

Annexure – E to the RfS (New)

ILLUSTRATION FOR PENALTIES APPLICABLE AGAINST SHORTFALL IN ENERGY SUPPLY

For a Contracted Capacity- 100 MW;

Tariff payable to the SPD- Rs. 2.75/kWh;

and annual CUF committed by the bidder- 25%.

For this case, the ESS installed by the bidder- 50 MW/100 MWh.

For a typical year (say 5th Contract Year), following is the supply of power during each month of that year:

Month	Energy Supplied by the SPD during hours other than Peak Hours (MUs)	Energy Supplied by the SPD in each month during Peak Hours (MUs)	Min. energy to be supplied in each month during Peak Hours (MUs) [= (0.7 x No. of days in the month x 1,00,000 kWh) / 10,00,000]	Shortfall in monthly energy supply during Peak Hours (MUs)
A	B	C	D	E= (D-C)
Jan	18	2	2.17	0.17
Feb*	16	2	1.96	-
Mar	18	2.1	2.17	0.07
Apr	17	2.1	2.1	-
May	18.5	2.5	2.17	-
Jun	16	2	2.1	0.10
Jul	15	2.4	2.17	-
Aug	7	2.3	2.17	-
Sep	8	2.3	2.1	-
Oct	16	2	2.17	0.17
Nov	15	2.1	2.1	-
Dec	15	2.2	2.17	-
Total	179.5	26		0.51

*Considering non-leap year

- (i) Penalty for shortfall in meeting min. annual CUF requirement, for hours other than Peak Hours:
Min. energy corresponding to min. annual CUF (-15% of committed CUF) to be supplied by the SPD = 186.2775 MUs;
Actual energy supplied by the SPD during hours other than Peak Hours = 179.5 MUs;

Applicable penalty = Rs. $[1.5 \times 2.75 \times (186.2775-179.5) \times 10,00,000]$ = Rs. 2.79571875 Crores

(ii) Penalty for shortfall in supply of energy during Peak Hours:

a. Penalty corresponding to monthly shortfall (payable monthly)- will be levied for the months, in which the shortfall exceeds 30% of the energy requirement stipulated for Peak Hours. In this example, the penalty shall be levied for the months of January, March, June, and October.

Applicable penalty for the month of January = Rs. $[1.5 \times 2.75 \times 0.17 \times 10,00,000]$ = Rs. 7.0125 Lakhs

Applicable penalty for the month of March = Rs. $[1.5 \times 2.75 \times 0.07 \times 10,00,000]$ = Rs. 2.8875 Lakhs

Applicable penalty for the month of June = Rs. $[1.5 \times 2.75 \times 0.10 \times 10,00,000]$ = Rs. 4.125 Lakhs

Applicable penalty for the month of October = Rs. $[1.5 \times 2.75 \times 0.17 \times 10,00,000]$ = Rs. 7.0125 Lakhs

Thus, the total penalty applicable for the Contract Year for shortfall in monthly energy supply during Peak Hours for the Contract Year = Rs. $(7.0125 + 2.8875 + 4.125 + 7.0125)$ = Rs. 21.0375 Lakhs

b. Penalty corresponding to annual shortfall-

Min. energy to be supplied annually = $100000 \text{ kWh} \times 365 \times 0.85 = 31.025 \text{ MUs}$

Actual annual Energy supplied by the SPD = 26 MUs

Therefore, applicable penalty = Rs. $[1.5 \times 2.75 \times (31.025-26) \times 10,00,000]$ = Rs. 2.0728125 Crores

Applicable Penalty for shortfall in supply of energy during Peak Hours for this Contract Year = Higher of the penalty corresponding to sum of monthly shortfall for the Contract Year and the penalty corresponding to annual shortfall in the Contract Year = Rs. 2.0728125 Crores.

Therefore, **total penalty payable by the SPD for this Contract Year** = The sum of penalty for shortfall in meeting min. annual CUF requirement (for hours other than Peak Hours) and Penalty for shortfall in supply of energy during Peak Hours = Rs. $(2.79571875 + 2.0728125)$ Crores = Rs. 4.86853125 Crores.