

Coal Price Index applicable for Power Sector published by the CERC: Revision of the Base Year 2017-18=100

I: Introduction

The Central Electricity Regulatory Commission (CERC) has been notifying various escalation rates including the escalation rate for domestic coal for the purpose of bid evaluation and payment. The escalation rate for domestic coal has been computed based on the coal price index (Base Year: 2017-18=100) applicable for power sector developed by the CERC. The CERC has been publishing and updating the coal price index on its website since April, 2018. In this regard, the CERC has been following the methodology that was specified in its order dated 18.10.2019 in Suo Motu Petition No.10/SM/2019, as under:

“28. Considering the submissions made by the stakeholders and views expressed during the public hearing, the Commission has decided the following principles for determining the methodology for compilation of the coal price index:

*(i) **Price Index:** Laspeyres Index is generally used for compilation of price indices (Ex:-Wholesale Price Index and Consumer Price Index i.e. for the purpose of inflation). In their submissions, some of the stakeholders have suggested to use Paasche Index for compilation of the coal price index. The Laspeyres Index uses base period quantities, whereas the Paasche Index uses current period quantities. Paasche Index can be used only when up-to-date data on price and quantity of Non-coking coal is available. Based on the purpose and practicability, the Commission has considered Laspeyres Index for compilation of the coal price index.*

*(ii) **Base Year:** The year 2017-18 has been considered as the base year for compilation of the coal price index. The Commission has already notified the escalation rate for domestic coal applicable till September, 2019. Therefore, the proposed coal price index shall be applicable prospectively.*

*(iii) **Grades of Coal:** Some of the stakeholders have submitted that majority of power producers are using G10-G13 grades of Non-coking coal. However, keeping in view the grades of Non-coking coal used by all power producers through competitive bidding, the Commission has decided to consider G7 to G14 grades of Non-coking coal for compilation of the coal price index.*

*(iv) **Price of Non-coking coal:** Coal India Ltd notifies the pit head run of mine (ROM) price of non-coking coal applicable for power sector (a) for all subsidiaries of CIL excluding WCL and (b) for WCL separately. These prices reflect adequately the changes in the price of non-coking coal applicable for power sector. Therefore, the Commission has decided to consider the price of WCL and all other subsidiaries of CIL for compilation of the coal price index.*

(v) **Base Year Price:** Base year price shall be the geometric mean of monthly prices of Non-coking coal of the base year. Monthly price of Non-coking coal has been computed on pro-rata basis based on the day of the price increase and the same has been used for computing the base period price.

(vi) **Base Year Weights:** Weights shall be based on the value of Non-coking coal dispatched to power sector. Value of Non-coking coal shall be computed based on monthly price and quantity of Non-coking coal.

(vii) **Exclusion:**

a. Though some of the stakeholders suggested to compute the index based on price including taxes, the same has not been considered for the reason that it would distort the index and inflation figures.

b. Surface Transportation Charges and Sizing Charges are not part of the price of coal notified by CIL and are therefore not considered in the price of coal used for compilation of the coal price index.

29. The Technical Advisory Committee on Statistics of Prices and Cost of Living (TAC on SPCL), Ministry of Statistics and Program Implementation (MOSPI), in its 66th Meeting held on 26th September, 2019, considered and endorsed the above principles (Para 28 (i) to (vi)) for compilation of „Coal Price Index“ for power sector and also made the following Recommendations:

(i) Since the weights for WCL and CIL prices are available with CERC, Weighted Geometric Mean may be used for compiling Elementary Prices Indices, instead of simple Geometric Mean proposed by CERC.

(ii) As the basket comprises of limited grades of Coal (G7-G14), the revision of Base Year may be conducted every three years.

30. Based on recommendations of the TAC on SPCL, the coal price index shall be compiled in the following two stages:

(i) In the first stage, the grade-wise indices (i.e. elementary price index) are calculated using “Jevons Index formula”, basing on the Weighted Geometric Mean of price relatives (i.e. the price change). Price relatives are calculated as the percentage ratios, i.e. by dividing the current price by the base period price and multiplying the quotient by 100.

(ii) In the second stage, these elementary price indices are aggregated using weighted arithmetic mean to obtain coal price indices using Laspeyre’s index formula, which has a fixed base-year weighting diagram operative through the entire life span of the series. The formula used is as under:

$$I = \frac{\sum (I_i \times W_i)}{\sum W_i}$$

Where, \sum represents the summation operation

I = Coal Price Index for G7-G14 grades of coal

W_i = Weight assigned to the I th grade of coal

I_i = Price Index of the I th grade of coal (Elementary Price Index)

31. The period of coal price index from September, 2018 to August, 2019 shall be considered for computing the escalation rate for domestic coal applicable for the period from October, 2019 to March, 2020 (i.e. with one month lag) keeping in view the practice followed for computing the escalation rates for imported coal and imported gas.

32. As recommended by TAC on SPCL of MOSPI, it is decided to revise the base year every 3 years.”

II: Need for revision of the present base year 2017-18

2. As per the above methodology, the coal price index with base year 2017-18 was introduced with effect from April, 2018. The base year of the coal price index needs to be revised every three years and the same was due in 2021-22 with base year 2020-21. The year 2020-21 was not a normal year for selection as base year due to the impact of COVID-19 on various economic activities, including production/consumption of non-coking coal used in the power sector.

3. With regard to the selection of base year, it is appropriate to follow certain criteria. While selecting the base year for WPI and CPI, the Government of India follow certain standard criteria. Similarly, the CERC may need to consider the following criteria for selecting the new base year for coal price index:

(i) Normal Year: A normal year, i.e., a year in which there are no abnormalities in the level of production/consumption of non-coking coal, import/export of non-coking coal and in the price level and price variations of non-coking coal;

(ii) Availability of reliable data: A year for which reliable data on quantum and price of non-coking coal are available; and

(iii) Recent origin: A year as recent as possible.

III: Examination of the criteria for selection of a new base year

4. For selecting the normal year, the data on quantum of coal dispatched to power sector and its price has been examined. Table-1 provides the data on quantum of coal dispatched to power sector for the period from 2018-19 to 2022-23. It can be observed from the Table

that there is a dip in the quantum of coal in 2020-21 and sharp increase in the quantum of coal in the following year 2021-22 due to base effect. It can also be observed from the Table that the quantum of coal dispatched to power sector witnessed a normal increase in the year 2022-23.

Table-1: Quantum of Coal Dispatched to Power Sector

Grade	Quantum of Coal Dispatched to Power Sector (Lakh Tonnes)				
	2018-19	2019-20	2020-21	2021-22	2022-23
G1	0.02	0.03	0.00	0.00	0.00
G2	0.37	0.00	0.00	0.00	0.00
G3	18.40	14.19	9.62	6.06	10.83
G4	126.31	116.22	93.92	91.50	116.57
G5	92.65	103.45	62.61	57.01	55.35
G6	56.02	34.95	35.32	46.39	44.84
G7	123.30	115.46	82.32	97.09	119.12
G8	237.31	239.59	214.84	241.73	289.46
G9	248.54	145.39	159.68	170.92	181.65
G10	915.89	854.19	818.83	907.20	982.99
G11	1270.76	1382.45	1262.51	1607.35	1673.67
G12	455.66	460.64	519.93	735.33	777.01
G13	433.90	327.27	302.29	699.40	745.69
G14	376.67	350.89	423.55	679.74	734.88
G15	20.47	38.07	100.23	67.41	64.24
G16	19.60	14.61	9.40	14.00	4.04
G17	12.07	12.10	5.29	5.33	5.38
Total	4407.93	4209.51	4100.34	5426.46	5805.72
Annual Increase/ decrease in Total	-	-4.50	-2.59	32.34	6.99

Note: Quantum of coal dispatched to power sector includes the quantum from all subsidiaries of CIL including WCL.

Source: CIL

5. The Coal India Ltd (CIL) notifies the revised coal prices from time to time. In the recent years, the coal prices have been revised in January, 2018 followed by November, 2020 and May, 2023. The coal prices applicable for power utilities have been examined for the period from 2018-19 to 2022-23. The CIL notifies the coal prices for all subsidiaries of CIL excluding Western Coalfields Ltd (WCL) and WCL separately, therefore, the coal prices have been examined accordingly. It can be observed from Table-2 that the price revision (generally with increase in prices) took place only once during the period under reference. The variation in the price of non-coking coal in both the cases (in case of CIL

excluding WCL and WCL) was not significant and the variation was less than general inflation.

Table-2: Price of Non-coking Coal applicable for power utilities from April 2018 to March 2023

Grade	Price of Non-coking Coal applicable for power utilities w.e.f 9.1.2018*		Price of Non-coking Coal applicable for power utilities w.e.f 1.12.2020**		Increase/Decrease in Price of Non-coking Coal	
	CIL	WCL	CIL	WCL	CIL	WCL
G1	-	-	-	-	-	-
G2	3288	3288	3298	3298	0%	0%
G3	3144	3144	3154	3154	0%	0%
G4	3000	3000	3010	3010	0%	0%
G5	2737	2737	2747	2747	0%	0%
G6	2317	2524	2327	2534	0%	0%
G7	1926	2311	1936	2321	1%	0%
G8	1465	1757	1475	1767	1%	1%
G9	1140	1368	1150	1378	1%	1%
G10	1024	1228	1034	1238	1%	1%
G11	955	1145	965	1155	1%	1%
G12	866	1063	896	1073	3%	1%
G13	817	980	827	990	1%	1%
G14	748	897	758	907	1%	1%
G15	590	708	600	718	2%	1%
G16	504	604	514	614	2%	2%
G17	447	536	457	546	2%	2%

Source: * CIL Notification dated 8.1.2018 and ** CIL Notification dated 27.11.2020.

Note: CIL: Coal India Ltd; WCL: Western Coalfields Ltd

IV: Proposal of the new base year

6. **New Base Year:** It can be inferred from the above analysis that there are no abnormalities in the quantum and price of non-coking coal dispatched to power sector during the year 2022-23. The data on quantum and price of non-coking coal is provided by the CIL and the same is reliable. The year 2022-23 is the recent year. The year 2022-23 is, therefore, meeting the general criteria set for a normal year, and the same is being proposed as the new base year for the coal price index published by the CERC.

7. While compiling the coal price index with the new base year, the method of calculation of coal price index shall be as specified in the CERC order dated 18.10.2019 in Suo Motu Petition No.10/SM/2019.

8. **Linking Factor:** In order to maintain continuity in the time series data on coal price index, it is imperative to provide a linking factor so that the new series may be compared with the outgoing one. While compiling the Wholesale Price Index, the office of the Economic Advisor, Ministry of Commerce & Industry has been using the arithmetic conversion method to link the various prices index series. Therefore, while compiling the coal price index, it is proposed to use the arithmetic conversion method to link the various coal price index series published by the CERC. The linking factor for the coal price index is provided in the Table-3 below.

Table-3: Linking Factor for Coal Price Index

Coal Price Index (Base: 2017-18) for 2022-23	Linking Factor
108.7	1.087

9. **Application of the Coal Price Index with new base year 2022-23:** The coal price index with the new base year (Base: 2022-23=100) shall be used for the computation of escalation rate for domestic coal to be notified in October 2024 (six-monthly notification) and onwards.
