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Government of India

Ministry of Coal

O/o Nominated Authority

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120-F, Shastri Bhavan, New Delhi

Date: 20.07.2022

**OFFICE MEMORANDUM**

**Sub: Roll-out of National Lignite Index with Base year 2021-22.**

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The Ministry of Coal (MoC) has decided to develop a National Lignite Index (NLI) for facilitating auction of lignite mines on revenue share basis. In order to arrive at the revenue share based on market prices of Lignite, National Lignite Index (NLI) has been conceptualized. The concept and design of the Index as well as the Base Prices is similar to that of National Coal Index and have been developed by the Indian Statistical Institute, Kolkata. National Lignite Index (NLI) is meant to track price movements of Lignite in the Indian market.

2. National Lignite Index is a weighted average of change in the price level of Lignite with base year as FY 2021-22. The Index is compiled and presented at two Sub-indices level which are group of various grades. These Sub-indices are average to compile the index for Lignite top grade and Bottom grade and finally for the whole of National Lignite Index.

3. For compilation of the Index, both sales channel .i.e. captive and commercial, as exist today, are considered. The table of weights on various price channels for computation of the National Lignite Index is given below:-

Grade	Commercial	Captives	Aggregate
G11	$u_{11} \times w_{11,m} = 4.08\%$	$u_{11} \times w_{11,c} = 0.35\%$	$u_{11} = 4.43\%$
G13	$u_{13} \times w_{13,m} = 3.08\%$	$u_{13} \times w_{13,c} = 2.05\%$	$u_{13} = 5.13\%$
G14	$u_{14} \times w_{14,m} = 6.12\%$	$u_{14} \times w_{14,c} = 3.25\%$	$u_{14} = 9.37\%$
G15	$u_{15} \times w_{15,m} = 22.51\%$	$u_{15} \times w_{15,c} = 21.97\%$	$u_{15} = 44.48\%$
G16	$u_{16} \times w_{16,m} = 0.43\%$	$u_{16} \times w_{16,c} = 36.07\%$	$u_{16} = 36.49\%$
G17 and below	$u_{17} = 0.09\%$		$u_{17} = 0.09\%$
All lignite	<b>36.30%</b>	<b>67.70%</b>	<b>100%</b>
Sub-indices Top Grade	<b>13.28%</b>	<b>5.65%</b>	<b>18.93%</b>
Sub-indices Bottom Grade	<b>23.03%</b>	<b>58.04%</b>	<b>81.07%</b>

4. The source of data for the National Lignite Index (NLI) are monthly quantity of lignite used for captive and commercial purpose and its value from of all 20(Twenty) operational Lignite mines, as exist today.
5. The National Lignite Index and Base prices with Base year 2021-22, for the financial year 2017-18 to 2021-22 is placed in the Annexures.

  
**(Ajitesh Kumar)**  
Director

**Website of the Ministry**

**Table A: National Lignite Index (Base 2017-18) for the Financial year 2017-18 to 2021-22**

Grade	Apr'17	May'17	Jun'17	Jul'17	Aug'17	Sep'17	Oct'17	Nov'17	Dec'17	Jan'18	Feb'18	Mar'18
G11	76	74	71	72	86	86	86	79	75	75	72	74
G13	75	76	77	78	78	75	77	75	73	72	73	74
G14	58	59	57	55	55	55	56	59	61	59	62	61
G15	104	104	96	109	109	107	92	89	92	83	86	86
G16	116	102	112	113	105	105	111	115	115	114	115	115
G17 and below	90	90	90	91	91	91	90	92	106	104	100	105
<b>All lignite</b>	<b>101</b>	<b>96</b>	<b>96</b>	<b>102</b>	<b>100</b>	<b>99</b>	<b>95</b>	<b>94</b>	<b>96</b>	<b>91</b>	<b>93</b>	<b>93</b>
<b>G14 and above</b>	<b>67</b>	<b>67</b>	<b>66</b>	<b>65</b>	<b>69</b>	<b>68</b>	<b>69</b>	<b>68</b>	<b>67</b>	<b>66</b>	<b>67</b>	<b>67</b>
<b>G15 and below</b>	<b>109</b>	<b>103</b>	<b>104</b>	<b>111</b>	<b>108</b>	<b>106</b>	<b>100</b>	<b>101</b>	<b>102</b>	<b>97</b>	<b>99</b>	<b>99</b>

Grade	Apr'18	May'18	Jun'18	Jul'18	Aug'18	Sep'18	Oct'18	Nov'18	Dec'18	Jan'19	Feb'19	Mar'19
G11	82	81	83	93	93	92	82	79	79	79	80	76
G13	82	83	84	83	85	83	82	81	81	82	81	82
G14	66	65	63	61	66	67	71	69	75	74	71	73
G15	111	104	105	104	138	139	105	104	104	104	139	107
G16	107	107	107	93	96	97	106	103	101	90	96	108
G17 and below	100	104	115	115	117	116	116	116	115	115	115	115
<b>All lignite</b>	<b>102</b>	<b>99</b>	<b>100</b>	<b>94</b>	<b>111</b>	<b>112</b>	<b>100</b>	<b>98</b>	<b>98</b>	<b>94</b>	<b>111</b>	<b>101</b>
<b>G14 and above</b>	<b>74</b>	<b>74</b>	<b>74</b>	<b>75</b>	<b>77</b>	<b>77</b>	<b>77</b>	<b>75</b>	<b>78</b>	<b>77</b>	<b>76</b>	<b>76</b>
<b>G15 and below</b>	<b>109</b>	<b>105</b>	<b>106</b>	<b>99</b>	<b>119</b>	<b>120</b>	<b>106</b>	<b>103</b>	<b>102</b>	<b>98</b>	<b>120</b>	<b>107</b>

Grade	Apr'19	May'19	Jun'19	Jul'19	Aug'19	Sep'19	Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20
G11	88	89	92	92	97	101	101	89	86	86	84	79
G13	86	86	92	91	90	91	91	90	90	90	89	91
G14	69	71	67	68	65	71	73	72	74	74	75	76
G15	101	101	102	102	101	100	83	79	80	106	101	101
G16	101	100	100	100	104	104	105	103	103	48	106	104
G17 and below	116	116	116	115	115	112	109	109	109	109	109	109



<b>All lignite</b>	<b>97</b>	<b>97</b>	<b>97</b>	<b>97</b>	<b>98</b>	<b>98</b>	<b>91</b>	<b>88</b>	<b>89</b>	<b>80</b>	<b>99</b>	<b>98</b>
<b>G14 and above</b>	<b>78</b>	<b>79</b>	<b>80</b>	<b>80</b>	<b>79</b>	<b>83</b>	<b>84</b>	<b>81</b>	<b>81</b>	<b>81</b>	<b>81</b>	<b>81</b>
<b>G15 and below</b>	<b>101</b>	<b>101</b>	<b>101</b>	<b>101</b>	<b>102</b>	<b>102</b>	<b>93</b>	<b>90</b>	<b>90</b>	<b>80</b>	<b>103</b>	<b>103</b>

<b>Grade</b>	<b>Apr'20</b>	<b>May'20</b>	<b>Jun'20</b>	<b>Jul'20</b>	<b>Aug'20</b>	<b>Sep'20</b>	<b>Oct'20</b>	<b>Nov'20</b>	<b>Dec'20</b>	<b>Jan'21</b>	<b>Feb'21</b>	<b>Mar'21</b>
G11	91	93	89	98	103	103	79	85	87	85	88	82
G13	98	99	99	90	89	88	93	97	96	98	100	100
G14	80	80	79	79	76	91	96	101	98	106	97	98
G15	98	98	90	107	108	110	88	98	98	87	97	96
G16	103	112	106	115	93	110	98	100	100	110	107	105
G17 and below	109	109	109	109	109	109	93	93	92	92	92	92
<b>All lignite</b>	<b>97</b>	<b>101</b>	<b>96</b>	<b>106</b>	<b>98</b>	<b>107</b>	<b>92</b>	<b>98</b>	<b>98</b>	<b>98</b>	<b>100</b>	<b>99</b>
<b>G14 and above</b>	<b>87</b>	<b>88</b>	<b>87</b>	<b>87</b>	<b>86</b>	<b>93</b>	<b>91</b>	<b>96</b>	<b>95</b>	<b>99</b>	<b>96</b>	<b>95</b>
<b>G15 and below</b>	<b>100</b>	<b>104</b>	<b>98</b>	<b>111</b>	<b>101</b>	<b>110</b>	<b>92</b>	<b>99</b>	<b>99</b>	<b>97</b>	<b>101</b>	<b>100</b>

<b>Grade</b>	<b>Apr'21</b>	<b>May'21</b>	<b>June'21</b>	<b>July'21</b>	<b>Aug'21</b>	<b>Sept'21</b>	<b>Oct'21</b>	<b>Nov'21</b>	<b>Dec'21</b>	<b>Jan'22</b>	<b>Feb'22</b>	<b>Mar'22</b>
G11	90	92	98	100	109	86	106	99	106	114	104	101
G13	99	101	100	98	99	102	98	102	101	99	100	101
G14	106	114	102	86	85	85	98	100	103	111	105	113
G15	93	86	90	92	94	102	106	102	111	104	104	123
G16	100	100	101	101	99	99	99	100	99	101	101	99
G17 and below	98	98	98	98	100	100	102	105	93	94	104	111
<b>All lignite</b>	<b>97</b>	<b>95</b>	<b>96</b>	<b>95</b>	<b>96</b>	<b>99</b>	<b>102</b>	<b>101</b>	<b>105</b>	<b>104</b>	<b>103</b>	<b>111</b>
<b>G14 and above</b>	<b>100</b>	<b>105</b>	<b>100</b>	<b>92</b>	<b>94</b>	<b>90</b>	<b>100</b>	<b>100</b>	<b>103</b>	<b>108</b>	<b>103</b>	<b>107</b>
<b>G15 and below</b>	<b>96</b>	<b>93</b>	<b>95</b>	<b>96</b>	<b>97</b>	<b>101</b>	<b>103</b>	<b>101</b>	<b>106</b>	<b>102</b>	<b>103</b>	<b>112</b>

**Table B: Base Prices for the Financial year 2017-18 to 2021-22**

Grade	Apr'17	May'17	Jun'17	Jul'17	Aug'17	Sep'17	Oct'17	Nov'17	Dec'17	Jan'18	Feb'18	Mar'18
G11	1372	1336	1286	1311	1560	1553	1554	1430	1365	1354	1311	1336
G12	1206	1197	1177	1197	1322	1290	1309	1235	1184	1172	1158	1178
G13	1040	1058	1068	1083	1083	1028	1065	1039	1004	990	1005	1021
G14	1033	1039	1019	975	973	976	998	1057	1092	1042	1106	1077
G15	1996	2007	1863	2089	2092	2048	1777	1721	1777	1604	1674	1670
G16	2176	1913	2116	2120	1984	1980	2085	2158	2158	2141	2161	2170
G17 and below	1578	1575	1574	1580	1580	1580	1576	1601	1853	1820	1748	1838

Grade	Apr'18	May'18	Jun'18	Jul'18	Aug'18	Sep'18	Oct'18	Nov'18	Dec'18	Jan'19	Feb'19	Mar'19
G11	1482	1471	1511	1690	1710	1693	1491	1439	1435	1437	1443	1382
G12	1307	1305	1334	1413	1436	1410	1310	1278	1275	1283	1280	1257
G13	1132	1139	1157	1136	1161	1128	1129	1117	1114	1128	1117	1131
G14	1158	1147	1116	1065	1141	1182	1277	1227	1340	1324	1258	1294
G15	2121	2004	2019	2005	2625	2628	2027	2004	1991	2000	2634	2055
G16	2021	2010	2012	1745	1805	1818	1995	1930	1899	1701	1810	2024
G17 and below	1737	1807	2011	2009	2045	2027	2029	2017	2011	2010	2010	2014

Grade	Apr'19	May'19	Jun'19	Jul'19	Aug'19	Sep'19	Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20
G11	1591	1611	1676	1666	1759	1842	1833	1624	1565	1565	1530	1431
G12	1388	1396	1472	1457	1499	1545	1539	1428	1402	1403	1382	1342
G13	1185	1180	1268	1248	1239	1248	1245	1233	1240	1241	1234	1252
G14	1205	1229	1166	1198	1124	1260	1294	1276	1316	1324	1341	1369
G15	1944	1941	1958	1961	1952	1933	1616	1544	1571	2031	1945	1953
G16	1893	1890	1875	1884	1950	1949	1973	1946	1930	900	1985	1958
G17 and below	2015	2015	2018	2010	2007	1952	1902	1902	1901	1903	1901	1901



Grade	Apr'20	May'20	Jun'20	Jul'20	Aug'20	Sep'20	Oct'20	Nov'20	Dec'20	Jan'21	Feb'21	Mar'21
G11	1650	1680	1603	1786	1862	1870	1424	1542	1571	1546	1596	1488
G12	1507	1531	1491	1511	1545	1544	1357	1445	1454	1457	1493	1445
G13	1364	1381	1379	1236	1229	1218	1290	1349	1337	1369	1390	1402
G14	1435	1450	1447	1450	1383	1613	1719	1806	1740	1871	1749	1759
G15	1885	1888	1759	2057	2073	2125	1727	1903	1905	1668	1867	1844
G16	1929	2114	2000	2165	1757	2069	1836	1880	1888	2067	2007	1984
G17 and below	2381	1900	1901	1903	1907	1904	1617	1616	1611	1602	1609	1603

Grade	Apr'21	May'21	June'21	July'21	Aug'21	Sept'21	Oct'21	Nov'21	Dec'21	Jan'22	Feb'22	Mar'22
G11	1620	1663	1781	1801	1968	1565	1928	1795	1931	2070	1888	1846
G12	1498	1530	1586	1582	1673	1492	1644	1605	1665	1713	1628	1643
G13	1377	1397	1391	1364	1378	1420	1361	1415	1400	1356	1368	1441
G14	1936	2059	1849	1572	1553	1552	1772	1815	1863	1991	1905	2026
G15	1790	1658	1734	1778	1827	1976	2054	1978	2156	2002	2017	2391
G16	1888	1884	1909	1896	1867	1865	1860	1875	1871	1902	1892	1869
G17 and below	1705	1705	1705	1705	1745	1749	1780	1838	1620	1645	1817	1935

## **Standard Operating Procedure for National Lignite Index.**

The Ministry of Coal (MoC) has decided to develop a National Lignite Index (NLI) for facilitating auction of lignite mines. Following recommendation of a High Powered Expert Committee (HPEC), a National Coal Index (NCI) was instituted from April 2019. A similar index for auction of Lignite mines was envisaged to track price movements of Lignite in the Indian market

In the auction process, the National Lignite Index (NLI) and Base Prices (BP) would play very important role. The concept and design of the Index as well as the Base Prices is similar to that of National Coal Index and have been developed by the Indian Statistical Institute, Kolkata. It is envisaged that the NLI would be used in the auction of lignite mines in the same manner as NCI is used in the auction of coal blocks. Specifically, the quantum of revenue share from an auctioned mine would be linked to the movement of NLI.

**2.1 Brief Ingredients of NLI and BP:** NLI is a price index combining the prices of Lignite from all the channels- captive and commercial Prices. The National Lignite Index would encompass all transactions of Lignite in the Indian market:-

- i. various quality grades
- ii. transactions in captive mode
- iii. Commercial transactions through auctions
- iv. Imports excluded

Presently there are Twenty Lignite mines of eight companies including Government and private companies. There are two channels for lignite use, first is captive and second is commercial. Majority of Lignite i.e 65.50% of lignite has been used for captive consumption during FY 2017-18 to FY 2021-22. Whereas, 34.50% of lignite has been sold during FY 2017-18 to FY 2021-22. In lignite sector, there are no Standardized Price and Grade at present as compared to coal sector. For captive and commercial purpose, all the lignite Mines have their own prices mechanism irrespective of grades and channels. Therefore, there is price discrimination as to the captive and commercial use. For computation of NLI, monthly sale volumes and sale values from 20 mines, would be separately identified for various ranges of GCV transaction in the captive mode and commercial transactions through auctions.

For compilation of NLI, monthly quantity of lignite used for captive and commercial purpose and its value for all 20 (Twenty) Lignite mines would be collected and from these two values, Unit Value of lignite would be computed for its use in NLI as well as BP.

### **List of Lignite Mines to be considered for Lignite index and Base price:-**

S.no.	State	Company	Mine
1	Gujrat	GMDCL	RAJPARDI
2	Gujrat	GMDCL	PANANDRO
3	Gujrat	GMDCL	TADKESAR
4	Gujrat	GMDCL	MATA-NO-MADH





5	Gujrat	GMDCL	SURKA
6	Gujrat	GMDCL	UMARSAR
7	Gujrat	GIPCL	VASTAN
8	Gujrat	GIPCL	VALIA
9	Gujrat	GSPL	GHOGHA
10	Rajasthan	RSMML	GIRAL,BARMER
11	Rajasthan	RSMML	MATASUKH,NAGA
12	Rajasthan	RSMML	SONARI,BARMER
13	Rajasthan	BLMCL	KAPURDI
14	Rajasthan	BLMCL	JALIPA
15	Gujrat	GHCL	KHADSALIYA
16	Rajasthan	V.S.LIGNITE	GURHA EAST
17	Rajasthan	NLCIL	Barsingsar Lignite Mine
18	Tamilnaidu	NLCIL	Lignite Mine 1
19	Tamilnaidu	NLCIL	Lignite Mine 1A
20	Tamilnaidu	NLCIL	Lignite Mine 2

Since the lignite market is in transition, the composition of the NLI may be reviewed after two years for incorporating data of new lignite mines and grades which will come up in future.

## 2.2 Exclusion of import data

The aggregated monthly data on domestic transactions and imports during the five financial years 2017-2022 are given below.

Year	Transactions volume (Tonnes)		Transactions value (Million Rupees)		Import volume as % of total volume	Import value as % of total value
	Domestic transacti ons	Imports	Domestic transacti ons	Imports		
2017-18	45184908	10405	82411	117	0.02%	0.14%
2018-19	44887100	19366	78746	403	0.04%	0.51%
2019-20	43071837	54250	75896	1074	0.13%	1.40%
2020-21	37694537	18857	69676	409	0.05%	0.58%
2021-22	49151704	696732	90661	1046	1.40%	1.14%

Since imports comprised less than 2% of all transactions, both in terms of volume and value, these are excluded from the computation of NLI, for now. This decision also makes way for faster computation of the NLI, as the DGCIS data generally becomes available several weeks after the end of a month.

**2.3 Process:-** For computation of NLI, monthly sale volumes and sale values from 20 mines, would be separately indentified for various ranges of GCV in the captive mode and commercial transactions through auctions. Only base price and raw lignite would be considered for NLI & BP. For each grade, sales in captive and commercial modes

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would be treated as separate price channels. All transactions below G16 would be labelled as "G17 or below. Some transactions data are labelled by non-standard GCV ranges and Disaggregation is available only at the annual level, and only by volume. In that case, Annual level break-up of volumes of clubbed quality grades would be used to disaggregate monthly data. In case of RSMM Limited and VS Lignite Power Private Limited, where only a range of GCV is available, break-up of annual sales into standard grades is required. This break-up to be imputed into the monthly transactions of the years. Where no break-up of the sales values is available, the average price would be imputed for all grades. There are cases where, grades may not be available or if available not in commensurate with GCV specifications. In that cases, grades would be properly imputed after a check of the GCV specifications through follow up.

FY 2021-22 has been taken as **base year** for a forward looking index .Geometric mean of monthly unit values of the base year 2021-22 is used in the denominator of the sub-indices for different price channels.The years 2017-22 excluding 2020-21 is chosen as reference period for computation of weights.

For each price channel, monthly unit value of transaction would be determined by dividing aggregate sales value with aggregate sales volume. Channels are for grades G11, G13, G14, G15, G16 and "G17 or below".Separate price channels for captive and commercial transactions.

**The complete list of all the price channels of NLI is given in the table below:-**

G11 commercial	G11 captive
G13 commercial	G13 captive
G14 commercial	G14 captive
G15 commercial	G15 captive
G16 commercial	G16 captive
"G17 and below" commercial	

**Sub-indices** for a particular month in a channel would be the unit value of transaction for that month relative to the unit value in Base Month. Index for a grade is a weighted average of the indices for captive and commercial channels of that grade. Value shares of the two modes in the reference period would be used as weights. There would be two sub-indices, one for G11 to G14 & another for G15 to G17 & below grades.

**National Lignite Index** is a weighted average of the grade specific indices. Value shares of grades in the reference period would be used as weights.

**Base Price** of a grade is a weighted average of monthly unit values in captive and



commercial channels. Volume shares of the modes in the reference period would be used as weights.

**2.4 Weights of each Price Channels in the NLI and Base Prices:** The table of weights on various price channels for computation of the National Lignite Index is given below:-

Grade	Commercial	Captives	Aggregate
<b>G11</b>	$u_{11} \times w_{11,m} = 4.08\%$	$u_{11} \times w_{11,c} = 0.35\%$	$u_{11} = 4.43\%$
<b>G13</b>	$u_{13} \times w_{13,m} = 3.08\%$	$u_{13} \times w_{13,c} = 2.05\%$	$u_{13} = 5.13\%$
<b>G14</b>	$u_{14} \times w_{14,m} = 6.12\%$	$u_{14} \times w_{14,c} = 3.25\%$	$u_{14} = 9.37\%$
<b>G15</b>	$u_{15} \times w_{15,m} = 22.51\%$	$u_{15} \times w_{15,c} = 21.97\%$	$u_{15} = 44.48\%$
<b>G16</b>	$u_{16} \times w_{16,m} = 0.43\%$	$u_{16} \times w_{16,c} = 36.07\%$	$u_{16} = 36.49\%$
<b>G17 and below</b>	$u_{17} = 0.09\%$		$u_{17} = 0.09\%$
<b>All lignite</b>	36.30%	67.70%	100%
<b>Sub-indices Top Grade</b>	13.28%	5.65%	18.93%
<b>Sub-indices Bottom Grade</b>	23.03%	58.04%	81.07%

The table of weights on various price channels for computation of the Base Prices accompanying the National Lignite Index is given below:-

Grade	Commercial	Captive	Aggregate
<b>G11</b>	$v_{11,m} = 87.24\%$	$v_{11,c} = 12.76\%$	100.00%
<b>G13</b>	$v_{13,m} = 54.37\%$	$v_{13,c} = 45.63\%$	100.00%
<b>G14</b>	$v_{14,m} = 55.07\%$	$v_{14,c} = 44.93\%$	100.00%
<b>G15</b>	$v_{15,m} = 44.96\%$	$v_{15,c} = 55.04\%$	100.00%
<b>G16</b>	$v_{16,m} = 1.22\%$	$v_{16,c} = 98.78\%$	100.00%

**3. Data Collection:** Monthly quantity of lignite used for captive and commercial purpose and its value of all Twenty Lignite mines would be collected directly from concerned companies by 10th day of subsequent month.

**4. Detailed compilation process of each type of prices:** For the purpose of compilation of both NLI and BP, One Excel based templates would be designed by ISI Team.

**5. Substitution of Prices:** In compilation of the NLI or BP, we require monthly prices of captive and commercial transaction. If due to some reason, one price is not available, there arises a need to use a substitute value for it. Any blank item would make the corresponding contribution as zero. In order to avoid this, the missing monthly prices from a Channel in a month would be substituted by the available figures from the last month. If in last month also it is not available, we may take the value from the latest month in which value was there.



**NB: Every effort has to be made to put values in each component.**

**6. Compilation of Index:** At this stage, all the Input Prices from each source is available. The NLI Computation Template and BP Template, prepared by ISI would be used for compiling NLI and BP.

**7. Detailed Flow Chart of the Operation:** The whole operation for the purpose of bringing out the NLI and BP from data collection stage to the publication stage may be summarized in the following table. This also shows the Officers responsible for each stage:

Stage	Officer Responsible	Remarks
Data Collection	Assistant Manager & Assistant Director, O/o DDG	Monthly quantity of captive and commercial and its value to be collected from concerned companies.
Compilation of NLI and BP	Assistant Manager & Assistant Director, O/o DDG	Supervision by Deputy DG
Recommendation	Deputy DG	In the absence of Deputy DG, link officer to send the recommendation
Approval and Release	Deputy Secretary O/o Nominated Authority	Approval by Secretary (Coal)

**8. Periodicity:** The index is planned for monthly computation on the basis of data obtained from the mines. Therefore, The National lignite Index and Base Prices would be compiled and published for every month by the end of the subsequent month.

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**Enclosed:- Detailed technical note on the National Lignite Index submitted by Indian Statistical Institute, Kolkata.**

