

# **DECISION ON TRANSMISSION AND BULK SUPPLY TARIFFS**

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**Effective from 1<sup>st</sup> April 2017**

## **DECISION ON BULK SUPPLY TARIFFS- April – September 2017**

In exercising the powers and functions vested with the Public Utilities Commission of Sri Lanka (Commission) under section 3 (d) of the Sri Lanka Electricity Act, No. 20 of 2009 (SLEA) to regulate tariffs and other charges levied by licensees and other electricity undertakings, in order to ensure that the most economical and efficient service possible is provided to consumers, and in accordance with section 30 (2) (a) of SLEA, the Commission has approved a Tariff Methodology.

In accordance with the methodology, the tariffs levied by the transmission licensee for the transmission and bulk sale of electricity (the transmission and bulk sale tariffs) and tariffs levied by the distribution licensee for the distribution and supply of electricity were approved by the Commission and requested licensees to implement with effect from 20<sup>th</sup> of June 2013, issuing the decision document on electricity tariffs. The transmission and bulk sale tariffs was a forecasted tariffs issued to determine the end use customer tariffs. The forecasted transmission and bulk sale tariffs are calculated and filed once every six months by the transmission license following the procedure defined in the methodology.

The Commission reviewed the transmission and bulk supply tariffs filed by the transmission licensee for the period from April to September 2017, and hereby approved and requested the transmission licensee to implement the bulk supply tariffs effective from 1<sup>st</sup> of April 2017.

## List of Acronyms

BSOB	Bulk Supply and Operations Business
BST	Bulk Supply Tariffs
CAPEX	Capital Expenditure
CEB	Ceylon Electricity Board
DL	Distribution Licensee: Ceylon Electricity Board and Lanka Electricity Company (Pvt) Ltd
DL1	Distribution and Supply Licensee for CEB Distribution Region 1 holding license number EL/D/09-003
DL2	Distribution and Supply Licensee for CEB Distribution Region 2 holding license number EL/D/09-004
DL3	Distribution and Supply Licensee for CEB Distribution Region 3 holding license number EL/D/09-005
DL4	Distribution and Supply Licensee for CEB Distribution Region 4 holding license number EL/D/09-006
DL5	Distribution and Supply Licensee LECO holding license number EL/D/09-052
FSA	Fuel Supply Agreement
CEB GL	CEB Generation Licensee holding License number
GWh	Gigawatt hour
kVA	kilovolt ampere
kW	kilowatt
kWh	kilowatt hour
LECO	Lanka Electricity Company (Pvt) Ltd.
LKR	Sri Lanka Rupee
LV	Low Voltage
MV	Medium Voltage
MWh	Megawatt hour
NCRE	Non-Conventional Renewable Energy
O & M	Operations & Maintenance
OPEX	Operating Expenditure
PPA	Power Purchase Agreement
Single Buyer	A function of the BSOB
SPPs	Small Power Producers
T&D	Transmission and Distribution
TL	Transmission and Bulk Supply Licensee holding License number EL/T/09-002
TOU	Time of Use
WIP	Work-in-Progress

## 1 ALLOWED REVENUE

Approved Distribution Variable Revenue Cap and Approved Retail Services Price Cap of each distribution licensee as per the *DECISION ON TRANSMISSION AND BULK SUPPLY TARIFFS effective from 1<sup>st</sup> October 2016* are shown in Table 1 below.

**Table 1: Approved Distribution Variable Revenue Cap and Approved Retail Services Price Cap for the year 2017**

	Unit	DL1	DL2	DL3	DL4	DL5
(Revised) Approved Distribution Variable Revenue Cap	LKR million	10,152.5	13,045.5	7,440.1	6,944.1	3,816.7
Approved Retail Services price cap	LKR/customer	500.19	463.17	572.21	593.08	950.75

Transmission and BSOB Revenue Caps mentioned in the *DECISION ON TRANSMISSION AND BULK SUPPLY TARIFFS effective from 1<sup>st</sup> October 2016* have been revised and the revised figures are shown in the Table 2 below.

**Table 2: Transmission and BSOB Revenue Cap for the year 2017(revised)**

Approved Revenue Cap	Unit	TL
Transmission Revenue Cap	LKR million	9,529.4*
BSOB Revenue Cap	LKR million	1,299.0*
Total allowed revenue	LKR million	10,828.3

\* Revised Transmission and BSOB Revenue Caps

## 2 APPROVED LOSSES FOR THE PERIOD

Approved network loss targets as per the *Revision of Network Loss Targets, effective from 24<sup>th</sup> May 2016*, are shown in Table 3 below.

**Table 3- Approved Network Loss For 2017**

Licensee	DL 1	DL 2	DL 3	DL 4	DL 5	TL
Loss target for 2017	7.41%	8.57%	7.64%	7.92%	4.81%	2.41%

### 3 GENERATION COSTS

The approved generation dispatch for April – September 2017 is shown in Table 4 below.

*Table 4- Dispatch Approved By the Commission for April-September 2017*

Month	Code	Unit	Month of year 2017						Total
			April	May	June	July	Aug	Sept	
<b>Independent Power Producers (IPPs)</b>									
ASIA Power – 51 MW	DAPL	GWh	10.1	11.0	1.4	1.2	0.3	1.1	25.0
Sojitz Kelanitissa – 165 MW	CAES	GWh	84.3	58.7	14.5	7.6	6.4	9.5	181.0
Kerawalapitiya – 270 MW	CCKW	GWh	96.2	102.3	129.3	94.4	75.8	90.6	588.7
ACE - Embilipitiya -99WW	DEMB	GWh	42.4	44.2	40.7	42.1	42.1	40.8	252.3
ACE - Matara - 20 MW	DMAT	GWh	10.9	11.2	10.4	10.8	10.8	10.4	64.4
Emergency 60MW	EMG	GWh	24.9	17.0	11.2	9.1	14.1	0.0	76.4
<b>TOTAL IPP</b>		<b>GWh</b>	<b>268.9</b>	<b>244.4</b>	<b>207.6</b>	<b>165.1</b>	<b>149.5</b>	<b>152.4</b>	<b>1187.8</b>
<b>CEB GL's Thermal Generation</b>									
Sapu Old 4 x 18 MW	DSP1	GWh	32.8	33.9	32.8	33.9	33.9	32.8	200.2
Sapu Ext. 8 x 9 MW	DSP2	GWh	36.9	38.2	36.9	38.2	38.2	36.9	225.3
KPS GT 4 x 17 MW	GT16	GWh	0.0	0.4	0.0	0.0	0.0	0.2	0.6
KPS GT 1 x 115 MW	GT07	GWh	14.5	4.2	1.4	0.3	0.0	0.6	20.9
KPS Combined – 165 MW	CCKP	GWh	95.8	51.6	96.5	103.1	92.7	91.9	531.5
Coal – Puttlam 300 MW	CPUT	GWh	504.9	480.1	333.4	389.7	521.7	450.6	2680.4
<b>Total CEB GL's Thermal Generation</b>		<b>GWh</b>	<b>684.9</b>	<b>608.3</b>	<b>501.0</b>	<b>565.2</b>	<b>686.5</b>	<b>613.0</b>	<b>3658.9</b>
<b>Renewable energy</b>	<b>RENEW</b>	<b>GWh</b>	<b>61.1</b>	<b>156.9</b>	<b>187.7</b>	<b>175.9</b>	<b>178.7</b>	<b>168.2</b>	<b>928.7</b>
<b>Chunnakam</b>									
New Chunnakam	DNCHU	GWh	13.2	13.2	13.2	13.7	13.2	9.5	76.0
Northern Power	DNOR	GWh	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total Northern generation</b>		<b>GWh</b>	<b>13.4</b>	<b>13.4</b>	<b>13.4</b>	<b>13.9</b>	<b>13.4</b>	<b>9.7</b>	<b>77.2</b>
<b>CEB GL's Hydropower Generation</b>		<b>GWh</b>	<b>173.2</b>	<b>252.4</b>	<b>351.8</b>	<b>389.1</b>	<b>285.2</b>	<b>328.7</b>	<b>1780.5</b>
<b>Total Generation</b>		<b>GWh</b>	<b>1201.6</b>	<b>1275.5</b>	<b>1261.5</b>	<b>1309.2</b>	<b>1313.3</b>	<b>1271.9</b>	<b>7632.9</b>

Forecast system coincident peak generation demand and the approved monthly capacity costs of each generation plant/ hydro scheme are shown in Table 5 below.

*Table 5- Approved Capacity payments to GL by TL for April-September 2017*

Item\Month	Unit	Apr	May	Jun	Jul	Aug	Sep
System Coincidental Peak demand	MW	2373	2253	2235	2282	2285	2297
<b>Capacity Payment</b>							
Plant\Month	Unit	Apr	May	Jun	Jul	Aug	Sep
<b>Mahaweli</b>	LKR Million	609	609	609	609	609	609
<b>Laxapana</b>	LKR Million	391	391	391	391	391	391
<b>Other Hydro</b>	LKR Million	261	261	261	261	261	261
<b>GTSM</b>	LKR Million	61	56	61	61	61	56
<b>DSP</b>	LKR Million	132	132	132	132	132	132
<b>DSPX</b>	LKR Million	166	166	166	166	166	166
<b>DAPL</b>	LKR Million	165	165	165	165	165	165

<b>CCKP</b>	LKR Million	206	206	206	206	206	206
<b>CAES</b>	LKR Million	46	47	46	47	47	46
<b>CCKW</b>	LKR Million	712	736	712	736	736	712
<b>CPUT</b>	LKR Million	1,861	1,861	1,861	1,861	1,861	1,861
<b>GT7</b>	LKR Million	94	94	94	94	101	94
<b>DCHU</b>	LKR Million	9	9	9	9	9	9
<b>DNOR</b>	LKR Million	73	75	73	75	75	73
<b>DNCHU</b>	LKR Million	50	50	50	50	50	50
<b>Emergency Power</b>	LKR Million	207	214	207	214	214	207
<b>TOTAL</b>	LKR Million	<b>5,041</b>	<b>5,071</b>	<b>5,041</b>	<b>5,076</b>	<b>5,083</b>	<b>5,037</b>
<b>Depreciation Provision Excluded from CEB GL</b>	LKR Million	1160	1160	1160	1160	1160	1160
<b>Return of Equity allowed for CEB GL</b>	LKR Million	232	232	232	232	232	232
	<b>Unit</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>August</b>	<b>September</b>
<b>Average Generation Capacity cost</b>	<b>LKR/MW</b>	<b>1,733,093.79</b>	<b>1,839,270.85</b>	<b>1,840,728.32</b>	<b>1,817,303.40</b>	<b>1,818,559.87</b>	<b>1,788,896.15</b>

Forecast monthly generation from each generation plant along with approved average cost LKR/kWh is shown in Table 6 below.

*Table 6- Approved Energy Payments to GL by TL for April - September 2017*

Plant\Month	Unit	April	May	June	July	August	September
<b>Hydro</b>	GWh	173.2	252.4	351.8	389.1	285.2	328.7
	LKR /kWh	0.00	0.00	0.00	0.00	0.00	0.00
<b>GTSM</b>	GWh	0.0	0.4	0.0	0.0	0.0	0.2
	LKR /kWh	0.00	101.95	0.00	0.00	0.00	96.28
<b>DSP</b>	GWh	32.8	33.9	32.8	33.9	33.9	32.8
	LKR /kWh	23.01	22.91	23.01	22.91	22.91	23.02
<b>DSPX</b>	GWh	36.9	38.2	36.9	38.2	38.2	36.9
	LKR /kWh	21.79	21.70	21.79	21.70	21.70	21.79
<b>DAPL</b>	GWh	10.1	11.0	1.4	1.2	0.3	1.1
	LKR /kWh	23.82	23.66	26.62	27.61	42.08	28.20
<b>CCKP</b>	GWh	95.8	51.6	96.5	103.1	92.7	91.9
	LKR /kWh	26.35	26.05	26.36	26.42	26.32	26.31
<b>CAES</b>	GWh	84.3	58.7	14.5	7.6	6.4	9.5
	LKR /kWh	21.52	21.73	24.03	26.72	27.84	25.63
<b>DMAT</b>	GWh	10.9	11.2	10.4	10.8	10.8	10.4
	LKR /kWh	14.76	13.81	15.55	14.59	12.89	13.54
<b>DEMB</b>	GWh	42.4	44.2	40.7	42.1	42.1	40.8
	LKR /kWh	14.76	13.81	15.55	14.59	12.89	13.54
<b>CCKW</b>	GWh	96.2	102.3	129.3	94.4	75.8	90.6
	LKR /kWh	22.31	22.12	21.70	22.33	21.61	21.99
<b>CPUT</b>	GWh	504.9	480.1	333.4	389.7	521.7	450.6
	LKR /kWh	7.30	7.32	7.51	7.35	7.22	7.28
<b>RENEW</b>	GWh	61.1	156.9	187.7	175.9	178.7	168.2
	LKR /kWh	19.00	17.75	18.46	18.61	18.20	18.44
<b>GT7</b>	GWh	14.5	4.2	1.4	0.3	0.0	0.6
	LKR /kWh	43.75	47.53	58.29	117.61	0.00	81.17
<b>DCHU</b>	GWh	0.2	0.2	0.2	0.2	0.2	0.2
	LKR /kWh	33.94	33.94	33.94	33.94	33.94	33.94
<b>DNOR</b>	GWh	0.0	0.0	0.0	0.0	0.0	0.0
	LKR /kWh	0.00	0.00	0.00	0.00	0.00	0.00

DNCHU	GWh	13.2	13.2	13.2	13.7	13.2	9.5
	LKR /kWh	21.22	21.22	21.22	21.16	21.23	21.95
Emergency Power	GWh	24.9	17.0	11.2	9.1	14.1	0.0
	LKR /kWh	23.95	23.95	23.95	23.95	23.95	0.00

TOTAL generated energy	GWh	1,201.6	1,275.5	1,261.5	1,309.2	1,313.3	1,271.9
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Monthly Energy Cost	LKR Million	15,438	14,744	14,696	14,131	14,199	13,596
Total Energy cost for six-months	LKR Million	86,804					
Total energy dispatch for six-months	GWh	7,633.0					
Six-month average energy cost	LKR/kWh	11.65					

#### 4 ENERGY COSTS IN EACH INTERVAL FOR TOU PRICING

Using the approved Methodology, the Commission has determined that the peak adjustment factors to be as given in Table 7 below.

*Table 7- Approved Peak Adjustment Factors*

Time interval for TOU pricing	Factor	Value
0530-1830	k1	1
1830-2230	k2	1.3
2230-0530	k3	0.6

The energy dispatches and costs in each interval are provided in table below. The Commission has assessed the energy dispatches in each interval using historic information on the load profile on typical weekdays, week-ends and holidays.

*Table 8- Monthly Energy Dispatches and Costs in the TOU Regime for April-September 2017*

Average Generation Energy cost							
	Unit	April	May	June	July	August	September
Generation Energy cost	LKR /kWh	12.85	11.56	11.65	10.79	10.81	10.69

Month 1 - Block tariffs				
Block	Energy generated (GWh)	Block Factor (#)	Adjusted Factor (#)	Charge (LKR /kWh)
B1 (day)	683	1	1.01	13.03
B2 (peak)	273	1.3	1.32	16.94
B3 (off-peak)	246	0.6	0.61	7.82

Month 2 - Block tariffs				
Block	Energy generated (GWh)	Block Factor (#)	Adjusted Factor (#)	Charge (LKR /kWh)
B1 (day)	724	1	1.01	11.72
B2 (peak)	290	1.3	1.32	15.24
B3 (off-peak)	261	0.6	0.61	7.03

Month 3 - Block tariffs				
Block	Energy generated (GWh)	Block Factor (#)	Adjusted Factor (#)	Charge (LKR /kWh)
B1 (day)	717	1	1.01	11.81
B2 (peak)	286	1.3	1.32	15.36
B3 (off-peak)	259	0.6	0.61	7.09

Month 4 - Block tariffs				
Block	Energy generated (GWh)	Block Factor (#)	Adjusted Factor (#)	Charge (LKR /kWh)
B1 (day)	744	1	1.01	10.95
B2 (peak)	297	1.3	1.32	14.23
B3 (off-peak)	268	0.6	0.61	6.57

Month 5 - Block tariffs				
Block	Energy generated (GWh)	Block Factor (#)	Adjusted Factor (#)	Charge (LKR /kWh)
B1 (day)	746	1	1.01	10.96
B2 (peak)	298	1.3	1.32	14.25
B3 (off-peak)	269	0.6	0.61	6.58

Month 6 - Block tariffs				
Block	Energy generated (GWh)	Block Factor (#)	Adjusted Factor (#)	Charge (LKR /kWh)
B1 (day)	722	1	1.01	10.84
B2 (peak)	289	1.3	1.32	14.09
B3 (off-peak)	261	0.6	0.61	6.50



## 5 COMBINED COSTS OF SINGLE BUYER, AND TRANSMISSION AND BSOB

The allowed capacity costs of generation and energy costs of generation have been combined with the allowed transmission and BSOB costs to calculate the Bulk Supply Tariffs (BST) for sales by the TL to DLs. The approved average BST in each month in each TOU interval is given below and provides the six-month average.

*Table 9- Combined Transfer Price from TL to DLs for April-September 2017*

### Capacity Charge

Month	Unit	Month					
		April	May	June	July	August	September
<b>Capacity Charge</b>							
Generation capacity	LKR/MW	1,733,093.79	1,839,270.85	1,840,728.32	1,817,303.40	1,818,559.87	1,788,896.15
Transmission	LKR/MW	338,440.76	356,562.85	359,459.76	351,926.79	351,533.21	349,715.73
Bulk Supply and Operation Business	LKR/MW	382,509.19	402,990.97	406,265.09	397,751.25	397,306.41	395,252.28
<b>BST (C)</b>	LKR/MW	<b>2,454,043.73</b>	<b>2,598,824.67</b>	<b>2,606,453.16</b>	<b>2,566,981.44</b>	<b>2,567,399.48</b>	<b>2,533,864.16</b>
<b>BST (C) 6-Month Weighted average</b>	LKR/MW/month	<b>2,553,632.36</b>					

### Energy Charge

Month	Unit	April	May	June	July	August	September

### Interval 1 (day)

Transmission Loss Factor B1	%	2.47%	2.47%	2.47%	2.47%	2.47%	2.47%
Generation energy Cost B1	LKR /kWh	13.03	11.72	11.81	10.95	10.96	10.84
<b>BST (E1)</b>	<b>LKR /kWh</b>	<b>13.35</b>	<b>12.01</b>	<b>12.11</b>	<b>11.22</b>	<b>11.24</b>	<b>11.11</b>

### Interval 2 (peak)

Transmission Loss Factor B2	%	3.16%	3.16%	3.16%	3.16%	3.16%	3.16%
Generation energy Cost B2	LKR /kWh	16.94	15.24	15.36	14.23	14.25	14.09
<b>BST (E2)</b>	<b>LKR/kWh</b>	<b>17.47</b>	<b>15.72</b>	<b>15.84</b>	<b>14.68</b>	<b>14.70</b>	<b>14.54</b>

### Interval 3 (off-peak)

Transmission Loss Factor B3	%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%
Generation energy Cost B3	LKR/kWh	7.82	7.03	7.09	6.57	6.58	6.50
<b>BST (E3)</b>	<b>LKR/kWh</b>	<b>7.95</b>	<b>7.16</b>	<b>7.21</b>	<b>6.68</b>	<b>6.69</b>	<b>6.62</b>

**Table 10- Approved Six-month Average Bulk Supply Tariffs for April-September 2017**

	Unit	BST (E)
BST day (E1) 6-Month weighted average	LKR/kWh	11.82
BST peak (E2) 6-Month weighted average	LKR/kWh	15.47
BST off-peak (E3) 6-Month weighted average	LKR/kWh	7.04

BST = Bulk Supply Tariff, means the average transfer price from Transmission to Distribution Licensees

E1, E2, E3 refer to the energy delivered in the three time intervals in the time-of-use tariffs regime. ie 0530-1830, 1830-2230 and 2230-0530, respectively.

## 6 APPROVED BST FROM TL TO EACH DL

Owing to the requirement to maintain a Uniform National Tariff (UNT) and owing to the varying customer mix among Distribution Licensees, the BST to each DL was adjusted, to enable each Distribution Licensee to recover their full allowed revenues. The summary calculation as per section 5.2.1 of the tariff methodology, and the approved BSTs are shown in Table 11.

The Transmission Licensee is hereby directed to invoice each Distribution Licensee at the rates shown in Table 11 as (i) Approved BST for payment on Coincident Maximum, and (ii) Approved BST for energy in each TOU interval. In addition, adjustment of sales to DL5 by DL2, DL3 and DL4 shall be done as per section 9.1 of the Decision on Revenue Caps and Bulk Supply Tariffs 2016-2020.

**Table 11- Approved BST from Transmission to each Distribution Licensee**

Description	Units	DL1: CEB Region 1	DL2: CEB Region 2	DL3: CEB Region 3	DL4: CEB Region 4	DL5: LECO	Total
Sales to end-use customers	GWh	3,616	3,911	2,227	1,733	1,507	12,994
Revenue based on approved customer tariffs (Jan-Dec)	LKR Million	68,516	65,317	33,922	27,499	29,020	224,274
Coincident peak demand for purchases from Transmission	MW	606	663	446	320	253	
Approved BST for payment on Coincident Maximum Demand	LKR/MW/ month	2,553,632	2,553,632	2,553,632	2,553,632	2,553,632	
Amount payable to Transmission on account of Demand (April- September)	LKR Million	9,290	10,156	6,831	4,897	3,875	35,049
Allowed losses (April-September)		7.41%	8.57%	7.64%	7.92%	4.81%	
Revenue to be recovered by Transmission through energy charges (April-	LKR Million	19,536	15,582	6,086	5,105	8,503	54,812

September)							
Energy sold from Transmission at MV	GWh	1,981	2,166	1,218	948	819	7,133
<b>Approved BST for energy in each TOU interval</b>							
<b>Peak (1830-2230)</b>	<b>LKR/kWh</b>	<b>13.09</b>	<b>9.55</b>	<b>6.63</b>	<b>7.14</b>	<b>13.77</b>	
<b>Off Peak (2230-0530)</b>	<b>LKR/kWh</b>	<b>5.96</b>	<b>4.35</b>	<b>3.02</b>	<b>3.25</b>	<b>6.27</b>	
<b>Day (0530-1830)</b>	<b>LKR/kWh</b>	<b>10.00</b>	<b>7.29</b>	<b>5.07</b>	<b>5.46</b>	<b>10.53</b>	