MALDIVES NATIONAL ENERGY POLICY & STRATEGY

Ministry of Housing and Environment
2010

Contents

List of Abbreviations

ADB	Asian Development Bank
CCS	Carbon capture and sequestration
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
GEF	Global Environmental Facility
GHG	Green House Gas
HEA	Hydrocarbon Exploration Act
IMF	International Monetary Fund
JICA	Japan International Cooperation Agency
LPG	Liquefied Petroleum Gas
MEA	Maldives Energy Authority
OTEC	Ocean Thermal Energy Conversion
RE	Renewable Energy
STELCO	State Electric Company Limited
TOE	Tons of Oil Equivalent
UNFCCC	United Nations Framework Convention on Climate Change
UNDP	United Nations Development Program

Foreword

Energy is crucial for development, notably for a small island nation such as the Maldives that is heavily dependent on imported fuel for meeting all of its energy needs and highly vulnerable to external shocks. The Government is aware and concerned about environmental degradation while deeming it necessary to provide a reliable, affordable and sustainable energy supply to all citizens. As such the Government has set itself the ambitious goal of becoming a carbon neutral country by 2020. The need to set concrete policies and strategies to direct the development of the energy sector is essential to implement and achieve the Government's overall objectives.

The National Energy Policy and Strategy is significant in that it embodies the principles that are set out in the Strategic Action Plan of the Government and provides for developing greater sustainability, conservation and efficiency in energy whilst promoting low carbon technologies and the quality of energy supply. The National Energy Policy and Strategy has been compiled based on comprehensive energy end use analysis that was initiated as a means of determining the energy use patterns of various sectors. Workshops and interviews in rural areas in the atolls and with energy providers were conducted to gather first-hand information. The results of the consultations and data analysis provided the necessary information regarding potential areas for energy efficiency applications and will serve to guide activities.

The success of the Energy Policy and Strategy set out henceforth is achievable through our collective commitment and participation.

I would like to express my deep gratitude to respective Government Authorities, Utility Companies, UNDP, GEF, NGOs and everyone for their contribution to this work. I am also grateful to the officials of the Climate Change and Energy Department of the Ministry of Housing and Environment.

I am confident that with the support of all parties we can achieve the goals and targets encompassed in this document.

27 September 2010
Mohamed Aslam
Minister of Housing and Environment

Male' the capital island

The Need & Urgency for a National Energy Policy

Energy needs for the Maldives are primarily met through the import of fossil fuels since the Maldives does not have access to conventional sources of energy. Energy security is critical for the Maldives whose 300,000 plus population reside in over 190 islands that are flung across more than a 100,000 square kilometers of the Indian Ocean. Economic progress and social development are at risk as the country depends on an unpredictable global market for its energy resources.

The islands and natural habitat of the Maldives have been ideal and conducive for economic progress with the growth of a robust tourism sector that makes up a third of the gross domestic product and the growth of fisheries which is the biggest contributor to export receipts and employment. Both sectors are energy intensive with the tourism sector being the single most energy intensive sector in the economy. Other sectors such as fisheries and construction also rely heavily on energy. Thus, the entire economy of the country is extremely vulnerable to external shocks caused by fluctuations in the price of fossil fuels.

At the same time, land is an extremely scarce resource in the Maldives. It is estimated that the 1190 island of the Maldives combined have an approximate total land area of 300 square kilometers. This has meant that Maldives relies heavily on imports to meet all of its demands including basic necessities of life such as food, water and shelter. Inhabited islands have a limited supply of freshwater in the ground and land for agricultural uses is usually non-existent. Thus, air and sea based distribution is essential for many primarily in terms of food security.

The spread of population also means that access to social services such as healthcare and education and the delivery of these services is not possible without transport and complicated logistics. The Government is consciously taking measures to minimize distances to social and public services by providing all services to clusters of islands.

The Government of Maldives recognizes that adequate energy supplies are important for food security, the delivery of essential public services, social equity and protection of vulnerable

groups including women and children, governance and for economic growth throughout all of its inhabited islands and as such the Government considers energy security a right of every citizen and is committed to the provision of energy resources at the lowest cost to all Maldivians.

The Government is addressing the significant growth in developmental activities at regional and national level that has led to an escalation in the use of energy by restructuring transport networks using regional hubs rather than the capital Male', privatization and opening of markets to energy suppliers and promoting renewable energy. The country can no longer rely entirely on imports to meet its energy demands in order to sustain socio-economic development, thus, the urgency for developing policies to guide the growth of the energy sector, to ensure effective use of energy and for the management of the sector.

Furthermore, the Government has set an ambitious national goal of achieving carbon neutrality by 2020 to mitigate the use of fossil fuels by adopting renewable sources and achieving greater energy efficiency. Energy efficiency is therefore a central component of the National Energy Policy and will help reduce, greenhouse gas emissions and energy costs, and contribute directly to energy security and affordable energy. Developing energy efficient products and services will support the growth of the energy sector and create jobs.

International cooperation and commitments were a fundamental consideration in the formulation of the policies and strategies herein. The Maldives was one of the first countries to sign the Kyoto Protocol and ratify it in 1998. The Maldives is also a member of the UN Framework Convention on Climate Change (UNFCCC).

Institutional Framework for the Energy sector

Lead agency

Climate Change and Energy Department
Ministry of Housing and Environment

Regulatory body

Maldives Energy Authority

Government Institutions and their role in the Energy Sector

The President's Office – Overall policy guidance.

Ministry of Finance Treasury – Assists in seeking external and domestic finance to develop the energy sector

Department of National Planning – Develop, coordinate and monitor the Strategic Action Plan of the Government, provide inter-sectoral policy coordination and implement development projects.

National Disaster Management Centre – Coordinate emergency relief efforts across sectors and supply fuel and mobile electricity generators in an emergency

Ministry of Economic Development – Assist in the development of business models to promote domestic and foreign investment opportunities for energy sector development.

Province offices – Involved in the decentralization of the energy sector

Ministry of Education – Assist in mainstreaming energy issues including renewable energy, energy conservation and develop an interest for people to work in the sector.

Maldives College of Higher education – Training institution for technical energy sector related programme delivery among others.

Attorney General's Office – Assist the lead agency in development of a national legal framework for energy-related acts and regulations

People's Majlis – Legislature

Ministry of Tourism, Arts and Culture – Implements energy regulations as well as offers the opportunity to learn from innovative private sector energy development programs

Marine Research Centre - Collects ocean-related data for exploring possible energy options (OTEC, ocean current, OTE)

Environment Protection Agency - Assists in the development of environmentally sound energy sector and its monitoring. (Energy-related EIAs)

Maldives Meteorological Services – Data repository and forecasting for renewable energy sources like solar and wind power

Ministry of Communication and Civil Aviation - Formulates the national Science and Technology Master Plan

Utility Companies – State owned providers of energy and other utility services in the provinces.

Maldives Customs Services – collaborates on energy imports and exports to the country

Ministry of Health and Family - Identifies health-impact in relation to energy use and power generation.

Local governance system

Province Offices – Oversee regional utilities in providing energy to the communities and assist in the decentralization of the lead agencies policies and strategies

Atoll Councils – Assess needs for power and energy requirements at atoll level.

Island Councils - Assess needs for power and energy requirements at island level.

Private sector involvement

Fuel importers and distributors, energy technology distributors and engineering companies

Private power producers (resort islands, Independent power producers, etc.) Energy consultants and engineers

International Partner Organizations and Bilateral Partners

UNDP, the UN system, GEF, the World Bank Group, ADB, JICA, Bilateral donors and friendly countries for financial and technical assistance

Legal Framework

Formulate energy Act/ Law

Legal framework to provide incentives for renewable energy technologies, energy efficiency and energy conservation

Revision/establishment of Maldives electricity regulation and standards

Establishment of Maldives energy standards

Ensuring inclusion of energy efficiency and conservation measures in the relevant sector codes: water, transport, waste management, heating and cooling, building code and the residential sector.

Guiding Principles

- *Create an enabling environment for the growth of a reliable and sustainable energy sector and meet the constitutional obligation of Government in the provision of electricity to every inhabited island at reasonable standards commensurate to the island.*
- *Reduce overreliance of the energy sector and the national economy on fossil fuels through the diversification of energy supplies*
- *Improve energy efficiency and conservation of energy use*
- *Encourage the adoption of low-carbon technologies in production, distribution and energy consumption through promotion of a healthy lifestyle*
- *Exploit local energy resources and renewable technologies*
- *Engage private sector participation in the development of the energy sector, energy services and quality assurance mechanisms*
- *Ensure energy equity through social protection mechanisms and/or safety nets for vulnerable groups of the population.*

Energy demands for seaplanes and sea transport are amongst the highest

Energy Supply and Utilization

Energy Supply

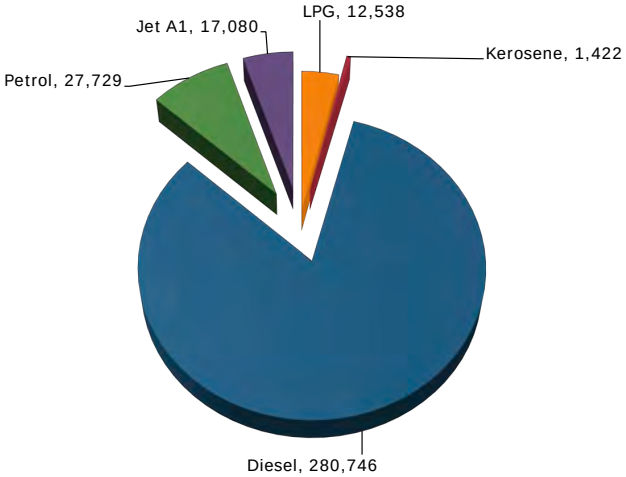
The Government is acutely aware of the changing international energy landscape. Growing global populations and strong growth of emerging markets are compelling demand for conventional energy resources and burdening global energy supplies. Energy supplies are at further risk from geopolitical tensions and natural disasters. It is in this increasingly challenging international context that Maldives needs address the security of its energy supplies.

The Maldives is entirely dependent on imports of fossil fuels to meet its energy needs. Imported fossil fuels, primarily diesel dominate energy consumption making up 82% of the total primary energy demand. Since the Maldives has not been successful in finding its own oil reserves, the steady supply of petroleum products is strategically critical for continued economic growth and social development for the country. Diesel and petrol are significant inputs to the tourism, fishing and transport sectors that together directly contribute to more than 50 percent of gross domestic product.

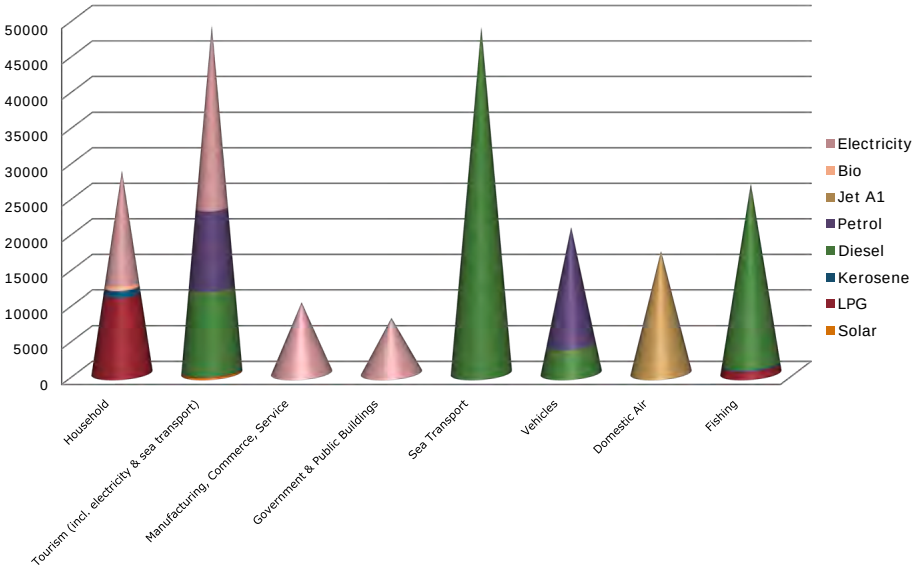
International energy prices are therefore closely monitored by the Government to anticipate shocks and introduce appropriate measures such as taxes, levies and/or concessions for vulnerable sectors such as fishing so that the impact of fluctuating international oil prices on the economy is minimized.

The national energy policy and strategy attempts to pave the way to increase renewable and other low-carbon technologies into our energy mix and propel the country towards a low-carbon economy through the implementation of a an appropriate market strategy that mitigates the demand for fossil fuels in the country.

Energy Imports by Fuel type in toe 2009



Energy Consumption by Sector and type of fuel in toe 2009



Energy Utilization

National energy consumption in the Maldives increased from 223,970 tons of oil equivalent (toe) in 2002 to 340,311 toe in 2009 due to a rise in the demand for electricity and transportation. Electricity generation is by far the single largest consumer of imported fuels. The production of electricity is the fastest growing energy consumption sector led by increased electrification of inhabited islands and growth in the tourism industry. Approximately two thirds of all electricity produced in the country is produced and consumed in tourist resorts. Producers of electricity in the Maldives are the State Electric Company (STELCO), which until recently supplied power to 32 main population centres in the Maldives, provincial utility companies, community or private run operators on inhabited islands, tourist resort island producers and electricity produced in islands designated for industrial processes such as fisheries processing. Electricity generation for the capital Male' and its satellite islands Hulhumale' and Vilingili accounts for approximately 62 percent of the total power generated for all inhabited islands in the country.

Energy demand in the Maldives is expected to continue to grow at more than 8.5 % per annum. The growing demand for energy consumption is attributed to the rising number of modern high rise buildings with increased use of air conditioning and the increase in the number of vessels and vehicles for transportation.

Diesel accounts for 82 percent of the total primary energy demand in the country. In 2009, 280,746 toe of diesel was consumed in the country of which 67.7 percent was utilized for electricity generation, 21 percent for sea transport, 8.9 by fishing boats and 1 percent for land transport. The demand for diesel by the tourism sector for electricity generation, sea transport and leisure activities amounts to 36.6 percent of the diesel imported in 2009.

Rising fuel prices has meant that the Government has had to subsidize the operational cost of electricity generation in Male' and other inhabited islands to maintain the stability of the price of electricity which in turn has imposed a significant burden on the Government's budget.

At the same time, financial support and intervention by the Government has contributed to the success of improving access to electricity for the entire population. Access to electricity rose from two-thirds with access to 100 percent within the past decade.

Electricity generation plant in the capital

Energy Policy Statements

Renewable Technologies

Affordable

Growth

Sustainable

Carbon Neutrality

Security

Efficiency & Conservation

More than 190 small islands are inhabited

POLICY 1: Provide all citizens with access to affordable and reliable supply of electricity

The geography of dispersed islands in the Maldives is such that a national grid to provide power to the population has not been a viable option thus far. This literally means that each island has to install and operate a power to generate electricity to meet its needs albeit at considerable costs. The Government has provided some financial assistance to many of the communities or private parties, that have installed, operate and manage their power house on inhabited islands.

The lack of regulation or national standards has resulted in the development of weak individual island grids that are unsustainable and unreliable. Reliability is further impeded by a lack of technically skilled personnel for maintenance, operation and management. It is not uncommon to find islands that have frequent power outages or are unable to provide 24 hours of electricity either due to mechanical failures or the price and availability of fuel supplies.

Electricity generation for any small island is unsustainable as it is expensive to operate and the costs of the high initial capital investment cannot be recovered. The cost of production is further exacerbated by the fact that transport costs of fuel from storage facilities near the capital island Male' is added, resulting in huge disparities between islands on electricity tariffs and in the quality of service.

STRATEGIES

- Upgrade the capacity of utility companies to manage electric power infrastructure on islands and to improve the efficiency and quality of services.
- Engage private sector participation to develop, manage and sustain electricity services.
- Source national and international investments to develop and sustain energy sector.
- Establish a transparent mechanism to provide targeted subsidies to vulnerable groups to ensure access to basic energy at affordable prices.
- Introduce incentives to power sector developers by facilitating access to grants, concessional finance and duty concessions to ensure affordability of energy supply.

Alternative resources

POLICY 2: Achieve carbon neutrality in the energy sector by year 2020

As an extremely low-lying small island state situated in the middle of the Indian Ocean, Maldives is perhaps one of the most vulnerable countries to the effects of climate change. Many of our islands are already experiencing first hand stronger storm surges, severe erosion and incidents of flooding.

On a global scale our efforts to reduce emissions of GHG will not have much effect on reversing the effects of climate change. However, Maldives announced its intention to achieve carbon neutrality at the UN General Assembly in 2009 and is committed to meeting this goal as a responsible citizen of the international community.

In 2009 GHG emissions amounted to 1,034,354 tons of carbon dioxide equivalent for the whole of Maldives of which 55.4% is from the production of electricity. The conversion efficiency of diesel to electricity varies from 26-39% and distribution losses throughout the country vary from 5-24% depending on the quality and design of the distribution system on any given island. These variances demonstrate that improvement of energy efficiency coupled with the application of renewable energy technologies is essential in the pursuit to achieve net zero carbon emissions.

STRATEGIES

- Develop and implement plans for the energy sector to include forecasts of energy usage by different sources, GHG emissions and status of carbon neutrality.
- Establish, apply and monitor targets to maintain energy source composition, efficiency and losses to achieve and sustain carbon neutrality.
- Promote carbon capture and sequestration (CCS) by conducting research and development of CCS projects necessary for the reduction of GHG emissions.
- Ensure compliance of energy sector utility companies and other energy service providers with safety standards issued by Maldives Energy Authority as well as environmental standards stipulated by the Environmental Protection Agency.
- Establish an environmental division in every energy sector utility company staffed by qualified personnel able to conduct environmental safety audits of existing and new facilities to ensure compliance with the standards and regulations under the National Environment Act.

Promote healthy lifestyles

POLICY 3: Promote energy conservation and energy efficiency

Greater efficiency and conservation of energy will benefit the country through a reduction in energy imports which directly translates into, savings for the country's foreign exchange reserves, reduced dependence on imported fossil fuels, increased energy security and reducing GHG emissions. On the supply side, measures are needed to increase efficiency particularly in the production and distribution of electricity. Conversion efficiencies in some islands are low and in others distribution losses caused by poorly designed and maintained systems are high. Reducing these variations through regulatory intervention will conserve more energy.

On the demand side, the level of awareness, our lifestyles and outlook need to be encouraged towards placing a greater importance on energy conservation and the wise consumption of resources. For example, in the Male' area, which accounts for approximately 62 percent of the total power generated for all inhabited islands in the country, households consume approximately the same amount of electricity as public, government, manufacturing and commerce sectors combined and 75% of household electricity usage is attributed to air-conditioning of homes.

STRATEGIES

- Implement advocacy and awareness programs to foster healthier and greener attitudes and behaviour in our society.
- Encourage energy efficiency in both the supply side and demand side through financial and other incentives/disincentives in respect of energy end-use and mandatory measures such as appliance energy labelling, building codes and energy audits.
- Engage and facilitate private sector participation in providing expertise and specialized services needed to increase energy efficiencies across sectors.
- Carry out awareness programs on energy efficiency and conservation as a priority and on a sustainable basis.
- Identify all areas for improvement and provide technical advice in fuel conservation and efficiency in different modes of transport, including marine and air transportation.
- Introduce incentives to encourage greater use of electric vehicles and vessels by establishing charging stations using renewable energy sources.
- Encourage utilization of waste heat from power generation for other applications (e.g. water heating, air conditioning, desalination).

Storage facility in Male'

POLICY 4: Increase national energy security

Energy security for a small island nation such as the Maldives can only be achieved through the diversification of the country's energy resources to reduce our dependency on imported fuels. The burden of rising global oil prices is compounded by the fact the Maldives relies heavily on imports to meet almost all of the country's domestic demand.

All fuel imported into the Maldives is currently stored in facilities in Male' and its neighbouring islands. The 190 or so inhabited islands are located anywhere from 3 kilometres to 541 kilometres from the capital Male'. This results in access and cost disparities across the country for fuel, electricity, food and other consumer goods. Provincial hubs are needed to be developed for storage and distribution of fuel and other imported goods such as food to ease both access and reduce cost to all energy producers as well as end-users and provide a cushioning stock in the event of any unforeseen rises in the international oil prices as well as to increase preparedness for natural disasters.

To ensure continuity of supply the energy mix must be considered along with important factors such as the economic cost, environmental impacts, reliability of supplies, convenience to consumers and strategic independence.

STRATEGIES

- Enhance national energy security by promoting indigenous renewable sources of energy while reducing the reliance on imported fossil fuels.
- Ensure fuel diversity in electricity generation through diversification in power generation technologies that do not use hydrocarbon fuels.
- Develop and maintain fuel reserves in strategic locations of the country.
- Identify feasible regions and open the fuel market for investors.
- Prepare for emergency supply needs by developing a reserve stock of energy.
- Diversify sources of fossil fuel imports.
- Encourage diversification in fuel consumption in the transport sector.
- Facilitate the implementation of a nationwide electricity grid.

His Excellency the President installs solar panels at his official residence

POLICY 5: Promote renewable energy technologies

In order to minimize the vulnerability of energy supplies to external factors, the use of indigenously available renewable energy resources for energy generation is necessary. This will in turn reduce the pressure on the country's balance of payments.

The Maldives has the potential for utilization of renewable resources such as solar, wind and biomass for energy needs. Pilot projects have been carried out and hybridized systems consisting of combinations of solar, wind, diesel and LPG have shown success in electricity generation that could be implemented nationwide. Commercial use of renewable energy is presently limited to solar photovoltaic panels in navigation lights and telecommunications systems. Solar thermal is used in some tourist resorts for water heating and lighting.

The renewable energy sector does face some barriers such as; a lack of capacities in development, design, implementation and management, lack of financing available for renewable energy applications and renewable energy based livelihood projects, as well as a lack of adequate information on the options available in renewable energy technology, renewable energy statistics and research.

STRATEGIES

- Promote the use of economically viable, environment friendly, renewable energy resources.
- Promote renewable energy sources and their advantages to the public through mass media, workshops and through a renewable energy information centre.
- Facilitate and provide research opportunities for locals and international parties through the establishment of a platform for information exchange on potential renewable energy resources and their application within the country.
- Seek concessionary external financing to improve the economic feasibility for renewable energy projects that are environmentally and socially sound.
- Assist the development of the renewable energy sector in increasing its contribution to the energy supply through the introduction of incentives and/or access to green funding that will attract the participation of the private sector.
- Facilitate research and development and technology transfer programs to aid the exchange of innovative ideas.

An example of a powerhouse that depicts a lack of standards

Strengthening the Institutional and Legal Framework of the Energy Sector

The existing legal framework requires improvement to cater to the evolving energy sector particularly with respect to meeting goals set out for renewable energy technologies, energy efficiency and energy conservation. Specific regulation for governing areas such as independent power generation, and the pricing and use of renewable energy technologies are currently not in place. Therefore, formulation of a Maldives Energy Act, a Maldives Hydrocarbon Exploration Act, Maldives Energy Standards and incorporation of energy efficiency and conservation measures into the national building code is critical.

Likewise, institutions in the energy sector are weak in terms of technical capacity to effectively deliver technical and regulatory functions for a vibrant energy sector. Hence it is important that the regulatory and policy making institutions are developed with defined roles and responsibilities and the technical capabilities to perform their functions.

POLICY 6: Strengthen the management capacity of the energy sector

The lead agency for the energy sector the Ministry of Housing and Environment and the regulatory authority the Maldives Energy Authority needs to develop local capacity to manage the energy sector effectively and to keep abreast with technological developments and good governance practices. There is insufficient capacity as the needs of these two institutions have not been regularly assessed or catered for. The Maldives Energy Authority is severely understaffed.

STRATEGIES

- Improve the capacity of the Ministry that is mandated for the energy sector in a sustainable manner ensuring continuity of capacity development to strengthen the Ministry in developing integrated long-term energy plans and conducting policy analysis for the energy sector.
- Improve the capacity within the Provincial Utility companies to enhance and expand their contribution to energy supply development.
- Develop and manage a national energy database.
- Develop management capabilities of the energy sector institutions through appropriate training, empowerment and proper delegation of authority.

POLICY 7: Adopt an appropriate pricing policy for the energy sector

In Maldives, the energy pricing structure follows a top-down approach. The Trade Ministry sets energy prices, which are implemented by most local bodies with minor adaptations. However, electricity pricing is a little more diffused for the provincial utility companies that determine electricity tariffs which are then approved by the Maldives Energy Authority.

The lack of a proper regulatory mechanism has led to non-cost reflective price. Making it difficult for companies that operate in the energy sector to become financially feasible. In addition, non-targeted subsidization of electricity production in the past has diverted the states scarce financial resources.

The Maldives Energy Authority needs to be strengthened to deliver the functions of regular review of pricing policies and to take action against noncompliance under this policy.

STRATEGIES

- Empower Maldives Energy Authority (MEA) to regulate the energy sector and the pricing policy.
- Formulate and implement pricing strategies to achieve a cost-reflective pricing policy for all commercial energy products (electricity, petroleum products, etc.).
- Formulate and implement optimal energy supply expansion plans for the energy sector to ensure cost-reflective prices

POLICY 8: Ensure customer protection

Existing regulations does not include adequate measures to protect the customers' rights and to safeguard their interests.

STRATEGIES

- Protect the rights and interests of energy utilizing customers through the formulation and adoption of a law and/or regulations.
- Empower and support MEA to ensure fairness to the customers of various energy products and services.

POLICY 9: Enhance the quality of energy services

The sector lacks standards to ensure that energy services meet quality requirements. The variation of the quality of energy services and prices particularly electricity throughout the islands of the Maldives produces inequalities in access as well as quality.

STRATEGIES

- Standardize the quality of services provided by energy suppliers through the formulation and adoption of a law and/or regulations.
- Introduce disincentive mechanisms to maintain a minimum standard of quality in the supply of energy products and services.

Contributors

Mr. Amjad Abdulla
Ministry of Housing and Environment

Mr. Ahmed Ali
Ministry of Housing and Environment

Mr. Ali Shareef
Ministry of Housing and Environment

Mr. Zammath Khaleel
Ministry of Housing and Environment

Mr. Akram Waheed
Ministry of Housing and Environment

Ms. Fathimath Raufa Moosa
Ministry of Housing and Environment

Mr. Mohamed Asif
Ministry of Housing and Environment

Mr. Mohamed Rasheed
M. Maadu

Mr. Abdul Gayoom
Upper North Utilities Ltd.

Dr. Ibrahim Nashid
Renewable Energy Maldives Pvt. Ltd.

Mr. Abdullah Nazih
Maldives Water and Sewerage Company

Dr. Zaid Mohamed
State Electric Company Ltd.

Mr. Ali Azwar
State Electric Company Ltd.

Mr. Ibrahim Athif
State Electric Company Ltd.

Mr. Ahmed Iqbal
State Electric Company Ltd.

Ms. Jimzeena Musthafa
Ministry of Tourism, Arts and Culture

Mr. Muawiyath Shareef
Maldives Energy Authority

Mr. Adam Manik
Ministry of Fisheries and Agriculture

Ms. Hudha Ahmed
Climate Change Advisory Council

Mr. Ali Hassan
Northern Utilities Ltd.

Mr. Ayathulla Hussain
Northern Utilities Ltd.

Ms. Fathimath Niuma
President's Office / Invest Maldives

Mr. Abdulla Wahid
Maldives Meteorological Services

Mr. Mohamed Inaz
UNDP

Mr. Ryo Hamaguchi
UNDP

Ms. Razana Ibrahim
Attorney General's Office

Reviewers

Mr. Ahmed Saleem
Ministry of Housing and Environment

Mr. Ahmed Ali
Ministry of Housing and Environment

Mr. Ali Shareef
Ministry of Housing and Environment

Mr. Zammath Khaleel
Ministry of Housing and Environment

Ms. Fathimath Raufa Moosa
Ministry of Housing and Environment

Mr. Akram Waheed
Ministry of Housing and Environment

Mr. Ahmed Yasir
Maldives Environment Management Project

Ms. Najfa Shaheem Razee
ICCRRIP Project

Photo Credits

Ministry of Housing and Environment	4
Ministry of Housing and Environment	10
Ministry of Housing and Environment	14
Ministry of Housing and Environment	16
Ministry of Housing and Environment	18
Ministry of Housing and Environment	20
Ministry of Housing and Environment	22
Mohamed Ali, The President's Office	24
Ministry of Housing and Environment	26

Ministry of Housing and Environment
Male', 20392
Republic of Maldives
tel: +960 3004300
fax: +960 3004301
email: secretariat@mhte.gov.mv
website: www.mhte.gov.mv

design & layout - najfa shaheem razee