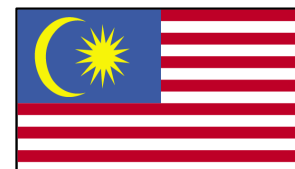


MALAYSIA



Country at a glance

- Population: 28.4 million (2010) [1]
- Total area: 329,847 sq. km [2]
- Carbon emissions per capita: 6.51 metric tons (2010) [3]
- Energy consumption per capita: 29.8 MWh (2010) [4]
- Percentage of global carbon emissions: 0.61% (2010) [3]



Young palmoil-plantation in East-Malaysia. Permission Under CC BY 1.0 License
commons.wikimedia.org/wiki/File:Junge_Palmoel-Plantage_in_Ost-Malaysia_Juni_2010_Foto_energie-experten.org.JPG

Young Palm Oil Plantation in Malaysia

Malaysia is the world's second largest producer of palm oil. In 2012 the sector covered 50,000 sq km of land and employed around 491,000 workers. In addition to its use as a cooking ingredient, and its use by the commercial food industry, it is also used in Malaysia to manufacture biodiesel, which is planned to be an important fuel sector for the future – both for export and home use.

Table 1 Breakdown of energy use, electricity and heat generation, 2010

	Primary energy sourced within country		Energy imports minus exports	Primary energy used within the country ^(a)			Electricity Generation ^(b)		Heat Generation ^(c)		
	unit	ktoe		%	ktoe	ktoe	GWh	%	GWh	%	
Coal, including brown coal & peat		1,511	2	13,011	14,601	169,809	20	43,067	34	0	0
Oil fuels		34,404	40	-6,186	26,020	302,608	36	3,670	3	0	0
Natural gas		45,895	53	-17,828	28,067	326,425	39	70,795	57	0	0
Nuclear		0	0	0	0	0	0	0	0	0	0
Hydroelectric		557	1	0	557	6,473	1	6,472	5	0	0
Biofuels and waste		3,511	4	-97	3,414	39,702	5	1,284	1	0	0
Solar photovoltaics		0	0	0	0	0	0	0	0	0	0
Solar thermal		0	0	0	0	0	0	0	0	0	0
Tide, wave and ocean		0	0	0	0	0	0	0	0	0	0
Wind		0	0	0	0	0	0	0	0	0	0
Geothermal		0	0	0	0	0	0	0	0	0	0
Electricity (imported)		0	0	-13	0	0	0	0	0	0	0
Sub total Renewables		4,067	5	-97	3,970	46,175	5	7,756	6	0	0
Totals		85,878	100	-11,113	72,658	845,017	100	125,288	100	0	0

Source: Based on World Energy Statistics and Balances Database 2012, "World Energy Balances." © OECD/IEA, 2012.

Notes:

Standard conversion used is 1 ktoe = 11.63 GWh

- Sum of energy sourced within country, energy imports minus exports, international marine and aviation bunkers and stock change flows.
- Includes all electricity generation, including any exported.
- Does not include electrical heating. Includes waste heat recovery from electricity generation plants.

Table 2 Breakdown of transport fuel use, 2010

(in ktoe)	Total transport mix	%	Domestic aviation	Road	%	Rail	Pipeline transport	Domestic navigation	Non-specified (transport)
Oil products	14,182	98	0	14,171	98	0	0	12	0
Natural gas	222	2	0	222	2	0	0	0	0
Biofuels and waste	4	0	0	4	0	0	0	0	0
Electricity	18	0	0	0	0	18	0	0	0
Sub total Renewables	4	0	0	4	0	0	0	0	0
Total	14,427	100	0	14,397	100	18	0	12	0

Source: Based on World Energy Statistics and Balances Database 2012, "World Energy Balances." © OECD/IEA, 2012.

Stand on climate change

Malaysia became a Non-Annex I Party to the United Nations Framework Convention on Climate Change (UNFCCC) when it ratified the UNFCCC in 1994. It ratified the Kyoto Protocol in 2002.

At COP15 in Copenhagen, Malaysia's Prime Minister announced that Malaysia would voluntarily reduce its emissions intensity of GDP by up to 40 percent, compared to 2005 levels, by 2020, conditional on technology transfer and financial support from developed countries. In 2011, Malaysia submitted its Second National Communication to the UNFCCC[5].

Malaysia's GHG emission amounted to 223 Mt CO₂ equivalent in 2000 and removal was 249.8 Mt CO₂ equivalent. The net emissions, after accounting for the removal was -26.8 Mt CO₂ equivalent. Hence, Malaysia was a net sink in 2000. However, estimates show that Malaysia became a net emitter by 2005 with net emissions for 2005 and 2007 reaching 38.7 Mt CO₂ equivalent and 45.9 Mt CO₂ equivalent, respectively.

A key source analysis to rank the sources of emissions showed that the three highest sources were the energy sector (energy industries, transport, and manufacturing industries and construction) followed by the waste sector (landfills) and the LULUCF sector (forest and grassland conversion). The cumulative total for these five sources alone came up to almost 76%. Fugitive emissions from oil and gas systems made up almost 10% of total emissions and cement production about 4%.

National climate change programmes

Malaysia released its National Policy on Climate Change in 2010. The main objectives include mainstreaming climate change through the wise management of resources and enhanced environmental conservation. The policy also aims to strengthen institutional and implementation capacity to better harmonize opportunities to reduce negative impacts on climate change. The policy is based on the principles of sustainable development, coordinated implementation, effective participation and common but differentiated responsibilities[6].

The Ministry of Natural Resources and Environment (NRE) was formed in 2004. In terms of climate change, it has enabled better coordination as some of the key agencies which were previously in various ministries are now under the NRE.

Residential Sector:

- The Energy Commission has conducted several promotional programmes on energy labelling and energy efficient refrigerators for the residential sector. As for the output, they have devised an energy efficiency star ranking system (1 star to 5 stars) for labelling purposes.

Building Sector:

- Construction of the Green Energy Office or GEO Building as a prototype of a building using renewable technology that is feasible in Malaysia

Industrial Sector:

- Change the blend or raw material mix in cement production to reduce GHG emissions
- Malaysian Industrial Energy Efficiency Improvement Programme (MIEEIP)

Transport Sector:

- Increase ridership of urban rail network lines running through the Klang Valley – Putra, KTM, Komuter, Start and KL Monorail
- Kuala Lumpur City Plan 2020 details extending coverage of the urban rail networks and integrating them with regional networks, providing park and ride facilities, and also giving priority to buses

Agriculture:

- Third National Agricultural Policy (NAP3) aims to increase productivity and conserve and utilize natural resources in a sustainable manner
- Introduce sustainable practices in farming such as utilization of idle agriculture land, optimization and certification of oil palm
- Irrigated rice water management
- Nitrogen fertilizer management
- Manure management

Forestry:

- In April 2010, the Minister of Natural Resources and Environment announced a nation-wide initiative to plant one tree for every Malaysian, a total of 26 million trees, in the coming five years. This amounts to an annual planting rate of 5.2 million trees per year. The areas targeted are logged over forests and poor forests and other suitable areas.
- The national Landscape Department embarked on a project to plant 20 million trees between 1997 and 2020 in urban areas in order to green cities and towns. As of 2009, 10 million trees had been planted throughout the country.

Waste and Water:

- Landfill solid waste management enhanced through the new Solid Waste and Public Cleansing Management Act (2007) [Act 672] to allow centralized and coordinated management of solid waste by the Federal Government of Malaysia (with the exception of Sabah and Sarawak)
- National Solid Waste Management Department (NSWMD) established under the Ministry of Housing and Local Government (MHLG) in 2007
- Solid Waste and Public Cleansing Management Corporation established to handle day-to-day operation of solid waste management

Energy Sector:

- Photo Voltaic (PV) System for Rural Electrification Programme in the 1980s
- First PV Grid Connected System Application in 1998
- Formulation of Fifth Fuel Policy in 2001
- Small Renewable Energy Power Programme (SREP) launched in 2002
 - Jena Landfill Project, Puchong, Selangor (Biogas – 2MW) completed in 2004
 - TSH Bio Energy Project, Kunak, Sabah (Biogas – 10 MW) completed in 2004
- Biomass Power Generation and Co-Generation Project (BIOGEN)
- Malaysia Building Integrated Photovoltaic Project (MBIPV) launched in 2005
- National Biofuel Policy launched in 2006
- Ninth Malaysia Plan (2006-2010) on clean technology development sets a non-mandatory target of 350 MW grid connected electricity to be generated through RE sources by 2010, with 300 MW in Peninsular Malaysia and 50 MW in Sabah

- Assessment of the existing Electricity Supply Act (1990) to adequately support the growth of RE in Malaysia
- Renewable Energy Policy and Action Plan which is to be implemented from the Tenth Malaysia Plan, 2011-2015, onwards including the implementation of a Feed-in Tariff Mechanism to spur development of RE in Malaysia
 - RE expected to reach 2,080 MW capacity or approximately 11 per cent of total peak electricity demand capacity by 2020 and to avoid 42.2 million tCO₂

Ministries involved in climate change/energy policy making:

Ministries involved	Web links
Ministry of Natural Resources and Environment	nc2.nre.gov.my
Ministry of Foreign Affairs	kln.gov.my
Ministry of Housing and Local Government	www.kpkt.gov.my/kpkt_bi/
Ministry of Energy, Green Technology and Water	www.kettha.gov.my/en
State Department of Agriculture	www.doa.gov.my/
Forestry Department of Peninsular Malaysia	www.forestry.gov.my
Malaysian Meteorological Department	www.met.gov.my/
Sustainable Energy Development Authority Malaysia	seda.gov.my/

Education institutes involved in climate change/energy policy making:

Education Institutes involved	Web links
University Teknologi of Malaysia	www.utm.my/

References

- [1] "World Population Prospects: The 2010 Revision." Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat.
- [2] "CIA - The World Factbook." Available at: <https://www.cia.gov/library/publications/the-world-factbook/geos/id.html>. [Accessed: 13-Mar-2013].
- [3] CO₂ Emissions from Fuel Combustion Statistics database 2012, "Indicators for CO₂ emissions." © OECD/IEA, 2012.
- [4] World Energy Statistics and Balances database 2012, "World Energy Balances." © OECD/IEA, 2012.
- [5] "Second National Communication to the UNFCCC." Ministry of Natural Resources and Environment Malaysia, 2011.
- [6] "National Policy on Climate Change (Malaysia)." Ministry of Natural Resources and Environment Malaysia, 2010.



Contact us at contact@aeepn.com
 Compiled by:
 Melissa Low
 Kamal Soundararajan