

HERC FY 2019-20 & FY 2020-21 TARIFF (Rs / kWh)

Bagasse generic tariff (Cogeneration)

Table of Parameters	
Capital cost (Rs. in Million / MW)	49.250
Residual value (10%)	4.93
Total depreciation (Rs in Million / MW)	44.33
Loan component (Rs in Million / MW)	34.48
Equity component (Rs in Million / MW)	14.78
CUF (stabilisation)	53%
CUF 1st year (Including Stabilisation)	53%
CUF 2nd year onwards	53%
O&M (Rs Million / MW)	0.23
O&M escalation	5.72%
Depreciation (first 13 years)	5.38%
ROE (1st 10 years)	14%
ROE (11th year onwards)	14%
Income tax (MAT) pass through	0.00%
Income tax (Corporate Tax) pass through	0.00%
Interest on term loan	10.13%
Interest on working capital	9.13%
Auxiliary consumption (1st year)	8.50%
Auxiliary consumption (2nd year onwards)	8.50%
Fuel cost (Rs. / MT)	2543.75
Fuel price escalation	5.00%
Heat rate (Kcal/kWh)	3600
GCV (Kcal/kg)	2250
Discount rate WACC	11.29%
Levellised tariff	8.11

0.21 0.222012 0.23

MCLR+2%

MCLR+1%

2307 2422.35 2543.468

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Fuel cost escalation	2544	2671	2804	2945	3092	3247	3409	3579	3758	3946	4144	4351	4568	4797	5036	5288	5553	5830	6122	6428	
O&M escalation	0.23	0.24	0.26	0.27	0.29	0.30	0.32	0.34	0.36	0.38	0.40	0.42	0.45	0.47	0.50	0.53	0.56	0.59	0.63	0.66	
Outstanding Loan amount	34.48	31.82	29.17	26.52	23.87	21.22	18.56	15.91	13.26	10.61	7.96	5.30	2.65								
Loan repayment	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65								
Interest on loan	3.36	3.09	2.82	2.55	2.28	2.01	1.75	1.48	1.21	0.94	0.67	0.40	0.13								
Working Capital																					
Fuel cost for four months	6.30	6.61	6.94	7.29	7.66	8.04	8.44	8.86	9.31	9.77	10.26	10.77	11.31	11.88	12.47	13.09	13.75	14.44	15.16	15.92	
One month O&M	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.06	
2 Months receivables	4.70	4.82	4.95	5.09	5.24	5.40	5.57	5.74	5.93	6.14	6.35	6.58	6.82	6.98	7.20	7.53	7.88	8.24	8.63	9.03	
Maintenance spares 15% of O&M	0.03	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.10	
Total	11.05	11.49	11.96	12.45	12.96	13.51	14.08	14.69	15.32	16.00	16.70	17.45	18.23	18.87	19.79	20.75	21.76	22.82	23.93	25.10	
Interest on working capital	1.01	1.05	1.09	1.14	1.18	1.23	1.29	1.34	1.40	1.46	1.52	1.59	1.66	1.72	1.81	1.89	1.99	2.08	2.19	2.29	
Variable Costs																					
Parameters	Derivation	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Capacity (MW)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Generation (Million Units)	A	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64
Auxiliary Cons (%)		8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%
Generation (Ex-bus Million Units)	A1	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25
Station Heat Rate (Kcal/KWh)	B	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600
Calorific Value of fuel (Kcal/Kg)	C	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250
Overall Heat (Gcal)	D= (A*B)	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714
Fuel Consumption (MT)	E= (D*1000/C)	7428	7428	7428	7428	7428	7428	7428	7428	7428	7428	7428	7428	7428	7428	7428	7428	7428	7428	7428	7428
Cost of fuel per MT	F	2544	2671	2804	2945	3092	3247	3409	3579	3758	3946	4144	4351	4568	4797	5036	5288	5553	5830	6122	6428
Total Cost of fuel (Rs Million)	G=E*F/10 ⁶	18.90	19.84	20.83	21.87	22.97	24.12	25.32	26.59	27.92	29.31	30.78	32.32	33.93	35.63	37.41	39.28	41.25	43.31	45.48	47.75
Fuel Cost (Rs/kWh)	H=G/A1	4.45	4.67	4.90	5.15	5.41	5.68	5.96	6.26	6.57	6.90	7.25	7.61	7.99	8.39	8.81	9.25	9.71	10.20	10.70	11.24
Fixed Costs																					
O&M Expenses		0.23	0.24	0.26	0.27	0.29	0.30	0.32	0.34	0.36	0.38	0.40	0.42	0.45	0.47	0.50	0.53	0.56	0.59	0.63	0.66
Depreciation		2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	1.41	1.41	1.41	1.41	1.41	1.41	1.41
Interest on Term Loan		3.36	3.09	2.82	2.55	2.28	2.01	1.75	1.48	1.21	0.94	0.67	0.40	0.13							
Interest on Working Capital		1.01	1.05	1.09	1.14	1.18	1.23	1.29	1.34	1.40	1.46	1.52	1.59	1.66	1.72	1.81	1.89	1.99	2.08	2.19	2.29
Return on Equity		2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07
Income tax on ROE		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fixed Cost		9.32	9.10	8.89	8.68	8.47	8.27	8.07	7.88	7.68	7.50	7.32	7.14	6.97	5.68	5.79	5.90	6.03	6.16	6.29	6.43
Fixed cost (Rs/kWh)		2.19	2.14	2.09	2.04	1.99	1.95	1.90	1.85	1.81	1.77	1.72	1.68	1.64	1.34	1.36	1.39	1.42	1.45	1.48	1.51
Total cost (Fixed+variable)		28.21	28.94	29.72	30.55	31.44	32.39	33.39	34.46	35.60	36.81	38.10	39.46	40.90	41.31	43.20	45.19	47.27	49.47	51.77	54.18
Tariff (Rs/kWh)		6.64	6.81	7.00	7.19	7.40	7.62	7.86	8.11	8.38	8.67	8.97	9.29	9.63	9.72	10.17	10.64	11.13	11.64	12.19	12.75
Per unit tariff components																					
Per unit O&M Expenses		0.05	0.06	0.06	0.06	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.10	0.11	0.11	0.12	0.12	0.13	0.14	0.15	0.16
Per Unit Depreciation		0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.33	0.33	0.33	0.33	0.33	0.33	0.33
Per Unit Interest on term loan		0.79	0.73	0.66	0.60	0.54	0.47	0.41	0.35	0.28	0.22	0.16	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Per Unit Interest on working capital		0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.32	0.33	0.34	0.36	0.37	0.39	0.41	0.43	0.45	0.47	0.49	0.51	0.54
Per Unit Return on equity		0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Per unit income tax		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Levellised tariff																					
Discount factor		1.00	0.899	0.807	0.73	0.65	0.59	0.53	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.22	0.20	0.18	0.16	0.15	0.13
Discounted tariff components(variable)	6.22	4.45	4.20	3.96	3.74	3.52	3.33	3.14	2.96	2.79	2.63	2.49	2.35	2.21	2.09	1.97	1.86	1.75	1.65	1.56	1.47
Discounted tariff components(fixed)	1.89	2.19	1.92	1.69	1.48	1.30	1.14	1.00	0.88	0.77	0.67	0.59	0.52	0.45	0.33	0.30	0.28	0.26	0.24	0.22	0.20
Discounted tariff components (Total)		6.64	6.12	5.65	5.22	4.82	4.47	4.14	3.84	3.56	3.31	3.08	2.86	2.67	2.42	2.27	2.14	2.01	1.89	1.78	1.67

HERC FY 2019-20 & FY 2020-21 TARIFF (Rs / kWh)
Non Fossil Fuel (Cogeneration) Other than Bagasse i.e. biomass etc.

Table of Parameters	
Capital cost (Rs. in Million / MW)	49.250
Residual value (10%)	4.93
Total depreciation (Rs in Million / MW)	44.33
Loan component (Rs in Million / MW)	34.48
Equity component (Rs in Million / MW)	14.78
CUF (stabilisation)	53%
CUF 1st year (Including Stabilisation)	53%
CUF 2nd year onwards	53%
O&M (Rs Million / MW)	0.23
O&M escalation	5.72%
Depreication (first 13 years)	5.38%
ROE (1st 10 years)	14%
ROE (11th year onwards)	14%
Income tax (MAT) pass through	0.00%
Income tax (Corporate Tax) pass through	0.00%
Interest on term loan	10.13%
Interest on working capital	9.13%
Auxiliary consumption (1st year)	8.50%
Auxiliary consumption (2nd year onwards)	8.50%
Fuel cost (Rs. / MT)	3605.61
Fuel price escalation	5.00%
Heat rate (Kcal/kWh)	3600
GCV (Kcal/kg)	3100
Discount rate WACC	11.29%
Levellised tariff	8.30

0.21 0.222012 0.23

MCLR+2%

MCLR+1%

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Fuel cost escalation	3606	3786	3975	4174	4383	4602	4832	5073	5327	5593	5873	6167	6475	6799	7139	7496	7871	8264	8677	9111	
O&M escalation	0.23	0.24	0.26	0.27	0.29	0.30	0.32	0.34	0.36	0.38	0.40	0.42	0.45	0.47	0.50	0.53	0.56	0.59	0.63	0.66	
Outstanding Loan amount	34.48	31.82	29.17	26.52	23.87	21.22	18.56	15.91	13.26	10.61	7.96	5.30	2.65								
Loan repayment	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65								
Interest on loan	3.36	3.09	2.82	2.55	2.28	2.01	1.75	1.48	1.21	0.94	0.67	0.40	0.13								
Working Capital																					
Fuel cost for four months	6.48	6.80	7.14	7.50	7.88	8.27	8.68	9.12	9.57	10.05	10.56	11.08	11.64	12.22	12.83	13.47	14.15	14.85	15.60	16.37	
One month O&M	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.06	
2 Months receivables	4.80	4.92	5.06	5.20	5.36	5.52	5.69	5.88	6.07	6.28	6.50	6.74	6.99	7.06	7.39	7.73	8.09	8.46	8.86	9.27	
Maintenance spares 15% of O&M	0.03	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.10	
Total	11.33	11.78	12.26	12.77	13.30	13.86	14.45	15.07	15.73	16.42	17.15	17.92	18.73	19.39	20.33	21.32	22.36	23.45	24.60	25.80	
Interest on working capital	1.03	1.08	1.12	1.17	1.21	1.27	1.32	1.38	1.44	1.50	1.57	1.64	1.71	1.77	1.86	1.95	2.04	2.14	2.25	2.36	
Variable Costs																					
Parameters	Derivation	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Capacity (MW)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Generation (Million Units)	A	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64
Auxiliary Cons (%)		8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%
Generation (Ex-bus Million Units)	A1	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25
Station Heat Rate (Kcal/kWh)	B	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600
Calorific Value of fuel (Kcal/Kg)	C	3100	3100	3100	3100	3100	3100	3100	3100	3100	3100	3100	3100	3100	3100	3100	3100	3100	3100	3100	3100
Overall Heat (Gcal)	D= (A*B)	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714	16714
Fuel Consumption (MT)	E= (D*1000/C)	5392	5392	5392	5392	5392	5392	5392	5392	5392	5392	5392	5392	5392	5392	5392	5392	5392	5392	5392	5392
Cost of fuel per MT	F	3606	3786	3975	4174	4383	4602	4832	5073	5327	5593	5873	6167	6475	6799	7139	7496	7871	8264	8677	9111
Total Cost of fuel (Rs Million)	G=E*F/10 ⁶	19.44	20.41	21.43	22.50	23.63	24.81	26.05	27.35	28.72	30.16	31.67	33.25	34.91	36.66	38.49	40.41	42.44	44.56	46.79	49.12
Fuel Cost (Rs/kWh)	H=G/A1	4.58	4.80	5.05	5.30	5.56	5.84	6.13	6.44	6.76	7.10	7.45	7.83	8.22	8.63	9.06	9.51	9.99	10.49	11.01	11.56
Fixed Costs																					
O&M Expenses		0.23	0.24	0.26	0.27	0.29	0.30	0.32	0.34	0.36	0.38	0.40	0.42	0.45	0.47	0.50	0.53	0.56	0.59	0.63	0.66
Depreciation		2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65
Interest on Term Loan		3.36	3.09	2.82	2.55	2.28	2.01	1.75	1.48	1.21	0.94	0.67	0.40	0.13							
Interest on Working Capital		1.03	1.08	1.12	1.17	1.21	1.27	1.32	1.38	1.44	1.50	1.57	1.64	1.71	1.77	1.86	1.95	2.04	2.14	2.25	2.36
Return on Equity		2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07
Income tax on ROE		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fixed Cost		9.34	9.13	8.92	8.71	8.50	8.30	8.10	7.91	7.72	7.54	7.36	7.18	7.01	5.72	5.84	5.96	6.08	6.21	6.35	6.50
Fixed cost (Rs/kWh)		2.20	2.15	2.10	2.05	2.00	1.95	1.91	1.86	1.82	1.77	1.73	1.69	1.65	1.35	1.37	1.40	1.43	1.46	1.50	1.53
Total cost (Fixed+variable)		28.78	29.54	30.35	31.21	32.13	33.11	34.16	35.27	36.44	37.70	39.02	40.43	41.92	42.38	44.33	46.37	48.52	50.77	53.14	55.62
Tariff (Rs/kWh)		6.77	6.95	7.14	7.35	7.56	7.79	8.04	8.30	8.58	8.87	9.19	9.52	9.87	9.98	10.43	10.92	11.42	11.95	12.51	13.09
Per unit tariff components																					
Per unit O&M Expenses		0.05	0.06	0.06	0.06	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.10	0.11	0.11	0.12	0.12	0.13	0.14	0.15	0.16
Per Unit Depreciation		0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.33	0.33	0.33	0.33	0.33	0.33	0.33
Per Unit Interest on term loan		0.79	0.73	0.66	0.60	0.54	0.47	0.41	0.35	0.28	0.22	0.16	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Per Unit Interest on working capital		0.24	0.25	0.26	0.27	0.29	0.30	0.31	0.32	0.34	0.35	0.37	0.39	0.40	0.42	0.44	0.46	0.48	0.50	0.53	0.55
Per Unit Return on equity		0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Per unit income tax		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Levellised tariff																					
Discount factor		1.00	0.899	0.807	0.73	0.65	0.59	0.53	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.22	0.20	0.18	0.16	0.15	0.13
Discounted tariff components(variable)	6.40	4.58	4.32	4.07	3.84	3.63	3.42	3.23	3.05	2.87	2.71	2.56	2.41	2.28	2.15	2.03	1.91	1.80	1.70	1.61	1.52
Discounted tariff components(fixed)	1.90	2.20	1.93	1.69	1.49	1.30	1.14	1.00	0.88	0.77	0.68	0.59	0.52	0.46	0.34	0.31	0.28	0.26	0.24	0.22	0.20
Discounted tariff components (Total)		6.77	6.25	5.77	5.33	4.93	4.57	4.23	3.93	3.65	3.39	3.15	2.93	2.73	2.48	2.33	2.19	2.06	1.94	1.82	1.72

