barangan di kedai borong atau runcit dan pertubuhan seumpamanya termasuk di gerai dan pasar;

- **Pekerja kemahiran dan pekerja pertukangan yang berkaitan**
Merujuk kepada mereka yang mengaplikasikan pengetahuan dan kemahiran khusus dalam bidang perlombongan dan pembinaan, penempatan logam, dan mendirikan struktur logam; membuat, melaraskan, menyelenggara dan membaik pulih jentera, kelengkapan atau peralatan; menjalankan kerja pencetakan; dan mengeluarkan atau memproses barang makanan, tekstil atau kayu, logam dan barangan lain termasuk barang kraftangan; dan
- **Operator mesin & loji dan pemasang**
Merujuk kepada mereka yang mengendalikan dan mengawasi jentera dan kelengkapan perindustrian dan pertanian; memandu dan mengendalikan kereta api, kenderaan bermotor, jentera dan kelengkapan bergerak; atau memasang bahagian komponen produk mengikut spesifikasi dan prosedur yang ketat.

iv. Pekerja asas

Merujuk kepada mereka yang menjalankan tugas yang mudah, rutin dan tidak sistematik yang biasanya memerlukan penggunaan perkakas tangan atau dengan sokongan mesin yang mudah, dan memerlukan tenaga fizikal yang banyak.

c. Pekerja bergaji (sambilan)

Merujuk kepada semua pekerja bergaji yang bekerja kurang daripada enam jam sehari dan/atau kurang daripada 20 hari sebulan.

9.7 KATEGORI KEMAHIRAN

Kategori kemahiran telah dikelaskan berdasarkan Piawaian Pengkelasan Pekerjaan Malaysia (MASCO) 2020 adalah seperti berikut:

a. Pekerja mahir

Pengurus, Profesional dan Juruteknik & profesional bersekutu;

b. Pekerja separuh mahir

Pekerja sokongan perkeranian, Pekerja perkhidmatan & jualan, Pekerja kemahiran pertanian, perhutanan, penternakan dan perikanan, Pekerja kemahiran dan pekerja pertukangan yang berkaitan, Operator mesin & loji dan pemasang; dan

c. Pekerja berkemahiran rendah

Pekerja asas.

9.8 GAJI & UPAH

Semua pembayaran (gaji, upah, bonus, komisyen, bayaran lebih masa dan elaun tunai termasuk belanja sara hidup, perumahan, kereta, makanan dan sebagainya) yang dibuat sepanjang tahun rujukan meliputi semua pekerja bergaji dalam setiap kategori pekerja yang diambil secara langsung termasuk jumlah bayaran yang dibuat adalah sebelum ditolak cukai pendapatan dan caruman pekerja kepada Kumpulan Wang Simpanan Pekerja (KWSP)/ Pertubuhan Keselamatan Sosial (PERKESO)/ Kumpulan wang simpanan lain/Kumpulan Wang Persaraan (KWAP). Caruman majikan kepada kumpulan wang yang di atas hendaklah dikecualikan.

9.9 NILAI HARTA TETAP

Harta tetap meliputi semua barangan, baru atau terpakai, aset ketara atau aset tidak ketara yang digunakan secara berulang atau berterusan yang mempunyai hayat produktif lebih daripada setahun. Ini termasuk tanah, bangunan & struktur, alat pengangkutan, komputer, jentera & kelengkapan, perabot & pemasangan, eksplorasi mineral dan harta lain. Harta lain meliputi aset biologi iaitu pokok/ tanaman (kecuali pokok balak yang bertujuan untuk pembalakan), ternakan dan perikanan akuakultur yang mengeluarkan hasil berulang kali dan mempunyai jangka hayat lebih daripada satu tahun.

Nilai harta tetap awal dan akhir bagi tahun rujukan 2022 adalah berasaskan nilai buku bersih. Pembelian, pindaan dan pembaikan besar atau perbelanjaan modal pada tahun berkenaan dikira pada nilai kos sebenar yang dibayar. Nilai harta tetap yang dijual dalam tahun semasa juga dikira pada nilai sebenar.

9.10 PERTUBUHAN MILIKAN WANITA

Pertubuhan milikan wanita merujuk kepada pertubuhan sekurang-kurangnya 51 peratus pemilikan ekuiti dipegang oleh wanita ATAU pemegang saham terbesar adalah wanita dan pertubuhan diuruskan oleh wanita ATAU Ketua Pegawai Eksekutif atau Pengarah Urusan adalah wanita yang memiliki sekurang-kurangnya 10 peratus ekuiti.

10. NEGERI SUPRA

Berdasarkan Sistem Perakaunan Negara (SNA) 2008, kategori unit institusi berdasarkan kepentingan ekonomi dan kedudukan geografi seperti berikut; (1) kebanyakan aktiviti adalah di dalam lingkungan satu wilayah; (2) unit pelbagai wilayah dengan pusat kepentingannya di beberapa wilayah tetapi tidak beroperasi pada skala nasional; dan (3) unit yang beroperasi pada peringkat nasional, dengan pusat kepentingannya tidak boleh dikaitkan dengan kedudukan geografi (contoh: Negeri Supra). Negeri Supra pada peringkat negeri adalah bersamaan dengan organisasi luar wilayah pada peringkat nasional. Di Malaysia, Negeri Supra merangkumi aktiviti pengeluaran yang melangkaui pusat kepentingan ekonomi utama bagi mana-mana negeri.

11. PEMBUNDARAN

Jumlah bagi angka komponen mungkin berbeza dengan jumlah besar disebabkan oleh pembundaran angka.

12. KADAR PERTUMBUHAN TAHUNAN DIKOMPAUN (CAGR)

Kadar pertumbuhan tahunan dikompaun (r) adalah berdasarkan formula berikut;

$$y^t = y_0 (1+r)^t$$

di mana,

$$r = \left[e^{\frac{1}{t} \ln\left(\frac{y_t}{y_0}\right)} - 1 \right] \times 100$$

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

13. SIMBOL DAN SINGKATAN

Simbol dan singkatan berikut digunakan dalam penerbitan ini:

-	:	tiada maklumat
&	:	dan
%	:	peratus
}	:	digabungkan
0	:	nilai kurang daripada 500
0.0	:	nilai kurang daripada 0.05 juta
b	:	bilion
Btu	:	<i>British thermal unit</i>
CAGR	:	kadar pertumbuhan tahunan
dll.	:	dan lain-lain
n.a	:	tidak berkenaan
RM	:	Ringgit Malaysia
t.t.t.l.	:	tidak terkelas di tempat lain
W.P.	:	Wilayah Persekutuan

1. SCOPE AND COVERAGE

This publication used data from Economic Census 2023 (reference year 2022). The census collected information from registered establishments in Agriculture, Mining & quarrying, Manufacturing, Construction and Services sectors. The classification for industries refers to Malaysia Standard Industrial Classification (MSIC) 2008 Ver. 1.0, which is in accordance with the International Standard Industrial Classification of All Economic Activities (ISIC), Rev. 4 United Nations. The coverage for all sectors encompasses 1,200 categories of industries as shown in **Table 1**.

Table 1: Category of industries by sector

Sector	Category of Industries
Agriculture*	142
Mining and quarrying	56
Manufacturing	259
Construction	72
Services	645
Total	1,174

Note*: Entrepreneurs in the Agriculture sector which registered with relevant government agencies for the purpose of receiving aid were NOT covered except palm oil's entrepreneurs.

The coverage of the census for the Mining and quarrying sector consists of 56 industries at the 5-digit level. These industries are classified according to the Malaysia Standard Industrial Classification (MSIC) 2008 Ver. 1.0. The complete list of covered industries is shown in the Appendix of the Malaysia Standard Industrial Classification (MSIC) 2008 Ver. 1.0.

2. SOURCE OF STATISTICAL FRAME

The main source of the establishment statistics frame is from the Malaysia Statistical Business Register (MSBR). MSBR is a list of organisations/ enterprises operating in Malaysia that includes the Register of Companies (ROC), Register of Business (ROB) and Limited Liability Partnership (LLP) registered with the Companies Commission of Malaysia (CCM) as well as organisations registered with local authorities (LA) and professional bodies. The list in MSBR is updated regularly based on surveys and censuses conducted by the Department of Statistics Malaysia (DOSM) and administrative data sources from various agencies. The main source of administrative data is from the Companies Commission of Malaysia (CCM).

In addition, DOSM also works together to obtain the latest information from other agencies such as the Employees' Provident Fund (EPF), the Royal Malaysian Customs Department, the Inland Revenue Board (IRB), Social Security Organization (SOCSO), local authorities and professional bodies. The frame is updated to take into account new establishments and to record any changes in the status of the establishments such as closed down, not in operation, change in activity and location/ correspondence address to ensure the frame is at the most current status.

3. TYPE OF BUSINESS ACTIVITY

Type of business activity refers to both principal and secondary activities. The principal activity refers to the activity to which the establishment devoted most of its resources or activity which derived most of its income. Secondary activities are defined as those incidental or ancillary to the principal activity. The classification of the industry of the establishment is based on the principal activity and is in accordance with the Malaysia Standard Industrial Classification (MSIC) 2008 Version 1.0 conforms to the International Standard Industrial Classification of All Economic Activities (ISIC), Rev. 4, United Nations, with modifications to suit local conditions.

4. CONCEPTS AND DEFINITIONS

Concepts and definitions used are based on the recommendations of the International Recommendations for Industrial Statistics, United Nations Statistical Division. The definition of Mining and quarrying used in this census accordance with the MSIC 2008 Version 1.0.

4.1 Mining and quarrying definition

Mining and quarrying include the extraction of minerals occurring naturally as solids (coal and ores), liquids (petroleum) or gases (natural gas). Extraction can be achieved by different methods such as underground or surface mining, well operation, seabed mining, etc. The Mining and quarrying sector consists of 2 sub-sectors namely:

4.1.1 Mineral mining and quarrying

i. Mining is defined as:

The extraction, dressing and beneficiating of minerals occurring naturally as solids, such as coal and ores; liquids, such as crude oil; or gases, such as natural gas. Mining also includes underground and surface mines, quarries and wells and all supplemental activities for dressing and beneficiating ores and other crude minerals such as crushing, screening, washing, cleaning, grading, milling, flotation, melting, pelleting, topping and other preparation needed to render the material marketable. Mining activities are classified into group on the basis of the principal mineral produced.

ii. Quarrying refers to:

An activity of extraction from a mine or quarry, but also dredging of alluvial deposits, rock crushing and the use of salt marshes. The products are used most notably in construction (e.g. sands, stones, etc.), manufacture of materials (e.g. clay, gypsum, calcium, etc.), manufacture of chemicals, etc.

It includes quarrying, rough trimming and sawing of monumental and building stone such as marble, granite, sandstones, etc., quarrying, crushing and breaking of limestone, mining of gypsum and anhydrite, mining of chalk and unclaimed dolomite, extraction and dredging of industrial sand, sand for construction and gravel, breaking and crushing of stone and gravel, quarrying of sand and mining of clays, refractory clays and kaolin.

Activities of it also includes mining of chemical and fertilizer minerals, extraction of peat, extraction of salt, etc.

4.1.2 Petroleum and natural gas mining

Petroleum & natural gas refers to:

The production of crude petroleum, the mining and extraction of oil from oil shale and oil sands and the production of natural gas and recovery of hydrocarbon liquids. This includes the overall activities of operating and/ or developing oil and gas field properties, including such activities as drilling, completing and equipping wells, operating separators, emulsion breakers, desilting equipment and field gathering lines for crude petroleum and all other activities in the preparation of oil and gas up to the point of shipment from the producing property.

It also includes support activities for petroleum and gas extraction, such as oil and gas field services, performed on a fee or contract basis, oil and gas well exploration and test drilling and boring activities.

5. CENSUS YEAR

Refers to the year in which a census was conducted.

6. REFERENCE YEAR

The reference year of the census was the calendar year 2022. Establishments whose accounting year differed from calendar year were requested to report according to the accounting year or financial year covering at least six (6) months in the reference year.

7. METHOD OF COLLECTION

This census was generally conducted through three (3) methods of data collection, namely:

7.1 Online method through e-BE portal

This method targets respondents who have used this method for previous routine surveys.

7.2 Data collection method via e-mail, post, fax and telephone

This method targets respondents who have used this method for previous routine surveys. Respondents were given a period of one month to complete and return the questionnaire to the DOSM.

7.3 Face-to-face data collection method

Field work operation is carried out to get feedback from establishments that have not yet given answers from the two methods above and this method also targets establishments that have never been involved in a DOSM routine survey.

8. REPORTING UNIT

The reporting unit used in the Economic Census 2023 was the establishment. As establishment is defined as “an economic unit engaged in one activity, under a single legal entity and operating in a single physical location”. Each establishment is assigned an industry classification based on its principal activity and not according to the activities of the parent company.

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

9. KEY VARIABLES:

9.1 LEGAL STATUS

The legal status of an establishment has been defined as follows:

a. Individual proprietorship

Refers to a business, owned and operated by one person for his own profit. The owner has the exclusive right to control the operation of the establishment.

b. Partnership

Refers to a group of individuals who agree to contract and to carry out a business with the objective of profit making. All shareholders or anyone could manage the business for all parties. A trading partnership must comprise of at least two members and should not exceed a maximum twenty members.

c. Limited liabilities partnership

Refers to business entity regulated under the Limited Liability Partnerships Act 2012. It is featured with the protection of limited liability to its partners similar to the limited liability enjoyed by shareholders of a company. It is coupled with flexibility of internal business regulation through partnership arrangement similar to a conventional partnership.

d. Private limited company

A private company established to undertake a business with the objective of making a profit. The shares are closely held by the shareholders of the company who have control over its operation.

Characteristics:

- i. Regulated under the Companies Act 1965 and is a legal entity separate from the owners;
- ii. Number of its shareholders between 2 - 50 members;
- iii. Company owners have limited liability;
- iv. Shareholders who own 51 per cent or more of the total shares shall be entitled to manage the company. The company's shares can be traded but not in the open market;
- v. Trading of share must be with the consent of the other shareholders;
- vi. Not listed on the Stock Exchange; and
- vii. Business life expectancy is longer and can be identified by the words "Sendirian Berhad" (Sdn. Bhd.) at the end of the company name.

e. Public limited company

A public limited company is a company established with limited liability, by a minimum of two persons to operate the business with the objective of making a profit. The shares in a public limited company are openly held and in the case of company listed on the Bursa Malaysia, the shares are freely transferable.

Characteristics:

- i. Regulated under the Companies Act 1965 and is a legal entity separate from the owner;
- ii. Owned by the shareholders and there is no limit to the shareholder;
- iii. Management of the company is under the board of director responsibilities as appointed by shareholders; and
- iv. Listed on Bursa Malaysia.

f. Co-operative

Refers to a voluntary association with unrestricted number of members and registered under the Co-operatives Act 1993. Funds are collectively owned to meet the needs of members.

g. Public corporation

Refers an undertaking set up under a Special Act Parliament or by the State Legislature.

h. Private non-profit making organisation

Refers to non-stock company set up with limited liability. It comprises mainly welfare, religious, educational, health, cultural, recreational and other organisations providing social and community services to households. These services are provided free of charge or at prices, which do not necessarily or fully cover the cost of providing such services (subsidy). Any profit made is reinvested in the organisation.

9.2 OWNERSHIP

The ownership of an establishment is classified by the residential status of the owner (s) of the majority (more than 50%) of the paid-up capital and not by their citizenship status. In instances where each party (Malaysian Resident and Non-Malaysian Resident) held equal shares in the business, the establishments were classified as "Joint Ownership".

A Malaysian Resident is any individual, company or other organization ordinarily domiciled in Malaysia for a period of at least one year. Malaysian registered branches and incorporated subsidiaries of foreign based/ origins are also regarded as Residents.

A Non-Malaysian Resident is any individual, company or other organization ordinarily domiciled in a country other than Malaysia. Foreign branches and/ or subsidiaries abroad owned by Malaysian Residents are also regarded as Non-Residents.

9.3 VALUE OF GROSS OUTPUT

*The value of gross output of **Mining and quarrying** is defined to include the following items:*

Sale of mineral/ quarry products/ manufactured products and construction work done

- + *Values of goods sold in the same condition as purchased*
- *Cost of goods sold in the same condition as purchased*
- + *Capital expenditure on own construction*
- + *Income from industrial services rendered to others*
- + *Income from industrial work done*
- + *Receipt from scrap, electricity, waste product, etc. sold to others*
- + *Receipt from commission and brokerage earned*
- + *All other output (such as receipts of non-industrial services, e.g. management fees received, income from rental of property, etc)*
- + *Closing stock of finished goods*
- *Opening stock of finished goods*
- + *Closing stock of goods being processed*
- *Opening stock of goods being processed*
- + *Research and development expenditure (In-house)*

9.4 VALUE OF INTERMEDIATE INPUT

The value of intermediate input of **Mining and quarrying** is defined to include the following items:

Value of materials and supplies consumed

- + *Cost of industrial work done (being processed) by others*
- + *Electricity and water purchased*
- + *Value of fuels, lubricants and gas consumed*
- + *Cost of materials used for repairs and maintenance of assets (including payments to others for this work)*
- + *Payments for non-industrial services (including payments for carriage outwards, travelling, management fees, legal services, information technology, advertising, bank chargers, postage, telecommunication, etc.)*
- + *All other input costs (including training and value of the free apparel provided for the workers)*

9.5 VALUE ADDED

Value added is the difference between gross output and intermediate input. It is approximately equivalent to commercial profit, salaries and wages, depreciation and indirect taxes; plus, interest paid less interest received.

9.6 NUMBER OF PERSONS ENGAGED

Number of persons engaged refers to all persons engaged during December or the last pay period of the reference year. The number of persons engaged was classified under the following categories:

a. **Working proprietors and unpaid family workers**

i. **Working proprietors and active business partners**

This category refers to all individual proprietors and partners, part time or full time, who are actively engaged in the work of the establishment. Therefore, it excludes silent and inactive partners.

ii. **Unpaid family workers**

This category encompasses all persons (full-time or part-time) in the household of the owners of the establishment who perform a specified job and work for a minimum of one third of the normal working time of the establishment, but do not receive regular payment either in cash or in kind for the work done. Such workers generally receive food, shelter and other support as part of the household of an owner and this would continue whether they worked in the establishment or not.

b. Paid employees (full-time)

Refers to all paid workers (full-time) who work for at least six hours a day and/or 20 days a month. Paid employees (full-time) are to be categorised according to Malaysia Standard Classification of Occupations 2020 (MASCO) as follows:

i. Manager, professional and researcher included:

- **Manager**

Refer to those who devise, analyse, formulate, direct and advise on government policy, and make, amend and repeal laws, public rules and regulations, and represent and act on behalf of the government, and oversee the interpretation and implementation of policies and government legislation, or carry out similar tasks on behalf of special interest organisations, or plan, organise, lead, control and coordinate the policies and activities of enterprises, organisations, departments or the internal section; and

- **Professional**

Refer to those responsible for increase the existing stock of knowledge, apply scientific or artistic concepts and theories, teach about the foregoing in a systematic manner, or engage in any combination of these three activities.

ii. Technicians and associate professionals

Refer to those who perform technical and related tasks connected with research and the application of scientific or artistic concepts and operational methods, and government or business regulations.

iii. Clerical, services & sales workers, craft workers, plant & machine operators and related occupations includes:

- **Clerical support workers**

Refer to those who record, organise, store and retrieve related information and perform clerical duties especially in connection with administrative operations, handling of money, travel arrangements and requests for information and appointments;

- **Service and sales workers**

Refer to those who provide personal services related to travel, housekeeping, catering, personal care, or protection against fire and unlawful acts, or demonstrate and sell goods in wholesale or retail shops and similar establishments as well as at stalls and markets;

- **Craft and related trades workers**
Refer to those who apply their specific knowledge and skills in the fields of mining and construction, metal forming, and erect metal structures, make, fit, maintain and repair machinery, equipment or tools, carry out printing work as well as produce or process foodstuffs, textiles, or wooden, metal and other articles including handicraft goods; and
 - **Plant & machine operators and assemblers**
Refer to those who operate and monitor industrial and agricultural machinery and equipment, drive and operate trains, motor vehicles and mobile machinery and equipment, or assemble product component parts according to strict specifications and procedures.
- iv. **Elementary occupations**
Refer to those who perform simple, routine and non-systematic tasks which mainly require the use of handheld tools or with the assistance of simple machines, and in some cases considerable physical effort.
- c. **Paid employees (part-time)**
Refers to all paid workers who work less than six hours a day and/or less than 20 days a month.

9.7 CATEGORY OF SKILLS

Category of skills have been classified according to Malaysia Standard Classification of Occupation (MASCO) 2020 as follows:

- a. **High-skilled workers**
Managers, Professionals and Technicians & associate professionals;
- b. **Semi-skilled workers**
Clerical support workers, Service & sales workers, Skilled agricultural, forestry, livestock & fishery workers, Craft & related trades workers, Plant & machine operators and assemblers; and
- c. **Low-skilled workers**
Elementary occupations.

9.8 SALARIES & WAGES

All payments (salaries, wages, bonuses, commissions, overtime pay and cash allowances including cost of living, housing, car, food, etc.) made throughout the reference year to all paid employees in each category. For all directly employed workers, total payments made before deductions for income tax and employees' contributions to Employees' Provident Fund (EPF)/ Social Security Organisation (SOCSO)/ Other provident/ Retirement Funds Incorporated (KWAP). The Employer's contribution to such funds as mentioned above should be excluded.

9.9 VALUE OF FIXED ASSETS

Fixed assets cover all goods, new or used, tangible or intangible, which have a normal economics life span of more than one year. For instance land, building & structure, transport equipment, computer, machinery & equipment, furniture & fittings, mineral exploration and other assets. Other assets also include biological assets namely trees/ crops (except for logging trees that intended for logging), livestock and aquaculture fisheries which can produce products repeatedly and have a life expectancy of more than one year.

Value of assets as at the beginning and end of 2022 was based on net book value. Purchases alterations and major repairs or capital expenditure during the year were valued at actual costs incurred. Value of assets sold during the year refers to the actual value.

9.10 WOMEN OWNED ESTABLISHMENTS

Women owned establishment refers to a minimum of 51 per cent of the equity held by a women OR the biggest shareholders are women and the establishment is managed by a women OR the Chief Executive Officer or Managing Director is women that owns at least 10 per cent of the equity.

10. SUPRA STATE

Based on the System of National Accounts (SNA) 2008, categorisation of institutional units based on their economic interest and geographical activities can be as follows; (1) most activities are within a single region; (2) multi-provincial units with centers of interest in multiple provinces or regions but do not operate on a nationwide scale; and (3) units operating at the national level, with their centre of interests not confined to any specific geographical position (e.g. Supra State). Supra State at the state level is equivalent to an overseas organisation at the national level. In Malaysia, Supra State covers production activities beyond the centre for the key economic interest of any state.

11. ROUNDING

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

12. COMPOUND ANNUAL GROWTH RATE (CAGR)

The calculation of compound annual growth rate (r) is based on the following formula:

$$y^t = y_0(1+r)^t$$

where,

$$r = \left[e^{\frac{1}{t} \ln\left(\frac{y_t}{y_0}\right)} - 1 \right] \times 100$$

where,

y^t	=	Value of current year
y_0	=	Value of previous year
t	=	Number of years, $y_t - y_0$
r	=	Annual growth rate

13. SYMBOLS AND ABBREVIATIONS

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

-	:	no information
&	:	and
%	:	per cent
}	:	combine
0	:	less than 500
0.0	:	less than 0.05 million
b	:	billion
Btu	:	British thermal unit
CAGR	:	compound annual growth rate
etc.	:	ec cetera
n.a	:	not applicable
RM	:	Malaysia Ringgit
n.e.c	:	not elsewhere classified
W.P.	:	Federal Territory

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MSIC 2008 dan keterangan
MSIC 2008 and description

051 PERLOMBONGAN BATU ARANG DAN LIGNIT
MINING OF HARD COAL AND LIGNITE

- 0510 Perlombongan batu arang**
Mining of hard coal
- 05100 Perlombongan batu arang pepejal**
Mining of hard coal
- 0520 Perlombongan lignit**
Mining of lignite
- 05200 Perlombongan lignit (batu arang perang)**
Mining of lignite (brown coal)

061 PENGEKSTRAKAN PETROLEUM MENTAH
EXTRACTION OF CRUDE PETROLEUM

- 0610 Pengekstrakan petroleum mentah**
Extraction of crude petroleum
- 06101 Pengekstrakan minyak petroleum mentah**
Extraction of crude petroleum oils
- 06102 Pengekstrakan bitumen atau minyak batu syal dan pasir tar**
Extraction of bituminous or oil shale and tar sand
- 06103 Pengeluaran petroleum mentah daripada batu syal dan pasir berbitumen**
Production of crude petroleum from bituminous shale and sand
- 06104 Proses mendapatkan minyak mentah**
Processes to obtain crude oils
- 0620 Pengekstrakan gas asli**
Extraction of natural gas
- 06201 Pengeluaran hidrokarbon mentah bergas (gas asli)**
Production of crude gaseous hydrocarbon (natural gas)
- 06202 Pengekstrakan kondensat**
Extraction of condensates
- 06203 Penyaliran dan pemisahan komponen hidrokarbon cecair**
Draining and separation of liquid hydrocarbon fractions
- 06204 Penyahsulfuran gas**
Gas desulphurization
- 06205 Perlombongan cecair hidrokarbon, diperoleh melalui pencairan atau penguraian kimia (pyrolysis)**
Mining of hydrocarbon liquids, obtain through liquefaction or pyrolysis

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MSIC 2008 dan keterangan
MSIC 2008 and description

071 PERLOMBONGAN BIJIH LOGAM

MINING OF IRON ORES

0710 Perlombongan bijih logam

Mining of iron ores

07101 Perlombongan bijih yang tinggi kandungan besi

Mining of ores valued chiefly for iron content

07102 Pengekstrakan dan penggumpulan bijih besi

Beneficiation and agglomeration of iron ores

072 PERLOMBONGAN BIJIH LOGAM BUKAN BESI (NON-FERROUS)

MINING OF NON-FERROUS METAL ORES

0721 Perlombongan bijih uranium dan torium

Mining of uranium and thorium ores

07210 Perlombongan bijih uranium dan torium

Mining of uranium and thorium ores

0729 Perlombongan bijih logam bukan besi lain

Mining of other non-ferrous metal ores

07291 Perlombongan bijih timah

Mining of tin ores

07292 Perlombongan tembaga

Mining of copper

07293 Perlombongan bauksit (aluminium)

Mining of bauxite (aluminium)

07294 Perlombongan ilmenit

Mining of ilmenite

07295 Perlombongan emas

Mining of gold

07296 Perlombongan perak

Mining of silver

07297 Perlombongan platinum

Mining of platinum

07298 Perlombongan amang

Amang retreatment

07299 Perlombongan bijih logam bukan besi lain t.t.t.l

Mining of other non-ferrous metal ores n.e.c

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MSIC 2008 dan keterangan
MSIC 2008 and description

081 PENGKUARIAN BATU, PASIR, DAN TANAH LIAT

QUARRYING OF STONE, SAND AND CLAY

0810 Pengkuarian batu, pasir, dan tanah liat

Quarrying of stone, sand and clay

08101 Pengkuarian, pemotongan kasar bongkah batu dan batu bangunan seperti marmar, granit (dimension stone), batu pasir

Quarrying, rough trimming and sawing of monumental and building stone such as marble, granite (dimension stone), sandstone

08102 Pengkuarian, penghancuran dan pemecahan batu kapur

Quarrying, crushing and breaking of limestone

08103 Perlombongan gipsum dan anhidrit

Mining of gypsum and anhydrite

08104 Perlombongan kapur dan dolomite yang tidak dirawat

Mining of chalk and uncalcined dolomite

08105 Pengekstrakan dan penggorekan bagi industri pasir, pasir untuk sektor pembinaan dan kerikil

Extraction and dredging of industrial sand, sand for construction and gravel

08106 Pemecahan dan penghancuran batu dan kerikil

Breaking and crushing of stone and gravel

08107 Pengkuarian pasir

Quarrying of sand

08108 Perlombongan tanah liat, refraktori tanah liat dan kaolin

Mining of clays, refractory clays and kaolin

08109 Pengkuarian, penghancuran dan pemecahan granit

Quarrying, crushing and breaking of granite

089 PERLOMBONGAN DAN PENGKUARIAN T.T.T.L

Mining and quarrying n.e.c.

0891 Perlombongan mineral kimia dan baja

Mining of chemical and fertilizer minerals

08911 Perlombongan fosfat semulajadi

Mining of natural phosphates

08912 Perlombongan garam kalium (potassium) semulajadi

Mining of natural potassium salts

08913 Perlombongan sulfur semulajadi

Mining of native sulphur

08914 Pengekstrakan dan penyediaan pirit dan pirotit, kecuali penyalan

Extraction and preparation of pyrites and pyrrhotite, except roasting

08915 Perlombongan barium sulfat semulajadi dan karbonat (barite dan witerit)

Mining of natural barium sulphate and carbonate (barytes and witherite)



Piawaian Klasifikasi Industri Malaysia, 2008 Ver. 1.0
Malaysia Standard Industrial Classification, 2008 Ver. 1.0

MSIC 2008 dan keterangan
MSIC 2008 and description

- 0892 Pengekstrakan tanah gambut**
Extraction of peat
- 08921 Penggalian tanah gambut**
Peat digging
- 08922 Penggumpulan tanah gambut**
Peat agglomeration
- 08923 Penyediaan tanah gambut untuk pembaikan kualiti atau kemudahan pengangkutan atau penstoran**
Preparation of peat to improve quality or facilitate transport or storage
- 0893 Pengekstrakan garam**
Extraction of salt
- 08931 Pengekstrakan garam dari bawah tanah**
Extraction of salt from underground
- 0899 Aktiviti sokongan untuk perlombongan dan pengkuarian lain**
Other mining and quarrying n.e.c.
- 08991 Perlombongan dan pengkuarian bahan pelepas (bahan kesat)**
Mining and quarrying of abrasive materials
- 08994 Perlombongan dan pengkuarian grafit semulajadi**
Mining and quarrying of natural graphite
- 08995 Perlombongan dan pengkuarian steatite (talkum)**
Mining and quarrying of steatite (talc)
- 08999 Perlombongan dan pengkuarian lain t.t.t.l**
Other mining and quarrying n.e.c.

091 AKTIVITI PERKHIDMATAN SOKONGAN PERLOMBONGAN
MINING SUPPORT SERVICE ACTIVITIES

- 0910 Aktiviti sokongan pengekstrakan petroleum dan gas asli**
Support activities for petroleum and natural gas extraction
- 09101 Aktiviti pengekstrakan petroleum dan gas yang dibekalkan atas dasar kontrak atau yuran**
Oil and gas extraction service activities provided on a fee or contract basis
- 09102 Perkhidmatan memadam kebakaran di lapangan minyak dan gas**
Oil and gas field firefighting services

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MSIC 2008 dan keterangan
MSIC 2008 and description

099 AKTIVITI SOKONGAN UNTUK PERLOMBONGAN DAN PENGKUARIAN LAIN
SUPPORT ACTIVITIES FOR OTHER MINING AND QUARRYING

0990 Aktiviti sokongan untuk perlombongan dan pengkuarian lain
Support activities for other mining and quarrying

09900 Aktiviti sokongan perlombongan dan pengkuarian lain
Support activities for other mining and quarrying

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