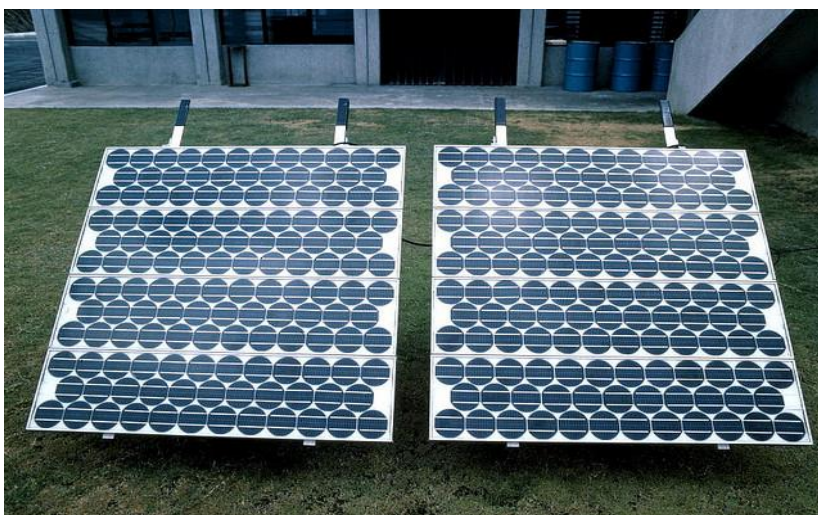


PHILIPPINES



Country at a glance

- Population: 93.3 million (2010) [1]
- Total area: 300,000 sq. km [2]
- Carbon emissions per capita: 0.82 metric tons (2010) [3]
- Energy consumption per capita: 5.1 MWh (2010) [4]
- Percentage of global carbon emissions: 0.25% (2010) [3]



Alternative Energy in Philippines

An array of solar photovoltaic cells ready for testing at the Center for Non-conventional Energy Development near Manila.

Energy in the 21st Century / the Alternatives by Derek Lovejoy. Permission Under CC BY-NC-ND 2.0 License www.flickr.com/photos/un_photo/4080558315/

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	3,510	15	4,311	7,717	89,746	19	23,301	34	0	0
Oil fuels	856	4	14,134	13,602	158,194	34	7,101	10	0	0
Natural gas	3,048	13	0	3,048	35,448	8	19,518	29	0	0
Nuclear	0	0	0	0	0	0	0	0	0	0
Hydroelectric	671	3	0	671	7,804	2	7,803	12	0	0
Biofuels and waste	6,790	29	78	6,898	80,218	17	13	0	0	0
Solar photovoltaics	0	0	0	0	1	0	1	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	5	0	0	5	62	0	62	0	0	0
Geothermal	8,536	36	0	8,536	99,271	21	9,929	15	0	0
Electricity (imported)	0	0	0	0	0	0	0	0	0	0
Sub total Renewables	16,003	68	78	16,110	187,357	40	17,808	26	0	0
Totals	23,417	100	18,523	40,477	470,744	100	67,728	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 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	7,851	98	236	6,918	97	0	0	697	0
Natural gas	0	0	0	0	0	0	0	0	0
Biofuels and waste	183	2	0	180	3	0	0	4	0
Electricity	10	0	0	0	0	10	0	0	0
Sub total	183	2	0	180	3	0	0	4	0
Renewables									
Total	8,044	100	236	7,098	100	10	0	701	0

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

Stand on climate change

Philippines ratified the Kyoto Protocol in 2003 [5]. The Republic Act 9729, also known as the Climate Change Act of 2009, shows the country's commitment to taking action on climate change. The main highlight of the act is the creation of the Climate Change Commission (CCC) as the government's sole policy-making body tasked to coordinate, monitor, and evaluate governmental climate change related programs and action plans. The Climate Change Commission is the national focal point for the UNFCCC [6].

National climate change programmes

Under the Climate Change Act, the CCC has formulated the National Climate Change Action Plan (NCCAP) [7]. The strategic direction of the NCCAP for 2011-2028 focuses on food security, water sufficiency, ecological and environmental stability, human security, climate-smart industries and services, sustainable energy, and knowledge and capacity development. Although the Philippines is not a major greenhouse gas emitter, it is highly vulnerable to climate change risks and natural hazards. Therefore the government does put emphasis on measures to reduce greenhouse gas emissions [8]. As outlined in the NCCAP, government priorities and expected outcomes are as follows:

Food security

- Ensuring the availability, stability, accessibility and affordability of food amidst climate change.

Water sufficiency

- Reviewing and subsequently restructuring the entire water sector governance.
- Assessing the resilience of major water resources and infrastructures.
- Managing water supply and demand.
- Managing water quality.
- Promoting water conservation.

Ecological and environmental stability

- Protecting and rehabilitating critical ecosystems.
- Restoring ecological services.

Human security

- Minimizing the risks to people from climate change and natural disasters.

Climate-friendly industries and services

- Creating green and eco-jobs.
- Encouraging sustainable consumption and production.
- Developing sustainable cities and municipalities.

Sustainable energy

- Promoting and expanding energy efficiency and conservation to meet the targeted 10% energy savings across all sectors, which will result in a total CO₂ reduction of 8,959,000 kilo-ton-of-oil-equivalent (KTOE) by 2020 and 12,446,357 (KTOE) by 2030 [8].

- Developing and expanding sustainable and renewable energy to meet the targeted total cumulative installed capacity of 7,120 MW by 2015, 10,408 MW by 2020, 10,805 MW by 2025, and 12,084 MW by 2030. This is according to the Biofuels Act of 2006 and Renewable Energy Act of 2008 [8].
- Having an environmentally sustainable transport by increasing the use of biodiesel blend (Clean Air Act).
- Climate-proofing and rehabilitating energy systems infrastructures.

Knowledge and capacity development

- Enhancing knowledge on the science of climate change.
- Enhancing capacity for climate change adaptation, mitigation and disaster risk reduction at the local and community level.
- Establishing climate change knowledge management accessible to all at the national and local levels.

The Department of Energy (DOE) takes a proactive stance on climate change mitigation. The launching of the 2012-2030 Philippines Energy Plan (PEP) by the DOE further highlights the government's commitment to mitigating climate change. The thrusts of the PEP includes, promoting a low-carbon future by prioritizing energy efficiency and the use of clean alternative fuels and technologies, as well as climate-proofing the energy sector [9]. Some of the specific quantifiable targets of the PEP which are related to climate change mitigation include that 30% of all public utility vehicles will run on alternative fuels, the implementation of higher Biofuels blend, and a 10% energy savings on the total energy demand [9]. The National Disaster Risk Reduction and Management Council (NDRRMC) and the National Economic and Development Authority (NEDA) are also working closely with the CCC on climate risk reduction and climate change adaptation. For instance, in 2010, the NEDA signed a Memorandum of Agreement (MOA) with the CCC for a climate change local development planning project [10]. Meanwhile, in 2011, the NDRRMC and the CCC signed a Memorandum of Understanding (MOU) for a Collaboration Programme on Philippine Climate Risk Reduction [11].

The Department of Environment and Natural Resources (DENR) is also actively involved in climate change actions and programs. The Climate Change Office (CCO) under the DENR was created in 2009 to serve as: (1) the internal coordination mechanism among all DENR offices and (2) the coordinator of other national government agencies, non-government organizations (NGOs), and local government units (LGUs) on climate change related matters [12]. Some of the noteworthy climate change programs of the CCO include a Philippines Climate Change Adaptation Project, a Vulnerability Assessment of Selected Watersheds and Coastal Areas in the Philippines to Climate Change Project, and a Joint Programme on Strengthening the Philippines' Institutional Capacity to Adapt to Climate Change [13]. To increase public awareness on climate change, the DENR has also continuously taken a number of initiatives. These include the development of information materials, i.e. a primer on climate change, fact sheets on climate change, and the production of a video documentary on climate change [14].

Ministries involved in climate change/energy policy making:

Ministries involved	Web links
Climate Change Commission	climate.gov.ph/
Department of Energy	www.doe.gov.ph/
National Economic and Development Authority	www.neda.gov.ph/
Department of Environment and Natural Resources	www.denr.gov.ph/

Educational institutes involved in climate change/energy policy making:

Education Institutes involved	Web links
Energy Regulatory Commission	www.erc.gov.ph/
National Disaster Risk Reduction and Management Council	www.ndrrmc.gov.ph/
Klima Climate Change Centre	klima.observatory.ph/

