Annual Report 2012

Sri Lanka Sustainable Energy Authority

Message from the Chairman

It is with great pleasure that I write this brief message for the Annual Report of 2012 as the Chairman of Sri Lanka Sustainable Energy Authority.

The power generation industry of the country has significantly shifted its reliance from the hydro sources towards thermal power during the recent past. This should be viewed with concern as Sri Lanka is lacking its own coal or oil resources, making the country largely dependent on the crude oil imports. With the increasing global demand for oil and the associated increase in the oil prices, this will not place the country's economy at its most favourable status. Hence the sustainable approach for the development in energy sector in the country should be given due consideration. SLSEA, established under the Sri Lanka Sustainable Energy Authority Act, No. 35 of 2007 is the focal government entity that develops and implements policies for the enhancement of renewable energy sector and energy conservation in the country. The main objective of the authority is to assist the government in achieving social and economic benefits for the country

through realizing energy security by means of facilitating renewable energy, energy efficiency and productive energy delivery. Emphasizing the significance of this concept in national policy formulation, through the 'MahindaChinthana' vision, targets have been set to increase the share of grid electricity from new renewable energy (NRE) up to 20% and the energy saving potential to the actual consumption by 8.7% by the year 2020 in. Achieving these targets will promote the utilization of ample indigenous resources in the country, while making the energy sector more energy efficient and environmental friendly. The NRE sources, namely the mini-hydro, wind, solar and biomass, have gained more attention in conception and in practice. Out of the gross generation of electricity in 2012, 6.3% has been generated from NRE. SLSEA keeps records of the renewable energy sources in Sri Lanka through resource mapping, with the intention of identifying the potential areas to establish and facilitate renewable energy development projects with highest yield.

Energy management and energy efficiency services play a key role in curtailing the energy wastage and implementing energy conservation measures in different sectors. SLSEA has identified four strategic steps for national energy management, including regulatory interventions, energy efficiency services, enhancing awareness on energy conservation and facilitating funding schemes for energy efficiency improvement. Under this procedure, SLSEA has been able to join accredited energy managers and energy auditors to the national energy management force. The energy conservation achievements in target sectors can ease the requirement for addition of new electricity generation capacity, proving to be a more cost effective method for realizing energy security. Therefore, it is given a high priority in formulating energy policies and mandates.

The Board of Management, Director General and the staff members of SLSEA are mentioned with sincere gratitude for the untiring efforts in achieving an energy secure future for the country through sustainable energy interventions.

Thank you.

Dr. KithsiriDissanayake

Chairman

Message from the Director General

It is with contentment that I bring you this brief statement for the Annual Report of Sri Lanka Sustainable Energy Authority (SLSEA). I take this as a unique opportunity to recollect the key achievements of the authority in the year 2012.

SLSEA, since its inception in October 2007, has been guiding the nation towards achieving an energy secure Sri Lanka through embracing the best sustainability practices. Through the tireless efforts of a dedicated team, we have been able to achieve significant developments in the renewable energy and energy conservation and management sectors. The year 2012 has made remarkable progress in identifying and promoting the newrenewable energy (NRE) sources such as mini hydro, wind, solar and biomass power plants. Using the NRE sources commissioned by SLSEA, it was able to connect 25.61 MW of power plants to the national grid in the year 2012 alone, accounting for a total of 243 MW since the beginning. SLSEA has been able to achieve a significant energy saving of 448.3 GWh in the year 2012 through the commencement of energy efficiency measures in the domestic, industrial and commercial sectors. This was equal to 4.1% of the total energy consumption of the country in year 2012.Moreover, a noteworthy saving of 715 million litres of oil, 328.7 ton of petroleum gas and 476.3 ton of firewood has been achieved in 2012 through the fuel switching programme. Regulations for the accreditation of energy managers and energy auditors had been published following the gazette notification number 1715/12 of 20th July 2011. The main objective behind this was to implement a proper energy management plan in over 1500 industrial sector institutions which accounted for 80% of the total energy consumption of the sector. Another important activity conducted in 2011 was the launching of energy management programme in transport sector. A seminar on energy efficient and environmentally sustainable transport (E^3ST) and a training programme on driving cycle development were conducted with the assistance of University of Moratuwa, Hong Kong Polytechnic University and Clean Air Initiatives for Asian Cities (CAI Asia) Center, and with the participation of local and international experts. It is expected that this initiative will continue to mobilize the relevant organizations in transport sector such that significant saving of transport fuels is achieved, while improving the urban air quality.

Looking into the future, the responsibilities of SLSEA are growing at large owing to the rising global demand for energy and the elevating risk to the environment. It is our duty to ensurethat the energy sector contributes to the economic development of the country, while safeguarding the social and environment interestswith the help of sustainability concepts to the maximum possible extent.

Dr. ThusithaSugathapala
Director General

Our Vision

An Energy Secure Sri Lanka

Our Mission

To guide the nation in all its efforts to develop indigenous energy resources and conserve energy resources through exploration, facilitation, research & development and knowledge management in the journey of national development, paving the way for Sri Lanka to gain energy security by protecting natural, human and economic wealth by embracing best sustainability practices.

Management of the Board of Management – 2012

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Dr. kithsiriDissanayake

Member

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Secretary
Ministry of Power & Energy

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Ministry of Local Government and Provincial Council

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Director (Corporation & Constitutional Board Division)
Ministry of Industry and Commerce

Ms. ThanujaMurugesan
Senior Assistant Secretary (Lands)
Ministry of Lands & Land Development

Mr. WimalJayawardana
Additional Secretary (Admin)
Ministry of Plantation Industries

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Ministry of Environment & Renewable Energy

Eng. P.U. Wickremaratne
Add. Secretary (Technical)
Ministry of Irrigation & Water Resources Management

Mr. A.W.M. Sarathchandra
Director (Planning & Project Implementation) Ministry of Transport

Mr. S.S. Mudalige
Director (Dept. of National Planning)
Ministry of Finance & Planning

Ms. DharaWijethilake
Secretary
Ministry of Science & Technology

Mr. DamithaKumarasinghe
Director General
Public Utilities Commission of Sri Lanka

Mr. D. Chandrasekata
Sri Lanka Energy Managers Association

Mr. KishanNanayakkara
Chief Executive Officer
Giddawa Hydro Power (Pvt) Ltd

Mr. L.P. Jayasinghe
Chamber of Commerce

Mr. K.A. BandulaChandrasekara
Director
Energy Forum

Mr. SuranjanKodituwakku

Mr. Chamath De Silva

Mr. AsokAbeygunawardana
Executive Director
A Representative of Rural Energy Sector
Energy Forum

Members of the Audit & Management Committee – 2012

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Mr. S.S. Mudalige
Director (Department of National Planning)
Ministry of Finance & Planning

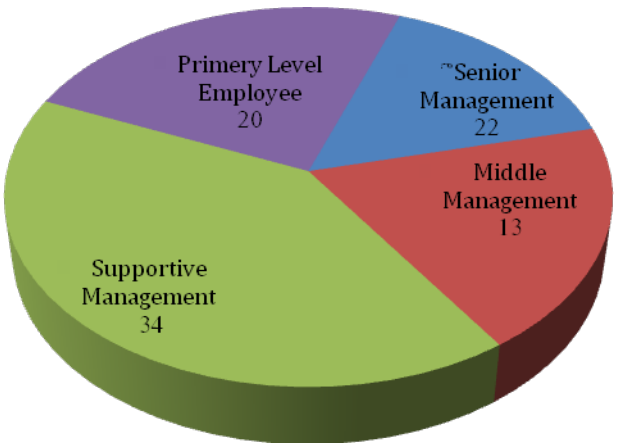
Member
Mr. D. Chandrasekara
Representative of the Sri Lanka Energy managers Association

Member
Mr. SulakshanajAyawardhana
Deputy Director (Planning & Progress monitoring)
Ministry of Power & Energy

Observer
Mr. R. M. Rathnayake
Audit Superintendent
Auditor General's Department

Our Staff Composition – 2012

We are relatively young organization with a total of 89 persons.
The Composition of our staff is shown below.



INTRODUCTION

The Sri Lanka Sustainable Energy Authority was established on 01st October 2007, enacting the Sri Lanka Sustainable Energy Authority (SEA) Act No. 35 of 2007 by the Parliament of the Democratic Socialist Republic of Sri Lanka. The SEA was established to meet the requirement of having an apex institution to drive Sri Lanka towards a new level of sustainability in energy supply and use, through increasing indigenous energy and improving energy efficiency within the country. It is envisaged that the programme of activities of SEA would contribute in achieving the national development goals including energy security, environmental sustainability and socio-economic development.

In accordance of the Corporate Plan 2012-2015, the activities of SEA during the year 2012 were continued under two main divisions viz Renewable Energy (RE) and Energy Management (EM). The RE Division has the mandate of promoting renewable energy resource utilization, whereas the EM Division has the mandate of managing the energy intensity of the country's economic development, and interventions in the two Divisions are formulated at both policy and operational levels. During the year 2012, a new initiative was taken to strengthen the area of Knowledge Management (KM) with the aims of supporting the dissemination of knowledge generated in RE and EM Divisions and establishing anenergy conscious nationvia formal and informal education channels.

By the end of 2012, total installed capacity of new renewable energy (NRE) sources reached 312 MW and generated 736 GWh contributing to 6.2% of the grid-electricity generation. The annual electrical energy savings resulted from the energy efficiency improvements and conservation activities conducted by SEA during the year 2012 in the industrial and commercial sectors alone are estimated to be about 37 MWh, while over 300 MWh of annual savings continued tobenefit the country from interventions in previous years. Further,a significant contribution to enhance the energy security of the country was achieved through fuel switching in industrial thermal application from fossil fuel to biomass.

OUR OBJECTIVES

As stipulated in the Act, there are four key objectives of SEA:

(a) Identify, assess and develop renewable energyresources with a view to enhancing energy security and thereby derive economic and social benefits to the country;

(b) Identify, promote, facilitate, implement and manage energy efficiency improvement and energy conservation programmes for use of energy in domestic, commercial, agricultural, transport, industrial and any other relevant sector;

(c) Promote security, reliability and cost-effectiveness of energy delivery to the country, by policy development and analysis and related information management; and

(d) Ensure that adequate funds are available forthe Authority to implement its objects, consistent with minimum economic cost of energy and energy security for the nation.

Further, National Energy Policy and Strategies of Sri Lanka specify several policy objectives relating to the scope of activities of SEA, listed under energy policy elements therein, such as:

- Providing Basic Energy Needs
- Ensuring Energy Security
- Promoting Energy Efficiency and Conservation
- Promoting Indigenous Resources
- Protection from Adverse Environmental Impacts of Energy Facilities

Among these, ensuring energy security, increasing indigenous energy and improving energy efficiency rank highest in our priorities.

OUR TARGETS

In reaching the above objectives, several targets have been established through interventions in the RE, EM and KM areas. Development of RE resources, targeting both electricity and thermal energy services in all sectors, is expected to contribute to enhance the energy security of the country through diversification of energy resources and rationalisation of the energy mix, and also to gain environmental sustainability through switching to cleaner energy sources and technologies. Accordingly, the following targets are set in the RE developments:

(i) Access to modern energy services for all citizens by 2017
(ii) Generation of 10% of grid-electricity by NRE sources by year 2015.
(iii) 10% of industrial thermal energy to be switched to biomass.
(iv) Increase of biomass as a clean cooking fuel by 10%.

Keeping the economic development goals of Sri Lanka in focus and anticipation of a strong growth in the industrial sector, retaining the present levels of energy intensity of economy will not be pursued. The increase in the energy intensity of the economy would hamper the economic development of the country due to heavy dependence on the imported fossil fuels. Hence, measures to decouple the economic development from energy demand growth, targeting an energy intensity of economy of 500 toe/XDR million by 2017, will be made through

- ✓ A complete mechanism for establishment of energy management systems and delivery of energy efficiency services
- ✓ Anextensivecapacity development programme
- ✓ A comprehensive awareness and education programme for establishment of energy conscious nation.

Specific target set in the above directions is

- ✓ Saving of 8.7% of electricity demand (equivalent to 20% of electricity demand in year 2010) by year 2020.

OUR IMPACT

Economy

Since 2007, our active facilitation of the NRE industry has saved more than LKR 52 billion foreign exchange for the country by avoiding fossil fuel imports.

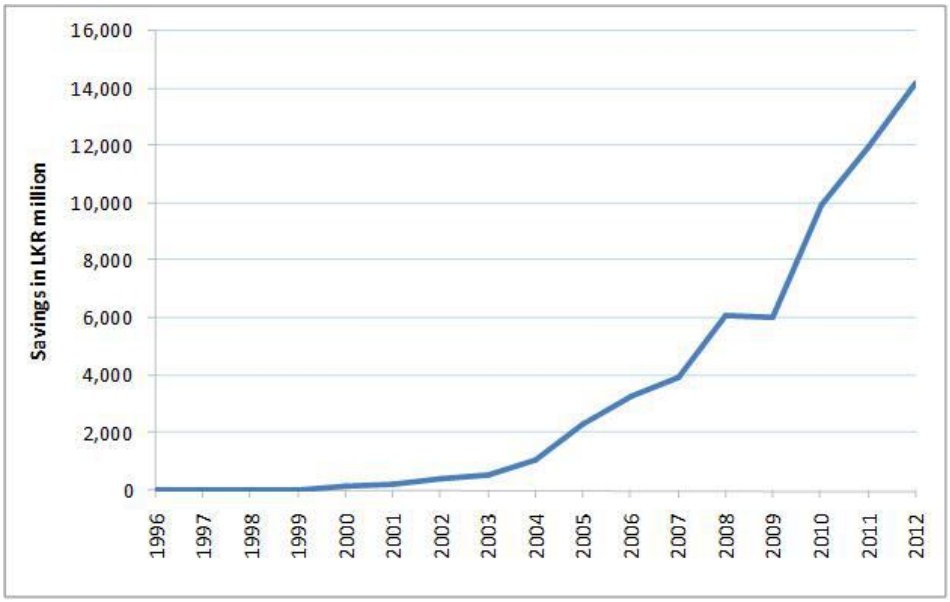


Figure 1: Foreign exchange savings

Clean Energy

Our active contribution to the new renewable energy industry has gifted the country with over 700 GWh of clean energy in 2012.

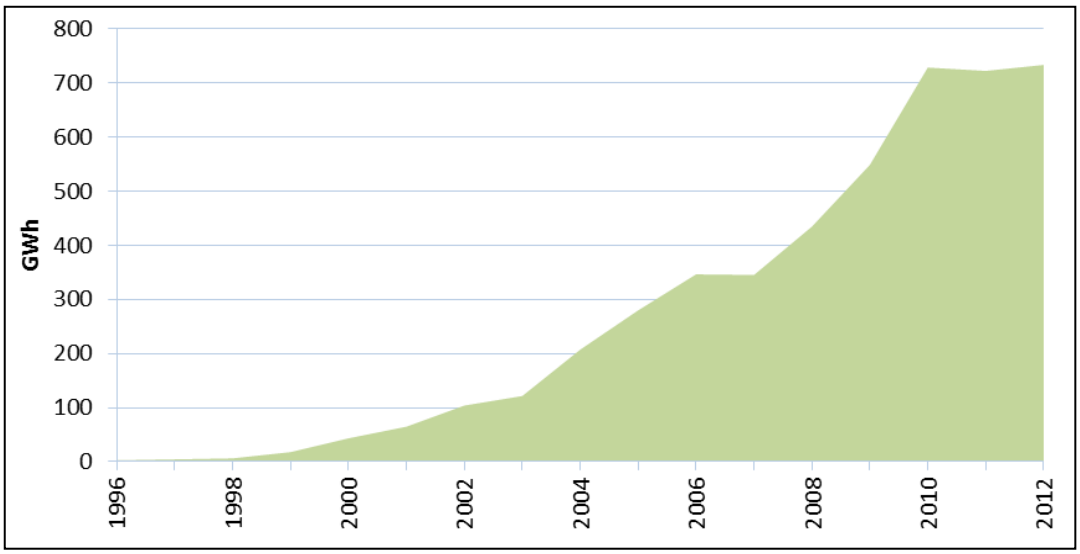


Figure 2: Grid-electricity generation from NRE sources

Further, energy efficiency activities carried out by us in 2012 alone resulted in the saving of 37 GWh in the industrial and commercial sector, which is in addition to the annual savings over 300 MWh resulted from interventions in previous years. In addition, about 8.7 million litres of diesel and 0.6 million litres of furnace oil were saved through fuel switching initiatives in industry through dissemination of modern biomass energy technologies.

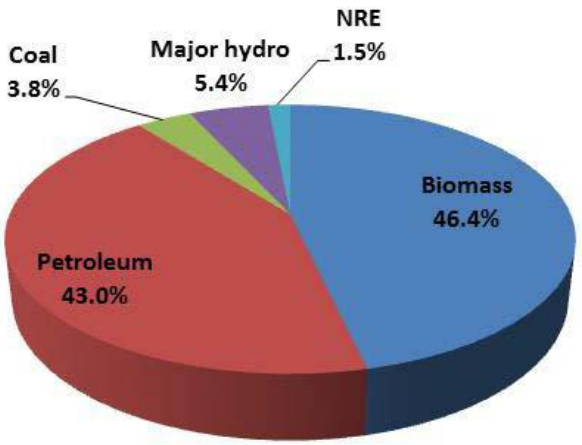
Industry

The SEA's strong advocacy in energy management activities in institutions led to one institute receiving Gold Awards in National Energy Efficiency, followed by four institutes receiving Silver Awards and two institutes receiving Bronze Awards.

ENERGY SECTOR OVERVIEW

Primary Energy Supply by Source

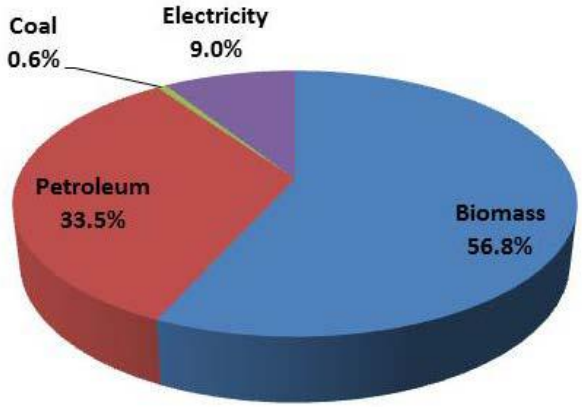
Energy Source	Primary Energy (PJ)	
	2011	2012
Biomass	207.0	235.9
Petroleum	205.8	218.5
Coal	13.6	19.1
Major hydro	40.4	27.4
NRE	7.5	7.6
Total	**474.2**	**508.4**



Primary Energy Supply by Source in 2012

Energy Demand by Source

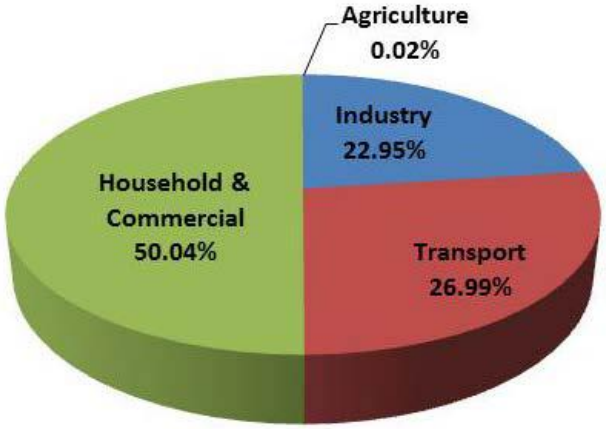
Energy Source	Energy Demand (PJ)	
	2011	2012
Biomass	206.1	235.3
Petroleum	128.5	139.0
Coal	3.1	2.6
Electricity	36.0	37.5
Total	**373.7**	**414.4**



Energy Demand by Source in 2012

Energy Demand by Sector

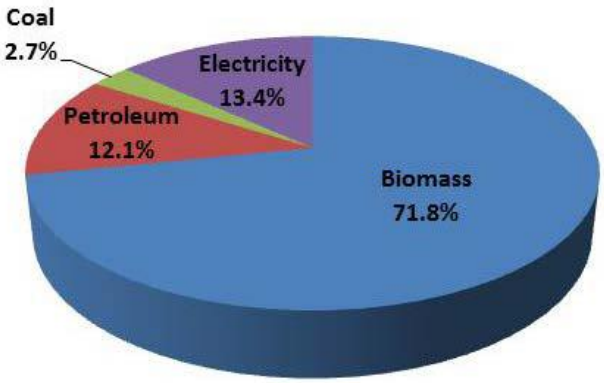
Energy Sector	Energy Demand (PJ)	
	2011	2012
Industry	91.1	95.1
Transport	103.0	111.8
Household & Commercial	79.4	207.3
Agriculture	0.3	0.1
Total	**373.8**	**414.3**



Energy Demand by Sector in 2012

Energy Demand in Industry by Source

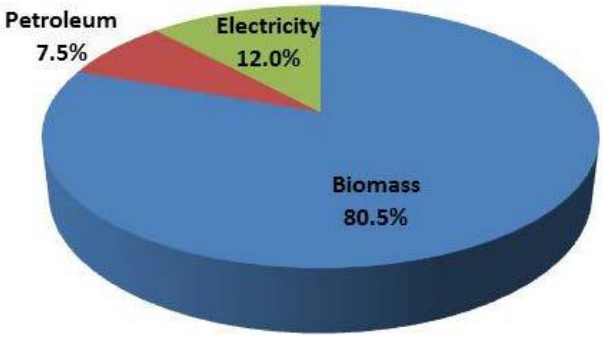
Energy Source	Energy Demand (PJ)	
	2011	2012
Biomass	66.3	68.3
Petroleum	10.5	11.5
Coal	2.1	2.6
Electricity	12.2	12.7
Total	**91.1**	**95.1**



Energy Demand in Industry by Source in 2012

Energy Demand in HH, Commercial and Other by Source

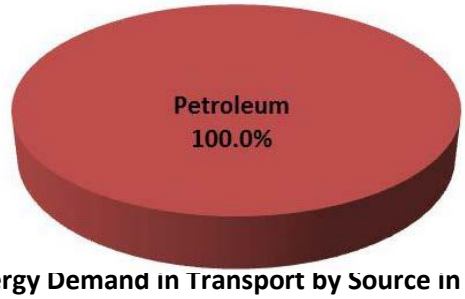
Energy Source	Energy Demand (PJ)	
	2011	2012
Biomass	139.9	166.9
Petroleum	15.7	15.6
Electricity	23.8	24.8
Total	**179.4**	**207.3**



Energy Demand in Household, Commercial and Other by Source in 2012

Energy Demand in Transport by Source

Energy Source	Energy Demand (PJ)	
	2011	2012
Petroleum	101.9	111.8
Coal	1.1	-
Total	**103.0**	**111.8**



Energy Demand in Transport by Source in 2012

Fossil Fuel Sector

Product	Imports (kt)	
	2011	2012
Crude Oil	**1,931.9**	**1,626.1**
Finished Products	**2,824.3**	**3,376.8**
LPG	181.3	192.6
Petrol	508.5	574.6
Avtur	244.1	288.2
Auto Diesel	1,402.0	1,652.2
Fuel Oil	367.9	563.7
Avgas	0.2	0.2
Bitumen	120.3	105.3
Coal	**760.2**	**962.4**

Product	Refined Products (kt)	
	2011	2012
Crude Input	**2,003.6**	**1,596.1**
Naphtha Total	80.0	70.9
Petrol Total	206.5	151.6
Avtur	155.4	93.2
Kerosene	92.9	74.8
Diesel Total	501.1	394.2
Furnace Oil Total	614.6	648.4
Solvents Total	3.8	3.8
Bitumen	46.1	46.1
Total Output	**1,724.4**	**1,480.7**

Electricity Sector

Source	Grid Capacity (MW)	
	2011	2012
Major Hydro	1,207.5	1,357.5
Thermal Power	1,689.5	1,695.3
NRE &CEB Wind	243.7	315.2
Total	**3,140.7**	**3,368.0**

Electricity Demand (GWh)		
Product	**2011**	**2012**
Domestic	3,928.4	4,062.9
Religious	59.1	63.3
Industrial	3,379.3	3,528.0
Commercial	2,490.2	2,614.1
Street-lighting	132.9	139.1
Total	**9,989.9**	**10,407.4**

Source	Gross Generation (GWh)	
	2011	2012
Major Hydro	4,017.7	2,726.7
Thermal (Oil)	5,857.5	7,012.7
Thermal (Coal)	1,038.1	1,403.7
CEB Wind	2.7	2.3
NRE	722.3	733.3
Total	**11,638.2**	**11,878.8**

Grid Emission Factors (t-CO2/MWh)		
Basis	**2011**	**2012**
Simple Operating Margin	0.7046	0.7035
Build Margin	0.7670	0.7665
Combined Margin	0.7202	0.7193

Economic Indicators

Indicator	2011	2012
GDP at 1982 factor cost prices (million LKR)	382,520	403,558
Commercial Energy Intensity (TJ/LKR million)	0.44	0.47
Average electricity price (LKR/kWh)	13.63	15.71
Electricity Sold (kWh/person)	478.7	511.1
Net oil imports as % of non-petroleum exports	44.2	51.5

PERFORMANCE

2012

New Renewable Energy Development

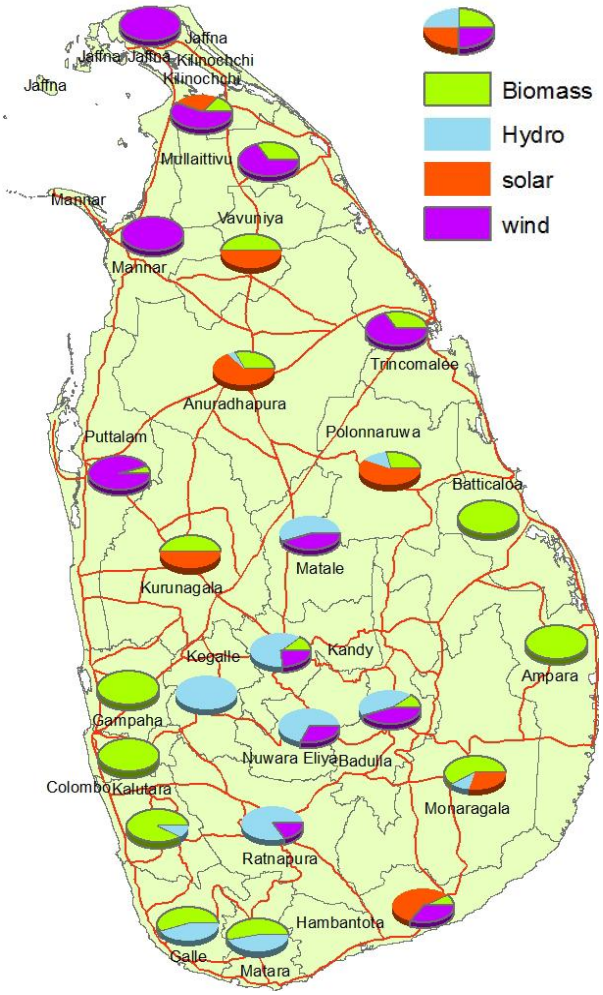
Conservation and Management of Renewable Energy Resources

Renewable energy development is carried out in the country with the aim of achieving 10% electricity generation with new renewable energy (NRE) by 2015 according to the strategies laid out in the National Energy Policies and Strategies of Sri Lanka, while this goal would be accelerated up to 20% by 2020 as per the MahindaChinthana – The Vision for the Future, the development policy framework of the Government of Sri Lanka (GoSL). The NRE industry passed many milestones in the year 2012.

The On-grid Renewable Energy Project Regulations 2009 published in the Gazette No. 1599/6 of April 27, 2009 was repealed by Gazette No. 1705/22 of May 10, 2011. The Regulations also introduced the Guide to the Project Approval Process for On-grid Renewable Energy Development Version V2.0/2011. The Guide provides information to investors and operators of existing renewable energy projects, investors who are in the process of developing renewable energy projects and those intend in developing and investing in such projects. A self-contained set of documents which enabled the prospective project developers to make a complete application for a given resource was prepared and made available at no cost to all applicants. The sets of document covered all resource types considered under the standardised power purchase agreement (SPPA) scheme.

Figure 3: Set of standerdised application for on-grid renewable energy projectsdevelopment

Renewable Energy Resource Development Plan



No	District	Biomass	Solar	Wind	Hydro	Total
1	Ampara	30	0	0	0	30
2	Anuradhapura	15	30	0	2	47
3	Badulla	15	0	60	61	136
4	Batticaloa	15	0	0	0	15
5	Colombo	40	0	0	0	40
6	Galle	15	0	0	12	27
7	Gampha	5	0	0	0	5
8	Hambantota	15	100	60	1	176
9	Jaffna	0	0	100	0	100
10	Kalutara	30	0	0	3	33
11	Kandy	15	0	30	80	125
12	Kegalle	0	0	0	94	94
13	Kilinochchi	15	30	60	0	105
14	Kurunegala	30	30	0	0	60
15	Mannar	0	0	260	0	260
16	Matale	0	0	30	38	68
17	Matara	15	0	0	13	28
18	Monaragala	30	15	0	6	51
19	Mullaittivu	15	0	30	0	45
20	Nuwara Eliya	0	0	60	133	193
21	Polonnaruwa	15	30	0	8	53
22	Puttalam	15	0	260	0	275
23	Ratnapura	0	0	30	151	181
24	Trincomalee	15	0	30	0	45
25	Vavuniya	15	15	0	0	30
	Total	360	250	1010	602	2222

Figure 4: NRE resource inventory for medium term developments

A comprehensive survey on renewable energy resources (covering small hydro, wind, solar and biomass) and a renewable resource assessment study are being continued in the country, as required under Section 7 of the Act. These studies contributed to the development of a renewable energy resource inventory using the web based Geographic Information System (GIS). Figure 4 above depicts the district-wise renewable energy resource inventory for medium-term development.

Wind: In 2012, the Wind Reference Station Network was further upgraded. 10 Stations are now in operation.The Asian Development Bank (ADB) contracted Resource Management Associates(Pvt.) Ltd, working in partnership with GEO-NET Umwelt consulting GmbH (GEO-NET) in Germany to conduct wind and solar resource assessments in the Mannar Island and Jaffna region, respectively. The assignment constitutes part 2 of the TA – 7837 SRI: Clean Energy and Network Efficiency Improvement Project (43576 – 012) offered to the GoSL, while the notice to proceed was issued in December, 2011. Under this assignment, a wind mast of the height of 80m was commissioned in Nadukuda on May 30, 2012. This is the tallest wind mast in the country at present. Further, the study completed the review of available upper-air and surface wind data, preliminary wind field modelling. The programme also included the training of SEA engineers on installation and commissioning of the wind mast and the basics of wind resource assessment. On completion of the assignment, it is expected that the SEA (as the implementation agency of this assignment) would be in possession of a reliable long term database on wind and solar resources in Mannar and Jaffna areas, respectively.

SEA recognised that efforts need to be made to generate high quality wind and solar measurements complying with international standards. As bankable feasibility studies on large-scale wind and solar project need long term data, the need for a development of a reliable long term wind and solar database was also considered as an urgent need.

Figure 5: Installation of the 80 m wind mast in Nadukuda

The SEA continued with the micro-siting for high potential wind areas, which resulted in a high resolution wind map with seasonal variation, for the Hambantota region. The investment grade wind resource maps will be accompanied by a project economic analysis, elevating the resources to 'ready to invest' status. The high resolution wind maps produced for the Mannar Region using the WAsP software was usedto prepare a pre-feasibility report of the country's first Wind Energy Park. The WAsP model analyses the wind resource data from specified location (wind measuring mast) and estimate the wind resources characteristics by correcting for the local effects such as surface roughness, topography, obstacles and atmospheric stability. The pre-feasibility report was submitted to the Board of Management.

Hydro: The developable hydropower potential of the country has been identified in a spatial context in the case of high and medium head resources. These spatial data is being presently analysed for an optimised grid interconnection strategy. Low head resources, including the potentials in manmade water conveyance structures require a more ground based approach.

Biomass: A detailed analysis of the biomass resources based on available land use data was initiated. Assessment of resource potential in Ratnapura district is nearing completion. This approach, refined after stakeholder consultation and ground verification will be expanded to cover the whole island.A national methodology of biomass resource assessment was formulated by a consultant under a Japanese technical assistance programme.

Solar: The initiative taken to further refine the solar data available will yield a high resolution solar map, suitable for pre-feasibility level assessments during year 2013. High quality solar resource data generated in the measuring station located in the Hambantota solar park continued to add new knowledge to solar energy development effort. This will be repeated in Jaffna region, using the high quality solar resource measuring equipment procured under a technical assistance programme of the ADB. Hambantota solar park attracted more than 900 visitors in 2012, most of whom were students and researchers from universities.

Figure 6: Solar plant Hambantota

Geo thermal –Further investigations on geothermal resourceshave received the attention of SEA and a report envisaging a more detailed resource assessment programme was prepared. This effort was supported by a comprehensive training of one SEA staff member on geothermal energy development received from United Nations University in Iceland. The report is based on the available water analysis of 10 hot springs and volumetric assessment of the geothermal resources of the country. SEA is now in the process of developing a project proposal for more detailed assessment of geothermal resources.

Declaration of energy development Areas

Up to now many Energy Development Areas have been declared in several places in the country, covering the hydro, wind and solar resources. This is further to be refined from the input of the long term wind data analysis and the ongoing biomass resource assessment programme.

New Renewable Energy Projects

The development of NRE commenced with the commissioning of the first Small Power Producing (SPP) hydro plant in 1996. However, NRE development did not progress on a fast track as expected, but was stagnant with an average growth of 0.5% capacity addition per annum. The establishment of the SEA streamlined the resource allocation process and expedited the development of NRE.

Figure 7illustrates the cumulative capacity addition and number of SPPs of NRE from 1996 to 2012.

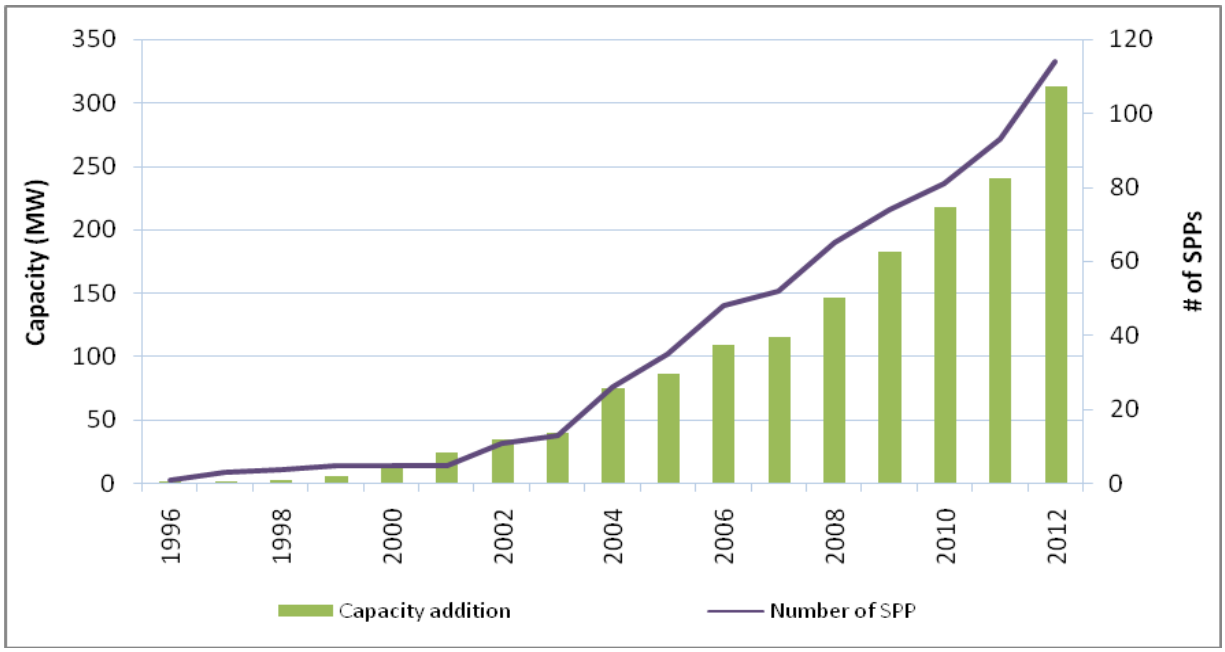


Figure 7: Cumulative capacity addition and number of SPPs of NRE

Table 1 and Table 2depict the progress achieved by the NRE industry.

Table 1: Total installed capacity of grid connected power plants by source

Installed Capacity (MW)	2000	2005	2009	2010	2011	2012
Hydro	1,137.45	1,207.45	1,207.45	1,207.45	1,207.45	1,357.45
Thermal	685.00	1,114.50	1,304.50	1,389.50	1,689.50	1,695.30
CEB Wind	3.00	3.00	3.00	3.00	3.00	3.00
NRE	12.75	85.81	182.23	217.63	240.72	312.22
Total	1,838.20	2,410.76	2,697.18	2,817.58	3,140.67	3,367.97
Installed Capacity (%)	**2000**	**2005**	**2009**	**2010**	**2011**	**2012**
Hydro	61.88	50.09	44.77	42.85	38.45	40.30
Thermal	37.26	46.23	48.37	49.32	53.79	50.34
CEB Wind	0.16	0.12	0.11	0.11	0.10	0.09
NRE	0.69	3.56	6.76	7.72	7.66	9.27

Table 2: Gross annual electricity generation of grid connected power plants by source

Gross Generation (GWh)	2000	2005	2009	2010	2011	2012
Major Hydro	2,812.8	3,222.5	3,355.6	4,988.5	4,017.7	2,726.7
Thermal	3,512.4	5,339.3	6,062.5	5,063.3	6,895.7	8,416.5
CEB Wind	3.4	2.4	3.5	3.0	2.7	2.3
NRE	43.3	279.7	548.5	728.5	722.3	733.3
Total	**6,371.8**	**8,844.0**	**9,970.1**	**10,783.2**	**11,638.2**	**11,878.8**
Gross Generation (%)	**2000**	**2005**	**2009**	**2010**	**2011**	**2012**
Hydro	44.1	36.4	33.7	46.3	34.5	23.0
Thermal	55.1	60.4	60.8	47.0	50.3	59.0
CEB Wind	0.05	0.03	0.04	0.03	0.02	0.02
NRE	0.7	3.2	5.5	6.8	6.2	6.2

The contribution of the NRE to gross grid electricity generation is 6.2% in 2012. Even with the increase in the installed capacity, a reduction in generation from small hydro, the key contributor of NRE, was seendue to the prolonged droughts experienced in 2011 and 2012.

Figure 7 illustrates the electricity generation from NRE resources by type from 1996 to 2012.

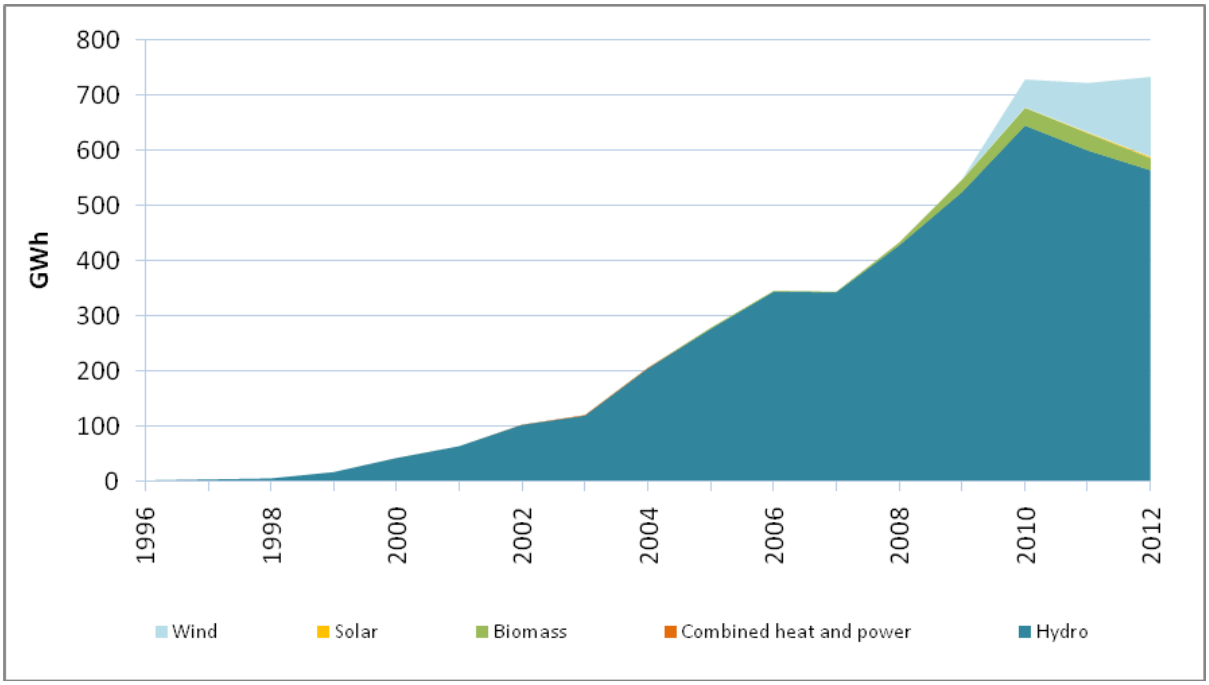


Figure 8: Electricity generation from NRE by resource type

The types of NRE projects that were commissioned in 2012 include small hydro, biomass (dendro, MSW and residues) and solar. The numbers and capacities of the respective technologies, at different stages of developments, at the end of 2012 are given in Table 3.

Table 3: Number of plants and capacities at different stages of development by technology

Technology/ Status	Biomass		Small Hydro		Wind		Solar &Others		Total	
	No.	MW	No.	MW	No.	MW	No.	MW	No.	MW
Provisional Approvals	4	17.6	42	63.4	1	10	8	62.3	55	153.3
Under Construction	17	84.8	94	190.0	4	21.3	-	-	115	296.1
Commissioned	2	10.5	107	227.3	9	73.0	4	1.38	122	312.2

Small hydro by far is the most developed renewable energy resource in Sri Lanka. At present, its contribution to the grid electricity generation sector alone stands at 227.3 MW from 207 plants at the end of 2012. The cumulative capacity additions up to 2012 of other technologies include 73.0 MW from wind, 10.5 MW from biomass and 1.4 MW from solar.

The technology development effort, involving *Vawin (Private) Limited* of Sri Lanka and *Nordic Folkecenter for Renewable Energy* of Denmark, saw the successful casting of wind turbine blades in Sri Lanka (see Figure 8). Strenuous efforts are now underway in integrating the key technologies to complete the first ever grid scale wind turbine manufactured in Sri Lanka. This initiative will bring down the cost of wind energy to LKR17.00/kWh in the prevalent cost structures. This will be on par with the average selling price of electricity, and will provide new avenues for local value addition, employment creation and skills development, paving the way for wealth creation in Sri Lanka.

Figure 9: Local manufacture of wind turbine blades

The Indurana micro hydropower project was commissioned in 2012 and is expected to add 0.22 GWh annually to the national grid. Revenue from the project will be utilised to develop the project as a self sustainedknowledge centre, demonstrating micro hydro technology to school children and the general public. The centre will also function as a training centre, placing special emphasis on plant operation and management, targeting university students and practitioners from Sri Lanka and the South Asian region and also promotes environmentally friendly energy generation options. This power plant employs a low head cross flow turbine, manufactured entirely in Sri Lanka.

Figure 10 shows some components of the plant during the construction and installation periods.

Figure 10: Channel and the locally manufactured hydro turbine

Repowering of Estate Hydropower Plants

Estate Micro Hydropower repowering pilot project is the first project of SEA which will be funded by a development partner. ADB has pledged USD 1.29 million to this project, which will see the repowering of about 20 estate hydropower projects. The SEA will enter into a partnership with Participating Finance

Institutes (PFI) and an Energy Services Company (ESCO) to implement the loan scheme. The project is progressing to select Consultants, PFIs and an ESCO.

Database for Renewable Energy Projects

The SEA processes a large volume of applications for New Renewable Energy Development projects.These applications are at varying stages of approvals, being processed by many peripheral approving authorities. The SEA formulated a project to bring the approval process to a common web based platform, to enable free access of information to all approving authorities. The platform will facilitate the workflow and produce automatic status updates to developers and approving authorities, facilitating and accelerating the project development.

Rural Energy Services

The SEA formulated a programme titled “Gramashakthi – Provision of Improved Energy Services to Rural Under-served Communities” to provide off-grid electrification to under-served communities. The first stage of this programme, a micro hydro project of capacity 63 kW catering for 115 households, two schools, one village hospital and a Samurdhi Bank and GN office was rehabilitated and commissioned in September 2012 in the Meemure, one of the most remote villages in Sri Lanka.The SEA bore a cost of LKR 6 million on the construction of transmission and distribution network. In addition, about 10 more villages in the vicinity of Meemure, are to be electrified through micro-hydro and solar home systems.

Distribution of cook stoves for rural families

SEA contributed to the rebuilding effort of the war ravaged Eastern Sector by providing improved cook stoves to 1,000 needy families. The stove type distributed is the Anagi -2 two pot mud stove, which is the most popular improved cook stove design in the country. It is expected that improved indoor air quality and lower fuel wood consumption will contribute to better living standards and improved economic conditions of these destitute families.

Figure 12: Distribution of improved cookstoves – Eastern Province

Renewable Energy Awareness Programmes

The Renewable Energy Group of the SEA conducted two Awareness Programmes to Facilitate and Enable Renewable Energy Development for officers of the Forest Department and the Central Environment Authority. The two programmes were conducted on March 15 – 16, 2012 and June 28 - 29, 2012, respectively. The primary target group of these programmes were the officers of above agencies involved in the process of granting approvals for carrying on and engaging in renewable energy projects. The objectives of the workshop were

- to create awareness on the Government's policies and targets to develop renewable energy, the resource allocation process, declaration of Energy Development Areas and grid interconnection of NRE projects,
- to create awareness about the role of the Project Approving Committee and the responsibilities of Officers of line agencies in the approval process,

- to discuss planning issues and possible solutions in granting approvals for Projects located in close proximity to excluded areas and to establish a forum with the PAC representative for conflict resolution.

A special promotional booklet was developed for the same, titled “Facilitating and Enabling Resource Allocation in Renewable Energy Development”.

Energy Information Management

The presentation of the annual energy account to the Parliament by the Minister is a mandatory requirement, stipulated by Section 42 of the Act. The last Sri Lanka Energy Balance (2007) was published in 2009. However, in 2012, a strenuous effort was made to clear the backlog and publish Sri Lanka Energy Balances of 2008, 2009 and 2010. The publication for 2008 was printed in July 2012, and the remaining three publications were completed by the end of 2012 (see Figure 13).

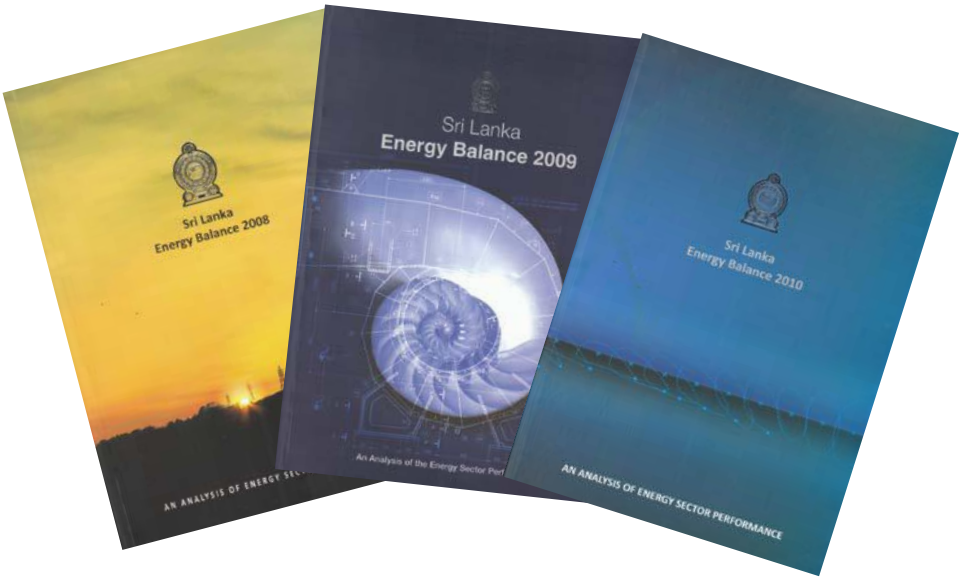


Figure 13: Sri Lanka Energy Balance publications

Four Advisory Committees were appointed by the Board of Management of the SEA to improve the methods of data capturing at national level. Two of these Advisory Committees, for the Petroleum Sector and the Energy Balance respectively, met in early 2012, and their recommendations have been incorporated in the Sri Lanka Energy Balance of 2011.

The SEA plans to forecast the energy demand of the country, using the Model for Analysis of Energy Demand (MAED). Two Officers of the SEA were trained on the usage of the model, at workshop held from March 19 – 30, 2012, organised by the Ceylon Electricity Board, and Atomic Energy Authority with tha assistance of the International Atomic Energy Authority. Data collection is in progress and it is expected to form a working group to carry forward the task.

A special web-hosted database application was made in February 2012, to host the national energy account and was launched by the Minister of Power and Energy (see Figure 14). The website is now available at www.info.energy.gov.lk, presenting energy information from 1970 to present.

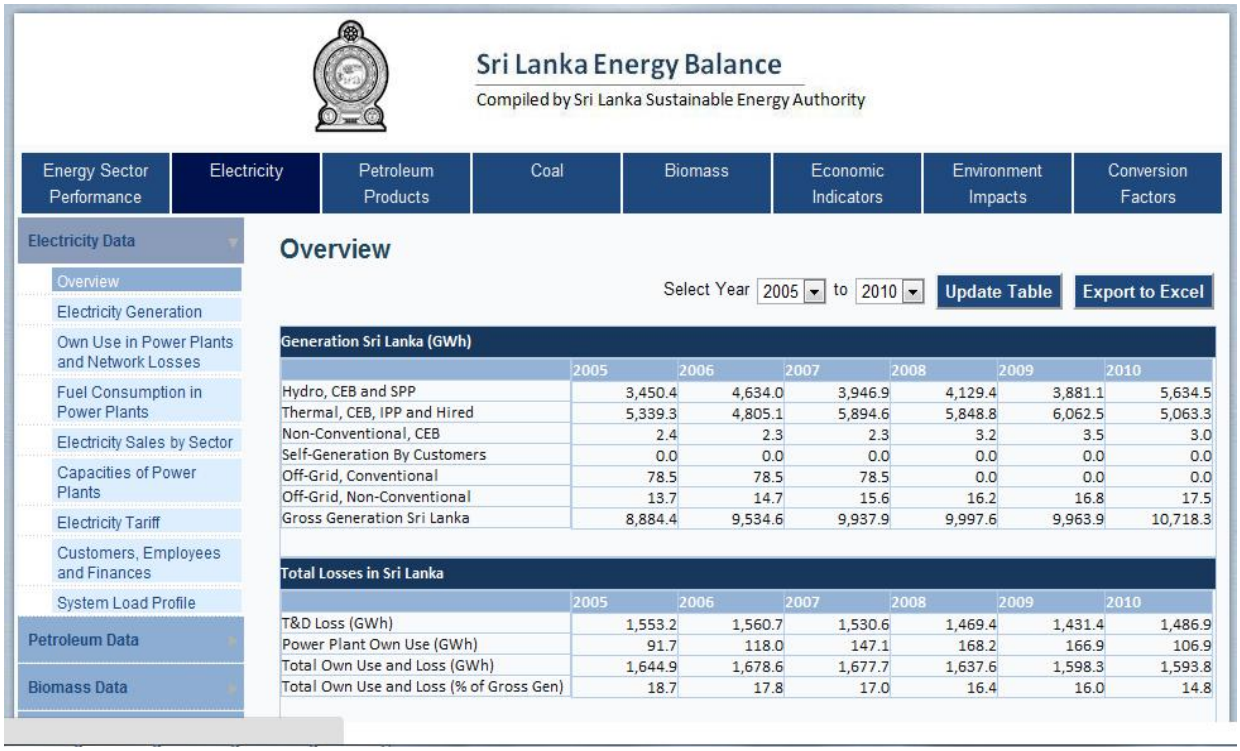


Figure 14: National energy account in the web

Post Project Impact Studies and Environmental Impacts

In order to assess the CO_2 emissions from grid connected power plants, the SEA calculated the Grid Emission Factors(GEF) for the years 2008, 2009, 2010 and 2011following the IPCC methodology available at http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v2.pdf. GEFs were published for the first time in a special chapter of the Sri Lanka Energy Balance 2011. As per the decision taken at the 35th meeting of the UNFCCC CDM Executive Board, the host country designated national authority (DNA) shall publish the GEF for the electrical system. Ministry of Environment and Renewable Energy is the DNA of Sri Lanka and SEA has taken the responsibility of calculating and publishing GEF. Figure 15 presents GEFs estimated for 2008 to 2011. The increase in the GEFs in 2011 is attributed to the lower contribution from hydro power generation due to prolonged droughts experienced in 2011.

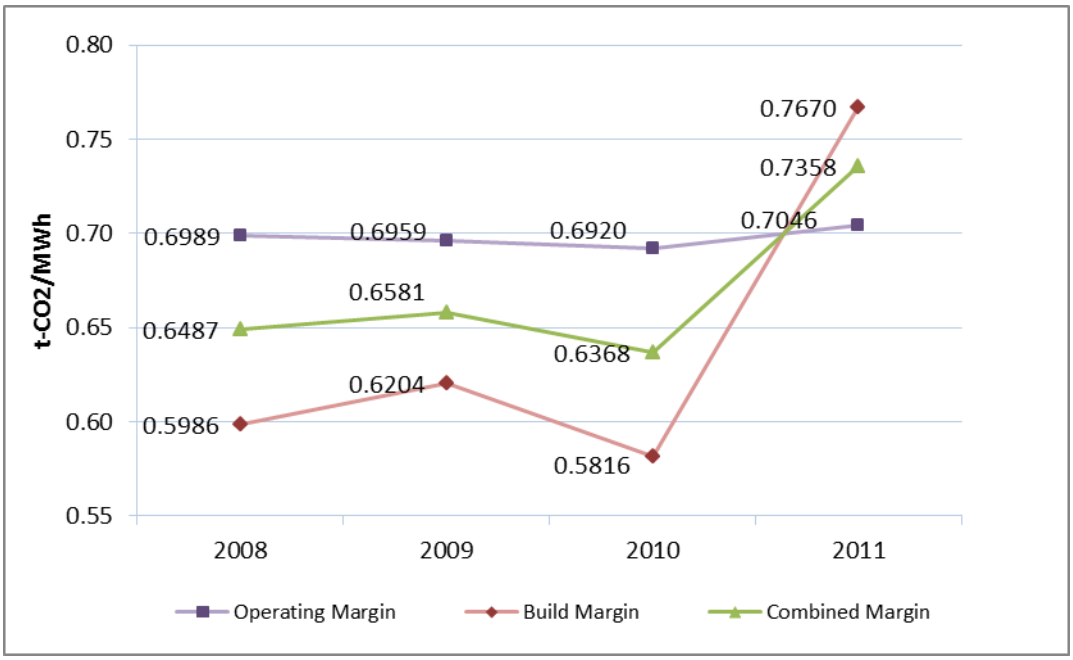


Figure 15: GEFs in Sri Lanka

The SEA formulated two Post Project Impact Assessment Studies for Operational Mini Hydro Projects, one to assess the conformity of the project operation with the conditions of the Energy Permit (EP), particularly on environmental impacts and the other to study technical aspects and upgrading options of existing projects. The objective of the Post Environmental Impact Assessment Study is to contribute to promoting New Renewable Energy by providing better information on actual post project conditions to set up environmental standards. The draft ToR and tender documents have been prepared for this study and at present, discussions are underway with the Central Environment Authority (CEA) to carry out the study in collaboration with them. The project component that covered the technical aspects focused on evaluating the technical feasibility of post installed mini hydro projects, to ensure expected outcomes such as the validation of the hydraulic efficiency and confirmation of the power given to the grid were achieved. 6 plants were selected from different capacity ranges. The team performs the testing and provides the power plants with recommendation after analysis of the data collected, for the better performance of the mini-hydro plants.

Figure 16: Flow measurement during performance evaluation of a small hydro plant

Sri Lanka Sustainable Energy Fund

Cash flow requirements for the approved portfolio of renewable energy projects was computed and two possible sources of financing this requirement, (1) levying a cess on importation of fossil fuel and (2) claiming a generation based royalty from major hydropower plants, were identified. The approved portfolio was evaluated by a consultant under a technical assistance programme of ADB, to ensure sustainability of the Sri Lanka Sustainable Energy Fund. Grouping of the entire portfolio for a programmatic CDM initiative or empowerment of Sri Lanka Carbon Fund to realise part of carbon financing to further enhance the SLSEF was studied.

Sustainable Energy Guarantee Fund

Operations of the Sri Lanka Sustainable Energy Guarantee Fund (SLSEGF) commenced with the inheritance of the operations of the Sustainable Guarantee Facility which operated with a LKR50 millionreserve fund. The operations which targeted only energy efficiency projects did not make any significant progress, given the availability of cheaper finances under the E-Friends II loan facility at 6% interest rate. An initiative to formally establish this facility using the provisions of the Section 47 of the

Act was taken, and a regulation on this facility was prepared and is being examined by the Legal Draftsman.

Acquisition and Leasing of Immovable property for Projects

Several consultations with Divisional Secretaries resulted in packaging water rights required for hydropower projects and acquisition of lands for the project being combined. Now, the issuance of Provisional Approvals results in the commencement of an automatic process to identify the land requirement by the relevant Divisional Secretary, greatly reducing the time and effort of the developer. An incentive scheme to expedite land acquisitions was introduced by the Authority and at present there are 4 cases completed while another 28 in process. Apart from the 28 sites already undertaken, further 6 cases of vesting were handed over to the Authority by developers in 2012.

Energy Efficiency Improvement, Conservation and Management

Energy management activities were carried out with a national focus with a target of achievinga saving about 2,000 GWh, which is equivalent to 20% of the electricity consumption in 2010 by 2020. Figure 17 illustrates the projected electricity savings at different milestones.

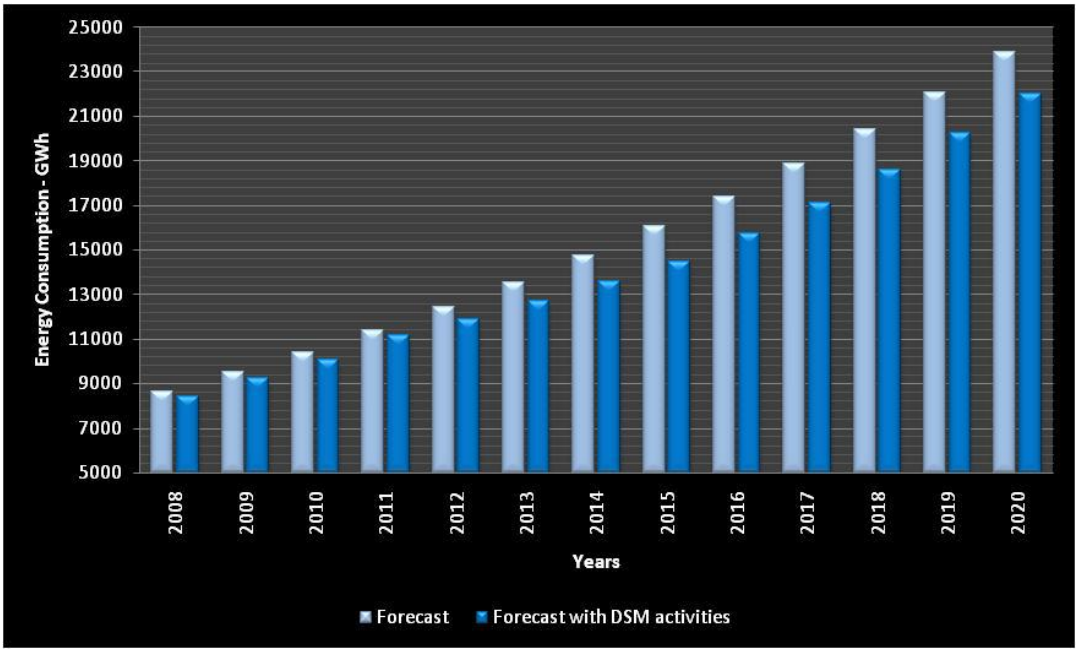


Figure 17: Projected electricity savings through DSM

Table 4too presents the electricity saving targets as a percentage of net generation, for the years 2012, 2016 and 2020.

Table 4: Electricity saving targets

Year	Target Savings (% of net generation)
2012	4.3
2016	6.4
2020	8.7

The electricity saving targets by 2020 from specific areas of intervention are presented Table 5.

Table 5: Annual electricity saving targets by 2020 from different interventions

Technology / Process	Annual Saving (GWh)	Technology / Process	Annual Saving (GWh)
▪ Energy Labeling Program		▪ Efficient motors	185
- *Ceiling Fans*	35	▪ Building Management System	20
- *Tubular Fluorescent Lamps*	65	▪ Efficient office equipment	16
- *Magnetic Ballasts*	80	▪ Solar water heaters	5
- *Refrigerators*	16	▪ Telecommunication	10
▪ Efficient lighting	173	▪ Efficient air compressors	11
▪ Air Conditioning	250	▪ Eliminating Incandescent Lamps	205
▪ ISO 50001	375	▪ Green Buildings	550
Total		**1,990 GWh**	

The electricity savings recorded as a result of the activities carried out by SEA from January to August in year 2012 are as follows:

- A saving of 37 GWh owing to the implementation of energy efficiency activities in the industrial and commercial sectors.
- A saving of 8.7 million liters of diesel and 0.61 million liters of furnace oil mainly owing to fuel switching initiatives.

Regulations

Enforcement of limits and codes of practices for existing and proposed buildings, industrial premises, land vehicles, ships and aircraft is one of the key regulatory interventions entrusted to SEA. Under this, Code of Practice for Energy Efficient Buildings in Sri Lanka (referred to as Energy Efficient Building Code) was compiled and published by SEA in 2009. As implementing partners, Urban Development Authority (UDA), Provincial Councils and Local Authorities are expected to introduce the Energy Efficient Building Code into the building plan approval process. So far, certificates were issued for 03 buildings applied for building plan approval from UDA, for their compliance with the Code.

Accreditation of Energy Managers, Energy Auditors and Energy Service Providers

Regulations were published in July 2011 for appointing of Energy Managers and Energy Auditors and in line with this, 142 energy managers were appointed in bulk energy consuming institutions, covering both commercial and industrial sectors.

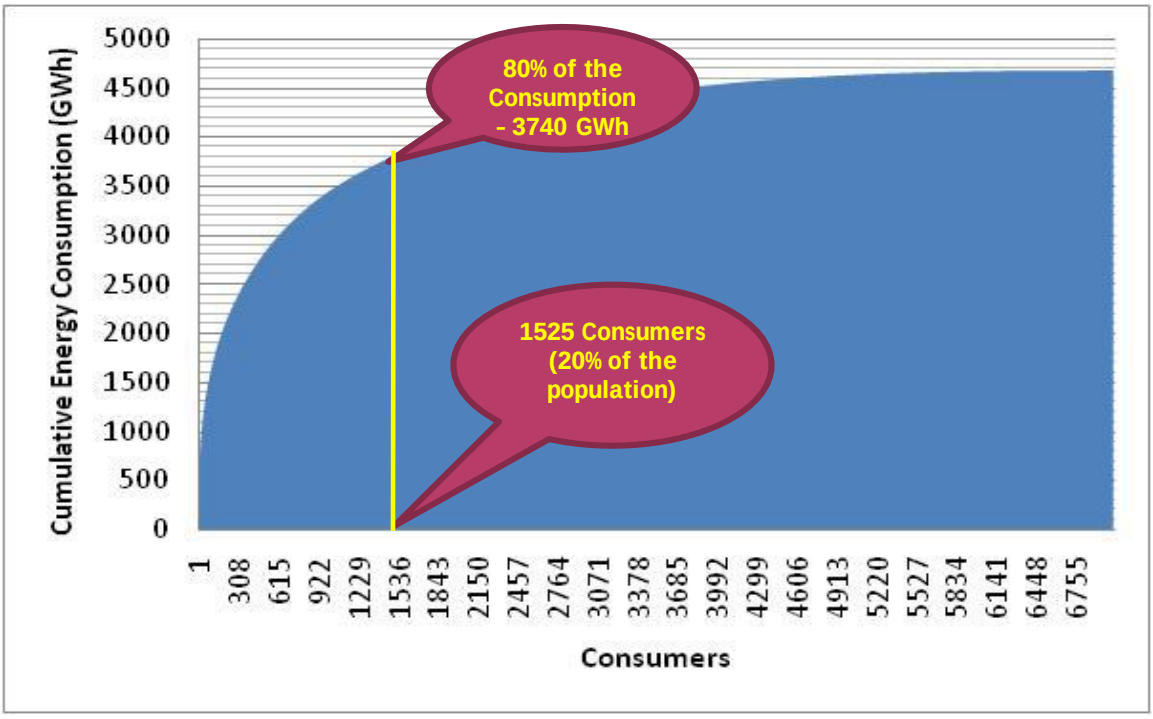


Figure 18: Cumulative electricity consumption in medium and large scale industrial and Commercial sectors

This is a long term continuous programme and the ultimate objectives of this project is to establish energy management systems, similar to those described in ISO 50001Standards, in 1,525 organisations which are contributing to 80% of the total industrial electricity use (as illustrated in Figure 18). As quantified in Table 5, once in full implementation, this programme alone is expected to save 375 GWh of electricity annually.

Figure 19: First Energy auditors Training Programme

Energy Audits

Energy audits are carried out with the objective of providing technical advice to organisations to go for energy conservation. 79 walk-through energy audits were carried out during 2012.

Energy Efficiency Services

Energy efficiency services is a continuous Programme and the services are being carried out mainly through Energy Services Companies (ESCOs) whichare registered with the Sri Lanka Sustainable Energy Authority. Energy auditing in end user sectors, identify the energy wasting areas and implementation of energy saving measures are some of the key elements covered under these services. SEA facilitatesthese activities byproviding energy measuring equipment at nominal rates, training and capacity development. 486 instrument days have been recorded during 2012.

Sector Specific Energy Efficiency Improvement Programme

The technical interventions in energy efficiency improvement are dependent on the pattern of energy use in a particular sector. Therefore, while developing overall national level infrastructure for energy efficiency improvement, it is important to develop specific technical capabilities in individual sectors. Some of the sectors considered include hotels, tea industry, garment, water pumping, buildings – air conditioned and without air condition. In particular, a comprehensive set of energy use data in the hotel sector was collected under EU Switch-Asia Greening Sri Lanka Hotels Project described below.

Hotel Sector

With the target of achieving a 20% energy consumption reduction in hotels, the SEA is providing technical inputs in the EU Switch-Asia Greening Sri Lanka Hotels Project, implemented by the Ceylon Chamber of Commerce, under the assistance of European Union. Hotels registered with the project submit monthly energy use data and trend analyses, while recommendations and guidance and project implementation assistance on energy efficiency improvement are provided by the SEA. 255 hotels are involved in the implementation of energy efficiency activities under this project.

Knowledge Management

Awareness Programmes and Media Publications

Awareness creation through seminars and mass media publications and educational activities were carried out in line with the target of creating an energy conscious nation. A series of seminars and presentations on basic concepts of sustainable energy covering both renewable energy and energy conservation & management were carried out in schools, government institutes, local authorities, and private sector organisations. Several information bulletins including leaflets and booklets related to the subject areas, especially on 'how to reduce the electricity bill', were distributed among the participants of the programmes. An energy conservation campaign targeting school children was also carried out in collaboration with the Mihira newspaper, which also included a quiz programme based on the articles published.

Figure 20: A school awareness programme on sustainable energy

Education Programmes

In addition to the general awareness, programmes for education and capacity building on sustainable energy concepts through more formal channels were formulated and implemented.

School Club Programme

The activities of School energy clubs were continued in 2012 too, with participation of about 60 school clubs in different education zones throughout the country. This programme was launched to assist the effective learning of the energy module introduced into the Science subject in the school curriculum (from Grade 7 to Grade 11) with the assistance of National Institute of Education. Each school was provided with financial assistance to implement relevant programmes in demonstrating and promoting sustainable energy targeting both communities within and surrounding the school.

Scouts Programme

An energy conservation programme was introduced to scouts in collaboration with the Scouts Association of Sri Lanka. Under this programme, curriculum on energy conservation was developed and distributed as a handbook for scouts island-wide. Training of scout instructors was done through 3 programmes held in Colombo and Matara. Energy efficiency proficiency batch for scouts was also launched.

Theme Parks

A concept of Renewable Energy Theme Parks was proposed for the practical demonstration and R&D of resources, technologies and systems, in which the first one was initiated at the solar park in Hambantota. Presently, the operational aspects of solar PV power plants are presented to all the visitors, and enhancement of facilities for demonstration of other solar energy conversion technologies and devices is planned.

Renewable Energy and Energy Efficiency (RE^3) Zones

Among the programmes carried out for different target groups, some programmes had specific objectives as well. For example, under the programmes carried out for local authorities and provincial administration officials, capacity building of them for initiating energy policy development and planning activities at local authority levels was included. This programme had broader objectives of mobilising resources in local authorities (human, finance, technical, administration, etc.) and empowering them to contribute to the sustainable energy development goals, thus branded as Renewable Energy and Energy Efficiency (RE^3) zones. The local authorities which participated in this programme during 2012 include Kandy Municipal Council, Jaffna Municipal Council, Kalmunai Municipal Council, Medadumbara Divisional Secretariat and AkuranaPradeshiyaSabha.

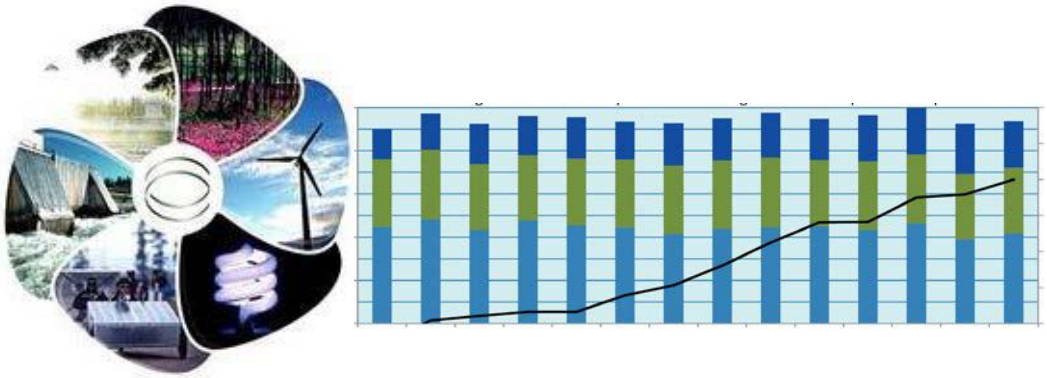
Vidulka 2012

Vidulka national energy exhibition was held for the third time from 17th to 19th August 2012, in collaboration with the Ministry of Power & Energy. It provided an opportunity for consumers at all levels to understand about latest energy efficient technologies.As well as renewable energy based technologies and products. The event also was an opportunity for enhancing awareness among different sectors on the national programmes implemented by SEA in the area of sustainable energy development. Vidulka national energy symposium held parallel to the exhibition was a high level forum for energy researchers to publish their work and also was an opportunity for a sustainable energy dialogue among academia and industrialists.

Sri Lanka National Energy Efficiency Award (SLNEEA)

The Sri Lanka National Energy Efficiency Award programme was implemented for the consecutive third time in August 2012. 31 applications were received from different institutions, under different sectors and most of the submissions were qualified for the award.Phoenix Industries Ltd received the Gold Award, followed by Silver Awards for Brandix Essentials, Koggala, Heritance Ayurveda MahaGedara, Sri Lankan Airlines Ltd and Hatton National Bank PLC, Nittambuwa and Bronze Awards for Loadstar (Pvt) Ltd, Midigama Tyre Division and Jetwing Blue. Merit Certificates were awarded to Ceylon Cold Stores PLC, Mount Lavinia Hotel, Cinnamon Grand, Banadarawela Hotel, The Royal Heritage Hotel (Pvt) Ltd, Sti Andrew's Hotel (Pvt) Ltd and Airport and Aviation Services (Sri Lanka) Ltd. The Professional Met Consultancy Services (Pvt) Ltd won the Bronze Award as the Best Energy Services Company, while a Merit Certificate was awarded to the Industrial Services Bureau in the same category.

Figure 21: Award winners – National Energy Efficiency Awards 2012



Financial Statement

Sri Lanka Sustainable Energy Authority **Final**

Balance Sheet as at 31st of December 2012.

	Note	2012	2012	2011 Restated Rs.	2011 Restated Rs.
ASSETS					
Non Current Assets					
Property, plant and equipment	3	1,355,913,508		1,462,170,917	
Work In Progress	4	7,551,235		20,277,945	
Investments	5	55,507,154	1,418,971,897	63,907,154	1,546,356,016
Current Assets					
Receivables	6	12,449,801		7,335,256	
Other current assets	7	23,593,415		47,959,116	
Cash and cash equivalents	8	159,958,726	196,001,942	68,705,192	123,999,564
Total Assets			1,614,973,839		1,670,355,580
EQUITY AND LIABILITIES					
Equity					
Accumulated fund	9	76,268,523		76,268,523	
Accumulated Surplus		(16,095,714)		(37,002,379)	
Deferred Grant	10	1,356,059,138		1,475,043,735	
Sri Lanka Sustainable Energy Fund	11	142,222,496	1,558,454,443	96,855,634	1,611,165,512
Non current liabilities					
Gratuity payable		6,328,608	6,328,608	5,545,677	5,545,677
Current liabilities					
Other payables	12	47,058,212		51,290,815	
Short term provisions-audit fees		982,076		632,076	
Deposit on land acquisition		2,150,500	50,190,788	1,721,500	53,644,391
Total equity and liabilities			1,614,973,839		1,670,355,580

FOR AND ON BEHALF OF THE SRI LANKA SUSTAINABLE ENERGY AUTHORITY.

Head Finance **Director General** **Chairman**

Sri Lanka Sustainable Energy Authority **Final**

Income statement for the year ended 31st December 2012.

	Note	2012 Rs.	2011 Rs. Restated
Revenue			
Capital Grant for project expenses	13	37,502,139	29,867,008
Amortized deferred grant	14	161,433,593	102,871,812
Recurrent Grant		33,180,000	32,000,000
Other Income	15	98,848,394	36,336,592
Total Revenue		**330,964,126**	**201,075,412**
Expenditure			
Project Expenses	16	(62,473,123)	(47,187,530)
Salaries and allowances	17	(48,391,942)	(40,948,366)
Travelling and subsistence	18	(1,416,843)	(1,967,173)
Supplies	19	(6,610,976)	(5,810,022)
Maintenance expenses	20	(5,356,408)	(4,082,889)
Contract service	21	(19,732,818)	(16,412,150)
Depreciation expenses	22	(161,433,114)	(106,395,700)
Other recurrent expenses	23	(4,642,237)	(8,143,087)
Expenditure for Period		**(310,057,461)**	**(230,946,917)**
Prior year Adjustments		-	
Surplus /(Deficit)		**20,906,665**	**(29,871,505)**

Sri Lanka Sustainable Energy Authority
Statement of changes in Equity for the year ended 31 December 2012

Description	Accumulated fund	Net Surplus / deficit	Deferred Grant	Sri Lanka Sustainable Energy Fund	Total
	(Rs.)	(Rs.)	(Rs.)	(Rs.)	(Rs.)
Balance as at 31.12.2010.	**76,268,523**	**(7,508,558)**	**128,431,867**	**29,414,356**	226,606,188
Increase/ decrease for the year 2011	-	(29,871,505)	1,346,611,868	67,441,279	1,384,181,642
Previous year adjustment		377,684			377,684
Balance as at 31.12.2011.	**76,268,523**	**(37,002,379)**	**1,475,043,735**	**96,855,634**	**1,611,165,513**
Increase/ decrease for the year 2012	-	20,906,665	(118,984,597)	45,366,862	(52,711,070)
Previous year adjustment					
Balance as at 31.12.2012.	**76,268,523**	**(16,095,714)**	**1,356,059,138**	**142,222,496**	**1,558,454,443**

The Accounting policies and notes appearing pages 5 to 17 form an integral part of the financial statements.

Final

Sri Lanka Sustainable Energy Authority
Cashflow statement for the year ended 31st December 2012

	2012		2011	
	Rs.	Rs.	Rs.	Rs.
Cash flows from operating activities				
Surplus for the period	20,906,665		(29,871,505)	
Previous year adjustment				
Adjustment for:				
Amortised Grant	(161,433,114)		(102,871,812)	
Interest Income	(5,782,567)		-	
Service Gratuity Provision	860,127		1,418,489	
Depreciation	161,433,114		102,871,812	
	15,984,225		(28,453,016)	
Increase/decrease in other current assets	20,170,207		(39,482,804)	
Increase/ decrease in current liabilities	(3,453,603)		43,495,297	
Cash generated from operations	32,700,829		(24,440,523)	
Net cash from operating activities		32,700,829		(24,440,523)
Cash flows from investing activities				
Purchase of property, plant and equipment	(12,630,337)		(1,442,842,587)	
Work in progress	(10,867,523)		(15,523,945)	
Interest Invested/Investments in FD & TBs	13,263,516		483,054	
Net cash used in investing activities		(10,234,344)		(1,457,883,478)
Cash flows from financing activities				
Deferred Grant	23,497,382		1,453,007,568	
Sri Lanka Sustainable Energy Fund	45,366,862		67,441,278	
Accumulated fund			(3,523,888)	
Gratuity Payment	(77,195)		-	
Net cash used in financing activities		68,787,049		1,516,924,958
Net Increase in cash and cash equivalents		91,253,534		34,600,957
Cash and cash equivalents at beginning of period		68,705,192		34,104,235
Cash and cash equivalents at end of period		159,958,726		68,705,192
		-		

The Accounting policies and notes appearing on pages 5 to 17 form an integral part of the financial statements.

Notes to the Financial Statements as at 31.12.2012

1. Corporate Information

1.1 General

Sri Lanka Sustainable Energy Authority (SEA) was established on 1st of October 2007. Located at room No. 3G-17 of the BMICH.

Energy Conservation Fund (ECF) Act No. 02 of 1985 was repealed by Sri Lanka Sustainable Energy Authority Act No. 35 of 2007. All the assets and liabilities of ECF as at 30th September 2007 are automatically transferred to the accounts of SEA from 1st of October 2007.

The Regional Center for Lighting (RCL) which was under the SL SEA was transferred to the Ceylon Electricity Board as per Instruction received from the Ministry of Power & Energy. Accordingly the assets and liabilities and employees of the RCL were transferred to the CEB in December 2012.

1.2 Principal Activities of Authority

Sri Lanka Sustainable Energy Authority; To develop renewable energy resources; to declare energy development areas; to implement energy efficiency measures and conservation to conduct programmes to promote energy security, reliability and cost effectiveness in energy delivery and information management.

1.3 No of Employees

Number of employees as at 31.12.2012. - 100

2.1 Summary of Significant Accounting Policies

2.1.1 Basis of Preparation and statement of compliance

The Balance sheet, Income statement, Statement of changes in Equity and Cash flow statement of the Sri Lanka Sustainable Energy Authority (SLSEA) as at 31 December 2012 together with accounting policies and notes have been prepared in compliance with the Sri Lanka Public Sector Accounting Standards.

The financial statements of the SLSEA are presented in Sri Lankan Rupees. The financial statements are prepared on accrual basis under the historical cost convention. Where appropriate accounting policies are disclosed in succeeding notes.

2.1.2 Comparative figures

Comparative figures have been adjusted to conform to the changes in presentation in the current financial year.

The Balance Sheets & Income statement has been retrospectively restated for years 2009, 2010 & 2011 for the correction of omissions/errors in that previous year.

Description	2009 Amount Rs	2010 Amount Rs	2011 Amount Rs
Correction of erroneous deduction of deferred revenue from accumulated fund instead from net surplus	3,523,888	3,523,888	3,523,888
Omission of depreciation of Energy instruments Purchased in 2009 , now accounted for	5,585,981	8,056,460	-

2.2.1 - Accounting for Government Grants and Disclosure of Government Assistance.

Government grants are divided into two categories as capital grant and recurrent grant. Recurrent grant is used to meet the expenses such as salaries of the staff, building rent etc. Capital grant is used to meet project/program expenses and purchase of fixed assets. As the project expenses comprises recurrent and capital expenses both are incurred from the capital grant.

Government capital grants are considered as deferred income which is recognized as income on a systematic and rational basis over the useful life of the asset.

Grants related to recurrent project expenditure are presented as a credit in the income statement, under the heading such as Capital grant for project expenses.

2.2. Accounting for long –term Investments.

Investments are made in Govt. Treasury Bills and Fixed Deposits at National Savings Bank and stated at cost.

2.2.3 - Revenue recognition

2.2.4 Contingent Liabilities and Contingent Assets

As per the cabinet decision dated 31 March 2008 the SL SEA has to pay the Ceylon Electricity Board an estimated Rs. 897 million for purchase of electricity from non conventional renewable energy producers. The SL SEA currently has no means of making this payment, unless funds are granted by the treasury or from earnings through CESS , royalties etc , These are subject to the approval of the General Treasury. Therefore this is disclosed only as a contingent liability.

2.3 Property, Plant and Equipment

2.3.1 Cost and valuation

Fixed Assets is stated at cost less accumulated depreciation. The provision of depreciation for fixed assets is calculated by using straight line method.

Item	Rate of Depreciation
Furniture & Office Equipment	25%
Motor Vehicles	20%
Photocopier	25%
Computers	33.33%
Electrical Goods	25%
Library Book	20%
Energy Instruments	33.33%
Exhibition Equipments	25%
Wind towers	20%
Building & structures	5%
Solar Power Projects:	
A. Solar Panels	5%
B. Steel Structure	10%
C. Building	5%
D. Switch gear	20%
E. Inverters	20%
F. Transformers	5%
G. Power Electronics	33.33%
H. Sanitary & Plumbing	5%
L. Cables	20%
J. Furniture Fittings & Office equipment	25%
K. Tools	33%
L. Machinery	20%
M. Other	20%

2.4 Liabilities and provisions

2.4.1 Gratuity

An amount equal to a half-month's salary based on the salary of the last month of the financial year is allocated for gratuity for all the employees.

2.4.2 EPF & ETF

Employees' are entitled to contribute to EPF & ETF according to the respective rules & regulations. Contributions by the SL SEA are made to EPF & ETF as 12% and 3% respectively.

2.4.3 Declaration of Related Party Transactions

All senior executives /managers of the SL SEA have submitted their declaration on related party transactions. Apart from one senior manager who is a related party to the Sri Lanka Energy Managers Association all managers have declared that they have no related party transactions to disclose in year 2012.

Only 14 members of the board of management have submitted their declarations on related party transactions. The other board members have not submitted same to the SL SEA. Out of the members who have submitted one member has stated that he is a related party to the Sri Lanka Energy Managers. The other 13 have stated that they have no related party transactions to disclose.

2.4.5 Approval of the board

These financial statements have been approved by the board of management of the Authority on 06th June 2014.

Note 3 :
Property, Plant & Equipment

Fixed Assets

Description	Balance as at 31.12.2011. Rs.	Acquisition during the period	Balance as at 31.12.2012. Rs.
Furniture & office equipment	10,578,249	1,011,862	11,590,111
Motor vehicles	45,811,750	-	45,811,750
Photocopier	1,661,391	302,400	1,963,791
Computers	18,035,829	7,394,658	25,430,487
Electrical Goods	218,468	0	218,468
Library Book	429,915	23,437	453,352
Energy Instruments	66,017,279	10,870,068	76,887,347
Wind towers and Instruments	19,016,000	9,628,898	28,644,898
Solar & Mini Hydro projects:			
A. Solar Panels	655,143,926	-	655,143,926
B. Steel Structure	219,252,898	3,008,840	222,261,738
C. Building	110,267,554	13,400,225	123,667,779
D. Switch gear	13,973,767	-	13,973,767
E. Inverters	78,637,410	-	78,637,410
F. Transformers	45,753,626	-	45,753,626
G. Power Electronics	19,861,894	5,611,358	25,473,252
I. Sanitary & Plumbing	166,360,476	-	166,360,476
J. Cables	100,166,611	57,960	100,224,571
K. Furniture Fittings & Office Equip.	2,964,429	-	2,964,429
L. Tools	13,977,290	-	13,977,290
M. Machinery	349,895	3,651,480	4,001,375
H. Other	59,679,157	212,520	59,891,677
	-	-	
Exhibition Equipments	352,853	2,000	354,853
	1,648,510,667	**55,175,706**	**1,703,686,373**

Depreciation Account

Description	Rate of Dep. %	Balance as at 31.12.2011. Rs.	Depreciation for the year Rs.	Balance as at 31.12.2012. Rs.	Net book Value Rs.	Net book Value Rs. 2011
Furniture & office equipment	25	8,630,951	1,406,196	10,037,147	1,552,964	1,947,298
Motor vehicles	20	32,700,604	7,236,969	39,937,573	5,874,177	13,111,146
Photocopier	25	1,058,514	312,465	1,370,979	592,812	602,877
Computers	33.33	14,266,260	3,140,658	17,406,918	8,023,569	3,769,569
Electrical Goods	25	217,785	683	218,468	0	683
Library Book	20	358,811	28,413	387,224	66,128	71,104
Energy Instruments	33.33	55,711,011	10,380,701	66,091,712	10,795,634	10,306,268
Wind towers and Instruments	20	6,116,378	5,446,151	11,562,529	17,082,369	12,899,622
Solar & Mini Hydro projects:						
A. Solar Panels	5	17,053,947	32,757,196	49,811,143	605,332,783	
B. Steel Structure	10	10,226,955	21,954,063	32,181,018	190,080,720	
C. Building	5	3,858,123	5,577,262	9,435,385	114,232,394	
D. Switch gear	20	2,603,332	2,794,753	5,398,085	8,575,682	
E. Inverters	20	8,646,370	15,727,482	24,373,852	54,263,558	
F. Transformers	5	1,085,415	2,287,681	3,373,096	42,380,530	
G. Power Electronics	33.33	4,030,300	6,582,389	10,612,689	14,860,563	
I. Sanitary & Plumbing	5	3,486,733	8,318,024	11,804,757	154,555,719	
J. Cables	20	8,590,324	20,034,431	28,624,755	71,599,816	
K. Furniture Fittings & Office Equip.	25	310,656	741,107	1,051,763	1,912,666	
L. Tools	33.33	1,998,633	4,612,506	6,611,139	7,366,151	
M. Machinery	20	48,889	139,816	188,705	3,812,670	
H. Other	20	5,003,239	11,939,896	16,943,135	42,948,542	133,466,606
			-		-	
Exhibition Equipments	25	336,519	14,272	350,791	4,061	16,334
		186,339,749	**161,433,116**	**347,772,865**	**1,355,913,508**	**176,191,507**

Note 4 : Work In Progress

	31.12.2012	31.12.2011.	31.12.2010.
Renewable Energy Assessment	2,377,000	2,377,000	11,885,000
Hambantota solar park	3,517,591	-	46,693,991
Indurana mini hydro project	1,656,644	15,523,945	
Balangoda wind tower	-	2,377,000	
	7,551,235	20,277,945	58,578,991

Note 5 : Investments

Fixed Deposits (Deposited in National Savings Bank, Borella)

Date of Investment	Date of maturity	Rate of investment	Deposit Reg. No.	Deposit as at 31.12.2012.	Deposit as at 31.12.2011.
21.09.2011.			2-0061-05-10246	-	1,200,000
21.09.2011.			2-0061-05-10238	-	1,200,000
21.09.2011.			2-0061-05-10220	-	1,200,000
21.09.2011.			2-0061-05-10360	-	1,200,000
21.09.2011.			2-0061-05-10394	-	1,200,000
21.09.2011.			2-0061-05-10467	-	1,200,000
21.09.2011.			2-0061-05-10459		1,200,000
21.09.2011.	21.09.2013	12.5%	2-0061-05-10416	1,200,000	1,200,000
21.09.2011.	21.09.2013	12.5%	2-0061-05-10432	1,200,000	1,200,000
21.09.2011.	21.09.2013	12.5%	2-0061-05-10408	1,200,000	1,200,000
21.09.2011.	21.09.2013	12.5%	2-0061-05-10343	1,200,000	1,200,000
21.09.2011.	21.09.2013	12.5%	2-0061-05-10335	1,200,000	1,200,000
21.09.2011.	21.09.2013	12.5%	2-0061-05-10378	1,200,000	1,200,000
21.09.2011.	21.09.2013	12.5%	2-0061-05-10386	1,200,000	1,200,000
21.09.2011.	21.09.2013	12.5%	2-0061-05-10327	1,200,000	1,200,000
21.09.2011.	21.09.2013	12.5%	2-0061-05-10319	1,200,000	1,200,000
21.09.2011.	21.09.2013	12.5%	2-0061-05-10297	1,200,000	1,200,000
21.09.2011.	21.09.2013	12.5%	2-0061-05-10289	1,200,000	1,200,000
21.09.2011.	21.09.2013	12.5%	2-0061-05-102262	1,200,000	1,200,000
21.09.2011.	21.09.2013	12.5%	2-0061-05-10254	1,200,000	1,200,000
25.09.2011.	21.09.2013	12.5%	2-0061-04-12376	450,000	450,000
05.10.2011.	21.09.2013	12.5%	2-0061-03-09834	2,800,000	2,800,000
				18,850,000	**27,250,000**

Treasury Bills- Invested in People's Bank, Head Quarters

Date of Investment	Date of maturity	Rate of investment	Deposit Reg. No.	Deposit as at 31.12.2012.	Deposit as at 31.12.2011.
18.01.2011.	17.01.2013.		LKB00615C156	12,489,626	12,489,626
09.07.2011.	11.07.2013.		LKB00314J011	24,167,528	24,167,528
				36,657,154	**36,657,154**

Total Amount	**55,507,154**	**63,907,154**

Note 6 - Receivables

Receivable interest on Fixed Deposits

Date of Investment	Date of maturity	Rate of investment	Deposit as at 31.12.2012.	Receivable for 2012 Rs.	Receivable for 2011
21.09.2011.					28,504
21.09.2011.					28,504
21.09.2011.					28,504
21.09.2011.					28,504
21.09.2011.					28,504
21.09.2011.					28,504
21.09.2011.					28,504
21.09.2011.	21.09.2013	12.5%	1,200,000	43,274.93	28,504
21.09.2011.	21.09.2013	12.5%	1,200,000	43,274.93	28,504
21.09.2011.	21.09.2013	12.5%	1,200,000	43,274.93	28,504
21.09.2011.	21.09.2013	12.5%	1,200,000	43,274.93	28,504
21.09.2011.	21.09.2013	12.5%	1,200,000	43,274.93	28,504
21.09.2011.	21.09.2013	12.5%	1,200,000	43,274.93	28,504
21.09.2011.	21.09.2013	12.5%	1,200,000	43,274.93	28,504
21.09.2011.	21.09.2013	12.5%	1,200,000	43,274.93	28,504
21.09.2011.	21.09.2013	12.5%	1,200,000	43,274.93	28,504
21.09.2011.	21.09.2013	12.5%	1,200,000	43,274.93	28,504
21.09.2011.	21.09.2013	12.5%	1,200,000	43,274.93	28,504
21.09.2011.	21.09.2013	12.5%	1,200,000	43,274.93	28,504
21.09.2011.	21.09.2013	12.5%	1,200,000	43,274.93	28,504
25.09.2011.	21.09.2013	12.5%	450,000	16,228.10	10,270
05.10.2011.	21.09.2013	12.5%	2,800,000	100,974.83	57,381
			18,850,000	679,777	**637,731**

Receivable interest on Treasury Bills

Date of Investment	Date of maturity	Rate of investment	Deposit as at 31.12.2012	Receivable for 2012	Receivable for 2011
18.01.2011.	17.01.2013.		12,489,626	1,050,908	804,264
09.07.2011.	11.07.2013		24,167,528	1,448,396	818,036
			36,657,154	2,499,304	**1,622,300**

Receivable Income-Energy Instrument Hiring

	31.12.2012.	31.12.2011.	31.12.2010.
Barndes Finishing Ltd. - 2005	4,850	4,850	4,850
BMI Holding (Pvt.) Ltd-2005	7,200	7,200	7,200
Hayleys Industrial Solutions -2005	500	500	500
Enerfab (Pvt) Ltd-2006	3,750	3,750	3,750
Access Energy Solutions	500	500	500
Access Energy Solutions	500	500	500
Brandix	2,650	250	250
DIMO	1,600		
Energy Solve Int.	5,750		
National Cleaner Production center	750		
MAS Active	2,400		
Engineering Design center	5,000		
Glide (Pvt) Ltd	150		
SLEMA	250		
	35,850	17,550	17,550
Recivable -Vidulka income	472,175		
Power generation -Indurana	80,270		
Training program			
Power generation -hambanrthota	8,682,425		
Prior year adjustment		5,057,675	
	9,270,720	**5,075,225**	**17,550**
Total Amount	12,449,801	7,335,256	**2,760,635**

	31.12.2012.	31.12.2011.	31.12.2010.
Note 7: Other current assets			
Advances			
CFL loan	194,673	194,673	194,673
Recivable from Energy Fund TO Fund of Authority	7,269,950		
Recivable from Fund of authrity to Energy Fund		30,000,000	
Borrowed by Ministry of Power & Energy	8,000,000		
Receivable from CEB		9,912,981	
Festival Advance			59,000
Medical Insurance	500	500	500
Advance A/C		22,500	504,815
National Water Resources Board			240,000
Advance Deposit fuel ect	136,500	111,500	111,500
Special Advance			77,500
Distress loan			7,227,549
Hambantota - CEB deposit	52,000	52,000	52,000
Indurana - CEB Deposit	62,500		
Telephone Deposit	8,775	8,775	8,775
Deposit SWRDB National Memorial fund	240,000		
Advance employee training programmes	80,000		
Advances for programes	161,185		
	16,206,083	**40,302,929**	**8,476,312**
Revolving Fund			
Distress loan	7,314,344	7,592,687	
Special Advance	500	500	
Festival Advance	72,489	63,000	
	7,387,332	**7,656,187**	
	23,593,415	47,959,116	
Note 8: Cash and cash equivalents			
National Savings Bank-Borella	149,942,180	66,981,167	29,540,089
People's Bank-SEA-078-1-001-8-8-503576	5,798,073	615,197	3,977,368
People's Bank-SEA-078-1-002-7-8-503576	3,082,245	537,860	31,868
Bank of Ceylon-Trrington	1,136,228	570,968	554,910
	159,958,726	**68,705,192**	**34,104,235**

Note 9 : Accumulated fund

Accumulated fund of Energy Conservation Fund (ECF) as at 30 September 2007 transferred to Sri Lanka Sustainable Energy Authority (SLSEA) on 1 October 2007. It consists the following :

Accumulated fund as at 30 September 2007	61,244,579	61,244,579	50,672,915
Initial Capital	5,000,000	5,000,000	5,000,000
Capital Grant - Ministry of Power And Energy	5,761,145	5,761,145	5,761,145
Capital Grant UNDP	3,612,560	3,612,560	3,612,560
Donor Grant - Food & Agriculture Organisation	650,239	650,239	650,239
Total	76,268,523	76,268,523	65,696,859

	2012	2011	2010
Note 10: Deferred Grant			
Capital Grant 2008	33,687,060	33,687,060	33,687,060
Capital Grant 2009	11,705,408	11,705,408	11,705,408
Foreign Grant 2009-Japnese	24,165,380	24,169,380	24,169,380
Capital Grant 2010-Hambantota solar park (WIP)	46,693,991	46,693,991	46,693,991
-Unamortised capital grant	10,563,444	10,563,444	10,563,444
Foreign Grant 2010-Japnese	11,419,569	11,415,569	11,419,569
Capital Grant 2011-Indurana mini hydro project (WIP)	15,523,945	15,523,945	
-Unamortised capital grant-Indurana MHP	68,548,216	68,548,216	
Foreign Grant 2011-Japnese	1,155,016,402	1,155,016,402	
- Korean	191,097,075	187,228,286	
Deffered grant -Foreign aid -2012 -ADB	15,082,346		
Treasury capital grant-2012	23,497,861		
Less:			
-Depriciation-2012	(161,433,593)		
-Depriciation-2011	(63,289,946)	(67,095,136)	
-Depreciation for previous years	(26,218,020)	(22,412,830)	(9,806,985)
	1,356,059,138	**1,475,043,735**	**128,431,867**
Note 11:			
Sri Lanka Sustainable Energy Fund			
RE income	130,426,630	74,350,910	25,720,450
Instrument hiring and energy auditing	10,769,803	6,519,206	3,693,906
Interest on Savings A/C - NSB	7,026,063	1,271,298	
Widrawal for awareness thru mass media programes	(6,000,000)		
	142,222,496	**82,141,414**	**29,414,356**
Note 12: Other Payables			
Sustainable Energy Fund		30,000,000	
Fund of the Authority	7,269,950		
Switch Asia control A/C	3,051,737	507,352	
Ministry of Power and Energy	500	500	500
Accrued expenses	29,294,019	16,303,819	4,657,611
Creditors			
Renewable Energy-E Net Solutions (Private) Ltd.	1,667,500	1,667,500	1,667,500
Acquisition of Energy Instruments			
- E-Net Solutions (Pvt.) Ltd	326,025	326,025	326,025
Retention	3,634,360	1,744,883	
Narahenpita Jathika Pola	99,405	209,545	
Sundry creditor			
Sri Lanka Custom	310,748	310,748	310,748
Welfare Society SEA	442	442	442
Battery deposit			
Sundry payable	984,269		
Refundable deposits			
E-Net solutions (Pvt) Ltd	10,000		150,000
ENL Consultant	150,000	150,000	10,000
E-Net solutions (Pvt) Ltd		10,000	
Zigma Technologies	10,000	10,000	10,000
Renco Renewable Energy Co. (Pvt.) Ltd	30,000	30,000	30,000
Gamini Senannayake	-	20,000	
vidulka exibition	9,256		
vehicle diposal tender	156,000		
Ceylon petrolium	54,000		
	47,058,212	**51,290,814**	**7,162,826**

	31.12.2012.	31.12.2011.	31.12.2010.
Note 13 : Capital grant for project expenses			
Capital grant received from Treasury	61,000,000	135,610,000	135,500,000
Transfer payments under FR 295 (1)		1,500,000	5,852,472
Less:			
Hambantota Solar Park	-	89,727,504	46,693,991
Work in progress	10,867,523	15,523,945	
Capital assets acquired during the current year	12,630,338	1,991,543	14,966,796
	37,502,139	**29,867,008**	**79,691,685**
Note 14 : Amortized deferred grant			
Depreciation for current year	161,433,593	66,082,128	4,403,352
Depreciation for previous years		40,313,572	20,378,649
	161,433,593	**106,395,700**	**24,782,001**
Note 15 : Other Income			
Energy permit fees	**30,269,950**	14,714,220	
Interest on Fixed deposits and Treasury bills	5,782,567	5,128,721	6,976,570
SAARC Energy centre	528,917	383,388	
Distress loan interest	294,114	310,964	308,985
Special advance interest	2,293	1,481	1,301
Interest on Savings A/C - NSB			608,661
Income from power generation-Hambanthota	37,278,565	16,577,905	
Income from power generation-Indurana	80,270		
Training course on lighting			9,593,114
Vidulka exhibition (sponsorship)	9,707,415	8,271,034	10,019,391
Switch Asia programme	-	467,753	1,040,100
accreditation of energy managers	1,639,300		
Other Income	269,692	82,679	349,952
Income from energy fund	6,000,000		
Regional centre for lighting	6,995,311	54,992	
Prior year adjustment		5,057,675	
	98,848,394	**51,050,812**	**29,059,775**
Note 16 : Project Expenses			
Renewable Energy			
Hydrogen from surplus wind potential - transport application			
Development of Electric Vehicle Technology	680	13,513	
Biogas generation from market garbage demonstration project	5,738	2,000	
Preparation of bio-fuel standards			
Promotion of efficient wood stoves	228,285		
Develop a small scale WECS suits to complex terrain in Sri Lanka		2,868,775	
Creating a suitable mechanism for data vending			
Assist pvt sector in developing CDM documents		12,518	

	31.12.2012.	31.12.2011.
Develop a comprehensive wind data base embracing all historical and existing wind measuring stations		5,000
Develop renewable energy resource maps for each resource type & Report on estimated RE potential	1,460,244	481,303
Determine the optimum penetration level of RE		
Encourage energy plantations &set up 1 bio mass zone	1,165	
Establish 10 long term wind/Solar measuring stations at selected locations in Sri Lanka with related satellite masts & additional 3 stations covering Northern SL, Initiate wave energy measurement		332,840
Establish 10 long term wind/Solar measuring stations ,establish 3 wind measuring stations in Northern SL, Initiate wave energy resource assessment.	414,647	
Amendments to the Regulations to fully utilize the potential of a given resource site	15,755	3,440
Establish a fully fledged energy park for grid connected solar power generation	7,102,263	
Establish a fully fledged energy park for grid connected 100 MW wind farm	150,580	14,851
Ratify the already proposed new methodology for project approval process as depicted in the presidential task force report	67,256	
Engage other relevant institutions to promote the development of NCRE industry as a national priority	933,034	2,000
Establish a primary contact within the SEA to offer services with regard to land issues	489,092	
Resolution of project approval related issues		114,969
Allocation of renewable energy resources	1,031,084	310,376
Dispute resolution		
Energy sector investment promotion of RE projects		720,127
Energy sector investment promotion (pvt sector facilitation)	186,623	
realizing the full economic potential in hydro power in GIS countries		
Streamline the technical standards of off-grid Generators	8,925	
Identify potential areas for off-grid applications and resource options available for such areas		6,670
Electrify 10 villages using off grid electrification option	6,545,905	
Finalise the RE portfolio and study the financial impact for various RE scenarios		
Progress monitoring & impact assessment of post installation of RE projects at selected locations	7,990	
Sri Lanka Energy balance	1,554,677	
	20,203,943	4,888,382
Energy Management		
Measures for Systematic Energy Management Approaches in Bulk Energy Consuming Organizations	1,554,199	92,378
Energy Labeling Programme	207,661	98,648
Establishment of Laboratory facility (Through ADB Assistance)		
Incorporation of the Code into the UDA building approval process, reference manuals and review of the code	19,800	376,188
establishment of motor testing facilities	250,700	
Sector specific programmes	57,965	117,500

	31.12.2012.	31.12.2011.	
Establishment of E2 shop		75,713	
Establishment of E2 zones		242,626	
Street Lamp code			
Instrument Bank	63,170	82,347	
Energy auditing in government sector institutions	31,514		
Strengthening ESCO's	671,904	10,080	
Energy efficiency improvement facility			
Introduction of policy guide lines		833,329	
Develop a transport energy policy/fuel economy standards	57,510		
Awareness programmes through media	5,325,141	2,462,150	
Vidulka Energy Week	9,554,421	14,123,433	
Dayata Kirula	2,267,449	95,056	
Printing and Publication	3,533,181	1,897,573	
Sri Lanka National Energy Efficiency Award	3,767,879	528,732	
Training programme for school children and office staff	2,434,820	870,198	
Introduction of Co-generation		267,515	
Annual review of impact of EE programmes in the national economy			
Maintenance of web site	74,361		
Establishment of bench marks	482,000		
Study on tri generation thermal storage & establishment of data base on equipment	1,120		
Establishment of E2 shop	67,012		
Establishment of E2 zone	889		
Repair & maintenance of wind instruments	124,856		
Regional Centre for Lighting	**11,721,628**	20,125,682	
	42,269,180	42,299,148	
	62,473,123	**47,187,530**	**83,360,030**
Recurrent Expenses			
Note 17 : Salaries and allowances			
Salaries for staff	33,474,859	25,683,097	21,673,786
Cost of living allowance	5,986,013	5,320,787	4,441,267
Allowances for staff		1,833,677	5,688,847
E.P.F. 12%	4,233,838	3,533,328	3,187,003
E.T.F. 3 %	1,047,061	870,477	721,854
Overtime & Holiday Pay	2,790,044	2,243,473	2,068,694
PAYE Tax			24,636
Gratuity	860,127	1,463,527	615,990
Compensation payment			
	48,391,942	**40,948,366**	**38,422,078**

	31.12.2012.	31.12.2011.	
Note 18 : Travelling & Subsistence			
Travelling- Local	864,889	710,126	695,853
Travelling- Foreign	551,955	1,257,047	1,095,174
	1,416,843	**1,967,173**	**1,791,027**
Note 19 : Supplies			
Printing, Stationary & office requisites	2,247,951	1,954,678	1,383,319
Fuel & Lubricants	4,279,789	3,785,964	1,965,269
Others- News Papers & Miscellaneous Service	83,236	69,380	76,145
	6,610,976	**5,810,022**	**3,424,733**
Note 20 : Maintenance Expenditure			
Maintenance of Vehicles and Insurance & License fees	5,027,580	3,197,983	3,704,665
Maintenance of Office Equipment	328,828	884,906	283,286
	5,356,408	**4,082,889**	**3,987,951**
Note 21 : Contract Service			
Office Rents and hire charges	17,467,060	14,554,873	13,846,924
Postal and Telecommunication charges	1,858,127	1,507,277	1,512,299
transport	57,630		135,589
Audit fees	350,000	350,000	350,000
	19,732,818	**16,412,150**	**15,844,812**
Note 22: Depreciation Expenses			
Furniture & office equipment	1,406,196	1,934,645	1,767,878
Motor vehicles	7,236,969	8,158,750	9,193,750
Photocopier	312,465	310,732	222,813
Computers	3,140,658	4,514,009	4,383,189
Electrical Goods	683	2,738	2,738
Library Book	28,413	26,166	12,817
Energy Instruments	10,380,701	20,972,481	6,587,700
Wind towers and Instruments	5,446,151	3,519,262	2,597,116
Hambantota Energy park	133,466,606	66,942,916	
Exhibition Equipments	14,272	14,000	14,000
	161,433,114	**106,395,699**	**24,782,000**
Note 23 : Other Recurrent Expenses			
Office & other miscellaneous Expenses	3,036,643	616,866	740,646
Translation Fees	65,406	17,855	59,183
Allowances for Board Members	718,000	472,000	146,000
Refreshment Charges	339,630	224,146	191,414
Labour Charges			
Local Training Program	482,558	434,817	457,810
Bank charges			42,228
Vidulka and public awareness		6,377,403	
	4,642,237	**8,143,087**	**1,637,281**

Retrospectively Restated Balance Sheets as at 31/12/20xx

	2010(RS)	2009(Rs)	2008(Rs)
Assets			
Non Current Assets			
Property,plant and equipment	73,055,142	47,203,906	55,255,338
Work in Progress	58,578,991	23,770,000	23,770,000
Investments	63,907,154	63,907,154	27,250,000
Treaury Bills		-	31,019,470
	195,541,287	134,881,060	137,294,808
Current Assest			
Receivables	2,760,635	4,359,058	-
Other current assets	8,476,312	8,050,621	-
Cash and cash equivalents	34,104,235	16,386,215	7,332,641
Advance			7,354,579
	45,341,182	28,795,894	19,696,220
Total Assest	**240,882,469**	**163,676,954**	**156,991,028**
Liabilities			
Non Current Liabilities			
Provision for Gratuity	4,127,188	3,588,118	3,105,000
	4,127,188	3,588,118	3,105,000
Current Liabilities			
Other payables	7,162,826	13,689,283	-
short term provisions	438,518	355,000	-
Deposit on land acquisition	2,547,750	-	-
Sundry Creditor		-	339,535
	10,149,094	14,044,283	35,646,489
Net Assets/Equity			
Accumulated fund	76,268,522	83,316,299	79,792,412
Add:Net Surplus/Deficit		-	(4,746,429)
Deferred Grant	128,431,867	45,392,468	43,193,556
Net Surplus	(7,508,558)	788,111	
Sri Lanka Sustainable Energy Fund	29,414,356	16,547,675	-
	226,606,187	146,044,553	118,239,539
Total Equity & Liabilities	**240,882,469**	**163,676,954**	**156,991,028**

Accumulated fund	65,696,858	
Net Surplus	3,063,106	
Deferred Grant	128,431,867	
Sri Lanka Sustainable Energy Fund	29,414,356	226,606,187
Current liabilities		
Other payables	7,162,826	
Short term provisions-audit fees	438,518	
Deposit on land acquisition	2,547,750	10,149,094
Total equity and liabilities		240,882,469

Retrospectively Restated Income Statement for Year Ending 31/12/20xx

	2010(RS)	2009(Rs)
Revenue		
Capital Grant for project expenses	79,691,685	62,902,359
Amortised deferred grant	21,258,113	7,374,841
Recurrent Grant	46,740,000	47,100,000
(-for recurrent expenses)		
Other Income	29,059,774	10,914,038
Total Revenue	**176,749,572**	**128,291,238**
Expenditure		
Project Expenses	(83,360,030)	(42,815,100)
Salaries and allowances	(38,422,077)	(31,608,871)
Travelling and subsistance	(1,791,027)	(1,333,996)
Supplies	(3,424,733)	(6,533,876)
Maintenance expenses	(3,987,951)	(4,009,507)
Contract service	(15,844,812)	(12,212,771)
Depreciation expenses	(40,894,921)	(21,149,073)
Other recurrent expenses	(1,637,281)	(3,092,258)
Expenditure for Period	**(189,362,832)**	**(122,755,452)**
Prior year Adjustments	-	
Surplus /(Deficit)	**(12,613,260)**	**5,535,786**

EH/I/SLSEA/FA/2012 November 2014

The Chairman

Sri Lanka Sustainable Energy Authority

REPORT OF THE AUDITOR GENERAL ON THE FINANCIAL STATEMENTS OF THE SRI LANKA SUSTAINABLE ENERGY AUTHORITY FOR THE YEAR ENDED 31 DECEMBER 2012 IN TERMS OF SECTION 14(2) (c) OF THE FINANCE ACT, NO.38 OF 1971

The audit of financial statements of the Sri Lanka Sustainable Energy Authority (SLSEA) for the year ended 31 December 2012 comprising the balance sheet as at 31 December 2012 and the income statement, statement of changes in equity and cash flow statement for the year then ended and summary of significant accounting policies and other explanatory information, was carried out under my direction in pursuance of provisions in Article 154(1) of the Constitution of the Democratic Socialist Republic of Sri Lanka read in conjunction with Section 50(3) of the Sri Lanka Sustainable Energy Authority Act, No.35 of 2007 and Section 13(1) of the Finance Act, No. 38 of 1971. My comments and observations which I consider should be published with the annual report of the Authority in terms of Section 14(2) (c) of the Finance Act, appear in this report. A detailed report in terms of Section 13(7) (a) of the Finance Act was issued to the Chairman of the Authority on 29 November 2013.

1.2 **Management's Responsibility for the Financial Statements**

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Sri Lanka Public Sector Accounting Standards and for such internal control as the management determines is necessary to enable the preparation of financial statements that are free from material misstatements, whether due to fraud or error.

1.3 **Auditor's Responsibility**

My responsibility is to express an opinion on these financial statements based on my audit. I conducted my audit in accordance with Sri Lanka Auditing Standards. Those standards require that I comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatements.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Authority's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements. Sub-sections (3) and (4) of Section 13 of the Finance Act, No.38 of 1971 give discretionary powers to the Auditor General to determine the scope and extent of the audit.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my qualified audit opinion.

1.4 **Basis for Qualified Opinion**

My opinion is qualified based on the matters described in paragraph 2.2 of this report.

2. **Financial Statements**

2.1 Qualified Opinion

In my opinion, except for the effect of the matters described in paragraph 2.2 of this report, the financial statements give a true and fair view of the financial position of the Sri Lanka Sustainable Energy Authority as at 31 December 2012 and its financial performance and its cash flows for the year then ended in accordance with Sri Lanka Public Sector Accounting Standards.

2.2 **Comments on Financial Statements**

2.2.1 **Accounting Deficiencies**

The following observations are made.

(a) A land with extend of 50 acres acquired from the Mahawali Authority and the buildings constructed therein for Hambantota Solar Park Project had not been valued and brought to the financial statements.

(b) The fully damaged wind tower had not been removed from the fixed asset account and as a result, the property plant and equipment shown in the financial statements as at 31 December 2012 had been overstated by Rs. 2,377,000.

(c) The investments relating to the Sri Lanka Sustainable Energy Guarantee Fund amounting to Rs. 55,507,154 had been shown under the investments (Note-05) in the financial statements of the Authority without being accounted the related Fund account.

2.2.2 **Receivables and Payables**

Age analysis had not been prepared in respect of balances of receivables and payables amounting to Rs. 12,449,801 and Rs. 47,058,212 respectively shown in financial statements. Further, confirmations relating to the receivables had also not been available for audit. Therefore the accuracy and the reliability of these balances could not be ascertained in audit.

2.2.4 **Unreconciled Differences**

A difference of Rs. 14,714,220 had been observed between the opening balance of the Sri Lanka Sustainable Energy Fund shown in the balance sheets for the previous year and the corresponding amount shown in the Note-11 to the financial statements for the year under review.

2.3 **Non-compliance with Laws, Rules and Regulations.**

According to the Section 8(1) of the Finance Act, No. 38 of the 1971, every Public Corporation should be prepared a budget for every financial year and it should be approved by the governing body of such institution not later than three months prior to commencement of the financial year to which the budget related. Nevertheless, the budget of the Authority for the year under review had been approved by the Board of Directors only on 26 January 2012

3 **Financial Review**

3.1 **Financial Results**

According to the financial statements presented, the operation of the Authority for the year under review had resulted in a surplus of Rs. 20,906,665 as against the deficit of Rs. 29,871,505 for the preceding year, thus indicating an improvement of Rs. 50,778,170 in the financial results. The increase of energy sales income of Hambanthota Solar Park Project by Rs. 20,700,660 was the main reason for this improvement.

3.2 Operating Inefficiencies

3.2.1 Development of Three Prototype Electric Vehicles

As pointed out in my previous year audit report, a sum of Rs. 7,888 million or 87.66 per cent of the agreed price had been paid as at 31 December 2009 to develop three prototype electric vehicles within 18 months from the date of 28 September 2007. It was observed that the developer had failed to complete even a single vehicle up to the date of audit inspection on 26 May 2013, even though the project period had been dragged for nearly four years excessively without formal time extension.

3.2.2 Supply, Fabrication, Installation and Commission of Ten Wind Measuring Masts

In addition to the weaknesses highlighted in my previous year audit report the following observations are also made in this regard.

(a) Only 3 wind measuring masts were actively furnished the required data by February 2013.

(b) It was observed that the physical performance of wind measuring data collection was remained around 51 per cent level. Therefore, the Authority could not able to achieve the expected objectives such as identify the sites for establishing the wind measuring masts, collection of measuring data of wind and reporting those data etc. from the establishment of Wind Measuring Masts.

(c) The Tower erected in Nadukuda was not in a required standard. Therefore it had been removed on 27 April 2012 and a new Tower had been installed. The parts of Tower removed were corroded and the Authority had failed to handover 15 stay wires to audit for physical verification. Further, it was observed that the cost incurred to install the Tower in Nadukuda amounting to Rs. 2,377,000 become fruitless expenditure.

3.2.3 Lands Acquisition for the Renewable Energy Project

Out of 11 Projects expected to implement, 06 Projects relating to the renewable energy had been abandoned during the period from 2009 to 2012 due to lack of monitoring of the land acquisition process implementing by the Government on behalf of the Authority.

3.2.4 Switch – Asia Programme

As pointed out in my previous year audit report, a sum of Rs. 3,135,202 out of Rs. 7,334,354 received under Switch Asia Programme had been paid to all officers of the Authority as professional allowance during the years 2010 and 2011 in contrary to the provisions in the Public Enterprises Circular No. 95 of 04 June 1994 and Public Finance Circular No. PF/PE/5 of 11 January 2000.

The Secretary to the Ministry of Power and Energy had instructed the Chairman of the Authority by his letter No. PE/IA/22/vol. II dated 03 December 2012 to recover this payment from all officers or from the Chairman of the Authority. However meaningful actions had not been taken to recover this unauthorized payment even up to the date of audit inspection on 20 November 2013.

3.3 Human Resources Management (HRM)

Proper personal management was not in operation in the Authority and the present recruitment procedure of the Authority had not been approved by the Department of Management Services.

3.4 Transactions of a Contentious Nature

Interest income amounting to Rs. 36,208,817 received during the period from 2008 to 2012 on the investments of Sri Lanka Sustainable Energy Fund and Sri Lanka Sustainable Guarantee Fund had been utilized by the Authority without being remitted to the relevant Funds.

4 Accountability and Good Governance

4.1 Budgetary Control

Significant variances were observed between the budgeted and the actual income and expenditure for the year under review thus indicating that the budget had not been made use of as an effective instrument of financial management control.

4.2 Submission of Financial statements

According to the Section 6.5 of the Public Enterprises Circular No PED/12 of 02 June 2003 the draft annual report and accounts should be rendered to the Auditor General within 60 days after the close of the financial year. However, the financial statements for the year under review had been submitted to the Auditor General only on 12 March 2013 and subsequently the Authority had withdrawn the financial statements and resubmitted the revised financial statements on 25 June 2014.

6 Systems and Controls

Deficiencies observed in systems and controls during the course of audit were brought to the notice of the Chairman of the Authority by my detailed report issued in terms of Section 13 (7) (a) of the Finance Act. Special attention is needed in respect of the following areas of control.

(a) Budget
(b) Assets Management
(c) Receivables and Payables
(d) Accounting
(e) Implementation of Projects
(f) Human Resources Management
(g) Payment Procedure

W.P.C. Wickramarathne
Acting Auditor General

My No: ESA /IA/14/02

25.08.2014

The Auditor General

Auditor General's Department

306/72

Polduwa Road

Baththarmulla

Dear Sir,

Report of the Auditor General on the Financial Statements of the Sri Lanka Sustainable Energy Authority for the ended 31st December 2011 in term of section 14 (2) (c) of the financial Act no 38 of 1971

This is with the reference of above mentioned report and sending the reply herewith

Prasad Galhena

Chairmen

Sri Lanka sustainable Energy Authority

Copy: 01. Mr. R.M. Rathnayake, Audit Superintendent, Auditor General's Department.

02. Secretary – Ministry of Environment and Renewable Energy

1.1 Comments on Financial Statements

1.1.1 Accounting Deficiencies

(a) Cabinet approval has been received to acquire the said land. SLSEA has initiated the acquisition process and waiting for the deed of the land from the Mahaweli Authority. Valuation cannot be done until the deed is executed. The block of land under reference will be taken into the Asset Register on the conclusion of the valuation process. We have mentioned the particulars of this acquisition below the balance sheet of 2013 as a foot note and action will be taken to take amounts in to the accounts after the valuation is done.

(b) The current assets include bank interest receivable as well. But these amounts have been shown separately under interest income and interest invested in the cash flow statement. The net decrease in current asset was arrived as follows :

Gross decrease in current assets	19,251,156
Taken to interest income	5,782,567
Taken to interest invested	(4,863,516)
Net decrease in Current Assets	20,170,207

(c) The amount of Rs.42, 140,932/- transferred to income statement which given in the audit report appears have been taken from our Draft Financial Accounts. The amount given in the Final Income statement is Rs.37, 502,139/-. Hence there is no overstatement in cash flow from Capital grant in the Final Account.

(d) We have re-examined the amounts of cash investments for Property Plant & Equipment (PPE) & Work In Progress (WIP) stated in our General Ledger and kindly informed you the amounts included are as follows.

Hambantota Solar Park	3,557,151
Indurana Minihydro Project	7,310,372
Total cash investment in	10,867,523

(e) The said application fee of Rs. 110,000/- has been corrected by posting to the Sustainable Energy Fund balance (Renewable Energy income) in the General Ledger and now it is not affecting to the net surplus shown in the Financial Statements.

(f) The 3.1. (l) observation of the 13 (7) (a) audit report, stated that the provision for gratuity was understated by 535,033/-. But 14 (2) (c) report stated that the provision has been over stated by the same amount. We observed that mistakenly we have overstated Rs.567, 202/- in our draft accounts. Now this error was rectified by correcting overstated surplus.

(g) This loss has been reported and the F.R. 104 application has sent to the ministry and action will be taken to written off this amount from the asset register after receiving the F.R.109 approval.

(h) The amounts in the financial statement for purchase of fixed assets etc was obtained from the General Ledger & not from the Fixed Assets register. The value of this assets pointed out in your report properly accounted in the General Ledger and it is consisted the total amount of the Fixed Assets.

(i) Action has been taken to transfer Rs.377, 400/- from the account of furniture and fittings to computer accessories purchase account and adjustment for the depreciation was made to rectify the surplus by a journal transaction.

1.1.2 Receivables and Payables

(i) Actions have been taken to prepare age analysis of Receivable and Payable balances**.**

1.1.3 None Compliance with Laws Rules & Regulations

In order to prepare and approve the budget three months prior to commencement of the financial year, the budget ceilings have to be received from the Treasury in written form in advance. However, the present practice is that, the approved budget is communicated only after the budget is approved by the Parliament in late November.. Generally budgets are approved by parliament in November every year, until then Board of Directors is unable to approve the budget of the Authority. Therefore it is impossible to comply with this provision

2 Financial and operating review

2.1 Financial Review – Financial Results

Observation of the Auditor general is comprehended.

2.2 Operating Review

2.2.1 Development of Three Prototype Electric Vehicles

The developer who undertook the above task managed to complete the chassis assembly and drive train on 25 November 2013 and demonstrated a short test drive. A video clip of this achievement can be viewed athttp://youtu.be/nrYFROJL25c <http://youtu.be/nrYFROJL25c>. The developer is now attending to the work of affixing the body shell to the chassis, at a slow pace, constrained by financial limitations. Legal action was initiated by referring the breach of agreement to the Department of Attorney General and was acknowledged (Ref. C/154/14/SLSEA) by the Attorney General on 30 July 2014. By either means a conclusion of the project is expected this year.

2.2.2 Supply, Fabrication, Installation and Commission of Ten Wind Measuring Masts

a) All wind towers are comprised of online data collecting facilities. Thus online data collection is depended on the signal strength of the locations. When such situation arises, data has to be collected physically. Only three wind measuring mast were furnished online data at the time of investigation.

b) The Authority is responsible for providing the land for Commissioning wind measuring masts. However due to the security reason at that time, some land located in North and East could not be provided to the contractor on time. As a result, of that several towers have been dragged. However, the average wind measuring data collection was at 57%, which is in an acceptable level.

c) The Nadukuda tower was erected in 15/03/2011 and data was collected up to 27/04/2012. The tower height 50m and Asian Development Bank (ADB) project wind tower of 80 m height was erected at the same place. So, most effective data collecting wind Tower is the highest Tower. By considering these facts, action has been taken to remove the Wind Tower and it is being preceded to handover the ADB tower to the Authority. 15 stay wires are in the stores of the Authority and it can be hand over anytime to verify physically.

3.2.3. Land Acquisition for the Renewable Energy Project

According to the section 30 of SLSEA Act, a land required by the Authority for any purpose of the Authority deemed to be a public purpose (including Renewable Energy development), may be acquired under the Land Acquisition Act. Based on past experience, it has been noted that this process needs a minimum 72 week period. Several institutions are involved and acquisition process depends on the contribution of these institutions such as Ministry of Land & Land Development, Ministry of Environment & Renewable Energy, Sri Lanka Sustainable Energy Authority, Relevant Divisional Secretariat Office, Survey Department, Department of Government Printing, Valuation Department, Indemnity review Board, Department of Land Registration, Sri Lanka Police Department, Court of Law, Attorney General's Department etc.

Out of the eleven projects on which money was deposited for acquisition of lands, three were dropped based on the request of developers themselves, as they have purchased the lands from the land owners by them. In another three projects, SLSEA has inquired from the developers whether land acquisition is still required and waiting for their response. The Land Acquisition process of balance projects are in progress.

3.2.4. Switch – Asia Programme

The advice of the Auditor General in this regard was to act according to the instructions given by the Secretary and also to arrive at an amicable solution discussing the matter with the Treasury and the Secretary. Based on that, activities in relation to the matter were taken, and the details are given below.

The way the matter was processed was informed to the Secretary, Ministry of Power & Energy through a letter dated 05.12.2012, and approval from the Treasury was requested through a letter dated 24th January 2013, sent to the Secretary to the Treasury, through Secretary, Ministry of Power & Energy. In subsequence to that, after SLSEA became under the purview of Secretary, Ministry of Environment & Renewable Energy, the letter to the Treasury was sent through that Ministry after obtaining advice from the Secretary to the Ministry. Accordingly, steps have been made to obtain covering approval of the Treasury.

3.2.5. Management Inefficiency

This has been the practice from 2008. The interests from these funds are utilized to cover the expenses of processing applications of Developers Application fees are deposited in the energy fund.

2.3 Human Resources Management (HRM)

Action has been taken to prepare the Schemes of Recruitment (SOR) at once we received the approval for the cadre from Department of Management Service (DMS).

2.4 Internal Audit

Internal Audit Executive was recruited on 02/04/2012 on permanent basis. Meanwhile one Management Assistant was placed additionally in the Internal Audit Division temporally. After the recruitment of Internal Audit Executive, five Audit & Management Committee meetings were held and several audit queries & observations of Auditor General's and COPE were attended during the period.

2.5 Budgetary Control

Budgeted income could not be met due to non availability of the imprest from the Treasury on time and shortage of required resources to carry out the planned activities. This was also due to the delays obtaining the approval of other government institution for energy permits.

Budgeted expenditure could be exceeded marginally due to payment of accrued expenses brought forward from the previous year. This was due to very high unanticipated price increases by suppliers.

3 Systems and controls

Deficiencies observed by the Auditor General are highly considered and noted to take actions to correct the weaknesses and regularize the situation in the observed areas.