Suruhanjaya Tenaga
Energy Commission

National Energy Balance 2014

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SURUHANJAYA TENAGA (ENERGY COMMISSION)
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PREFACE

Malaysia is fortunate as we are endowed with both conventional and renewable sources of energy and has achieved considerable progress in harnessing those resources, in line with our National Energy Policy objectives and strategies. Indeed, over the years, our country has experienced significant changes in its energy supply-demand balance in order to meet the changing needs as we strive to become a developed economy.

In 2014, the Malaysian economy recorded a stronger growth of 6.0 percent (2013: 4.7 percent), driven primarily by the continued strength of domestic demand and supported by an improvement in external trade performance. However, primary energy supply grew by only 1.9 percent compared to 4.9 percent during the previous year, whilst final energy consumption grew 1.2 percent, lower than the 4.6 percent growth recorded in the previous year.

The transportation sector continued to be the country's largest consumer of energy since 2008. However, final energy consumption in the transportation sector grew at a slower rate of 8.8 percent in 2014 as compared to 13.2 percent in 2013. Similarly, final energy consumption in the industry sector, which remained as the second largest consumer of energy, declined by 2.5 percent to 13,162 ktoe (thousand tonnes of oil equivalent), mainly due to lower consumption of natural gas and petroleum products.

Electricity generation fuel mix in 2014 did not change much from the previous year's, with the share of natural gas at 43.9 percent, coal at 43.2 percent, fuel oil and diesel oil at 2.8 percent, hydro at 8.7 percent and renewables at 0.5 percent. Total installed capacity as at the end of 2014 was 29,938 MW (Megawatt), an increase of 0.6 percent from 29,748 MW in 2013. Total electricity consumption recorded a growth of 4.3 percent to 128,330 GWh (Gigawatt-hours), with the highest share by the industrial sector at 45.9 percent, followed by the commercial sector at 32.3 percent and residential sector at 21.2 percent.

I am happy to note that the country's final energy intensity has reduced by 4.5 percent, from 54.0 toe (tonnes of oil equivalent)/RM million in 2013 to 51.6 toe/RM million. At the same time, our electricity intensity has also improved from 0.129 GWh/RM million in 2013 to 0.127 GWh/RM million, equivalent to a reduction of 1.6 percent. This shows that our efforts in improving energy use efficiently are bearing fruits.

This National Energy Balance (NEB) 2014 publication includes new data on Malaysia's energy consumption according to sub-sectors such as manufacturing and residential sub-sectors as compared to the previous NEB publications, which included total energy consumption according to sectors only.

I would like to take this opportunity to thank all who have been involved in the preparation of this report, in particular, the relevant government agencies, power utilities, independent power producers, private oil companies, coal producers as well as the cement and iron & steel manufacturers for your continuing support in providing relevant and accurate data for the report.

Thank you.

Datuk Seri Panglima Dr. Maximus Johnity Ongkili
Minister of Energy, Green Technology and
Water Malaysia

INTRODUCTION

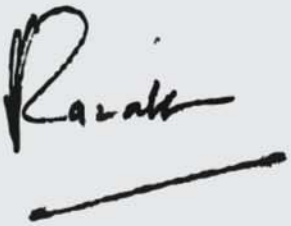
The National Energy Balance (NEB) 2014 marks the 5th publication of NEB by Energy Commission (Suruhanjaya Tenaga - ST). Every year we strive to ensure the comprehensiveness and accuracy of the data and statistics presented, as well as improving the overall outlook of the report. Data submission through our Malaysia Energy Information Hub (MEIH) portal that was first introduced back in 2012 has proven to be an effective enabler to enhance our efficiency in data collection process, facilitating easy access to the data providers. We hope with the consistency and continual cooperation between data providers and the staff of ST, we can further improve, streamline and ensure the MEIH portal is informational and periodically updated for the users.

The NEB 2014 report has been compiled to cater for varied users, from government sectors to university students and for various other purposes too. The report provides useful information for related entities and agencies to understand the flow of energy, how the input and output energy balance out, and we can see where Malaysia stands in comparison to other developing countries. As Malaysia adapts a policy towards Sustainable Development, these data and information would be vital for future projections and decision making for the country's development.

ST is in the midst of conducting a survey on households' energy consumption, and as of now, we are in the process of analysing and compiling the results. The purpose of the survey is to gain an insight of the amount of energy usage among Malaysians' households based on different types of dwellings, education backgrounds and household income. The survey results are expected to provide a reflection of our country's economic status and the level of awareness in energy efficiency amongst the general population. With the availability of this data, further analysis by government bodies or related agencies can be conducted for forecasting the future energy consumption and formulating mechanisms to implement energy efficiency initiatives not just for the commercial and industrial sectors, but also for the residential customers.

Here, I would like to take this opportunity to thank the Honourable Minister and the Ministry of Energy, Green Technology and Water for their guidance and support in ensuring the success of NEB publication. We would also acknowledge and appreciate the efforts of the data providers for providing data in a timely and systematic manner, and to those who have directly or indirectly assisted us in publishing the NEB 2014. We look forward towards a continuous and meaningful participation from all.

Thank you.



Dato' Abdul Razak Bin Abdul Majid
Chairman of Energy Commission
Malaysia

DATA COMPILATION

The first stage in compiling the overall energy balance is to rearrange the data to fit into a standard structure of commodity (or partial) balance. The commodity balance shows clearly the production, imports, exports, stock change and consumption for each energy commodity. The basic sequence adhered to in the overall balance is: -

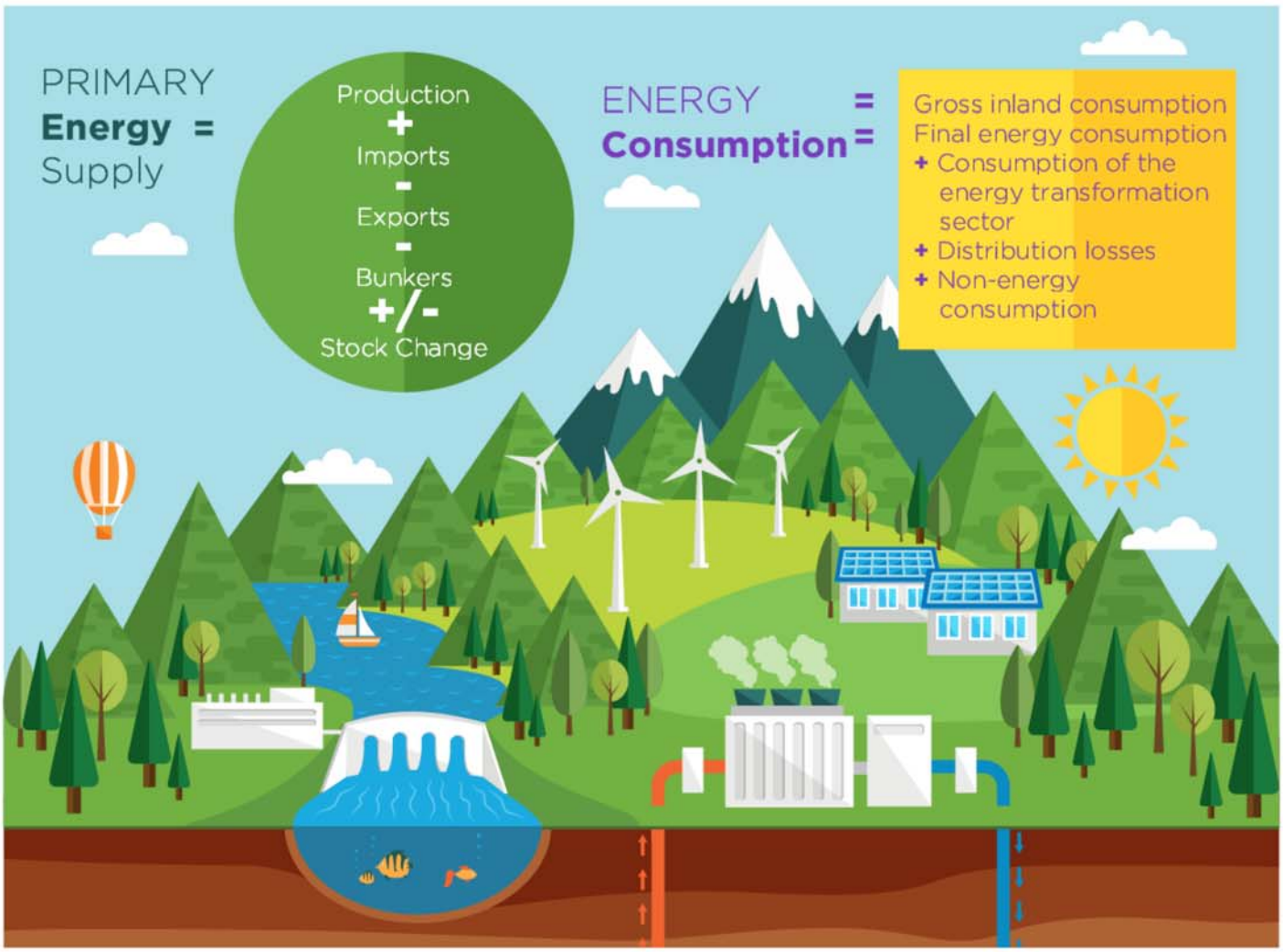
Production + Imports - Exports +/- Stock change = **APPARENT INLAND DELIVERIES (OR CONSUMPTION)**

In practice, however, "Apparent inland deliveries" deduced from supply statistics hardly ever match actual sales data. It is necessary, therefore, to include two "statistical discrepancies" - the first to account for the difference in apparent inland delivery of primary supply mainly due to the difficulties in obtaining actual stock change data and difference in data compilation at source and the second to account for the difference in secondary supply as the result of the transformation processes of one form of energy to another.

In addition, the statistical discrepancies also act as a balancing tool to minimise possible errors. In the case of oil and oil products, losses in transportation and distribution, as well as statistical errors are included in the statistical discrepancies. However, for electricity, distribution losses and the sector's own use of electricity are accounted for in the "losses and own use".

Stock changes are not fully accounted for in the balance. It is extremely difficult to obtain stocks of all energy commodities at distributors and final users. Only oil companies' stocks are readily available and these would include stocks at refineries and depots. The statistical discrepancy might also include unrecorded stock changes. Coal stocks at TNB power station and a producer in Sarawak are taken into account in this report.

In summary, the flow of energy is represented by the following equations: -



E[illegible]ECU[illegible]E [illegible]U[illegible]AR[illegible]

[illegible]
[illegible]

[illegible]he [illegible]alaysian economy recorded a stronger growth of [illegible] percent in [illegible] [illegible] percent, driven primarily by the continued strength of domestic demand and supported by an improvement in e[illegible]ternal trade performance. [illegible]et e[illegible]ports turned around to contribute positively to growth after seven years of negative contribution, as [illegible]alaysia bene[illegible]ted from the recovery in the advanced economies and the sustained demand from the regional economies. [illegible]hile the growth in private domestic demand remained strong, public sector e[illegible]penditure registered slower growth, consistent with the [illegible]overnment's [illegible]scal consolidation efforts.

[illegible]n the energy sector, [illegible]nal energy consumption for [illegible] recorded a positive growth of [illegible] percent, lower than the growth recorded in the previous year [illegible] percent. [illegible]n the other hand, primary energy supply mar[illegible]ed [illegible] percent growth rate in [illegible] as compared to [illegible] percent in [illegible]

P[illegible]M[illegible]S[illegible]PP[illegible]

[illegible]n [illegible], the primary energy supply grew only [illegible] percent compared to [illegible] percent during the previous year. [illegible]he growth was anticipated by higher total primary energy supply for all types of energy e[illegible]cept for crude oil. [illegible]he total primary supply for crude oil declined by [illegible] percent due to higher net e[illegible]port. At a lesser rate, production of crude oil increased by a narrow margin of [illegible] percent from [illegible],[illegible] [illegible]oe in [illegible] to [illegible],[illegible] [illegible]oe in [illegible]. [illegible]he production of coal during year [illegible] decreased by [illegible] percent, this has led to the lower e[illegible]port of coal by [illegible] percent. [illegible]otal primary energy supply from renewables had also recorded an increase from [illegible] levels to [illegible] [illegible]. [illegible]the primary supply of solar registered at [illegible] [illegible]oe compared to only [illegible] [illegible]oe in [illegible]. [illegible]he total primary energy supply of biodiesel increased to [illegible] [illegible]oe from [illegible] [illegible]oe in [illegible] [illegible], total primary energy supply of hydro had also recorded a positive increase by [illegible] percent from [illegible] level to settle at [illegible],[illegible] [illegible]oe.

[illegible]n terms of total shares, crude oil and petroleum products shares increased slightly from [illegible] percent in [illegible] to [illegible] percent in [illegible]. [illegible]he share of natural gas, decreased to [illegible] percent from [illegible] percent during the same period. [illegible]he share of coal and co[illegible]e has remained unchanged at [illegible] percent. [illegible]ydro has also increased from [illegible] percent to [illegible] percent in [illegible]

[illegible]
[illegible]S[illegible]M[illegible]

[illegible]nce the commencement of PE[illegible]R[illegible]A[illegible]s third [illegible] plant [illegible]A[illegible] in [illegible]ntulu in [illegible]arch [illegible], conversion of natural gas to [illegible]ue[illegible]ed [illegible]atural [illegible]as [illegible] has continuously increased. [illegible]n year [illegible], [illegible],[illegible] [illegible]oe of [illegible] was produced compared to [illegible],[illegible] [illegible]oe in [illegible], an increase of [illegible] percent within fourteen years.

[illegible]atural gas is not only transformed in the [illegible] plant but also in the [illegible]iddle [illegible]istillate [illegible]ynthesis [illegible] and PP[illegible]P[illegible] plants. [illegible]n [illegible] out of [illegible],[illegible] [illegible]oe of natural gas used in the transformation plants, [illegible] percent was used by the [illegible] plant and the balance of [illegible] percent and [illegible] percent was transformed in the [illegible] and PP[illegible]P[illegible] plants respectively. [illegible] production, which is the main output of the [illegible] plant, raised by [illegible] percent in [illegible] supported by the increase in the global [illegible] demand. [illegible]he plant also produced [illegible] [illegible]oe of P[illegible], adding up to the country's total P[illegible] production of [illegible] [illegible]oe which was mainly produced by the PP[illegible]P[illegible] plant. [illegible]nce the introduction of P[illegible] as an alternative fuel for coo[illegible]ng in the country, large supplies of P[illegible] was actively channelled to the household and commercial sectors. P[illegible] was supplied to the households and small commercial premises in small canisters [illegible] [illegible], and to large commercial and industrial customers in bul[illegible]

[illegible]n the other hand, the [illegible] plant, which has been in operation since [illegible], converts the non[illegible]associated natural gas into high [illegible]uality synthetic oil products [illegible]diesel, [illegible]erosene, naphtha[illegible] and other chemical products. [illegible]he increasing demand of [illegible] products is evident by the [illegible] percent upsurge of [illegible] production in gas conversion plant in [illegible]

[illegible]he total installed re[illegible]nery capacity as of the end of [illegible] was about [illegible]o barrels per day [illegible]bpd, [illegible]not including the condensates splitter capacity of [illegible] [illegible]bpd. [illegible]he ma[illegible]imum capacity at PE[illegible]R[illegible]A[illegible] [illegible]ertih re[illegible]nery is [illegible] [illegible]bpd, which totalled up the capacity of PE[illegible]R[illegible]A[illegible]s owned re[illegible]neries to [illegible] [illegible]bpd.

[illegible]he other re[illegible]neries owned by [illegible]E[illegible] and Petron [illegible]alaysia have a ma[illegible]imum capacity of about [illegible] [illegible]bpd and [illegible] [illegible]bpd respectively. [illegible]gether, these re[illegible]neries have an estimated combined re[illegible]ning capacity of [illegible] [illegible]bpd.

Re[illegible]neries supplied about [illegible],[illegible] [illegible]oe of petroleum products in [illegible] representing a slight decrease of [illegible] percent from re[illegible]nery output of year [illegible] [illegible]nput to these re[illegible]neries consists of both local crude and

imported crude, mainly from the iddle East. he share of imported crude oil in the re nery mi increased from percent in to percent in , to ful l the domestic consumption re uirement.

[illegible]

alaysia's total installed capacity as of the end of was , an increase of percent from , in Around percent of the installed capacity is located in Peninsular alaysia, percent in arawa and remaining percent in abah. ross electricity generation registered at , h, an increase of percent as compared to , h in he pea demand for Peninsular alaysia was recorded at , arawa at , and abah did at

he share of natural gas as energy input in power stations increased from percent in to percent in he oil's share of fuel used for generation continued to decline and in , oil accounted for only percent. his was in line with the government's strategy in emphasi ing the use of non oil indigenous energy sources in the power sector. he share of coal, slightly decreased from percent in to percent in ydro share was at percent while the remaining were renewables at percent.

he total electricity consumption for alaysia recorded a growth of percent from , h in to , h in he share in electricity consumption was highest for the industrial sector at percent, followed by the commercial sector at percent, residential sector at percent, agriculture at percent and transport at percent.

[illegible] $MP

n , total nal energy consumption was recorded at , toe, an annual growth increase of percent compared to percent growth in , due to increasing demand from all sectors. he domestic growth has been sustained by the manufacturing and services sectors.

Analysis on the consumption by fuel type showed that the share of petroleum products increased marginally from percent in to percent in f this share, petrol and diesel were the major contributors at percent and percent respectively. eanwhile, the share of electricity increased to percent in compared to percent in the previous year. he share of natural gas in nal energy consumption decreased slightly to percent from percent in the previous year due mainly to the lower consumption from non energy sector. Coal and co e consumption increased by percent to , toe, due to increase in cement production for the construction industry as cement production increased percent in compared to the previous year.

he nal energy consumption in the industry sector has decreased percent to record at , toe. he reduction in growth was contributed by lower consumption of natural gas and petroleum products by the manufacturing sub sector which resulted in a downward trend of energy intensity. his sub sector, though, has put greater increase in ef ciency to drive for higher productivity in order to minimise production costs. owever, despite the decrease in energy growth, the industrial sector showed stronger performance in terms of value added contribution to the strong growth in the manufacturing sector during the year.

he nal energy consumption in transportation sector was increased by percent, placing the sector as the highest consumer overta ing the industrial sector. he increment in growth was re ected by the higher consumption of petroleum products especially from diesel and Aviation urbine uel A Aviation asoline A as As we all now, the overnment through the Cabinet eeting on ovember has decided that starting from ecember , the retail price of R petrol and diesel will be determined by the oating method managed oat he same method has been implemented for the retail price of R since uly n this case the retail prices of petroleum products in alaysia was determined via the Automatic Price echanism AP since hrough AP, the overnment will set the retail price at a certain level at which the cost of the product change will not change the retail price. owever, in the oatation method managed oat, the average change in the cost of the product will determine the pricing for the ne month. his means if the mar et price of crude oil increases, the retail price of R R and diesel will also increase and vice versa.

he residential and commercial sectors consumption for energy also continued to increase rapidly, with the increased attributed to electricity consumption growth of percent. hese sectors are also highly dependable on natural gas, which is supplied to households, government buildings, hotels, hospitals and even airports as well as food courts and restaurants. n these sectors maintained in natural gas usage of toe. n addition, the collaboration between natural gas suppliers with developers have enabled the bul volume of natural gas supplies to residential areas.

As of the non energy consumption for energy showed a slight decrease of percent, of which a total of , toe of natural gas has been supplied for this non energy use application. he reduction of natural gas usage was due to lower consumption especially in Peninsular alaysia as the consumption of natural gas dropped about percent to settle

at 67,995 mmscf. The consumption of natural gas for non-energy used was also contributed by the sales of fertilizers and pesticides of which the gas is used as feedstock in industrial projects such as ASEAN Bintulu Fertilizer plant for production of ammonia and urea and the methanol plant in Labuan.

OUTLOOK IN 2015

Overall, the Malaysian economy is projected to register a steady growth of 4.5 - 5.5 percent in 2015 (2014: 6.0 percent), supported mainly by a sustained expansion in domestic demand amid strong domestic fundamentals and a resilient export sector. Domestic demand will continue to anchor growth in 2015, driven by private sector spending.

Malaysia's energy supply and consumption will be expected to grow further in 2015. The decline in global oil prices is expected to affect upstream oil and gas projects, particularly in the enhanced oil recovery (EOR) and marginal oilfield activity. The impact will, however, be partially mitigated by the implementation of projects that have already been contracted out and existing long-gestation projects such as deep-water exploration.

In terms of energy consumption, all major sectors are expected to benefit from lower commodity prices and remain the key driver of economic growth in 2015. For households, lower fuel prices will lead to additional disposable income and support private consumption.

01.

KEY ECONOMIC AND

	2014				
	1	2	3	4	
P at current prices R million					1 106 530
P at prices R million					1 012 505
at current prices R million					1 069 258
Population people					30 598
Primary Energy upply toe					92 487
inal Energy Consumption toe					52 209
Electricity Consumption toe					11 042
Electricity Consumption h					128 330
P P					
P at Current Prices R					36 165
Primary Energy upply toe					3.023
inal Energy Consumption toe					1.706
Electricity Consumption h					4 194
$					
Primary Energy upply toe P at prices R million					913
inal Energy Consumption toe P at prices R million					516
Electricity Consumption toe P at prices R million					10.9
Electricity Consumption h P at prices R million					0.127

ote uarterly data from epartment of tatistics alaysia id-year population from epartment of tatistics alaysia

P $ M $	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
P at Current Prices R million										
P at Prices R million										
Population people										
inal Energy Consumption toe										
Electricity Consumption toe										
Electricity Consumption h										
P P										
P at Current Prices R										
inal Energy Consumption toe										
Electricity Consumption h										
$										
inal Energy Consumption toe P at prices R million										
Electricity Consumption toe P at prices R million										
Electricity Consumption h P at prices R million										

ote P data by tates from epartment of tatistics alaysia
P for Peninsular alaysia including upra tate upra tate covers production activities that beyond the centre of predominant economic interest for any state
d year population from epartment of tatistics alaysia

S	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
P at Current Prices million										
P at prices million										
Population people										
inal Energy Consumption toe										
Electricity Consumption toe										
Electricity Consumption h										
P P										
P at Current Prices										
inal Energy Consumption toe										
Electricity Consumption h										
$										
inal Energy Consumption toe P at prices million										
Electricity Consumption toe P at prices million										
Electricity Consumption h P at prices million										

ote P data by tates from epartment of tatistics alaysia
P for abah including P abuan
d year population from epartment of tatistics alaysia

S	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
P at Current Prices million										
P at prices million										
Population people										
inal Energy Consumption toe										
Electricity Consumption toe										
Electricity Consumption h										
P										
P at Current Prices										
inal Energy Consumption toe										
Electricity Consumption h										
$										
inal Energy Consumption toe P at prices million										
Electricity Consumption toe P at prices million										
Electricity Consumption h P at prices million										

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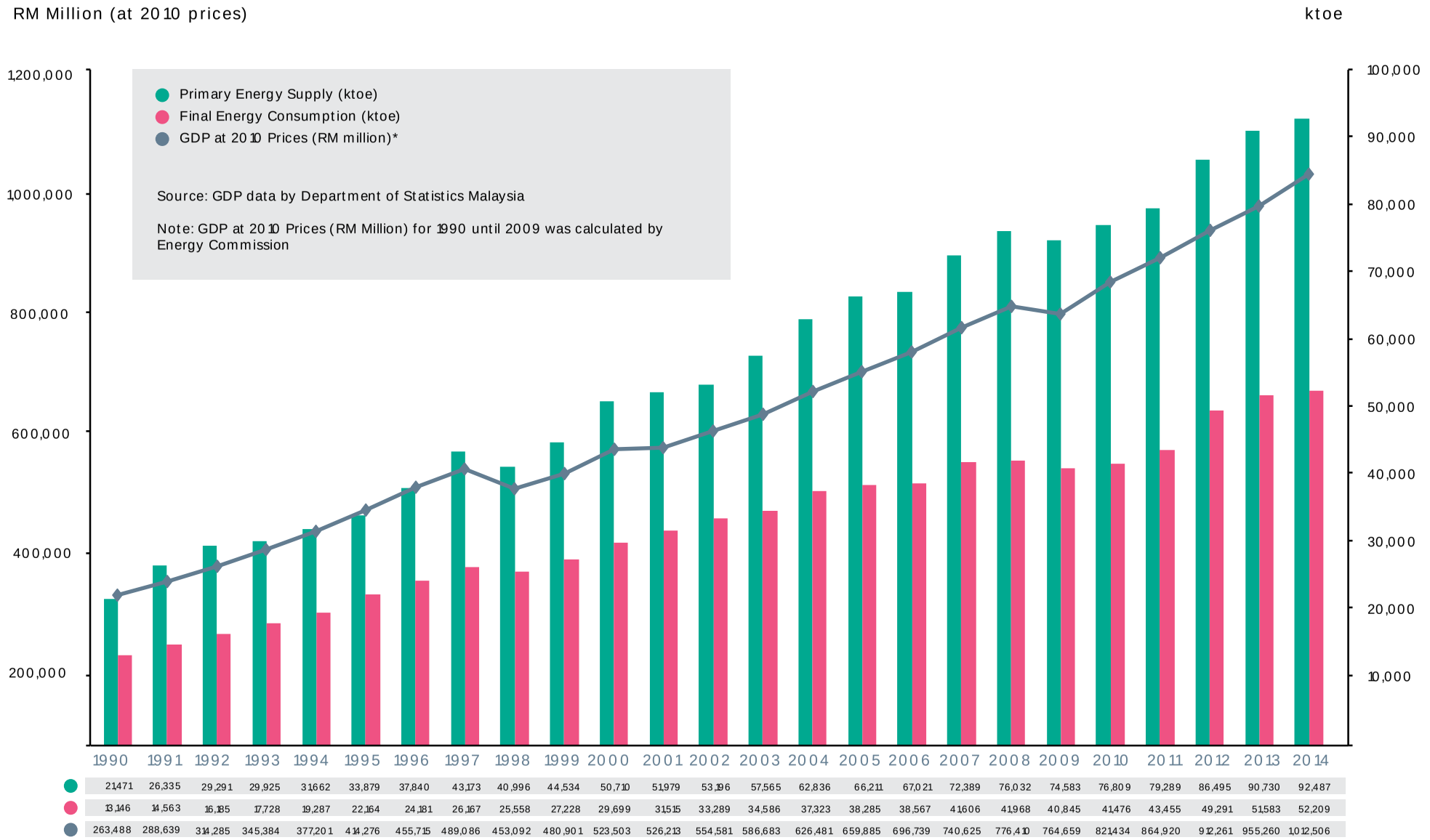
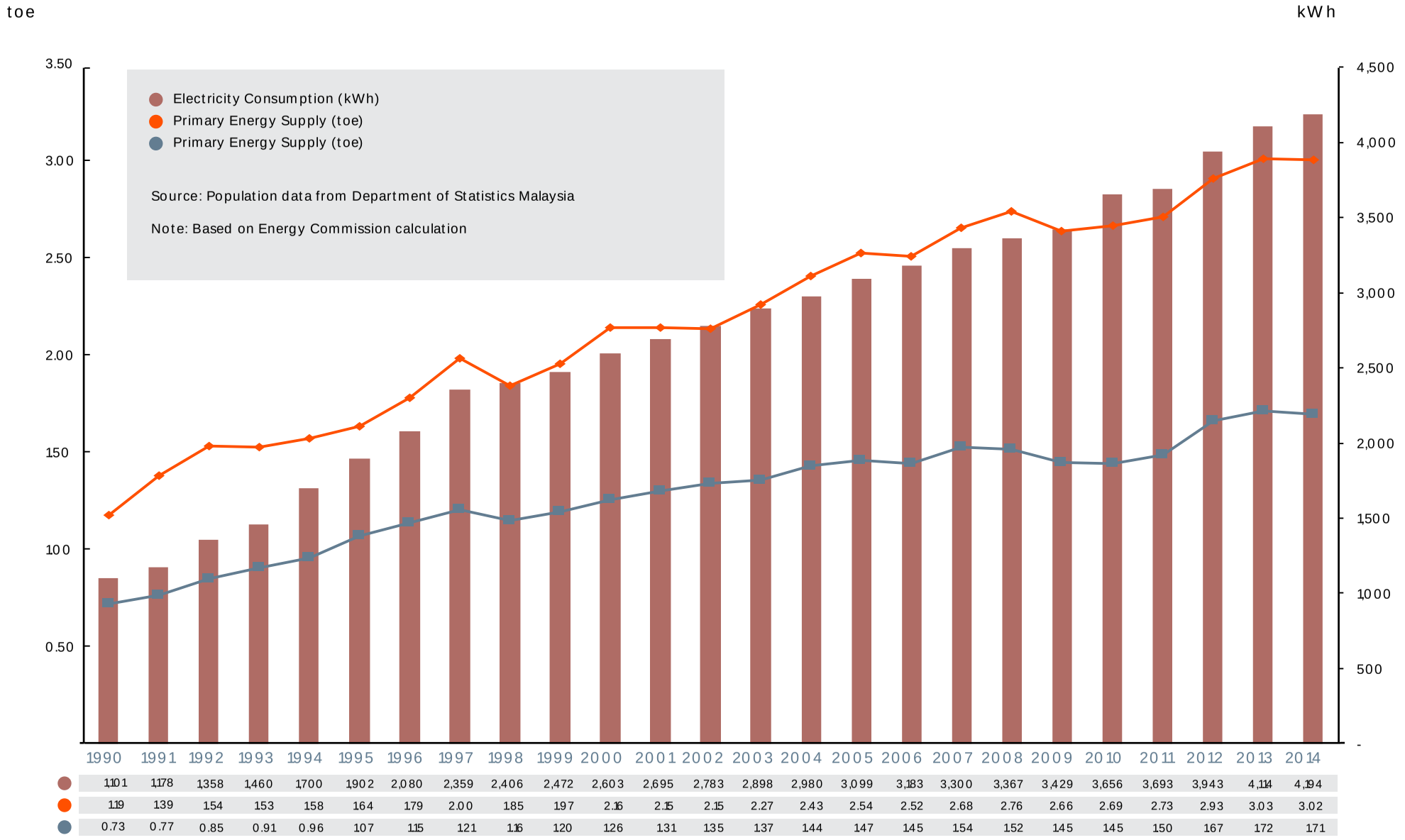
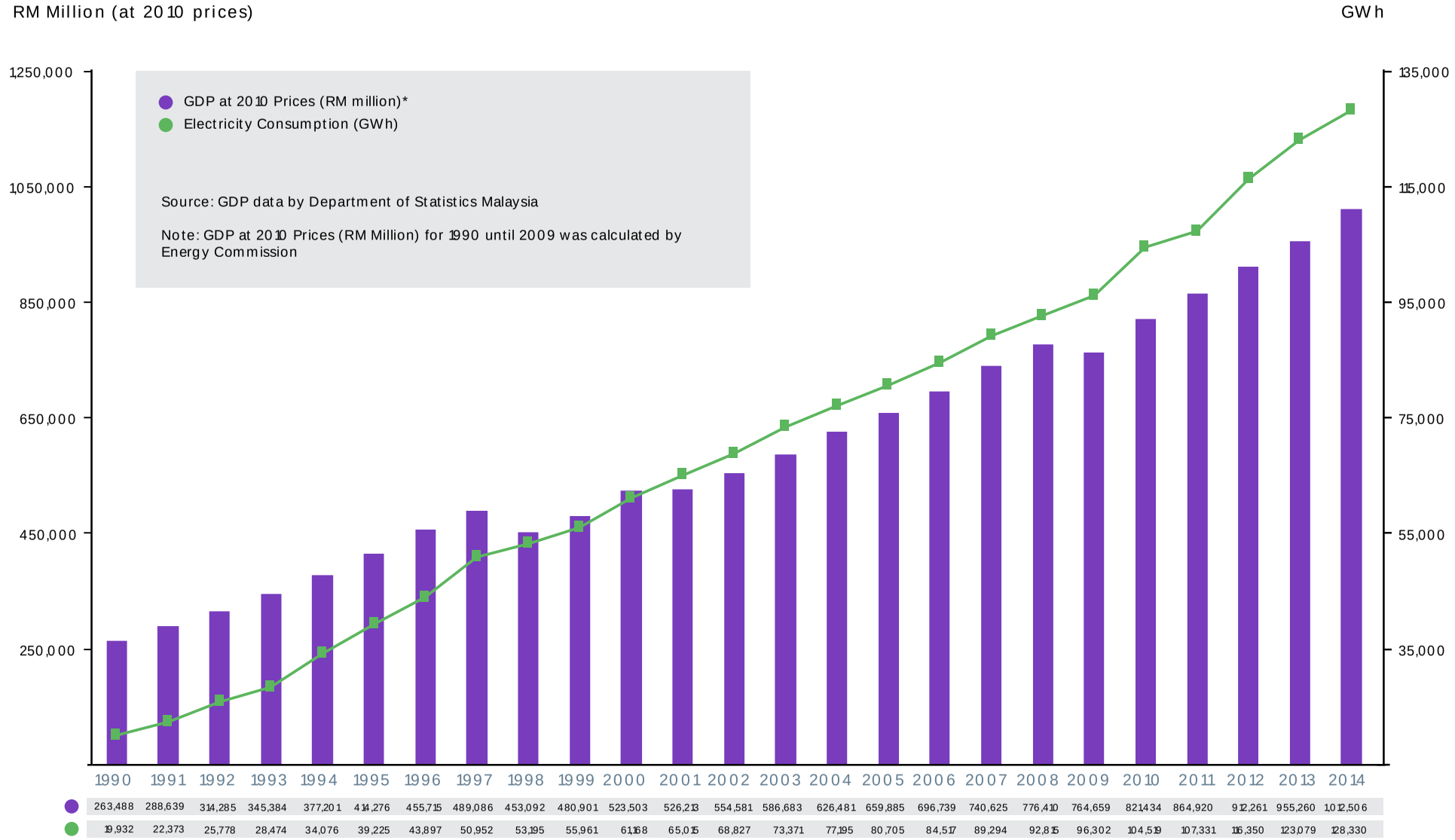
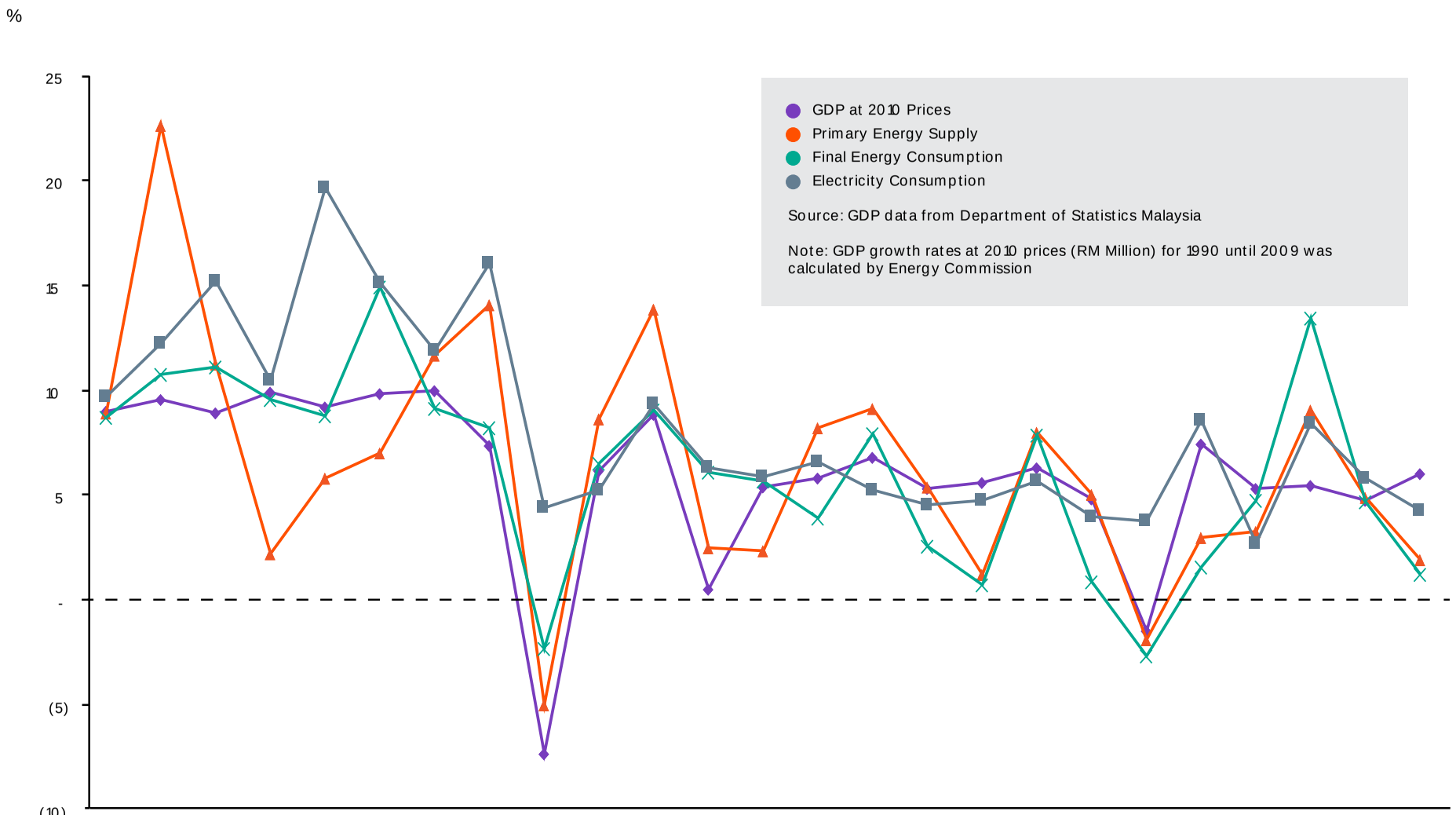
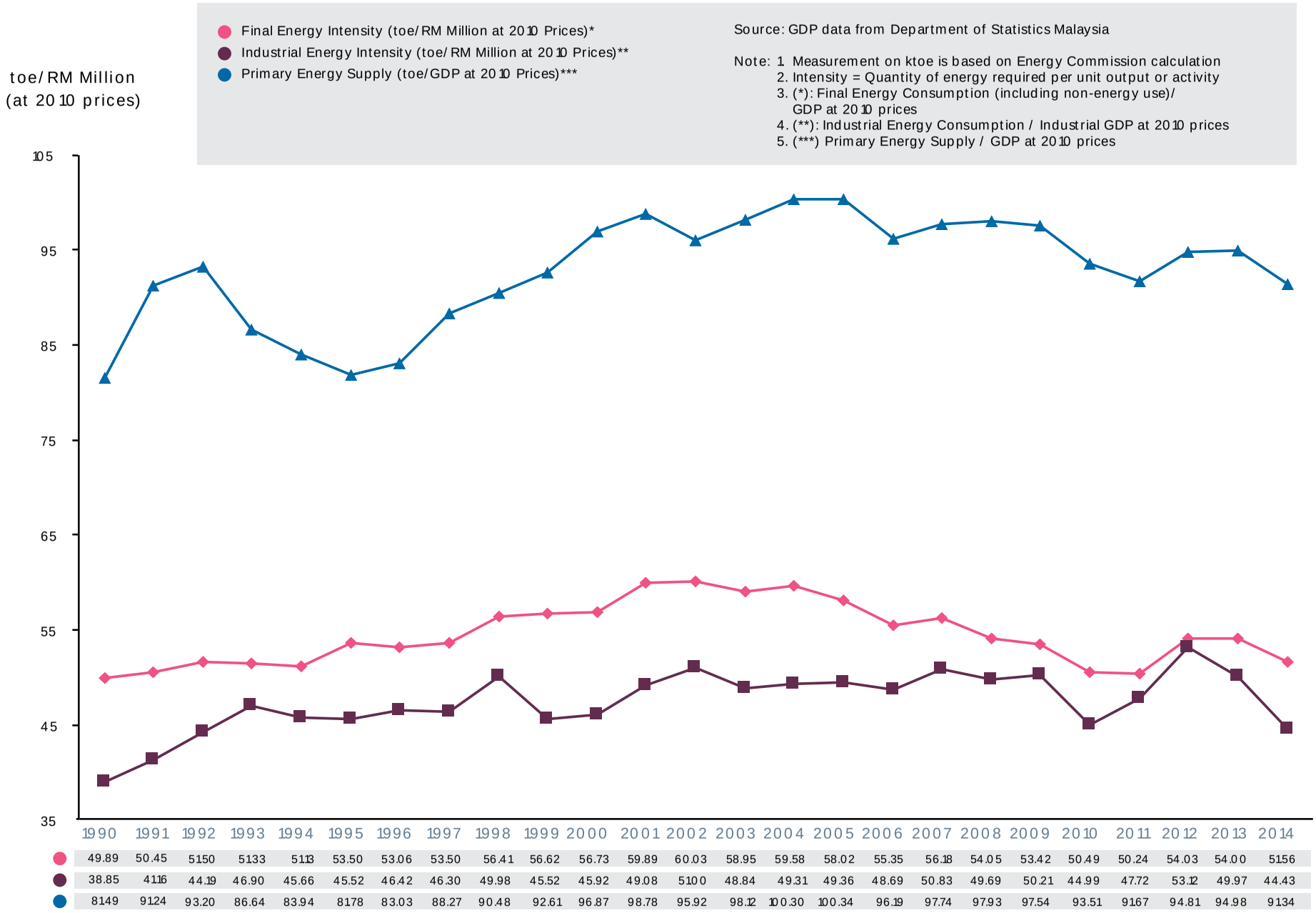

RM Million (at 2010 prices)
ktoe
Primary Energy Supply (ktoe)
Final Energy Consumption (ktoe)
GDP at 2010 Prices (RM million)*
Source: GDP data by Department of Statistics Malaysia
Note: GDP at 2010 Prices (RM Million) for 1990 until 2009 was calculated by Energy Commission
1,200,000
1,000,000
800,000
600,000
400,000
200,000
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
21,471 26,335 29,291 29,925 31,662 33,879 37,840 43,173 40,996 44,534 50,710 51,979 53,196 57,565 62,836 66,211 67,021 72,389 76,032 74,583 76,809 79,289 86,495 90,730 92,487
13,146 14,563 16,185 17,728 19,287 22,164 24,181 26,167 25,558 27,228 29,699 31,515 33,289 34,586 37,323 38,285 38,567 41,606 41,968 40,845 41,476 43,455 49,291 51,583 52,209
263,488 288,639 314,285 345,384 377,201 414,276 455,715 489,086 453,092 480,901 523,503 526,213 554,581 586,683 626,481 659,885 696,739 740,625 776,410 764,659 821,434 864,920 912,261 955,260 1,012,506

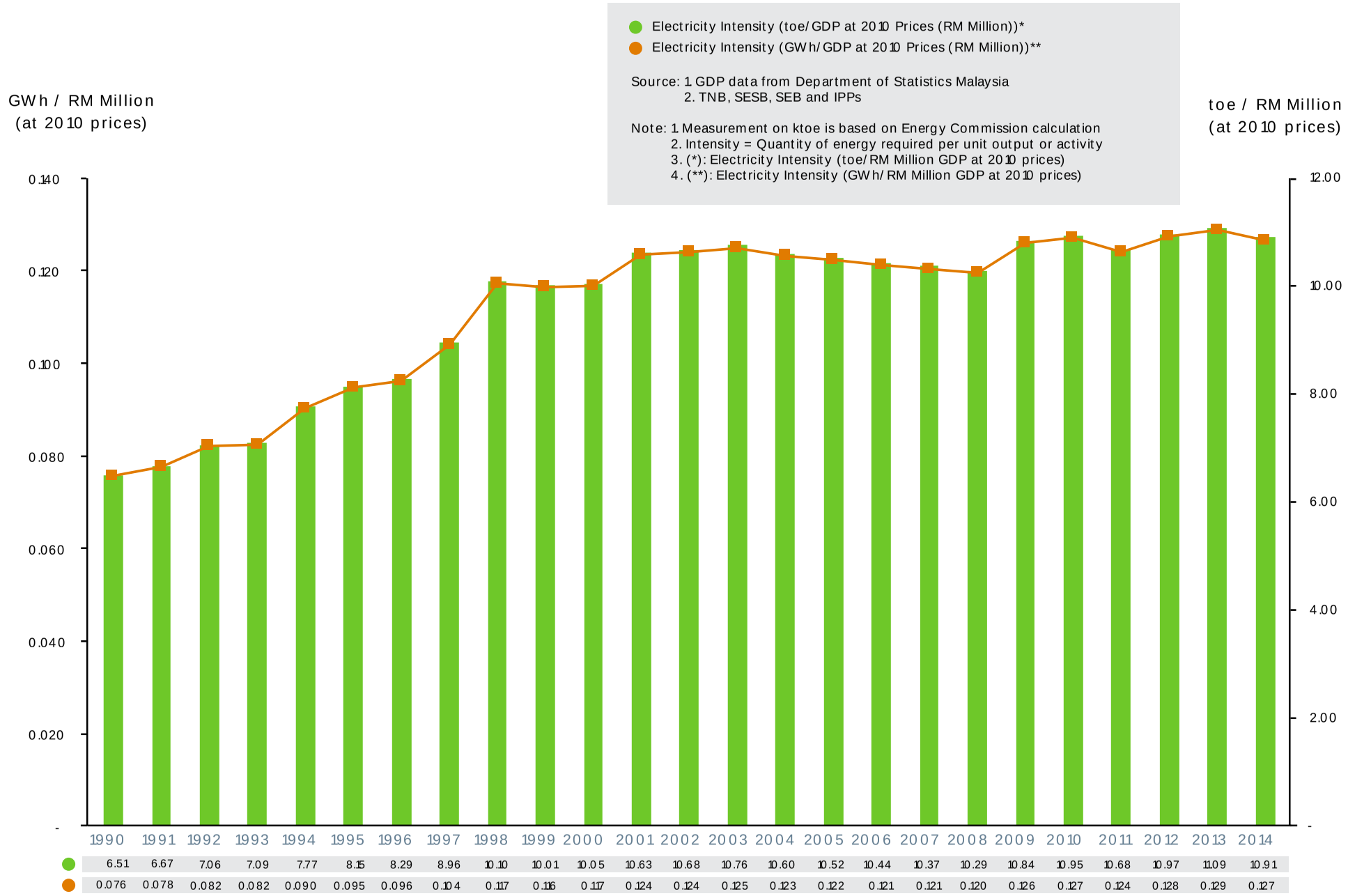

toe
kWh
Electricity Consumption (kWh)
Primary Energy Supply (toe)
Primary Energy Supply (toe)
Source: Population data from Department of Statistics Malaysia
Note: Based on Energy Commission calculation
3.50
3.00
2.50
2.00
150
100
0.50
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
-
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
1,101 1,178 1,358 1,460 1,700 1,902 2,080 2,359 2,406 2,472 2,603 2,695 2,783 2,898 2,980 3,099 3,183 3,300 3,367 3,429 3,656 3,693 3,943 4,114 4,194
1.19 1.39 1.54 1.53 1.58 1.64 1.79 2.00 1.85 1.97 2.16 2.15 2.15 2.27 2.43 2.54 2.52 2.68 2.76 2.66 2.69 2.73 2.93 3.03 3.02
0.73 0.77 0.85 0.91 0.96 1.07 1.15 1.21 1.16 1.20 1.26 1.31 1.35 1.37 1.44 1.47 1.45 1.54 1.52 1.45 1.45 1.50 1.67 1.72 1.71

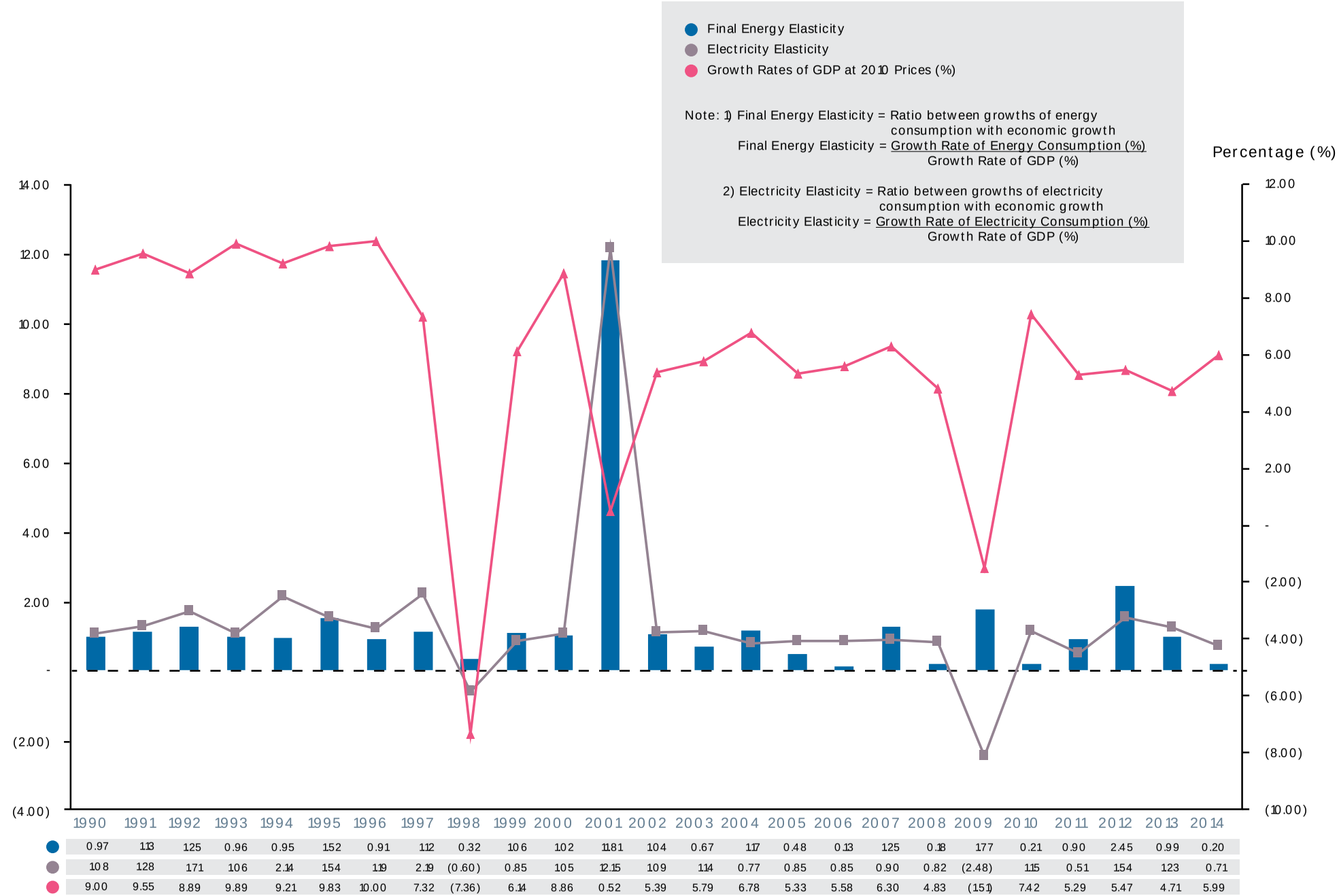

RM Million (at 2010 prices)
GWh
GDP at 2010 Prices (RM million)*
Electricity Consumption (GWh)
Source: GDP data by Department of Statistics Malaysia
Note: GDP at 2010 Prices (RM Million) for 1990 until 2009 was calculated by Energy Commission
1,250,000
1,050,000
850,000
650,000
450,000
250,000
135,000
115,000
95,000
75,000
55,000
35,000
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
263,488 288,639 314,285 345,384 377,201 414,276 455,715 489,086 453,092 480,901 523,503 526,213 554,581 586,683 626,481 659,885 696,739 740,625 776,410 764,659 821,434 864,920 912,261 955,260 1,012,506
19,932 22,373 25,778 28,474 34,076 39,225 43,897 50,952 53,195 55,961 61,168 65,015 68,827 73,371 77,195 80,705 84,517 89,294 92,815 96,302 104,519 107,331 116,350 123,079 128,330

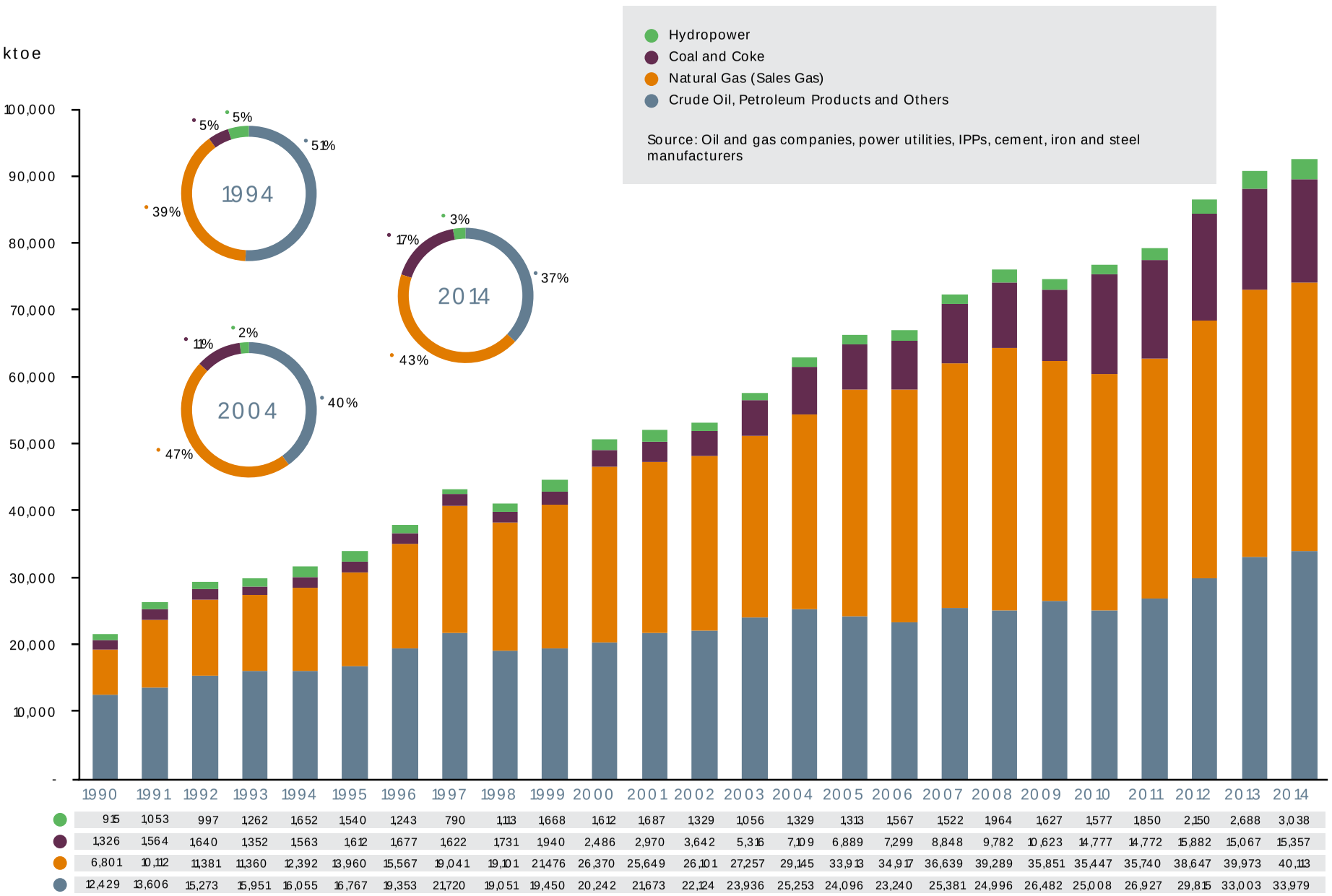


	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
●	9.00	9.55	8.89	9.89	9.21	9.83	10.00	7.32	(7.36)	6.14	8.86	0.52	5.39	5.79	6.78	5.33	5.58	6.30	4.83	(1.51)	7.42	5.29	5.47	4.71	5.99
●	8.90	22.65	11.22	2.16	5.80	7.00	11.69	14.09	(5.04)	8.63	13.87	2.50	2.34	8.21	9.16	5.37	1.22	8.01	5.03	(1.91)	2.98	3.23	9.09	4.90	1.94
●	8.70	10.78	11.14	9.53	8.79	14.92	9.10	8.21	(2.33)	6.53	9.08	6.11	5.63	3.90	7.91	2.58	0.74	7.88	0.87	(2.68)	1.54	4.77	13.43	4.65	1.21
●	9.70	12.24	15.22	10.46	19.67	15.11	11.91	16.07	4.40	5.20	9.30	6.29	5.86	6.60	5.21	4.55	4.72	5.65	3.94	3.76	8.53	2.69	8.40	5.78	4.27

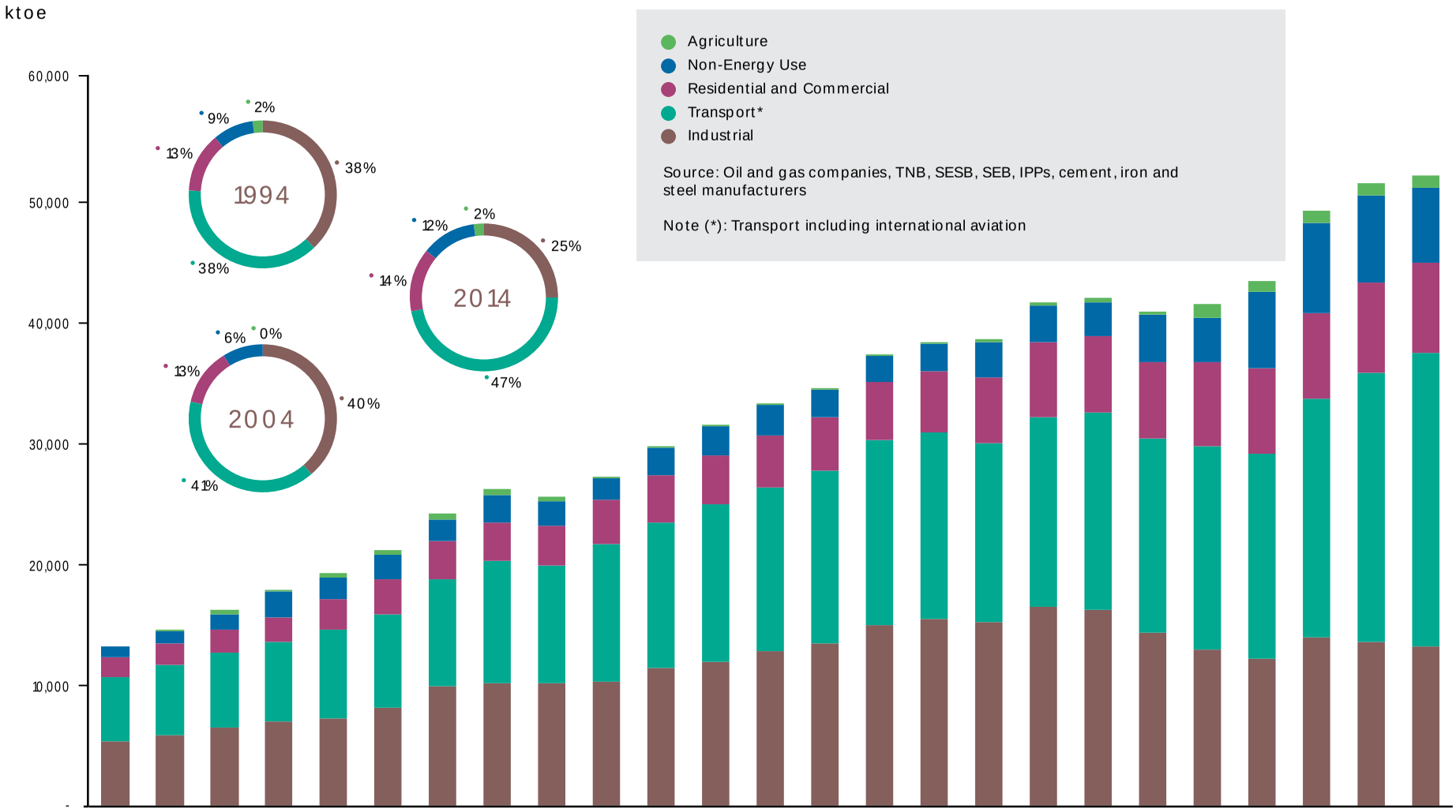

Final Energy Intensity (toe/RM Million at 2010 Prices)*
Industrial Energy Intensity (toe/RM Million at 2010 Prices)**
Primary Energy Supply (toe/GDP at 2010 Prices)***
Source: GDP data from Department of Statistics Malaysia
Note: 1. Measurement on ktoe is based on Energy Commission calculation
2. Intensity = Quantity of energy required per unit output or activity
3. (*): Final Energy Consumption (including non-energy use)/ GDP at 2010 prices
4. (**): Industrial Energy Consumption / Industrial GDP at 2010 prices
5. (***) Primary Energy Supply / GDP at 2010 prices
toe/RM Million
(at 2010 prices)
105
95
85
75
65
55
45
35
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
49.89 50.45 51.50 51.33 51.13 53.50 53.06 53.50 56.41 56.62 56.73 59.89 60.03 58.95 59.58 58.02 55.35 56.18 54.05 53.42 50.49 50.24 54.03 54.00 51.56
38.85 41.16 44.19 46.90 45.66 45.52 46.42 46.30 49.98 45.52 45.92 49.08 51.00 48.84 49.31 49.36 48.69 50.83 49.69 50.21 44.99 47.72 53.12 49.97 44.43
81.49 91.24 93.20 86.64 83.94 81.78 83.03 88.27 90.48 92.61 96.87 98.78 95.92 98.12 100.30 100.34 96.19 97.74 97.93 97.54 93.51 91.67 94.81 94.98 91.34


Electricity Intensity (toe/GDP at 2010 Prices (RM Million))*
Electricity Intensity (GWh/GDP at 2010 Prices (RM Million))**
Source: 1. GDP data from Department of Statistics Malaysia
2. TNB, SESB, SEB and IPPs
Note: 1. Measurement on ktoe is based on Energy Commission calculation
2. Intensity = Quantity of energy required per unit output or activity
3. (*): Electricity Intensity (toe/RM Million GDP at 2010 prices)
4. (**): Electricity Intensity (GWh/RM Million GDP at 2010 prices)
GWh / RM Million
(at 2010 prices)
toe / RM Million
(at 2010 prices)
0.140
0.120
0.100
0.080
0.060
0.040
0.020
-
12.00
10.00
8.00
6.00
4.00
2.00
-
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
6.51 6.67 7.06 7.09 7.77 8.15 8.29 8.96 10.10 10.01 10.05 10.63 10.68 10.76 10.60 10.52 10.44 10.37 10.29 10.84 10.95 10.68 10.97 11.09 10.91
0.076 0.078 0.082 0.082 0.090 0.095 0.096 0.104 0.117 0.116 0.117 0.124 0.124 0.125 0.123 0.122 0.121 0.121 0.120 0.126 0.127 0.124 0.128 0.129 0.127


Final Energy Elasticity
Electricity Elasticity
Growth Rates of GDP at 2010 Prices (%)
Note: 1) Final Energy Elasticity = Ratio between growths of energy consumption with economic growth
Final Energy Elasticity = Growth Rate of Energy Consumption (%) / Growth Rate of GDP (%)
2) Electricity Elasticity = Ratio between growths of electricity consumption with economic growth
Electricity Elasticity = Growth Rate of Electricity Consumption (%) / Growth Rate of GDP (%)
Percentage (%)
14.00
12.00
10.00
8.00
6.00
4.00
2.00
-
(2.00)
(4.00)
12.00
10.00
8.00
6.00
4.00
2.00
-
(2.00)
(4.00)
(6.00)
(8.00)
(10.00)
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
0.97 1.13 1.25 0.96 0.95 1.52 0.91 1.12 0.32 1.06 1.02 11.81 1.04 0.67 1.17 0.48 0.13 1.25 0.18 1.77 0.21 0.90 2.45 0.99 0.20
1.08 1.28 1.71 1.06 2.14 1.54 1.19 2.19 (0.60) 0.85 1.05 12.15 1.09 1.14 0.77 0.85 0.85 0.90 0.82 (2.48) 1.15 0.51 1.54 1.23 0.71
9.00 9.55 8.89 9.89 9.21 9.83 10.00 7.32 (7.36) 6.14 8.86 0.52 5.39 5.79 6.78 5.33 5.58 6.30 4.83 (1.51) 7.42 5.29 5.47 4.71 5.99

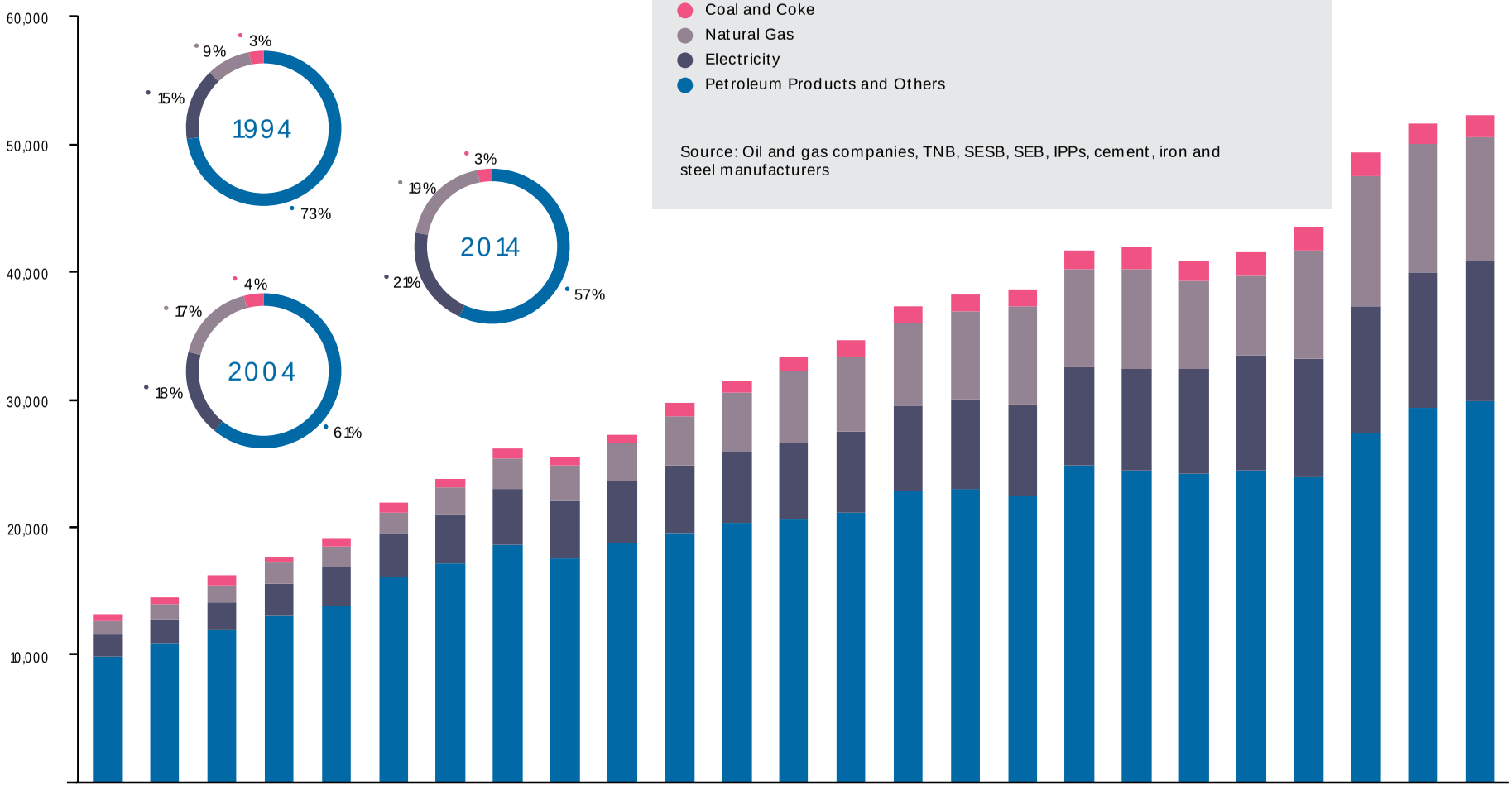


	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Hydropower	915	1,053	997	1,262	1,652	1,540	1,243	790	1,113	1,668	1,612	1,687	1,329	1,056	1,329	1,313	1,567	1,522	1,964	1,627	1,577	1,850	2,150	2,688	3,038
Coal and Coke	1,326	1,564	1,640	1,352	1,563	1,612	1,677	1,622	1,731	1,940	2,486	2,970	3,642	5,316	7,109	6,889	7,299	8,848	9,782	10,623	14,777	14,772	15,882	15,067	15,357
Natural Gas (Sales Gas)	6,801	10,112	11,381	11,360	12,392	13,960	15,567	19,041	19,101	21,476	26,370	25,649	26,101	27,257	29,145	33,913	34,917	36,639	39,289	35,851	35,447	35,740	38,647	39,973	40,113
Crude Oil, Petroleum Products and Others	12,429	13,606	15,273	15,951	16,055	16,767	19,353	21,720	19,051	19,450	20,242	21,673	22,124	23,936	25,253	24,096	23,240	25,381	24,996	26,482	25,008	26,927	29,815	33,003	33,979



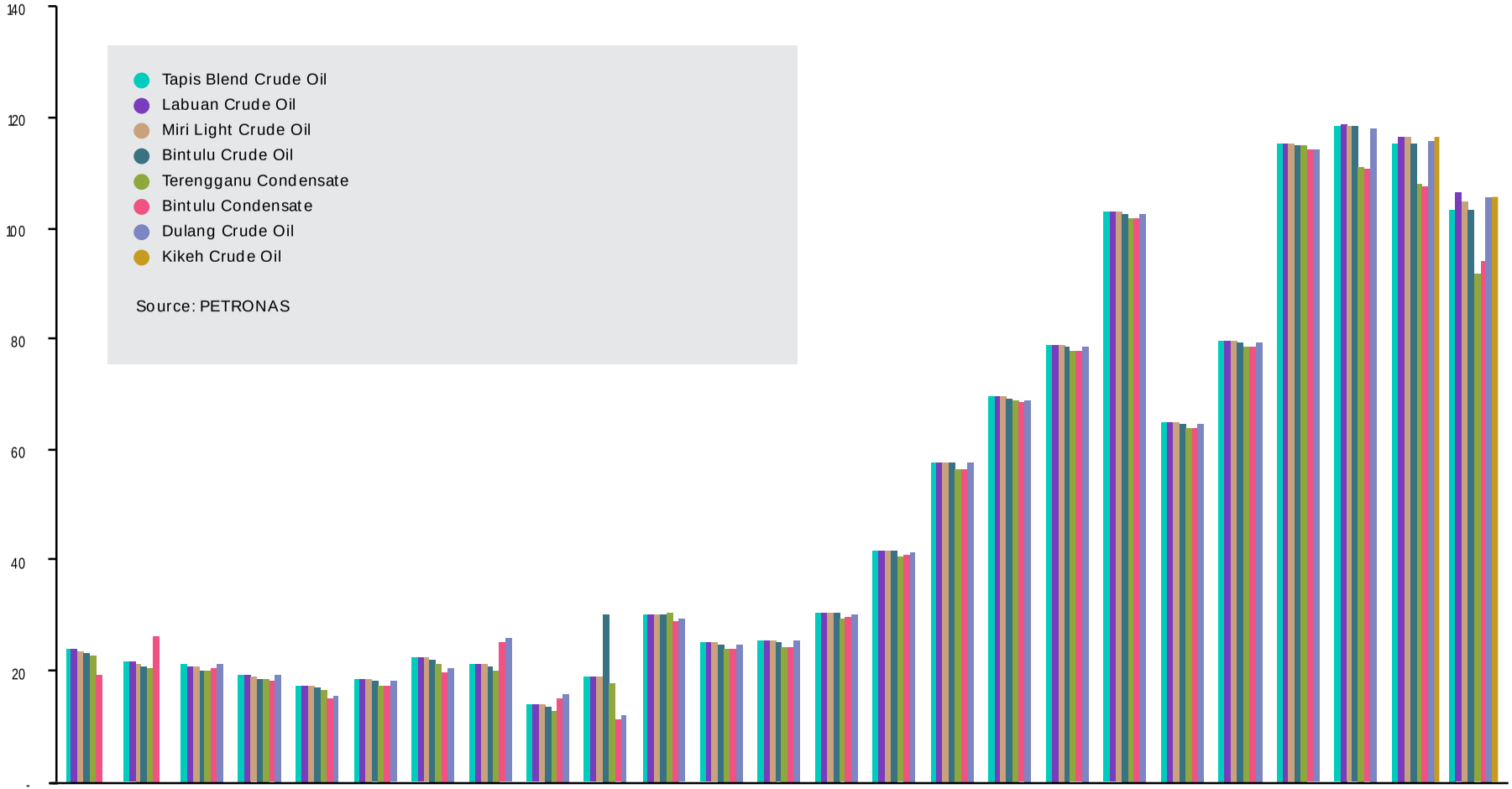
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Agriculture	-	130	391	62	422	446	486	490	307	106	104	98	96	98	87	101	253	265	287	211	1,074	916	1,053	1,051	1,045
Non-Energy Use	838	1,071	1,222	2,027	1,817	1,994	1,744	2,298	2,023	1,799	2,250	2,378	2,511	2,345	2,183	2,173	2,819	2,958	2,876	3,868	3,696	6,377	7,497	7,277	6,217
Residential and Commercial	1,622	1,721	1,891	2,069	2,502	2,837	3,162	3,073	3,314	3,653	3,868	4,048	4,387	4,399	4,754	5,134	5,430	6,212	6,205	6,336	6,951	6,993	7,065	7,403	7,459
Transport*	5,386	5,806	6,226	6,558	7,262	7,827	8,951	10,201	9,793	11,393	12,071	13,137	13,442	14,271	15,385	15,384	14,819	15,717	16,395	16,119	16,828	17,070	19,757	22,357	24,327
Industrial	5,300	5,835	6,455	7,012	7,283	8,060	9,838	10,106	10,121	10,277	11,406	11,852	12,854	13,472	14,914	15,492	15,248	16,454	16,205	14,312	12,928	12,100	13,919	13,496	13,162

ktoe



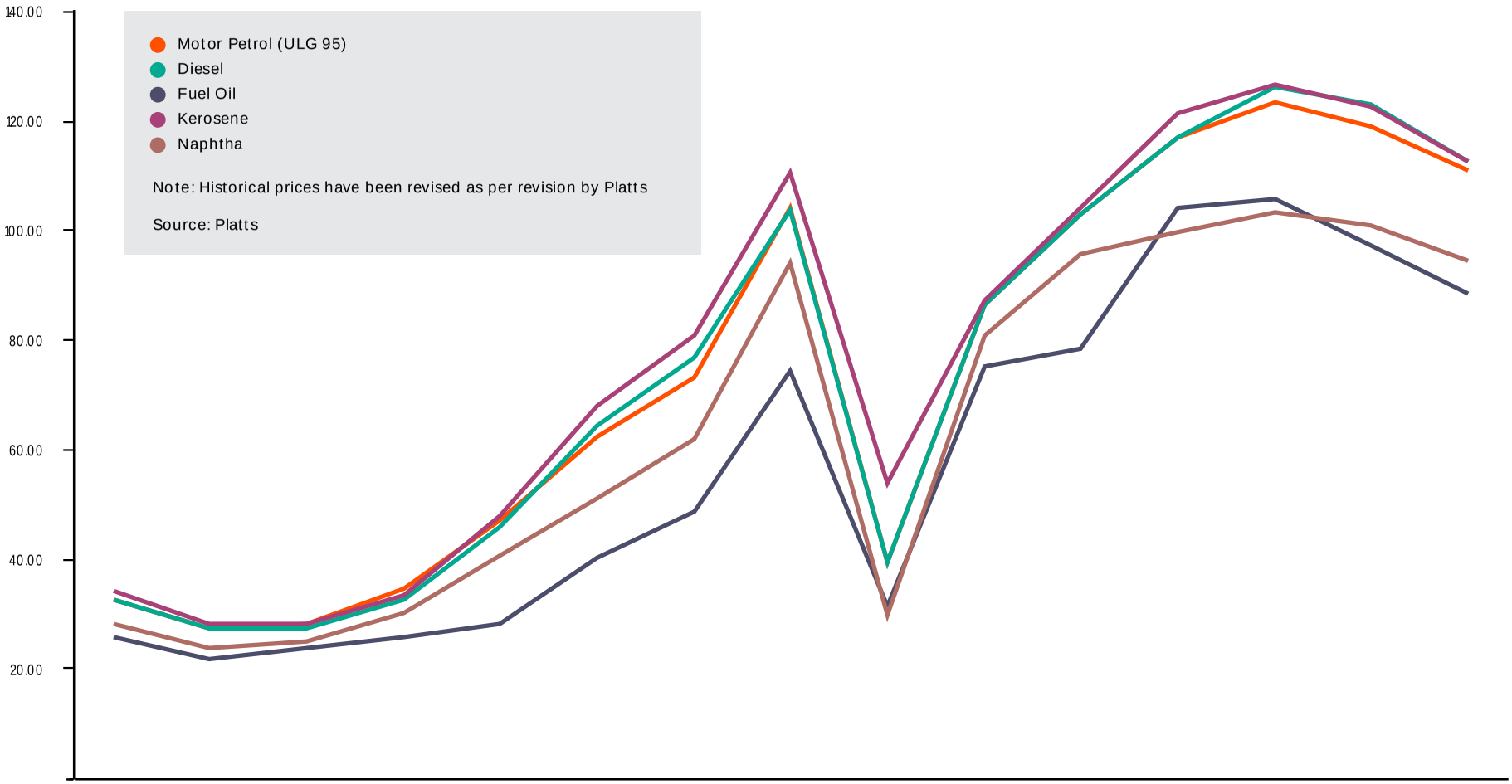
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coal and Coke	513	599	672	487	598	712	727	740	767	608	991	977	1,086	1,212	1,305	1,348	1,335	1,361	1,713	1,613	1,826	1,759	1,744	1,539	1,709
Natural Gas	1,069	1,099	1,344	1,701	1,660	1,654	2,079	2,465	2,726	3,023	3,862	4,620	5,642	5,886	6,490	6,981	7,562	7,709	7,818	6,802	6,254	8,515	10,206	10,076	9,641
Electricity	1,715	1,925	2,218	2,450	2,932	3,375	3,777	4,384	4,577	4,815	5,263	5,594	5,922	6,313	6,642	6,944	7,272	7,683	7,986	8,286	8,993	9,236	10,011	10,590	11,042
Petroleum Products and Others	9,825	10,914	11,927	13,075	13,894	16,142	17,203	18,578	17,488	18,782	19,582	20,323	20,638	21,175	22,886	23,012	22,398	24,852	24,451	24,145	24,403	23,946	27,329	29,379	29,817

USD / Barrels



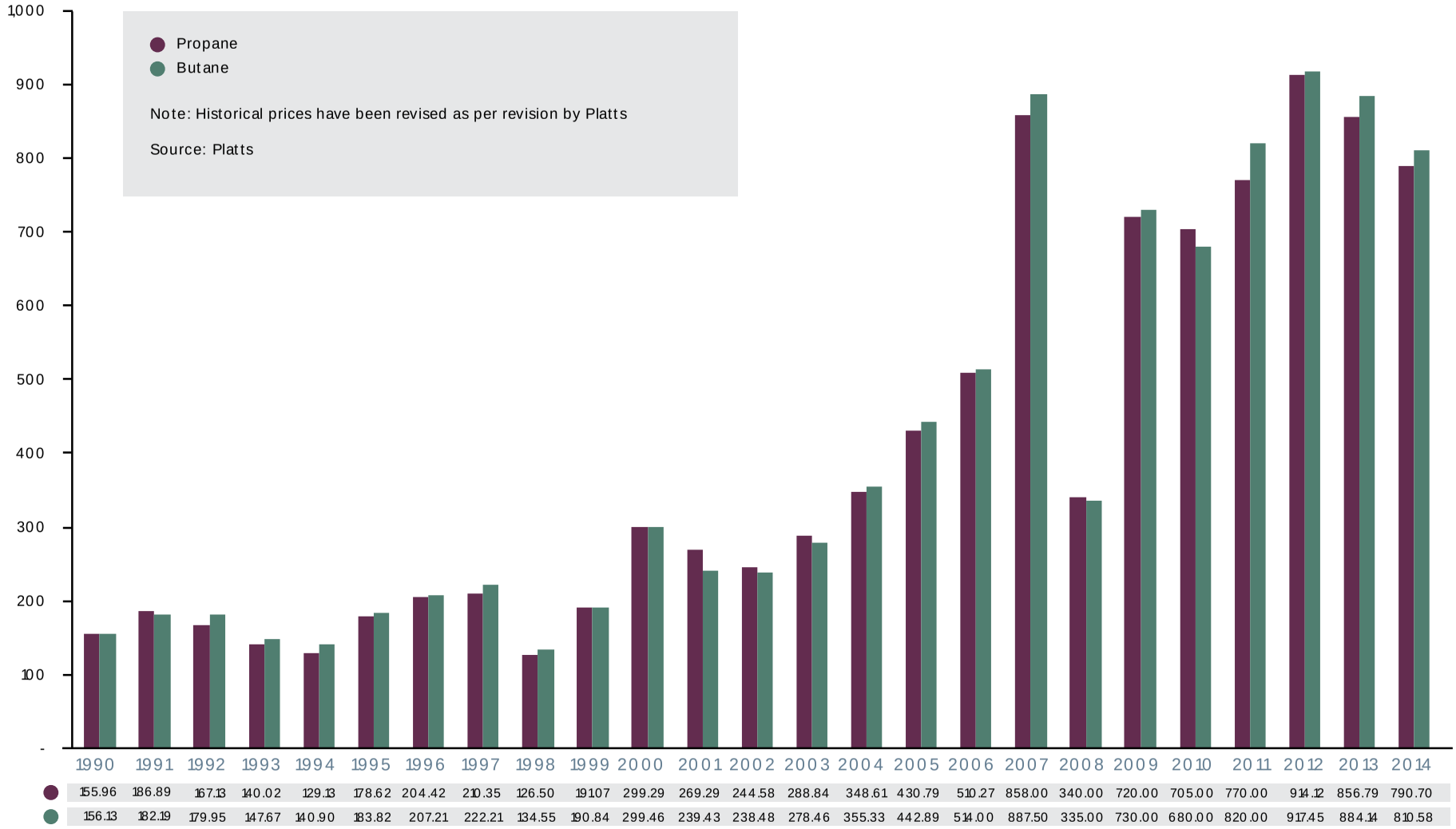
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Tapis Blend Crude Oil	23.86	21.47	20.98	19.11	17.30	18.53	22.28	21.18	13.81	18.95	30.25	25.06	25.52	30.60	41.84	57.71	69.56	78.96	102.79	64.97	79.51	115.33	118.22	115.30	103.26
Labuan Crude Oil	23.76	21.37	20.88	19.11	17.40	18.63	22.38	21.33	13.84	18.95	30.25	25.06	25.52	30.60	41.84	57.71	69.56	78.96	102.79	64.97	79.51	115.33	118.66	116.60	106.41
Miri Light Crude Oil	23.56	21.17	20.68	18.91	17.20	18.43	22.18	21.28	13.83	18.95	30.25	25.06	25.52	30.60	41.84	57.71	69.56	78.96	102.79	64.97	79.51	115.33	118.56	116.30	104.89
Bintulu Crude Oil	23.06	20.67	20.18	18.46	16.90	18.06	21.89	20.78	13.48	29.95	29.95	24.78	25.22	30.33	41.54	57.43	69.28	78.66	102.49	64.67	79.21	115.03	118.36	115.44	103.13
Terengganu Condensate	22.76	20.37	19.88	18.26	16.45	17.33	21.08	19.98	12.61	17.76	30.29	23.86	24.32	29.40	40.64	56.51	68.66	77.91	101.59	63.77	78.31	115.03	110.92	108.00	91.82
Bintulu Condensate	19.10	26.35	20.20	18.25	15.00	17.36	19.79	25.13	14.80	11.14	29.09	23.96	24.42	29.50	40.74	56.61	68.45	77.92	101.69	63.87	78.41	114.13	110.62	107.70	93.99
Dulang Crude Oil	-	-	21.15	19.20	15.40	18.16	20.30	25.66	15.57	11.84	29.18	24.68	25.23	29.99	41.17	57.41	68.96	78.59	102.49	64.67	79.21	114.23	118.16	115.70	105.46
Kikeh Crude Oil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	116.60	105.66

USD / Barrels



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Motor Petrol (ULG 95)	32.64	27.43	28.04	34.69	47.23	62.38	73.20	104.05	39.25	86.55	103.15	117.00	123.42	119.00	110.97
Diesel	32.48	27.32	27.55	32.46	45.92	64.35	76.93	103.74	39.32	86.60	103.17	117.10	126.15	123.27	112.69
Fuel Oil	25.82	21.78	23.63	25.72	28.15	40.32	48.84	74.60	31.40	75.30	78.40	104.10	105.72	97.44	88.40
Kerosene	34.27	28.32	28.08	33.25	47.69	67.99	80.72	110.50	53.90	87.25	104.30	121.64	126.79	122.85	112.50
Naphtha	28.32	23.75	24.93	30.14	40.82	51.04	62.13	93.98	29.90	80.72	95.91	99.90	103.57	100.99	94.40

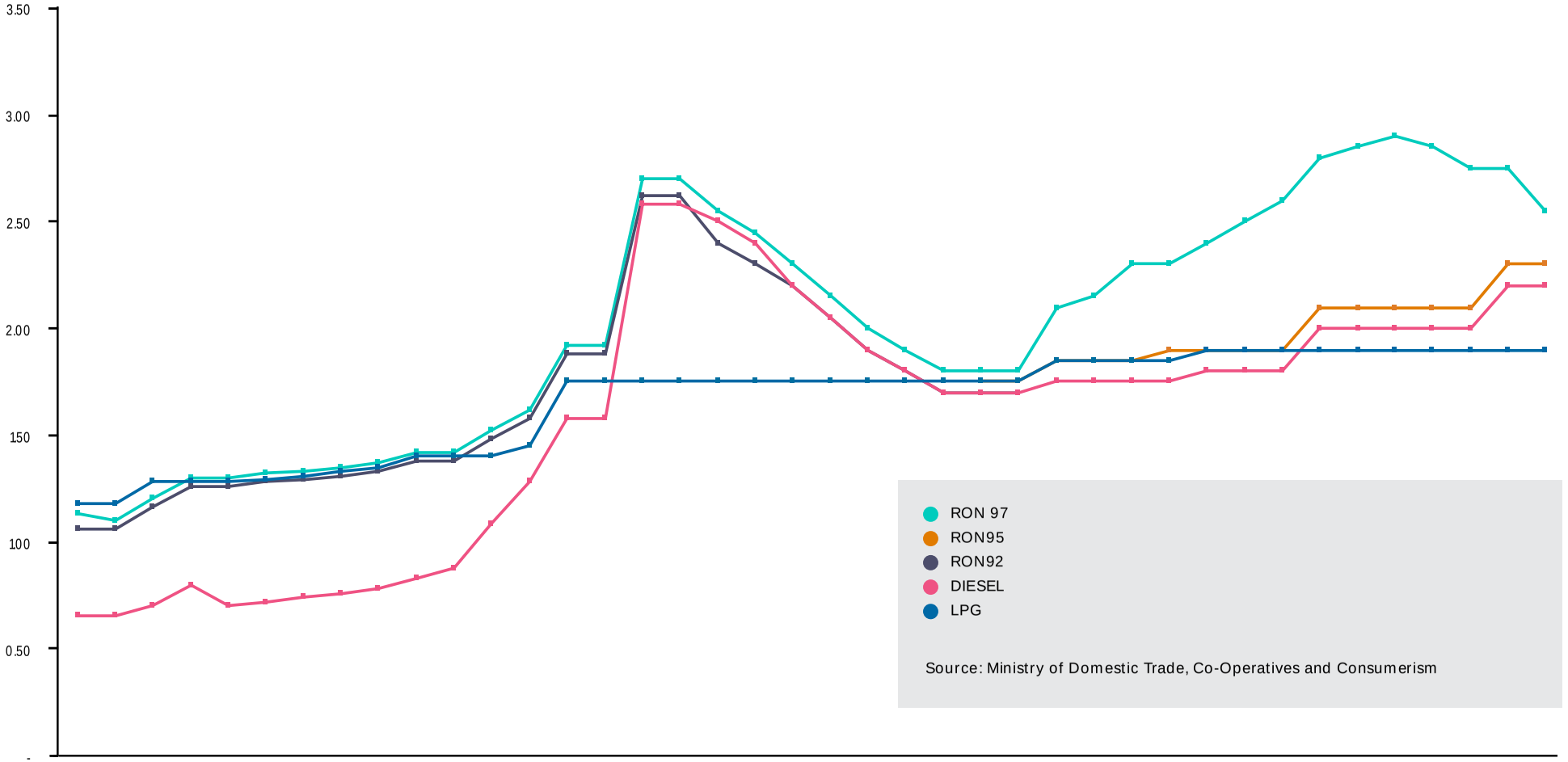
USD / Metric Tonne



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
●	155.96	186.89	167.13	140.02	129.13	178.62	204.42	210.35	126.50	191.07	299.29	269.29	244.58	288.84	348.61	430.79	510.27	858.00	340.00	720.00	705.00	770.00	914.12	856.79	790.70
●	156.13	182.19	179.95	147.67	140.90	183.82	207.21	222.21	134.55	190.84	299.46	239.43	238.48	278.46	355.33	442.89	514.00	887.50	335.00	730.00	680.00	820.00	917.45	884.14	810.58

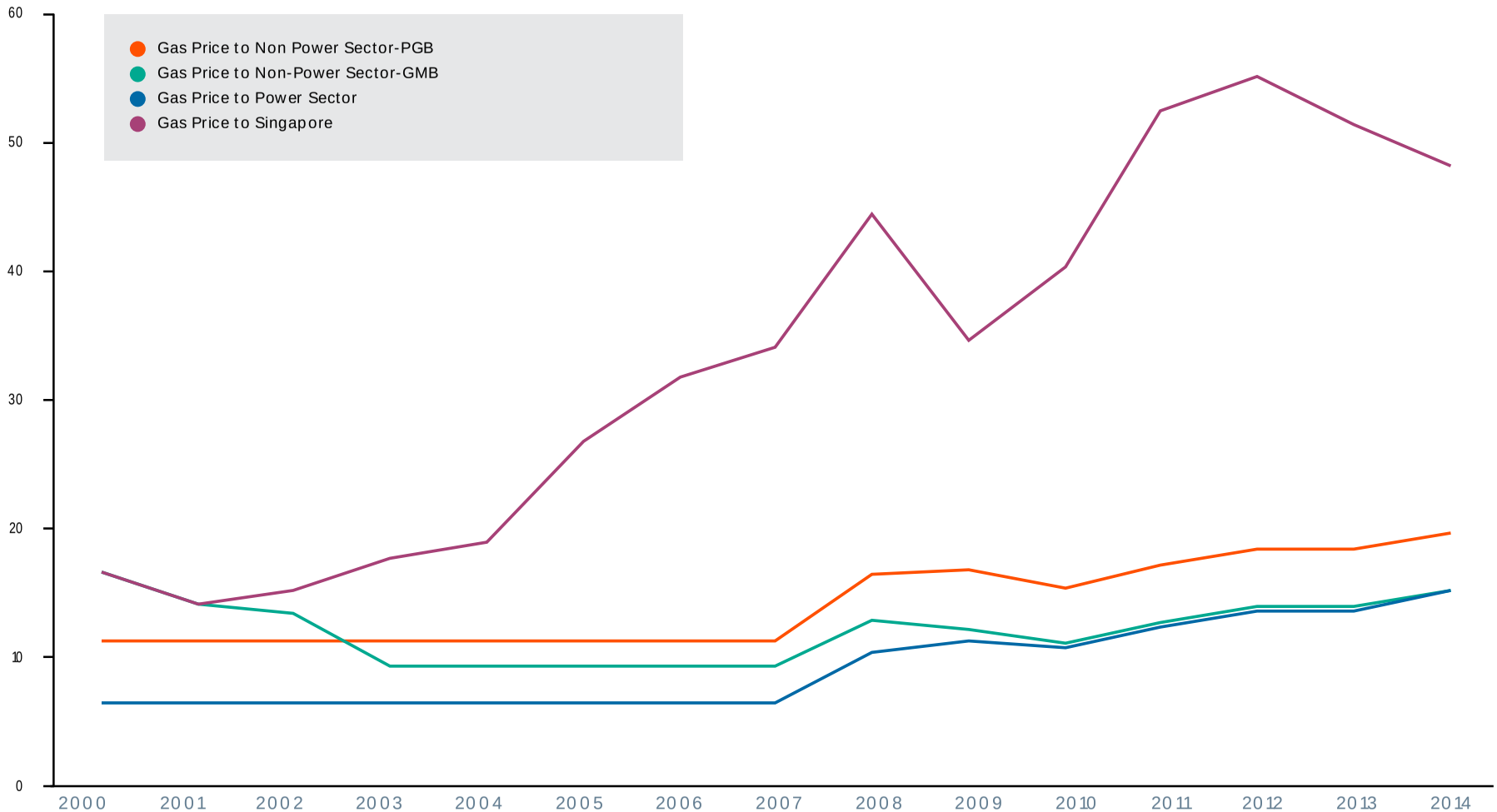
[illegible]14 [illegible]P[illegible]S [illegible]M[illegible]S[illegible]

RM / Litre



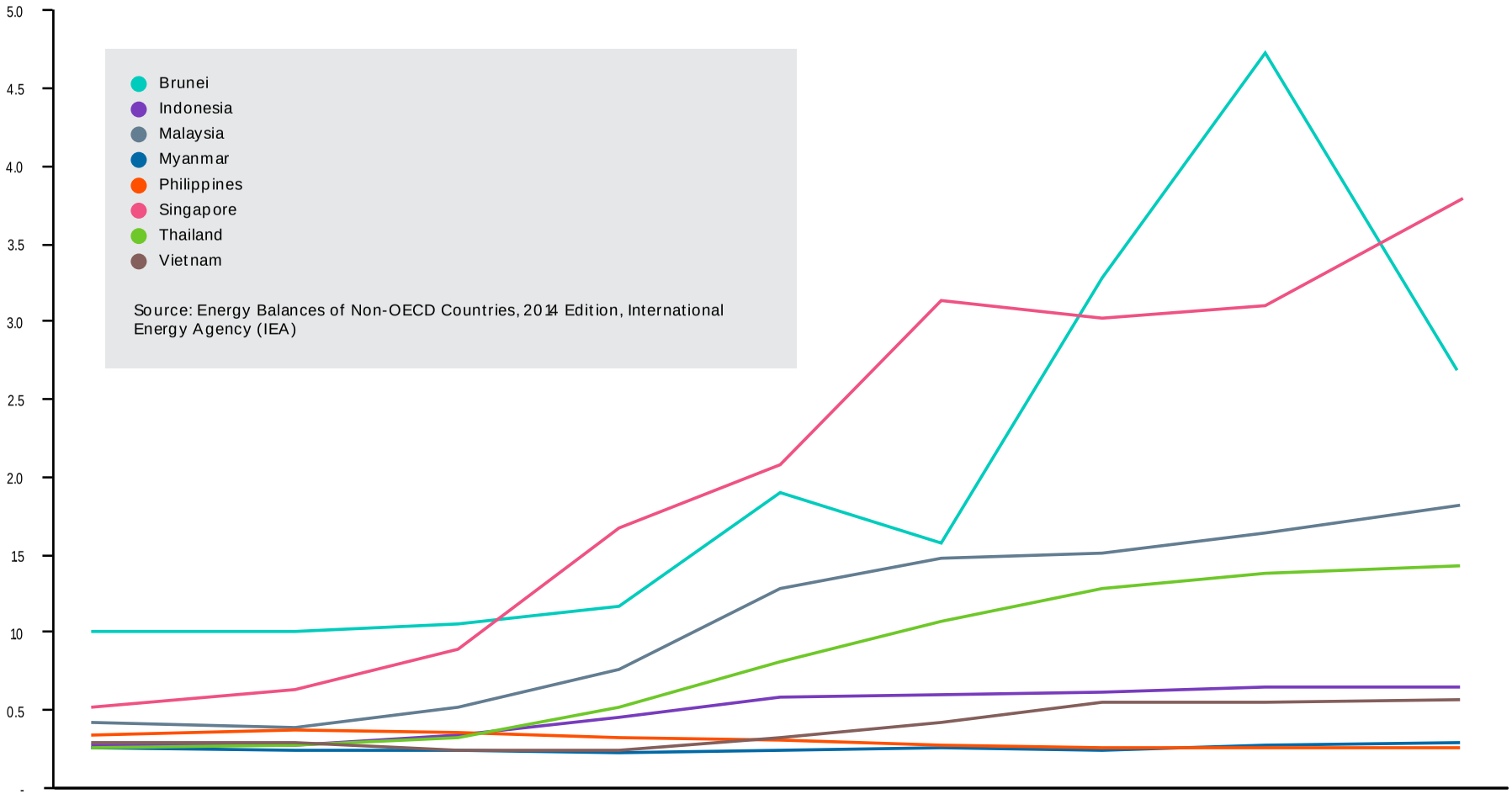
	01 JAN 1991	01 JAN 1994	01 OCT 2000	20 OCT 2001	16 NOV 2001	01 MAY 2002	01 NOV 2002	01 MAR 2003	01 MAY 2004	01 OCT 2004	01 MAR 2005	05 MAY 2005	31 JUL 2005	28 FEB 2006	16 APR 2008	05 JUN 2008	06 JUN 2008	23 AUG 2008	25 SEP 2008	15 OCT 2008	01 NOV 2008	18 NOV 2008	03 DEC 2008	16 DEC 2008	12 MAY 2009	01 SEP 2009	16 JUL 2010	02 NOV 2010	01 DEC 2010	04 DEC 2010	05 JAN 2011	01 FEB 2011	12 AUG 213	08 JAN 2014	07 FEB 2014	07 MAR 2014	06 JUN 2014	09 SEP 2014	02 OCT 2014	19 NOV 2014
RON 97	1.13	1.10	1.20	1.30	1.30	1.32	1.33	1.35	1.37	1.42	1.42	1.52	1.62	1.92	1.92	2.70	2.70	2.55	2.45	2.30	2.15	2.00	1.90	1.80	1.80	1.80	1.80	2.10	2.15	2.30	2.30	2.40	2.50	2.60	2.80	2.85	2.90	2.85	2.75	2.75	2.55
RON95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.75	1.75	1.85	1.85	1.85	1.90	1.90	1.90	1.90	2.10	2.10	2.10	2.10	2.10	2.30	2.30
RON92	1.06	1.06	1.16	1.26	1.26	1.28	1.29	1.31	1.33	1.38	1.38	1.48	1.58	1.88	1.88	2.62	2.62	2.40	2.30	2.20	2.05	1.90	1.80	1.70	1.70	1.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DIESEL	0.65	0.65	0.70	0.80	0.70	0.72	0.74	0.76	0.78	0.83	0.88	1.08	1.28	1.58	1.58	2.58	2.58	2.50	2.40	2.20	2.05	1.90	1.80	1.70	1.70	1.70	1.75	1.75	1.75	1.75	1.80	1.80	1.80	2.00	2.00	2.00	2.00	2.00	2.20	2.20
LPG	1.18	1.18	1.28	1.28	1.28	1.29	1.31	1.33	1.35	1.40	1.40	1.40	1.45	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.85	1.85	1.85	1.85	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90

RM/ MMBtu



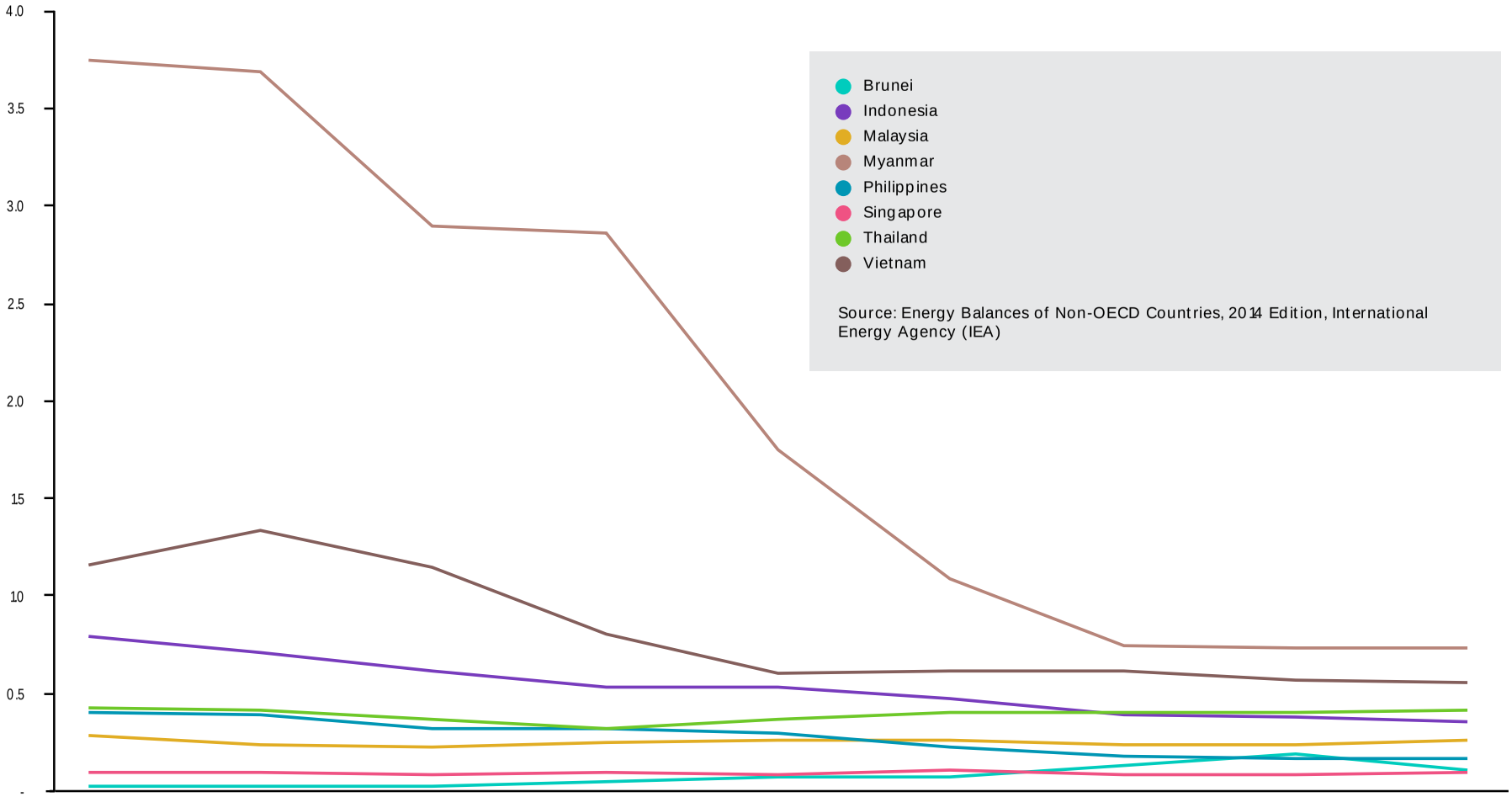
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Gas Price to Non Power Sector-PGB	11.32	11.32	11.32	11.32	11.32	11.32	11.32	11.32	16.55	16.77	15.35	17.10	18.35	18.35	19.60
Gas Price to Non-Power Sector-GMB	16.72	14.10	13.40	9.40	9.40	9.40	9.40	9.40	12.98	12.21	11.05	12.80	14.05	14.05	15.30
Gas Price to Power Sector	6.40	6.40	6.40	6.40	6.40	6.40	6.40	6.40	10.36	11.30	10.70	12.45	13.70	13.70	15.20
Gas Price to Singapore	16.72	14.10	15.30	17.74	18.92	26.76	31.77	34.10	44.41	34.58	40.42	52.47	55.08	51.36	48.28

Mtoe/ Millions



	1971	1973	1980	1990	2000	2005	2010	2012	2013
Brunei	1.000	1.000	1.050	1.167	1.900	1.575	3.275	4.725	2.750
Indonesia	0.274	0.277	0.342	0.446	0.580	0.600	0.621	0.647	0.648
Malaysia	0.413	0.393	0.525	0.769	1.276	1.481	1.512	1.639	1.821
Myanmar	0.258	0.245	0.242	0.223	0.237	0.259	0.249	0.274	0.286
Philippines	0.343	0.364	0.349	0.317	0.308	0.266	0.254	0.252	0.262
Singapore	0.519	0.636	0.888	1.670	2.078	3.130	3.018	3.102	3.648
Thailand	0.252	0.271	0.320	0.510	0.812	1.065	1.279	1.375	1.430
Vietnam	0.285	0.286	0.243	0.243	0.323	0.426	0.555	0.556	0.568

Mtoe/ Billion US$ 2005



	1971	1973	1980	1990	2000	2005	2010	2012	2013
Brunei	0.024	0.021	0.025	0.051	0.066	0.066	0.133	0.184	0.109
Indonesia	0.790	0.710	0.614	0.532	0.534	0.470	0.396	0.373	0.358
Malaysia	0.289	0.236	0.226	0.244	0.262	0.266	0.240	0.241	0.260
Myanmar	3.749	3.686	2.893	2.866	1.753	1.083	0.742	0.738	0.728
Philippines	0.406	0.396	0.315	0.316	0.290	0.221	0.181	0.168	0.166
Singapore	0.097	0.098	0.089	0.099	0.083	0.106	0.087	0.086	0.099
Thailand	0.424	0.419	0.363	0.325	0.368	0.396	0.404	0.406	0.416
Vietnam	1.164	1.340	1.144	0.807	0.608	0.610	0.616	0.564	0.552

02.

3 Peninsular Malaysia Oil Fields as at 1st January 2014

	Oil Fields			Gas Fields		
	Number of Fields	Number of Wells	Area (km²)	Number of Fields	Number of Wells	Area (km²)
Peninsular Malaysia	[illegible]	[illegible]	2,341	[illegible]	[illegible]	252.30
Sabah	[illegible]	[illegible]	1,885	[illegible]	[illegible]	158.20
Sarawak	[illegible]	[illegible]	1,566	[illegible]	[illegible]	192.36
Total	4,822	970	5,792	494.34	108.53	602.87

Source: PETRONAS

4 Major Refineries in Malaysia and Their Capacities

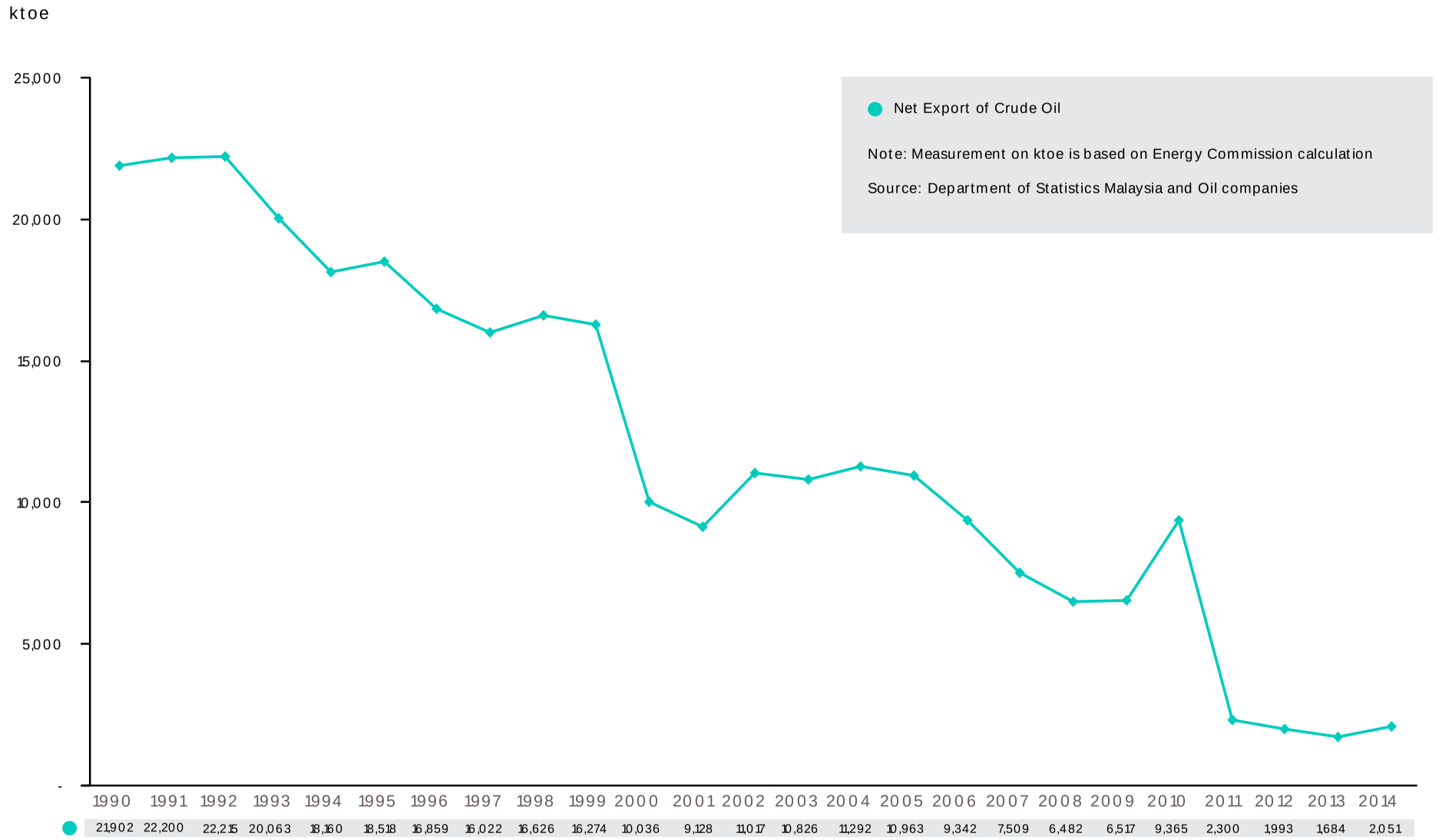
	Location	Ownership	Capacity (bpd)
ExxonMobil Refining Co. Sdn Bhd	Port Dickson, Negeri Sembilan	[illegible]	[illegible]
Petron Malaysia	Port Dickson, Negeri Sembilan	[illegible]	[illegible]
PETRONAS	Kertih, Terengganu	[illegible]	[illegible]
PETRONAS	Melaka	[illegible]	[illegible]
Malaysia Refining Company Sdn Bhd (PETRONAS/ConocoPhillips)	Melaka	[illegible]	[illegible]
Total			492

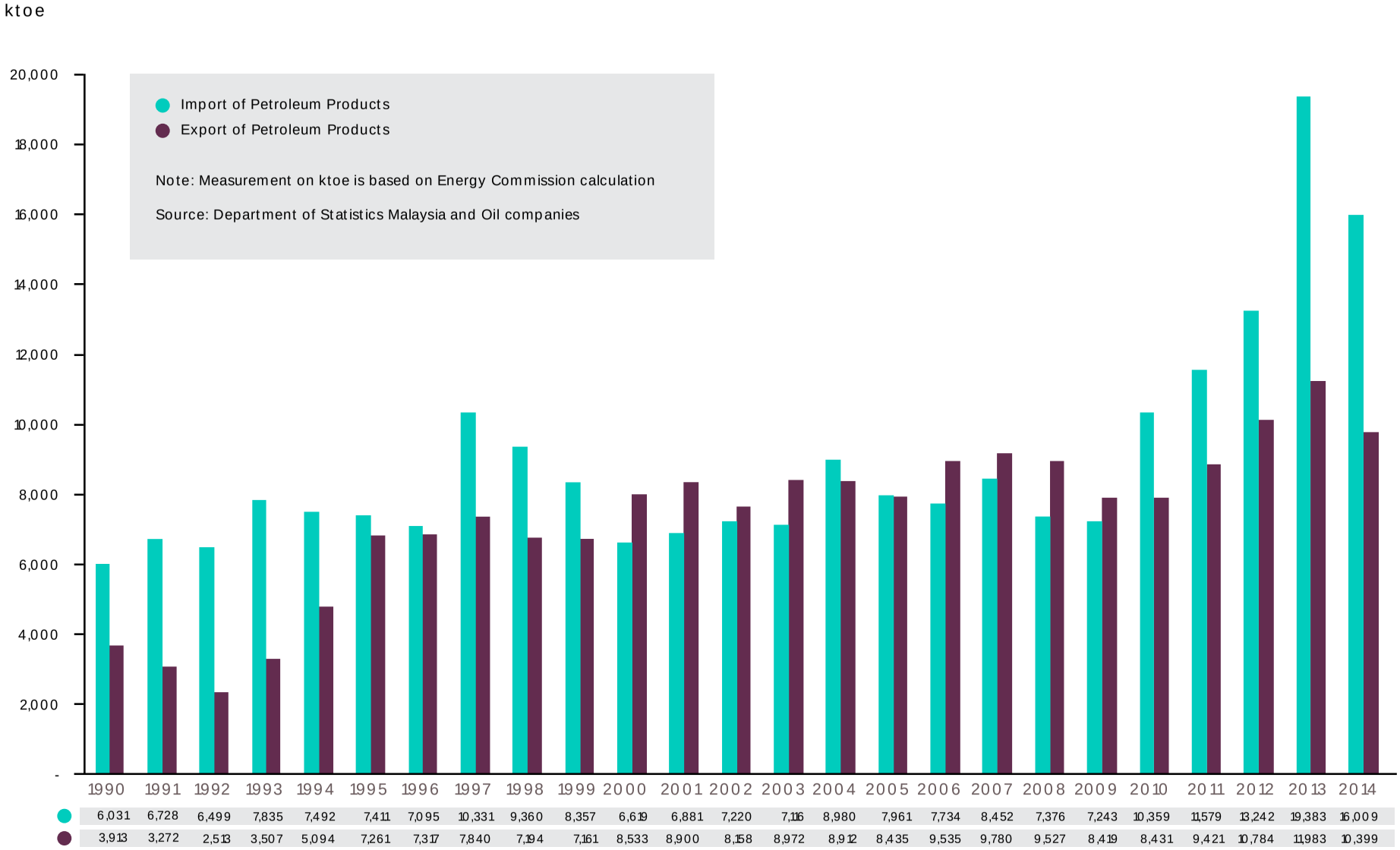
Source: PETRONAS, PETRONAS ExxonMobil Note: Excludes condensate splitter of [illegible] bpd

5 Petroleum Products Sales by Major Companies

Petroleum Products	Peninsular Malaysia	Sabah	Sarawak	Total
Petrol	[illegible]	[illegible]	[illegible]	103,387
Diesel	[illegible]	[illegible]	[illegible]	83,700
Fuel Oil	[illegible]	[illegible]	[illegible]	5,527
Kerosene	[illegible]	[illegible]	[illegible]	173
LPG	[illegible]	[illegible]	[illegible]	15,938
Aviation Gas	[illegible]	[illegible]	[illegible]	24,195
Non Energy	[illegible]	[illegible]	[illegible]	3,842
Total	196,794	18,663	21,305	236,761

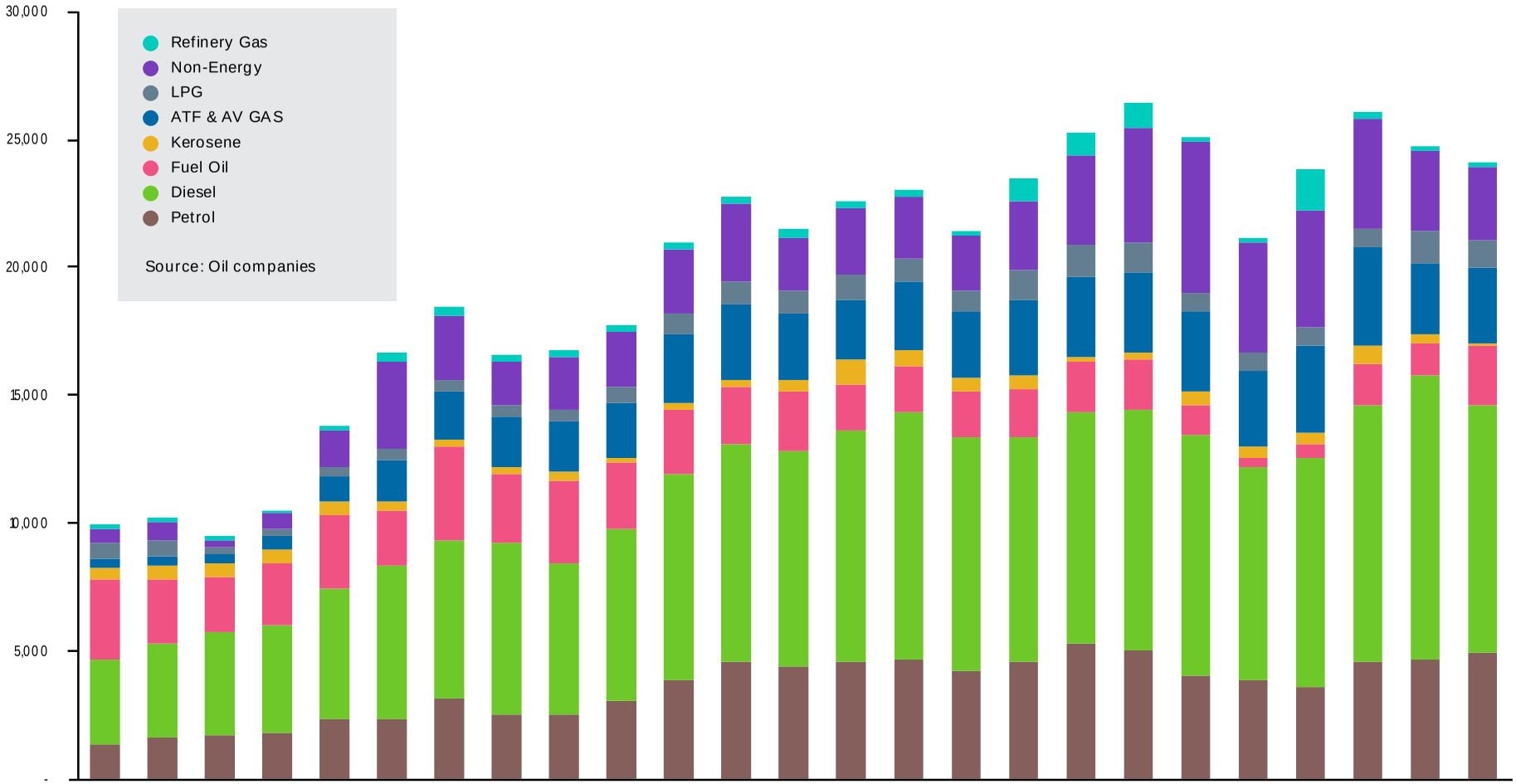
Source: Oil companies


ktoe
25,000
20,000
15,000
10,000
5,000
-
Net Export of Crude Oil
Note: Measurement on ktoe is based on Energy Commission calculation
Source: Department of Statistics Malaysia and Oil companies
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
21,902 22,200 22,215 20,063 18,160 18,518 16,859 16,022 16,626 16,274 10,036 9,128 11,017 10,826 11,292 10,963 9,342 7,509 6,482 6,517 9,365 2,300 1,993 1,684 2,051


ktoe
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
Import of Petroleum Products
Export of Petroleum Products
Note: Measurement on ktoe is based on Energy Commission calculation
Source: Department of Statistics Malaysia and Oil companies
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
6,031 6,728 6,499 7,835 7,492 7,411 7,095 10,331 9,360 8,357 6,619 6,881 7,220 7,116 8,980 7,961 7,734 8,452 7,376 7,243 10,359 11,579 13,242 19,383 16,009
3,913 3,272 2,513 3,507 5,094 7,261 7,317 7,840 7,194 7,161 8,533 8,900 8,158 8,972 8,912 8,435 9,535 9,780 9,527 8,419 8,431 9,421 10,784 11,983 10,399

20 P D M P D S M

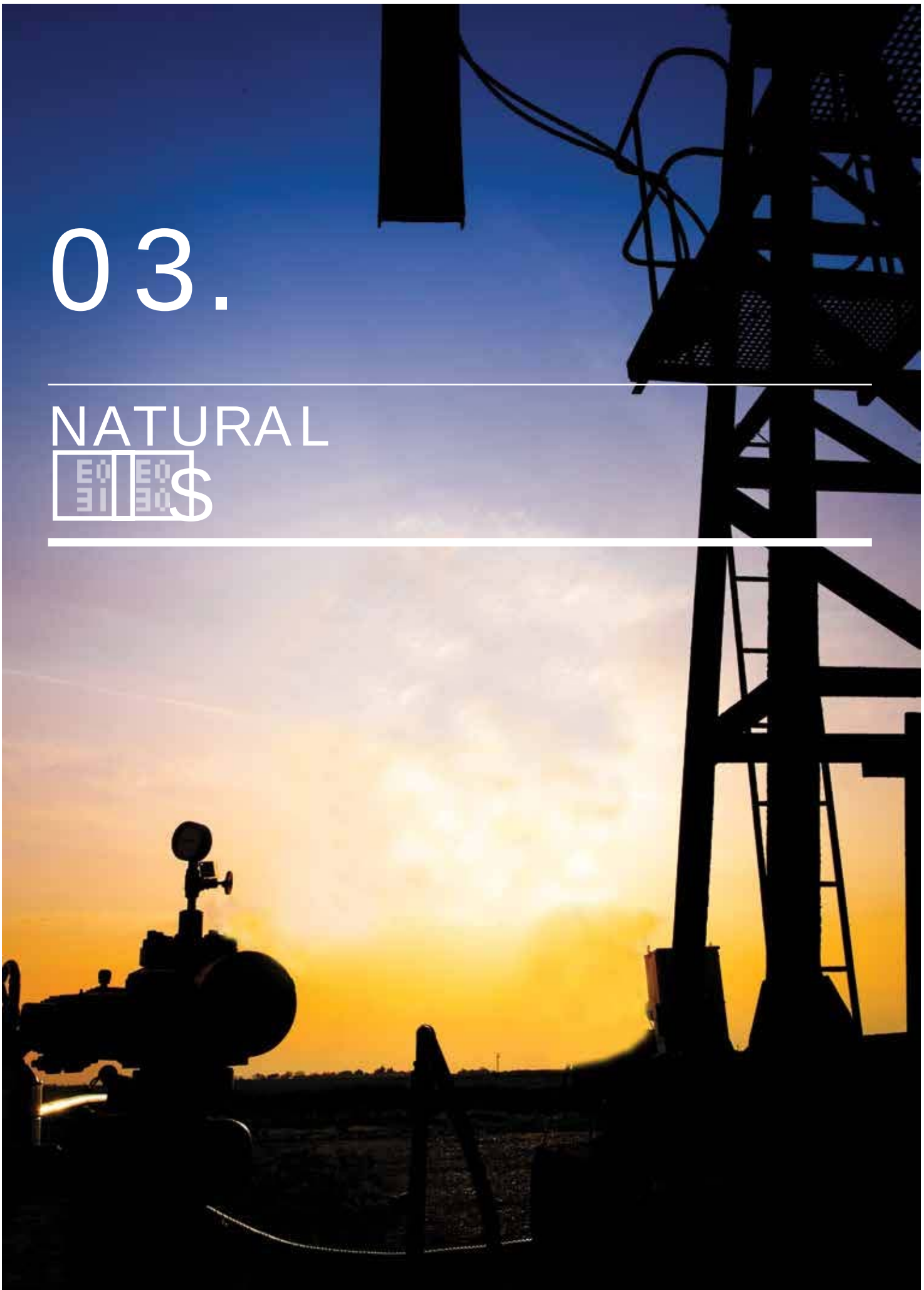
ktoe



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Refinery Gas	151	168	143	106	162	385	331	203	192	230	241	331	294	262	215	202	849	938	991	195	209	1,659	197	195	192
Non-Energy	561	772	324	600	1,468	3,380	2,554	1,783	2,117	2,159	2,492	3,020	2,127	2,623	2,455	2,157	2,750	3,461	4,475	5,905	4,357	4,572	4,318	3,089	2,826
LPG	613	548	200	244	319	431	371	371	449	617	838	875	897	932	897	822	1,118	1,228	1,208	732	697	665	702	1,252	1,102
ATF & AV GAS	360	390	412	517	980	1,587	1,899	2,000	1,985	2,140	2,660	2,954	2,570	2,367	2,693	2,553	2,938	3,138	3,139	3,085	2,891	3,457	3,917	2,750	2,916
Kerosene	491	526	541	576	563	360	292	265	285	210	239	283	414	983	591	521	537	234	245	565	483	419	654	387	100
Fuel Oil	3,106	2,547	2,110	2,375	2,887	2,212	3,696	2,716	3,233	2,603	2,532	2,269	2,332	1,763	1,813	1,777	1,933	1,990	1,994	1,144	327	571	1,608	1,286	2,340
Diesel	3,350	3,681	4,048	4,249	5,108	6,011	6,174	6,744	5,926	6,712	8,059	8,462	8,401	9,062	9,611	9,161	8,752	9,033	9,364	9,415	8,369	8,925	10,033	11,063	9,725
Petrol	1,347	1,611	1,724	1,816	2,316	2,320	3,134	2,491	2,545	3,056	3,893	4,623	4,460	4,584	4,724	4,245	4,607	5,285	5,066	4,052	3,873	3,599	4,618	4,702	4,918

Petrol	43.1%
Diesel	34.4%
ATF & AV GAS	10.7%
LPG	8.9%
Non-Energy	2.0%
Fuel Oil	0.8%
Kerosene	0.1%

Source: Oil companies



03.

NATURAL $

Table 6 [illegible] 2014

Region	[illegible]			Production [illegible]
	[illegible]			[illegible]
	Associated [illegible]	Non-Associated [illegible]	Total [illegible]	
Peninsular Malaysia	[illegible]	[illegible]	34.930	[illegible]
Sabah	[illegible]	[illegible]	13.753	[illegible]
Sarawak	[illegible]	[illegible]	51.979	[illegible]
Total	16.436	84.226	100.662	6,592.63

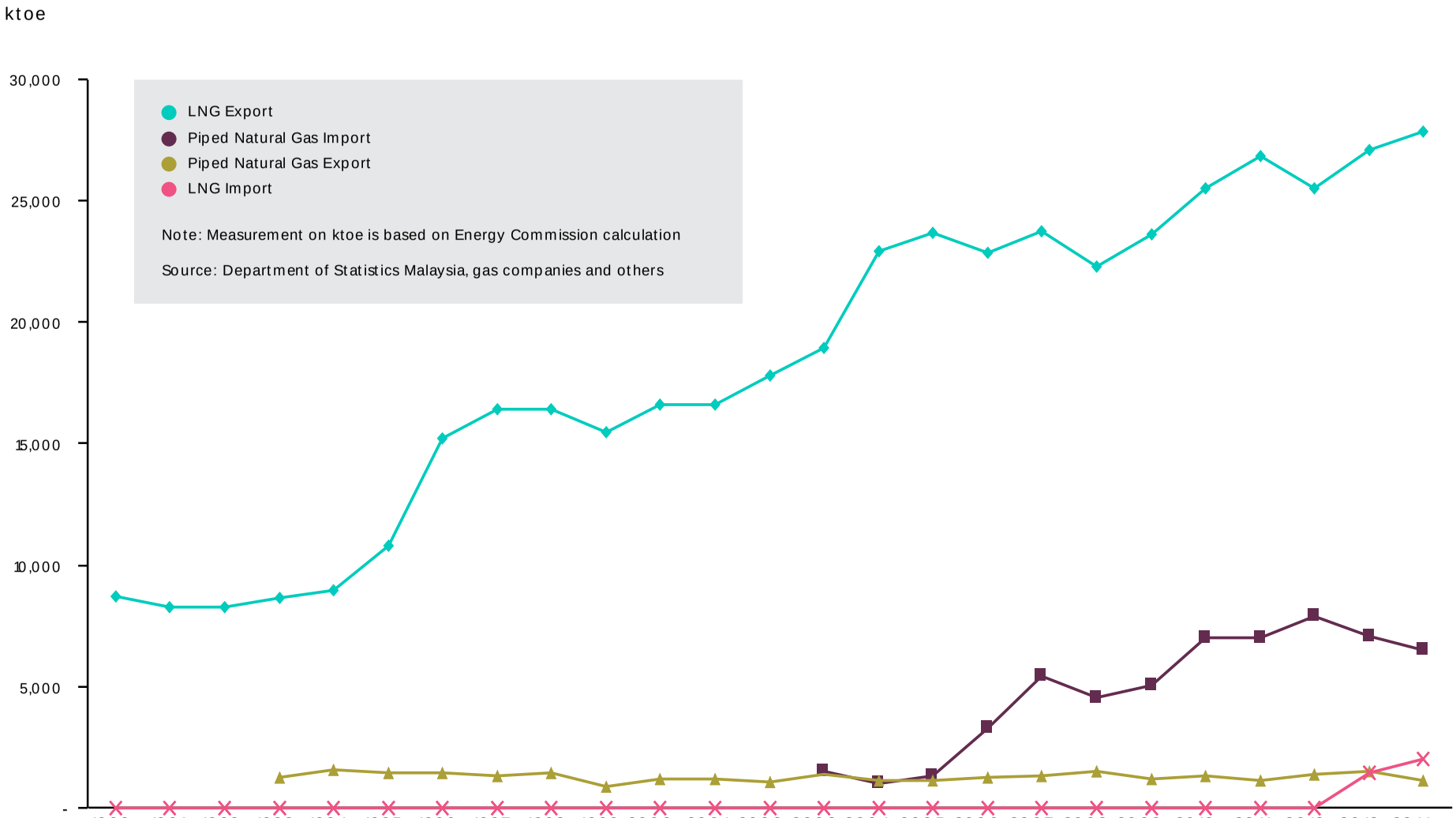
Notes: [illegible] Refers to the amount of gas produced/generated from associated fields
[illegible] cubic feet [illegible] cubic metre
Associated Gas: Natural gas produced in association with oil
Non-Associated Gas: Natural gas produced from a gas reservoir not associated with oil

Source: PETRONAS

Table 7 [illegible] 2014

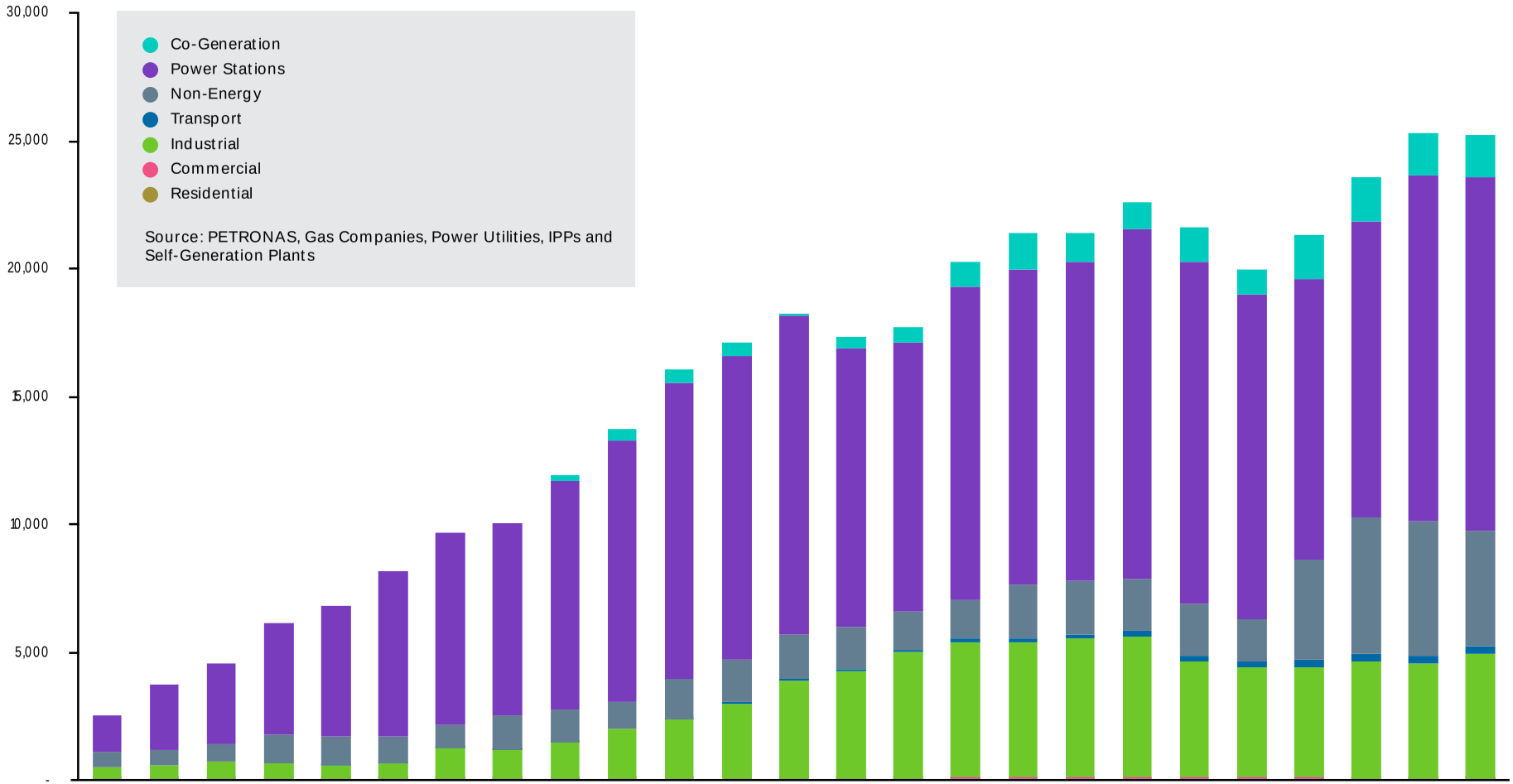
Sectors	Peninsular Malaysia	Sabah	Sarawak	Malaysia
Residential	[illegible]	[illegible]	[illegible]	[illegible]
Commercial	[illegible]	[illegible]	[illegible]	[illegible]
Industry	[illegible]	[illegible]	[illegible]	[illegible]
Non-Energy	[illegible]	[illegible]	[illegible]	[illegible]
Transport	[illegible]	[illegible]	[illegible]	[illegible]
Power Stations	[illegible]	[illegible]	[illegible]	[illegible]
Co-generation	[illegible]	[illegible]	[illegible]	[illegible]
Total	790,495	89,994	87,733	968,222

Source: Power utilities, IPPs, PETRONAS and gas distribution companies

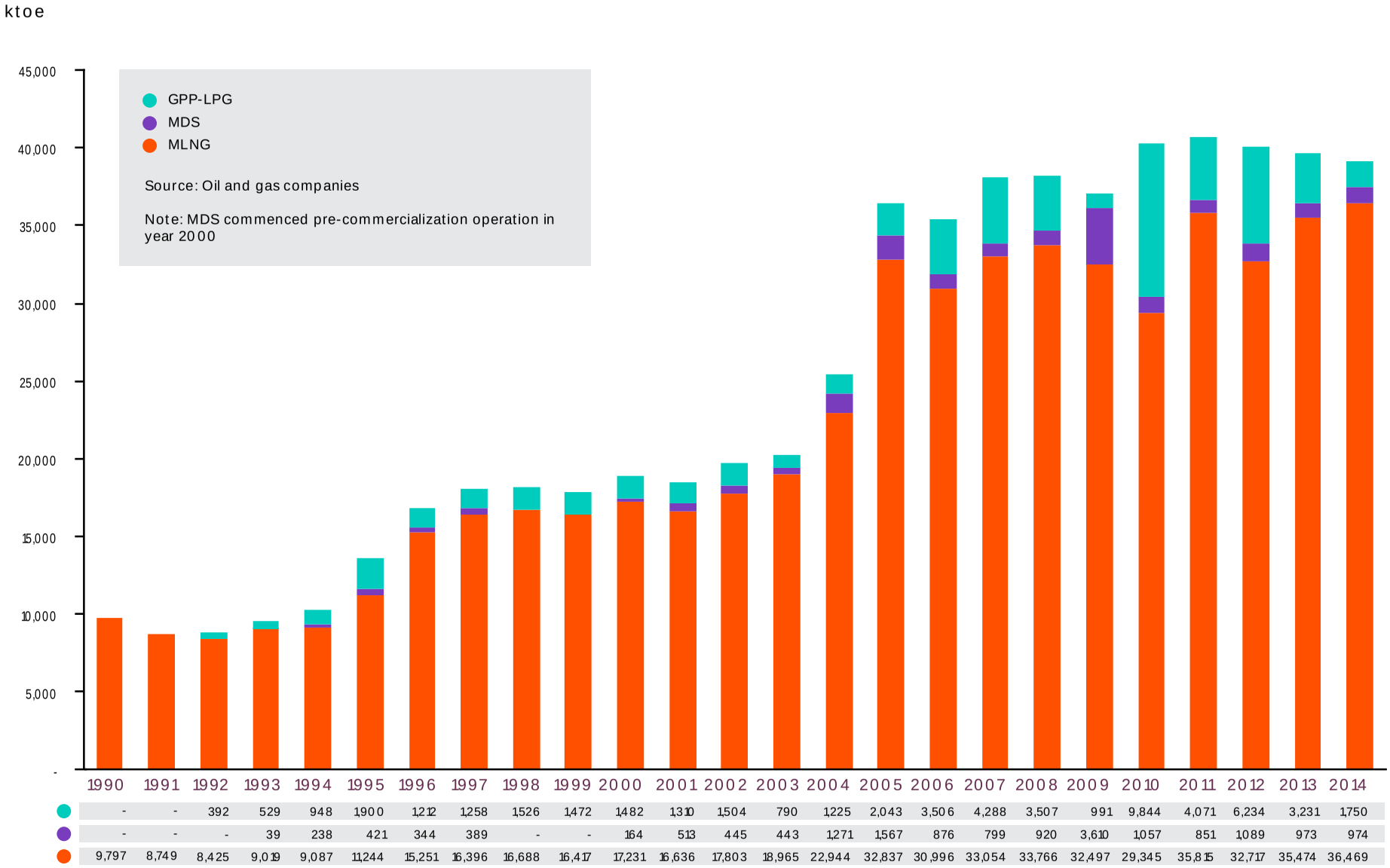


	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
●	8,686	8,278	8,262	8,654	8,938	10,790	15,251	16,396	16,429	15,445	16,633	16,636	17,803	18,965	22,944	23,707	22,874	23,777	22,277	23,606	25,487	26,856	25,547	27,089	27,835
●	-	-	-	-	-	-	-	-	-	-	-	-	-	1,501	999	1,340	3,313	5,435	4,565	5,055	7,013	6,979	7,866	7,098	6,472
●	-	-	1	1,258	1,589	1,474	1,474	1,340	1,444	860	1,198	1,178	1,098	1,402	1,143	1,134	1,257	1,295	1,524	1,166	1,340	1,147	1,368	1,497	1,129
●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,450	2,019

ktoe

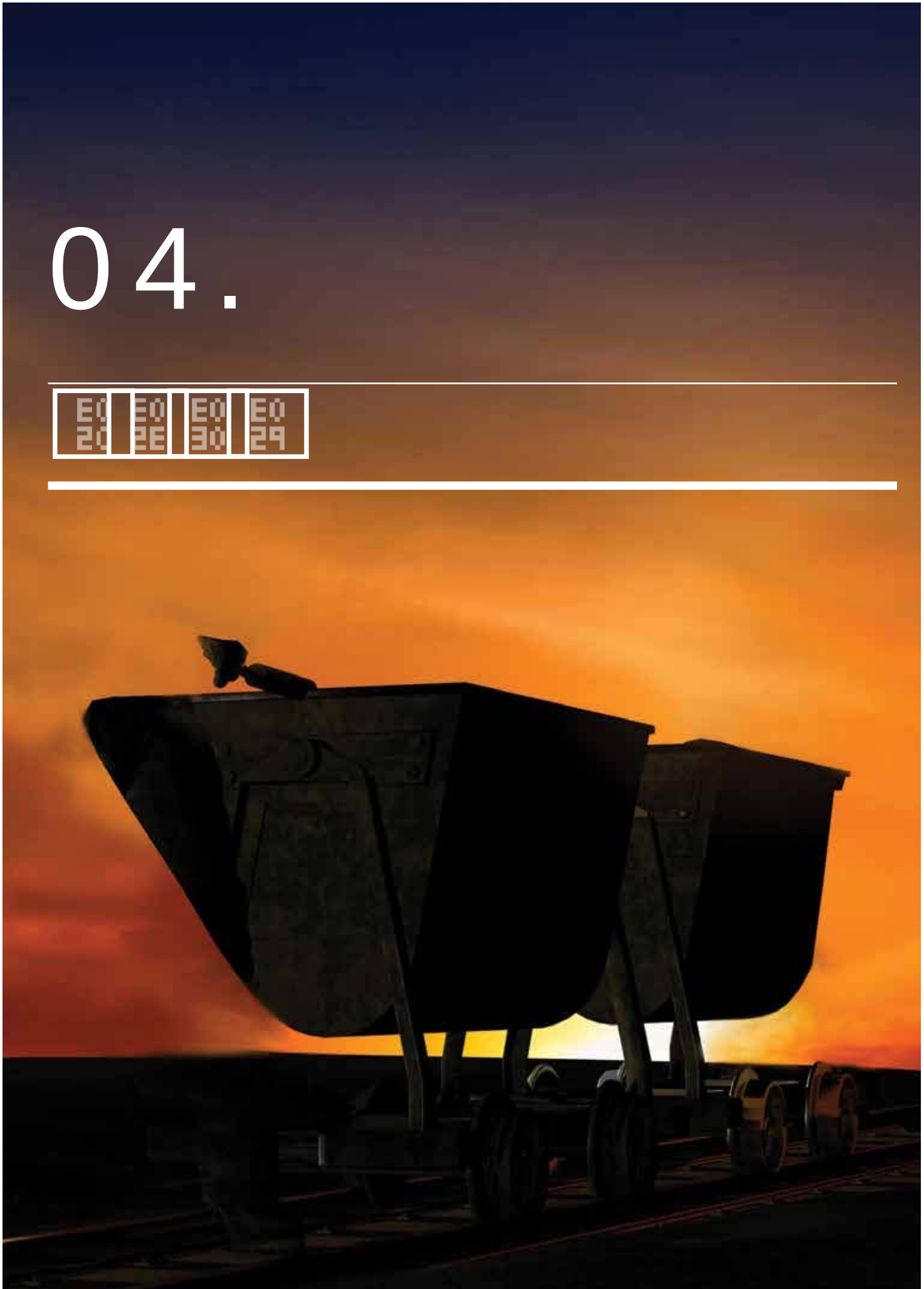


	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Co-Generation	-	-	-	-	-	-	-	-	271	488	530	495	128	469	568	923	1,431	1,140	1,030	1,385	1,031	1,697	1,734	1,650	1,678
Power Stations	1,361	2,533	3,144	4,374	5,119	6,414	7,489	7,531	8,886	10,162	11,580	11,922	12,424	10,893	10,545	12,271	12,330	12,476	13,651	13,390	12,628	10,956	11,533	13,520	13,860
Non-Energy	609	604	657	1,141	1,163	1,064	870	1,378	1,282	1,118	1,512	1,655	1,775	1,616	1,476	1,541	2,110	2,112	2,046	1,995	1,661	3,967	5,336	5,276	4,472
Transport	-	-	-	-	5	5	4	5	4	-	7	14	28	40	54	95	120	147	194	236	247	272	292	289	276
Industrial	452	487	679	552	484	577	1,197	1,074	1,430	1,891	2,327	2,937	3,824	4,207	4,937	5,317	5,301	5,416	5,541	4,544	4,310	4,300	4,556	4,488	4,869
Commercial	4	4	4	4	4	4	4	4	6	9	12	10	11	18	18	23	24	28	31	25	30	32	22	22	22
Residential	4	4	4	4	4	4	4	4	4	5	4	4	4	5	5	5	5	6	6	2	6	7	1	1	1



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
GPP-LPG	-	-	392	529	948	1,900	1,212	1,258	1,526	1,472	1,482	1,310	1,504	790	1,225	2,043	3,506	4,288	3,507	991	9,844	4,071	6,234	3,231	1,750
MDS	-	-	-	39	238	421	344	389	-	-	164	513	445	443	1,271	1,567	876	799	920	3,610	1,057	851	1,089	973	974
MLNG	9,797	8,749	8,425	9,019	9,087	11,244	15,251	16,396	16,688	16,417	17,231	16,636	17,803	18,965	22,944	32,837	30,996	33,054	33,766	32,497	29,345	35,815	32,717	35,474	36,469

04.



[illegible] 8 P[illegible]D [illegible]D [illegible]S [illegible]S [illegible]S 31ST D[illegible]M[illegible] 2014

[illegible]	[illegible]S [illegible]S M[illegible]			[illegible]P[illegible]	P[illegible]D [illegible]
	M[illegible]$[illegible]D	[illegible]D	[illegible]D		M[illegible] [illegible]S
S[illegible]					
[illegible]Abo[illegible]tlante[illegible], [illegible]r Aman	[illegible]	[illegible]	[illegible]	Co[illegible]ing Coal, [illegible]emi[illegible] Anthracite and Anthracite	[illegible],[illegible]
[illegible]Lerit [illegible]ila, [illegible]apit	[illegible]	[illegible]	[illegible]	[illegible]ub[illegible]ituminous	[illegible],[illegible]
[illegible]ntulu	[illegible]	[illegible]	[illegible]	[illegible]ituminous [illegible]partly co[illegible]ing coal[illegible]	[illegible]
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[illegible]utoh Area	[illegible]	[illegible]	[illegible]	[illegible]ub[illegible]ituminous	[illegible]
S[illegible]	276.04	323.01	963.10		2[illegible]687[illegible]764
S[illegible]					
[illegible]alimpopon	[illegible]	[illegible]	[illegible]	[illegible]ub[illegible]ituminous	[illegible]
[illegible]abuan	[illegible]	[illegible]	[illegible]0	[illegible]ub[illegible]ituminous	[illegible]
[illegible]aliau	[illegible]	[illegible]	[illegible]	[illegible]ituminous	[illegible]
[illegible]alibau	[illegible]	[illegible]	[illegible]		[illegible]
[illegible] [illegible]alibau	[illegible]	[illegible]	[illegible]		[illegible]
[illegible]Pinangan [illegible]est [illegible]iddle [illegible]oc[illegible]	[illegible]	[illegible]	[illegible]	[illegible]ituminous	[illegible]
S[illegible]	4.80	55.22	299.20		[illegible]
S[illegible]					
[illegible]atu Arang	[illegible]	[illegible]	[illegible]	[illegible]ub[illegible]ituminous	[illegible]
S[illegible]	0.00	0.00	17.00		[illegible]
[illegible]	280.84	378.23	1[illegible]279.30		
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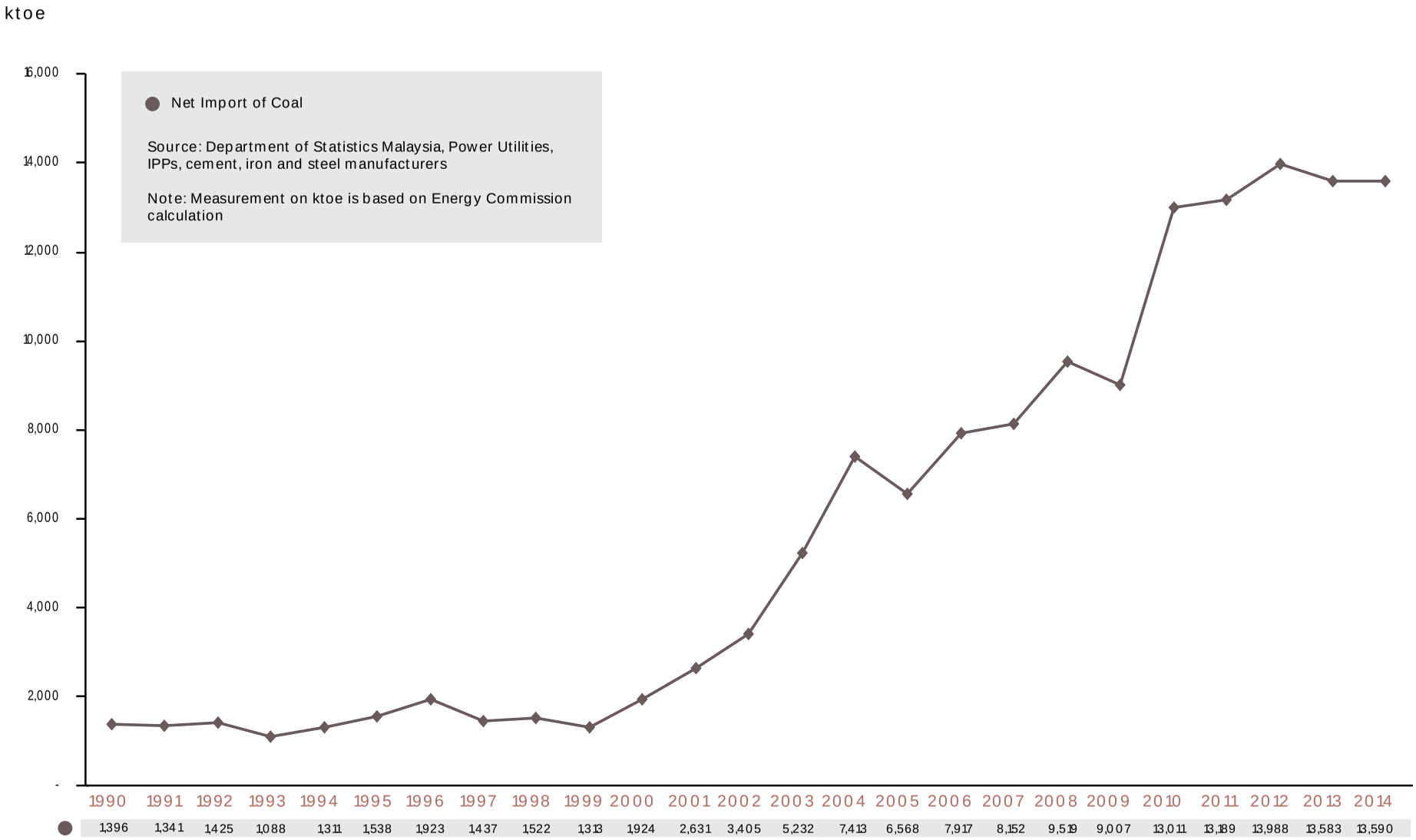
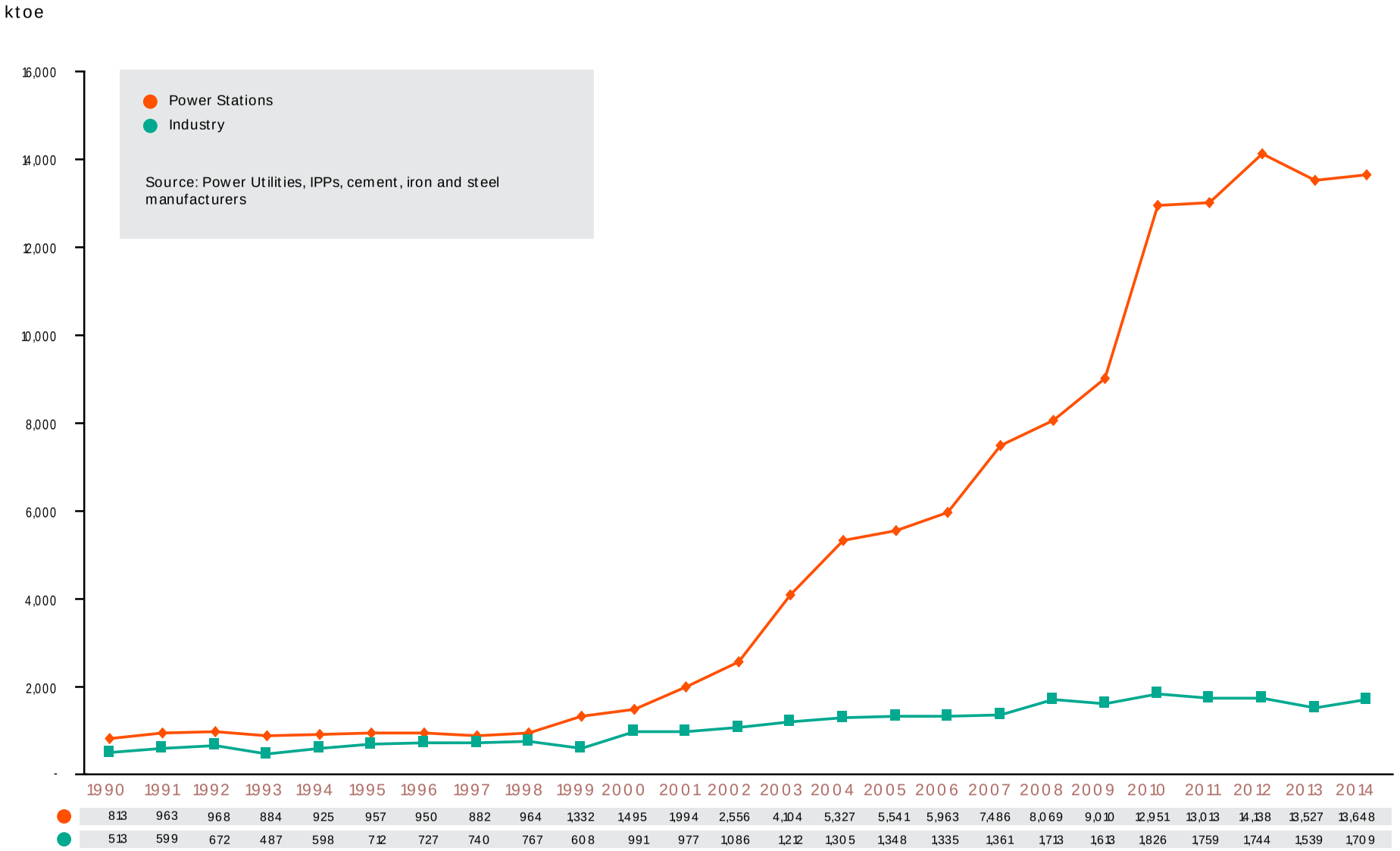
Sour[illegible]s [illegible]epartment of [illegible]ineral and [illegible]eosciences [illegible]alaysia

[illegible] 9 [illegible]S MP[illegible] [illegible] [illegible] M[illegible] [illegible]S 2014

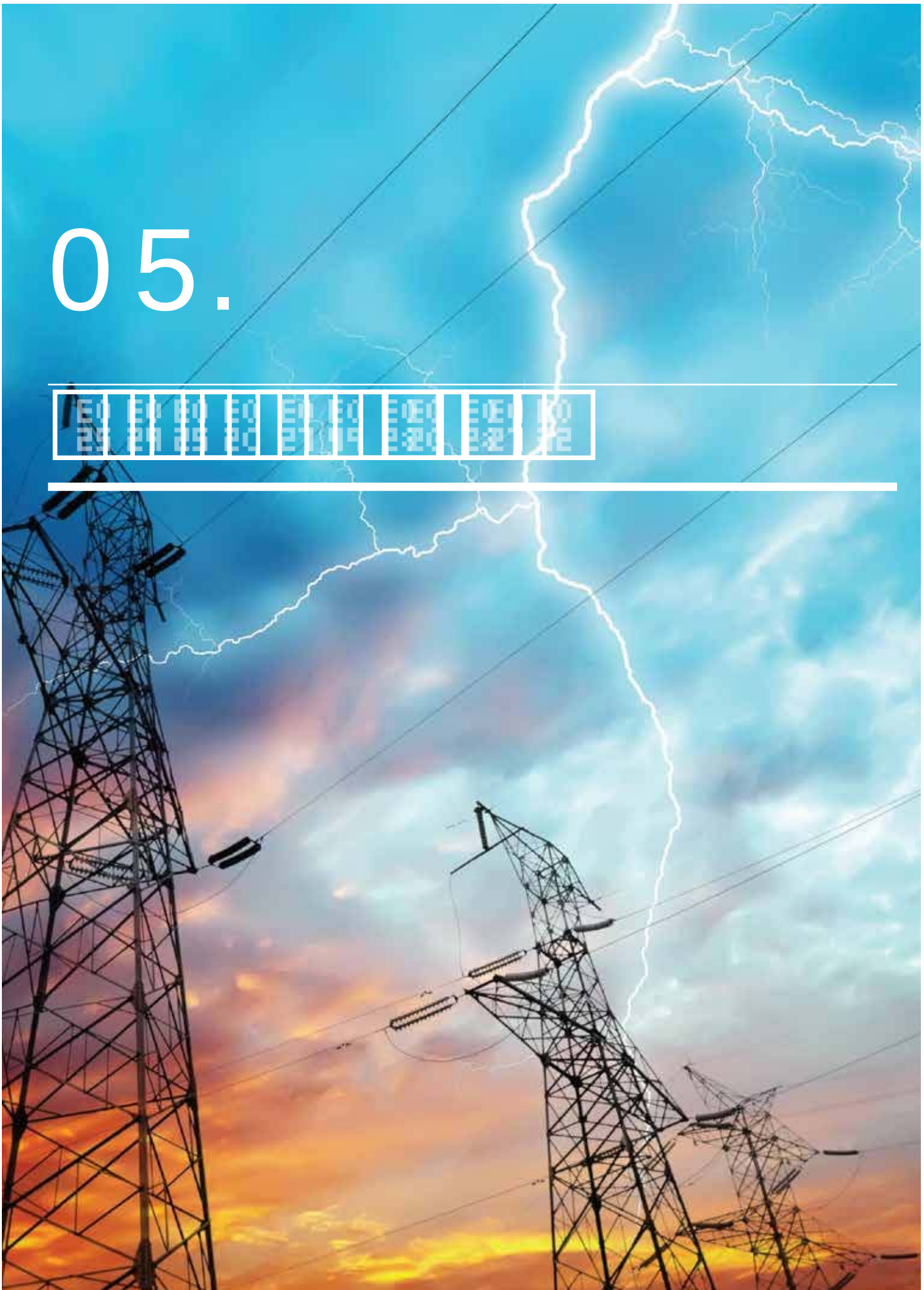
S[illegible]S	P[illegible]S[illegible] M[illegible]S[illegible]	S[illegible]	S[illegible]	M[illegible]S[illegible]
[illegible]ndustry	[illegible],[illegible],[illegible]	[illegible]	[illegible],[illegible]	[illegible],[illegible],[illegible]
Power [illegible]tations	[illegible],[illegible],[illegible]	[illegible]	[illegible],[illegible],[illegible]	[illegible],[illegible],[illegible]
[illegible]	22[illegible]083[illegible]849	0	2[illegible]276[illegible]153	24[illegible]360[illegible]002

Sour[illegible]s [illegible]Power Utilities, [illegible]IPPs, cement, iron and steel manufacturers


ktoe
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
Net Import of Coal
Source: Department of Statistics Malaysia, Power Utilities, IPPs, cement, iron and steel manufacturers
Note: Measurement on ktoe is based on Energy Commission calculation
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
1,396 1,341 1,425 1,088 1,311 1,538 1,923 1,437 1,522 1,313 1,924 2,631 3,405 5,232 7,413 6,568 7,917 8,152 9,519 9,007 13,011 13,189 13,988 13,583 13,590


ktoe
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
Power Stations
Industry
Source: Power Utilities, IPPs, cement, iron and steel manufacturers
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
813 963 968 884 925 957 950 882 964 1,332 1,495 1,994 2,556 4,104 5,327 5,541 5,963 7,486 8,069 9,010 12,951 13,013 14,138 13,527 13,648
513 599 672 487 598 712 727 740 767 608 991 977 1,086 1,212 1,305 1,348 1,335 1,361 1,713 1,613 1,826 1,759 1,744 1,539 1,709

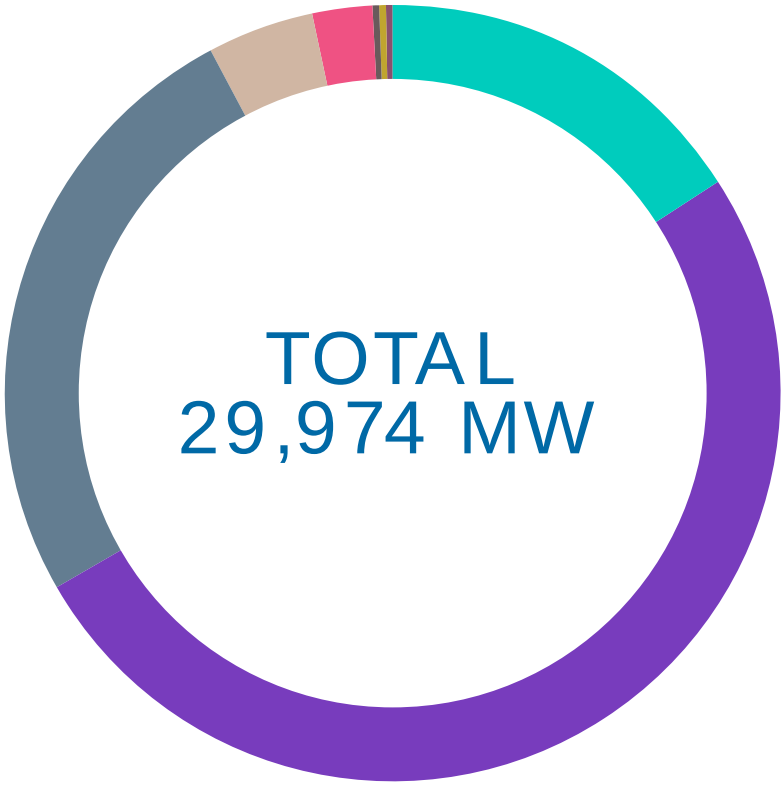
05.



10 $ P 31 D M 2014 M

		D			D $	M $$	S	$		
P M S										6 16.0
	PPs									15 289.0
	Co eneration									652.7
	elf eneration									637.2
	REP									199.6
	S	1945.5	13 288.0	7 200.0	345.8	391.5	160.7	11.7	51.3	23 394.5
S	E									362.8
	PPs									1 112.1
	Co eneration									159.5
	elf eneration									542.7
	REP									59.2
	S	76.9	1 076.0	0.0	802.7	277.2	0.3	3.2	0.0	2 236.3
S	E									1 584.0
	PPs									2 400.0
	Co eneration									289.0
	elf eneration									69.9
	S	2 751.0	884.0	480.0	166.8	60.0	0.0	0.0	1.1	4 342.9
		4 773.4	15 548.0	7 680.0	1 315.3	728.8	161.0	14.9	52.3	29 673.8
S		15.9	50.9	25.6	4.4	2.4	0.5	0.1	0.2	100.0

Sour e ower Utilities, PPs and E A alaysia ote E cluding plants that are not in operation



Natural Gas	50.9%
Coal	25.6%
Hydro	15.9%
Diesel	4.4%
Biomass	2.4%
Solar	0.5%
Others	0.2%
Biogas	0.1%

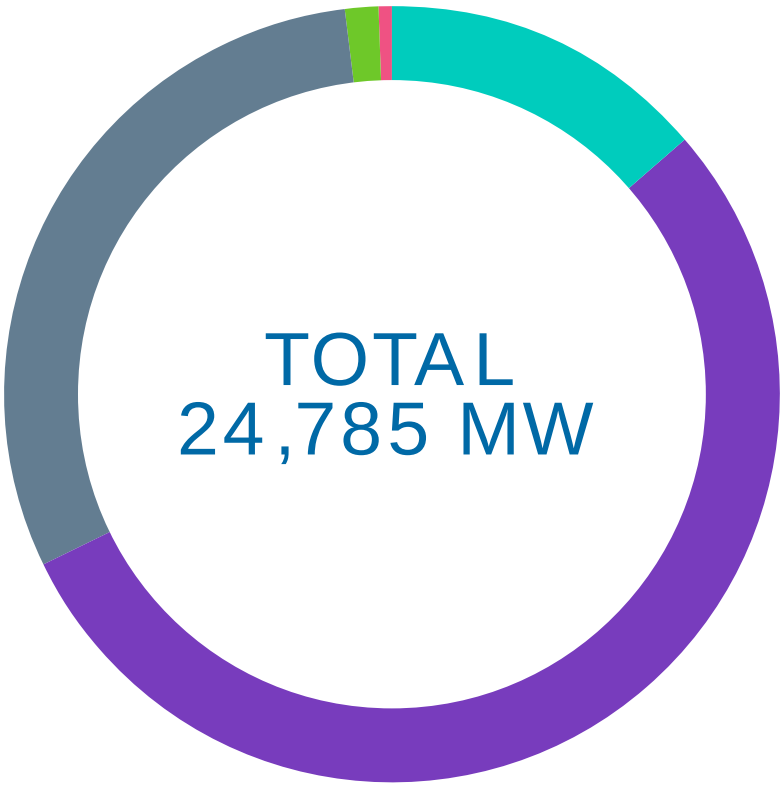
Source: Power Utilities and IPPs

Table 11: Installed Capacity by Power Plants as at 31st December 2014 (MW)

		Hydro	Geothermal, Solar, Wind & Cogen	Thermal - HFO	Thermal - Diesel	Thermal - Gas	Total
Power Stations Managed by KPLC	KPLC	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6,378.0
	IPPs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	14,446.9
	Sub-Total	1,867.0	11,899.5	7,058.4	0.0	0.0	20,824.9
Standby	KPLC	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	324.4
	IPPs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	947.0
	[illegible]REP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	49.5
	Sub-Total	75.7	974.5	0.0	227.7	43.0	1,320.9
Stand Alone	KPLC	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1,239.0
	IPPs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1,400.0
	Sub-Total	1,501.0	576.0	423.0	139.0	[illegible]	2,639.0
[illegible]		3,443.7	13,450.0	7,481.4	366.7	43.0	24,784.8

Note: Dependable Capacity Source: Power Utilities and IPPs

Figure 28: Share of Installed Capacity by Power Plants as at 31st December 2014



Natural Gas	54.2%
Coal	30.2%
Hydro	13.9%
Diesel	1.5%
Biomass	0.2%

Source: Power Utilities and IPPs

[illegible] 12 [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible]	[illegible] [illegible] [illegible]	[illegible] [illegible]
[illegible] [illegible] [illegible]		
1. [illegible]		
[illegible] [illegible] [illegible] [illegible] [illegible]	[illegible]	[illegible]
2. [illegible]		
[illegible] [illegible] [illegible] [illegible]	[illegible]	[illegible]
[illegible] [illegible] [illegible] [illegible]	[illegible]	[illegible]
[illegible] [illegible] [illegible] [illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
3. [illegible]		
[illegible] [illegible] [illegible] [illegible] [illegible]	[illegible]	[illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]	[illegible]	[illegible]
[illegible]		[illegible]
4. [illegible]		
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible] [illegible]		1,931.0
[illegible]		
[illegible]	[illegible]	[illegible]
[illegible] [illegible]		66.0
[illegible]		
[illegible]	[illegible]	[illegible]
[illegible]	8,300	[illegible]
[illegible]	1,236	236.0
[illegible] [illegible]		2,744.0
[illegible]		4,741.0

Sources: [illegible], [illegible] and [illegible]. Note: [illegible] Cameron Highland Scheme includes Mardi, Habu, Sg. Raia, Sg. Terla and Robinson Falls stations

[illegible] 13 [illegible]S [illegible]D [illegible]P [illegible]M [illegible]D [illegible]P [illegible]S [illegible]$

S [illegible]	[illegible]M [illegible]
1. [illegible]D [illegible]	
[illegible]g [illegible]awar [illegible]esar	[illegible]
[illegible]g [illegible]empelam	[illegible]
[illegible]g [illegible]ahang	[illegible]
2. P[illegible]	
[illegible]g [illegible]ebing [illegible]nggi	[illegible]
[illegible]g Asap	[illegible]
[illegible]g [illegible]hlang	[illegible]
[illegible]g [illegible]	[illegible]
[illegible]g [illegible]enas	[illegible]
[illegible]g Chempias	[illegible]
[illegible]g [illegible]emelong	[illegible]
3. P[illegible]	
[illegible]g [illegible]empam [illegible]	[illegible]
[illegible]g Pertang	[illegible]
[illegible]g Perda[illegible]	[illegible]
[illegible]g [illegible]a	[illegible]
4. [illegible]	
[illegible]g Renyo[illegible]	[illegible]
[illegible]g Renyo[illegible]	[illegible]
[illegible]g [illegible]o[illegible]	[illegible]
[illegible]g Re[illegible]	[illegible]
5. [illegible]	
[illegible]g [illegible]erang	[illegible]
[illegible]g Cherala[illegible]	[illegible]
S[illegible]	9.327
S[illegible]	
[illegible]elang[illegible]ap [illegible]ota [illegible]elud[illegible]	[illegible]
[illegible]ayap [illegible]ota [illegible]elud[illegible]	[illegible]
[illegible]ombalai [illegible]awau[illegible]	[illegible]
[illegible]erotai [illegible]awau[illegible]	[illegible]
[illegible]iau [illegible]ota [illegible]elud[illegible]	[illegible]
[illegible]aradau [illegible]anau[illegible]	[illegible]
[illegible]edamaian [illegible]ota [illegible]elud[illegible]	[illegible]
[illegible]Pengapuyan [illegible]ota [illegible]arudu[illegible]	[illegible]
S[illegible]	13.043
S[illegible]	
[illegible]g Pasir	[illegible]
[illegible]Penindin	[illegible]
[illegible]eba[illegible]	[illegible]
[illegible]ndu	[illegible]
[illegible]alamu[illegible]	[illegible]
[illegible]alamu[illegible]	[illegible]
[illegible]g [illegible]eiin	[illegible]
[illegible]g [illegible]ota	[illegible]
[illegible]g [illegible]ota	[illegible]
S[illegible]	7.297
[illegible]	29.667

Sour[illegible]E[illegible]and [illegible]E

[illegible] 14 [illegible] $M SS [illegible] – [illegible] M [illegible] S

[illegible]	500 [illegible]	275 [illegible]	132 [illegible]	66 [illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sour [illegible] and [illegible]

[illegible] 15 D S [illegible] – [illegible] M [illegible] S

[illegible]	[illegible] D [illegible] S	[illegible] D [illegible] D [illegible] S
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

Sour [illegible] and [illegible]

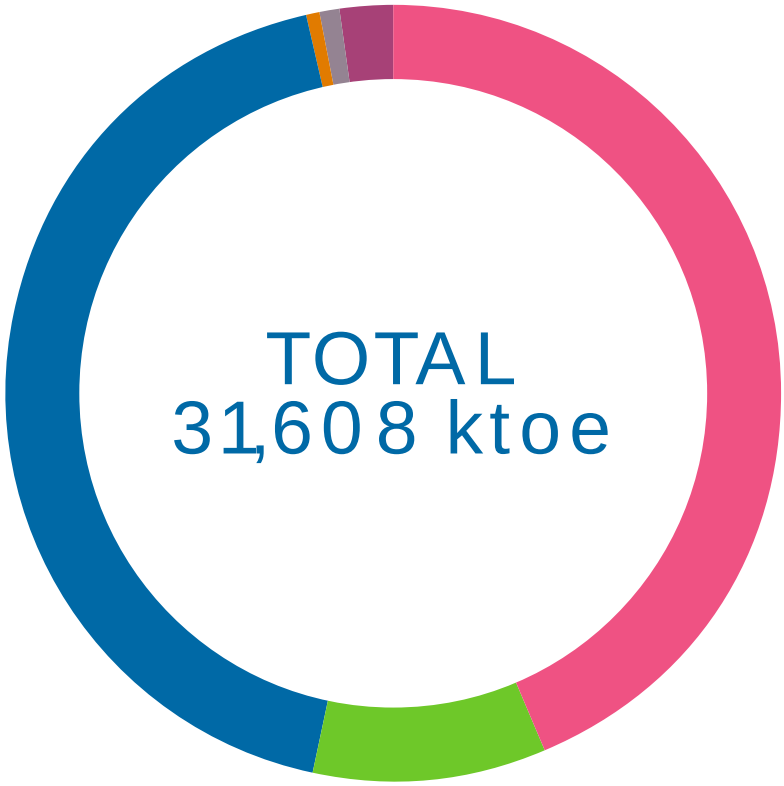
[illegible] 16 [illegible] SS [illegible] S MP [illegible] P [illegible] P [illegible] D M [illegible] D [illegible] D
[illegible] S [illegible] M [illegible] M [illegible] S [illegible]

[illegible]	[illegible] SS [illegible]		[illegible] [illegible] S MP [illegible]		[illegible] P [illegible]	P D M [illegible] D	[illegible] S M [illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	M [illegible]	M [illegible]	[illegible]
P [illegible] S [illegible] M [illegible] S [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
S [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
S [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	147 [illegible] 80	100.0	128 [illegible] 30	100.0	24 [illegible] 85		

Sour [illegible] and [illegible] Ps, [illegible] and [illegible]

[illegible] ote [illegible] ost diesel units in [illegible] are aged sets hence they are derated due to thermal limitations. [illegible] owever, during operational state, some generating units are not available due to maintenance outages as well as random brea [illegible] downs. [illegible] he actual operation capacity available to system operation for dispatch was very limited.

[illegible] Available Capacity for Peninsular [illegible] alaysia was based on [illegible] ested Annual Available Capacity [illegible] AAC [illegible] Available Capacity for [illegible] abah was based on [illegible] ependable Capacity



Natural Gas	43.8%
Coal	43.2%
Hydropower	9.6%
Diesel	2.0%
Fuel Oil	0.9%
Renewables	0.5%

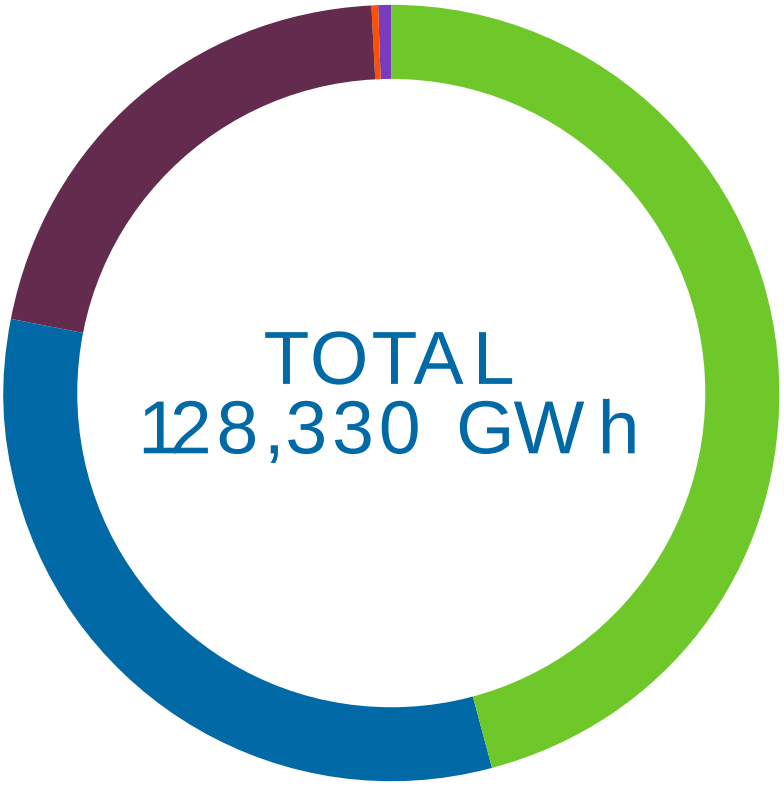
Note: Figures exclude fuel consumption for self-generation plants

Source: Power utilities and IPPs

17

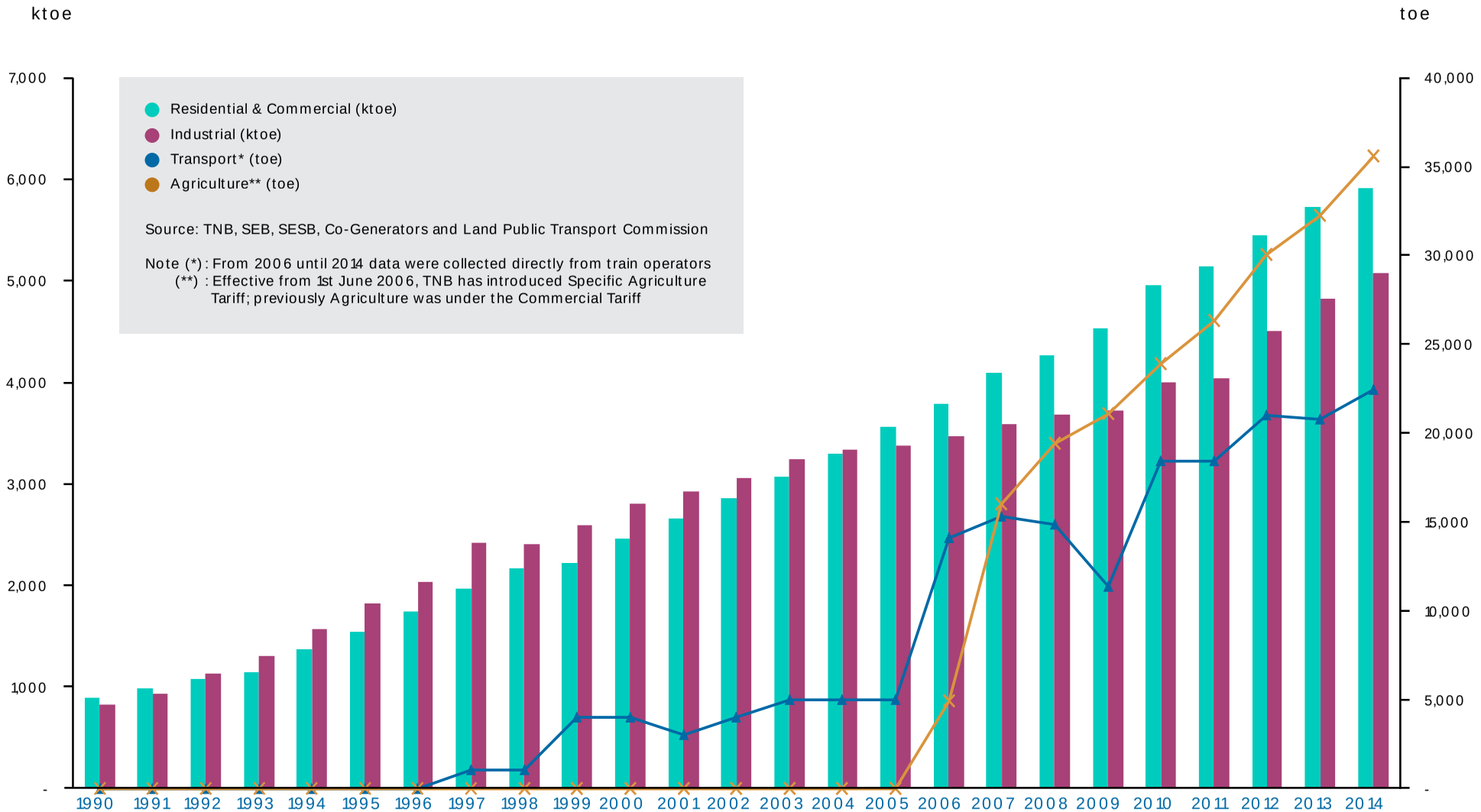
	58,951	100.0	41,441	100.0	27,264	100.0	261	100.0	414	100.0	128,330
											108,259
											4,919
											15,152

Sources: Power utilities, IPPs and self-generators



Industry	45.9%
Commercial	32.3%
Residential	21.2%
Agriculture	0.4%
Transport	0.2%

Source: Power utilities, IPPs and Self-Generators



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
●	885	988	1,081	1,147	1,365	1,549	1,747	1,961	2,165	2,220	2,453	2,660	2,859	3,066	3,298	3,567	3,792	4,094	4,266	4,535	4,957	5,146	5,451	5,728	5,912
●	830	937	1,137	1,303	1,567	1,826	2,029	2,422	2,411	2,591	2,805	2,930	3,059	3,242	3,340	3,371	3,475	3,587	3,687	3,719	3,994	4,045	4,509	4,818	5,072
●	-	-	-	-	-	-	-	1,000	1,000	4,000	4,000	3,000	4,000	5,000	5,000	5,000	14,117	15,295	14,862	11,358	18,439	18,428	21,027	20,774	22,443
●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,886	15,991	19,393	21,080	23,920	26,312	30,014	32,240	35,578

[illegible] 18 [illegible] 2014

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Mini Hydro [illegible]	[illegible]	[illegible]
	Mini Hydro [illegible]	[illegible]	[illegible]
	Mini Hydro [illegible] Cameron Highlands Scheme	[illegible]	[illegible]
	Mini Hydro [illegible]	[illegible]	[illegible]
	Solar [illegible]	[illegible]	[illegible]
	Solar [illegible]	[illegible]	[illegible]
	Biogas [illegible]	[illegible]	[illegible]
	Biomass [illegible]	[illegible]	[illegible]
	Subtotal	242.2	342,467
[illegible]	Mini Hydro [illegible]	[illegible]	[illegible]
	Mini Hydro [illegible]	[illegible]	[illegible]
	Biomass [illegible]	[illegible]	[illegible]
	Biomass [illegible] Co[illegible]en	[illegible]	[illegible]
	Subtotal	79.7	129,223
[illegible]	Mini Hydro [illegible]	[illegible]	[illegible]
	Solar	[illegible]	[illegible]
	Subtotal	7.6	11,841
[illegible]		329.4	483,531

Source: Energy Commission, [illegible], [illegible], [illegible], Ministry of Public Utilities Sarawak and [illegible] Malaysia

Note: Public Licence is the licensee that generates for his own use and for supply to other persons

[illegible] 19 [illegible] 2014

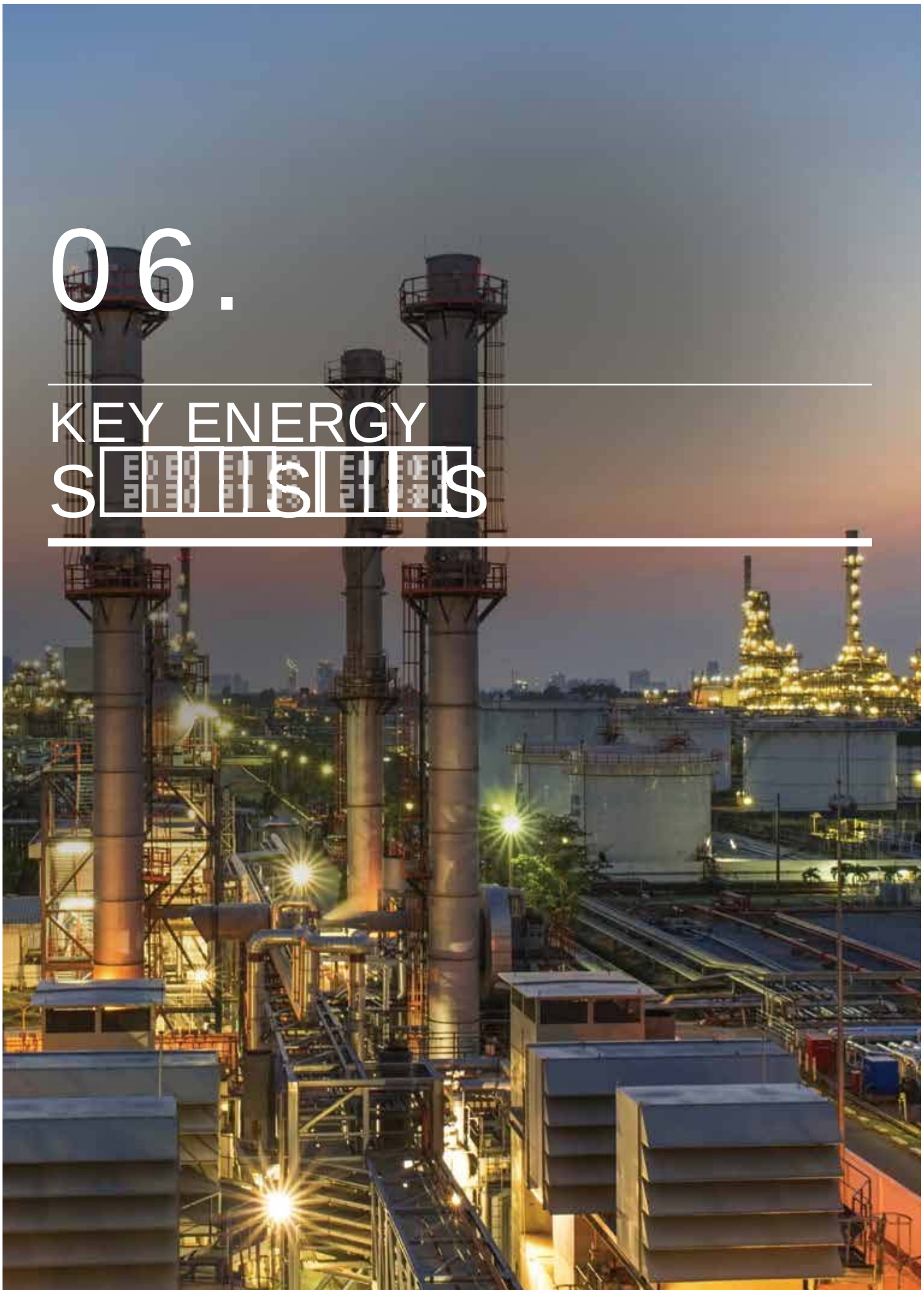
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Biomass [illegible]elf[illegible]en	[illegible]	[illegible]
	Subtotal	293.3	110,137
[illegible]	Biomass [illegible] Co[illegible]en	[illegible]	[illegible]
	Biomass [illegible]elf[illegible]en	[illegible]	[illegible]
	Subtotal	211.7	241,450
[illegible]	Biomass	[illegible]	[illegible]
	Subtotal	60.0	43,260
[illegible]		565.1	394,847

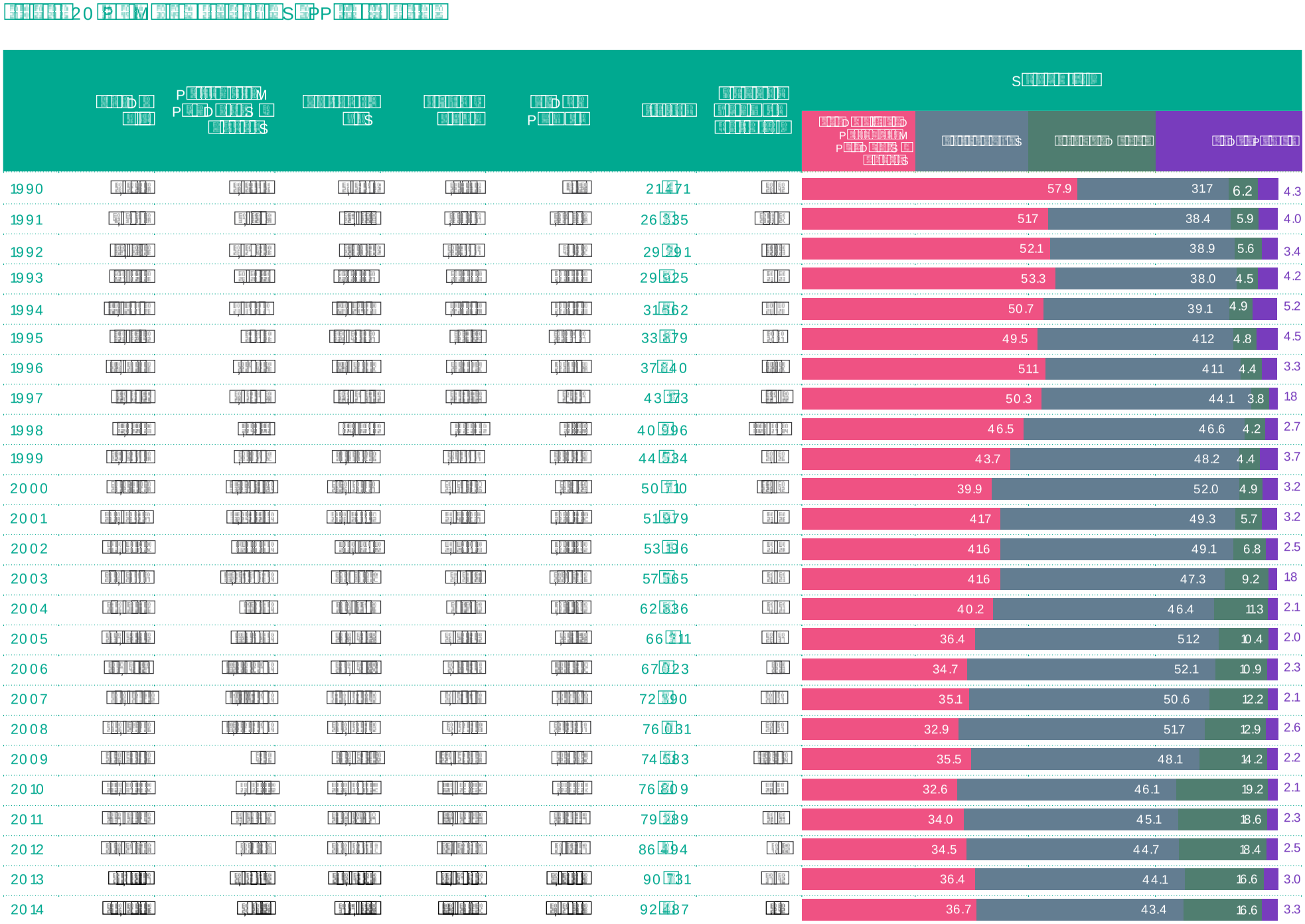
Source: Energy Commission, [illegible], [illegible], [illegible] and Ministry of Public Utilities Sarawak

Note: Private Licence is the licensee that generates for his own use only

06.

KEY ENERGY STATISTICS





[illegible] 21 [illegible]

	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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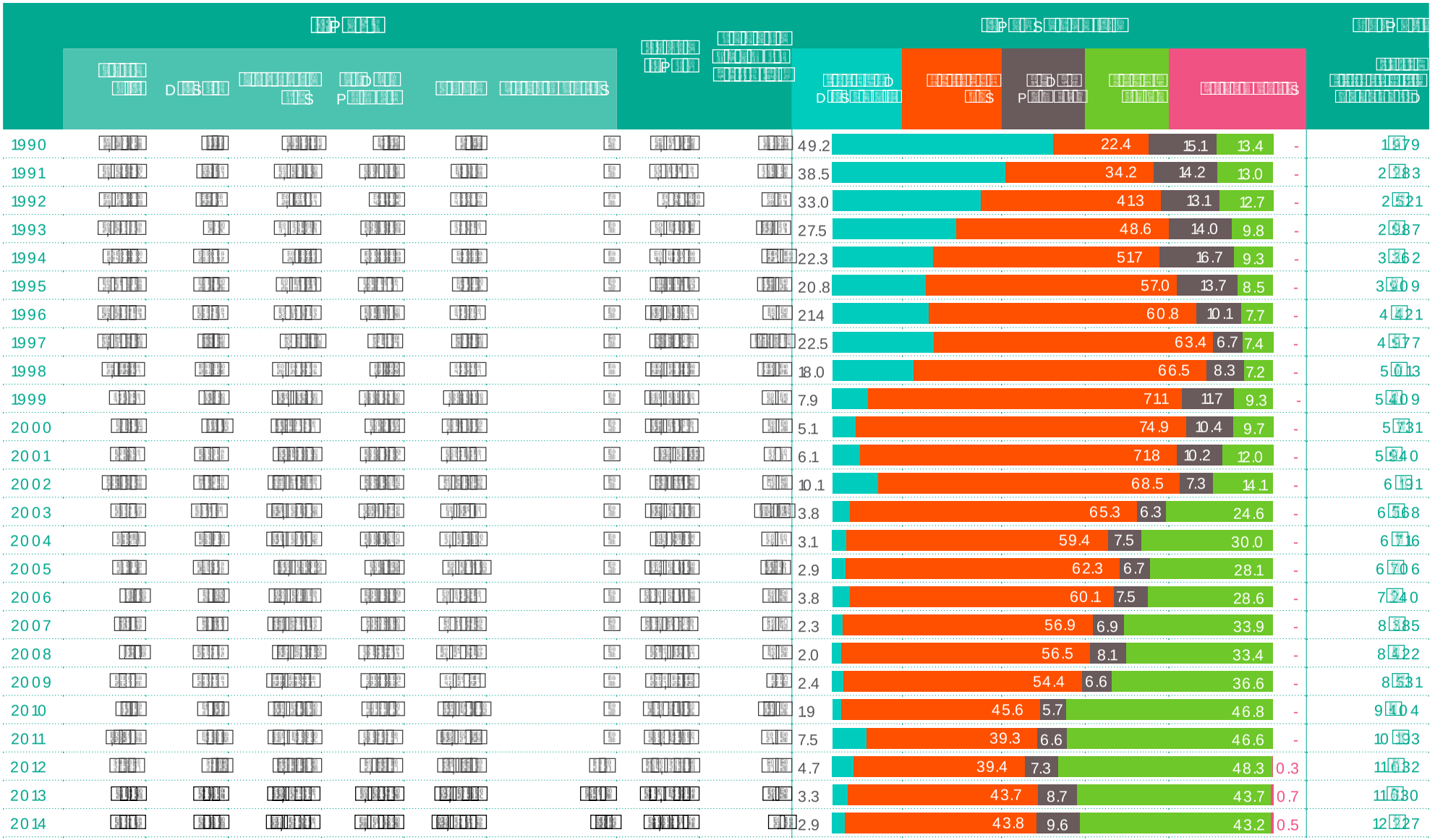
1991	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1992	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1993	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1994	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1995	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1996	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1997	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1998	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1999	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2001	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2002	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2003	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2004	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2005	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2006	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2007	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2008	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2009	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2010	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2011	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2012	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2013	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] 22 [illegible] $ [illegible] $ P[illegible]S [illegible]

[illegible] P[illegible]	[illegible] $ P[illegible]S		
[illegible] $	M[illegible]	[illegible] PP [illegible] B	MDS
1990	[illegible]	[illegible]	na	na
1991	[illegible]	[illegible]	na	na
1992	[illegible]	[illegible]	[illegible]	na
1993	[illegible]	[illegible]	[illegible]	[illegible]
1994	[illegible]	[illegible]	[illegible]	[illegible]
1995	[illegible]	[illegible]	[illegible]	[illegible]
1996	[illegible]	[illegible]	[illegible]	[illegible]
1997	[illegible]	[illegible]	[illegible]	[illegible]
1998	[illegible]	[illegible]	[illegible]	na
1999	[illegible]	[illegible]	[illegible]	na
2000	[illegible]	[illegible]	[illegible]	[illegible]
2001	[illegible]	[illegible]	[illegible]	[illegible]
2002	[illegible]	[illegible]	[illegible]	[illegible]
2003	[illegible]	[illegible]	[illegible]	[illegible]
2004	[illegible]	[illegible]	[illegible]	[illegible]
2005	[illegible]	[illegible]	[illegible]	[illegible]
2006	[illegible]	[illegible]	[illegible]	[illegible]
2007	[illegible]	[illegible]	[illegible]	[illegible]
2008	[illegible]	[illegible]	[illegible]	[illegible]
2009	[illegible]	[illegible]	[illegible]	[illegible]
2010	[illegible]	[illegible]	[illegible]	[illegible]
2011	[illegible]	[illegible]	[illegible]	[illegible]
2012	[illegible]	[illegible]	[illegible]	[illegible]
2013	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] ote [illegible] na means not applicable
[illegible] iddle [illegible] istillate [illegible] ynthesis [illegible] ommenced pre[illegible] ommerciali[illegible] ation operation in year [illegible]
[illegible] plant produced [illegible] B [illegible] in the year [illegible]

1990												9 579
1991												10 243
1992												9 502
1993												10 483
1994												13 803
1995												16 586
1996												18 451
1997												16 573
1998												16 732
1999												17 727
2000												20 954
2001												22 817
2002												21 495
2003												22 576
2004												22 999
2005												21 438
2006												23 434
2007												25 307
2008												26 482
2009												25 093
2010												21 706
2011												23 567
2012												26 138
2013												24 724
2014												24 120



ote igures calculated from average ef iency of thermal stations of respective year

25

1990						13 46				
1991						14 563				
1992						16 385				
1993						17 728				
1994						19 286				
1995						21 164				
1996						24 181				
1997						26 168				
1998						25 558				
1999						27 328				
2000						29 599				
2001						31 513				
2002						33 290				
2003						34 585				
2004						37 323				
2005						38 284				
2006						38 569				
2007						41 606				
2008						41 568				
2009						40 546				
2010						41 477				
2011						43 456				
2012						49 291				
2013						51 584				
2014						52 509				

ote ned as total P for Agriculture, orestry and shing, ining and uarrying, anufacturing and Construction

ndustrial P for year was calculated by Energy Commission

			GAS FOR NON-ENERGY USE	GAS FOR HEATING					
1990			609	460			13,122		
1991			604	495			14,537		
1992			657	687			16,161		
1993			1,141	560			17,713		
1994			1,163	497			19,084		
1995			1,064	590			21,883		
1996			870	1,209			23,786		
1997			1,378	1,087			26,167		
1998			1,282	1,444			25,558		
1999			1,118	1,905			27,228		
2000			1,512	2,350			29,698		
2001			1,655	2,965			31,514		
2002			1,775	3,867			33,288		
2003			1,616	4,270			34,586		
2004			1,476	5,014			37,323		
2005			1,541	5,440			38,385		
2006			2,120	5,442			38,567		
2007			2,112	5,597			41,605		
2008			2,046	5,772			41,968		
2009			1,995	4,807			40,846		
2010			1,661	4,593			41,476		
2011			3,906	4,609			43,456		
2012			5,336	4,870			49,290		
2013			5,276	4,800			51,584		
2014			4,472	5,168			52,209		

1990								9 823
1991								10 614
1992								11 927
1993								13 076
1994								13 594
1995								16 142
1996								17 203
1997								18 578
1998								17 488
1999								18 782
2000								19 581
2001								20 523
2002								20 637
2003								21 176
2004								22 885
2005								23 011
2006								22 593
2007								24 851
2008								24 452
2009								24 146
2010								24 402
2011								23 923
2012								27 215
2013								29 190
2014								29 517

[illegible] 28 [illegible] (1990 [illegible] 2014)

	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
								[illegible]	[illegible]	[illegible]
1990	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1991	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1992	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1993	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1994	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1995	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1996	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1997	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1998	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1999	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2001	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2002	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2003	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2004	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2005	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2006	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2007	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2008	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2009	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2010	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2011	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2012	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2013	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2014	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Source: [illegible]P and Population data from Department of Statistics, Malaysia

	P[illegible] P[illegible]				[illegible] $[illegible]				[illegible] $[illegible]	
[illegible] $ MP [illegible]	DP [illegible] P [illegible] $ [illegible] M [illegible]	P [illegible] M [illegible] S PP [illegible]	[illegible] $ MP [illegible]	[illegible] $ MP [illegible] K [illegible]	P [illegible] M [illegible] S PP [illegible] DP [illegible] 2010 P [illegible] $ M M [illegible]	[illegible] $ MP [illegible] DP [illegible] 2010 P [illegible] $ M M [illegible]	[illegible] $ MP [illegible] DP [illegible] 2010 P [illegible] $ M M [illegible]	[illegible] $ MP [illegible] DP [illegible] 2010 P [illegible] $ M M [illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]ote [illegible]P at [illegible]Prices [illegible]illion [illegible]for [illegible]until [illegible]was calculated by Energy Commission

MM MS 2014 S

S	S		D	S 2	P M P D S	P M P D S			
						P	D S		P
P M S PP									
Primary Production					0				
as aring, Reinection Use					0				
mports					16 09				
E ports					10 98				
unkers					208				
toc Change					1296				
tatistical iscrepancy					0				
8. Primar Su	65 29	25 816	26 765	42	6 99	8 062	946	17 68	136
S M									
as Plants									
					96				
					420				
PP P					1250				
Su total	39 93	28 17	0	0	1765	0	108	0	1346
Re neries					24 20				
Power tations elf eneration									
ydro tations					0				
hermal tations					890				
elf eneration					25				
Su total	15 538	2019	0	0	915	0	647	269	0
osses wn Use					2098				
tatistical iscrepancy					54				
14. Se on ar Su	56 288	25 816	26 765	42	22 818	4 643	9 216	2 014	2495
S S MP									
Residential					647				
Commercial					877				
ndustrial					1511				
ransport					23 750				
Agriculture					1				
shery					987				
on Energy Use					1744				
22. otal nal onsumption	9 541	0	0	0	29 517	12 705	10 361	246	2532
									P
Main Pro er									
ross Electricity eneration h					3401				
to o er									
ross Electricity eneration h					89				

Crude production includes Condensates comprising Pentane and eavier ydrocarbons.
hers Refer to on Crude Energy orms onsist of mported ight iesel, lop Reprocess, Crude Residuum iddle East Residue hich are Used as Re inary ina .
PP E tracts id Products i.e Condensates, Ethane, utane, Propane from atural as, Ethane is ot included under P production.
utane and Propane as eedstocks are Presented as on Energy use under P column. Ethane is Presented under atural as Column.
Estimated gures based from the Energy Commission, tatistics of Electricity upply ndustry in alaysia

ote otal may not necessarily add up due to rounding

											98 236
											2 505
											48 511
											51 465
											208
											560
											144
72	233	838	0	15 357	3 038	63	181	12	300	0	92 437
											3 256
											554
											500
40	0	272	0	0	0	0	0	0	0	0	9 310
											2 255
											1 686
											19 514
											1 885
0	0	0	0	13 648	3 038	63	181	12	0	12 629	52 735
											5 628
											300
94	2 925	1 430	0	13 648	3 038	63	181	12	0	11 041	40 278
											2 993
											4 465
											13 362
											24 827
											36
											1 609
											6 217
23	3 158	592	0	1 709	0	0	0	0	300	11 042	52 209
											142 788
											4 673

MM M S 2014 S

S	S		D	S 2	P M P D S				
						P	D S		P
P M S PP									
Primary Production					0				
as aring, Reinection Use					0				
mports					4 228				
E ports					2 727				
unkers					36				
oc Change					46				
tatistical iscrepancy					0				
8. Primar Su	16 957	6 841	6 539	9	1 511	1 976	2	295	14
S M									
as Plants									
					25				
					110				
PP P					349				
Subtotal	10 089	7 138	0	0	484	0	27	0	374
Re neries					6 533				
Power tations elf eneration									
ydro tations					0				
ermal tations					299				
elf eneration					6				
Subtotal	4 210	4 28	0	0	305	0	195	110	0
osses wn Use					520				
tatistical iscrepancy					36				
14. Se on ar Su	14 721	6 841	6 539	9	6 029	1 37	2 56	522	725
S S MP									
Residential					153				
Commercial					203				
Industrial					559				
ransport					5 73				
Agriculture					1				
ishery					252				
on Energy Use					497				
22. otal inal onsumption	2 36	0	0	0	7 539	3 13	2 54	227	711
								P	
Main Pro er									
ross Electricity eneration h					1 242				
to o er									
ross Electricity eneration h					23				

Crude production includes Condensates comprising Pentane and eavier ydrocarbons.
hers Refer to on Crude Energy orms onsist of mported ight iesel, lop Reprocess, Crude Residuum iddle East Residue hich are Used as Re inary ina e.
PP E tracts id Products i.e Condensates, Ethane, utane, Propane from atural as, Ethane is ot included under P production.
utane and Propane as eedstocks are Presented as on Energy use under P column. Ethane is Presented under atural as Column.
Estimated gures based from the Energy Commission, tatistics of Electricity upply ndustry in alaysia

ote otal may not necessarily add up due to rounding

											24 776
											715
											12 617
											12 926
											36
											246
											36
8	35	182	0	3 211	731	16	46	3	70	1	22 234
											2 228
											133
											107
10	0	73	0	0	0	0	0	0	0	0	2 467
											130
											467
											4 741
											350
0	0	0	0	2 799	731	16	46	3	0	2 979	5 558
											114
											80
12	746	331	0	2 799	731	16	46	3	0	2 626	9 351
											713
											1 955
											3 283
											6 614
											8
											256
											1 554
4	782	148	0	412	0	0	0	0	70	2 626	12 883
											33 648
											1 164

MM 2014

Primary Production					0				
as Flaring, Reinjection Use					0				
mports					4 260				
Exports					3 284				
unkers					36				
oc Change					497				
tatistical iscrepancy					0				
8. Primar Su	16 382	6 227	6 399	3	2 137	2 275	436	458	729
as Plants									
					21				
					111				
PP					268				
Subtotal	9 599	7 002	0	0	400	0	28	0	289
Re neries					6 170				
Power tations elf eneration									
ydro tations					0				
hermal tations					310				
elf eneration					6				
Subtotal	1042	535	0	0	316	0	227	39	0
osses wn Use					518				
tatistical iscrepancy					285				
14. Se on ar Su	13 992	6 227	6 399	3	5 451	951	2 336	465	719
Residential					178				
Commercial					186				
ndustrial					353				
ransport					6 200				
Agriculture					0				
ishery					263				
on Energy Use					408				
22. otal inal onsumption	2 390	0	0	0	7 588	3 226	2 272	8	641
									P
Main ro									
ross Electricity eneration h					1 776				
uto ro er									
ross Electricity eneration h					22				

Crude production includes Condensates comprising Pentane and eavier ydrocarbons.
Others Refer to on Crude Energy orms onsist of mported ight iesel, lop Reprocess, Crude Residuum iddle East Residue hich are Used as Re inary ina .
PP E tracts id Products i.e Condensates, Ethane, utane, Propane from atural as, Ethane is ot included under P production.
utane and Propane as eedstocks are Presented as on Energy use under P column. Ethane is Presented under atural as Column.
Estimated gures based from the Energy Commission, tatistics of Electricity upply ndustry in alaysia

ote otal may not necessarily add up due to rounding

											24 516
											716
											12 329
											13 570
											36
											711
											45
35	217	219	0	3 712	730	15	44	3	86	0	23 279
											1 617
											142
											138
9	0	74	0	0	0	0	0	0	0	0	2 197
											108
											457
											4 928
											322
0	0	0	0	3 260	730	15	44	3	0	3 238	5 707
											1 559
											330
43	577	359	0	3 260	730	15	44	3	0	2 810	9 952
											769
											1 504
											3 228
											6 355
											9
											269
											1 593
8	795	140	0	453	0	0	0	0	86	2 810	13 327
											36 648
											1 165

MM M S 2014 S

S	S		D	S 2	P M P D S				
						P	D S		P
P M S PP									
Primary Production					0				
as aring, Reinection Use					0				
mports					4 48				
E ports					2 36				
unkers					08				
toc Change					725				
tatistical iscrepancy					0				
8. Primar Su	15 69	5 64	7 51	15	2 28	2 00	429	491	151
S M									
as Plants									
					19				
					92				
PP P					296				
Subtotal	8 29	6 70	0	0	407	0	22	0	315
Re neries					5 04				
Power tations elf eneration									
ydro tations					0				
hermal tations					41				
elf eneration					6				
Subtotal	37 68	641	0	0	47	0	12	35	0
osses wn Use					520				
tatistical iscrepancy					115				
14. otal inal onsumption	2 996	5 64	7 51	15	5 39	1 80	2 17	498	485
S S MP									
Residential					155				
Commercial					215				
ndustrial					339				
ransport					6 15				
Agriculture					0				
ishery					259				
on Energy Use					404				
22. otal inal onsumption	2 73	0	0	0	7 87	3 80	2 45	7	637
									P
Main Pro er									
ross Electricity eneration h					497				
to o er									
ross Electricity eneration h					22				

Crude production includes Condensates comprising Pentane and eavier ydrocarbons.
Others Refer to on Crude Energy orms onsist of mported ight iesel, lop Reprocess, Crude Residuum iddle East Residue hich are Used as Re inary ina .
PP E tracts id Products i.e Condensates, Ethane, utane, Propane from atural as, Ethane is ot included under P production.
utane and Propane as eedstocks are Presented as on Energy use under P column. Ethane is Presented under atural as Column.
Estimated gures based from the Energy Commission, tatistics of Electricity upply ndustry in alaysia

ote otal may not necessarily add up due to rounding

											23
											12
											1
14	123	171	0	4	704	16	46	3	75	0	23
											1
10	0	61	0	0	0	0	0	0	0	0	
0	0	0	0	3	704	16	46	3	0	3	5
21	651	307	0	3	704	16	46	3	0	2	10
7	775	136	0	408	0	0	0	0	75	2	13
											36

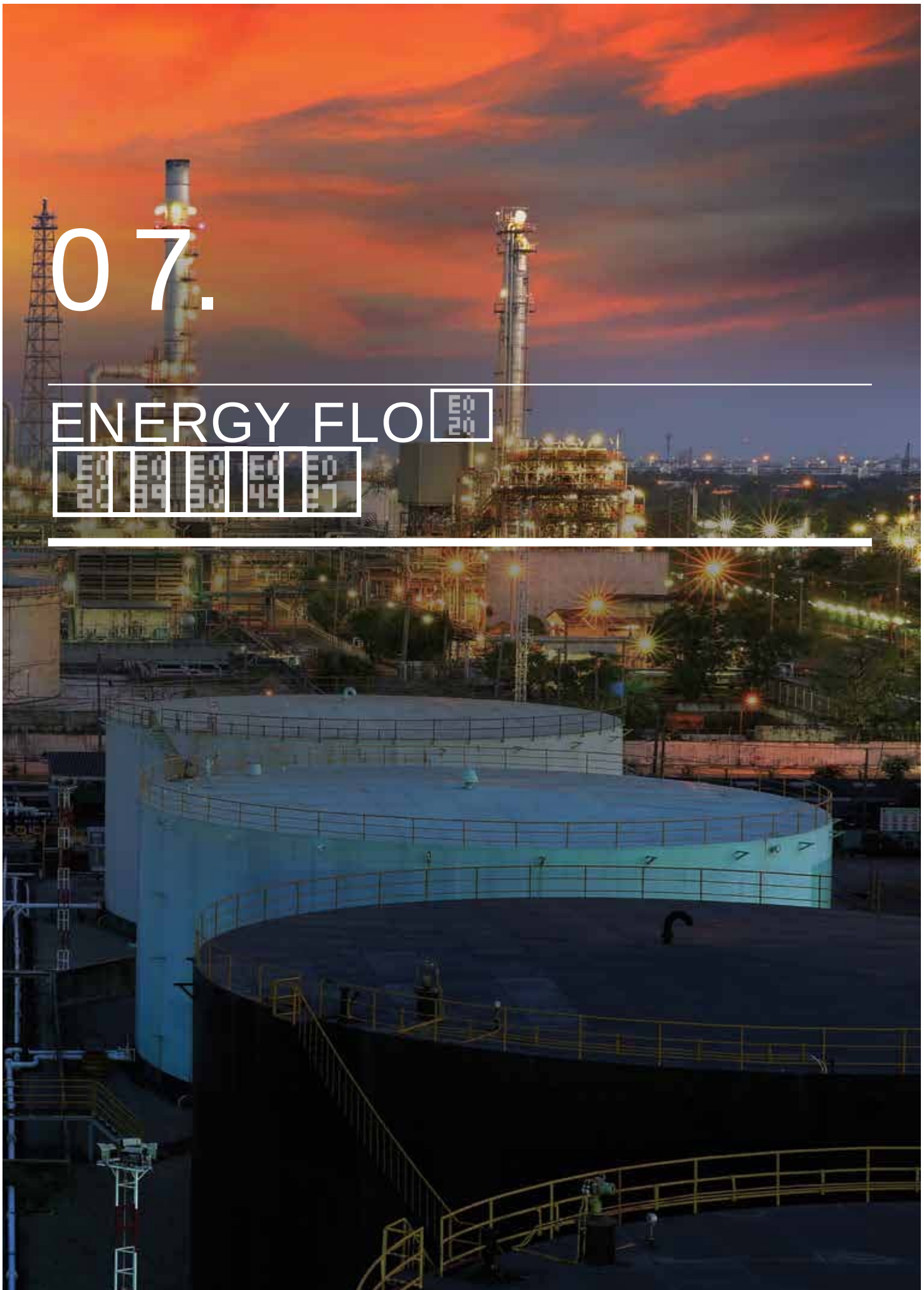
MM M S 2014 S

S	S		D	S 2	P M P D S	P M P D S			
						P	D S		P
P M S PP									
Primary Production					0				
as aring, Reinection Use					0				
mports					2773				
E ports					1951				
unkers					28				
toc Change					28				
tatistical iscrepancy					0				
8. Primar Su	17122	6984	6778	16	823	1512	82	525	78
S M									
as Plants									
					31				
					106				
PP B					337				
Subtotal	10675	7506	0	0	475	0	31	0	369
Re neries					6512				
Power tations elf eneration									
ydro tations					0				
hermal tations					141				
elf eneration					6				
Subtotal	3518	415	0	0	147	0	113	54	0
osses wn Use					540				
tatistical iscrepancy					79				
14. Secondar Su	14580	6984	6778	16	6178	1174	2208	529	565
S S MP									
Residential					160				
Commercial					273				
ndustrial					260				
ransport					5661				
Agriculture					0				
shery					213				
on Energy Use					435				
22. otal inal onsumption	2542	0	0	0	7001	3087	2290	4	643
									P
Main		Pro	er						
ross Electricity eneration h					486				
to o er									
ross Electricity eneration h					22				

Crude production includes Condensates comprising Pentane and eavier ydrocarbons.
thers Refer to on Crude Energy orms onsist of mported ight iesel, lop Reprocess, Crude Residuum iddle East Residue hich are Used as Re inary ina .
PP E tracts id Products i.e Condensates, Ethane, utane, Propane from atural as, Ethane is ot included under P production.
utane and Propane as eedstocks are Presented as on Energy use under P column. Ethane is Presented under atural as Column.
Estimated gures based from the Energy Commission, tatistics of Electricity upply ndustry in alaysia

ote otal may not necessarily add up due to rounding

											25836
											495
											11242
											13307
											28
											218
											52
15	43	266	0	4250	871	16	46	3	69	0	22978
											2410
											152
											132
11	0	65	0	0	0	0	0	0	0	0	2694
											360
											533
											4173
											256
0	0	0	0	3813	871	16	46	3	0	3167	56663
											1501
											79
19	950	433	0	3813	871	16	46	3	0	2790	10139
											738
											1191
											3208
											5799
											9
											219
											1575
4	807	167	0	437	0	0	0	0	69	2790	12839
											35775
											1138



07.

ENERGY FLOW

ENERGY FLOW CHART

PRIMARY SUPPLY

PRIMARY SUPPLY*

1. NATURAL GAS — 43.4%
2. CRUDE OIL — 28.9%
3. COAL & COKE — 16.6%
4. PETROLEUM PRODUCTS & OTHERS — 7.2%
5. HYDROPOWER — 3.3%
6. RENEWABLES — 0.6%

PRIMARY PRODUCTION

1. NATURAL GAS — 64.2%
2. CRUDE OIL — 30.1%
3. HYDROPOWER — 3.1%
4. COAL & COKE — 1.7%
5. RENEWABLES — 0.9%

IMPORTS

1. PETROLEUM PRODUCTS — 33.3%
2. COAL & COKE — 28.5%
3. CRUDE OIL & OTHERS — 20.4%
4. NATURAL GAS & LNG — 17.8%

EXPORTS

1. LNG — 54.1%
2. CRUDE OIL & OTHERS — 23.1%
3. PETROLEUM PRODUCTS — 20.2%
4. NATURAL GAS — 2.2%
5. COAL & COKE — 0.2%
6. RENEWABLES — 0.2%

TRANSFORMATION

GAS PLANT INPUT

- **93.0%** LNG
- **4.5%** GPP-LPG
- **2.5%** MDS

OIL REFINERIES INPUT

- **61.9%** LOCAL
- **38.1%** IMPORT

POWER STATIONS & SELF GENERATION INPUT

- **49.6%** NATURAL GAS
- **38.5%** COAL & COKE
- **8.6%** HYDRO
- **1.8%** DIESEL
- **0.8%** FUEL OIL
- **0.7%** RENEWABLES

Note *: Primary Supply = Primary Production - Flaring + Imports - Exports - Bunkers (+-) Stock Change (+-) Statistical Discrepancy