

## **EXPLANATION FOR THE NOTIFICATION DATED 01.04.2016 ON ESCALATION FACTORS AND OTHER PARAMETERS**

In pursuance of Clause 5.6 (vi) of Ministry of Power (MOP) Notification on “Guidelines for Determination of Tariff by Bidding Process for procurement of Power by Distribution Licensees”, dated 19.1.2005, as amended from time to time, the CERC had been notifying various escalation factors and other parameters, every six months, for the purpose of bid evaluation and payment. Clause 5.6 (vi) of the guidelines updated as on 21.7.2010, is as under:

*Following shall be notified and updated by the CERC every six months:*

- 1. Escalation rate for domestic coal. (Separately for evaluation and payment)*
- 2. Escalation rate for domestic gas. (Separately for evaluation and payment)*
- 3. Escalation rates for different escalable sub-components of energy charge for plants based on imported coal. (Separately for evaluation and payment)*
- 4. Escalation rates for inland transportation charges for coal (Separately for evaluation and payment)*
- 5. Escalation rates for inland transportation charges for gas (Separately for evaluation and payment)*
- 6. Escalation rate for different escalable sub-components of energy charge for plants based on imported gas. (Separately for evaluation and payment)*
- 7. Inflation rate to be applied to indexed capacity charge component.*
- 8. Inflation rate to be applied to indexed energy charge component in cases of captive fuel source.*
- 9. Discount rate to be used for bid evaluation.*
- 10. Dollar-Rupee exchange variation rate. (For the purpose of evaluation)*
- 11. Escalation for normative transmission charges (For the purpose of evaluation)”*

2. The MOP has, vide its resolution dated 21.9.2013 and 9.11.2013, issued new guidelines for Case 2 and Case 1 bidding, respectively. As per these new guidelines, the CERC is not required to notify the escalation factors and other parameters for the purpose of evaluation. Accordingly, the Commission issued an Order (in Petition No.002/SM/2014) dated 21.2.2014 as under:

*"9. We direct that the notification of escalation rates for evaluation applicable for the six months commencing 1.4.2014 and onwards shall be discontinued in accordance with the provisions discussed in Para 3 to 7 of this order."*

3. However, as required under the MOP Guidelines dated 19.1.2005, as amended from time to time, the CERC shall continue to notify the escalation rates for the purpose of payment. The explanation for the present notification applicable for the period from 1.4.2016 to 30.9.2016 is provided in the following paras.

4. The methodology for computing the escalation rate for imported coal for payment has been followed as per the CERC Order (in Petition No.308/SM/2013) dated 23.12.2013. In case of other parameters (other than escalation rate for imported coal for payment), the methodology (including basis for selection of prices/price indices) for computing the escalation factors for payment for the current notification may be seen from the methodology that was used for computing the escalation factors and other parameters published in the notification dated 24.11.2006, 3.7.2009 and 28.12.2010 (see CERC website [www.cercind.gov.in](http://www.cercind.gov.in)).

5. The data on domestic gas prices received from Ministry of Petroleum and Natural Gas (MOPNG) is available in Dollar terms. Therefore, the price of gas has been converted in terms of rupees based on monthly average RBI reference rate for dollar. From 1st November 2014, MOPNG revised the price of gas and changed calorific value of gas from NCV to GCV basis.

## **6. Escalation Factors and other parameters for Payment**

The annual escalation rates for payment have been computed based on latest twelve months data. The steps followed while computing the escalation rates are as under.

Step 1: Average index values for the appropriate six months period computed.

Step 2: A half-yearly escalation rate computed based on the average six months index.

Step 3: Annual escalation rate computed by multiplying half-yearly escalation rate by two.

Step 4: The annual escalation rate for parameters that require combining of two or more series in pre-determined proportion has been determined by combining each data point of two or more series in the pre-determined proportion to arrive at a composite new single series and then the annual escalation rate has been determined.

### **(1) Escalation Rate for Domestic Coal Component**

The escalation rate for domestic coal for payment has been computed based on the data on WPI for Non-Coking coal for the period from January 2015 to December 2015. The escalation rate for domestic coal has been computed as under.

<b>Table-1: ESCALATION RATE FOR DOMESTIC COAL</b>	
<b>Period</b>	<b>WPI (Non-Coking Coal)</b>
Jan-15	178.1
Feb-15	178.1
Mar-15	178.1
Apr-15	178.1
May-15	178.1
Jun-15	178.1
Jul-15	178.1
Aug-15	178.1
Sep-15	178.1
Oct-15	178.1
Nov-15	178.1
Dec-15	178.1
Average Index (Jan 15-Jun 15)	178.10
Average Index (July 15-Dec 15)	178.10
Half-Yearly Inflation	0.00%
Annual Inflation	0.00%

The above computed annual inflation (0.00%) is notified as escalation rate for domestic coal for payment.

### **(2) Escalation Rate for Domestic Gas**

The escalation rate for domestic gas has been computed based on the data on consumer price of gas for the period from January 2015 to December 2015. The data has been collected from Ministry of Petroleum & Natural Gas (MOPNG) and GAIL (India) Ltd. Composite index, using weight of 90% to Consumer Price off-shore and 10% to Consumer Price for North-Eastern States, has been developed and used for computing the escalation rate for domestic gas as under:

<b>Period</b>	<b>Consumer Prices Off-shore (Landfall point and On-shore) (₹/'000' cubic metre)</b>	<b>Consumer Prices For North-Eastern States (₹/'000' cubic metre)</b>	<b>Composite Index*</b>
Jan-15	11312.67	6787.60	10860
Feb-15	11278.44	6767.06	10827
Mar-15	11353.38	6812.03	10899
Apr-15	10527.47	6325.52	10107
May-15	10703.14	6431.07	10276
Jun-15	10713.28	6437.16	10286
Jul-15	10675.40	6414.41	10249
Aug-15	10916.53	6559.29	10481
Sep-15	11108.70	6674.76	10665
Oct-15	8946.78	5363.38	8588
Nov-15	9092.42	5450.69	8728
Dec-15	9158.22	5490.13	8791
Average Index (Jan 15-June 15)			10543
Average Index (July 15-Dec 15)			9584
Half-Yearly Escalation			-9.09%
Annual Escalation			-18.19%
* Composite Index using weight of 90% to Consumer Price Off-shore and 10% to consumer price North-Eastern States.			

The annual escalation rate computed in the above table (-18.19%) is notified as escalation rate for domestic gas for payment.

### **(3) Escalation Rate for different escalable sub-components of energy charge for plants based on imported coal**

#### ***(3.1) Escalation Rate for Imported Coal***

The escalation rate for imported coal has been computed based on price of South African Coal, Australian Coal and Indonesian Coal for the period from March 2015 to February 2016. The escalation rate for imported coal for payment has been computed as under:

<b>Component Index</b>	<b>Data Series</b>	<b>Annual Escalation Rate</b>
Composite series using weight of 25% to API4 (Price of South African Coal), 25% to GlobalCOAL (Price of Australian Coal), 25% to Argus ICI 3 (Price of Indonesian Coal) and 25% to Platts CI (Price of Indonesian Coal).	Weekly/Daily data from March 2015 to February 2016	-26.51%

The annual escalation rate computed in the above table (-26.51%) is notified as escalation rate for imported coal for payment.

### ***(3.2) Escalation Rate for Transportation of Imported Coal***

The escalation rate for transportation of imported coal has been computed based on FOB price of 380cst Singapore bunker fuel for the period from March 2015 to February 2016. The escalation rate for transportation of imported coal for payment has been computed as under:

<b>Table-3.2: ESCALATION RATE FOR TRANSPORTATION OF IMPORTED COAL</b>		
<b>Component Index</b>	<b>Data Series</b>	<b>Annual Escalation Rate</b>
Singapore Bunker Price Index	Monthly data from March 2015 to February 2016	-75.16%

The annual escalation rate computed in the above table (-75.16%) is notified as escalation rate for transportation of imported coal for payment.

### ***(3.3) Escalation Rate for Inland Handling of Imported Coal***

The escalation rate for inland handling of imported coal has been computed based on the data on WPI-all commodities and CPI-IW for the period from January 2015 to December 2015. Composite index, based on WPI-all commodities with 60% weight and CPI-IW with 40% weight has first been developed, which then has been used for computing the escalation rate. The data on WPI and CPI-IW has been taken from the website of Ministry of Commerce & Industry and Labour Bureau, respectively. The escalation rate for inland handling of imported coal has been computed as under:

<b>Table-3.3: ESCALATION RATE FOR INLAND HANDLING OF IMPORTED COAL</b>			
<b>Period</b>	<b>WPI</b>	<b>CPI</b>	<b>Composite Index*</b>
Jan-15	177.3	254.0	208.0
Feb-15	175.6	253.0	206.6
Mar-15	176.1	254.0	207.3
Apr-15	176.4	256.0	208.2
May-15	178.0	258.0	210.0
Jun-15	179.1	261.0	211.9
Jul-15	177.6	263.0	211.8
Aug-15	176.5	264.0	211.5
Sep-15	176.5	266.0	212.3
Oct-15	176.9	269.0	213.7
Nov-15	177.5	270.0	214.5
Dec-15	176.8	269.0	213.7

Average Index (Jan 15-Jun 15)	208.65
Average Index (July 15-Dec 15)	212.91
Half-Yearly Inflation	2.04%
Annual Inflation	4.09%
*Composite Index using weight of 60% to Wholesale Price Index (WPI) and 40% to Consumer Price Index (CPI).	

The annual inflation computed in the above table (4.09%) is notified as escalation rate for inland handling charges of imported coal for payment.

#### (4) Escalation rates for inland transportation charges for coal

The escalation for inland transportation charges for coal has been computed based on the data on coal freight rates (₹/Tonne) for the period from January 2015 to December 2015. The data has been collected from Ministry of Railways. The data on coal freight rate for 125 km, 500 km, 1000 km, 2000 km and 3000 km has been used for computing the escalation rate for inland transportation charges for coal for distance upto 125 km, upto 500 km, upto 1000 km, upto 2000 km and beyond 2000 km respectively. The escalation rate for inland transportation charges of coal for payment has been computed as under:

Period	Coal Freight Rate for 125 km	Coal Freight Rate for 500 km	Coal Freight Rate for 1000 km	Coal Freight Rate for 2000 km	Coal Freight Rate for 3000 km
Jan-15	193.4	660.6	1269.2	2350.8	3007.1
Feb-15	193.4	660.6	1269.2	2350.8	3007.1
Mar-15	193.4	660.6	1269.2	2350.8	3007.1
Apr-15	205.6	702.4	1349.5	2499.7	3197.5
May-15	205.6	702.4	1349.5	2499.7	3197.5
Jun-15	205.6	702.4	1349.5	2499.7	3197.5
Jul-15	205.6	702.4	1349.5	2499.7	3197.5
Aug-15	205.6	702.4	1349.5	2499.7	3197.5
Sep-15	205.6	702.4	1349.5	2499.7	3197.5
Oct-15	205.6	702.4	1349.5	2499.7	3197.5
Nov-15	205.6	702.4	1349.5	2499.7	3197.5
Dec-15	205.6	702.4	1349.5	2499.7	3197.5
Average Rate (Jan 15-June 15)	199.50	681.50	1309.35	2425.25	3102.30
Average Rate (Jul 15-Dec 15)	205.60	702.40	1349.50	2499.70	3197.50
Half-Yearly Escalation Rate	3.058%	3.067%	3.066%	3.070%	3.069%
Annual Escalation Rate	6.12%	6.13%	6.13%	6.14%	6.14%

The annual escalation rates computed in the above table (6.12%, 6.13%, 6.13%, 6.14% and 6.14% respectively applicable upto 125 km, upto 500 km, upto 1000 kms, upto 2000 kms and beyond 2000 kms) are notified as annual escalation rates for inland transportation charges of coal for payment.

**(5) Escalation rate for inland transportation charges for gas**

The Escalation Rate for Inland Transportation Charges for Gas has been computed based on the data on transportation charges of gas along HVJ pipeline charged by GAIL for the period from January 2015 to December 2015. The data has been collected from Ministry of Petroleum & Natural Gas. The escalation rate for transportation of natural gas has been computed as under:

<b>Period</b>	<b>Transportation charges along HVJ pipeline (₹/1000 SCM)</b>
Jan-15	856
Feb-15	856
Mar-15	856
Apr-15	856
May-15	856
Jun-15	856
Jul-15	856
Aug-15	856
Sep-15	856
Oct-15	856
Nov-15	856
Dec-15	856
Average Charges (Jan 15-Jun 15)	856
Average Charges (Jul 15-Dec 15)	856
Half-Yearly Escalation	0.00%
Annual Escalation	0.00%

The annual escalation rate computed in the above table (00.00%) is notified as escalation rate for transportation charges of gas.

**(6) Escalation rate for different escalable sub-components of energy charge for plants based on imported gas**

**(6.1) Escalation rate for imported gas**

The escalation rate for imported gas for payment has been computed based on Japan JCC LNG price for the period from March 2015 to February 2016. The data has

been subscribed from Platts. The computation of escalation rate for imported gas can be seen from the following table.

<b>Table-6.1: ESCALATION RATE FOR IMPORTED GAS</b>		
<b>Component Index</b>	<b>Data Series</b>	<b>Annual Escalation Rate</b>
Japan JCC LNG Price Index	Monthly data from March 2015 to February 2016	-20.36%

The annual escalation rate computed in the above table (-20.36%) is notified as escalation rate for imported gas for payment.

### **(6.2) Escalation rate for transportation of imported gas**

The escalation rate for transportation of imported gas has been computed based on FOB price of 380cst Singapore bunker fuel for the period from March 2015 to February 2016. The escalation rate for transportation of imported gas for payment has been computed as under:

<b>Table-6.2: ESCALATION RATE FOR TRANSPORTATION OF IMPORTED GAS</b>		
<b>Component Index</b>	<b>Data Series</b>	<b>Annual Escalation Rate</b>
Singapore Bunker Price Index	Monthly data from March 2015 to February 2016	-75.16%

The annual escalation rate computed in the above table (-75.16%) is notified as escalation rate for transportation of imported gas for payment.

### **(6.3) Escalation rate for inland handling of imported gas**

The escalation rate for inland handling of imported gas has been computed based on the data on WPI-all commodities and CPI-IW for the period from January 2015 to December 2015. Composite index, based on WPI with 60% weight and CPI-IW with 40% weight has first been developed, which then has been used for computing the escalation rate. The data on WPI and CPI-IW has been taken from the website of Ministry of Commerce & Industry and Labour Bureau, respectively. The escalation rate for inland handling of imported gas has been computed as under:

<b>Table-6.3: ESCALATION RATE FOR INLAND HANDLING OF IMPORTED GAS</b>			
<b>Period</b>	<b>WPI</b>	<b>CPI</b>	<b>Composite Index*</b>
Jan-15	177.3	254.0	208.0
Feb-15	175.6	253.0	206.6



Mar-15	176.1	254.0	207.3
Apr-15	176.4	256.0	208.2
May-15	178.0	258.0	210.0
Jun-15	179.1	261.0	211.9
Jul-15	177.6	263.0	211.8
Aug-15	176.5	264.0	211.5
Sep-15	176.5	266.0	212.3
Oct-15	176.9	269.0	213.7
Nov-15	177.5	270.0	214.5
Dec-15	176.8	269.0	213.7
Average Index (Jan 15-Jun 15)			208.65
Average Index (July 15-Dec 15)			212.91
Half-Yearly Inflation			2.04%
Annual Inflation			4.09%
*Composite index using weight of 60% to Wholesale Price Index (WPI) and 40% to Consumer Price Index (CPI).			

The annual inflation computed in the above table (4.09%) is notified as escalation rate for inland handling charges of imported gas for payment.

#### **(7) Inflation Rate to be applied to Indexed Capacity Charge Component**

The Inflation rate to be applied to Indexed Capacity Charge Component has been computed based on the data on WPI-all commodities and CPI-IW for the period from January 2015 to December 2015. Composite Index, based on WPI with 60% weight and CPI-IW with 40% weight has first been developed, which then has been used for computing the escalation rate. The data on WPI and CPI-IW has been taken from the website of Ministry of Commerce & Industry and Labour Bureau, respectively. The inflation rate has been computed as under:

<b>Period</b>	<b>WPI</b>	<b>CPI</b>	<b>Composite Index *</b>
Jan-15	177.3	254.0	208.0
Feb-15	175.6	253.0	206.6
Mar-15	176.1	254.0	207.3
Apr-15	176.4	256.0	208.2
May-15	178.0	258.0	210.0
Jun-15	179.1	261.0	211.9
Jul-15	177.6	263.0	211.8
Aug-15	176.5	264.0	211.5
Sep-15	176.5	266.0	212.3
Oct-15	176.9	269.0	213.7

Nov-15	177.5	270.0	214.5
Dec-15	176.8	269.0	213.7
Average Index (Jan 15-Jun 15)			208.65
Average Index (July 15-Dec 15)			212.91
Half-Yearly Inflation			2.04%
Annual Inflation			4.09%
*Composite index using weight of 60% to Wholesale Price Index (WPI) and 40% to Consumer Price Index (CPI).			

The annual inflation computed in the above table (4.09%) is notified as Inflation Rate to be applied to Indexed Capacity Charge Component.

**(8) Inflation Rate to be applied to indexed energy charge component in cases of captive fuel source**

Using Consumer Price Index for industrial workers (CPI-IW), Wholesale Price Index for all commodities (WPI-all commodities) and disaggregated WPI series for various commodities used in the captive mining for the period from January 2015 to December 2015, the inflation rate to be applied to indexed energy charge component in cases of captive fuel source has been computed. Before computing the escalation rate, composite index has been arrived at by giving weight of 10% to WPI; 20% to CPI; 10% to Tyres; 10% to Matches, Explosives & Other Chemicals; 25% to Machinery & Machine Tools; and 25% to HSD Oil and the same has been used for computing the escalation rate.

<b>Table-8: INFLATION RATE TO BE APPLIED TO INDEXED ENERGY CHARGE COMPONENT IN CASE OF CAPTIVE MINE COAL SOURCE</b>							
Period	WPI-all commodities	CPI-IW	Wholesale Price Index				Composite Index*
			Tyres	Matches, Explosive & Other Chemicals	Machinery & Machine Tools	High Speed Diesel Oil	
Jan-15	177.3	254.0	177.9	154.2	135.3	200.7	185.74
Feb-15	175.6	253.0	177.7	154.4	135.2	188.4	182.27
Mar-15	176.1	254.0	177.7	154.1	135.0	203.2	186.14
Apr-15	176.4	256.0	176.5	154.3	134.8	195.6	184.52
May-15	178.0	258.0	177.7	154.7	135.0	209.6	188.79
Jun-15	179.1	261.0	177.7	154.8	135.2	212.0	190.16
Jul-15	177.6	263.0	177.8	154.9	135.1	200.8	187.61
Aug-15	176.5	264.0	177.9	154.7	135.1	179.4	182.34
Sep-15	176.5	266.0	178.1	154.8	135.0	174.0	181.39
Oct-15	176.9	269.0	177.8	154.4	134.9	176.5	182.56
Nov-15	177.5	270.0	178.0	153.3	134.9	181.7	184.03
Dec-15	176.8	269.0	178.0	152.1	134.9	181.7	183.64

Average Index (Jan 15-Jun 15)	186.27
Average Index (July 15-Dec 15)	183.59
Half-Yearly Inflation	-1.437%
<b>Annual Inflation</b>	<b>-2.87%</b>
*Composite index using weight of 10% to Wholesale Price Index (WPI), 20% to Consumer Price Index (CPI), 10% to WPI-Tyres, 10% to WPI-Matches, Explosives & other chemicals, 25% to WPI-Machinery & Machine Tools and 25% to WPI-HSD Oil.	

The annual inflation computed in the above table (-2.87%) is notified as inflation rate to be applied to indexed energy charge component in cases of captive fuel source.

7. The data series for API-4, Global Coal Index, Argus ICI3, Platts CI, Japan JCC LNG Price Index and Singapore 380 CST Bunker Fuel Price Index has been analysed by CERC. The data is not made available for public dissemination since it is paid for and is sourced on a single user subscription.

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