

**PROJECTED ENERGY AVAILABILITY & COST FOR**  
**FINANCIAL YEAR 2019-20**

**1.0** The energy required by ESCOMs of Karnataka for the Financial Year 2019-20 is 71638.05 MUs considering STU transmission losses of 3.19%. The ESCOM wise energy requirement is shown in as **Table-1**.

**Table-1**

<b>ESCOMs</b>	<b>Energy requirement in MUs</b>
BESCOM	34091.87
GESCOM	9268.18
HESCOM including Hukkeri Society & AEQUS	14808.77
MESCOM including MSEZ	5973.11
CESC, Mysore	7496.13
<b>Total</b>	<b>71638.05</b>

**2.0** Energy being purchased by ESCOMs from different sources viz., KPCL Hydel, KPCL Thermal, Central Generating Stations, DVC, Priyadarshini Jurala Hydro Electric scheme, Tungabhadra Hydro Electric Scheme (TBHE), Udupi Power Corporation Ltd (UPCL) and Non-Conventional Energy source including solar projects.

**2.1 Hydro and Thermal Stations of KPCL**

The Energy availability of Hydel and Thermal stations of State Owned Power plants are considered as per the details furnished by KPCL in its letter dated 15.11.2018. The energy projected by KPCL in respect of hydro stations is based on anticipated inflows for 2018-19 considering as on 17.9.2018 less by 1% auxiliary consumption as per PPA. Energy availability in respect of Thermal Stations is as per the targeted availability defined in the PPA/Regulations wherever applicable and less by applicable auxiliary consumption of each station. The Raichur Power Corporation Ltd (RPCL) furnished projected energy and cost through

email on 17.11.2018. The KPCL project of Yelahanka Combined Cycle is expected to commissioned before March 2019.

During the year 2019-20, Energy availability from different sources is more than the quantum required by ESCOMs, considering the following factors;

- i) The energy availability from KPCL station, RPCL and KSPDCL as per the details furnished by them.
- ii) Energy availability from CGS stations as per LGBR No.172 of CEA for the year 2018-19.
- iii) The energy availability from DVC station is at 85% of the contracted quantum
- iv) New NLC Thermal Power project likely to be commissioned during December 2018 as per SRPC minutes. Hence, Karnataka share of 70 MW is considered for next control period.
- v) The Kudgi project totaling 2400 MW is added to the grid during 2018-19. And projected 85% of the energy available from the station out of which the share of Karnataka is 53.96%.
- vi) 90% of the installed capacity of 85% has been considered for UPCL project
- vii) NCE projects commissioned and supplied energy for the year 2017-18 considered for 2019-20 onwards.
- viii) Solar projects selected through bidding route for which cumulative utilization factor as per the PPA is considered.
- ix) In respect of Taluka wise, 1 to 3 MW farmers category likely to be commissioned during 2019-20 onwards is as per the scheduled CoD date.
- x) The energy availability from Jurala Priyadarshini and TBHE is as per the actual energy supplied for the year 2017-18.

xi) 600 MW from solar park at Pavagada has been added to the grid during 2017-18 and corresponding 300 MW from NTPC coal station started supplying power from western region.

xii) The energy availability from Medium term cogeneration plants of 637 MW at 60% PLF is considered.

Considering the above, the energy available from different sources for the year 2019-20 is as detailed below;

(Energy in Mus)		
<b>Generating Stations</b>	<b>2019-20</b>	<b>Source</b>
KPCL Hydro	11450.65	KPCL
<b>KPCL thermal</b>		
RTPS -1 & 7	8647.00	KPCL
RTPS 8	1605.24	KPCL
BTPS		
Unit I	3240.28	KPCL
Unit II	3292.82	KPCL
Unit III	4927.95	KPCL
Yelahanka Combined Cycle Gas Power projects	2509.00	KPCL
<b>Raichur Power Corporation ltd</b>		
Yermarus TPS - 1& 2	11288.14	RPCL
<b>CGS</b>	16022.58	LGBR 2018-19
Kudigi	7719.28	Considering 85% of the 2400 MW
DVC	3279.63	Considering 85% of 450 MW
UPCL	7522.99	90% of 85% installed capacity
NCE Projects	17020.68	Actuals for 2017-18 with projected energy based on scheduled CoD
TBHE & Jurala projects	108.65	Actuals of 2017-18
Medium Term procurement of Co-generation Plants	1285.06	60% of Exportable capacity
<b>Total</b>	<b>99919.95</b>	

The availability of energy from different sources is more than quantum required by ESCOMs and hence available quantum from different

sources have been reduced on the basis of Merit Order Despatch is as detailed below;

<b>Sources</b>	<b>Available quantum in Mus</b>	<b>Quantum offtake by ESCOMs in Mus</b>	<b>Difference in Mus</b>	<b>Justification</b>
RTPS 8	1393	1605.24	212.24	Due to higher variable cost, Offtake of power from these power plants is reduced. The full Fixed cost is considered
BTPS Uni1	3240.28	1784.934	1455.35	
BTPS Unit-2	3292.82	1784.93	1507.89	
BTPS Unit-3	4927.95	2100	2827.95	
Yelahanka Combined Cycle gas Power projects	2509	378.47	2130.53	Only 5 hours considered for energy availability and full capacity charges applicable for the year is considered
Yermarus TPS - 1 & 2	11288.14	3284.42	8003.71	800 MW available upto Sep-2019 and 1600 MW available from Oct-2019 onwards
Vallur TPS Stage I &2 &3	882.92	538.77	344.14	Due to higher variable cost , Offtake of power from these power plants is reduced. The full Fixed cost is considered
NTPL	1202.27	697.16	505.12	
Kudigi Units 1,2 &3	7719.28	3021.17	4698.11	
UPCL	7522.99	3277.14	4245.85	
DVC-Mejia	1457.62	900	557.62	
DVC-Koderma	1822.02	1046.16	775.86	
Sharavathy Valley project	4908.41	4150.08	756.33	
Kali Valley project	3129.82	2867.21	262.61	Considering the average hydro availability previous years

**2.2** The availability of Energy from KPCL Hydel & Thermal Power Station's is shown in **Table 2 & 3**.

**Table-2  
HYDEL ENERGY**

<b>Sl. No.</b>	<b>Generating Source</b>	<b>Energy in MUs</b>
1	Sharavathy valley project (Sharavathy, Linganamakki & Chakra Projects)	4150.08
2	Kali Valley projects (Nagajari & Supa Projects)	2867.21
3	Varahi Valley projects (Varahi & Mani Projects)	1079.22
4	Bhadra & Bhadra Right Bank	48.01
5	Ghataprabha (GDPH)	72.36
6	Mallapur & Others	0.00
7	Kadra Dam	365.42
8	Kodasalli Dam	348.39
9	Gerusoppa/STRP	513.09
10	Almatti Dam Power House	442.40
12	Shiva & Shimsa	242.74
13	Munirabad	91.44
14	MGHE-Jog	211.37
	<b>Total KPCL Hydel</b>	<b>10431.71</b>

**Table-3  
THERMAL POWER STATIONS**

<b>Sl. No.</b>	<b>Stations</b>	<b>Installed Capacity in MW</b>	<b>Net generation in MUs</b>
1	RTPS I & 7	1470	8647.00
2	RTPS Unit 8	250	1394.00
3	BTPS Unit I	500	1784.93
4	BTPS Unit II	500	1784.93
5	BTPS UNIT-III	700	2100.00
6	Yelahanka Combined Cycle	370	378.47
7	Yermarus TPS - 1 & 2		3284.77
	<b>Total</b>		<b>19374.11</b>

**2.3** Total Hydel generation would be **10431.71** MUs and Thermal is around 19374.11 MUs for 2019-20, totaling to 29805.82 MUs from KPCL Station and Raichur Power Corporation Ltd.

### 3.0 Projection of cost - KPCL Hydel and Thermal Stations:

#### Hydel Stations:

The tariff rates worked out by KPCL based on KERC order dated 03.08.2009 for hydel stations except for Shivasamudram, Shimsha, Munirabad & MGHE. The tariff for the hydel stations is based on the design energy, over and above the design energy paid at 15 paise per kwh or 3% of the ROE whichever is less. The tariff for the Hydel station of Shiva and Shimsha, Munirabad & MGHE is based on the KERC tariff order dated 25.02.2015. The Capacity charges and primary energy rate details furnished by the KPCL is as shown in Table-4.

**Table-4**

<b>Sl. No.</b>	<b>Source</b>	<b>Design energy in MUs</b>	<b>Paise per Unit</b>
<b>A</b>	<b>KPCL - Hydel</b>		
1	Sharavathy valley project ( Sharavathy, Linganamakki & Chakra Projects)	3737.95	51.11
2	Kali Valley projects	2058.77	79.02
3	Varahi Valley projects ( Varahi & Mani Projects)	848.69	100.17
4	Varahi 3 & 4	848.69	36.49
5	Bhadra & Bhadra Right Bank	50.49	525.24
6	Ghataprabha (GDPH)	84.97	275.07
7	Mallapur & Others	0.00	0.00
8	Kadra Dam	419.90	242.30
9	Kodasalli Dam	372.48	163.65
11	Gerusoppa/STRP	442.62	183.46
12	Almatti	384.00	185.73
13	Shiva & Shimsa	252.00	131.14
14	Munirabad	65.00	107.10
15	MGHE-Jog	119.00	145.76

**Note: Paise 4 as royalty charges is considered for the actual generation**

#### KPCL Thermal Stations:

The tariff rates worked out by KPCL based on various parameters of tariff orders in respect of thermal stations RTPS units 1 to 7, BTPS unit-I, II & III is considered. The Yelahanka Combined Cycle Power Plant is yet to be declared by commercial operation by KPCL and tariff yet to be determined by KERC and hence the tariff proposed in the letter dated

15.11.2018 is considered. The capacity charges determined by KERC in respect of following units are considered.

<b>Sl. No.</b>	<b>Stations</b>	<b>Date of order</b>	<b>Capacity charges applicable for 2019-2020 (Amount in Rs. crore)</b>
1	BTPS Unit-2	25.02.2015	462.37
2	RTPS Unit-8	25.02.2015	216.29

The average variable cost for the month of July -2018, Aug-2018 and Sep-2018 is considered for energy charges for FY 2019-20.

**Table-5**

<b>Sl. no.</b>	<b>Stations</b>	<b>2019-20</b>	
		<b>Fixed cost Rs in Crores</b>	<b>Variable cost Paise per Kwh</b>
1	RTPS unit 1 to 7	982.19	394.77
2	RTPS unit-8	216.29	374.00
3	BTPS unit-1	360.20	412.44
4	BTPS unit-II	462.37	365.93
5	BTPS Unit-III	1006.28	369.20
6	Yelahanka Combined Cycle	474.26	475.08
7	Yermarus TPS - 1 & 2	1623.27	300.00

The average cost of hydel stations works out to 98.31 per unit and thermal units is around 639.50 paise per unit. The Income tax is included in the capacity charges component in respect of RTPS and BTPS Units. In case of hydel stations, tax component included in the primary energy charges component.

Raichur Power Corporation Ltd has furnished the capacity charges and energy charges for applicable for their station for the financial year 2019-20 to 2021-22 is considered.

**Table 5a**

<b>Raichur Power Corporation Ltd</b>	<b>Fixed charges Rs/Crores</b>	<b>Variable cost (Ps/unit)</b>
Yermarus TPS - 1 & 2	1623.27	300

## 4.0 Central Generating Stations:

4.1 ESCOMs have a share in Central Generating station of NTPC, Neyveli Lignite Corporation (NLC), Nuclear power stations and other Joint Venture Projects. The allocation of capacity entitlement from these stations includes both firm and unallocated share. The unallocated share is vary depending upon the allocation issued by Ministry of Power, GoI.

4.2. The energy available to ESCOMs depends on the scheduled generation and share in a month and other parameters such as availability and outages (forced and planned). The net energy available at ex-bus generation details furnished by Central Generating Stations to CEA for preparation of LGBR for the year 2018-19 is considered for energy available for 2019-20. Out of the total month wise energy available at Ex-bus, the share of Karnataka including unallocated share for the month of October 2018 (cumulative) is taken to arrive the energy available to Karnataka for FY 2019-20. In order to arrive energy available at Karnataka Periphery, POC losses of injection (State/Power station wise) and losses of withdrawal of the state for the week 12.11.2018 to 18.11.2018 as notified by the NLDC is taken. The scheduled energy available at ex-bus and share of Karnataka is shown in **Table-6** and net energy available at KPTCL periphery after considering the POC losses is shown in **Table-7**.

The new NLC Thermal Power Project of 1000 MW is expected to be commissioned during December 2018. Out of 1000 MW installed capacity Karnataka having a share of 70.54 MW.



**Table-6**

Sl. No.	Stations	Total Energy scheduled at EX-bus in MUs	Share of Karnataka in %	Karnataka Share in MUs
1	RSTP-I&II	13886	18.28	2538.22
2	RSTP-III	3238	19.37	627.04
3	RSTP-Talcher	13280	17.79	2362.64
4	Simhadri station II	5846	17.76	1038.19
5	Vallur unit-I & II	8670	10.40	901.59
6	NLC II Stage-1	3310	22.51	745.15
7	NLC II Stage-2	4421	22.78	1007.19
8	NLC expansion I	2792	25.61	715.00
9	New NLC Thermal power project	2334	25.67	599.11
10	NLC expansion Stage II (Unit-1)	6324	7.05	446.13
11	NTPL-2X 500 MW	6160	20.18	1243.33
12	MAPS	2404	8.50	204.34
13	Kaiga Unit-1& 2	2791	31.57	881.12
14	Kaiga Unit-3&4	2718	34.07	926.02
15	Kudamkulam Unit-1	5220	23.29	963.74
	Kudamkulam Unit-2	5760	22.10	1272.96
16	Kudigi Station(3X800 MW)	16535	53.96	7922.40
17	DVC- Maija ( unit 7 &8 )	1489		1489
18	DVC- Koderma (unit 1 & 2)	1862		1862

**Table-7**

Stations	Energy scheduled @ generators Ex-bus in MUs	Injection loss in %	With drawl loss in %	Energy @ KPTCL periphery
N.T.P.C-RSTP-I&II	2538.22	1.04	1.54	2473.14
NTPC-III	627.04	1.04	1.54	610.96
NTPC-Talcher	2362.64	1.09	1.54	2300.90
NLC TPS2-Stage 1	745.15	1.04	1.54	726.04
NLC TPS2-Stage 2	1007.19	1.04	1.54	981.37
NLC TPS1-Expn	715.00	1.04	1.54	696.67
NLC II expansion I	599.11	1.04	1.54	583.75
New NLC Thermal power project	446.13	1.04	1.54	434.69
MAPS	446.13	1.04	1.54	434.69
Kaiga Unit 1&2	204.34	1.29	1.54	199.10

Kaiga Unit 3 &4	881.12	1.29	1.54	856.36
Simhadri Unit -1 &2	926.02	1.04	1.54	900.00
NTPLUnit-2X 500 MW	721.17	1.79	1.54	697.16
KudamKulam	1243.33	1.79	1.54	1202.27
KudamKulam	963.74	1.79	1.54	931.91
Vallur TPS Sg I ,2 &3	550.22	0.54	1.54	538.77
Kudigi(3X800 MW)	3130.74	1.04	1.54	3021.17
DVC - Mejja thermal Power Station	919.59	0.59	1.54	900.00
DVC - Koderma Thermal Power Station	1068.93	0.59	1.54	1046.16
<b>Total</b>	<b>20717.51</b>			<b>20140.65</b>

4.3. The power drawl from the Central Sector Generating Stations either through the PGCIL lines or any lines constructed by developer selected through competitive bidding route from the generating plants. ESCOMs will pay POC (Transmission charges) to PGCIL/Independent Power Transmission Utility for Transmitting the CGS power and other states power. The POC charges as per RTA for the month of October-2018 is considered for FY 2019-2020 which includes POC, Reliability Support Charges and HVDC Charges. Considering the POC of October 2018, the total POC payable by ESCOMs for the year 2019-20 is Rs.2216.93 Crore. The CERC determined the charges for POSOCO-SRLDC for the control period vide order dated 29.12.2016. Out of the charges receivable by SRLDC, the share of Karnataka works out to Rs. 2.81 Crore.

4.4 The Tariff in respect of Central Generating Stations Like NTPC, NLC and DVC stations for the Control period 2019 to 2024 is yet to determined by CERC for the stations belonging to Generators, Similarly, Transmission Charges of PGCIL owned transmission lines for the next control period is yet to be determined by the CERC. Under the above circumstances, the Capacity charges/Transmission charges applicable for the period 2018-19 is

considered for next MYT tariff period from 2019 -20 to 2021-2022. The capacity charge considered based on various orders are as detailed below;

<b>Sl. No.</b>	<b>Stations</b>	<b>Date of order</b>	<b>Capacity charges applicable for 2018-19(Amount Rs. In crore)</b>
1	RSTP-I&II	24.1.2017	1068.28
2	RSTP-III	8.11.2016	272.45
3	RSTP-Talcher	16.02.2017	1012.59
4	Simhadri station II	29.7.2016	1081.69
5	Vallur unit-I & II	11.7.1017	1858.96
6	NLC II Stage-1	12.6.2017	299.80
7	NLC II Stage-2	12.06.2017	414.29
8	NLC expansion I	18.10.2016	276.18
9	NLC expansion Stage II (U-1)	24.7.2017	728.06
10	New NLC Thermal projects	As per the petition	1381.72
11	NTPL-2X 500 MW	11.7.2017	1090.17
12	Kudigi	As per the petition	2613.67
13	DVC-Mejia	3.10.2016	1019.21
14	DVC-Koderma	28.2.17	1175.74

The average variable cost for the month of Aug-2018, Sep-2018 and Oct-2018 is considered for energy charges for FY 2019-2020. In case of MAPS, Kaiga, and Kundamkulam, rate per unit for the month of Oct-2018 is considered.

<b>Particulars</b>	<b>MAPS</b>	<b>Kaiga Units 1 to 4</b>	<b>Kudamkulam Unit -1</b>	<b>Kudamkulam Unit -2</b>
Base Price	2.587	3.465	3.545	3.545
Heavy Water adjustment charges	0.031	0.000	0.428	0.420
Heavy Water lease adjustment charges	0.003	0.013	0.000	0.000
Insurance	0.099	0.095	0.037	0.037
Decommissioning Levy	0.020	0.020	0.020	0.020
Forex Variation Adjustment Charges			0.027	0.053
Nuclear Liability & Forex adjustment	0.050	0.050	0.050	0.050

Others	0.0028	0.000	0.001	0.001
Total tariff	2.793	3.643	4.107	4.127

4.5 The capacity charges (Fixed Cost) and variable cost considered for 2019-20 is shown in Table-9.

**Table-9**

<b>Central Projects</b>	<b>Fixed Cost (Rs in Cr)</b>	<b>Variable Cost (Paise per Kwh)</b>
N.T.P.C-Ramagundam	195.27	249.10
<b>NTPC-VII</b>	52.76	243.13
NTPC-Talcher	180.15	168.47
NLC TPS2-Stage 1	67.49	254.97
NLC TPS2-Stage 2	94.38	254.97
NLC TPS1-Expn	70.73	235.40
NLC II Expansion-1	186.88	235.93
New NLC Thermal Power project	97.47	219.60
MAPS	0.00	279.23
Kaiga unit I &II	0.00	364.25
Kaiga Unit 3 &4	0.00	364.25
Simhadri Unit -1 &2	192.10	285.30
Vallur TPS Stage I &2 &3	193.31	313.80
NTPL	220.04	309.73
KudamKulam Unit1	0.00	410.47
KudamKulam Unit2	0.00	412.44
Kudigi	1410.34	382.03
DVC- Mejia thermal Power Station	203.84	233.70
DVC Kodemma thermal Power Station	293.93	193.70

4.6 Income tax for the CGS station included in the capacity charges payment on normative basis by grossing up of ROE with effective tax rate of the respective financial year of the generating company. Income tax is already part of capacity charges and not payable separately and hence not considered.

## 5.0 Independent Power Producers

5.1. The generation of 1200 MW of UPCL Unit -1 & Unit-2 taken at 85% of 90% installed capacity as per PPA/ approval given by Government. The tariff for the control period 2019-20 to 2023-24 is yet to be determined by CERC and hence the auxiliary consumption of 5.25% as per CERC Regulation 2014 and additional auxiliary consumption 1.2% allowed by CERC vide order dated 20.02.2014 and 10.07.2015 is taken. The capacity charges determined by CERC in the truing up order dated 24.03.2017 for FY 2013-14 excluding cost of secondary fuel is considered for FY 2019-20. The average variable cost for the month from April 2018 to October-2018 is considered. The energy and cost details are shown in Table-10.

**Table-10**

<b>Stations</b>	<b>Energy in Mus</b>	<b>Fixed cost Rs in Cr</b>	<b>Variable cost Paise per Kwh</b>
UPCL	<b>3277.14</b>	1198.02	367.14

## 6.0 Non conventional Energy Source (NCE source)

- 6.1 The actual generation of NCE projects for the year 2017-18 has been considered for 2019-20 including Solar, Co-generation, Bio-mass, Wind Mills and Mini Hydel projects.
- 6.2 Projects which are expected to be commissioned during 2018-19 is based on scheduled CoD of the projects in respect of 1 to 3 Farmer scheme, Taluk wise solar and Bidding by KREDL. The rates is as per the revised order issued by Commission in respect of 1 to 3 farmer scheme. The rates for other projects are as per the bidding rates.
- 6.3 The PLF is based on tariff orders issued by KERC for control period from 2018-19 to 2020-21.is considered to arrive energy for FY 2019-20.

6.4 The energy generated from Solar park in respect of 600 MW developed by NTPC for the FY 2019-20 is as below;

	<b>Open Category</b>	<b>Capacity in MW</b>	<b>Average CUF in %</b>	<b>Tariff per unit</b>	<b>Energy in Mus</b>	<b>Amount in RS</b>
1	M/s Yarrow Infrasture	50	24.50	4.79	107.31	51.40
2	M/s Tata Power Renewable Energy Pvt. Ltd.,	100	22.20	4.79	194.47	93.15
3	M/s Parampujya Solar Energy private limited	100	24.75	4.79	216.81	103.85
4	M/s Fortum FinnSurya Energy private Ltd	100	23.30	4.79	204.11	97.77
5	M/s ACME Reneri Solar Power private ltd	50	25.00	4.79	109.50	52.45
6	M/s ACME Kurukshetra Solar Energy Pvt. Ltd	50	25.00	4.79	109.50	52.45
7	M/s Renew wind Energy Private Ltd	50	22.50	4.8	98.55	47.30
	<b>DCR category</b>					
8	M/s Tata Power Renewable Energy Private limited	50	23.85	4.84	104.46	50.56
9	M/s Parampujya Solar Energy private limited	50	23.90	4.86	104.68	50.88
		<b>600</b>			<b>1249.40</b>	<b>599.81</b>

6.5 Ministry of Power, GoI, allocated 300 MW to Karnataka from unallocated power of coal based NTPC stations of Eastern Region and Western Region. The expected energy from bundled power of coal is around 2021.81 MUs (300 MW @85% PLF after considering POC losses)

6.6 ESCOM wise NCE energy projected for FY 2019-20 is shown in **Table 11.**

**Table-11**

<b>Minor IPPs</b>	<b>BESCOM</b>	<b>GESCOM</b>	<b>HESCOM</b>	<b>MESCOM</b>	<b>CESC</b>
<b>Existing NCE projects</b>					
Co-generation	0.000	74.540	335.504	0.000	51.700
Biomass	63.870	11.200	0.000	0.000	12.960
Mini Hydel	342.530	110.090	54.190	271.860	165.670
Wind mill	2501.270	1476.730	1973.565	261.650	197.500
KPCL wind mill	11.170	0.000	0.000	0.000	0.000
Solar	1293.401	275.310	815.329	262.960	324.760
KPCL Solar	3.887	2.427	3.459	0.000	0.000
NTPC Bundled power - Coal	235.210	74.931	96.231	39.903	58.002

NTPC Bundled Power- Solar	56.205	17.905	22.995	9.535	13.860
Captive/Wind MOA	0.000	0.790	137.805	0.000	0.000
NTPC Bundled power Coal,WR region Pavagada	937.142	305.445	385.503	159.389	234.336
NTPC Bundled Power Solar, Pavagada	579.594	188.909	237.385	98.577	144.930
<b>Total of existing NCE</b>	<b>6024.280</b>	<b>2538.276</b>	<b>4061.966</b>	<b>1103.875</b>	<b>1203.718</b>
<b>New NCE Projects</b>					
Wind mill	192.50	0.00	0.00	0.00	0.00
Solar Bidding at Pavagada	869.84	241.41	303.72	144.40	144.40
		0.00			
Solar VGF Scheme				0.00	18.31
Solar talukwise			69.49	99.86	4.65
<b>Total of New NCE projects</b>	<b>1062.34</b>	<b>241.4064</b>	<b>373.21</b>	<b>244.2572</b>	<b>167.3568</b>
<b>Total</b>	<b>7086.617</b>	<b>2779.683</b>	<b>4435.176</b>	<b>1348.132</b>	<b>1371.075</b>

6.5 The average cost of the year 2017-18 is considered for existing Hydro and Wind projects.

6.6 In respect of new Bio-mass, Co-generation, Wind Mill and Mini Hydel the tariff considered is as per the KERC order dated 14.5.2018.

6.8 In respect of Solar Power Projects, the rate obtained through tender is considered.

## 7.0 Jurala Project

The ESCOMs having a share of 50% from Jurala Priyadarshni Hydro Electric Projects i.e., 117 MW. The net energy exported to Karnataka from Jural Priyadarshni Hydro Electric Projects for the year 2017-18 is considered for 2019-20 as energy expected to receive during the year 2019-20. The TSERC vide tariff order dated 6.7.2017 determined the capacity charges for the project for the control period from 1.4.2014 to 31.3.2019. The 50% of the capacity charges applicable for the financial year 2018-19 is considered. The capacity Charges for the next control period is yet to be determined by TSERC. Hence capacity charges applicable for the year 2018-19 is considered for the year 2019-20 also

**Table-13**

	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov19	Dec-19	Jan-20	Feb-20	Mar-20	Total
Energy in Mus	0	-0.032	-0.048	-0.016	0	42.864	44.752	3.248	0.336	-0.192	-0.16	-0.032	90.72
Amount in Rs Cr	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.89	4.89	58.66

**8.0** The energy from T. B. Dam power is shared between AP/Telangana and Karnataka. The 1/5<sup>th</sup> share of revenue expenditure and energy has been shared between two states. The actual cost and energy supplied for the FY 2017-18 is considered for 2019-20. The power purchase cost and energy from T. B. Dam has been estimated to 17.93 MUs and Rs. 1.62 crore.

**Table-14**

	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov19	Dec-19	Jan-20	Feb-20	Mar-20	Total
Energy in Mus	-0.25	-0.30	-0.17	-0.19	-0.04	5.02	4.28	3.06	0.33	3.14	2.68	0.39	17.93
Amount in Rs crore	0.03	0.07	0.04	0.06	0.12	0.10	0.11	0.12	0.11	0.12	0.15	0.58	1.62

### **9.0 Medium Term Power Purchase – Co generation power plant for a period of 5 years**

GoK vide Order EN 16 PPT 2016 dated 11.11.2016 accorded approval to purchase power from Bagasse Based Co-generation Units of 28 Sugar factories with an exportable capacity of 501 MW during the season only in the State with the approval of KERC for a period of 5 (FIVE) years commencing from 2016-17 at the tariff determined by KERC

KERC vide order dated 11th April 2017 has determined the final tariff for the co-generation units for the financial year 2016-17 to 2020-21. As per the KERC order, the tariff payable per unit for the energy supplied from the co-generation plants commissioned in different years during the period from 2005 or earlier to 2014 are as detailed below;



<b>Year of Commissioning</b>	<b>FY17 (Rs. Ps.)</b>	<b>FY18 (Rs. Ps.)</b>	<b>FY19 (Rs. Ps.)</b>	<b>FY20 (Rs. Ps.)</b>	<b>FY21 (Rs. Ps.)</b>
Variable Charges	3.14	3.32	3.51	3.71	3.92
2005 and Earlier	3.98	4.16	4.35	4.55	4.76
2006	3.96	4.14	4.33	4.53	4.74
2007	3.95	4.13	4.32	4.52	4.73
2008	4.01	4.19	4.38	4.58	4.79
2009	4.08	4.26	4.45	4.65	4.86
2010	4.58	4.76	4.95	5.15	5.36
2011	4.71	4.89	5.08	5.28	5.49
2012	4.85	5.03	5.22	5.42	5.63
2013	4.91	5.09	5.28	5.48	5.69
2014	4.96	5.14	5.33	5.53	5.74

The rate applicable for FY 2019-20 as per the above table is considered with 60% of the energy generated from the exported capacity for a period of 140 days. The above rates are subject to final outcome of the review petition filed by ESCOMs before KERC. The details are indicated in **Table-15**.

**Table-15**

<b>Sl. No.</b>	<b>NAME OF THE SELLER</b>	<b>Rate as per KERC order dated 11.4.2017 (Rs./kwh)</b>	<b>Energy @ 60% PLF in Mus</b>	<b>Amount in Rs. crore</b>
1	Godavari biorefineries ltd. Unit-1	4.55	28.22	12.84
2	Godavari biorefineries ltd. Unit-2	5.15	28.22	14.54
3	Jamakhanda sugars ltd. -1	4.55	6.05	2.75
4	Jamakhanda sugars ltd. -2	5.15	22.18	11.42
5	Jamakhanda sugars ltd. -3	5.53	28.22	15.61
6	Nirani Sugars Ltd., -unit-2	5.15	22.18	11.42
7	Nirani Sugars Ltd., unit -3	5.28	32.26	17.03
8	NSL sugars ltd., Koppa,	4.55	21.57	9.81
9	NSL sugars ltd., Thungabhadra	5.28	33.87	17.88
10	NSL sugars ltd., Aland	5.42	38.30	20.76
11	Parry sugar industries ltd., haliyal	4.58	39.31	18.00
12	Parry sugar industries ltd., sadashiva units	4.58	18.14	8.31
13	Sri chamundeshwari sugars ltd.	4.58	36.29	16.62
14	Sri prabulingeshwar sugars & chemicals	4.55	50.40	22.93
15	Coregreen sugar & fuels pvt. ltd	5.28	30.24	15.97
16	Manali sugars ltd., malaghan,	5.53	20.16	11.15

	bijapur			
17	Vijayanagara sugar pvt. Ltd.,	4.65	30.24	14.06
18	Bhalkeshwara sugars ltd	5.53	18.14	10.03
19	GM sugars ltd.	4.65	20.16	9.37
20	Gem sugars ltd.,	4.55	24.19	11.01
21	Shree renuka sugars ltd, Burlatti	4.53	50.40	22.83
22	Shree renuka sugars ltd, Havalga	4.65	40.32	18.75
23	Shree renuka sugars ltd, Munoli	4.55	30.24	13.76
24	KPR sugars ltd	5.42	36.29	19.67
25	Shivashakthi sugars ltd	5.42	48.38	26.22
26	Shiraguppi sugars ltd	5.48	24.19	13.26
27	Soubhagya Laxmi sugars ltd	5.48	33.38	18.29
28	Davanagere sugars	4.55	22.18	10.09
29	Indian cane power ltd	5.53	108.86	60.20
30	Viswaraj sugars	4.55	28.22	12.84
31	Athani Sugars Ltd	5.42	33.61	18.21
32	Satish Sugars	5.42	44.35	24.04
33	Doodh Ganga Krishna Sahakari Sakkare Kharkane U-1	4.55	21.17	9.63
34	Doodh Ganga Krishna Sahakari Sakkare Kharkane U-II	5.53	16.13	8.92
35	Ugar Sugar - Malli Nagarhalli, Jevargi	4.58	14.11	6.46
36	Ugar Sugar - Ugar, Athani Taluk	4.55	62.50	28.44
37	Bannari Aman - Alaganchi	5.53	24.19	13.38
38	Bannari Aman - Kuntur	4.55	25.60	11.65
39	Nandi Sahakari Sakkare Kharkane	4.55	24.19	11.01
40	Hiranakeshi Sahakri Sakkare Kharkane -Phase I	4.58	24.19	11.08
41	Hiranakeshi Sahakri Sakkare Kharkane -Phase II	5.28	24.19	12.77
	<b>Total</b>		<b>1285.0589</b>	<b>643.04</b>

**10.0** The projected energy and cost allocated among the ESCOMs is as per GoK order dated 24.04.2018 and allocation of bundled power of NTPC Solar Park is as per PPA.

**11.0** The ESCOMs wise energy and cost projected for the financial year 2019-20 is as below;

<b>ESCOMs</b>	<b>Energy requirement in MUs</b>	<b>Power Purchase cost (Rs/Crores)</b>	<b>Average cost (Rs./unit)</b>
BESCOM	34091.87	19241.15	5.64
GESCOM	9268.18	3843.88	4.15
HESCOM including Hukkeri Society & AEQUS	14808.77	6833.42	4.61
MESCOM	5973.11	2215.35	3.71
CESC, Mysore	7496.13	2976.05	3.97
<b>Total</b>	<b>71638.05</b>	<b>35109.85</b>	<b>4.90</b>