

**Fuel Surcharge for Fourth Quarter of FY 2018-19**

**(January'19-March'19)**

**FINAL REPORT**

**Submitted to**

**AjmerVidyutVitrان Nigam Limited**

**Ajmer**

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## Background

1. In term of the Regulation 88 of the RERC Tariff Regulation 2014, AVVNLis allowed to recover the variation in the approved and actual variable cost of power purchased. The variation allowed has to be passed on to the consumers of AVVNL on quarterly basis as fuel surcharge.
2. The said provision under the RERC Tariff Regulations, 2014 with respect to the fuel surcharge is reproduced as below:

### **“88. Fuel Surcharge**

*“The Fuel Surcharge (FS) chargeable by the distribution licensee from its consumers for any quarter shall be computed as per the following formula:*

$$FS = C/E \quad \text{Rs./kWh}$$

*Where,*

*C (in Rs. Lakh) = {(Weighted Average Variable Cost of all sources of power purchase during previous quarter in Rs/kWh – Base Weighted Average Variable Cost of all sources of power purchase as approved under Tariff Order for the year under operation in Rs/kWh) x Corresponding Power Purchase from all sources during previous quarter in LU}.*

*E (in Lakh Units) = Energy sold (metered plus estimated) during previous quarter.”*

*Note:*

- *Quarter referred under this formula shall correspond to financial quarter (s) viz Q1 (Apr. to Jun) Q.2 (Jul to Sept), Q3 (Oct to Dec) and Q4 (Jan to Mar).*
- *The variation in power purchase cost due to UI and Hydro based generation and other unapproved purchases shall not be covered under fuel surcharge adjustment.*
- *For the generation stations/power purchase sources, which have single part tariff, 1/3 of the tariff shall be considered as fixed charge and 2/3 of the tariff shall be considered as energy charge for adjustment under this formula.*
- *The cost and quantum of power purchase shall be based on bills paid/credits received during the previous quarter irrespective of period to which it pertains and shall include arrears or refunds, if any, for previous period, not considered earlier.*
- *The rate of Fuel Surcharge shall be worked out in Rs./kWh rounded off next second decimal place.*
- *The Fuel Surcharge per unit for any quarter shall not exceed 10% of weighted average power purchase cost approved by the Commission, or such other ceiling as may be stipulated by the Commission from time to time.*
- *The total Fuel Surcharge recoverable, as per the formula specified above, shall be recovered from the actual sales and in case of un-metered consumers, it shall be recoverable based on estimated sales to such consumers, calculated in accordance with such methodology as may be stipulated by the Commission.”*

## Description

1. The Tariff Order for FY 2018-19 was issued by the Hon'ble Commission on 28<sup>th</sup> May 2018 and was applicable from June 2018 onwards. Hence the approved figures from the Tariff Order for FY 2018-19 have been considered for October, November and December 2018.
2. In terms of the Regulation 88 of the RERC Tariff Regulations 2014, the variation in power purchase cost due to UI and Hydro based generation and other unapproved purchases shall not be covered under fuel surcharge adjustment. Further where the Generating Station/ Power purchase source has a single part tariff the tariff would be bifurcated into one-third as fixed charges and two-thirds as variable charges.
3. The calculation of actual weighted average variable cost for the third quarter of FY 2018-19 (October'18-December'18) which is used to determine the fuel Surcharge for fourth quarter (period from January'19 to March'19), against the RERC approved weighted average variable cost in the Tariff Order for FY 2018-19 is tabulated below:

### Weighted Average Variable Cost

Weighted Avg variable Cost of all sources of power purchase (Rs/kWh)							
Sl. No.	Sources of Power Purchase	Approved Power Purchase for AVVNL for FY 2018-19			Power Purchase (Oct'18-Dec'18)		
		Net Generation	Total variable Cost	Approved Variable Cost/Unit	Net Generation	Total Variable Cost	Actual Variable Cost/Unit
		(MU)	(Rs Cr)	Rs./Unit	(MU)	(Rs Cr)	Rs./Unit
<b>A</b>	<b>NTPC</b>						
	ANTA GTPS	13.00	6.00	4.62	4.95	2.44	4.92
	AURIYA GTPS	9.00	6.00	6.67	2.21	1.83	8.29
	Bhadla	116.00	39.33	3.39	29.57	9.86	3.33
	DADRI GTPS	40.00	14.00	3.50	5.53	2.70	4.88
	FARAKKA STPS	12.00	4.00	3.33	4.48	1.00	2.24
	KAHALGAON II (U 1)	29.00	7.00	2.41	10.38	2.33	2.24
	KAHALGAON-2 STPS	140.00	33.00	2.36	41.06	8.78	2.14
	RIHAND STPS (unit 1 & 2)	214.00	27.00	1.26	45.33	6.00	1.32
	RIHAND 2 STPS	228.00	27.00	1.18	55.72	7.51	1.35
	RIHAND STPS III	262.00	32.00	1.22	48.86	5.84	1.20
	NSM Bundled	491.00	139.00	2.83	218.36	62.76	2.87
	SINGRAULI STPS	586.00	77.00	1.31	157.52	21.38	1.36
	Unchahar I	27.00	7.00	2.59	4.97	1.59	3.20
	Unchahar II	51.00	12.00	2.35	4.91	2.15	4.38
	Unchahar III (unit 5)	31.00	7.00	2.26	4.39	1.69	3.85
	NCTPS II	11.00	1.00	0.91	0.00	-0.17	0.00
	Prior Period				0.00	0.01	
	<b>Sub-Total (A)</b>	<b>2260.00</b>	<b>438.33</b>	<b>1.94</b>	<b>638.25</b>	<b>137.71</b>	<b>2.16</b>
<b>B</b>	<b>Lignite Based plant</b>						
	Giral TPS				0.00	0.00	0.00
	Barsingsar (Neyveli Lignite Power)	406.00	50.00	1.23	83.19	9.30	1.12
	Rajwest Total	1697.00	365.00	2.15	426.38	113.17	2.65

Weighted Avg variable Cost of all sources of power purchase (Rs/kWh)							
Sl. No.	Sources of Power Purchase	Approved Power Purchase for AVVNL for FY 2018-19			Power Purchase (Oct'18-Dec'18)		
		Net Generation	Total variable Cost	Approved Variable Cost/Unit	Net Generation	Total Variable Cost	Actual Variable Cost/Unit
		(MU)	(Rs Cr)	Rs./Unit	(MU)	(Rs Cr)	Rs./Unit
	Prior Period				0.00	-0.95	
	<b>Sub-Total (B)</b>	<b>2103.00</b>	<b>415.00</b>	<b>1.97</b>	<b>509.57</b>	<b>121.52</b>	<b>2.38</b>
<b>C</b>	<b>NPCIL</b>						
	NAPP 1&2	95.00	16.67	1.75	22.94	4.89	2.13
	RAPP-I & II	377.00	74.00	1.96	73.85	17.17	2.32
	RAPP-III& IV	306.00	60.00	1.96	59.90	13.93	2.32
	RAPP-V & VI	190.00	45.33	2.39	38.85	10.50	2.70
	Prior Period				0.00	7.49	
	<b>Sub-Total (C)</b>	<b>968.00</b>	<b>196.00</b>	<b>2.02</b>	<b>195.55</b>	<b>53.98</b>	<b>2.76</b>
<b>D</b>	<b>State Gen. &amp; Others</b>						
	STPS (Unit 1 to 6)	1235.00	425.00	3.44	522.42	181.38	3.47
	KTPS (Unit 1 to 7)	1761.00	491.00	2.79	487.48	155.21	3.18
	Ramgarh TPS	103.00	23.00	2.23	25.20	5.62	2.23
	Dholpur GTPP	67.00	33.00	4.93	3.49	1.55	4.45
	Chhabra-I & II	772.00	178.00	2.31	257.07	61.97	2.41
	Chhabra-III	318.00	74.00	2.33	114.63	26.68	2.33
	Chhabra Phase 3 Unit IV	439.00	102.00	2.32	122.10	28.50	2.33
	Kalisind Unit 1	871.00	236.00	2.71	263.63	68.69	2.61
	Kalisind Unit II	826.00	224.00	2.71	0.00	0.00	0.00
	Ramgarh project stage 3 unit 4	283.00	82.00	2.90	34.04	11.26	3.31
	Others				0.00	9.55	0.00
	<b>Sub-Total (D)</b>	<b>6675.00</b>	<b>1868.00</b>	<b>2.80</b>	<b>1830.06</b>	<b>550.41</b>	<b>3.01</b>
<b>E</b>	<b>Indira Ghandi (jhajjar -unit 1&amp; 2) (Aravali Power)</b>	<b>1.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>F</b>	<b>COASTAL GUJARAT (MUNDRA) unit 1, 2 and 3</b>	<b>661.00</b>	<b>99.00</b>	<b>1.50</b>	<b>170.44</b>	<b>36.69</b>	<b>2.15</b>
<b>G</b>	<b>ADANI POWER RAJASTHAN LTD.</b>	<b>1481.00</b>	<b>309.00</b>	<b>2.09</b>	<b>453.07</b>	<b>119.74</b>	<b>2.64</b>
<b>H</b>	<b>SASAN POWER LTD.</b>	<b>751.00</b>	<b>100.00</b>	<b>1.33</b>	<b>205.38</b>	<b>25.76</b>	<b>1.25</b>
<b>J</b>	<b>NVVN Bundled Power</b>	<b>633.00</b>	<b>225.00</b>	<b>3.55</b>	<b>151.22</b>	<b>48.72</b>	<b>3.22</b>
<b>K</b>	<b>PTC (DB Power)</b>	<b>518.00</b>	<b>91.00</b>	<b>1.76</b>	<b>142.53</b>	<b>37.81</b>	<b>2.65</b>
<b>L</b>	<b>PTC (Maruti)</b>	<b>510.00</b>	<b>91.00</b>	<b>1.78</b>	<b>113.36</b>	<b>18.71</b>	<b>1.65</b>
<b>M</b>	<b>Chhabra TPS St - 1 Ph -3 (Unit - 5)</b>	<b>609.00</b>	<b>130.00</b>	<b>2.13</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>N</b>	<b>Chhabra TPS St - 1 Ph -3 (Unit - 6)</b>	<b>609.00</b>	<b>130.00</b>	<b>2.13</b>			

Weighted Avg variable Cost of all sources of power purchase (Rs/kWh)							
Sl. No.	Sources of Power Purchase	Approved Power Purchase for AVVNL for FY 2018-19			Power Purchase (Oct'18-Dec'18)		
		Net Generation	Total variable Cost	Approved Variable Cost/Unit	Net Generation	Total Variable Cost	Actual Variable Cost/Unit
		(MU)	(Rs Cr)	Rs./Unit	(MU)	(Rs Cr)	Rs./Unit
<b>O</b>	<b>RAPP Unit 7&amp;8 (2*700) NPCIL</b>	<b>1159.00</b>	<b>234.00</b>	2.02			
<b>P</b>	<b>Tnda STPP Stage II (2*660 MW)</b>	<b>165.00</b>	<b>45.00</b>	2.73			
<b>Q</b>	<b>Unchahar IV (1*1500 MW) NTPC</b>	<b>145.00</b>	<b>41.00</b>	2.83	<b>0.00</b>	<b>0.00</b>	0.00
<b>R</b>	<b>NCES</b>						
	Wind Farms	1670.00	548.67	3.29	199.54	64.75	3.24
	Bio-Mass	286.00	130.00	4.55	22.95	10.69	4.66
	Solar	1288.00	418.67	3.25	25.57	10.45	4.09
	CPPs				0.00	0.00	0.00
	<b>Sub-Total (E)</b>	<b>3244.00</b>	<b>1097.33</b>	3.38	<b>248.06</b>	<b>85.89</b>	3.46
	<b>TOTAL (without bilateral trading)</b>	<b>22492.00</b>	<b>5509.67</b>	2.45	<b>4657.48</b>	<b>1236.95</b>	2.66
<b>S</b>	<b>Other Short term source</b>						
	Bilateral Trading	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Sub-Total (F)</b>	<b>0.00</b>	<b>0.00</b>	0.00	<b>0.00</b>	<b>0.00</b>	0.00
	<b>GRAND TOTAL</b>	<b>22492.00</b>	<b>5509.67</b>	2.45	<b>4657.48</b>	<b>1236.95</b>	2.66
	<b>Weighted Avg Variable Cost (Rs./kWh)</b>		<b>2.45</b>			<b>2.66</b>	

4. Asit can be inferred from the table above that the weighted average power purchase cost as approved by the Commission in the Tariff Order for FY 2018-19 is lower than the actual weighted average cost for the third quarter of FY 2018-19 (Oct'18 to Dec'18). Hence, fuel surcharge is recoverable in the fourth quarter (period Jan'19- Mar'19) of FY 2018-19.

#### Calculation of Fuel Surcharge:

5. As per the regulation "The Fuel Surcharge (FS) chargeable by the distribution licensee from its consumers for any quarter shall be computed as per the following formula:

$$FS = \frac{C}{E} \text{ Rs./kWh}$$

Where,

$C$  (in Rs. Lakh) = {(Weighted Average Variable Cost of all sources of power purchase during previous quarter in Rs/kWh – Base Weighted Average Variable Cost of all sources of power purchase as approved under Tariff Order for the year under operation in Rs/kWh) x Corresponding Power Purchase from all sources during previous quarter in LU}.

$E$  (in Lakh Units) = Energy sold (metered plus estimated) during previous quarter.”

Based on the above mentioned formula, fuel surcharge is computed.

6. The Fuel Surcharge for the third quarter of FY 2018-19 (Oct'18 to Dec'18) was 0.37 Rs/kWh, which was recoverable during the desired period. The weighted average variable cost as approved by the Hon'ble Commission was 2.44 Rs/kWh in its tariff order for FY 2018-19, which was lesser than the actual variable cost of Rs. 2.66/kWh for the months of Oct'18 to Dec'18.
7. The fuel surcharge for the fourth quarter of FY 2018-19 (Jan'19-Mar'19) is computed as follows:

Sl. No.	Fuel Surcharge for 4th Quarter (Jan'19 - Mar'19)	Units	Oct'18-Dec'18
1	Weighted Avg variable cost of all sources of power purchase during previous Quarter	Rs/kWh	2.66
2	Base weighted avg variable cost as approved	Rs/kWh	2.45
3	Power Purchase during Previous Quarter (Oct'18 - Dec'18)	MU	4657.48
4	Energy Sold during previous quarter (Oct'18 - Dec'18)	MU	4131.11
5	<b>FSA for 4th Quarter of FY 2018-19</b>	<b>Rs/kWh</b>	<b>0.23</b>

8. The power purchase quantum and cost approved by the Hon'ble Commission in Tariff Order for FY 2018-19 is as follows:

Approved by RERC	FY 2018-19
Total Quantum (MU)	24511
Total Variable Cost (Rs Cr)	6540
Total Fixed Cost (Rs Cr)	2474
Total Power Purchase Cost (Rs Cr)	9014
<b>Weighted avg Power Purchase Cost (Rs/kWh)</b>	<b>3.68</b>

### Conclusion:

9. The Discom summarises that it has not included bills to M/s Adani Power Rajasthan Limited, which had to be paid due to Change in Law by the month of December 2018 and this bill will be recovered in the form of Special FSA as the Discom has filed a petition of Special FSA to the Hon'ble Commission. The Discom have requested the Hon'ble Commission to allow recovery of the payment made to M/s Adani Power Rajasthan Limited in form of Special FSA. In case the Hon'ble Commission does not grant Special FSA to the Discom, the Discom shall recompute and refile the FSA petition of this Quarter.

10. As per above calculation the fuel surcharge of Rs. 0.23/ unit is computed for the fourth quarter (January'19 to March'19) of FY 2018-19, which is less than the average ceiling limit of Rs. 0.37/kWh approved by the Hon'ble commission (i.e. 10% of the weighted average power purchase cost approved by the Hon'ble Commission in its Tariff Order for FY 2018-19). The fuel surcharge of 0.23 Rs/kWh will be recoverable for fourth quarter of FY 2018-19 (January'19 to March'19).