

Energy Profile of Maldives

1. Maldives imports all its energy needs from abroad.
2. **To oversee the Energy, Environment and Water Related Matters**
Ministry of Environment, Energy and Water (MEEW)
3. **Organization Mandated to Regulate Energy Sector**

Maldives Energy Authority

4. **Organizations Involved in Energy Supply**

a. **State Electric Company Limited (STELCO)**

STELCO provides electricity to 27 of 199 inhabited islands designated by the Government. STELCO's installed capacity is about 35% of the whole country, which is 59.13 MW and it serves peak demand of around 39 MW.

b. **State Trading Organization (STO)**

It imports diesel, gasoline, LPG, kerosene and aviation fuel. In addition to import it has license to re-export the products.

c. **VILLA, Private Operators and Communities in Atolls**

d. **Tourist Resort**

e. **Associations, NGOs, Civic Societies and Private Sector**

Apart from the government entities, there are several private organizations, civic societies and associations whose involvement and contribution plays significant role in the development of the energy sector. About 150 outer islands are provided with electricity from community owned power generation and distributions systems. Electricity in a few islands is provided by private parties. Public-private partnerships have been limited to the transportation and distribution of fuel.

5. Energy Demand

Fuel-wise and sector-wise breakup of the demand for energy is given below:

a. Household, Manufacturing and Public Sector

Based on the Housing Census 2000, the use of LPG, kerosene and biomass, a breakdown of energy end-use on user categories has been derived in Maldives Energy Balance of 2005 and is given in Table 1.

Table 1: Total Energy Demand in toe - 2005

Category	Electricity	Biomass	LPG	Kerosene	Total
Household	7,841	1,863	6,754	1,346	17,804
Public	1,679	-	380	75	2,134
Manufacturing & Commerce	3,662	-	20	143	3,825
Government buildings	2,010	-	-	-	2,010
Total	15,192	1,863	7,154	1,564	25,773

Source: Maldives Energy Balances and Indicators 2005

b. Transport

Fuel consumption of vessels and vehicles in the Maldives determined in Maldives Energy Balance 2003-2005 and is given in Table 2

Table 2 : Total Energy Demand in Mill. Lit./Yr. - 2005

Category	Diesel	Petrol
Vessels	39.40	8.97
Vehicles	7.31	2.21

Source: Maldives Energy Balances and Indicators 2003-2005

c. Resorts

As the consumption of energy is significant an estimate of energy use in the resorts has been prepared in Maldives Energy Balance 2003-2005, it is given in Table 3.

Table 3: Energy consumption in Resorts in toe

Category	2002	2003	2004	2005
No Beds	16,400	16,444	16,858	
Solar heat utilized	NA	179	200	160*
Diesel	63,918	64,291	66,103	

* The reduction in consumption in year 2005 is due to the closure of some resorts after the 2004 Tsunami.

Source: Maldives Energy Balances and Indicators 2003-2005

6. Energy Supply

Maldives imports all its hydrocarbon energy requirements from abroad. The details of various types of fuel imports are given in Table 4.

Table 4: Energy Supply in Metric Tonne

Type	Year 2003	Year 2004	Year 2005	Year 2006
Diesel - Import	165,233	202,530	178,109	42,1581
Diesel - Re-Export	20,393	16,169	16,743	3,177
Heavy Fuel oil	-	-	11,410	NA
Petrol	12,213	18,461	19,209	23,051
LPG	3,558	6,488	7,150	6,403
Kerosene	4,981	8,518	1,174	4,259
Jet A1 - Import	112,415	132,448	98,715	130,792
Jet A1 - Re-export	99,498	116,617	85,678	113,840
Biomass (in toe)	2,380,000	2,300,000	2,220,000	NA
Solar heat utilization (in ktoe)	179	200	160	NA

Source: MEEW, National Energy Policy, Maldives Customs Services

Other Energy Sources

At the moment, only wind and solar PV based electricity production is used. The telecommunication company Dhiraagu has some PV panels in use to supply their masts with power for stand-alone operations at remote locations. Pilot project of small biogas digester is ongoing in Thilafushi Island. MEEW has implemented a grid connected small PV system at AA. Mandhoo Island in 2006.

7. Indigenous Energy Resources and Development Potential

Coal, Oil and Natural Gas

Maldives does not have any known reserve of coal, oil or gas. There was an attempt by Shell Company to explore oil in early 1990's. It was concluded that there was no significant deposits of oil or gas in the studied area. No further attempt was made thereafter.

8. Evolution of Pricing in the Country

All the energy requirements are met by imported fossil fuel and its price is determined by world market price. The price of electricity for public supply is regulated by Maldives Energy Authority. The calculation of electricity tariff is based on the cost of electricity generation, distribution and ability to pay.

For the public electricity generation the government has been giving subsidy to meet the increase in fuel price.

9. New/Renewable Energy Resource

The current renewable energy technology (RET) applications are limited to some application of solar photovoltaic cells in navigation lights and outer island telecommunication systems, as well as modest use of solar water heaters in resort islands.

The Renewable Energy Technology Development and Application Project (RETdap, 2003), which is the most comprehensive project in the field of RE in the country recognizes the following RE application as potential alternatives for traditional fossil fuel technologies:

- Solar photovoltaic and wind power systems used in hybrid systems with diesel generators in the (outer) islands.

- Landfill gas recovery and utilization in the island of Thilafushi where biologically degradable waste from Male' is disposed.
- Possible use of household or village bio-digesters to produce biogas out of kitchen waste and other agricultural waste; and
- Passive solar technology in water heating, fish and crop drying, seawater desalination and other applications.

The national energy policy encourages the development of renewable energy resources. The price paid for electricity from renewable energy resources in the country is same as from the conventional resources. There is no subsidy for the development and use of renewable energy resources. The development of renewable in the country is slow.

10. Future Outlook for Energy Demand and Supply

The Maldives is a net energy importer of petroleum products. There is no major energy production in the country except for electricity production from diesel fired power stations. Energy demand and supply analysis are given in Table 5 and 6.

Table 5: Energy Demand Forecast

Type	Year 2000	Year 2010	Year 2020
Petroleum liquids (bpd)	3,136	9,942	16,606

Source: Country Watch Forecast

Table 6: Energy Supply Forecast

Type	Year 2000	Year 2010	Year 2020
Petroleum liquids (bpd)	3,136	9,942	16,606

Source: Country Watch Forecast

Source : Mr. Abdulla Wahid, GB Member, SEC