MYANMAR

Country at a glance

- Population: 48.0 million (2010) [1]
- Total area: 676,578 sq. km [2]
- Emissions per capita: 0.2 metric tonnes (2010) [3]
- Energy consumption per capita: 3.4 MWh [4]
- Percentage of GHG emissions globally: 0.03% [3]

The Ayeyarwady river viewed from the city of Myityina, Myanmar

A large dam and hydroelectric plant is being built on this river. The dam will be 310 m long and 40 m high. The plant will supply up to 6,000 MW - mostly for export to China.

View of Ayeyarwady River from Myitkyina by Colegota. *Permission under CC BY-SA 2.5 ES License*
commons.wikimedia.org/wiki/File:Myitkyina-ayeyarwady-d01.jpg

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	%	GWh	%
Coal, including brown coal & peat	409	2	0	409	4,762	3	671	9	0	0
Oil fuels	935	4	239	1,282	14,911	9	33	0	0	0
Natural gas	10,211	45	0	1,332	15,488	10	1,734	23	0	0
Nuclear	0	0	0	0	0	0	0	0	0	0
Hydroelectric	439	2	0	439	5,106	3	5,105	68	0	0
Biofuels and waste	10,535	47	0	10,535	122,522	75	0	0	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	0	0	0	0	0	0	0	0
Sub total Renewables	10,974	49	0	10,974	127,628	78	5,105	68	0	0
Totals	**22,530**	**100**	**239**	**13,997**	**162,789**	**100**	**7,543**	**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

(a) Sum of energy sourced within country, energy imports minus exports, international marine and aviation bunkers and stock change flows.

(b) Includes all electricity generation, including any exported.

(c) Does not include electrical heating. Includes waste heat recovery from electicity generation plants.

Table 2 Breakdown of transportation fuel use, 2010

(in ktoe)	Total transport mix	%	Domestic aviation	Road	%	Rail	Pipeline transport	Domestic navigation	Non-specified (transport)
Oil products	644	79	61	471	74	67	0	45	0
Natural gas	168	21	0	168	26	0	0	0	0
Total	**812**	**100**	**61**	**639**	**100**	**67**	**0**	**45**	**0**

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

Stand on climate change

Myanmar ratified the Kyoto Protocol on 13 August 2003 and bought it into force on 16 February 2005.

National climate change programmes

Because of its low levels of GHG emissions, Myanmar regards itself as a sufferer of climate change impacts, rather than as a contributor to climate change. Although there are some methane emissions from paddy fields, Myanmar's contribution towards global warming and climate change on the whole is minimal due to large areas of forest cover which act as a carbon sink [5].

Myanmar has not issued specific climate change policy statements. However there are other provisions and ministerial policy statements which do relate to climate change. These include the Constitution of the Republic of the Union of Myanmar, adopted in May 2008, which requires laws for environmental protection and conservation.

Myanmar submitted its initial national communication to the UNFCCC on 26 December 2012.
At the fourth meeting of the South East Asia Network of Climate Change Focal Points held in 2011, Myanmar presented some of its climate change targets [6]:

- To achieve energy consumption savings, relative to the existing BAU case, of 5% in 2020, and 8% in 2030.
- To improve energy efficiency by 10% relative to BAU, and reduce emissions of greenhouse gases from the industrial sector, by 2020.
- In the transport sector, enhance Biofuel fuel substitution (E 85 and Biodiesel) up to 8% by 2020, based on the 2005 level.
- 15-20% renewable energy in the total installed energy capacity by 2020.

Residential and Commercial Sector:

- The Solar Lighting Posts project implemented at the Yangon-Nay Pyi Taw Mandalay High-way Road to reduce CO_2 emissions by 26 ton/yr.
- The National Sustainable Development Strategy outlines the national goals for sustainable management of natural resources, integrated economic development and sustainable social development.

Industrial sector:

- Implementation of a Thin Film Solar Module Plant Project by the Ministry of Industry.
- Enhanced cooperation with ASEAN Centre for Energy for the Promotion of Energy Efficiency and Conservation (ACE/PROMEEC) such as the Multi Training Program on Energy Conservation (MTPEC).

- Energy Audits have been conducted for various industrial sectors including oil refineries, cement plants, textile factories, and the automobile and diesel engine industries.

Transport sector:

- As of April 2011, 46 compressed natural gas (CNG) refuelling stations have been set up in Myanmar and 27,500 Natural Gas Vehicles have been converted from petrol and diesel.

- Plans have been made to install CNG refuelling stations along existing domestic pipeline corridors.

Agricultural sector:

- Myanmar adopted the following policies and legislative measures: Forest Law in l992; Protection of Wildlife and Wild Plants and Conservation of Natural Areas Law in 1994; Myanmar Forest Policy in 1995; and Forest Rules in l995. The Forest Department issued "Community Forestry Instructions" in 1995 to promote community participation in forestry.

- A "Dry Zone Greening Department" was set up in 1997 and environmental rehabilitation measures are in progress. The Myanmar Forest Policy has identified six imperatives in its text for Sustainable Forest Management (SFM) [7].

- The National Medium–Term Priority Framework (NMTPF), 2010-2014 includes:
    a. Proper management of water storage
    b. Renovation of existing dams
    c. Construction of new reservoirs or dams

- Wood fuel substitution via the distribution of efficient stoves and also the wider use of briquettes and agricultural residues are in progress.

- The Ministry of Science and Technology (MOST) started research projects on biogas in 1995. Over 126 biogas units have already been implemented [8].

For heating and electricity production

- Employ gas turbine power generation mainly just for the short term and then rely on hydroelectric power as the main source of energy. Developments include the Myitsone Dam now under construction along the Irrawaddy River [10].

Ministries involved in climate change/energy policy making:

Ministries involved	Web links
Ministry of Agriculture and Irrigation	**www.moai.gov.mm/**
Ministry of Forestry	**www.modins.net/myanmarinfo/ministry/forest.htm**
Ministry of Energy	**www.energy.gov.mm/**
Ministry of Science and Technology	**www.most.gov.mm/**

Education Institutes and agencies involved in climate change/energy policy making:

Ministries involved	Web links
Myanmar Engineering Society	**www.mes.org.mm/**

References

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