Generation Performance in Sri Lanka

2012 (First Half)

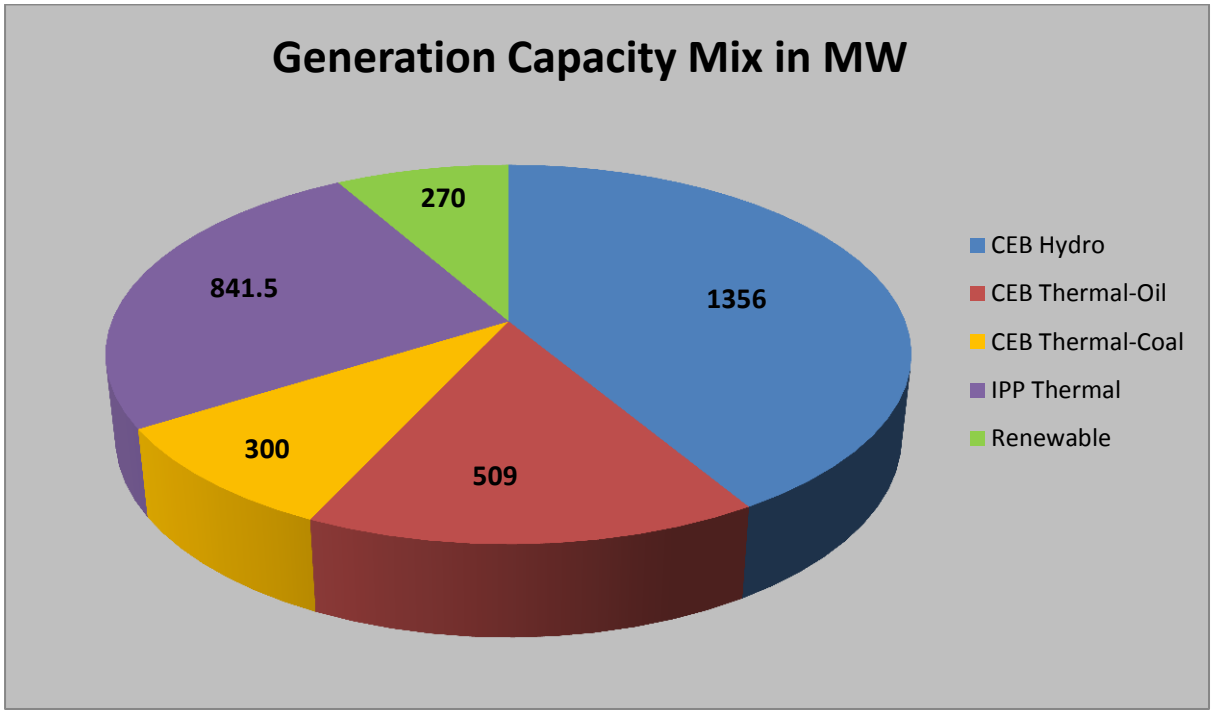
Prepared By : Public Utilities Commission of Sri Lanka

Content

1. Introduction

During the first half of year 2012, maximum recorded electricity demand in Sri Lanka was 2146.4MW (excluding NCRE component) which is a slight low value compared to the maximum demand of 2163.1MW in year 2011. In order to attain this demand and to satisfy the electricity requirement in Sri Lanka, altogether 142 Grid connected power plants and 3 power plants in Jaffna peninsula with total installed capacity of 3277MW have been operated in the first half of 2012. Out of these power plants 25 have been owned and operated by Ceylon Electricity Board including 17 hydro plants, 7 thermal plants and 1 wind power plant. Upper Kotmale hydro power plant with 150MW was added to the national grid to enhance the generation capacity of CEB, during the first 6 months of 2012. Withal, 11 thermal power plants have been operated by Independent Power Producers (IPPs) and 109 renewable power plants have been operated by Small Power Producers (SPPs) including mini hydro plants, solar power plants, wind power plants and biomass power plants. 5 renewable power plants have been commissioned in the first half of 2012 to raise the generation capacity of the country.

The chart below shows the existed installed capacities in MW of each type of power plants by the end of June 2012.



This Generation Performance Report contains a summary of information and performance statistics of the generation units and electricity network in Sri Lanka for the first half of year 2012.

All the index and other calculations in this report have been done based on the data received through Licensee Information Submission System (LISS) and details obtained from CEB Monthly Operational Data Reports.

2. Energy Generation

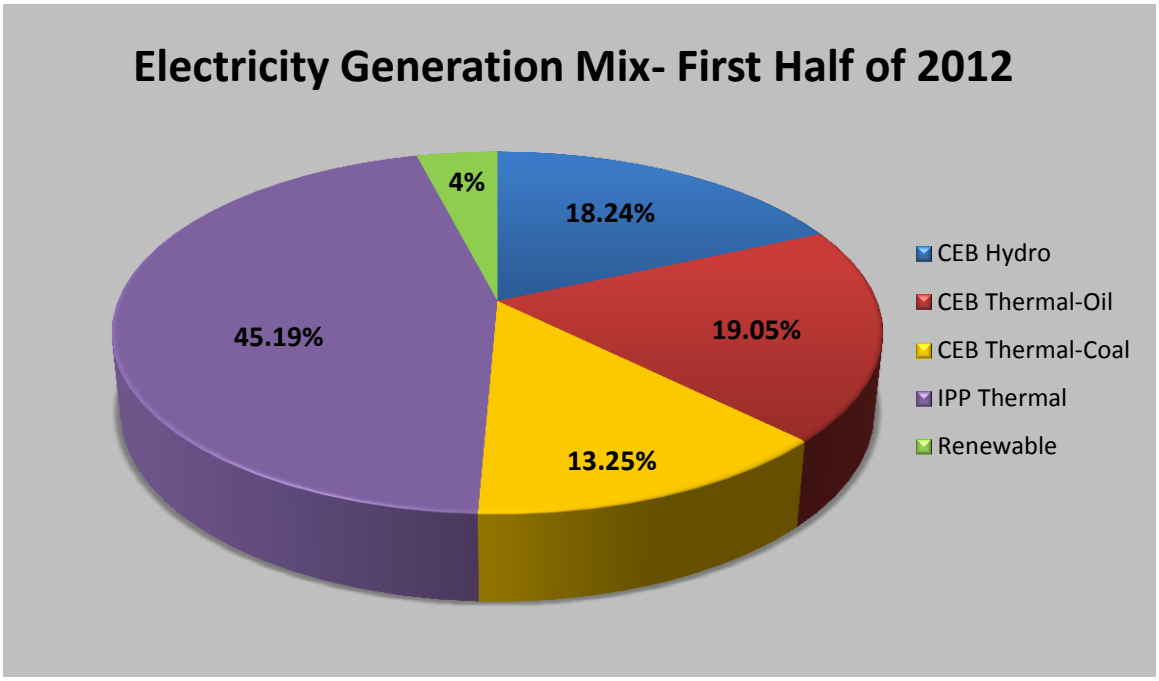
All grid connected generation plants sell their power to the only transmission licensee in Sri Lanka to deliver the power to the consumers through distribution licensees.

The chart below shows the semiannual generation figures in 2012 in MWh.

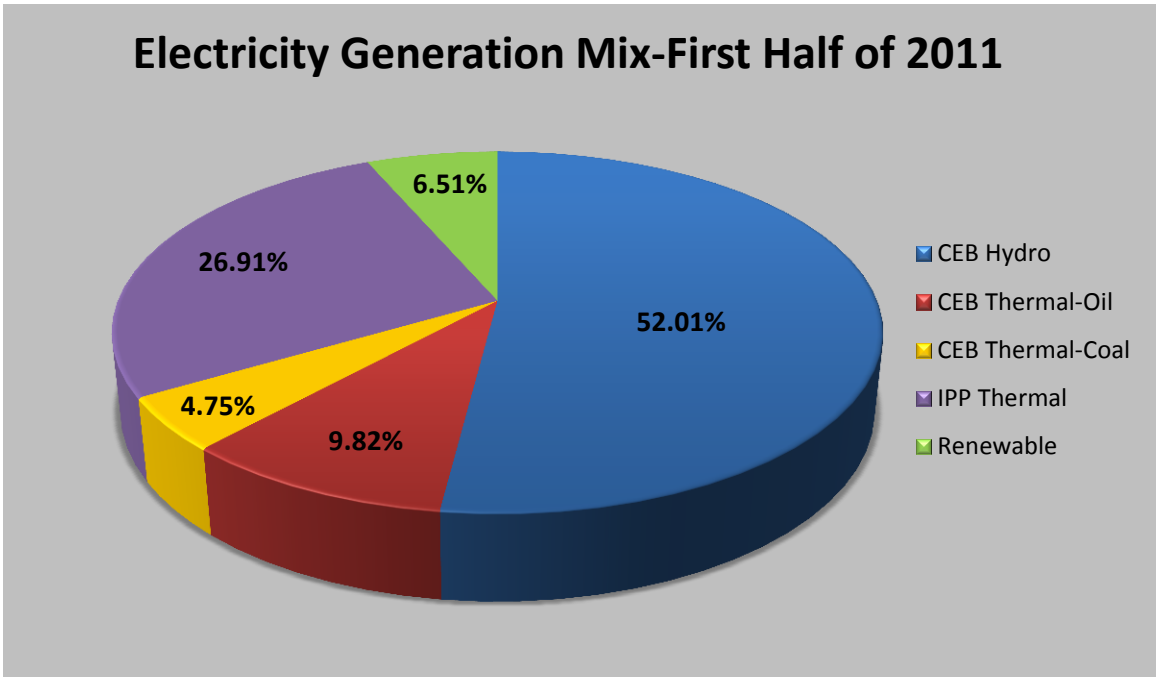
	CEB Hydro	CEB Thermal Oil	CEB Thermal Coal	IPP	Renewable	Total
Jan	160,273	228,512	78,196	497,076	24,614	**988,672**
Feb	155,350	228,432	56,314	456,608	25,663	**922,367**
Mar	160,121	189,273	177,156	489,364	20,177	**1,036,091**
Apr	211,743	137,324	145,796	357,490	59,815	**912,169**
May	220,844	159,762	170,916	440,512	45,264	**1,037,298**
Jun	164,215	177,154	166,716	416,254	59,583	**983,922**
Total	**1,072,546**	**1,120,456**	**795,095**	**2,657,305**	**235,115**	**5,880,518**

Source :LISS

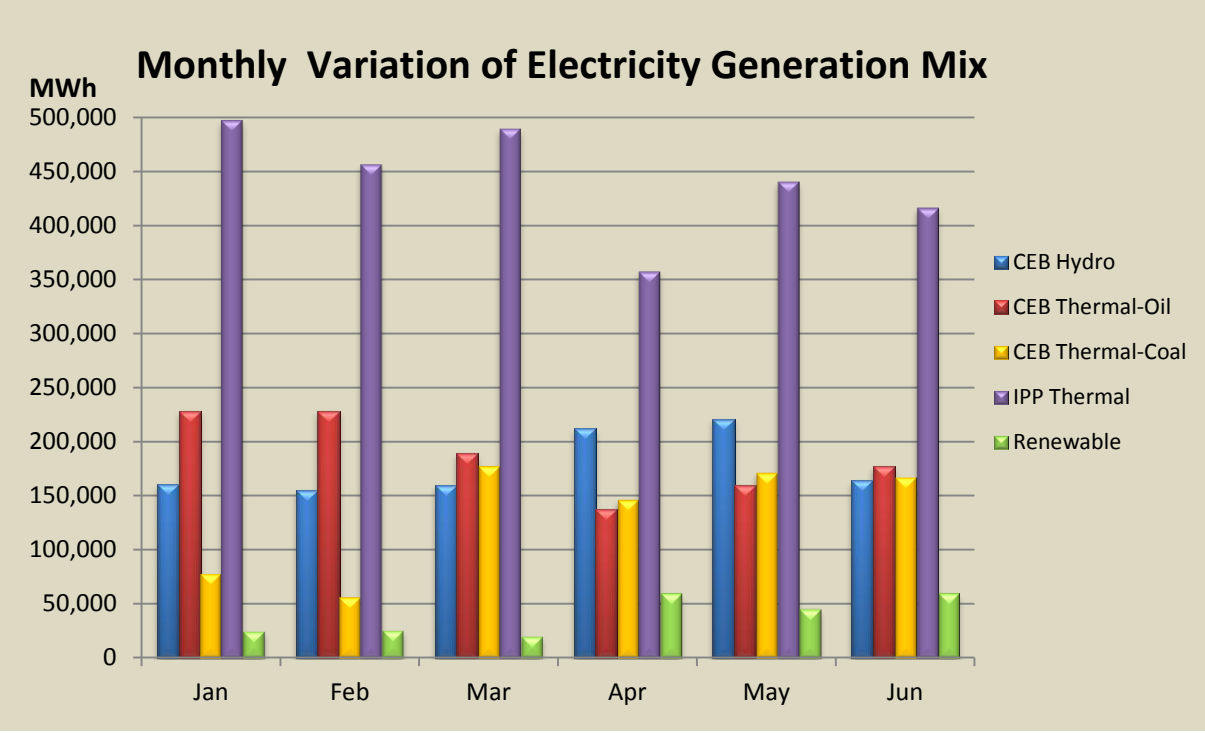
The chart below shows the generation mix in Sri Lanka for the first six months of 2012.



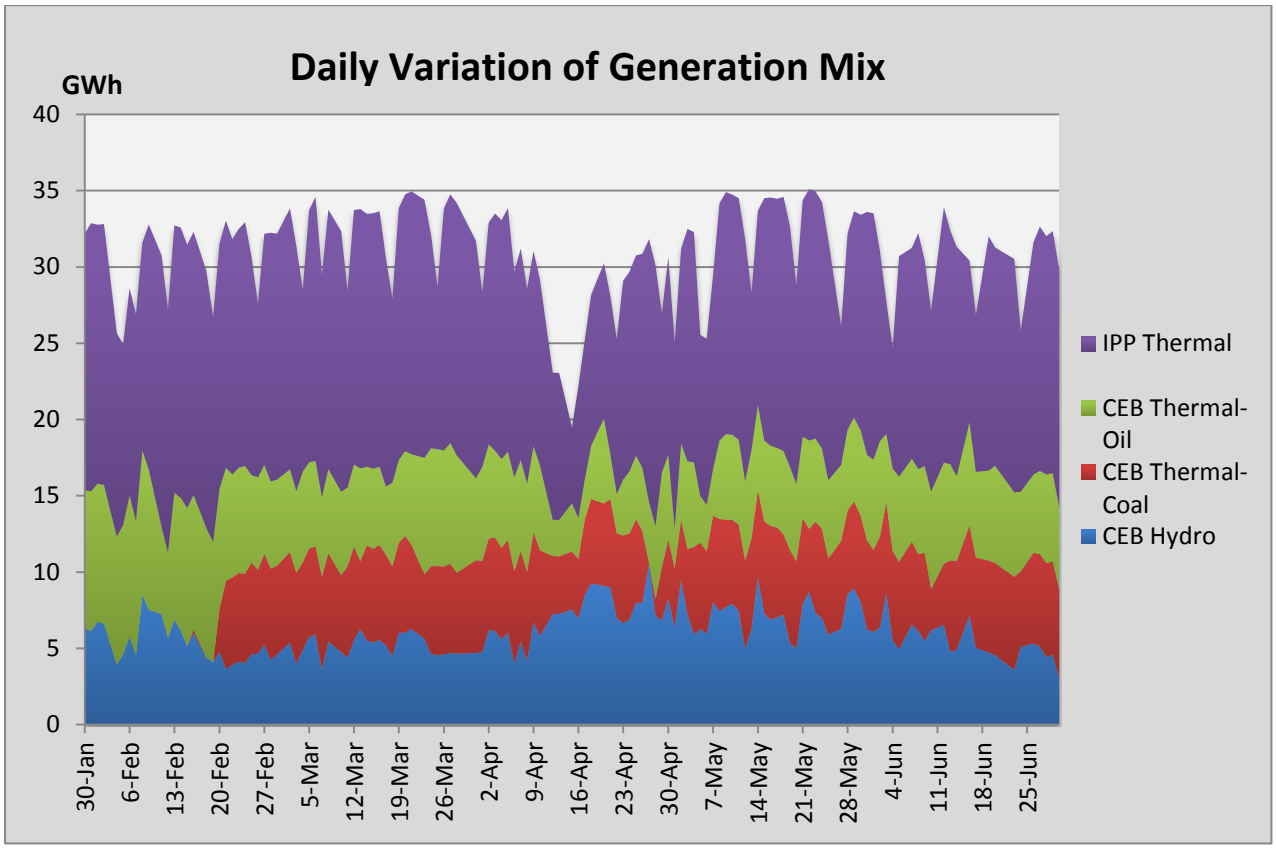
The chart below shows the generation mix in Sri Lanka for the first six months of 2011.



The chart below shows the monthly variation of generation mix in Sri Lanka during the first six months of 2012.



The following chart shows the daily variation of generation mix in Sri Lanka during the first six months of 2012.

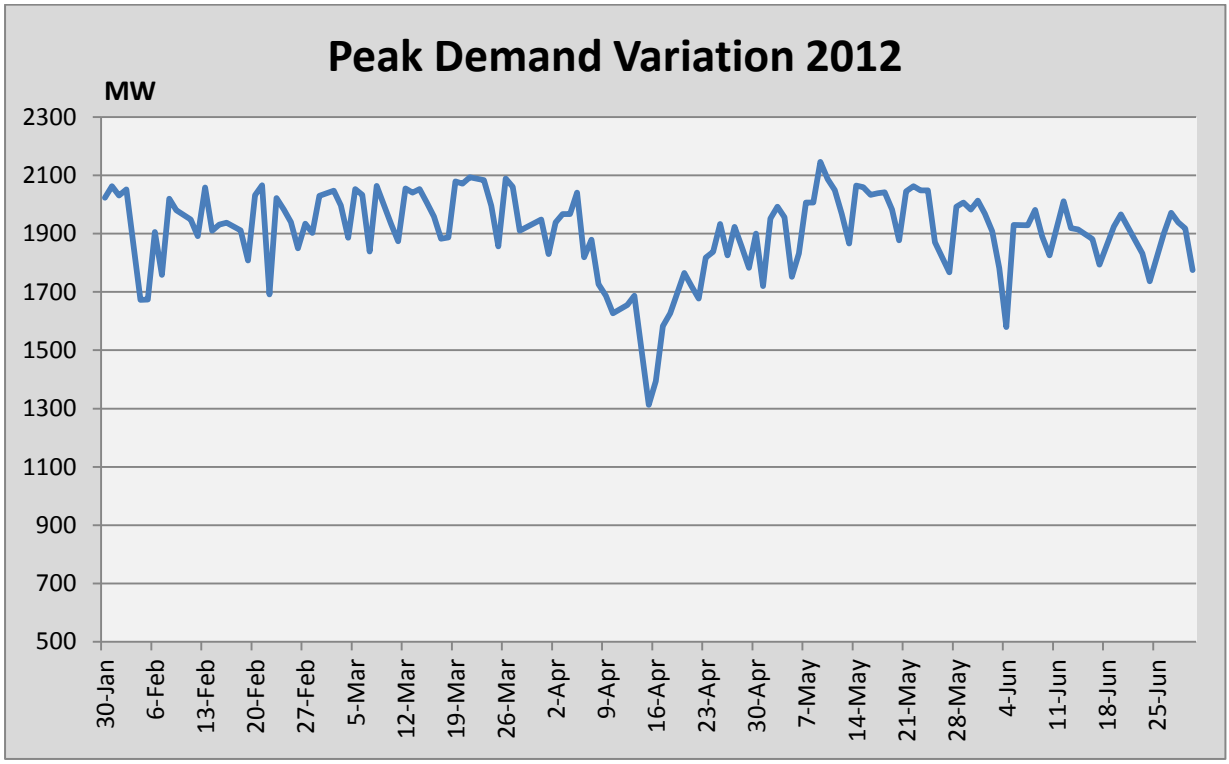


Note: *Daily generation data of renewable power plants was not available.*
Daily generation data of January was not available.

3. System Peak Demand

CEB System Control records the daily peak power demand of the country.

Daily variation of country's system peak demand during the first half of the year 2012 is depicted by the following graph.



Note: *NCRE contribution is not included for the peak demand.*
Daily demand data for the month of January was not available.

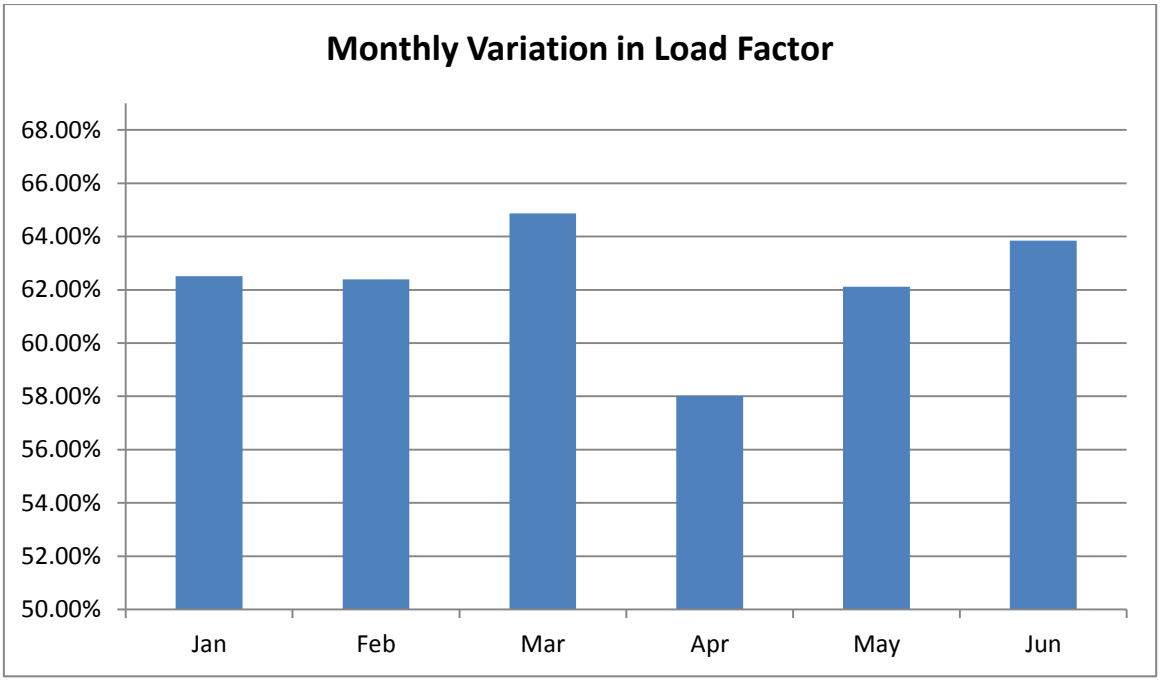
4. Load Factor

Load Factor is an indicator which shows how steady an electrical load over time. It is simply the average load divided by the peak load in a system over a period of time. But normally load factor is calculated subjected to the produced energy according to the following formula.

$$Load\ Factor = \frac{Total\ Generation\ During\ the\ Nominal\ Period}{Maximum\ Demand\ \mathrm{x}\ No.of\ hours\ in\ the\ report\ period}$$

Calculated Load Factor for the total system for first half of year 2012 = **60.21%**

Load factor of any system must be tried to keep in its maximum by pulling down the concentrated maximum demand and shifting the loads to periods of otherwise low usage. Load factor maximization is essential in maintaining the security of supply of the countries in which, meeting the concentrated maximum demand is critical. Countries which have a flat load curve own a higher load factor.



Sri Lanka has a load curve with a steep peak in the night, where starting from about 6.00 pm the load grows to about 2,000 MW by 7.30 pm and starts falling off after about 08.30 pm. Therefore the system must be comprised a substantial additional generation capacity only to meet that abrupt sharp night peak; hence the load factor in Sri Lanka is comparatively low. As a solution for that, CEB has introduced a three tier tariff plan for the industrial electricity consumers with low off peak rates and penal peak rates to smoothen the daily peak load and push some industrial activities to low demand hours, and this time-of-day tariff scheme is expected to be facilitated for the domestic consumers as well in near future.

***Note**: Load Factors were calculated excluding NCRE component of the system*

5. Plant Factor

The plant factor of a power plant is the ratio of the actual energy output of the power plant over a period of time to its potential output if it had operated at full nameplate capacity the entire time.

Plant Factors vary greatly depending on the type of power plants and it is calculated according to the following formula.

$$Plant\ Factor = \frac{Actual\ Energy\ Production\ During\ the\ Nominal\ Period}{Potential\ Energy\ Production\ During\ the\ Period}$$

Calculated plant factors for all grid connected power plants in Sri Lanka during the first half of the year 2012 are listed below.

CEB Hydro

Inginiyagala	53.98%
Old Laxapana	34.84%
Kukule	29.21%
Rantambe	28.00%
Polpitiya	27.20%
New Laxapana	23.48%

Randenigala	21.88%
Ukuwela	21.74%
Victoria	19.42%
Samanala	18.41%
Wimalasurendra	15.64%
Udawalawe	14.72%

Upper Kotmale	12.52%
Canyon	12.40%
Kotmale	9.62%
Nilambe	7.75%
Bowatenna	3.32%

CEB & IPP Thermal

Plant Factors of thermal power plants are listed below in the order of calculated unit cost for the first half of year 2012. Power Plants in Jaffna Peninsula have been shown in a different colour.

1	Puttalam Coal	60.68%
2	Sapugaskanda 2	85.60%
3	Sapugaskanda 1	69.86%
4	Heladanavi	84.24%
5	ACE - Matara	98.29%
6	ACE - Embilipitiya	75.06%
7	Colombo Power - Barge	96.51%
8	ACE - Horana	113.41%
9	Lakdhanavi	57.87%

10	Asia Power	84.39%
11	Nothern Power	53.70%
12	Westcoast	73.17%
13	KPS CCY	67.23%
14	AES - Kelanitissa	53.51%
15	KPS GT7	47.90%
16	Aggreko Chunnakam	47.00%
17	Chunnakam	9.69%
18	KPS(Small) GT	12.86%

CEB Wind – 8.7%

SPP

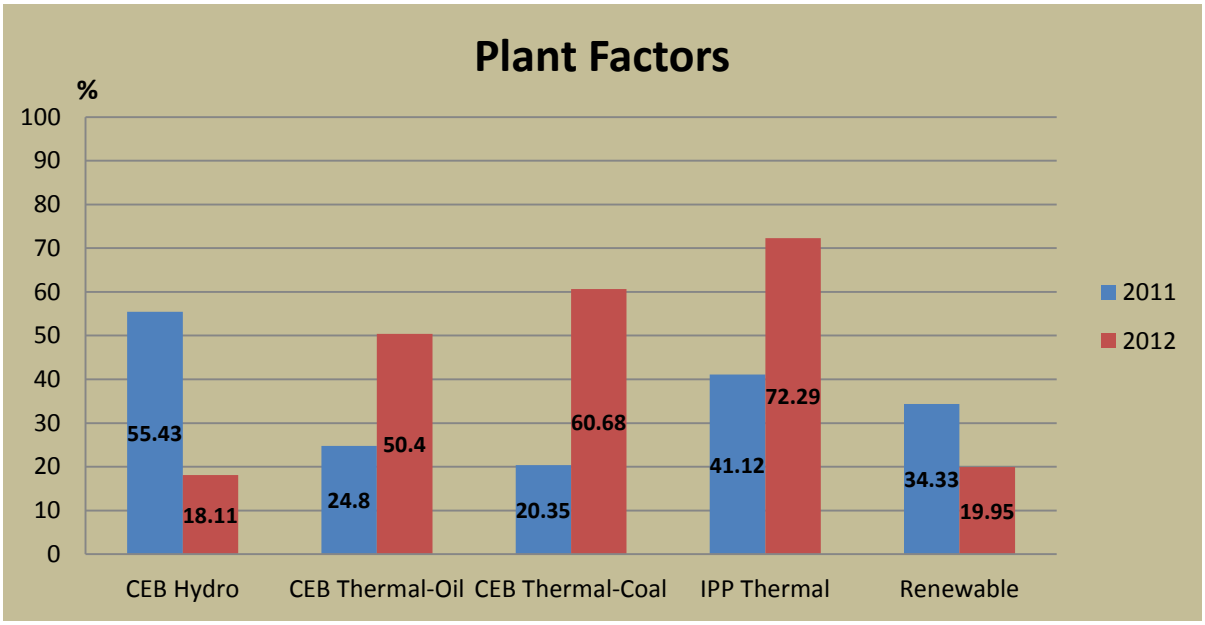
Kalugala-Pitawala MHP	62.69%
Maduruoya MHP	42.15%
Wee Oya MHP	42.14%
Badulu Oya MHP	40.28%
Rathganga MHP	39.63%
Lower Neluwa MHP	39.13%
Batatota MHP	34.93%
Kotanakanda MHP	34.35%
Denawak Ganga MHP	33.71%
Hapugastenna - 2 MHP	33.56%
Bogandana MHP	33.00%
Lower Hemingford MHP	32.81%
Hapugastenna - 1 MHP	32.75%
Loggal Oya MHP	32.53%
Erathna (Waranagala) MHP	32.48%
Watakelle MHP	32.24%
Gampola Walakada MHP	31.70%
Gomala Oya MHP	29.53%
Alupola MHP	27.26%
Lemastota MHP	26.55%
Belihul Oya Oya MHP	26.15%
Kotapola (Kiruwana) MHP	25.78%
Delgoda MHP	25.03%
Guruluwana MHP	24.90%
Pathaha MHP	24.39%
Kirkoswald MHP	23.43%
Kolonna MHP	23.28%
Kottamurichchana DPP	22.59%
Koladeniya MHP	22.50%
Miyanawita Oya MHP	22.16%
Amanawala Oya MHP	22.15%
Brunswic MHP	22.14%
Bambarabatu Oya MHP	21.95%
Asupiniella MHP	21.86%
Niriella MHP	20.38%
Giddawa MHP	19.87%
Manelwala MHP	19.64%

Gangaweraliya MHP	19.60%
Upper Ritigaha Oya MHP	19.43%
Sithagala MHP	19.23%
Soranathota MHP	19.17%
Minuwanella MHP	18.49%
Labuwewa MHP	18.45%
Koswatta Ganga MHP	18.13%
Way Ganga MHP	17.97%
Halathura Ganga MHP	17.77%
Rakwana Ganga MHP	17.56%
Carolina MHP	17.34%
Galaboda (Denawak Ganga) MHP	16.95%
Waltrim MHP	16.25%
Nakkawita MHP	16.19%
Kumburuteniwela MHP	16.16%
Henfold (Agra Oya) MHP	16.11%
Magal Ganga MHP	16.10%
Adavikanda MHP	16.10%
Karawila Ganga MHP	15.08%
Watawala B Estate MHP	14.88%
Ritigaha Oya II MHP	14.87%
Sheen MHP	14.62%
Nugedola MHP	14.62%
Bowhill (Kadiyanlena) MHP	14.48%
Somerset MHP	14.21%
Palmerston MHP	13.81%
Kokawita 1 MHP	13.52%
Kabaragala MHP	13.46%
Glassaugh MHP	13.06%
Ellapita Ella MHP	12.98%
Huluganga MHP	12.46%
Ganthuna Udagama MHP	12.35%
Mandagal Oya MHP	12.19%
Upper Magal Ganga MHP	11.83%
Kiriwan Eliya MHP	11.79%
Dunsinane MHP	11.79%

Kalupahana Oya MHP	11.76%
Barcaple I MHP	11.30%
Kehelgamu Oya MHP	10.38%
Coolbawn MHP	9.71%
Gurugoda Oya MHP	9.07%
Upper Korawaka MHP	8.76%
Aggra Oya MHP	8.60%
Atabage Oya MHP	8.43%
Lower Atabage MHP	8.18%
Branford MHP	8.10%
Watawala (Carolina ii) MHP	8.00%
Kudah Oya MHP	7.57%
Black Water MHP	7.41%
Kadawala I MHP	6.94%
Nilambe Oya MHP	6.81%
Delta MHP	6.75%
Sanquahar MHP	6.64%
Kolapathana MHP	5.91%
Deiyanwala MHP	4.85%
Kalupahana MHP	3.45%
Kadawala I MHP	2.61%
Forest Hill MHP	2.39%
Radella MHP	1.91%
Galatha Oya MHP	0.82%
Battalagala MHP	0.81%
Vidatamunai WPP	33.87%
Seguwantivu WPP	29.95%
Mampuri WPP	28.51%
Nirmalapura WPP	20.43%
Willwind WPP	6.77%
Gonnoruwa I SPP	14.37%
Gonnoruwa II SPP	12.87%
Tirappane SPP	1.19%
Solar PV	0.71%
Badalgama BMP	21.38%
Tokyo BMP	19.65%

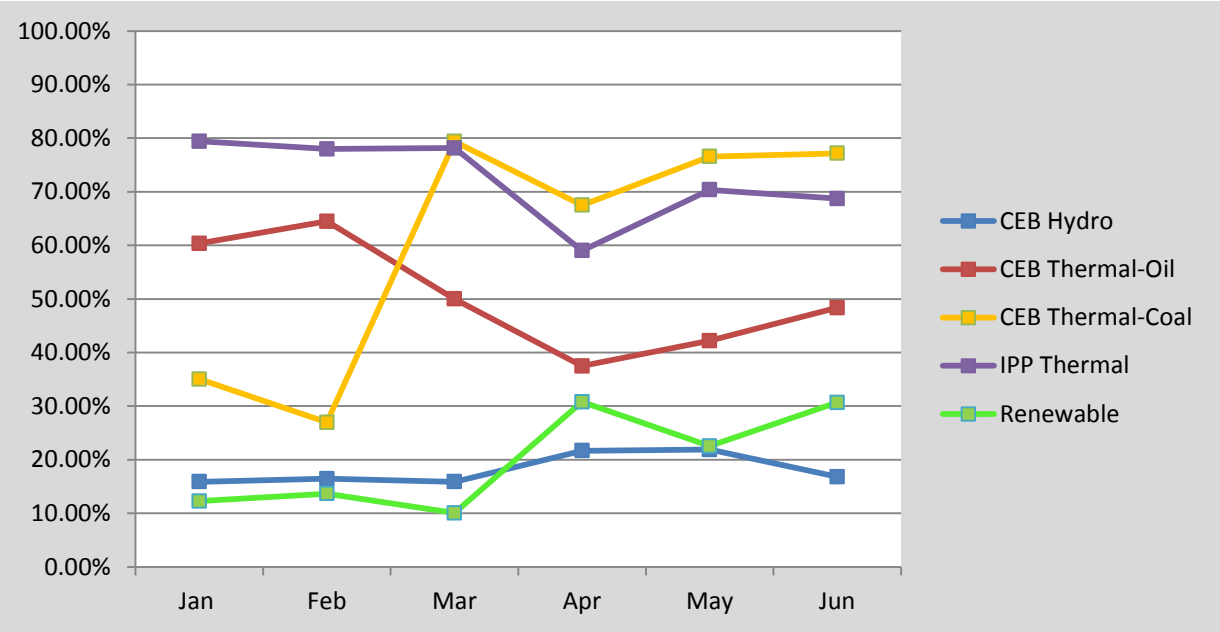
Note: *Plant Factors for the CEB power plants were calculated using gross generation figures*
Gross generation data for IPPs and SPPs were not available for Plant Factor calculation.
Therefore the Net generation data were used to calculate the plant factors of these plants.

First Semi Annual Overall Plant Factors for the major types of generation options in 2011 & 2012 are given below.



Overall plant factors of CEB hydro plants and Renewable plants have been dropped drastically due to lower rainfall, which has highly impacted towards increasing thermal dispatch.

The chart below shows the variation of plant factors during the first 6 months of different types of generation plants operated in 2012.



6. Running Plant Factor

The running plant factor of a generation unit is the ratio of the actual energy output of a generation unit over a period of time to its potential output if it had operated at full nameplate capacity during the period in which it has been operated.

Running Plant Factor shows the extent to which the generation units have been operated when they are running out of their nominal capacities.

Calculated running plant factors for CEB owned generation units in the first half of the year 2012 are listed below.

CEB Hydro

Kukule	Unit 1	96.11%
	Unit 2	93.01%
Ukuwela	Unit 1	92.59%
	Unit 2	93.06%
Rantambe	Unit 1	77.18%
	Unit 2	75.48%
Wimalasurendra	Unit 1	75.42%
	Unit 2	63.11%
Randenigala	Unit 1	72.75%
	Unit 2	72.47%
Samanalawewa	Unit 1	63.04%
	Unit 2	61.19%
Canyon	Unit 1	56.03%
	Unit 2	61.92%

Old Laxapana	Unit 1	56.19%
	Unit 2	52.12%
	Unit 3	49.93%
	Unit 4	55.70%
	Unit 5	58.89%
Victoria	Unit 1	54.56%
	Unit 2	56.34%
	Unit 3	54.36%
Kotmale	Unit 1	52.03%
	Unit 2	53.18%
	Unit 3	50.70%
New Laxapana	Unit 2	49.98%
Polpitiya	Unit 1	38.45%
	Unit 2	44.15%
Bowatenna	Unit 1	32.43%

CEB Thermal

Puttalam Coal	Unit 1	76.45%
Sapugaskanda 2	Unit 5	88.05%
	Unit 6	88.29%
	Unit 7	86.86%
	Unit 8	87.37%
	Unit 9	86.25%
	Unit 10	88.94%
	Unit 11	88.84%
	Unit 12	88.42%

Sapugaskanda 1	Unit 1	75.80%
	Unit 2	78.47%
	Unit 3	74.74%
	Unit 4	77.19%
KPS CCY	Unit 8 (GT)	76.73%
	Unit 8 (ST)	81.92%
KPS GT7	Unit 7	81.34%
KPS(Small) GT	Unit 1	61.33%
	Unit 2	71.23%
	Unit 3	75.28%
	Unit 4	81.13%
	Unit 5	86.35%

***Note**: Running Plant Factors for IPPs and SPPs were not calculated since the operation durations of those plants were not available.*

7. Generation Cost

Plant	Energy Dispatched		Total Cost to CEB (Mn.LKR)		Avarage Unit Cost (Rs/kWh)	
	2011	2012 (Jan-Aug)	2011	2012 (Jan-Aug)	2011	2012 (Jan-Aug)
Mahaweli Complex	1914.63	709.985	4326.41	3,814.800	2.26	5.37
Laxapana Complex	1341.323	463.921	2477.53	1,621.200	1.85	3.49
CEB Other Hydro	605.863	272.629	1885.18	1,283.200	3.11	4.71
Sapugaskanda 1	384.241	271.684	4,449.290	4,359.215	11.58	16.05
Sapugaskanda 2	452.989	361.084	4,723.229	5,203.155	10.43	14.41
KPS Small GTs	69.317	82.555	3,510.509	4,013.989	50.64	48.62
KPS GT 7	205.248	120.299	6,454.962	3,528.842	31.45	29.33
KPS CCY	209.677	685.026	7,876.692	17,184.508	37.57	25.09
Puttalam Coal	869.927	967.692	6,226.833	7,999.099	7.16	8.27
Chunnakam	6.119		299.896		49.01	
Lakdhanavi	104.433	74.917	1,491.571	1,449.934	14.28	19.35
Asia Power	290.391	248.714	4,855.487	5,392.192	16.72	21.68
AES Kelanitissa	511.819	550.169	13,992.514	15,965.287	27.34	29.02
Colombo Power	432.610	339.838	5,464.358	6,153.714	12.63	18.11
ACE Matara	134.658	42.716	1,900.557	737.407	14.11	17.26
ACE Horana	145.141	133.409	2,023.089	2,508.088	13.94	18.80
Heladhanavi	649.460	504.880	7,665.975	8,529.802	11.80	16.89
ACE Embilipitiya	385.433	443.776	5,877.662	8,023.401	15.25	18.08
West Coast	1,005.572	1,082.701	22,124.380	25,063.366	22.00	23.15
Aggreko	66.456	38.414	2,067.675	1,494.992	31.11	38.92
Nothern Power	77.718	67.209	1,362.039	1,542.473	17.53	22.95
NCRE	663.333	378.261	8,189.559	5,208.690	12.35	13.77
All Hydro	**3,861.816**	**1,446.535**	**8,689.120**	**6,719.200**	**2.25**	**4.65**
All CEB Thermal	**2,197.518**	**2,488.340**	**33,541.410**	**42,288.809**	**15.26**	**16.99**
ALL IPP Thermal	**3,803.690**	**3,526.743**	**68,825.307**	**76,860.655**	**18.09**	**21.79**
All Plants	**10,526.357**	**7,839.879**	**119,245.396**	**131,077.354**	**11.33**	**16.72**

***Note:** Energy and Payment details of December, 2011 have been excluded from the Annual figures.*

Forecasted capacity charges for Chunnakam Plant were unavailable for the year 2012.

7.1 Amount Paid in Excess of Capacity and Energy Charges

CEB has paid to Independent Power Producers (IPP) in excess of capacity and energy charges according their Power Purchase Agreements (PPA). The amounts which have been paid are summarized below.

Plant	Start/Stop Charge (Mn.LKR)		Reimbursement Claim (Mn.LKR)		O & M Charges (Mn.LKR)		Total (Mn.LKR)	
	2011	2012 (Jan-Aug)	2011	2012 (Jan-Aug)	2011	2012 (Jan-Aug)	2011	2012 (Jan-Aug)
Lakdhanavi	0	0	11.412	13.002	0	0	11.412	13.002
Asia Power	35.921	0	151.240	101.832	0	0	187.162	101.832
AES Kelanitissa	302.748	562.139	16.955	72.553	0	0	319.703	634.692
Colombo Power	25.979	0	66.244	63.689	0	0	92.223	63.689
ACE Matara	22.183	7.450	23.999	16.969	0	0	46.182	24.419
ACE Horana	17.587	0	34.825	24.969	0	0	52.413	24.969
Heladhanavi	14.799	0	186.894	236.027	0	0	201.693	236.027
ACE Embilipitiya	23.501	0	340.655	446.054	0	0	364.156	446.054
West Coast	476.183	85.436	385.176	548.265	0	0	861.359	633.701
Aggreko	0	0	0	0	44.347	26.598	44.347	26.598
Nothern Power	0	0	49.621	54.521	178.452	174.323	228.073	228.844
Total (Mn.LKR)	**918.903**	**655.025**	**1,267.023**	**1,577.882**	**222.799**	**200.921**	**2,408.724**	**2,433.828**

Note: *December month's payments are excluded from the 2011 Annual figures.*

8. Comparison of Scheduled Dispatch and Actual Dispatch

CEB implements a generation dispatches schedule every 6 months prior operation. It contains the amount of energy to be produced by each power plant for the forthcoming months. Due to numerous reasons the actual dispatch could be deviated from this schedule and, the comparison between actual and scheduled dispatches for the first six months of year 2012 is given below.

	Capacity MW	Scheduled GWh	Actual GWh	Variation GWh	Scheduled PF	Actual PF
Puttalam Coal	300	843.9	795.09	-48.81	64.40%	60.68%
Sapugaskanda 2	72	237.9	269.20	31.30	75.64%	85.60%
Heladhanavi	100	367.6	367.95	0.35	84.16%	84.24%
Sapugaskanda 1	64	192.1	195.30	3.20	68.72%	69.86%
Colombo Power Barge	60	212.8	252.94	40.14	81.20%	96.51%
ACE Embilipitiya	100	312.1	327.85	15.75	71.45%	75.06%
Lakdhanavi	22.5	70.7	56.87	-13.83	71.94%	57.87%
ACE Horana	20	81.4	99.07	17.67	93.18%	113.41%
ACE Matara	20	42.1	42.93	0.83	96.38%	98.29%
ASIA Power	51	164	187.99	23.99	73.62%	84.39%
Kerawalapitiya	270	579.3	862.98	283.68	49.12%	73.17%
AES Kelanitissa	163	424.9	381.00	-43.90	59.68%	53.51%
KPS GT 7	115	0	120.30	120.30	0.00%	47.90%
KPS CCY	165	436.1	484.51	48.41	60.51%	67.23%
KPS Small GT	85	33.8	47.76	13.96	9.10%	12.86%
Total Grid Con. Thermal	1607.5	3998.7	4491.76	493.06	56.95%	63.97%
Northern Power	20	68.9	46.92	-21.98	78.87%	53.70%
Aggreko	15	62.01	30.80	-31.21	94.64%	47.00%
Chunnakam	8	6.89	3.39	-3.50	19.72%	9.69%
Total Northern	43	137.8	81.10	-56.70	73.37%	43.18%
Renewable energy	269.81	260	235.12	-24.88	22.06%	19.95%
CEB Hydro	1356	1500	1072.55	-427.45	25.32%	18.11%
Total Generation	3276.31	5896.5	5880.52	-15.98		

9. Auxiliary Consumption

Auxiliary system facility is a major part of a power generation facility and the auxiliary consumption of a power plant depends on its configuration, age and related technical parameters. Purpose of an auxiliary system is to supply power for its own electricity requirements.

Normally 0.5% - 2% of power generated is consumed for the auxiliary system in hydro plants while the auxiliary consumption in fossil fuel power plants is 7% - 15% since there are different equipment like feed pumps, cooling water pumps, air fans, coal grinding mills, ash handling equipment etc. utilized in thermal plants.

Calculated percentages of auxiliary consumption out of gross generation during the first six months in 2012 of CEB power plants are as follows.

- CEB Hydro 0.77%
- CEB Thermal 1.62%
- CEB Wind 0.53%

Note: *Auxiliary power consumption data was available only for CEB power plants and consumptions for each plant separately were not available.*

10. Availability Factor

The evaluation of availability of a power plant is one of the most important tasks at any power station. To analyze plant availability performance, generation unit outages should be scrutinized to identify the causes of unplanned or forced energy losses and to reduce the planned energy losses. Reducing outages increases the number of operating hours, therefore increases the plant availability factor.

Availability Factor of a generation plant can be calculated using the formula given below.

$$Availability\ Factor = \frac{Duration\ in\ which\ the\ generation\ unit\ was\ available\ for\ opertaion}{Total\ length\ of\ the\ period}$$

Total Availability Factor for all CEB generation Units in first half of 2012 = **80.96%**

Availability Factor for CEB hydro generation units in first half of 2012 = **78.79%**

Availability Factor for CEB thermal generation units in first half of 2012 = **82.26%**

Availability Factor for CEB wind generation units in first half of 2012 = **92.44%**

Note: *Interruption data is available only for CEB owned power plants*

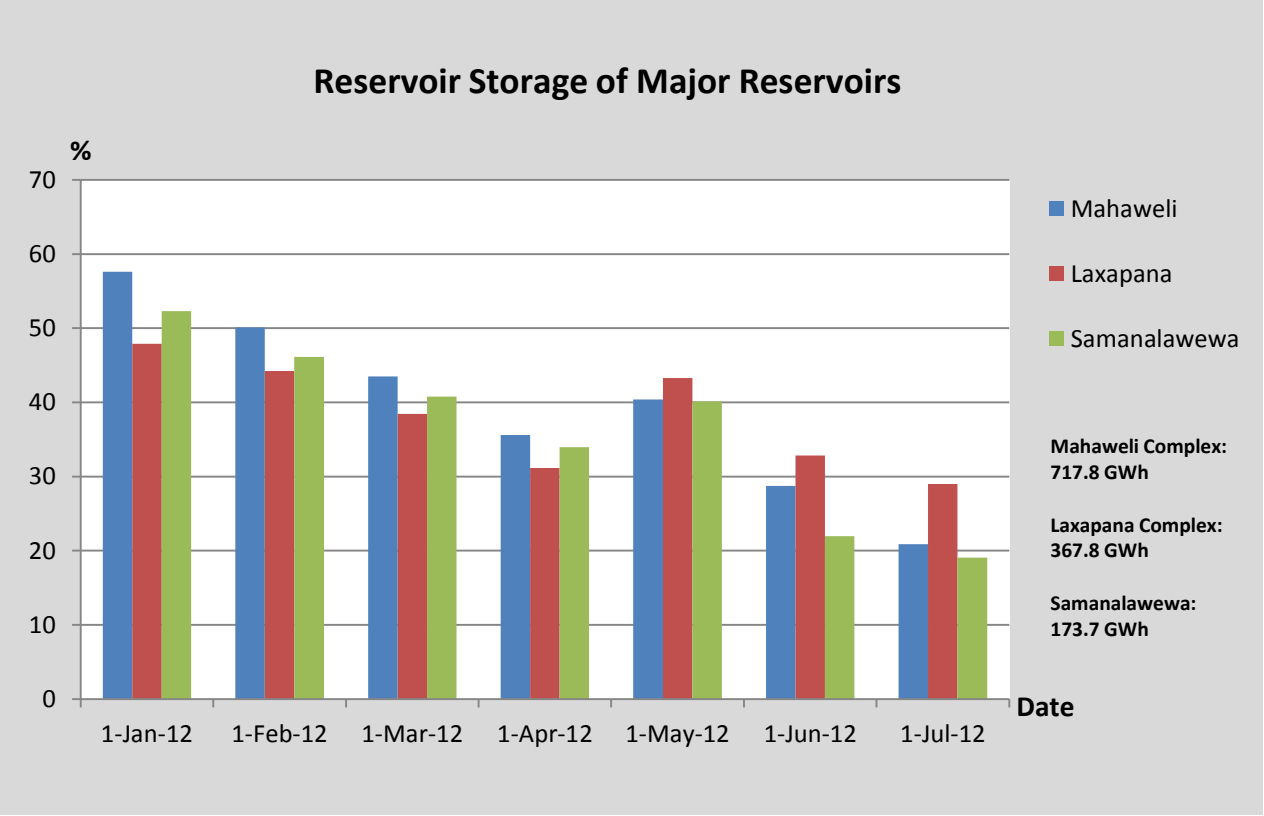
11.Reservoir Storages

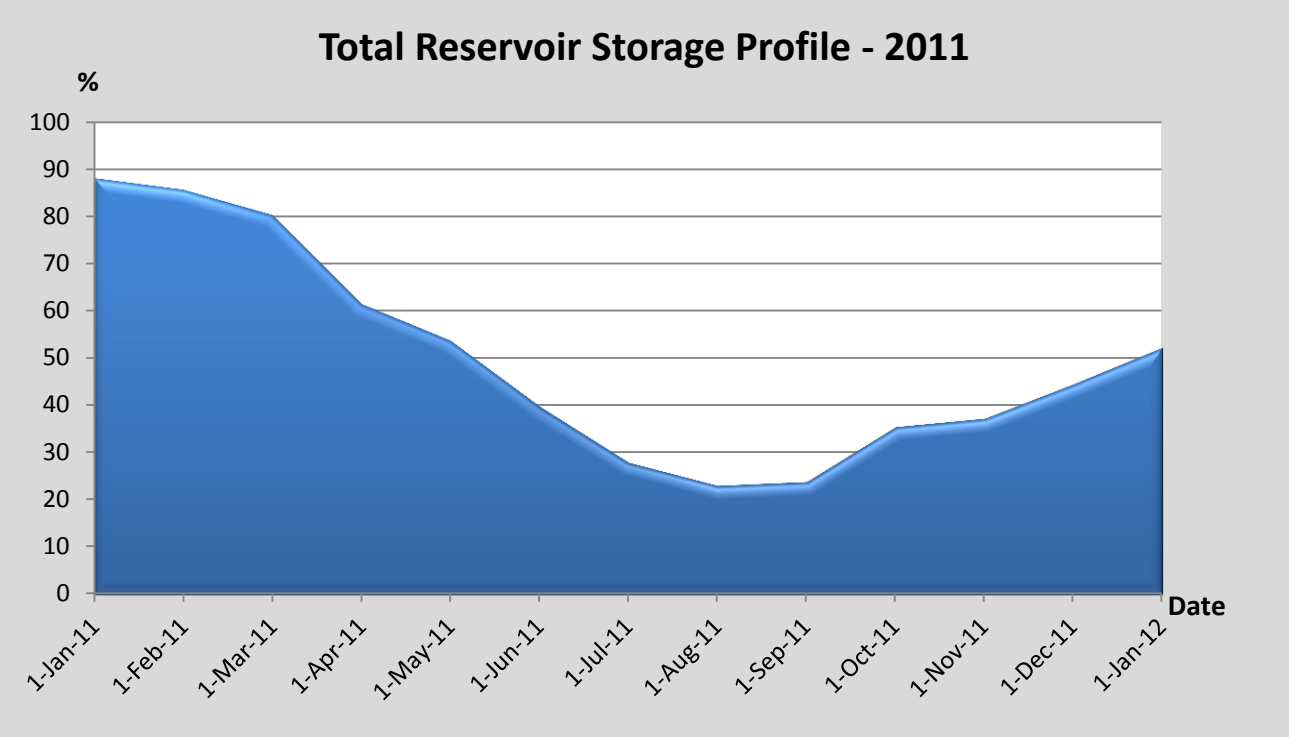
Hydro power is one of the major sources of electricity generation in the Sri Lanka and most of the large scale hydro projects have been developed by CEB. In 2012 approximately 41% of the total existed capacity by the end of June was covered by 17 CEB hydro stations and a contribution of 18.24% has been given out of total generation.

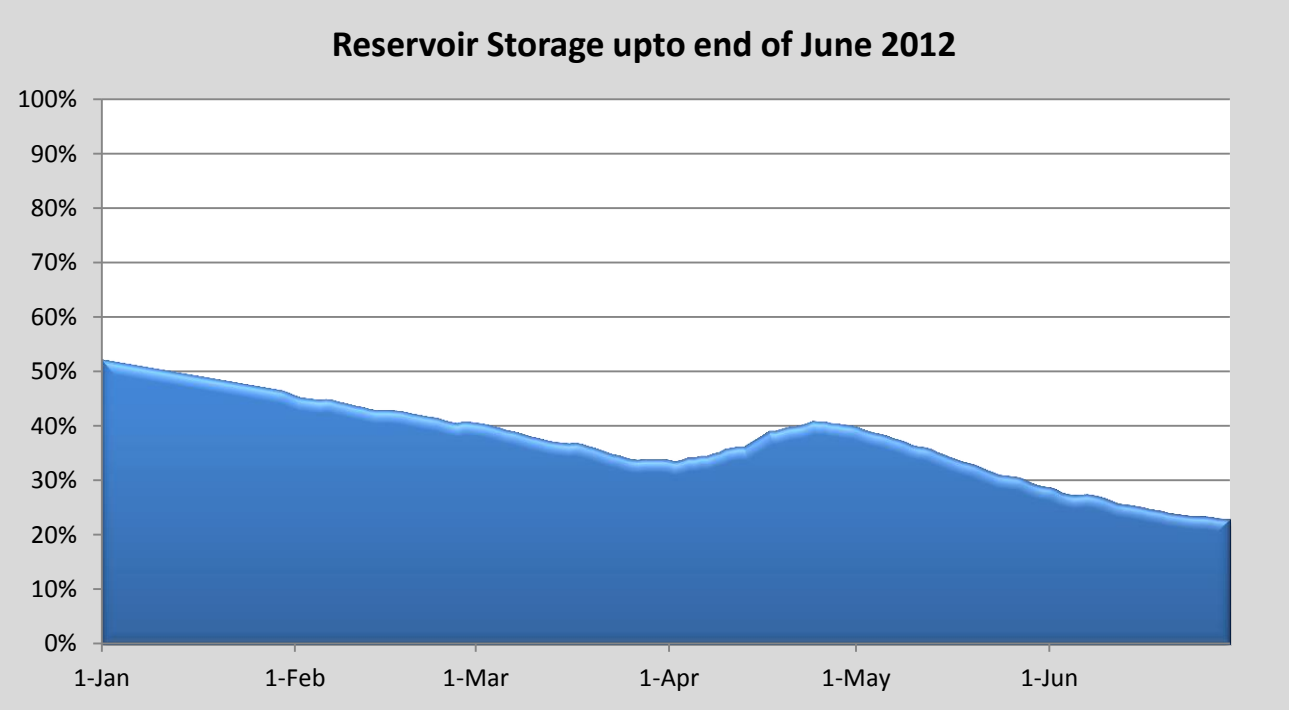
The major hydropower schemes already developed are associated with Kelani and Mahaweli river basins. Laxapana complex comprises five hydro power stations which have been built associated with the two main tributaries of Kelani River; Kehelgamu Oya and Maskeli Oya. Castlereigh and Moussakelle are the major storage reservoirs in the Laxapana complex. Mahaweli complex comprises seven hydro power stations and three major reservoirs; Kotmale, Victoria and Randenigala. In addition to above mentioned reservoirs Samanalawewa, which is on Walawe River, is also can be considered as a large reservoir. And all the other small reservoirs which contribute to power up the run-of-river type plants are considered as ponds.

Therefore having a satisfactory capacity of water in these reservoirs throughout the year is essential to dispatch the hydro power to a significant amount.

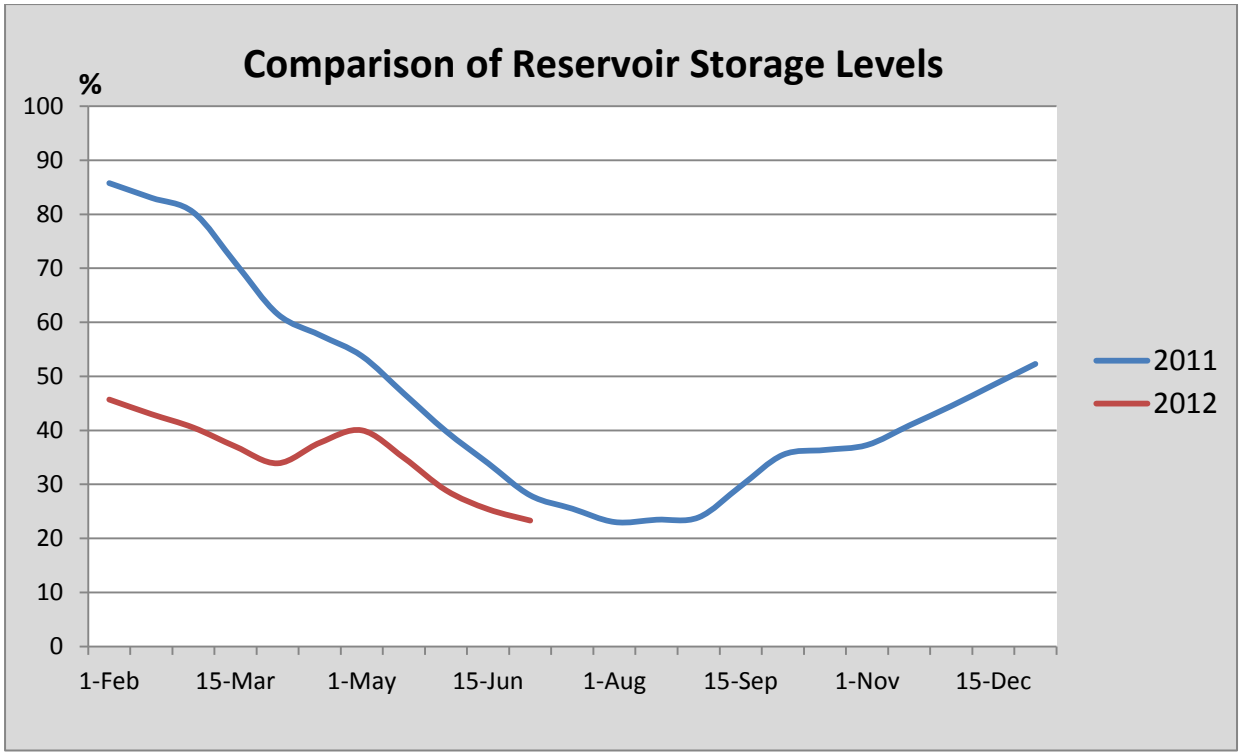
The major reservoir storage levels prevailed during the first half of the years 2012 are depicted below.







Note: Only Mahaweli, Laxapana and Samanalawewa Complexes' reservoirs are considered in total reservoir storage profile.



12.Conclusion

Compared to the generation figures in first six months of year 2011, it can be perceived that hydro generation contribution of 52.01% has been dropped down to 18.24% during the first half of year 2012 as a result of the low levels of hydro storage conditions due to failure of both monsoons. Even the contribution of renewable energy component has been dropped down to 4% which was 6.5% in year 2011, due to failure of sufficient rainfall. Therefore more IPP thermal generation (45% of total generation) has been dispatched during first six months of 2012 to fill that huge deficiency.

The Report has described and calculated a number of key performance indicators for total generation system and individual generation plants operated in Sri Lanka. And it moreover gives a comparison of the generation statistics between first halves of year 2011 and 2012. The indicators for the present technical performance of the generation system are useful when planning the future developments and taking the corrective actions if necessary to improve the efficiency of generation.

Maximum electricity demand recorded in the year 2012 is 2146MW and it is expected to be risen to 2288MW in 2013 subjected to the peak demand growth rate of 6.6% as specified by the Long Term Generation Expansion Plan (2011-2025). To achieve this demand a system capacity of 2944.5MW (without NCRE component) is available to dispatch during the year 2013. Therefore there will be a Reserve Margin of 28.7% when the peak demand of year 2013 is reached, assuming that all the power plants are readily available to dispatch with their full capacities. But when it comes to the practical state it is obvious that all the plants will not be available fully at the same time.

Even though the available dispatchable total capacity is dropped by 400MW the Reserve Margin can be maintained above 10%, which is the minimum allowed Reserve Margin by the Least-Cost Generation Expansion Planning Code. And it is to be noted that the phase 2 of the Puttalam Coal Power Plant will be commissioned by October 2012 to enhance the generation capacity of Sri Lankan electricity network.

Improving the performance of existing power plants is the most cost effective way to increase the energy producing capabilities of them. Performance indicators are very useful in identifying the areas where the improvements are needed. Among generation plants' performance measures plant factor, availability and auxiliary consumption are critical performance indicators, both in technical and commercial terms. Nevertheless, generator outages' details and auxiliary consumption data of IPPs are not available to assess the availability and percentage of auxiliary consumption of them. And individual auxiliary consumption data of CEB owned power plants are also not available to measure their individual performances. Therefore the availability details and auxiliary consumption data of all CEB and Private power are intended to be received through LISS in order to measure their performance.