

# The New Electricity Pricing Policy in Sri Lanka

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**Abstract<sup>1</sup>:** After years of decline by way of inadequate investments on new generation and transmission assets, and poor financial performance that caused the sector to report losses since 1999, the electricity industry in Sri Lanka is now on a path for recovery. The success of the recovery process depends on the extent to which the Government and its policy and regulatory agencies, electricity suppliers and customers alike, understand, appreciate and abide by the electricity law, follow the rules and diligently implement the transition arrangements. This paper explains the new pricing policy, which is a key ingredient for a successful recovery of the electricity industry by the target year of 2015.

## Electricity Industry of Sri Lanka: A Sector in Turmoil

A long-term debt exceeding LKR 200 billion, projected to increase to LKR 500 billion by year 2015; a business in which the income is adequate only to meet about 90% of the expenditure excluding debt service; electricity prices that give rise to the inadequate income being high when compared with other countries in the region; a country that generates over 40% of its electricity requirements from renewable sources; the country with the lowest network losses in South Asia; and the only country in South Asia that has had no planned load shedding since year 2002; probably the only country in South Asia that issues invoices for all electricity used and collects almost all the due revenue.

A mixed bag indeed, of good and bad, successes and failures. Isn't there a way out for Sri Lanka, to bring the electricity industry back to profitability, or to breakeven, while providing a more reliable, competitively-priced service to customers?

This paper sets out the issues, problems and solutions, available for Sri Lanka to reach this objective. In fact, the reform process has

already begun. The challenge is to keep the reform and recovery process on track.

## Electricity Sector Financial Performance

The industry is dominated by Ceylon Electricity Board (CEB), the state-owned corporation. Lanka Electricity Company (LECO) is a distribution utility. Let us consider the recent financial performance of CEB, shown in Table 1.

**Table 1 - Recent Financial Performance of CEB**

Year	2006	2007	2008
Net Profit before Tax (LKR million)	-11,125	-19,811	-33,870
Return on Average net Fixed Assets	-0.56%	-2.29%	-5.85%

Source: CEB Annual reports

This is not a healthy situation, to report recurrent losses. The question is why these heavy losses continue to occur. Let us consider the situation in year 2010, just the last year. Actual information for the last year is not released yet, but it is possible to make some assessments.

**Table 2 - Cost Structure of the Power Sector 2010**

Cost Structure of Sales to End-Users		2010
Generation Capacity	LKR/kWh	3.20
Generation Fuel	LKR/kWh	10.54
Transmission	LKR/kWh	0.45
Distribution	LKR/kWh	2.71
<b>Total Average Cost of Sales</b>	<b>LKR/kWh</b>	<b>16.91</b>
<b>Forecast Income from Selling Electricity at Government-Determined Tariffs of 2010</b>	<b>LKR/kWh</b>	<b>13.15</b>
<b>Forecast Loss on Sales</b>	<b>LKR/kWh</b>	<b>3.76</b>

Source: Author's own assessments, includes all electricity sales in Sri Lanka

Note: The cost assessment is made on the basis of CEB and LECO each making a marginal profit. A debt moratorium (both capital and interest) is in place. Depreciation is provided for, where appropriate.

Even with a moratorium on debt repayments in place, the selling price is significantly

<sup>1</sup> This paper was presented as the Eng (Prof) RH Paul Memorial Lecture, 9<sup>th</sup> February 2011, Institution of Engineers, Sri Lanka.

below the cost. Accordingly, the revenue shortfall is estimated to be about LKR 35,000 million in 2010.

Therefore, the obvious answer to the question of losses seems to be that of raising the electricity prices by about 30%. When interest payments too have to be made on long-term loans, the tariff increase would be larger than 30%.

### Electricity Prices in the Region

Sri Lanka's electricity prices are not the highest in the region. However, they are higher than most countries in the region, for certain customer categories. Please see Table 3 where "typical" customer electricity prices are compared on the basis of average price per kWh.

**Table 3 - Electricity Prices in the Region**

Customer	Class	Electricity Usage (kWh/mth)	Maximum Demand (kW)	Average Unit Price in LKR per kWh											
				Bangladesh	Kerala, India	Maharashtra, India	Tamilnadu, India	Malaysia	Nepal	Pakistan	Philippines	Singapore	South Korea	Sri Lanka	Thailand
Household	Small	30	-	5.31	2.82	1.87	2.78	8.00	7.80	3.26	11.92	21.09	8.46	5.00	5.58
	Medium	90	-	4.58	3.98	6.59	4.61	8.00	10.05	5.68	14.54	21.09	7.77	6.07	7.04
	Large	300	-	4.94	7.53	9.12	7.32	9.41	11.50	7.63	18.31	21.09	12.92	23.87	8.79
Commercial	Small	1,000	-	5.33	21.23	14.02	15.73	14.56	13.85	17.32	26.44	21.09	10.52	19.74	10.11
	Medium	58,000	180	8.82	15.03	21.02	16.52	13.29	12.66	12.01	18.93	21.09	9.44	22.09	8.76
	Large	600,000	1500	6.67	11.23	18.47	16.08	12.76	12.15	10.68	16.95	14.60	7.67	20.98	8.75
Industrial	Small	5,000	-	6.81	8.11	11.95	12.04	12.77	10.27	11.60	16.33	21.09	5.74	10.55	10.65
	Medium	65,000	180	4.12	9.20	12.31	11.86	12.13	9.83	10.72	18.37	20.95	6.50	12.47	8.49
	Large	270,000	600	7.71	8.84	13.21	11.45	9.39	9.47	10.18	16.61	20.49	6.51	11.55	8.46
	Very Large	1,050,000	2250	5.25	8.49	13.18	11.40	8.84	7.61	9.72	16.36	19.57	6.35	11.48	8.38

Source: Author's own assessments

Notes:

1. Electricity use and maximum demand have been defined for typical customers. Thus, the average prices calculated reflect the price if each typical customer is located in different countries. Analysis is based on published tariffs. Whether the tariffs are cost-reflective or not, and whether the utilities are profitable or loss making, has not been considered.
2. Sales taxes such as VAT are not included. Fuel surcharges, if any, are included.
3. These are based on published tariffs. Special concessions given to identified customers or within special economic zones are not included.
4. Optional tariffs (such as time-of-use, TOU) are not included. When TOU tariffs are mandatory, a flat load profile has been assumed.
5. Unity power factor is assumed, where relevant.
6. Prices updated as of 1st Feb 2011.

Therefore, it is not possible or reasonable to raise the electricity prices by whatever percentage desired by the Government or the electricity utilities. Such an action is likely to be strongly opposed by all electricity customers, and if imposed, may even cause certain electricity intensive industries themselves to move from profit to loss. If other countries in the region can sell electricity at lower prices, Sri Lanka too may have avenues to reach such lower levels of costs. However, here we have to be cautious: if such "cheap" electricity is found in a country where,

- Energy resources, both renewable and fossil-based, are available and are under-priced, or

- Electricity industry receives substantial subsidies from the respective Governments, or
- Electricity services are not available throughout the day, with moderate to severe unreliability of supply,

then, Sri Lanka should not emulate such countries when pricing electricity.

In fact, there is no country in the region listed above that is an "exact match" to Sri Lanka, in terms of the primary energy resources used for electricity generation, their prices, power supply reliability and state support. Therefore, an exact comparison is somewhat unreasonable from the Government and electricity industry point of view, but

comparison from the customer point of view helps to highlight the relevant issues in pricing and the price structure.

### The Breakup of Costs

As in any business, a breakup of costs assists in evaluating what has gone wrong with each component of costs. For this comparison, we show the costs of both year 2010 and 2011, in Table 4.

From 2010 to 2011, the generation costs have decreased, transmission costs have increased, and a new levy to (i) settle short-term debts, and (ii) to pay for renewable energy, has been added.

**Table 4 - Costs of Year 2010 and 2011**

Cost Structure of Sales to End-Users	2010		2011	
	Value	Percentage	Value	Percentage
Generation Capacity	3.20	18.9%	2.64	18.5%
Generation Fuel	10.54	62.4%	8.11	56.9%
Transmission	0.45	2.7%	0.77	5.4%
Distribution	2.71	16%	2.73	19.2%
Total Direct Costs	<b>16.91</b>	<b>100%</b>	<b>14.25</b>	<b>100%</b>
Levy to Settle Short-Term Debts			0.59	
Levy to Pay for Renewable Energy			0.12	
Total Average Cost of Sales	<b>16.91</b>		<b>14.96</b>	

Note: All figures are in LKR/kWh sold, kWh sold is the total sales to end-use customers by all distribution licensees.

Source for 2011 information: Consultation Paper on Setting of Tariffs for the period 2011-2015, PUCSL, November 2010

The fundamental problem with the above costs and the cost structure is the high generation costs. Years of delays in making decisions on lower-cost generating plants (ie coal fired generation and large hydropower) and the unrealised expectation that the private sector would provide solutions to the problem of electricity generation, have caused Sri Lanka to be a country with a very high cost of generating electricity. Even the 40% contribution from very low cost hydropower could not resolve the cost issue.

The reduction of generation capacity costs from 2010 to 2011 owes to the new debt moratorium announced by the Government. The reduction in fuel costs is because of the commissioning of the first generating unit of the Puttalam Coal-fired Power Plant, expected in 2011. The first generator in

Puttalam is estimated to save at least LKR 16,000 million to the country in year 2011, even during its first year of operation amidst testing and commissioning runs. Transmission costs have increased owing to the new methodology to calculate transmission prices. So, as demonstrated by the calculations, the answer to the question of profitability of the electricity industry lies not only in raising electricity prices but in reducing costs as well. Why Sri Lanka did not take action on these cost reduction methods earlier is already well known.

### The Price Structure

Sri Lanka has a complicated electricity price structure, that evolved over more than seventy years, and now plagued with ambiguity and confusing definitions, causing nightmares to commercial engineers who have to determine, for example (i) whether a household is one house or two houses, (ii) whether an industry has enough motive power to qualify to be classified as an industry, (iii) whether a tourist hotel is serving an industry or providing a commercial service. He/she then has to determine the customer category, and the customer pays based on that determination.

The paper will later discuss the current price structure in 2011, which has some of the unpleasant elements of the 2010 tariffs already removed.

### The Transition in the Electricity Industry

Sri Lanka is now placed in a unique window of opportunity, to resolve the problems related to the costs and pricing of electricity. Not many countries have this opportunity to restructure the industry, in an environment of (i) reducing production costs in real terms, (ii) reducing network losses, (iii) a period of higher economic growth.

### The Transition in Costs

The production costs of electricity will decline over 2011-2015 owing to,

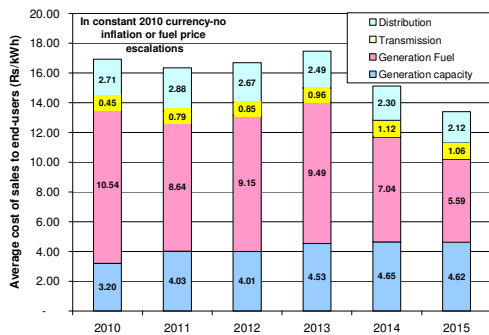
- reduction on the use of oil burning power plants (replaced with coal-fired generation) and retirement of several

Independent Power Plants (IPPs), saving on capacity charges.

- reduction in network losses, if diligently pursued by the licensees and by the Public Utilities Commission of Sri Lanka (PUCSL)
- overall improvement in network utilization, serving more energy over the same network, including vigorous demand-side management
- improvement in overall efficiency, causing network costs to increase at a rate less than inflation.

Out of the above, the reduction in generation costs is expected to be significant. Figure 1 shows how the fuel costs embedded in a kWh of electricity sold, presently in 2011 at 8.64 LKR/kWh (a) would gradually rise by 2013 to 9.49, (b) then with the commissioning of the 2nd and 3rd generators of the Puttalam Power Plant, would drop, in real terms, to 7.04 LKR/kWh by 2014. The commissioning of the Upper Kotmale hydroelectric power plant would further cushion the fuel costs in 2013. The most significant drop will be in year 2015, when (c) the Trincomalee power plant was scheduled to operate.

**Figure 1- Forecast Transition of Costs and Cost Structure**



Source: Analysis of the filing, allowed revenues and tariff calculations, PUCSL, Nov 2010

If for any reason, economic or political, environmental or sentimental, the Government or CEB delays the commissioning any one of these power plants, the consequences would be significant and would prevent the electricity industry from achieving the cost targets.

**Table 5 - Targets for Network Losses Stipulated by the PUCSL**

Year	Sales to End-use Customers (GWh)	Input to Transmission Network (GWh)	Sri Lanka T&D Loss (% of Input to Transmission)	Policy Target for Sri Lanka T&D Losses
2009	8,371	9,754	14.2%	13.5%
2010	9,031	10,503	14.0%	
2011	9,667	11,185	13.6%	
2012	10,308	11,903	13.4%	
2013	10,989	12,612	12.9%	
2014	11,713	13,375	12.4%	
2015	12,485	14,206	12.1%	
2016				12.0%

Source: Analysis of the filing, allowed revenues and tariff calculations, PUCSL, Nov 2010

The new regulatory regime established under the Sri Lanka Electricity Act No 20 of 2009, administered by the PUCSL, has established key targets for network losses described in Table 5, in keeping with the targets stated in the National Energy Policy and the Government’s 10-year Development Plan. The reduction of network losses by about 2%, should bring about a corresponding reduction in the cost of electricity.

The overall improvement of network efficiency, by way of demand management, cost control, etc. would also bring about a saving of about 0.50 LKR/kWh, which is even more significant than the reduction of losses.

**The Transition to a Regulated Market**

Sri Lanka is not planning a competitive market in the electricity industry in the near future. Sophisticated markets where the electricity customer has the option of choosing his supplier, then pay a transmission/ distribution fee and purchases electricity, are in operation in many countries. Beyond the excessive publicity on the customer tariffs that would have attracted the attention of many, what Sri Lanka established on 1st January 2011 is a multi-year tariff regime, based on clear and transparent principles and methodologies. In other words, it is not a change in the way the electricity business operates. The business will remain as a monopoly, but a well-regulated monopoly where the costs and the prices are transparently calculated and presented.

On 9<sup>th</sup> April 2009, Sri Lanka's electricity industry moved from a Government-owned, vertically-integrated, traditional monopoly to an unbundled industry with clear separation of the functions of the policy-maker, owner, regulator and the operator. The industry continues to remain under Government ownership, but regulated on the basis of the Electricity Act and the licenses issued to each business line. Accordingly, the following are the roles of each party:

**Policy Maker:** Government of Sri Lanka (Ministry of Power and Energy)

**Owner:** Government of Sri Lanka (General Treasury) for CEB, other owners

**Regulator:** Public Utilities Commission of Sri Lanka

**Operators:** Ceylon Electricity Board (six licenses), Lanka Electricity Company (one license), Independent Power Producers (ten licenses), Small Power Producers (about 100 licenses)

**Table 6 - Licensees and Their Licensed Businesses**

Licensee	Businesses			
Generation (CEB, IPP, SPP)	Generation of Electricity and Selling to the Single Buyer	-	-	-
Transmission	Single Buyer (from generation)	Transmission Business (lines and equipment)	System Operator	Bulk Supply to Distribution
Distribution (five licenses)		Distribution Business (lines and equipment)	Supply of Electricity	

Much of the reforms into a regulated market are already being implemented.

**Generators:** These are licensed to produce electricity and sell to the Transmission Licensee. They cannot sell to any other buyer. Existing Power Purchase Agreements (PPAs) will continue. CEB's own power plants too would have a PPA with the Transmission Licensee, although they are the same legal entity. New PPAs are only possible for power plants in the approved Long-term Least-cost Generation Expansion Plan, through a competitive bidding procedure. All private power plants should carry some shares owned by the Government. There are special issues related to renewable energy-based small power producers.

**Transmission Licensee:** Buys from generators, operates the transmission system in the most economical manner, and sells to Distribution Licensees. All capital expenditure must be based on an approved plan. Maintains a bulk supply account to manage the transactions.

**Distribution Licensees:** There are five distribution licensees. All licensees buy from Transmission and sell to end-use customers. All capital expenditure must be on an approved plan. They are required to meet loss targets.

- (a) CEB Region 1
- (b) CEB Region 2
- (c) CEB Region 3
- (d) CEB Region 4
- (e) Lanka Electricity Company (Pvt) Ltd.

#### The New Tariff Policy

The term "tariffs" has a broad meaning in the electricity industry. Tariffs do not purely mean the prices paid by end-use electricity customers. In the new tariff methodology published by the PUCSL, the following principles apply:

- (a) All generation is priced on the basis of Power Purchase Agreements. Generation costs are passed-through by the purchaser (transmission) to distribution. Distribution licensees pass them through to end-users.

Transmission and Distribution Licensees do not make a profit or a loss through buying from generation and selling to end-use customers.

- (b) The Transmission Licensee:
  - a. Transmission Business: Invests on and maintains all transmission assets (from power plant HV metering points to the 33 kV delivery points at each grid substation)

- b. Bulk Supply and operations business:  
Relevant costs are paid
- c. Generation costs are passed-through to distribution [no profit or loss]
- (c) Distribution Licensees:
- a. Distribution Business: Invests on and maintains all distribution assets
- b. Retail services: metering, accounting and revenue collection
- c. Retail Business: Generation and transmission costs are passed through to end-use customers [no profit or loss]

Therefore, each licensee is “ring-fenced”, making the licensee (i) responsible to the components of his business that are within his control, (ii) compensated transparently for external or market-related features of the business which are not within his control.

As a consequence, the sad history of underpricing electricity, and naming and blaming those assumed to be responsible for the financial status of the electricity industry, should come to an end. Year 2011 marks the first year in which all the licensees’ allowed

costs were transparently calculated and published.

### Generation Costs

In the new tariff methodology, generation costs are fixed for a period of six months. Any surpluses will be “clawed back” six months later. Similarly, any deficits will be compensated for, six months later. Thereby, the “fuel surcharge” that was arbitrarily fixed in the past (and frequently misused as a tool to provide concessions to certain customer groups and to penalize other customer groups) has now been withdrawn. However, every month, the payments due to all generators will be paid. The Transmission Licensee (acting as the Single Buyer) would have access to funds to meet any shortfalls to pay the generators on-time.

Power generation costs during the day and the month vary, depending on the available generating plants and the demand on the system. Arguably, the generation costs in the dry months of February-April should be higher. Generation costs in the peak period of 1830-2230 of each day should be higher than at other times.

**Table 7 - Monthly Average Costs of Generation in 2011**

Month		1	2	3	4	5	6
Capacity Cost of Generation	LKR million	2,079	2,079	2,083	2,110	2,124	2,076
Energy Cost of Generation	LKR million	6,894	6,229	7,031	6,181	6,172	6,000
Total Generation Cost	LKR million	8,973	8,308	9,114	8,291	8,296	8,076
Electricity Generated	GWh	924.8	873.1	973.4	882.6	945.1	915.8
All Inclusive Generation Cost	LKR/kWh	9.70	9.52	9.36	9.39	8.78	8.82

Note: The expected increase of fuel costs in Feb-Apr does not occur owing to the commissioning of the coal-fired power plant in Feb-March period of year 2011.

**Table 8 - National Average Rates for Billing from Transmission to Distribution**

		Economic Dispatch	ST Debt Recovery	Renewable Energy above Avoided Costs	Total BST (E)
BST day (E1) 6-month Weighed Average	LKR/kWh	7.16	0.52	0.11	7.78
BST peak (E2) 6-month Weighed Average	LKR/kWh	9.37	0.52	0.11	10.00
BST off-peak (E3) 6-month Weighed Average	LKR/kWh	4.97	0.52	0.11	5.60

Note: BST: Bulk Supply Tariff, for sale from Transmission to Distribution  
Source: Consultation Paper, PUCSL, Nov 2010

Generation costs during the three time intervals of the day have been determined in a more simplistic manner, through revenue balancing. The day-time (0530-1830) cost is fixed at the monthly average cost. The peak time costs are raised by a certain percentage, and the off peak rate is calculated in such a way that the monthly revenues are balanced. Accordingly PUCSL has published the rates for billing from Transmission to Distribution, shown in Table 8.

### Transmission and Distribution Tariffs

Table 9 provides the allowed costs for transmission and each distribution licensee. Each licensee has a revenue cap, which will be subsequently adjusted for factors beyond the licensee's control. eg: inflation, customers served, energy sold. In constant January 2011 terms, all licensees show a declining cost of service. Therefore, although these allowed revenues will be inflation-adjusted every year, the end-use customer should see a reduction of transmission and distribution costs in real terms.

**Table 9 - Transmission and Distribution Tariffs Proposed by the PUCSL**

Licensee	2011	2012	2013	2014	2015
	Revenue Cap (LKR million)				
DL1	6,981	7,303	7,623	7,939	8,286
DL2	7,956	8,318	8,706	9,073	9,455
DL3	4,657	4,859	5,073	5,292	5,517
DL4	3,776	3,926	4,056	4,187	4,318
DL5	2,514	2,581	2,663	2,729	2,780
Distribution Total	25,883	26,988	28,122	29,220	30,356
TL	7,288	7,288	7,288	7,288	7,288
Total	33,172	34,276	35,411	36,509	37,645
Sales Forecast (GWh)	9,667	10,308	10,989	11,713	2,485

Licensee	Sales by each Licensee (GWh)				
	2011	2012	2013	2014	2015
DL1	2,704	2,882	3,071	3,272	3,486
DL2 (including sales to DL5)	3,193	3,403	3,626	3,863	4,116
DL3 (including sales to DL5)	2,115	2,253	2,401	2,558	2,726
DL4 (including sales to DL5)	1,730	1,843	1,964	2,093	2,230
DL5	1,198	1,241	1,284	1,327	1,370
Distribution Total	9,667	10,308	10,989	11,713	12,485
TL	10,890	11,546	12,233	12,974	13,780

Licensee	Cost of Service (LKR/kWh sold by each licensee)				
	2011	2012	2013	2014	2015
DL1	2.58	2.53	2.48	2.43	2.38
DL2 (including sales to DL5)	2.49	2.44	2.40	2.35	2.30
DL3 (including sales to DL5)	2.20	2.16	2.11	2.07	2.02
DL4 (including sales to DL5)	2.18	2.13	2.06	2.00	1.94
DL5	2.10	2.08	2.07	2.06	2.03
Distribution Total	2.68	2.62	2.56	2.49	2.43
TL	0.67	0.63	0.60	0.56	0.53

Total T&D Cost (LKR/kWh sold)	2011	2012	2013	2014	2015
	3.43	3.33	3.22	3.12	3.02

### End-Use Customer Tariffs

While removing the complexities and ambiguities of the tariff structure and definitions, it would also be required to move the tariff structure to a cost-reflective structure stipulated in the Electricity Act, as early as possible. Sri Lanka's electricity prices are nowhere near the cost of supply to any customer category, as shown in Table 10.

A closer look at the subsidy column would show that all household customers using up to 180 kWh/month are subsidised. Additionally, religious, Industrial 2 and Hotels 2(IP) customers too were subsidised. The subsidy is carried by larger households and other institutional customers. The hardest hit, are the households using more than 600 kWh per month, who pay about 2.5 times the cost of supply.

The disparities between tariffs are too large to make adjustments overnight to make them cost-

reflective. Therefore, a road map for tariff reforms and rebalancing has been announced, which would, over a period of five years, cause the customer tariffs (i) to be cost reflective, (ii) to be

based on the voltage at which electricity supply is received, but not the purpose for which electricity is used, and (iii) encourage demand management to achieve the desired results.

**Table 10 - Cost of Supply and Income from Sales for each Class Customer, if 2010 Tariffs Prevailed in 2011**

Customer Category in the 2010 Tariff Schedule	Total Sales Forecast in 2011 (GWh)	Total Cost (LKR million)	Total Revenue (LKR million)	Total (Subsidy) or Surcharge on Customers (LKR million)	Cost of Supply (LKR/kWh)	Forecast Revenue (LKR/kWh)
<b>Households</b>						
0-30	233	5,518	1,113	(4,405)	23.66	4.77
31-60	756	15,928	3,695	(12,233)	21.07	4.89
61-90	1,018	20,093	5,974	(14,119)	19.73	5.87
91-180	1,254	22,225	14,973	(7,252)	17.72	11.94
181-600	492	8,346	9,957	1,611	16.98	20.26
>600	100	1,479	3,561	2,082	14.79	35.61
<b>Sub Total</b>	<b>3583</b>	<b>73,590</b>	<b>39,273</b>	<b>(34,317)</b>	<b>19.10</b>	<b>10.19</b>
<b>Other LV</b>						
Religious	57	1,004	513	(491)	17.65	9.02
General Purpose 1	1,149	15,809	23,943	8,134	13.76	20.83
Industrial 1	238	3,171	2,611	(561)	13.32	10.96
Hotel 1	1	19	20	1	15.01	15.73
Street Lighting	148	2,292	3,668	1,376	15.43	24.70
<b>Sub Total</b>	<b>1,594</b>	<b>22,295</b>	<b>30,754</b>	<b>8,460</b>	<b>13.99</b>	<b>19.29</b>
<b>LV BULK</b>						
General Purpose 2	875	9,751	18,555	8,803	11.14	21.20
Industrial 2	1,561	19,899	19,444	(455)	12.75	12.46
Industrial 2 TOU	174	2,159	2,343	184	12.41	13.47
Hotels 2 TOU	2	26	30	4	11.10	12.60
Hotels 2 (GP)	73	824	1,169	345	11.21	15.91
Hotels 2 (IP)	54	656	625	(31)	12.25	11.67
<b>Sub Total</b>	<b>2,739</b>	<b>33,315</b>	<b>42,165</b>	<b>8,850</b>	<b>12.16</b>	<b>15.39</b>
<b>MEDIUM VOLTAGE</b>						
General Purpose 3	223	2,263	4,378	2,115	10.13	19.61
Industrial 3	1,035	10,965	11,661	697	10.59	11.26
Industrial 3 TOU	143	1,376	1,721	345	9.64	12.06
Hotels 3	8	77	83	6	9.66	10.44
Hotel 3 TOU	71	629	725	95	8.89	10.24
<b>Sub Total</b>	<b>1,480</b>	<b>15,310</b>	<b>18,569</b>	<b>3,259</b>	<b>10.34</b>	<b>12.55</b>
<b>Total</b>	<b>9,666</b>	<b>144,510</b>	<b>130,761</b>	<b>(13,749)</b>	<b>14.95</b>	<b>13.53</b>

Source: Consultation Paper, PUCSL, Nov 2010.

Note: Cost of supply information includes the Government's debt moratorium is given. If interests were to be paid, these costs would be higher. TOU = time of use

**Table 11 - The Road Map for Tariff Reforms and Rebalancing**

Year	Households	Religious	Other Retail (Industry, General, Hotel)	Industry (bulk)	Hotel (bulk)	General (bulk)
2011	No major changes	No changes	Reduce the gap between the three classes	TOU mandatory	All hotel customers unified into one category. TOU mandatory	No changes
2012	Reduce blocks from 6 to 4 For 0-30 kWh customers, Govt fully implements a direct subsidy, as provided in the National Energy Policy and the Govt's 10-year plan	No changes	Further reduce the price gap between the three classes of customer	All three classes of bulk customers to be unified and TOU tariffs to be mandatory Introduce a charge for reactive power		
2013	Reduce blocks from 4 to 3	No changes	No difference between the customer classes, except in terms of voltage at which service is provided. For the purpose of retaining a database, customer classification will be retained in the accounting system.			
			TOU tariffs will be mandatory for all retail and bulk customers in industry, hotel and general purpose categories			
			Any subsidies will be addressed outside the licensee tariffs.			
2014	Retain 3 blocks	No changes	No further changes			
	Optional TOU tariff for all 3-phase customers	No changes				
Tariffs yield adequate revenue to breakeven, meet all commitments including debt service, but excluding a return on assets to GOSL						
2015	Abolish block tariffs. Optional TOU tariffs to all customers.	No changes	No further changes			
	Tariffs to all customers are targeted to be fully cost reflective. GOSL earns a return on assets on the sector.					

Note: This tables shows only the structural changes and not the price changes

**Table 12 - Structure of Electricity Prices in Year 2015 if Planned Reforms are Implemented**

Customers	Energy Charge (LKR/kWh)		Demand Charge (LKR/kVA.month)	Reactive Power Charge (LKR/kVArh)	Fixed Charge (LKR/month)
Households	All day	15.00	-	-	100
	Day	15.00	-	-	100
Other retail	Peak	18.00			
	off-peak	12.00			
LV Bulk	Day	10.00	1500	0.50	1000
	Peak	13.00			
	off-peak	7.00			
MV Bulk	Day	9.00	1200	0.40	2000
	Peak	12.00			
	off-peak	8.00			

Note: This table is provided only to demonstrate the tariff structure. The prices shown too are in the probable range, but should not be considered as a forecast.

Thus by year 2015, all customers would be paying the cost of supplying electricity to them, depending on their

(i) point of purchase (retail, bulk or MV) (ii) load profile. The summarized tariff structure

and tariff would be of the form shown in Table 12.

#### Customer Tariffs for 2011

After much debate between the stakeholders, both on the supply-side and the demand-side, a new tariff structure and tariffs were

announced in January 2011. See Table 13. The tariffs display the implementation of a few steps towards tariff reforms, leading towards the goal of reaching cost reflectivity by year 2015. The significant achievements towards the goal in the January 2011 announcements are,

- All industry and hotel bulk customers have been placed in the mandatory TOU tariffs. TOU tariffs were previously optional.
- Bulk customers in the hotels previously classified as either industries or commercial, have now been unified into one category.
- Household blocks have been retained at 6 (although a reduction was previously envisaged)

- Street lighting costs have been socialized, meaning that all customers share the cost of approved street lighting services.

However, the following desired steps have not been included in the January 2011 announcement.

- unification of the bulk customer groups: industry and hotels
- non-implementation of reductions to customers who are already paying prices significantly higher than the cost of supply (households >600 kWh/month, bulk customers in general purpose category)
- increases to customers who are paying below the cost of supply.

**Table 13 - Customer Tariffs Announced for January to June 2011**

Customer Category and Consumption per month	Energy Charge (LKR/kWh)	Fixed Charge (LKR/month)	Maximum Demand Charge per month (LKR/kVA)
<b>Domestic (D)</b>			
0-30	3.00	30	-
31-60	4.70	60	-
61-90	7.50	90	-
91-120	21.00	315	-
121-180	24.00	315	-
>180	36.00	315	-
<b>Religious (R)</b>			
0-30	1.90	30	-
31-90	2.80	60	-
91-120	6.75	180	-
121-180	7.50	180	-
>180	9.40	240	-
Street lighting	15.60	-	-

Customer Category and the Time Interval, if Applicable	Energy Charge (LKR/kWh)	Fixed Charge (LKR/month)	Maximum Demand Charge per month (LKR/kVA)
<b>Industry (I)</b>			
I-1	10.50	240	-
I-2			
Day	10.45	3,000	850
Peak	13.60		
Off-peak	7.35		
I-3			
Day	10.25	3,000	750
Peak	13.40		
Off-peak	7.15		
<b>Hotel (H)</b>			
H-1	19.50	240	-
H-2			
Day	13.00	3,000	850
Peak	16.90		
Off-peak	9.10		
H-3			
Day	12.60	3,000	750
Peak	16.40		
Off-peak	8.85		
<b>General Purpose (GP)</b>			
GP-1	19.50	240	-
GP-2	19.40	3,000	850
GP-3	19.10	3,000	750

**Notes on tariffs:**

1. Eligible Government institutions shall be entitled to a 25% discount on energy charges stated above.
2. Energy charges to Religious premises have been reduced by 25% compared with the present tariffs.
3. The above tariffs do not cause any increase to Domestic customers using up to 120 kWh per month and to Small and Medium Enterprises (SMEs) classified under I-1, H-1 and GP-1.
4. Fuel Adjustment Charge will no longer be applicable to any customer category.
5. "month" means a 30-day billing period.

**Notes on Customer Categories and time intervals**

1. Codes refer to the tariff codes presently used for billing by the Distribution Licensees.
2. Hotels which presently pay either the Industrial rates or General Purpose rates are unified into a single customer category identified as Hotels.
3. Customers in I-2, I-3, H-2 and H-3 would pay on the basis of mandatory Time of Use (TOU) tariffs. Time intervals applicable shall be as follows.

Interval Description	Interval (hours)
Day	05.30 to 18.30
Peak	18.30 to 22.30
Off-peak	22.30 to 05.30

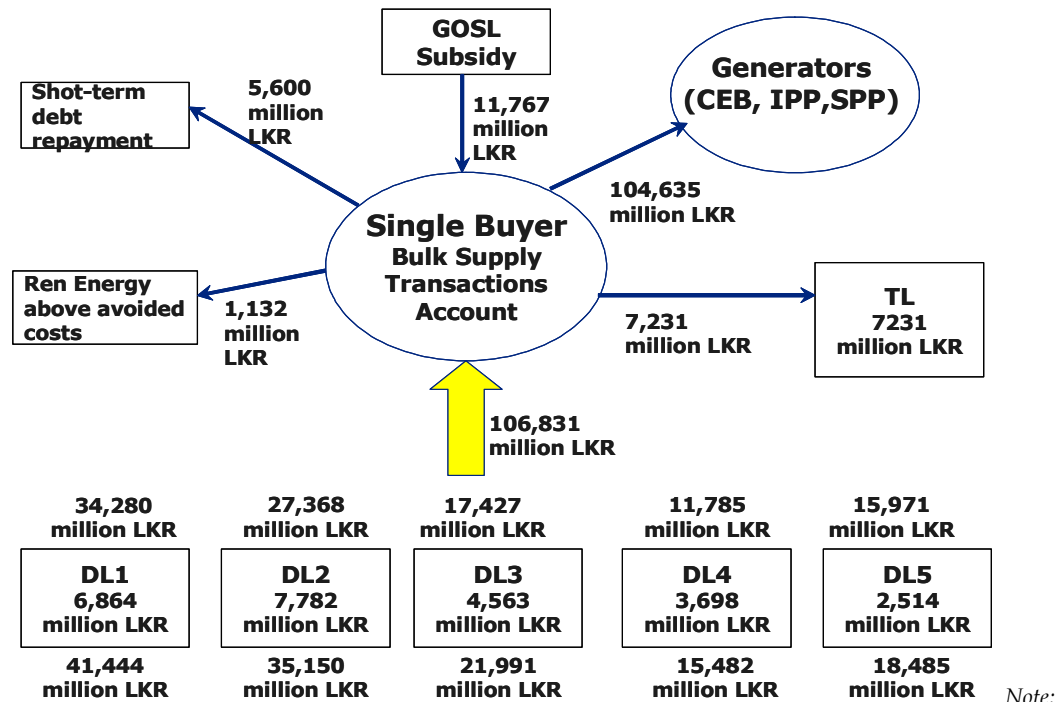
In spite of the shortcomings in the published customer tariffs, the first step towards tariff reforms have been taken, and are being successfully implemented. Some initial difficulties are expected, such as delays in programming the bulk customer meters to align with the new TOU tariff time intervals.

These are being resolved speedily by the licensees, who are enthusiastically participating in the reform process.

**Tariffs for Transfers between Licensees**

The new pricing mechanism for transfers between licensees has commenced. Figure 2 shows the forecast cash flows between licensees in year 2011.

**Figure 2 - Forecast Cash Flows between Licensees in Year 2011**



*Transfers are shown for the entire year, assuming the tariffs announced for January-June 2011 will prevail.*  
 Source: Adapted from the Consultation Paper Nov 2010 and Tariff Decision, PUCSL, 2011.

Each Distribution Licensee (DL1 to DL5) and the Transmission Licensee (TL) is free to retain the amounts due to the licensee, and transfer the balance to the Single Buyer, who maintains the Bulk Supply Transactions Account. The following are the key issues remaining:

- (i) **Government Subsidy:** A sum of LKR 11,767 million is due from the Government to the Single Buyer (CEB Transmission Licensee) to ensure that Government’s policy for January 2011 on,
  - a no price increases to households using less than 120 kWh/month

- b the 25% reduction to religious institutions and Government schools
- c no price increases to small and medium enterprises
- d a nominal 8% increase to other customers is to be implemented successfully. Hopefully, PUCSL would shortly publish for the information of the public how the Government subsidy would actually be paid to CEB, and what the Commission would do if the subsidy is not received. The logical way to handle non-payment would be to pass it on to customers with an

interest, and compensate the CEB. We should remember that licensees are expected to control and manage only those parameters within their control.

- (ii) **Renewable Energy Levy:** Sri Lanka is a country that has been considered to be an example on how small renewable energy could be developed by the private sector. All that status has been lost in the past two years, when the pricing formula has been mishandled both by the Government and now by the regulator. The prices offered are arbitrary and exorbitant, and significantly exceed those offered in developed countries. CEB is left with the dilemma of being unable to meet the commitments to private renewable energy developers. Ultimately the customer has to pay these exorbitant prices. In the present tariffs, the customers are paying 0.12 LKR on each kWh to foot the additional cost on renewable energy. It would be additional to what we would have paid if such energy was obtained from oil or coal.
- (iii) **Short-term Loans:** These appear as a levy on the tariffs, and should be a diminishing feature. Presently the load on the customer tariff is high, at 0.55 LKR/kWh.

### Conclusions

Sri Lanka has embarked on a process to reform the electricity industry, and gradually bring it back to profitability, or to at least breakeven, so that it would not be a burden on the general public. Privatization is not a relevant argument in this scenario, where the Electricity Act prevents privatization in the foreseeable future. The Act provides for introducing a regulatory mechanism on which the costs of the state-owned utilities CEB and LECO are monitored and transparently assessed. Public hearings at various points in the process would enable customers as well as state sector stakeholders to participate in the process.

The most important feature is the transparency of the process. For the first time in the history of the electricity industry in Sri Lanka, electricity customers now know how

much it costs to serve them with electricity, how much they pay, and who is subsidized and who has to pay a surcharge.

Keeping the new tariff reforms on track and taking it towards full implementation is a challenging task. There are many skeptics, both in the Government hierarchy and in the utility industry. Will this system work? Will the Government honour the promised subsidy? Will licensees, who are state owned, respond to regulatory oversight of their operations? Will we ever reach cost reflective tariffs in Sri Lanka? Will electricity prices ever come down?

These are the questions foremost in the minds of all stakeholders. We have to begin with a positive mind. We have in fact already begun the reform process. The licensees have become revenue neutral entities from 1st Jan 2011. If they run the business according to the rules, by the end of 2011, all licensees should be reporting marginal revenue surpluses. That does not mean the sector has become profitable, because we should not forget that the sector enjoys a debt moratorium until end 2013. The licensees' annual accounts are most likely to report losses for 2011 as well, but the important issue is whether the sector is on the path for recovery.

All have to work to achieve the objective. There will be many shortcomings, interferences, but they can be overcome if,

- The Public Utilities Commission remains strong and professional
- The licensees cooperate and stand strong against outside interference
- The customers stand strong and demand for their rights and a cost-reflective price

The plans are ready, and the mechanism is in place, and working. The stakeholders must ensure that the new tariff policy and the system continue without any hindrance, but making important corrections on the way.

Sector profitability is not too far away: by end 2015, all licensees should report real profits, all customers should be paying lower prices than today in real terms.