

## **2. Policies for renewable energies/biomass in Sri Lanka**

Sri Lanka's Energy Sector concentrates on ensuring a continuous supply of electricity and thermal energy products. Commercial energy utilities require to be further strengthened to improve their financial viability and service quality. The involvement of the country's population in planning and delivering energy services needs to be increased. The proper policies should be in place as the growing economy has to manage the strategic balance between indigenous energy sources and imported fossil fuels. Electricity services are yet to reach a quarter of Sri Lanka's population.

The intense lobbying of BEASL during the last couple of years has attracted the attention of the Government of Sri Lanka for creating a better policy environment for the promotion of the renewable energy technologies.

Ministry of Power and Energy on behalf of Government of Sri Lanka is in the process of finalizing the National Energy Policy and Strategies of Sri Lanka. This report declares the Energy Policy, and spells out the implementing strategies, specific targets and milestones through which the Government of Sri Lanka and its people would endeavour to develop and manage the energy sector in the coming years. Specific new initiatives are included in this policy to expand the delivery of affordable energy services to a larger share of the population, to improve energy sector planning, management and regulation, and to revitalise biomass as a significant source of commercial energy.

Institutional responsibilities to implement each policy element and associated strategies to reach the specified targets are also stated in this Energy Policy. Ministry of Power and Energy has discussed this Energy Policy among a wide group of stakeholders and made the necessary amendments before this Policy is published as the official Energy Policy of the Government of Sri Lanka. Parallel to this initiative the Ministry of Power and Energy has taken steps to establish an authority under the name of Sustainable Energy Authority of Sri Lanka for creating a better environment for renewable energy and for achieving specific targets and milestones of the National Energy Policy. Further the Government of Sri Lanka has hired The Energy Research Institute (TERI) of India for recommending a suitable tariff structure for renewable energy.

Following are the key policy decisions highlighted in the draft report on National Energy Policy.

### **2.1 National Energy Policy Declaration**

#### *2.1.1 Providing Basic Energy Needs*

Creating the necessary framework to provide the basic energy needs of the population is recognised as a primary social responsibility of the state.

#### *2.1.2 Ensuring Energy Security*

The primary and secondary energy sources used in the country will be diversified to maximise the country's energy security. To ensure the continuity of supply, the future energy mix will be optimised considering important factors such as the economic cost,

environmental impacts, reliability of supplies, convenience to consumers and strategic independence.

### *2.1.3 Promoting Indigenous Resources*

Minimum dependence on non-indigenous resources and optimum development of local energy resources will minimise the vulnerability of energy supplies to external factors such as the international socio-political environment. Further, it also eases pressure on the country's balance of payment. The Energy Policy includes necessary initiatives to vigorously implement the country's oil and gas exploration programme.

### *2.1.4 Enhancing Energy Sector Management Capacity*

The local capacity to develop and manage the energy sector has been built over the years. This capacity needs to be constantly enhanced taking into account the continuous technological developments in the energy sector. The management capability of the energy sector professionals needs to be enhanced to meet challenges in the emerging competitive environment in the sector and ensuring good governance.

### *2.1.5 Consumer Protection and Ensuring a Level Playing Field*

The State accepts that consumers, the main stake holders, do not enjoy their rightful place in the electricity/petroleum sub-sectors. Also, the country has so far failed to prove to investors the stability of the energy sector and also exhibit a level playing field. Therefore necessary steps will be taken to protect the interests of the consumers and also ensure fairness and predictability to all energy sector investors.

### *2.1.6 Protection from Adverse Environmental Impacts Arising through Development and Operation of Energy Facilities*

Adverse impacts to society and the environmental hazards arising out of the electricity and petroleum sub-sector activities have not been receiving adequate attention of the relevant utilities. Every year a considerable number of valuable lives are lost due to such impacts. The State recognises that it is its duty to protect the public and its employees in this respect.

## **2.2 Implementing strategies**

The broad strategies to implement the energy sector policy formulated above are as follows:

### *2.2.1 Providing Basic Energy Needs*

- Priority will be given to improving access by rural areas to commercial energy forms such as electricity and petroleum products.
- Dedicated energy plantations will be encouraged in the geographical areas having a deficit of biomass supplies.
- Current modalities of providing basic electricity requirements of the entire population either through grid-extension or off-grid systems will be expanded and a systematic action-plan implemented to meet those requirements.
- A transparent mechanism will be established to provide subsidies to the deserving groups to ensure that such groups have access to their basic energy needs at

affordable prices. This includes providing low cost standardised electricity connections to consumers on lifeline tariffs both in urban and rural areas.

### 2.2.2 *Ensuring Energy Security*

- Fuel diversity in electricity generation will be ensured through diversifying into non-oil generation technologies.
- Fuel diversification in the transport sector will be encouraged through transport systems based on off-peak electricity.
- Regional cooperation will be promoted in the energy sector in different forms including viable cross-border energy transfer with neighbouring countries.

### 2.2.3 *Promoting Indigenous Resources*

- The use of economically viable, environmentally friendly, non-conventional renewable energy sources will be promoted by providing a level playing field to both conventional and non-conventional energy sources.
- Concessionary financing will be sought to implement hydroelectric projects which are economically, environmentally and socially viable, but not viable under normal commercial terms.
- Necessary incentives will be provided to develop other renewable non-conventional energy resources when necessary to ensure their contribution to the energy supply in special situations even if they are marginally viable economically.
- A separate facilitation centre dedicated to the systematic planning and promotion of non-conventional renewable energy sources will be established.
- Oil and natural gas resources will be explored and commercially exploited; both public and private sector investment will be promoted in this regard.
- Biomass-based energy projects will be developed in areas where land resources are available, enabling a new industrial activity in such areas emphasising on creating rural income generation avenues.
- Research and development on adopting new technologies and practices, particularly in the use of non-conventional renewable energy, to suit local conditions will be promoted.
- Initiatives of other institutions to convert biomass and other waste to energy will be encouraged and supported where appropriate.

### 2.2.4 *Consumer Protection and Ensuring a Level Playing Field*

- A conducive environment will be created for the PUCSL to ensure a level playing field for all the stakeholders in the energy sector.

### 2.2.5 *Protecting the public and the environment from dangers arising out of development and operation of energy sector facilities*

- Every energy sector utility will establish an environmental division with staff qualified to conduct environmental safety audits of existing and new facilities to comply with or exceed the standards and regulations under the National Environment Act.

### 2.3 Specific Targets, Milestones and Institutional Arrangements

This section deals with specific targets and milestones to be achieved when implementing the strategies identified. Further the institutions responsible of implementation of these strategies are also identified in this sector against each activity.

#### 2.3.1 Electrification of Households

Electricity will be made available to all possible areas using the national grid extension projects and a focussed rural energy initiative using off-grid technologies.

- Medium-term targets for electrification of households through grid extension

Year	Total Households to be provided access to the grid
2010	80%

- Medium-term Targets for off-grid electrification of households

Year	Total Households using off-grid electricity systems
2010	6%

***Institutional responsibility:*** Ministry of Power and Energy shall prepare a long-term electrification plan, updated every year, and would be responsible for its implementation, with the support of the PUCSL, electricity supply utilities, Energy Conservation Fund, Provincial Councils, NGOs and appropriate financial institutions.

#### 2.3.2 Targeted Subsidies

Subsidised electricity and kerosene shall be provided for household use on the following basis:

- (a) Electricity:

Year	Quantity Provided	Target of subsidy	Level of subsidy	Method of subsidy
2006	Electrified Households- 30 kWh per month	To all the Samurdhi Beneficiaries	50% of cost of supply	Entire subsidy to be provided by the Treasury from saving accrued through elimination of cross-subsidies in electricity tariff now in effect for social reasons.
	Non-Electrified		Coupons to the value of the electricity subsidy will be provided	

- (b) Kerosene:

Ten litres of kerosene per month to all the Samurdhi Beneficiaries

***Institutional Responsibility:*** Ministry of Power and Energy to provide any further policy guidelines directives to PUCSL., PUCSL shall prepare plans to provide the targeted subsidies.

### 2.3.3 Electricity Sector Fuel Diversity

- The electricity sector shall rapidly move from the present two energy source (hydropower and oil) status to a **multi source** (hydropower, oil, coal and non-conventional renewable energy) status.
- The Government shall not initiate or entertain any proposal either by the electric utilities or private developers to build power plants that will use oil, oil-based products or fuels of which the price is indexed to the oil price unless they are required to be included in the expansion plan due to technical limitations in other plant types. This **moratorium on oil-based power plants** shall be factored into the CEB's Long Term Generation Expansion Plan (LTGEP) and shall remain in force until Sri Lanka's electricity generation to the national grid has achieved a level of 80% diversity into non-oil based fuels. The strategy of the Government shall be to immediately diversify into a **third fuel**. To ensure maximum possible security against price and supply fluctuations, this third fuel shall be **coal**. The LTGEP studies confirm the viability of this strategy. Following are the envisaged electricity generation targets with non-conventional renewable energy (NRE) combined with coal based energy

**Table 1 Targets for source of power production**

Year	Conventional Hydroelectric	Oil	Coal and NRE	Comments
1995	94%	6%	0%	-
2000	45%	54%	1%	-
2005	51%	47%	2%	Moratorium on power plants burning oil or similarly priced oil/gas products
2010	40%	40%	20%	Progressive diversification into coal and NRE
2015	28%	8%	64%	Moratorium on power plants burning oil or similarly priced oil / gas products may be lifted
2020	19%	4%	77%	Caution on possible over-dominance by coal
2025	13%	7%	80%	- do -

***Institutional responsibility*** to implement this fuel diversity policy will lie with the PUCSL and the Ceylon Electricity Board (CEB.) The CEB's Long-Term Generation Expansion Plan (LTGEP) shall reflect the above strategy and milestones. LTGEP shall be a 20-year plan, updated once in two years.

### 2.3.4 Non-conventional Renewable Energy (NRE) Based Electricity in the Grid

- NRE Sources include **small-scale hydropower, biomass including dendro power and wind energy**. These are the three leading sustainable, non-

conventional forms of renewable energy promoted in Sri Lanka for electricity generation into the grid.

- Commercial development of biomass will be encouraged and facilitated as a new rural industry, allowing rural poor to engage in fuelwood farming and participate in the mainstream economic activity by supplying electricity to urban load centres. By 2010, such Dendro power plants are targeted to reach a cumulative capacity of 100 MW, providing income generation avenues to more than 100,000 families.
- The Government will endeavour to reach a level of **10%** of grid electricity using NRE. The target year to reach this level of NRE penetration is **2015**. The NRE strategy shall not cause any additional burden on the end use customer tariffs. If justified, the grid operating utility may be subsidized by the Government for this purpose.
- The Government recognises that certain NRE technologies would require incentives to ensure their capacity build-up to contribute to the national NRE target. These incentives shall be provided on a competitive basis, in which the NRE developers shall bid for a share of the NRE target subject to a price ceiling. NRE incentives shall be technology-specific and based on actual energy production.
- To make available the incentives for NRE technologies, the Government will create an ‘Energy Fund’, which will be managed by the Energy Conservation Fund (ECF). This fund will be strengthened through an energy cess, grants received from donors and well wishers as well as any funds received under the "Clean Development Mechanism". This fund will be used to provide incentives for the promotion of NRE technologies and strengthen the transmission network to absorb the NRE technologies into the grid.
- NRE developments will not be charged any resource charge (royalty) for a period of 12 years from the commercial operation date. Thereafter, while electricity utilities shall continue to pay NRE suppliers on the basis of avoided costs payable for non-centrally dispatched power plants determined by the utilities and approved by the PUCSL, the Government shall charge a resource charge for the primary source of energy. The resource charges shall be used to finance incentives for further NRE development through the Energy Fund.

***Institutional responsibility** to implement this NRE strategy shall lie with the PUCSL and the Energy Conservation Fund (ECF). ECF shall prepare a Long-term Non-conventional Renewable Energy Plan (LTNREP), which shall provide interim targets for specific NRE technologies, upper thresholds of pricing and resource costing. The LTNREP shall be a 20-year plan, updated once in two years. Implementation of the LTNREP shall be promoted and facilitated by ECF.*

### 2.3.5 National Energy Database and Integrated National Energy Planning

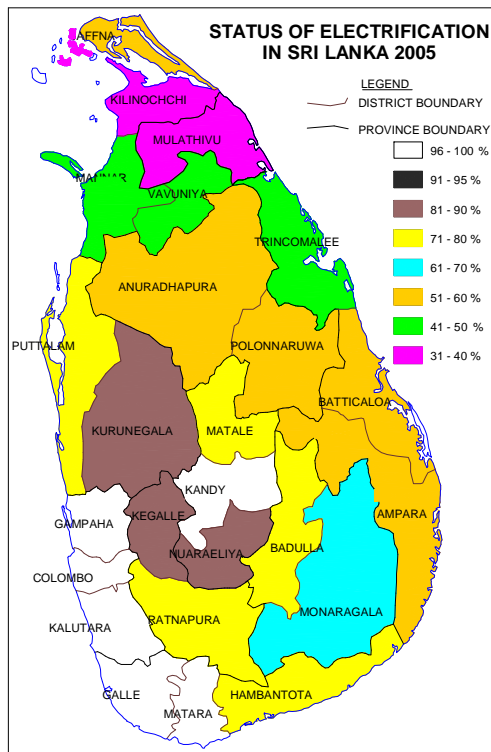
- Ministry of Power and Energy shall immediately establish a **national energy planning team**, to address the policy issues, inter-linkages between sub-sectors, and to investigate important issues such as pricing policy.

- The planning team shall, by **end of 2006**, establish improved if necessary to develop demand forecasts, simulate development scenarios, integrate sectoral plans, conduct sensitivity studies, analyse policy options, and develop forecast energy balances in collaboration with the department of national planning.
- The **National Energy Database** and the analysis on **Energy Sector Performance** shall be updated every year. Summary information of these shall be available on a website, and detailed information will be provided on request. The first publication shall be for energy data updated until year 2003, to be published by mid 2006.

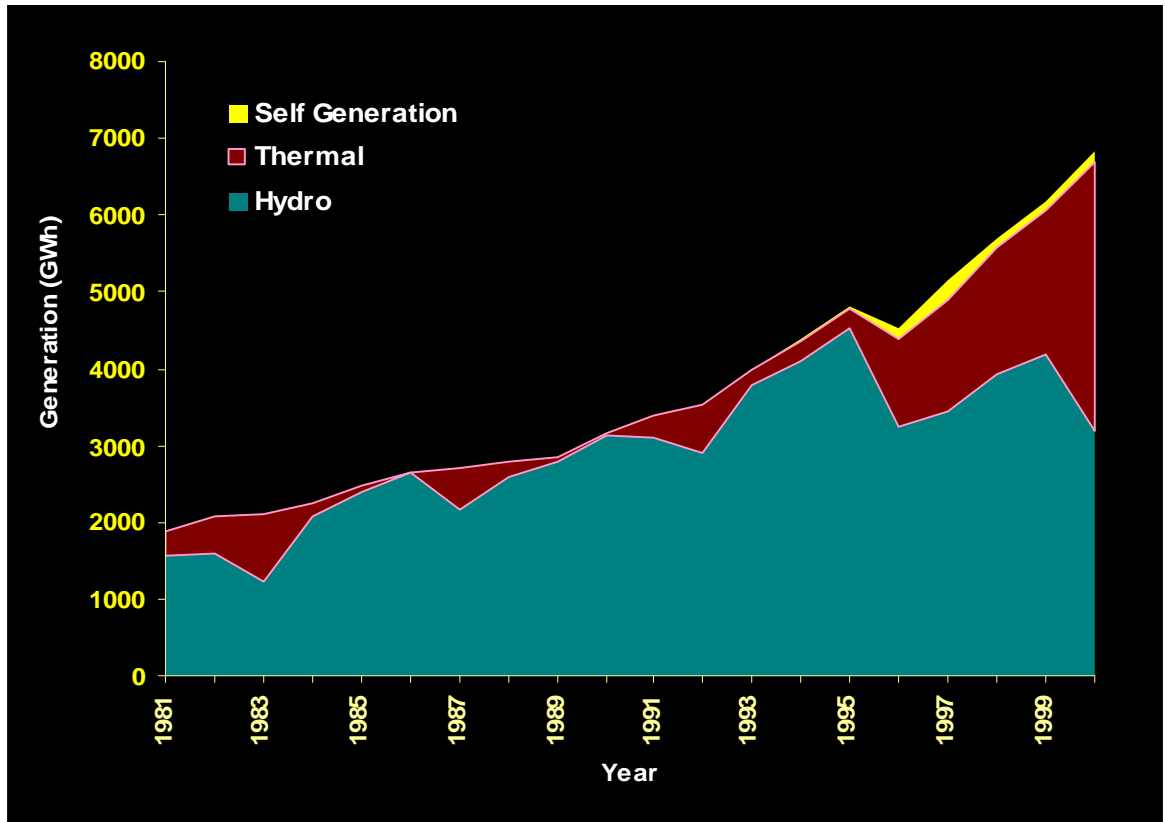
**Implementation Responsibility:** *An integrated national energy plan to cover 25 years into the future shall be prepared by the National Energy Planning Team of the Ministry of Power and Energy, and published at least once in two years.*

### 2.3.6 Rural Electrification

A special fund will be created for the purpose of funding the rural electrification (RE) programs. All donor funds, government contributions and contributions from the future distribution companies, (as would be decided by the PUCSL) will be the main sources of funds. The practice hitherto followed in RE programmes will be closely examined. In this context the government will study the policies/programs adopted by other developing countries of auctioning subsidies etc, to carry out RE work at a reduced cost. The government will also seriously consider entrusting the management of RE schemes to consumer co-operatives, a policy successfully implemented by some developing countries.



**Figure 1 Electricity generation in Sri Lanka**



**Figure 2 Sources of power generation in Sri Lanka**