Annual Report 2011

Sri Lanka Sustainable Energy Authority

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Message from the Chairman

It is with great pleasure that I write this brief message for the Annual Report of 2011 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 favorable 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 'Mahinda Chinthana' 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 2011, 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. Kithsiri Dissanayake
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 2011.

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 2011 has made remarkable progress in identifying and promoting the new renewable 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 2011 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 2011 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 2011. Moreover, a noteworthy saving of 715 million liters of oil, 328.7 ton of petroleum gas and 476.3 ton of firewood has been achieved in 2011 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 ensure that the energy sector contributes to the economic development of the country, while safeguarding the social and environment interests with the help of sustainability concepts to the maximum possible extent.

Dr. Thusitha Sugathapala
Director General

Introduction

The Sri Lanka Sustainable Energy Authority is the apex institution established on 01st October 2007 for the purpose of leading the country towards a new level of sustainability in energy generation and usage, through the dual thrusts of increasing indigenous energy and improving energy efficiency.

The SLSEA was established by the Sri Lanka Sustainable Energy Authority Act No. 35 of 2007.

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.

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Energy Forum

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Mr. Sulakshana Jayawardhana
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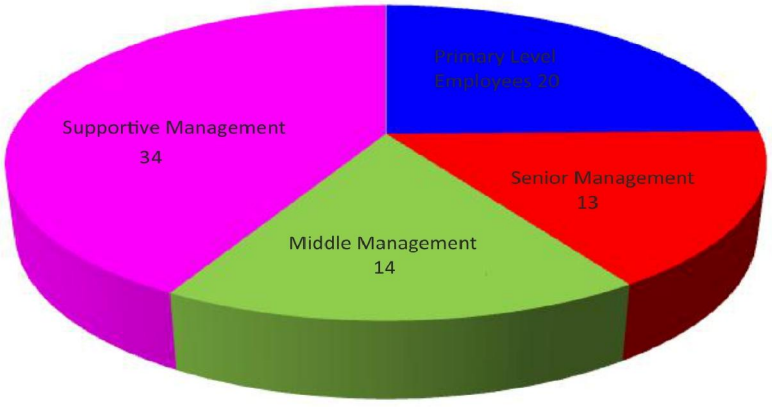
Ministry of Power & Energy

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

Our Staff Composition – 2011

We are a relatively young organization with a total of 81 persons.

The Composition of our staff is shown below.




2011
Performance

Sri Lanka Sustainable Energy Authority

1. INTRODUCTION

In view of present global energy and environmental crises, integration of sustainable concepts in economic development, especially in the energy sector, has become a prime and essential requirement for the future existence of the human society. Basically, development of renewable energy resources for energy generation and rational use of energy via conversion efficiency improvement, conservation and management considered to be the two main facets of sustainable energy solutions. Accordingly, Sri Lanka Sustainable Energy Authority (SLSEA) was established on 01st October 2007 under the Sri Lanka Sustainable Energy Act No.35 of 2007 as the apex institution in Sri Lanka for the purpose of leading the country towards a new level of sustainability in the energy development and use through the dual thrust of increasing the share of indigenous renewable energy and improving energy efficiency.

The vision of SLSEA is "An Energy Secure Sri Lanaka" and the mission is "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". In order to realize these, SLSEA has formulated its corporate plan comprising of appropriate strategies and activities to be implemented under two themes viz Renewable Energy and Energy Management, the two facets of the sustainable energy solutions. In each, the government has set targets in its policy document "Mahinda Chinthanaya – The Way Forward", namely 20% of grid electricity generation from new (or non-conventional) renewable energy resources by 2020 and energy saving of 8.7% by 2020 (equivalent to 20% of energy consumption in 2010). Accordingly, activities and targets are set in each sub-sectors contributing to the above overall targets.

During the first few years of existence, SLSEA has been implementing a progressive activity plan, while enhancing its resources and capacities required to implement them, and remained relevant to the energy sector by engaging all stakeholders in a meaningful

manner. In this period, SLSEA was able to at least initiate most of the activities mandated by the Act, while moving towards the overall national targets in renewable energy generation and energy conservation. By the end of 2011, total installed capacity of new renewable energy resources reached 239 MW, while the annual energy savings are estimated to be over 300 MWh, equivalent to power generation capacity reduction of over 300 MW, which highlights the significance and impact of energy conservation on national economy.

2. IMPLEMENTATION STRATEGY

SLSEA managed to initiate most of the activities mandated to it in year 2011, facilitated from the corporate planning exercise. SLSEA functioned under a three-year corporate plan for the period 2008-2010 prepared with its inception in 2007. A vigilant analysis of the mandate given in the Act, supplemented by a stakeholder consultative process, identified many work streams for SLSEA, which were duly incorporated into the five-year corporate plan being prepared for the period 2011-2015. The Corporate Plan 2011-2015 was presented to the Board of Management on 09th September 2011, and was submitted to the Postgraduate Institute of Management of the University of Sri Jayawardenapura for review. Meanwhile, every effort has been made to fill the vacant carder positions of some key personnel.

Development of corporate plan exercise has also led to the identification of gaps in resources, especially the expertise and manpower, which highlighted the need as well as importance of more collaborative works with stakeholder institutions and outsourcing of selected activities, in addition to the enhancement of in-house resources. In particular, the requirement of regional operations with the assistance and collaboration with relevant institutions (including government agencies, provincial setup, industry-clusters, NGOs, CBOs) to reach the society as a whole in delivering the energy services is recognized. For example, the concept of Energy Efficiency Zones (E^2 Zones) has been introduced with the assistance of Ceylon Electricity Board (CEB) to facilitate the implementation of energy conservation and management programmes at given localities. The programmes, activities and relevant resource requirements for the year 2011 and beyond were formulated accordingly.

The strategies and activities in the corporate plan were identified and implemented under two main divisions viz Renewable Energy (RE) and Energy Management (EM). The RE group has the mandate of promoting renewable energy resource utilization via policy and operational levels interventions such as provides inputs to the government to formulate the relevant policy instruments, formulation of appropriate regulatory measures and guidelines, identification and mapping of renewable energy resources, development of renewable energy road map in medium and long time horizon. Whereas, the EM group has the overall mandate of managing the energy intensity of the country's economic development through interventions at both policy and operational levels, including formulation and implementation of relevant regulations and guidelines for energy efficiency improvements, conservation and management in all the energy consumer sectors, providing energy efficiency services, awareness and education via formal, informal and non-formal channels, and establishment of financing mechanisms.

3. DEVELOPMENT OF NEW RENEWABLE ENERGY RESOURCES

3.1 Conservation and Management of Renewable Energy Resources

Renewable energy development is carried out in the country with the aim of increasing the stake of renewable energy in power generation by 10% 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 vision of the Mahinda Chinthanaya – The Way Forward. The private sector has been allowed to develop non conventional (or new) renewable energy plants below 10 MW capacities under Standardized Power Purchase Agreement (SPPA) on non-negotiable cost reflective technology specific tariff.

Up to now, the new renewable energy resources exploited in the country include small hydro (mini, micro and pico), wind, biomass (fuel wood, biomass residues and municipal solid waste) and solar, covering both grid and off-grid electricity generation. Although several other resources, such as geothermal, ocean thermal, and sea wave, do exist, detailed resource assessments are yet to be carried out that are required for facilitating the project development and implementation. By the end of 2011, the total installed capacity of new renewable energy resources (comprising of mini hydro, wind, biomass and solar)

in the national grid reached 239 MW, with a contribution of 6.7% of total grid electricity generation. The new renewables industry passed many milestones in the year 2011.

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 intending to develop and invest in such projects. The amended regulation managed to grant a new lease of life to more than 170 projects to move forward. This in turn resulted in the immediate clearing of 22 projects, realizing 28.3 MW of new renewable energy capacity additions.

3.2 Preparation of Comprehensive Renewable Energy Resource Development Plan

3.2.1 An Overview

As a prerequisite for preparation of a comprehensive renewable energy resources development plan within three years from the appointed date, as required under Section 8 of the SLSEA Act No.35 of 2007, a survey and a renewable resource assessment was carried out in the country as required under Section 7 of the Act. The renewable energy resources covered so far in these assessments primarily include small hydro (in selected high potential areas / river basins) and wind. In case of biomass, a methodology for identifying existing resources and future potentials (land availability and productivity) is being developed, while enhancing information on resource availability via field surveys and other literature. The basic data required for solar resource mapping is yet to be gathered, and it is intended to acquire these data via international agencies, while enhancing the capacities for on-site measurements in strategically selected locations. Other renewable energy resources to be covered in the resource mapping include geothermal, ocean thermal and sea wave. Though, some assessments in each of these resources have been undertaken in the country, all are in preliminary levels and more detailed analyses are required to establish proper resource maps. SLSEA is in the process of initiating a stage-wise programme for resource assessments in this respect.

A resource inventory was compiled for renewable energy resources using the web based Geographic Information System (GIS). All project management databases were migrated to the GIS platform, resolving most of the resource conflicts. The web based interface on the GIS system 'EnerGIS', launched in 2009, allows easier exchange of information between developers and the SLSEA, and now has become the primary tool of project prospecting among the developer community.

3.2.2 Wind Resource Map

The Wind Resource Assessment project continued in 2011 with ten National Reference Stations entering operation and two more stations under construction (see Figure 3.1). One station went out of service during this period due to a structural damage resulted from adverse weather conditions.

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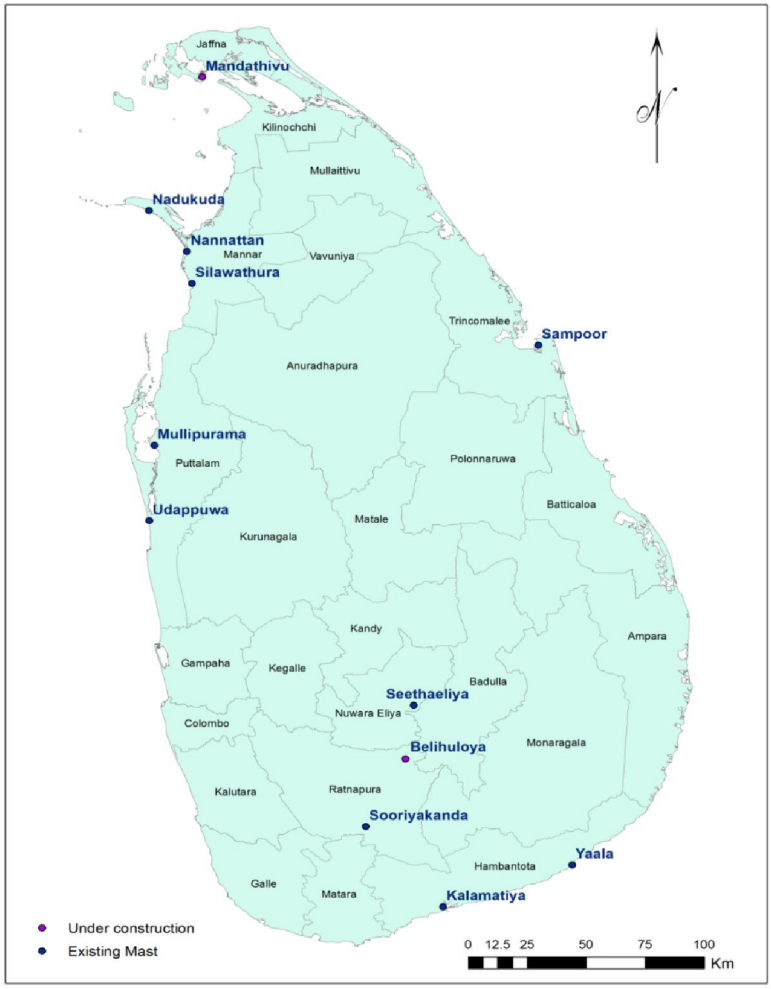

Figure 3.1: Locations of wind measuring masts.

Sophisticated software for wind mapping was used to perform micro-sitting of two high potential wind areas for wind power development. For each promising wind region, a high resolution wind resource map with seasonal variations was prepared, complete with energy yield estimates to guide the investors. The investment grade wind resource maps will be accompanied by a project economic analysis, elevating the resources to 'ready to invest' status.

All wind resource data available in Sri Lanka was aggregated to a single database, embracing all wind measuring stations including now defunct stations, establishing a continuum of past and current data streams. Figure 3.2 shows high resolution wind power density map in Mannar Island. Here, dark red colour indicates excellent wind potential regions, while yellow colour represents moderate potentials, indicating the very high overall potentials in developing wind energy in the entire region. With these results, SLSEA recommends to concentrate future wind energy developments under "energy park concept", in larger scale (than < 10 MW in SPPA model) in selected regions such as Mannar Island capable of attaining high plant factors (even above 40%), to maximize the economic benefits to the country.

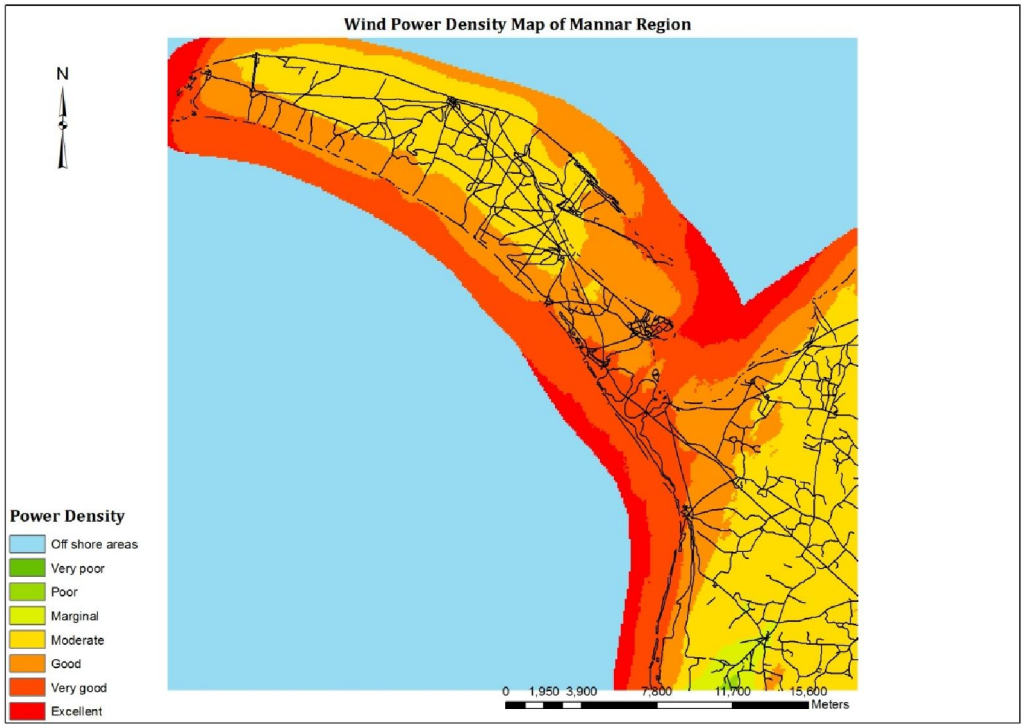

Figure 3.2: High resolution wind power density map – Mannar Island.

3.2.3 Hydro Power Resources

The total hydropower potential of the country is being assessed through a river basin approach, using both heuristic information from operational power plants and information generated through analyses carried out in the geographic information system EnerGIS. A complete assessment of a the Kalu Ganga river basin is nearing completion and the same methodology will be applied to all river basins, once the pilot study is cleared by a validation process. Once the technical potentials of hydro resources have been identified, it is intended to incorporate the constraints arisen from environmental and social aspects to screen them to establish the real hydro resource potential for electricity generation.

3.2.4 Biomass Resources

Among the new renewable energy resources, biomass represents the most difficult one for resource mapping due to its wide-ranging resource roots, which comprised of not only the present generations but also the future potential sources (such as alternative land, waste streams, etc). This situation becomes more complicate when one considers the fact that sufficient amounts of biomass have to be allocated for conventional applications such as cooking in domestic sector and small scale thermal energy applications in commercial and industrial sectors. Therefore, biomass resource potentials for modern energy applications, such as grid electricity generation and medium/large scale industrial thermal energy generation have to be estimated by incorporating all the above aspects.

Presently, the biomass based grid electricity generation under SPPA scheme is facilitated under three different roots: dendro-power (fuel wood plantation based), agricultural residues and municipal solid wastes, each having different feeding tariffs. As such, the biomass resource mapping shall comprise of all the three resource types, and thus requires different modeling approaches. Presently, SLSEA's resource mapping of biomass primarily concentrated on fuel wood plantation root, which in fact is the most difficult one.

A term of reference to carry out an island wide survey of biomass resources was developed and will be offered with a request for proposals after refinement. A programme focused on the use of biomass resources for industrial thermal energy applications was formulated for funding from the Global Environment Facility (GEF) in association with the United Nations Development Programme (UNDP). The programme titled Promoting Sustainable Biomass Energy Production and Modern Bio-energy Technologies will fill many gaps in biomass resource assessment, when implemented.

3.2.5 Solar Energy Resources

The solar atlas available presently will be further refined by a network of ground measuring stations and solar yield data from net metering installations and the two pilot projects once they become operational. First ever solar radiation measurement station with the capability to measure only the diffused component was established in the Hambantota Solar Energy Park (see Figure 3.3). By contrasting data coming out from this instrument with a pyranemometer which measure both direct and diffused radiation, direct radiation levels can be accurately assessed. This will pave the way for direct radiation solar energy technologies (such as concentrated solar power – CSP) being introduced to Sri Lanka.

Figure 3.3: Solar radiation measurement station in the Hambantota Solar Energy Park

As country-wide solar energy resource mapping requires more detailed information, it is expected to acquire higher resolution data from international agencies with appropriate modeling tools. It is expected to commence this programme in 2012. Further, it is expected to install a couple of solar energy measuring stations covering high potential locations in the country to obtained high quality data to refine and validate the model.

3.2.6 Other Resources

Initial examination of geothermal resources were carried out in 2010, and was escalated during 2011, to identify at least one potential site. Preliminary findings of geothermal resource assessments undertaken by different institutes so far show promising results, but need detailed resource assessment to verify them. A couple of visits by a Professor from the United Nations University in Iceland (an international expert in Geothermal Energy), has created an opportunity to build local capacities for the future development of geothermal energy in the country. SLSEA is in the process of exploiting this link with the aim of establishing long term programme on geothermal energy.

Sea-wave and ocean thermal resource mappings have similar status and no specific programme is in place yet.

3.3 Declaration of Energy Development Areas

As per the Section 12 of the Act, SLSEA has given the mandate to identify and declare suitable areas for the conservation and management of renewable energy resources or for the promotion of renewable energy development projects as Energy Development Areas. This is set with the objective of obtaining the maximum economic utilization of renewable energy resources**.**

Up to now, two Gazette Notifications bearing Nos. 1538/22 of February 26, 2008 and 1632/10 of December 15, 2009 had declared Energy Development Areas in several places in the country, deemed suitable for energy development work. Additionally, an area of 600 acres in Bolhinda, Karuwalawewa and Baruthankanda was recommended to the Hon. Minster of Power and Energy in June 2011, for the declaration of Energy Development areas for solar energy.

The analysis of long term wind data, solar resource mapping and the results of the ongoing biomass resource assessment programme will further refine the resource maps and will lead to the declaration of more energy development areas in the future.

3.4 On Grid Renewable Energy Programme

3.4.1 An Overview

As per the mandate given in the Sections 16 to 22 of the Act, grid electricity generation via new renewable energy resources is being promoted by SLSEA through both regulator measures and facilitation. As described earlier, there are four resources exploited for grid electricity generation so far, i.e. mini hydro, wind, biomass and solar. Among these resources, the new renewable energy industry was dominated by mini hydro power, the only technology that was viable under the avoided cost tariff regime. In a bid to broaden this portfolio, SLSEA introduced a technology specific cost based tariff, which was pitched to six types of technologies, encouraging many developers to invest in renewable energy technologies, in addition to hydropower. The cumulative capacity additions of these new renewable resources are shown in Figure 3.4 below.

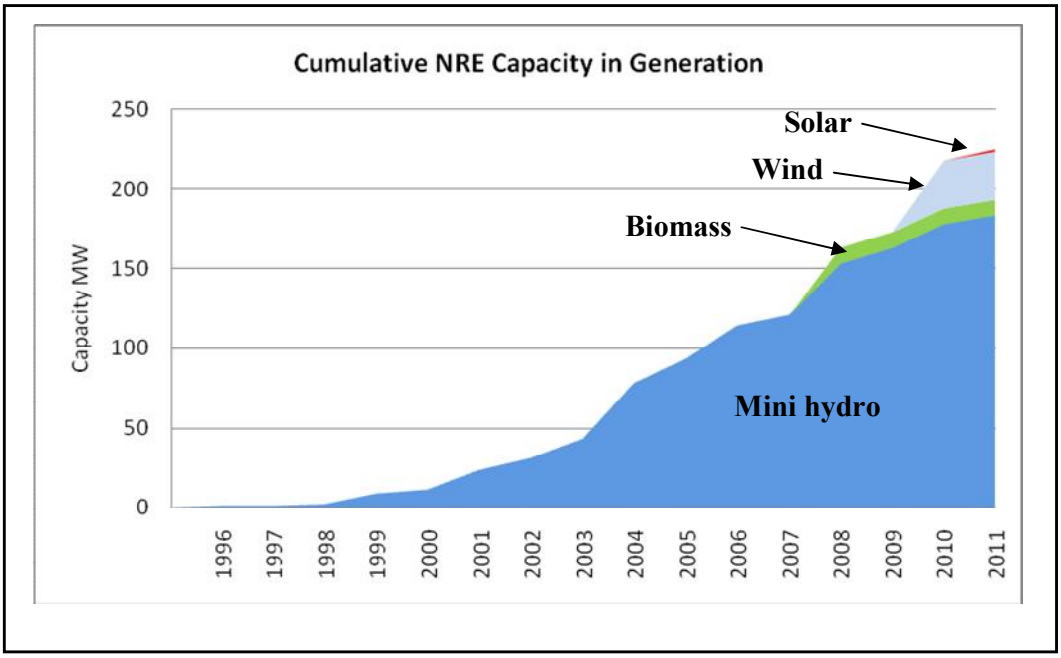

Figure 3.4: Cumulative Capacity Additions of Renewable Energy Projects (1996 to 2011)

By the end of 2011, the total installed capacity of new renewable energy power plants reached 239.06 MW from 102 plants. There were 109 projects in the energy permit stage, with a total of 326.7 MW of capacity, while there were valid provisional approvals of over 100, with about 300 MW of total capacity. The progress of new renewable energy development at the end of 2011 is summarized in the Table 3.1.

Table 3.1: Status of Renewable Energy Projects

Technology/ Status	Biomass		Hydro		Wind		Other (including Solar)		Total	
	No.	MW	No.	MW	No.	MW	No.	MW	No.	MW
Provisional Approvals	13	160	90	113	2	20	2	20	107	313
Energy Permits	13	69.25	87	168.36	9	89.1	-	-	109	326.71
Commissioned	3	11.5	90	192.94	5	33.24	4	1.38	102	239.06

3.4.2 Mini Hydro

Mini hydro by far is the most developed renewable energy resource in Sri Lanka. Its contribution to the national electricity generation the year 2011 was about 600 GWh of energy which accounts for over 6% of the annual electricity generation in Sri Lanka. The number of plants was 90, with a total installed capacity of about 193 MW feeding into the national grid. There were 90 valid Provisional Approvals which consisted of 113 MW of capacity. 87 mini hydro plants, which could contribute to a capacity addition of over 168 MW, have Energy Permits. It is observed that the capacity of new projects now becoming lesser and lesser, and there is a need to analysis the viability of low head sites and explore their potentials.

SLSEA was involved with developing a mini hydro plant in Indurana, which was constructed by the National Engineering Research & Development Centre in 1998, but was subsequently shut down due to technical faults. The Authority took over this project, rehabilitated it and transformed it into a fully functional mini hydro plant, increasing its former capacity from 30 kW to 65 kW. This hydro plant also functions as a learning and demonstration centre. It imparts knowledge to school children and the general public on the technology of mini hydro power generation, functions 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.

3.4.3 Wind

Introduction of the cost based tariff regime, availability of long term ground data, a sound financing programme supported by the World Bank supported RERED Project and other lending institutions managed to launch the first grid connected commercial wind project in 2009 with capacity of 10 MW. This project was fast followed by several other projects, resulting in a capacity addition up to 33.24 MW by the end of 2011. A further 89 MW of wind power capacity will be added to the grid, which have received energy permits.

Considering wind energy to be the next most likely resource attract investments, several steps were taken to refine the wind Atlas by validating certain locations with good to excellent wind prospects. The Kalpitiya peninsula in the west coast proved to be a very good resource and resulted in attracting investments for 30MW of capacity in year 2010. It is quite likely that the region will see more than 90 MW of wind capacity in operation within the next few years.

The concept "Energy Park", which facilitates development of renewable energies in larger scales (i.e. > 10 MW as specified in SPPA scheme) has been proposed to both wind and solar energy systems in the future development to maximize their economic impacts. According to the studies carried out in the Island of Mannar, a potential for a 100 MW wind capacity with excellent energy yields has been identified. Hence expeditious efforts were taken to develop a 100 MW Wind Energy Park after the conclusion of the Wind Absorption Capacity Studies by the CEB. Detailed wind resource maps of the area were prepared in 2011, while the land acquisition process has commenced. The concept was endorsed by the Cabinet of Ministers in July 2011. The detailed proposal for the establishment of the Wind Energy Park is being formulated inline with the Cabinet Decision. It is expected to commission the 100 MW wind park during the 1st quarter of 2015.

So far, wind energy development in Sri Lanka was mainly limited to the coastal areas. The inland wind potential sites, especially in the Central Highlands, were not considered due to the inability to transport wind turbines and large haulage vehicles like cranes to the hilly areas. Therefore, a study was undertaken to invent an indigenous wind turbine to harness the Central Highland wind resources. After a successful technology development effort, involving *Vawin (Private) Limited* of Sri Lanka and *Nordic Folkecenter for Renewable Energy* of Denmark, wind turbine blades will be manufactured in Sri Lanka

by early 2012. This initiative will open up new market for skilled labour and deliver real economic benefits of wind energy to Sri Lanka.

Presently, development of wind energy has been hindered by technical limitations related to grid connectivity and associated controlling issues. A consultant appointed to investigate the wind power absorption capacity of the national grid produced a report, which is being studied by CEB and will provide necessary planning inputs in the future.

3.4.4 Solar

At present, solar energy is the fastest growing power-generation technologies in the world although it's still a very small fraction of global power-generating capacity from all sources. During the year 2010, the annual growth rate of grid connected solar PV plants was over 80%, and that of concentrated solar power (CSP) plants was 77%.

The Authority laid the foundation to develop the first ever grid connected, commercial solar project in Hambantota. The project was realized in 2011. The project was supported by Japan International Cooperation Agency (JICA) and Korea International Cooperation Agency (KOICA). The combined capacity of both projects is 1.237 MW. The estimated annual energy generation from the Park is 1.7 GWh and will save over 429,800 liters of oil reducing 680 tonnes CO_2 per year. The first ever large scale solar plant connected to the grid with a capacity of 500 kW was ceremonially opened on August 8, 2011, by His Excellency Choi, Jong Moon, the Ambassador of the Republic of Korea, Hon. Patali Champika Ranawaka and Hon. Namal Rajapaksa, Member of Parliament. The Government of the Republic of Korea granted LKR 412 million for implementing this project.

Figure 3.5: 500 kW solar plant

The total solar project spans is funded by the Governments of Japan and Korea. The Japanese component is known as Phase I, while the Korean component is known as Phase II. The Government of Japan extended the Japanese Grant Aid for the first phase (Phase I) of this project under their Introduction of clean energy by solar electricity generation. The Government of Japan granted LKR 1,024 Million worth 737 kW solar power systems. The project reached commissioning stage in August 2011. The opening ceremony for this project has been scheduled for October 2011. The Authority has allocated LKR 114 million for infrastructure development at the Park. This included providing land, access roads, water, electricity, telephone and security services.

The National Renewable Energy Laboratory of the USA has conducted a solar resource assessment in the island in 2003 and determined that the southern part of the country, especially the Hambantota area, is a potential site for solar development. Based on this observation, the Ministry of Power and Energy envisages developing the first Solar Park in Hambantota, of a 100 MW capacity, by extending the above two pilot projects. Energy Parks are to be developed as a part of the energy investment promotion programme, which has been identified as a new concept to attract investments to renewable energy industry. Invitations to establish power plants will be extended to interested developers, with the hope of reducing overall project costs by providing infrastructure as a common facility. The present project area spans 50 acres, and the Government is now in the process of acquiring the adjoining land area of 600 acres from the Mahaweli Authority of Sri Lanka to establish the 100 MW Energy Park.

In addition to the promotion of large scale grid connected solar project, net metering was introduced in Sri Lanka for promotion of distributed small PV applications. Sri Lanka was one of the first developing countries to introduce “net metering regulations” for purchasing power from distributed solar PV systems, where customers would be able to generate small amounts of renewable energy through solar PV systems installed on their roof tops, 'export' the energy generated to the national grid, and only pay for the 'net' amount of electricity used.

3.4.5 Biomass

The recent efforts to promote the use of biomass for power generation have started to show positive results and encouraging signs of increased interest among developers on establishing of dedicated plantations for biomass based power generation. Currently three

plants are in operation contributing to 11.5 MW, including 10 MW paddy husk based power plant at Tokyo Cement Factory in Trincomallee. By the end of 2011, there are 13 biomass projects with valid Provisional Approvals, which accounted for a capacity of 160 MW, while 13 more projects with Energy Permits promising to add 69.25 MW of capacity to the national grid. These projects include all the three categories of biomass resources (i.e. dendro-power, agricultural residues and MSW). Formulation of a waste to energy project which will use most of the MSW generated in Colombo and suburbs also progressed well, and could result in adding substantial firm power within the next few years.

3.5 Off-Grid renewable energy development programmes

89% of the population in the country is served by grid connected electricity while another 2% is served by off-grid technologies. About 9% of households (about 500,000) are dependent on kerosene and other fuel based lighting. Among the 500,000 households, an amount 40,000 would remain un-electrified even with the grid expansion plan of the CEB. An independent survey carried out in association with the Ministry of Public Administration and Home Affairs to collect all information related to un-served areas reconfirmed this.

Several renewable energy resources have been used for off-grid electricity generation in Sri Lanka. Solar photovoltaic systems have been increasingly used from the early 1980s, and presently contributes to electrification of more than 100,000 household. Small village-level hydroelectric systems are increasingly used in remote locations for household use. There are over 300 such mini grids powered by very small hydro systems serving about 7000 households in the country. In addition, there are about 1500 pico hydro systems supplying electricity to individual households.

The Government has envisioned providing electricity to these under-served communities through the Programme “Grama Shakthi – Provision of Improved Energy Services to Rural Under-served Communities”. It is a programme designed to cater to the basic energy needs of such communities, in collaboration with the Sri Lanka Sustainable Energy Authority, Ceylon Electricity Board and the Ministry of Power and Energy. The objectives of the programme are to provide electrification and improved energy services to rural communities, employing indigenous renewable energy resources and technologies, eliminate adverse effects of the use of kerosene based lighting through the

popularisation of off-grid renewable energy solutions and saving of foreign exchange to the government which otherwise would be expended to import kerosene. The target consumers would be served at a lower cost and would benefit from using energy efficiency lighting technologies including LEDs and CFLs as well as obtain additional electricity services using solar photovoltaic (PV) and other renewable energy options.

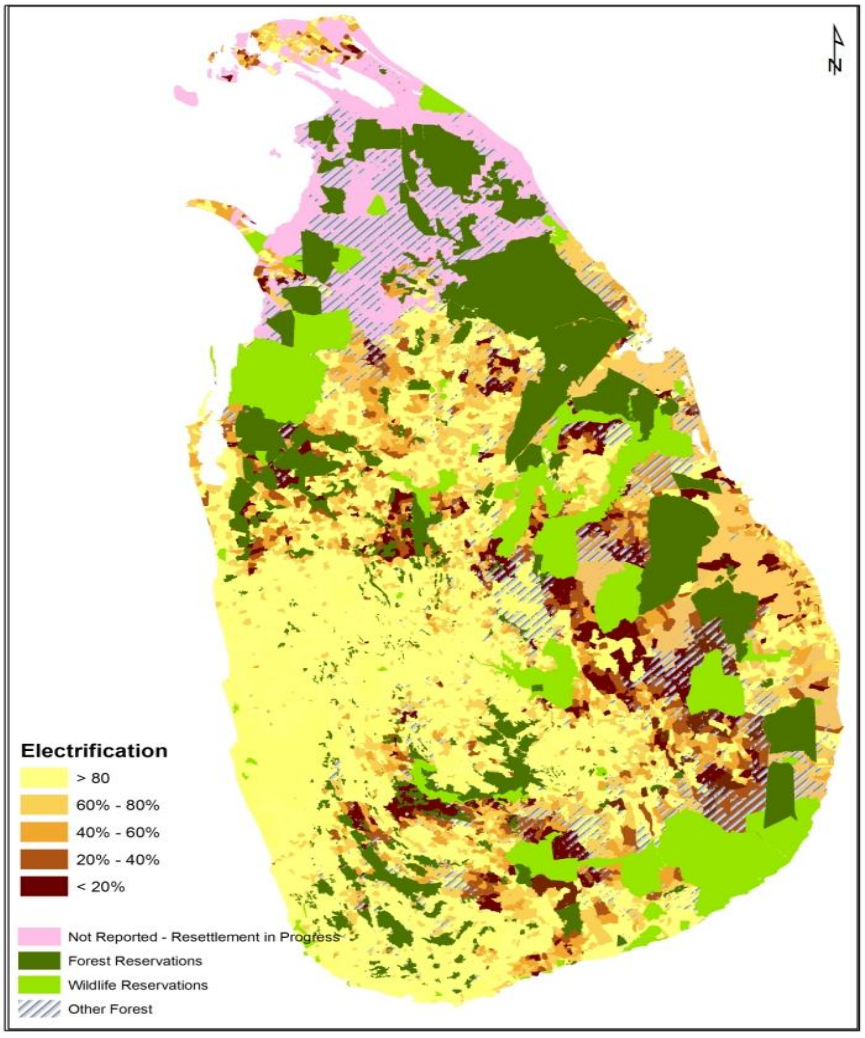

Figure 3.6: Levels of household electrification in Sri Lanka

The off-grid solutions include solar PV stand-alone systems ranging in size from 10 Wp to 40 Wp, or pico-hydro units in the 100 W range to individual households, village hydro mini-grids and diesel solar/wind hybrids. Development assistance was sought from a development partner to find the wind/diesel/solar hybrid system in four Northern islands in 2011. This effort could result in further increase of electrification level of the country.

These systems would provide high quality LED and CFL lighting to fulfill basic lighting needs, mobile phone charging or provide enhanced energy services that will include TV/radio and other minor applications. The project would function as a Government enabled programme with the active involvement of the private sector. The project has been formulated and is expected to be implemented in 2012.

With the advent of the national grid into all remote corners of the hill country, many off-grid micro hydro power installations became obsolete. A pilot project was formulated to connect these stranded generation assets to the national grid. Through this project, the village communities who invested in these projects will be able to recoup part of their investment by the revenue resulting from the electricity sales.

3.6 Knowledge Enhancement

Sri Lanka Energy Balance, published annually by SLSEA, is considered to be the main source of energy data in the country. Sri Lanka Energy Balance, which was lagging behind by two years received due attention and all data required for publication were collected by the 3Q2011 for years 2008, 2009 and 2010. A strenuous effort was made to improve the Energy Balance publication and backlog of publications will be available before the end of 2011. The Energy Database which is now carried in a popular spreadsheet application will be migrated to a proper database platform, to ensure security of four decades of data painstakingly collected by the predecessors. The migration will also enable web based publication of the full database.

3.7 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 program 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.

3.8 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 million reserve 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.

3.9 Acquisition and Leasing of Immovable property for Projects

Several consultations with Divisional Secretaries resulted in packaging water rights required for a hydropower projects and acquisition of lands for the project being combined. Now, the issuance of Provisional Approvals result 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 were introduced by the Authority and at present 31 cases is in process. Apart from the 31sites already undertaken, a further 1 case of land acquisitions and 2 cases of vesting and 1 case involving both acquisition and vesting were handed over to the Authority by developers in 2011.

4 ENERGY EFFICIENCY AND CONSERVATION PROGRAMMES

4.1 An Overview

Energy management activities were carried out with a national focus with a target of achieving an energy consumption reduction of 20% of the energy consumption of year 2010, by 2020. The overall electricity savings as a result of the activities carried out by SLSEA were 280 GWh and 294 GWh in the years 2009 and 2010 respectively.

When compared with the projections made by CEB in the LTGEP, high saving of petroleum oil has been achieved by fuel switching projects in the year 2010 done by the ESCOs and the equivalent monetary savings are quite high since the replaced fuels are biomass.

Table 4.1: Energy saving in different sectors

	Savings GWh	
	2009	2010
Domestic	275	238
ESCO	LKRM 300	1.2GWh (LKRM 2400)
Water Pumping	2.8	3.2
Hotel	2.2	3.0
Tea	0.43	0.63
Energy labeling	N/A*	26
Implementing National Energy Efficiency Award (NEEA) scheme	N/A*	22

*These activities were implemented in the year 2010.

Energy management regulatory systems were launched in order to establish a long term national framework for energy management in the country. This approach was mainly focusing the industrial and commercial establishments. Mass scale awareness creation was also done in order to create awareness on energy conservation and to inculcate attitudes towards that mainly focusing towards changing the life style of the public for achieving energy conservation.

4.2 Establishment of Energy Consumption Benchmarks

Baseline energy consumption levels (benchmarks) are reference levels introduced to a particular sector in order that the establishments in that sector can go for energy efficiency improvement taking benchmarks thus introduced as their designated energy consumption target levels. Benchmarks were established for major energy consuming sectors such as hotel, tea, garment, tile, desiccated coconut, office buildings and water pumping. IT infrastructure was developed to facilitate energy consumption reporting by industrial and commercial sector end users, which supports towards obtaining data easily and accurately from such end users.

4.3 Framing of regulations

(1) Control and manufacture, import, sale or purchase of appliances which do not conform to the energy consumption limits and energy performance standards

Energy labeling programme introduced for CFLs couple of years back was closely monitored to ensure that low quality CFLs are phased out and high quality CFLs are penetrated among households and industrial & commercial sectors. Standards for ceiling fans, ballasts, motors, etc. have been prepared, and it is expected to introduce energy labels for ballasts in the coming year as a priority item in view of the significant impact achievable through introducing high efficient ballasts for linear fluorescent lamps.

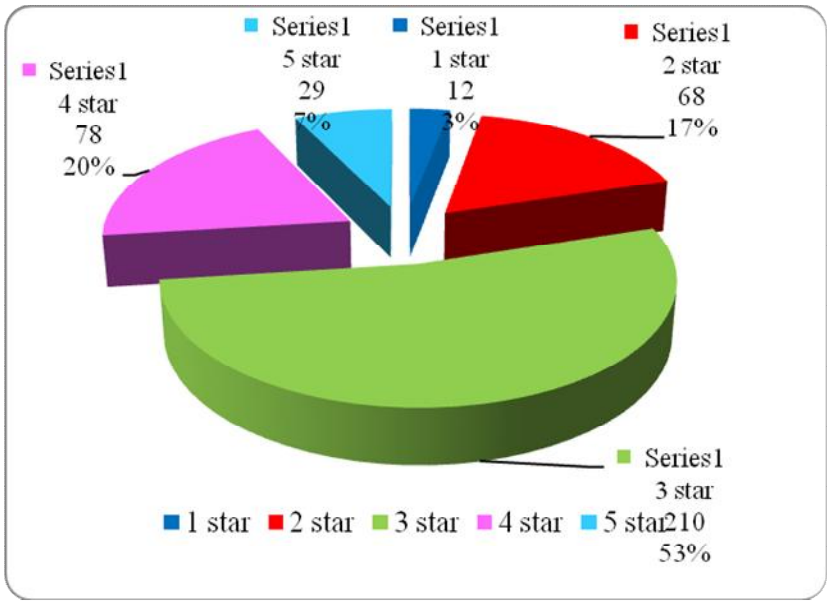

Figure 4.1: The quantity of CFL models with star rating in the market.

It is significant that imports of Incandescent Filament Lamps (IFLs) have been dropped and the imports of Compact Fluorescent Lamps (CFLs) have been increased drastically during the past decade.

During the past decade the imports of CFLs and Incandescent lamps have changed as shown below:

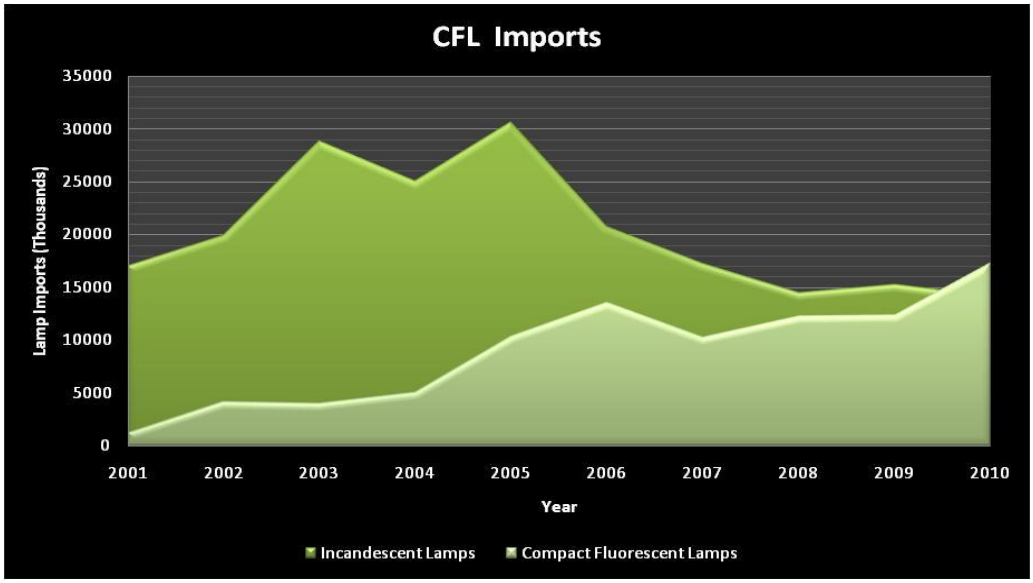

Figure 4.2: Imports of CFLs and IFLs during past decade.

The demand saving achieved through penetration of CFLs is about 380 MW in 2010 and the electrical energy saving is approximately 238 GWh per annum. It has been revealed from the consumer surveys that the penetration of CFLs in urban, semi-urban and rural households is 92%, 85% and 75% respectively.

(2) Enforce limits and codes of practices for existing and proposed buildings, industrial premises, land vehicles, ships and aircraft

Incorporation of energy efficiency in building construction was given special focus with the latest phase of taking the inculcation of energy efficient practices towards changing life style. Code of Practice for Energy Efficient Buildings, the guideline document compiled by SLSEA for this purpose was introduced into the building approval process of the Urban Development Authority and capacity building programmes in relation to this were conducted.

4.4 Accreditation of Energy Managers, Energy Auditors and Energy Service Providers

Regulations were developed on certification of Energy Managers and Energy Auditors with the objective of introducing systematic energy management approaches mainly targeting the 1525 organizations under bulk consumers, which are contributing to 80% of the total industrial electricity consumption. The Certified Energy Managers thus appointed in the respective organizations will be responsible for submitting annual energy consumption reports, which will be assessed by SLSEA against the benchmarks;

and whenever SLSEA makes directives to submit energy audit reports and energy conservation action plans, the respective organizations are bound to do so as per the Clause 37 of the Sri Lanka Sustainable Energy Authority Act. 60 persons from leading organizations in industrial and commercial sectors were provided training to enhance their capabilities to become prospective Energy Managers in the respective establishments. Programmes were also conducted in collaboration with the CEB for the bulk electricity consumers for preparing themselves for the targeted activities under the prospective regulations. The projected saving as the result of organizations complying to these regulations is 240 GWh/annum.

Energy efficiency services to cater to the implementation of prospective energy management systems were strengthened. Capacity development of ESCOs in energy auditing and report writing, usage of instruments, etc. was done. Energy auditing consultancy was delivered to end use sectors and there also capacity building was done for the officers of those organizations to understand energy audit methodologies in order to make it a sustainable process for the respective industrialists.

4.5 Conduct of Energy Audits

With the objective of providing technical advice to organizations to achieve energy consumption benchmarks, energy audits were carried out in the following sectors.

- Commercial buildings
- Hotel sector
- Hospitals

While improved energy situations support the national targets of energy efficiency improvement and demand management, it helps towards increasing competitiveness of products and services and enhancing environmental impacts as other benefits.

4.6 Energy Efficiency Services

As the energy management regulations come into effect end use establishments will have to comply themselves to the regulations, and those organizations have to implement energy efficiency improvement projects, as per the directives given by SLSEA and recommended by Accredited Energy Auditors as energy audit recommendations. SLSEA has developed the energy efficiency services sector to cater to this need. State and private sector organizations, providing such services have been registered as Energy Services Companies (ESCOs) with SLSEA, and the capacity building for them was carried out through providing technical inputs and facilitating with the instrument bank. Energy conservation activities of the ESCOs' in the year resulted in savings in 1.2 GWh of electricity and 11.2 million litres of oil consumption.

4.7 Energy Efficiency Promotional Programmes in collaboration with CEB & LECO

Two programmes were initiated in collaboration with the CEB to promote and implement energy efficiency improvement activities among end use sectors. One of this is E^2shop programme, under which dissemination of energy efficiency activities will be done through CEB consumer outlets. The first E^2shop has been planned to be established attached to the CEB DGM's office, Anuradhapura. The other programme is Energy Efficient Zone (EEZ), and under this energy efficiency improvement activities targeting bulk consumers and all other sectors including households will be carried out in a confined locality. Activities have been carried out to establish the first EEZ in the Narammala area. Opening of the first E^2shop and establishment of the first EEZ will be done in October 2010. The saving targeted to be achieved through the programmes of E^2shop and EEZ is 25 GWh/annum

Energy efficient zones and energy efficiency shops were also introduced to the country in collaboration with the CEB, and it is expected that these will be also supportive in the delivery of energy efficiency services in a more systematic manner. In taking the message of energy conservation to the households, student population is a good messenger and various programmes initiated in the past years resulted in fruitful outcomes, for which series of quiz programmes conducted in collaboration with the printed media was of testimony. Giving yet another formal approach to this, school energy conservation clubs were launched through which an active participation of students in energy conservation programmes is expected.

Figure 4.3: Opening of E2 Shop in Anuradapura.

4.8 JICA Technical Assistance Programme

As energy efficiency improvement is identified as an important intervention in present national situation, overall national level development activities were carried out targeting the establishment of an integrated energy conservation approach for the country. This was done under a 3-year technical assistance programme under JICA. The special feature of the technical assistance programme is that Japan has developed energy efficiency improvement activities in the country through regulatory intervention based approaches, and the infrastructure is made in a holistic approach taking examples from the Japanese model.

4.9 Sector Specific Energy Efficiency Improvement Program

The technical interventions in energy efficiency improvement are dependant on the pattern of energy use in each particular sector. Therefore, while developing overall national level infrastructure for energy efficiency improvement, it is important to develop technical capabilities in individual sectors, and sector specific energy efficiency improvement program has been launched to achieve this.

Hotel Sector

With the target of achieving 20% energy consumption reduction in hotels, SLSEA is providing technical inputs in a project operated by Ceylon Chamber of Commerce, under the assistance of European Union. Hotels registered to the project submit energy consumption data monthly and trend analysis, recommendations and guidance and project implementation assistance on energy efficiency improvement are provided by SLSEA. This will be a typical model for energy efficiency improvements, benchmark settings and directing organizations for complying with the prospective regulations.

Tea Industry

Energy consumption analysis software was distributed among the factory officers, and it is being used in tea factories, especially the factory officers, who has participated the energy efficiency improvement capacity building programmes in the sector. A capacity development programme for 40 factory officers was also conducted.

National Water Supply & Drainage Board

Based on the energy auditing and capacity building programmes conducted in previous years, energy efficiency improvement activities in NWS&DB were carried out. These include efficiency improvement of pumps, introduction of variable speed drives to control the energy inputs at optimum levels according to the variation of water flow requirements, etc.

4.10 Awareness Creation

Creation of awareness on energy conservation specifically in the domestic sector and also among all the consumers at large is important for effective implementation of energy efficiency improvement activities in the country, which is the objective under the regulatory provisions of SLSEA Act. Awareness creation activities are carried out in order to achieve an energy conscious nation, and among various methodologies adopted, providing publicity for successful achievements is also an effective tool in realizing this. The "Energy" subject has been introduced to school curriculum and trained 400 master teachers as national resource team.

4.11 Sri Lanka National Energy Efficiency Award (SLNEEA)

The first ever recognition at national level for the involvement in energy conservation activities in both state sector and private sector organizations was made through presentation of Sri Lanka National Energy Efficiency Award by H.E. the President on 3rd August 2010. Organizations excelled in energy conservation in the manufacturing sector, hotels, hospitals, state sector office buildings and commercial buildings were recognized under this.

The estimated annual saving as a result of implementing projects by organizations due to the launch of SLNEEA is 22GWh. It is expected to disseminate information on the successful projects as show case projects in order to inculcate the approach among peer organizations in the respective sectors in view of the broad benefits at large to be achieved at national level.

Figure 4.4: Sri Lanka National Energy Efficiency Award - 2010.

Vidulka national energy exhibition was held for the second time from 11th to 14thAugust 2011, in collaboration with the Ministry of Power & Energy. It was a good opportunity for consumers at all levels to understand about latest energy efficient technologies, opportunity for dealers to introduce newer technologies, and also the symposium held parallel to the exhibition provided opportunity for researchers to have a valuable dialogue on sustainable energy concepts and R&D findings through a high level national forum of energy professionals.

4.12 Regional Canter for Lighting

Electric Lighting is the major contributor to the very high evening peak in Sri Lanka and more than 15% of energy generated is consumed for lighting needs. In order to manage this demand by various measures, a Regional Centre for Lighting (RCL), which aimed to be a world class facility in South Asia has been established in Colombo. The Center has developed number of technical competent personnel in lighting designs and testing within the Universities and in the industry. A fully equipped photometry laboratory has been established for quality control and performance monitoring of various lighting products. The laboratory will function as an independent laboratory to cater the needs in South Asia region. The center has initiated research activities with the University of Moratuwa and conduct training and awareness programs on various aspects on lighting, especially on applicability and performance of new technologies in the local environment.

Financial Statement

2011

Sri Lanka Sustainable Energy Authority
Balance Sheet as at 31st of December 2011.

		2011		2010 Restated	
	Note	Rs.	Rs.	Rs.	Rs.
ASSETS					
Non Current Assets					
Property, plant and equipment	3	1,475,813,358		86,697,583	
Work In Progress	4	20,277,945		58,578,991	
Investments	5	63,907,154	1,559,998,457	63,907,154	209,183,728
Current Assets					
Receivables	6	2,277,581		2,760,635	
Other current assets	7	47,959,116		8,476,312	
Cash and cash equivalents	8	68,705,192	118,941,889	34,104,235	45,341,182
Total Assets			1,678,940,346		254,524,910
EQUITY AND LIABILITIES					
Equity					
Accumulated fund	9	62,172,970		65,696,858	
Net Surplus		(14,322,061)		16,705,547	
Deferred Grant	10	1,475,043,735		128,431,867	
Sri Lanka Sustainable Energy Fund	11	96,855,634	1,619,750,278	29,414,356	240,248,628
Non current liabilities					
Gratuity provision		5,545,677	5,545,677	4,127,188	4,127,188
Current liabilities					
Other payables	12	51,290,815		7,162,826	
Short term provisions-audit fees		632,076		438,518	
Deposit on land acquisition		1,721,500	53,644,391	2,547,750	10,149,094
Total equity and liabilities			1,678,940,346		254,524,910
			-		

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

The members of the Sri Lanka Sustainable Energy Authority are responsible for the preparation and presentation of these financial statements.

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

	Dr. Thusitha Sugathapala	**Dr. Kithsiri Dissanayake**
Specialist (Finance)	**Director General**	**Chairman**

Sri Lanka Sustainable Energy Authority				
Income statement for the year ended 31st December 2011.				
	Note	**2011**		**2010**
		Rs.		**Rs.**
Revenue				
Capital Grant for project expenses	13	29,867,008		79,691,685
Amortised deferred grant	14	106,395,700		24,782,001
Recurrent Grant		32,000,000		46,740,000
Other Income	15	31,278,917		29,059,774
Total Revenue		**199,541,625**		**180,273,460**
Expenditure				
Project Expenses	16	(47,187,530)		(83,360,030)
Salaries and allowances	17	(40,174,609)		(38,422,077)
Travelling and subsistance	18	(1,967,173)		(1,791,027)
Supplies	19	(5,810,022)		(3,424,733)
Maintenance expenses	20	(4,082,889)		(3,987,951)
Contract service	21	(16,412,150)		(15,844,812)
Depreciation expenses	22	(106,395,700)		(24,782,001)
Other recurrent expenses	23	(8,143,087)		(1,637,281)
Expenditure for Period		**(230,173,160)**		**(173,249,912)**
Prior year Adjustments (gratuity)		(773,757)		-
Surplus /(Deficit)		**(31,405,292)**		**7,023,548**
The Accounting policies and notes appearing on pages 5 to 17 form an integral part of the financial statements.				

Sri Lanka Sustainable Energy Authority					
Statement of changes in Equity for the year ended 31 December 2011					
Description	**Accumulated fund**	**Net Surplus / deficit**	**Deferred Grant**	**Sri Lanka Sustainable Energy Fund**	**Total**
	(Rs.)	**(Rs.)**	**(Rs.)**	**(Rs.)**	**(Rs.)**
Balance as at 01.01.2010.	69,220,747	13,421,868	75,771,125	16,547,675	174,961,415
Increase/ decrease for the year 2010	(3,523,889)	3,283,679	52,660,742	12,866,681	65,287,212
Previous year adjustment					
Balance as at 31.12.2010.	**65,696,858**	**16,705,547**	**128,431,867**	**29,414,356**	240,248,628
Increase/ decrease for the year 2011	(3,523,888)	(30,631,535)	1,346,611,868	67,441,279	1,379,897,724
Previous year adjustment		(396,073)			(396,073)
Balance as at 31.12.2011.	**62,172,970**	**(14,322,061)**	**1,475,043,735**	**96,855,634**	**1,619,750,278**
The Accounting policies and notes appearing pages 5 to 17 form an integral part of the financial statements.					

Sri Lanka Sustainable Energy Authority
Cashflow statement for the year ended 31st December 2011.

	2011		2010	
	Rs.	Rs.	Rs.	Rs.
Cash flows from operating activities				
Surplus for the period	(30,631,535)		7,023,548	
Previous year adjustment	(396,073)			
Adjustment for:				
Amortised Grant	(106,395,700)		(24,782,001)	
Interest Income	-		(6,285,916)	
Service Gratuity Provision	1,418,489		615,990	
Depreciation	106,395,700		24,782,001	
	(29,609,119)		1,353,622	
Increase in other current assets	(39,482,804)		(425,691)	
Increase in current liabilities	43,495,297		(3,895,189)	
Cash generated from operations	(25,596,626)		(2,967,258)	
Net cash from operating activities		(25,596,626)		(2,967,258)
Cash flows from investing activities				
Purchase of property, plant and equipment	(1,495,511,475)		(14,955,616)	
Decrease of WIP	38,301,046		(46,693,991)	
Interest Invested	483,054		7,895,517	
Net cash used in investing activities		(1,456,727,375)		(53,754,090)
Cash flows from financing activities				
Deferred Grant	1,453,007,568		61,649,607	
Sri Lanka Sustainable Energy Fund	67,441,278		12,866,681	
Accumulated fund	(3,523,888)			
Gratuity Payment	-		(76,920)	
Net cash used in financing activities		1,516,924,958		74,439,368
Net Increase in cash and cash equivalents		34,600,957	-	17,718,020
Cash and cash equivalents at beginning of period		34,104,235		16,386,215
Cash and cash equivalents at end of period		68,705,192		34,104,235

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 31.12.2011.

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.

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 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 31.12.2011. - 79

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 2011 are prepared together with accounting policies and notes have been compliance with the Sri Lanka 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.

As required by the accounting standards the Balance Sheets have been retrospectively restated for years 2008, 2009 and 2010 for the correction of the following omissions/errors in those previous years.

		2008 Amount Rs.	2009 Amount Rs.	2010 Amount Rs.
1	being correction of erroneous deduction of deferred revenue from deferred grant in 2007	*3,523,888*	*3,523,888*	*3,523,888*
2	correction of energy instruments purchased from Japanese foreign grant not taken in to account		23,330,880	11,419,569
3	Correction of depreciation energy instruments not taken in to account			2,901,370

2.2 Summary of accounting policies

2.2.1 SLAS 24 - Accounting for Government Grants and Disclosure of Government Assistants

Government grant divided into two categories as capital grant and recurrent grant. Recurrent grant uses for incur the expenses for salaries for the staff. Capital grant uses for incur project expenses. As the project expenses comprises recurrent and capital expenses both are incur from the capital grant.

Government grant consider 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.

2.2.2 SLAS 27- 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 SLAS 29- Revenue recognition

Revenue represents Interest on fixed deposits and treasury bills, Interest on savings A/C-NSB, Distress loan interest, special advance interest, vehicle utilities, tender fees income, registration of suppliers, Training course on lighting, Vidulka exhibition, Switch Asia programme and other income.

Part of the interest from Sustainable Energy Fund & Sustainable Energy Guarantee Fund has been treated as Income in order to meet the cost of maintaining /earning the income to these 2 funds.

Fixed deposits and treasury bills accounted for on an accrual basis. Others are accounted for on cash basis after receipt of the income.

2.2.4 SLAS 36- 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. subject to the approval of the General Treasury.

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.

2.3.2 Depreciation

Depreciation rates are revised as per decision taken by the Meeting No. 2007/02 of the Audit & Management Committee of the Energy Conservation fund held on 14th August 2007 and the percentage depreciation of items is given below.

Depreciation for a month period is shown on accounts.

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%
I. Sanitary & Plumbing	5%
J. Cables	20%
K. Furniture Fittings & Office equipment.	25%
L. Tools	33%
M. Machinery	20%
H. 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 are made to EPF & ETF as 12% and 3% respectively.

Retrospectively Restated Balance Sheets as at 31/12/2011			
	2009(Rs)		**2008(Rs)**
Assets			
Non Current Assets			
Property,plant and equipment	52,789,887		55,255,338
Work in Progress	23,770,000		23,770,000
Investments	63,907,154		27,250,000
Treaury Bills	-		31,019,470
	140,467,041		137,294,808
Current Assest			
Receivables	4,359,058		-
Other current assets	8,050,621		-
Cash and cash equivalents	16,386,215		7,322,641
Advance	-		551,330
Staff Debitors	-		7,070,908
Receivable Interest on Fixed Deposits	-		1,003,827
Receivable Interest on Treasury Bills	-		3,676,705
Receivable Income-Energy Instrument/Audit	-		70,750
Receivable Income-Special Advance Interest	-		59
	28,795,894		19,696,220
Total Assest	**169,262,935**		**156,991,028**
Liabilities			
Non Current Liabilities			
Provision for Gratuity	3,588,118		3,105,000
	3,588,118		3,105,000
Current Liabilities			
Other payables	13,689,283		-
short term provisions	355,000		-
Deposit on land acquisition	-		-
Sundry Creditor	-		339,535
Provision for Audit Fees	-		155,000
Ministry of Irrigation & Power	-		500
Sundry Payable	-		375,000
Accrued Expenses	-		13,620,304
Creditors	-		21,156,150
	14,044,283		35,646,489
Net Assets/Equity			
Accumulated	76,268,523		76,268,524
Add:Net Surplus/Deficit	-		(1,222,541)
Deferred Grant	45,392,468		43,193,556
Net Surplus	13,421,868		-
Sri Lanka Sustainable Energy Fund	16,547,675		-
	151,630,534		118,239,539
Total Equity & Liabilities	**169,262,935**		**156,991,028**

Note 3 :

Property, Plant & Equipment

Fixed Assets

Description		Balance as at 01.01.2011. Rs.	Acquisition during the period	Balance as at 31.12.2011. Rs.	
Furniture & office equipment		9,790,650	787,599	10,578,249	
Motor vehicles		45,811,750	-	45,811,750	
Photocopier		1,156,271	505,120	1,661,391	
Computers		17,345,811	690,018	18,035,829	
Electrical Goods		218,468	-	218,468	
Library Book		421,110	8,805	429,915	
Energy Instruments		66,017,279	0	66,017,279	
Wind towers and Instruments		11,885,000	7,131,000	19,016,000	
Hambantota solar park- local		-	100,479,233	100,479,233	
- Foreign	-Japan		1,189,320,000	1,189,320,000	
	-Korea		196,589,700	196,589,700	-
Exhibition Equipments		352,853	-	352,853	
		152,999,192	**1,495,511,475**	**1,648,510,667**	

Depreciation Account

Description	Rate of Dep. %	Balance as at 01.01.2011.	Depreciation for the year Rs.	Balance as at 31.12.2011. Rs.	Net book Value Rs.
Furniture & office equipment	25	6,696,306	1,934,645	8,630,951	1,947,298
Motor vehicles	20	24,541,854	8,158,750	32,700,604	13,111,146
Photocopier	25	747,782	310,732	1,058,514	602,877
Computers	33.33	9,752,251	4,514,009	14,266,260	3,769,569
Electrical Goods	25	215,047	2,738	217,785	683
Library Book	20	332,645	26,166	358,811	71,104
Energy Instruments	33.33	21,096,089	20,972,481	42,068,570	23,948,709
Wind towers and Instruments	20	2,597,116	3,519,262	6,116,378	12,899,622
solar parks -construction	5		3,652,971	3,652,971	96,826,262
-Equipment & machinery -Japanese			46,165,398	46,165,398	1,143,154,602
- Equipment & Machinery-Korea			17,124,548	17,124,548	179,465,152
Exhibition Equipments	25	322,519	14,000	336,519	16,334
		66,301,609	**106,395,700**	**172,697,309**	**1,475,813,358**

Break down of Solar Park Fixed Assets

Description	% Rate of depreciatio	Opening balance Rs	Acquisitions during year Rs.	Depreciation Rs	Net book Value 31/12/2011 Rs
A. Solar Panels	5	-	655,143,926	17,053,947	638,089,979
B. Steel Structure	10	-	219,252,898	10,226,955	209,025,943
C. Building	5	-	110,267,554	3,858,123	106,409,431
D. Switch gear	20	-	13,973,767	2,603,332	11,370,435
E. Inverters	20	-	78,637,410	8,646,370	69,991,040
F. Transformers	5	-	45,753,626	1,085,415	44,668,211
G. Power Electronics	33.33	-	19,861,894	4,030,300	15,831,594
I. Sanitary & Plumbing	5	-	166,360,476	3,486,733	162,873,743
J. Cables	20	-	100,166,611	8,590,324	91,576,287
K. Furniture Fittings & Office Equip.	25	-	2,964,429	310,656	2,653,773
L. Tools	33.33	-	13,977,290	1,998,633	11,978,657
M. Machinery	20	-	349,895	48,889	301,006
H. Other	20	-	59,679,157	5,003,239	54,675,918
		-	**1,486,388,933**	**66,942,916**	**1,419,446,017**

Note 4 : Work In Progress

	31.12.2011.	31.12.2010.
Renewable Energy Assessment	2,377,000	11,885,000
Hambantota solar park		46,693,991
Indurana mini hydro project	15,523,945	
Balangoda wind tower	2,377,000	
	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 31.12.2011.	Deposit as at 31.12.2010.
21.09.2011.	21.09.2012.	8.50%	2-0061-05-10246	1,200,000	1,200,000
21.09.2011.	21.09.2012.	8.50%	2-0061-05-10238	1,200,000	1,200,000
21.09.2011.	21.09.2012.	8.50%	2-0061-05-10220	1,200,000	1,200,000
21.09.2011.	21.09.2012.	8.50%	2-0061-05-10360	1,200,000	1,200,000
21.09.2011.	21.09.2012.	8.50%	2-0061-05-10394	1,200,000	1,200,000
21.09.2011.	21.09.2012.	8.50%	2-0061-05-10467	1,200,000	1,200,000
21.09.2011.	21.09.2012.	8.50%	2-0061-05-10459	1,200,000	1,200,000
21.09.2011.	21.09.2012.	8.50%	2-0061-05-10416	1,200,000	1,200,000
21.09.2011.	21.09.2012.	8.50%	2-0061-05-10432	1,200,000	1,200,000
21.09.2011.	21.09.2012.	8.50%	2-0061-05-10408	1,200,000	1,200,000
21.09.2011.	21.09.2012.	8.50%	2-0061-05-10343	1,200,000	1,200,000
21.09.2011.	21.09.2012.	8.50%	2-0061-05-10335	1,200,000	1,200,000
21.09.2011.	21.09.2012.	8.50%	2-0061-05-10378	1,200,000	1,200,000
21.09.2011.	21.09.2012.	8.50%	2-0061-05-10386	1,200,000	1,200,000
21.09.2011.	21.09.2012.	8.50%	2-0061-05-10327	1,200,000	1,200,000
21.09.2011.	21.09.2012.	8.50%	2-0061-05-10319	1,200,000	1,200,000
21.09.2011.	21.09.2012.	8.50%	2-0061-05-10297	1,200,000	1,200,000
21.09.2011.	21.09.2012.	8.50%	2-0061-05-10289	1,200,000	1,200,000
21.09.2011.	21.09.2012.	8.50%	2-0061-05-102262	1,200,000	1,200,000
21.09.2011.	21.09.2012.	8.50%	2-0061-05-10254	1,200,000	1,200,000
25.09.2011.	25.09.2012.	8.50%	2-0061-04-12376	450,000	450,000
05.10.2011.	05.10.2012.	8.50%	2-0061-03-09834	2,800,000	2,800,000
				27,250,000	**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 31.12.2011.	Deposit as at 31.12.2010.
18.01.2011.	17.01.2012.	8.9%		12,489,626	12,489,626
09.07.2011.	11.07.2012.	9.0%		24,167,528	24,167,528
				36,657,154	**36,657,154**
Total Amount				**63,907,154**	**63,907,154**

Note 6 - Receivables

Receivable interest on Fixed Deposits

Date of Investment	Date of maturity	Rate of investment	Deposit as at 31.12.2011.	Receivable for 2011	Receivable for 2010
21.09.2011.	21.09.2012.	8.50%	1,200,000	28,504	28,504
21.09.2011.	21.09.2012.	8.50%	1,200,000	28,504	28,504
21.09.2011.	21.09.2012.	8.50%	1,200,000	28,504	28,504
21.09.2011.	21.09.2012.	8.50%	1,200,000	28,504	28,504
21.09.2011.	21.09.2012.	8.50%	1,200,000	28,504	28,504
21.09.2011.	21.09.2012.	8.50%	1,200,000	28,504	28,504
21.09.2011.	21.09.2012.	8.50%	1,200,000	28,504	28,504
21.09.2011.	21.09.2012.	8.50%	1,200,000	28,504	28,504
21.09.2011.	21.09.2012.	8.50%	1,200,000	28,504	28,504
21.09.2011.	21.09.2012.	8.50%	1,200,000	28,504	28,504
21.09.2011.	21.09.2012.	8.50%	1,200,000	28,504	28,504
21.09.2011.	21.09.2012.	8.50%	1,200,000	28,504	28,504
21.09.2011.	21.09.2012.	8.50%	1,200,000	28,504	28,504
21.09.2011.	21.09.2012.	8.50%	1,200,000	28,504	28,504
21.09.2011.	21.09.2012.	8.50%	1,200,000	28,504	28,504
21.09.2011.	21.09.2012.	8.50%	1,200,000	28,504	28,504
21.09.2011.	21.09.2012.	8.50%	1,200,000	28,504	28,504
21.09.2011.	21.09.2012.	8.50%	1,200,000	28,504	28,504
21.09.2011.	21.09.2012.	8.50%	1,200,000	28,504	28,504
21.09.2011.	21.09.2012.	8.50%	1,200,000	28,504	28,504
25.09.2011.	25.09.2012.	8.50%	450,000	10,270	10,270
05.10.2011.	05.10.2012.	8.50%	2,800,000	57,381	57,381
			27,250,000	**637,731**	**637,521**

Receivable interest on Treasury Bills

Date of Investment	Date of maturity	Rate of investment	Deposit as at 31.12.2011.	Receivable for 2011	Receivable for 2010
18.01.2011.	17.01.2012.	8.9%	12,489,626	804,264	1,056,759
09.07.2011.	11.07.2012.	9.0%	24,167,528	818,036	1,048,805
			36,657,154	**1,622,300**	**2,105,564**

Receivable Income-Energy Instrument Hiring

	31.12.2011.	**31.12.2010.**
Barndes Finishing Ltd. - 2005	4,850	4,850
BMI Holding (Pvt.) Ltd-2005	7,200	7,200
Hayleys Industrial Solutions -2005	500	500
Enerfab (Pvt) Ltd-2006	3,750	3,750
Access Energy Solutions	500	500
Access Energy Solutions	500	500
Brandix	250	250
	17,550	**17,550**
Total Amount	**2,277,581**	**2,760,635**

	31.12.2011.		31.12.2010.
Note 7: Other current assets			
Advances			
CFL loan	194,673		194,673
Borrowings to SEA from Sustainable Energy Fund	30,000,000		
Receivable from CEB	9,912,981		
Festival Advance			59,000
Medical Insurance	500		500
Advance A/C	22,500		504,815
National Water Resources Board			240,000
Advance Deposit	111,500		111,500
Special Advance			77,500
Distress loan			7,227,549
Hambantota - CEB deposit	52,000		52,000
Telephone Deposit	8,775		8,775
	40,302,929		**8,476,312**
Revolving Fund			
Distress loan	7,592,687		
Special Advance	500		
Festival Advance	63,000		
	7,656,187		
Note 8: Cash and cash equivalents			
National Savings Bank-Borella	66,981,167		29,540,089
People's Bank-SEA-078-1-001-8-8-503576	615,197		3,977,368
People's Bank-SEA-078-1-002-7-8-503576	537,860		31,868
Bank of Ceylon-Trrington	570,968		554,910
	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	47,149,026		50,672,915
Initial Capital	5,000,000		5,000,000
Capital Grant - Ministry of Power And Energy	5,761,145		5,761,145
Capital Grant UNDP	3,612,560		3,612,560
Donor Grant - Food & Agriculture Organisation	650,239		650,239
Total	62,172,970		65,696,859

	2011		2010
Note 10: Deferred Grant			
Capital Grant 2008	33,687,060		33,687,060
Capital Grant 2009	11,705,408		11,705,408
Foreign Grant 2009-Japnese	24,169,380		24,169,380
Capital Grant 2010-Hambantota solar park (WIP)	46,693,991		46,693,991
-Unamortised capital grant	10,563,444		10,563,444
Foreign Grant 2010-Japnese	11,415,569		11,419,569
Capital Grant 2011-Indurana mini hydro project (WIP)	15,523,945		
-Unamortised capital grant	68,548,216		
Foreign Grant 2011-Japnese	1,155,016,402		
- Korean	187,228,286		
Less:			
-Depriciation	(67,095,136)		
-Depreciation for previous years	(22,412,830)		(9,806,985)
	1,475,043,735		**128,431,867**
Note 11:			
Sri Lanka Sustainable Energy Fund			
RE income	89,065,130		25,720,450
Instrument hiring	6,519,206		3,693,906
Interest on Savings A/C - NSB	1,271,298		
	96,855,634		**29,414,356**
Note 12: Other Payables			
Sri Lanka Sustainable Energy Fund	30,000,000		
Switch Asia control A/C	507,352		
Ministry of Power and Energy	500		500
Accrued expenses	16,303,819		4,657,611
Creditors			
Renewable Energy-E Net Solutions (Private) Ltd.	1,667,500		1,667,500
Acquisition of Energy Instruments			
- E-Net Solutions (Pvt.) Ltd	326,025		326,025
Retention	1,744,883		
Narahenpita Jathika Pola	209,545		
Sundry creditor			
Sri Lanka Custom	310,748		310,748
Welfare Society SEA	442		442
Battery deposit			
Sundry payable			
Refundable deposits			
E-Net solutions (Pvt) Ltd			150,000
ENL Consultant	150,000		10,000
E-Net solutions (Pvt) Ltd	10,000		
Zigma Technologies	10,000		10,000
Renco Renewable Energy Co. (Pvt.) Ltd	30,000		30,000
Gamini Senannayake	20,000		
	51,290,814		**7,162,826**

	31.12.2011.		31.12.2010.
Note 13 : Capital grant for project expenses			
Capital grant received from Treasury	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
Indurana mini hydro project (WIP)	15,523,945		
Capital assets acquired during the current year	1,991,543		14,966,796
	29,867,008		**79,691,685**
Note 14 : Amortised deferred grant			
Depreciation for current year	66,082,128		4,403,352
Depreciation for previous years	40,313,572		20,378,649
	106,395,700		**24,782,001**
Note 15 : Other Income			
Interest on Fixed deposits and Treasury bills	5,128,721		6,976,570
SAARC Energy centre	383,388		
Distress loan interest	310,964		308,985
Special advance interest	1,481		1,301
Interest on Savings A/C - NSB			608,661
Vehicle utilities			22,500
Tender fees income			138,700
Registration of suppliers			500
Income from power generation	16,577,905		
Training course on lighting			9,593,114
Vidulka exhibition	8,271,034		10,019,391
Switch Asia programme	467,753		1,040,100
Other Income	82,679		349,952
Regional centre for lighting	54,992		
	31,278,917		**29,059,774**
Note 16 : Project Expenses			
Renewable Energy			
Hydrogen from surplus wind potential - transport application			
Development of Electric Vehicle Technology	13,513		
Biogas generation from market garbage demonstration	2,000		
Preparation of bio-fuel standards			
Promotion of effecinet wood stoves			
Develop a small scale WECS suits to complex terrain in Sri	2,868,775		
Creating a suitable mechanism for data vending			
Appoint a committee to calculate the emission factor for the grid based electricity generation			
Sri Lanka Sustainble Guarantee Facility			
Establish a cell for CDM			
Assist pvt sector in developing CDM documents	12,518		

Develop a comprehensive wind data base embracing all historical and existing wind measuirng stations	5,000
Develop renewable energy resource maps for each resource type	481,303
Determine the optimum penetration level of RE	
Encourage energy plantations	
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
Amendments to the Regulations to fully utilise the potential of a given resouce site	3,440
Establish a fully fledged energy park for grid connected solar power generation	
Establish a fully fledged energy park for grid connected 100 MW wind farm	14,851
Ratify the already proposed new methodology for project approval process as depicted in the presidential task force	
Engage other relavent institutions to promote the development of NCRE industry as a national priority	2,000
Establish a primary contact within the SEA to offer services with regard to land issues	
Resolution of project approval related issues	114,969
Allocation of renewable energy resources	310,376
Dispute resolution	
Energy sector investment promotion of RE projects	720,127
Streamline the technical standards of off-grid Generators	
Disamination of information	
Establish a database on off-grid community based standalone schemes	
Conduct Technical training programs for maintenance technitians for off grid sysytems	
Identify potential areas for off-grid applications and resource options available for such areas	6,670
Electrify 10 villages using off grid electrification option	
Finalise the RE portfolio and study the financial imapct for various RE scenarios	
Progress monitoring & imapct assessment of post installtion of RE projects at selected locations	
Energy Management	
Measures for Systematic Energy Management Approaches in Bulk Energy Consuming Organizations	92,378
Energy Labeling Programme	98,648
Establishment of Laboratory facility (Through ADB Assistance)	
Incorporation of the Code into the UDA building approval process, referene manuals and review of the code	376,188
Sector specific programmes	117,500

Establishment of E2 shop	75,713		
Establishment of E2 zones	242,626		
Street Lamp code			
Instrument Bank	82,347		
Strengthening ESCO's	10,080		
Energy efficiency improvement facility			
Introduction of policy guide lines	833,329		
Awareness programmes through media	2,462,150		
Vidulka Energy Week	14,123,433		
Dayata Kirula	95,056		
Printing and Publication	1,897,573		
Sri Lanka National Energy Efficiency Award	528,732		
Training programme for school children and office staff	870,198		
Introduction of Co-generation	267,515		
Annual review of impact of EE programmes in the national economy			
Regional Centre for Lighting	20,125,682		
Renewable Energy			
Energy Parks (Providing all infra-support for RE projects)			8,263,379
Energy sector investment promotion project (Spearhead the			8,452,249
Balashakthi Surakshitha Janawasa Vyapruthiya (Twelve			3,533,515
Economic Affairs			
Catalyse Energy Efficiency Investments (Special			169,219
Knowledge Management			
Awaken Sri Lankans (Mass media events)			8,607,396
Energy Week			14,327,505
Reach Out (SAY What We DO, Future Citizens and other			5,888,431
Our Technologies (Electric Vehicle/ Wind turbine)			9,253,806
Discover our resources (Resource assessment and			
Energy Management			
Energy Efficient Zones (Three zones)			247,095
Knowledgeable Users/Capable Providers (labelling/capacity			13,554,261
Lighting Excellence (Centre of Lighting Excellence)			11,063,174
Efficient Transport (Fleet management and road awareness)			
	47,187,530		**83,360,030**
Recurrent Expenses			
Note 17 : Salaries and allowances			
Salaries for staff	25,683,097		21,673,786
Cost of living allowance	5,320,787		4,441,267
Allowances for staff	1,833,677		5,688,847
E.P.F. 12%	3,533,328		3,187,003
E.T.F. 3 %	870,477		721,854
Overtime & Holiday Pay	2,243,473		2,068,694
PAYE Tax			24,636
Gratuity	689,770		615,990
Compensation payment			
	40,174,609		**38,422,077**

Note 18 : Travelling & Subsistance			
Travelling- Local	710,126		695,853
Travelling- Foreign	1,257,047		1,095,174
	1,967,173		**1,791,027**
Note 19 : Supplies			
Printing, Stationary & office requisites	1,954,678		1,383,319
Fuel & Lubricants	3,785,964		1,965,269
Others- News Papers & Miscellaneous Service	69,380		76,145
	5,810,022		**3,424,733**
Note 20 : Maintenance Expenditure			
Maintenance of Vehicles and Insurance & License fees	3,197,983		3,704,665
Maintenance of Office Equipment	884,906		283,286
	4,082,889		**3,987,951**
Note 21 : Contract Service			
Office Rents and hire charges	14,554,873		13,846,924
Postal and Telecommunication charges	1,507,277		1,512,299
			135,589
Audit fees	350,000		350,000
	16,412,150		**15,844,812**
Note 22: Depreciation Expenses			
Furniture & office equipment	1,934,645		1,767,878
Motor vehicles	8,158,750		9,193,750
Photocopier	310,732		222,813
Computers	4,514,009		4,383,189
Electrical Goods	2,738		2,738
Library Book	26,166		12,817
Energy Instruments	20,972,481		6,587,700
Wind towers and Instruments	3,519,262		2,597,116
Hambantota Energy park	66,942,916		
Exhibition Equipments	14,000		14,000
	106,395,699		**24,782,001**
Note 23 : Other Recurrent Expenses			
Office & other miscelaneous Expenses	616,866		740,646
Translation Fees	17,855		59,183
Allowances for Board Members	472,000		146,000
Refreshment Charges	224,146		191,414
Labour Charges			
Welfare Expenses			
Local Training Program	434,817		457,810
Bank charges			42,228
Vidulka and public awareness	6,377,403		
	8,143,087		**1,637,281**

EH/C/SEA/FA/2011 06 June 2013

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 2011 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 2011 comprising the balance sheet as at 31 December 2011 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 SEA 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 SEA on 09 October 2012.

1.2 Responsibility of the Management for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Sri Lanka Accounting Standards (SLAS) 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 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 effects 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 2011 and its financial performance and cash flows for the year then ended in accordance with Sri Lanka Accounting Standards.

2.2 Comments on Financial Statements

2.2.1 Sri Lanka Accounting Standards (SLAS)

The following observations are made.

(a) **SLAS 3 - Presentation and Disclosures in the Financial Statements**

Significant accounting assumptions and estimations and date of authorization for issuing the financial statements had not been disclosed.

(b) **SLAS 18 - Property, Plant and Equipment (PPE)**

Revaluation of PPE of the Authority had not been done and the zero valued PPE which are still being used had not been disclosed in the financial statements as per SLAS–18.The historical cost of zero valued PPE as at 31 December 2011 was Rs.16,388,545.

(c) **SLAS - 29 - Revenue**

Revenue includes only the gross inflows of economic benefits received and receivable by the enterprise on its own account. However, the Authority had recognized all its income other than the interest on Fixed Deposits and Treasury Bills on cash basis without recognizing on accrual basis.

(d) **SLAS 30- Related Party Disclosures**

Related parties and related party transactions had not been disclosed in the financial statements as required.

2.2.2 **Accounting Deficiencies**

Following observations are made.

(a) Deficiencies observed in accounting of the transactions of the newly constructed Solar Park at Hambantota were as follows.

(i) Only the equipment received to the value of US $ 1,663,316 out of agreed foreign aid grant of US $ 3 million as per the Terms of Reference included in the agreement entered into between the Authority and the Korean Federation on 09 December 2009 for the Solar Power Project had been taken into the accounts. The other facilities provided within the financial limit of US $ 3 million as per the agreement had not been ascertained and brought to the accounts.

(ii) The land acquired from the Mahaweli Authority to the extent of 50 acres for Solar Park had not been valued and brought to the accounts.

However, the Chairman of the Authority stated in this regard as follows.

"The Authority has initiated the acquisition process and waiting for the deed of the land from the Mahaweli Authority. The block of land under reference will be taken into the Assets Register on the conclusion of the acquisition process."

(b) As pointed out in my previous year audit report, a sum of Rs. 897,025,919 payable to the Ceylon Electricity Board for the purchasing of electricity during the period 2008 - 2009 from non-conventional renewable energy producers as per the Cabinet Decision dated 31 March 2008 had not been taken into accounts.

However, the Chairman of the Authority stated in this regard as follows.

"The Sri Lanka Sustainable Energy Authority currently has no means of making this payment, unless funds are granted by the General Treasury or from earnings through CESS, royalties etc. subject to the approval of the General Treasury."

(c) A sum of Rs. 608,661 being interest earned by the Energy Fund in 2010 by depositing its income of Rs. 28,861,798 in a Bank Saving Account had been inappropriately treated as an income of the Authority. This had not been rectified even in 2011.

(d) The total Government grant which had not been treated as deferred grant prevailed as at 01 October 2008 was Rs.15,023,944. The net book value of the Property Plant and Equipment procured from those grants remained as at that date was Rs.14,095,553. However, those assets had been fully depreciated at present and the amount equal to the book value of those assets had been adjusted to the accumulated fund balance in 2011 instead of being adjusted to the net surplus balance as at 01 January 2010 in the statement of changes in equity. As a result, the net deficit and accumulated fund balance shown in the financial statements as at 31 December 2011 had been understated by Rs.14,095,553.

(e) Interest earned from investment of the collection to the Sri Lanka Sustainable Energy Fund and Sri Lanka Sustainable Guarantee Fund amounting to Rs. 30,426,250 during the period 2008 – 2011 had been utilized for the expenditure of the Authority without reinvesting to enhance the respective Funds.

(f) Equipment cost relating to the incompleted wind towers had erroneously been accounted as Property, Plant and Equipment (PPE) and as a result, the work-in-progress (WIP) and the PPE shown in the financial statements had been understated and overstated by Rs.1,419,000 respectively.

(g) One out of five Wind Towers capitalized in 2010 had been fully damaged and action had not been taken to remove it from Fixed Assets Accounts. Therefore, the fixed asset shown in the financial statements had been overstated by Rs. 2,377,000.

(h) The amount accounted under work-in-progress (WIP) in 2011 was Rs. 15,523,945 but the amount taken into the Cash Flow Statement as WIP was Rs. 38,301,046. Hence, net cash used in investing activities shown in the Cash Flow Statement had been overstated by Rs. 22,777,101.

(i) Cash flow from interest income was Rs. 5,611,777 but the amount taken into the cash flow statement was Rs. 5,128,721. Hence, the net cash used in investing activities shown in the cash flow statement had been understated by Rs. 483,056.

(j) Cash flows from capital grant shown in the cash flow statement had been overstated by Rs. 5,019,888 due to erroneous computation.

(k) The value of completed works amounting to Rs. 53,824,991 transferred from work-in-progress account to property, plant and equipment in 2011 had erroneously been treated as purchase of PPE in the cash flow statement and as a result, the investing activities shown therein had been overstated by the same amount.

(l) Following observations are made in respect of the energy instruments of Rs. 24,169,380 received as foreign aid grant in 2009.

(i) The depreciation and differed revenue applicable to the energy instruments had not been accounted for. As a result, the differed grant and energy instruments shown in the financial statements as at 31 December 2011 had been overstated by Rs. 22,493,705.

(ii) The energy instruments received on 29 December 2009 amounting to Rs. 838,500 had been fully depreciated in 2011 and adjusted the entire amount in the previous year net surplus balance. Due to that erroneous accounting treatment, the net surplus as at 31 December 2010 and the deficit and the PPE balance shown in the financial statements as at 31 December 2011 had been understated by Rs.559,000 and Rs.279,500 respectively.

(m) Following transactions relating to the Regional Centre for Lighting (RCL) which should have been accounted separately had inappropriately been included in the financial statements of the Authority as at 31 December 2011.

Item	**Amount**
	Rs.
Capital Expenditure	10,416,735
Recurrent Expenditure	20,493,912
Total	**30,910,647**

(n) Generally, estimation errors should be adjusted to the current year and no need to treat as prior year adjustments in the income statements. However, under provision of the gratuity for the year under review amounting to Rs. 773,757 had erroneously been treated as prior year adjustment and shown separately in the income statement.

(o) The deficit and the net surplus shown in the income statements for the year under review and the previous year respectively had not been tallied with the equity statement and differences of Rs.773,757 and Rs.3,739,868 had been observed between those two figures respectively as details given below.

Description	**2011**	**2010**
	Rs.	**Rs.**
Surplus/ (deficit)		
As per Income Statement	(31,405,292)	7,023,548
Surplus / (deficit)		
As per Equity Statement	(30,631,535)	3,283,679
Difference	**773,757**	**3,739,868**

2.2.3 **Unexplained Differences**

The Authority was not in position to explain the net difference of Rs. 2,792,181 in amortized differed grant shown between the Note – 14 and Note – 10 to the financial statements to audit. Details are given below.

Description	**Amount**
	Rs.
Amortized Differed Grant	106,395,700
as per Note – 14 to the financial statements	
as per Note – 10 to the financial statements	89,507,966
Difference	16,887,734
Less: Depreciation adjusted erroneously **(Refer paragraph 2.2.2(d) in this report)**	14,095,553
Net difference	**2,792,181**

2.2.4 Lack of Evidence for Audit

Computation details of the deferred revenue transferred to the income statement of the year under review amounting to Rs. 106,395,700 was not made available for audit.

2.2.5 Non-compliance with Laws, Rules and Regulations.

Following instances of non-compliance were observed in audit.

(a) Finance Act. No 38 of 1971

(i) Section 8(1) – The annual budget of the Authority for the year under review had been approved by the Board of Directors only on 28 January 2011 i.e. three months later.

(ii) **Section 14 (1)** - A draft annual report which should have been furnished along with the draft financial statements was furnished to the Auditor General only on 02 August 2012 i.e. six months later.

(b) **Sri Lanka Sustainable Energy Authority Act No 35 of 2007**

(i) Sub section 46(2) – Action had not been taken to collect the funds from activities such as initial capital from the consolidated Fund, funds from CESS (Section 45) etc. other than the application fee.

The Chairman of the Authority stated in this regard as follows.

"From the inception of the Authority, at each budget preparation, proposals were made to evoke the provisions of the subsection. However, the officials involved in the preparations objected to these measures as likely to contribute to further increased cost of fossil fuels."

(ii) Sections 46.3(a), (b), (c), (d) and (e) – The funds amounting to Rs.96,856,634 was idling in a Bank Saving Account as at 31 December 2011 without utilizing it for the following purposes as permitted by the Act.

- Subsidies for selected renewable energy based energy conversion plan.
- Subsidies for promoting the use of energy efficient appliances and technologies
- Capital subsidy for fuel switching, including industrial thermal applications
- Conducting awareness programmes
- Incentives or other similar financial assistance to any society or community for encouraging the utilization of renewable energy sources

The Chairman of the Authority stated in this regard as follows.

"***From the inception of the Authority, at each budget preparation, proposals were made to evoke the provisions of the subsection.***

However, these efforts failed to bare any fruit. From the inception of the Authority a set of proposals in line with the objects of the Authority were presented for inclusion in the budget proposals to the Department of Fiscal Policy and Department of National Planning."

3. Financial and Operating Review.

3.1 Financial Review - Financial Results

According to the financial statements presented, the operations of the Authority for the year under review had resulted in a deficit of Rs.31,405,292 as against the net surplus of Rs. 7,023,548 for the preceding year, thus indicating a decrease of Rs.38,428,840 in the financial results. Main reasons attributed for the decrease in financial results were the reduction of the recurrent grant by the Government due to over estimation of the budgeted income for the year under review, and increase of normal and project related recurrent expenditure incurred from of the recurrent and capital grant as against the previous year. Details are given below.

Item	2011	2010
	Rs.	Rs.
Other income	31,278,917	29,059,774
Total recurrent expenditure other than project expenses	(76,589,930)	(65,107,881)
Expenditure over income before adjusting the recurrent grant for administration expenditure and capital grant for Project expenditure	**(45,311,013)**	**(36,048,107)**
Net surplus/(deficit) arisen between capital grant and expenditure transferred from capital projects	(17,320,522)	(3,668,345)
Expenditure over income before adjusting the recurrent grant for administration	(62,631,535)	(39,716,452)
Recurrent grant for administration expenditure	32,000,000	46,740,000
Net Surplus / (Deficit)	**(30,631,535)**	**7,023,548**

According to the above analysis, the deficits for the year under review and the previous year before adjusting the government contribution were Rs. 45,311,013 and Rs. 36,048,107 respectively. However, after adjusting the Government contribution, it was converted into deficit and surplus of Rs. 30,631,535 and Rs. 7,023,548 for the year under review and previous year respectively. Hence, it was evidenced that the Authority had fully depended on the Treasury funds.

The Chairman of the Authority stated in this regard as follows.

"***The SLSEA is engaged in promoting and educating on sustainable energy in the country. And also acts as the regulator of new projects in Renewable Energy. Most of the revenue it generates through energy permits etc. is deposited in the Energy Fund and is set aside for special activities described in the Act. Only the income generated from the solar power plant in Hambanthota could be utilized for the capital projects of SLSEA in specified areas. This income is limited to about Rs.40 million annually but the capital project budget is well over this amount. On the other hand restructuring and expanding of SLSEA was required to recruit new staff and office space and other facilities resulted to increase amount of recurrent expenses. The General Treasury has so far not allowed the SLSEA to implement their fund generation activities, such as CESS, Royalty etc as sanctioned by the Act. Hence, the Authority could not become a self-financing institution yet.***"

3.2 Operating Review

3.2.1 Regional Centre for Lighting

The Regional Centre for Lighting (RCL) had been established within the Authority in April 2009 in view of the widespread benefits expected through the introduction of the efficient lighting system. In this regard following observations are made.

(a) Decision to function the Centre as a separate unit under the Ministry of Power and Energy or a separate unit under the Authority had not been finalized yet. However, according to the information made available, it was observed that the Centre had been functioned as a separate unit under the Authority in 2011.

The Chairman of the Authority stated in this regard as follows.

"***Since energy saving as a result of efficiency improvement in lighting would be directly benefitted the CEB, on the request of the Ministry the CEB undertook the operation and management of the centre in later part of the year 2012.***"

(b) Achieving the targeted income of Rs. 12.3 million in 2011 from testing of Compact Florescent Lamps (CFL) in the Lab established in the Authority had not succeeded due to non designing of a mechanism for that. Further, the Centre had not been efficiently and effectively used for the intended purposes during last two years period even the Authority had spent a sum of Rs. 30,249,692 as at 31 December 2011.

The Chairman of the Authority stated in this regard as follows.

"Although the objectives of the Centre could not be fully achieved during its first two years of operation, the photometry laboratory has been established and funding for procurement of equipment was secured. Further, training facilities and other infrastructure has been established."

3.2.2 Development of Three Prototype Electric Vehicles

The Authority had entered into an agreement with a private company to develop three prototype electric vehicles for Rs. 9 million on 28 September 2007. Accordingly, the project required to be completed within 18 months from the date of the agreement.

According to the agreement, due date for completion of the Project was 31 May 2009. However, the developer had failed to develop even a single vehicle out of three prototype vehicles although Rs.7.824 million i.e.86.93 per cent of the agreed sum had been paid and taken 56 months as at 31 May 2012. It was further observed that the developer had dragged on the project without formal time extension because he has not impacted from that delay.

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

The Authority had entered into an agreement with a private Company on 14 July 2008 for a sum of Rs. 16,675,000 for supplying, installation and erection of ten wind measuring masts at places selected in four Provinces. According to the Contract, the Project period was 12 months and after issuing of the completion certificates the defect liability and maintenance period was also 12 months. In addition to the contract value, the Authority had spent a sum of Rs. 7,095,000 for instruments and other accessories. In this regard following observations are made.

(a) Only four out of ten Masts had been completed within the project period and the balance towers except Karabagala had been completed after two years period late from the due date.

The Chairman of the Authority stated in this regard as follows.

"A project of this nature requires careful positioning of the measuring towers to gain a good knowledge of the wind resource. Accordingly, selection of appropriate measuring sites took a considerable time. Measures will be taken to conclude the project within the current financial year."

(b) Progress of the construction of Kabaragala Wind Tower was only site selection stage as at 23 April 2012. However, the instruments and other accessories valued at Rs. 634,500 relating to that Tower remained with the contractor.

The Chairman of the Authority stated in this regard as follows.

"The material required for the Kabaragala measuring site (last site) has been mobilized. The Contractor is planning to conclude the installation within two months period."

(c) According to Clause No. 16 of the agreement, the Contractor was required to warrant the components free of corrosion or any other defect for a minimum period of two years. However, it was observed in audit that the Authority had ignored the said provision and taken the responsibility to replace the inferior material, used by the contractor, at its own cost of Rs. 461,440.

The Chairman of the Authority stated in this regard as follows.

"The offer made by the Contractor included an alternative offer to have stainless steel stay wire for corrosive environments. The Authority decided to reject this expensive, alternative offer an opted to investigate the suitability of mile steel stay wire. Accordingly, the Contractor was not held responsible for the corrosion of the stay wires."

(d) According to the close Nos.18 and 19 of the agreement, the Contractor was liable to insure against the all risk contemplated by the Authority and contractor will further be held responsible for all insurable risks of every kind other than war, rebellion and earth quakes that occur during the period of maintenance. However, ignoring these provisions, the Authority had decided to release contractor from all liabilities arisen as a result of collapse the wind measuring Mast at Udappuwa on 07 October 2010 as it was happened due to the natural disaster.

However, the Authority had not taken action to investigate the incident to establish the contractors fault. Further, it was observed that the location of the collapsed tower had been selected after measuring wind and doing feasibility studies by incurring public funds. However, the information furnished to audit revealed that the Authority has no intention to re-erect a new Tower at that location. Hence, the amount spent for the tower had become fruitless.

(e) According to Clause No 16 of the agreement, the Authority should retain 10 per cent of the contracted sum as retention money for a period of 12 months of operation. However, the Authority had paid to the Contractor a sum of Rs. 15,007,500 (i.e. 1,675,000 × 90% × 10) as at 25 March 2009 even only four Towers had been completed at that time and one Tower was still at the initial stage as at 23 April 2012 as mentioned in paragraph (b) above. Therefore, stage wise payment instead of measure and pay could not be accepted in audit for the Project like this because the Authority had lost the control over project administration.

3.2.4 Development of Local Wind Turbine Studies to Complex Terrain in Sri Lanka

The objectives of the Project are to design and development a Wind Energy Conversion System suited to different terrain condition in Sri Lanka with a view to maximize local value addition and thereby encouraging local wind turbine manufacturing efforts in anticipation of creating employment and producing electricity at a competitive price. In this regard following observations are made.

(a) The Authority had entered into an agreement with a Private Company for diversification of Energy Resource Base/Development of a Wind Energy Conversion System with a view to maximize local value addition in harnessing wind energy on different terrain conditions in Sri Lanka on 01 March 2010 without complying of the provisions in Section 8(2)(b) of the Finance Act No. 38 of 1971. The Developer had estimated the total project cost at Rs.40.80 million out of which Rs.20.80 million to be borne by the Authority.

(b) According to Clause 7 of the Agreement, the total duration for the Development was eighteen months of which 12 months for prototype manufacturing and six months for field testing. But the Developer had not completed the Project even after taking 22 months without formal time extension as at 31 December 2011. The total amount paid to the Developer as at 31 December 2011 was Rs. 11.440 million and it was 55 per cent of the contracted sum of Rs. 20.80 million.

(c) The prudence and fairness of the total Project cost estimated to get 50 per cent from the Authority could not be satisfied in audit because the reasons and basis of valuation of certain items (eg. Land value and extent) included therein is questionable.

3.2.5 **Other Projects**

Renewable Energy Division of the Authority had planned to implement 24 programmes during the year under review at a total estimated cost of Rs. 197.3 million. However, ten programmes of them had not achieved any financial and physical progress as at 31 December 2011 and the total estimated cost in the annual budget for those programmes was Rs. 29.04 million. Considerable physical and financial progress of the balance programmes was also not observed.

The Chairman of the Authority stated in this regard as follows.

"Every year this Authority plans for activity-filed calendar based on existing staff assigning with multiple tasks. Accordingly, only the priority program has to be implemented sacrificing some of the planned activities and therefore hindered due to unavailability of funds from the Treasury on time. As a result, considerable deviation between the budgeted and the actual performance is experienced."

3.3 Items of Contentious Nature

A sum of Rs. 7,334,354 had been received to the Authority during the years 2010 and 2011 as the reimbursement of the expenditure incurred to carry out the Greening Sri Lanka Hotel Programme coming under the Project financially supported by Switch-Asia Programme, a European Union funded Project managed by the Ceylon Chamber of Commerce. Out of this, a sum of Rs.3,135,202 had been distributed among the entire employees of the Authority as professional allowance in contrary to the provisions in Public Enterprises Circular No. 95 of 04 June 1994 and Public Finance Circular No.PF/PE/5 of 11 January 2000.

3.4 Human Resources Management (HRM)

The Authority had functioned without having a staff recruitment procedure approved by the Department of Management Services (DMS) in 2011 as well.

Further, the approved and actual cadre as at 31 December 2011 was 114 and 85 respectively. Twenty two out of twenty nine vacancies i.e. 76 per cent was in managerial level and above.

The Chairman of the Authority stated in this regard as follows.

"We have conducted detailed review of the staff recruitment and a new organization structure was designed. The new structure has been referred to the Sri Lanka Institute of Development Administration (SLIDA) by the Ministry for review."

3.5 Corporate Plan

Previous Corporate Plan was for the period 2006 -2010 and the new plan is for 2012 – 2016. However, the Authority had functioned without a Corporate Plan in 2011. 18

3.6 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. 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) Debtors and Creditors

(d) Accounting

(e) Implementation of Projects

(f) Human Resources Management (HRM)

(g) Staff Loans

(h) Payment Procedure

H.A.S. Samaraweera
Auditor General

My No: SEA/IA/CH/01
07th November 2012

The Auditor General
Auditor General's Department
306/72
Polduwa Road
Baththaramulla

Dear Sir,

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

Ref No: EH/C/SEA/FA/2011

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

Dr. Kithsiri Dissanayake
Chairman
Sri Lanka Sustainable Energy Authority

Copy:
01. Mr.R.M.Rathnayake, Audit Superintendent, Auditor General's Department.
02. Secretary, Ministry of Power and Energy.

2.2 Comments on Financial statements

2.2.1 Sri Lanka Accounting Standards

(a) Presentation and Disclosures in the Financial Statements – SLAS 3

Significant accounting policies have been disclosed under notes to financial statement paragraph 2.1 & 4.2 with the Auditors comments. And will be incorporate with the financial statements 2012 and onwards.

(b) SLAS 18 – Property, Plant and Equipment (PPE)

SLAS-18 states that if revaluation is done for a particular class of assets then all assets in that class have to be revalued. This means that even fixed assets purchased in year 2011 have to be revalued. Action has been taken to revalue the said items.

(c) Revenue – SLAS – 29

It has been noted to report the revenue on an accrual basis in future. This requires receiving of information (e.g. treasury grant etc) credited to the bank is received by SLSEA.

(d) SLAS 30 – Related parties and related party transactions.

A form was circulated in September 2012 among top management and Board members of SLSEA to declare any related party transaction for year 2011 & 2012. So far all the senior managers of SLSEA have submitted the information in this regard.

2.2.2 Accounting Deficiencies

(a) (i) As per the agreement SLSEA acquired only the equipment which was mentioned in the document provided by the Korean Embassy. Assets related Korean project are to be subjected to a performance evaluation after which the formalities required to take all the relevant assets of this project to the authority. Asset Register will be finalized and action will be taken to capitalize all relevant cost as prior year adjustment in the year 2012 accounts.

(ii) As per the records of the Renewable Energy division 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 acquisition process.

(b) The amount under reference is the funding gap between the tariff paid to renewable energy projects by Ceylon Electricity Board (CEB) and the avoided cost payable to those projects according to the implementation arrangement of the cost based tariff regime. However, this funding gap which was originally intended to be filled using the proceeds due to be credited to the Sri Lanka Sustainable Energy Fund (SLSEF) established under Section 46 of the Act (Sri Lanka Sustainable Energy Authority Act No. 35 of 2007) had not been paid due to government policies. This is further clarified in 3.1. As a result, Ceylon Electricity Board (CEB) included the funding gap in its tariff filing made to the Public Utilities Commission of Sri Lanka (PUCSL) in 2011. Therefore this sum will have no further effect on the accounts of the Authority.

(c) This was done only in year 2010. In year 2011 this has not been treated as income. Action is being taken to rectify the 2010 entry.

(d) Steps will be taken to rectify this issue in the 2012 accounts.

(e) The money was utilized from the fund with the authorization of the Ministry. Since the savings Accounts interest is only 5% and the treasury is borrowing at a higher rate to make capital grants, this borrowing is justifiable as it is the least cost option. However Rs.7 million of this amount has already been repaid to the said fund in early 2012.
Further, believed that we shall be paid "subsidies to selected renewable energy based energy conversion plants" according to the Section 46 (3) (a) of the SLAEA Act, No. 35 of 2007.

(f) A reference wind measuring station comprises of tower and array of instrumentation. Even though the station in Balangoda was commissioned in March 2012, most of the requisites of this station were realized in 2011. It was deemed appropriate to capitalize the asset prior to commissioning of the station. However future occurrences of this nature will be avoided.

(g) A Committee was appointed and was requested to submit a report including the Wind Tower information, extent of damaged, cost, salvage value, recoverable assets value and other relevant information on this regards. Action will be taken to write off the amount recommended by the committee accordingly.

(h)
(i)
(j)
(k)

Steps have been taken to rectify the errors.

i) The point has been noted and relevant changes will be incorporated in 2012 Financial Statement. The amount which has been utilized to purchase PPE will be considered as differed grant. The amount which has been utilized for capital projects will be considered as revenue.

ii) The committee appointed for the evaluation for fixed assets in the Authority has also investigated this issue. This committee is in the process of rectifying the book balance of energy instruments received as foreign aids and grants. Entries relevant to energy instruments will be entered in the books of accounts once the report of the assigned committee is received.

iii) As per the records the under stated amount is Rs.3,029,478/= not Rs. 21,139,902/=. Necessary action will be taken to rectify the understated value of Rs. 3,029,478 in 2012 Accounts.

2.2.4 Lack of evidence for audit

Deferred revenue of Rs.39, 300,564/= transferred in year 2011 is the amount of depreciation for 2011. A breakdown of this amount was indicated in Note 3 of the 2011 accounts.

2.2.5 None Compliance with Laws Rules & Regulations

(a) Finance Act No. 38 of 1971

i) **Section 8 (1)**

Due to unavailability of the Director (Finance) permanently, the Authority has been compelled to get temporary services of officials appointed from the Ministry.

So that the Authority experienced the breakdown of most routine functions such as the preparation of Annual Budget due to the sudden transfer of Director (Finance) and the appointment of a new Director (Finance). As a result, the Annual Budget preparations could not be concluded as planned. Every effort will be taken to avoid such occurrences in the future.

ii) **Section 14 (1)**

As explained above the unavailability of full time officer as the Director (Finance) caused a delay in completion of a Draft Annual Report. Every effort will be made to avoid such occurrences in future.

(b) Sri Lanka Sustainable Energy Authority Act No. 35 of 2007

i) **Subsection 46 (2)**

From the inception of the Authority, at each budget preparation, proposals were made to evoke the provisions of the subsection. However, these efforts failed to bare any fruit, as the officials involved in the preparations objected to these measures as likely to contribute to further increased cost of fossil fuels. Nevertheless, a fresh attempt has been made for the 2013 budget preparation activities (See item (ii) below).

ii) **Sections 46.3 (a), (b), (c), (d) and (e)**

From the inception of the Authority a set of proposals in line with the objects of the Authority were presented for inclusion in the budget proposals to the Department of Fiscal Policy and Department of National Planning. A fresh attempt was made this year by submitting a proposal (copy of which attached herewith marked as Annexure I) to the Department of National planning on 28th August 2012.

It is expected that at least a part of these proposals will be allowed to be implemented during the year 2013.

3 Financial and operating review

3.1 Financial Review

The SLSEA is engaged in promoting and educating on sustainable energy in the country. And also acts as the regulator of new projects in Renewable Energy. Most of the revenue it generates through energy permits etc is deposited in the

Energy Fund and is set aside for special activities described in the Act. Only the income generated from the solar power plant in Hambanthota could be utilized for the capital projects of SLSEA in specified areas. This income is limited to about Rs.40 million annually but the capital project budget is well over this amount. On the other hand restructuring and expanding of SLSEA was required to recruit new staff and office space and other facilities resulted to increase amount of recurrent expenses. The General Treasury has so far not allowed the SLSEA to implement their fund generation activities, such as CESS, Royalty etc as sanctioned by the Act. Hence, the Authority could not become a self financing institution yet.

3.2 Operating Review

3.2.1 Regional Centre for Lighting

(a) The Regional Center for Lighting was established with the broad objective of promoting efficient lighting in the South Asia region. The development strategy of the center recognized that the reputation of RCL will need to be earned and that it will need to evolve steadily as the capabilities of RCL grows. As USAID has provided expertise and assistance of an internationally reputed organization to establish the center at the initial stages, the center was operated affiliated to SEA for secretarial and administrative support. All the technical expertise was provided through USAID until April 2011 with employment of a full time local professional and guidance of lighting experts from Lighting Research Center of Rencellair Polytechnic in USA.

Attraction of high caliber professionals to operate the Center was recognized for long term operation of the center and it was decided to operate Center as a special project under the Ministry of Power & Energy. In this respect Human Resources Plan has been prepared and submitted for the approval of the Cabinet of Ministers. However, taking into consideration of the Finance Ministry on the proposal the Cabinet directed the Secretary, Ministry of Power & Energy to discuss with Secretary to the Treasury and propose a suitable arrangement for providing the necessary staff for the Center. Since energy saving as result of efficiency improvement in lighting would be directly benefitted the CEB, the ministry requested to consider the operation and management of the center by CEB. The Board of the CEB has approved the taking over the Center and

manages with CEB staff. CEB has appointed a full time DGM in charge of RCL with one Chief Engineer, two electrical engineers and other supporting staff.

(b) The main income sources envisaged during the year was affiliated program, income from capacity building program, library and information center, overhead recovery through donor funded projects and laboratory services. Although the affiliated program, capacity building program, and full operation of library and information center could not be fully operational due to the above mentioned reason of delay in employing the necessary staff, an amount of US $ 50,000 was recovered through USAID as overhead recovery. The photometry laboratory was established at the Center; however there was delay in employing the laboratory manager and training him. The testing of CFLs for star rating compliance was commenced in July 2012 with an approximate monthly income of Rs. 500,000. 00. The test capacity will be doubled by end 2012 December.

The main expenditure of the Center up to now was procurement of laboratory equipment and the rental for the premises. The physical location for the Center was the first requirement for establishment of laboratory and convincing donor/lending agencies for their assistance. Therefore, the premises were rented to suit present as well as future requirements of the Center.

Although the objectives of the center could not be fully achieved during its first two years of operation, the photometry laboratory has been established and funding for procurement of equipment was secured. Further, training facilities and other infrastructure has been established.

Contribution by donor assistance up to now are shown below

Organization	Contribution (US $)
USAID (Technical Assistance)	800,000
ADB (Procurement of Laboratory Equipment)	260,000
ADB (TA for developing guidelines on street lighting)	40,000
USAID (Overhead recovery – cash transfers)	50,000

3.2.2 Development of Three Prototype Electric Vehicles

The Electric Vehicle initiative was taken to diversify the transport energy supply which is in a very vulnerable position with 100% dependence of liquid petroleum

fuels. The original project intent of providing a viable alternative to the three wheeler fleet had to be changed to a better alternative, based on a market survey carried out by the contractor.

Apart from these changes of project objectives, many technological changes also necessacited a more sophisticated approach for the solution of the problems at hand, causing certain delays. However, the contractor is moving ahead with the assignment. The agreement will be extended to cover the extended project period.

Apart from the above, this project must be viewed from the perspective of national development where a solution to the crisis situation of the ever increasing expenditure on import of fossil fuels, creating a large volume of high skilled employment opportunities contributing in equal measures to create national wealth.

Further, the contractor must purchase components for all three proto types and the completion of the first unit is expected to accelerate the completion of the remaining two units. This project is a technology development effort which involves a lot of research compared to the supply of a product. This means an unforeseen issues and corrective measures to resolve same are required. Accordingly, the project is being implemented at a slower than anticipated phase under the supervision of a steering committee.

But there is an issue with a Contractor as the bad progress. Action will be taken to call a meeting with the steering committee to resolve the issue and for further action, meanwhile arranging a visit to workshop to check the physical progress and the stock verification.

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

(a) The contractor has completed nine out of ten towers and is presently attending to the last tower. A project of this nature requires careful positioning of the measuring towers to gain a good knowledge of the wind resource. Accordingly, selection of appropriate measuring sites took a considerable time. Measures will be taken to conclude the project within the current financial year.

(b) The material required for the Kabaragala measuring site (last site) has been mobilized. The Contractors is planning to conclude the installation within two months period.

(c) The offer made by the Contractor included an alternative offer to have stainless steel stay wire for corrosive environments. The Authority decided to reject this expensive, alternative offer an opted to investigate the suitability of mile steel stay wire. Accordingly, the Contractor was not held responsible for the corrosion of the stray wires.

(d) The Authority investigated the collapsed tower and observed that the failure had been due to a high gust of wind which is considered as a natural condition. The low quality of the wind resource as elicited by the wind data available in the data log also confirmed this. The Authority decided to shift its resource assessment focus to areas north of this location. The tower covering its operation provided a valuable screen of data to establish the southern boundary of the wind resource area of the western coast.

(e) This project involved the erection of 10 wind measuring mast which can be treated as individual and independent project components. The retention money under reference was released to contractor based on the commissioning date of individual towers that has given the 10 resource locations. However, the authority remains in full control of the project with the payment obligation for liabilities.

3.2.4 Development of Local Wind Turbine Studies to Complex Terrain in Sri Lanka

(a) The Authority decided to initiate this project as research & development activities considering the large scale economic benefits realizable with relatively low value stimulation. This being a budgeted programme, no further authorization was deemed necessary to implement the programme, given the approval of the annual budget of the SEA by all due authorities.

(b) This project involves the transfer of technology as well as indigenization of transfer technology to a very high degree. As a result, there were many mid course corrections and improvements required for the project. These corrections caused some delays in the program, which will be caught up as much as possible to complete the project the shortest possible time period. The payments already made in accordance with the schedule of payments agreed upon and is fully justified on the level of achievements of the project under reference.

(c) Even though, it is advertised in the newspapers, only 2 bids were received and the Authority selected the developer using the standard two envelope bidding process meant for projects of significant complexity. Accordingly, there was no violation of the National Procurement Guidelines.

(d) The development of a wind power project specially in a location with lot of uncertainties requires a lot of resource and expertise to evaluate an implementable project status. The project intention clearly covers the method of repayment of the funding provided by the Authority emphasizing the stimulation role played by the Authority with no implications.

3.2.5 Other Projects

Every year this Authority plans for activity-filed calendar based on existing staff assigning with multiple tasks. Accordingly, only the priority program has to be implemented sacrificing some of the planned activities and therefore hindered due to unavailability of funds from the Treasury on time. As a result, considerable deviation between the budgeted and the actual performance is experienced.

3.3 Items of Contentious Nature

For the purpose of increasing the Energy Efficiency of hotel industry, SEA joint to the project with Responsible Tourism Partnership. According to the achievement of that project, Greening Sri Lanka Hotels' project was established on 01/11/2009 by joining with the Ceylon Chamber Of Commerce funded by European Union.

The consultancy of the Energy Management was conducted by the SEA and it was decided to appoint two officers for the post of Snr. Energy Manger and the Energy Manager. Further, decided to pay monthly allowance for them as EUR 1300 And EUR 1100 respectively.

This Project was processing for the purpose of increasing the Energy Efficiency for 350 hotels and the targets are running similarly with the SEA targets. While one Engineer was appointed full time and other four Engineers in the part time basis as necessary. General office works of the fully appointed Engineer are covered by other officers in the SEA. In addition to that the special common programmes works of the appointed Engineers, which was conducted by the SEA (Eg: - Vidulka Exhibition) were covered by the all staff of the SEA.

With the comparing of CEB, SEA staff is paid a very low salary under the same Ministry and not paid even annual bonus also.

By considering the above factors for the purpose of motivate officers 85% of that project (After reimbursing the Officers' SEA Salaries) engineering allowance was distributed through the all SEA staff and rest 15% was accounted as the SEA income.

3.4 Human Resources Management (HRM)

We have conducted detailed review of the staff recruitment and a new organization structure was designed. The new structure has been referred to the Sri Lanka Institute of Development Administration (SLIDA) by the Ministry for review.

Meanwhile a constant effort has been put forwarded to fill the carder positions. And as a result, 13 vacancies were filled the details of which are given below:

1.	Director (Knowledge Management)	01
2.	Specialist (Finance /Communication)	02
3.	Executive	02
4.	Junior Professional (Engineers)	07
5.	Office Assistant	01
		13

3.5 Corporate Plan

The Corporate Plan 2008 – 2010 prepared before the inception of the Authority was valid until the end of the year 2010. A fresh effort was taken immediately after the approved of the Budget for year 2010 to prepare a new 5 year plan for the period of 2011-2015. A study with stakeholders' participation was conducted to derive a comprehensive 5 year corporate plan encompassing all the areas of activities sanctioned by the Act. Considerable time has been taken for this effort, the Authority extended its long term programmes containing first Corporate Plan

till the end of 2011, the second Corporate Plan was updated to cover the period from 2012-2016

3.6 Budgetary Control

Every year this Authority plans for activity-filed calendar based on existing staff assigning them multiple tasks. Our attempts to acquire human resources have consistently failed due to non-availability of attractive remunerations. Effort will be made to remedy this situation at the earliest.

4 Systems and controls

Action has been already initiated to rectify the deficiencies in system and control observed during the period of Audit. During past two years measures have been taken to strengthen the overall process of systems and control by strictly adapting to Policies, Programmes, Procedures and Standards.