### Coal India Ltd.

**Koal Indiya Liimited**

Coal India Limited

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### Production / Extraction data

<table>
<thead>
<tr>
<th>Year</th>
<th>Lignite</th>
<th>Thermal Coal</th>
<th>Total Coal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Million tons/yr</td>
<td>Million tons/yr</td>
<td>Million tons/yr</td>
</tr>
<tr>
<td>1946</td>
<td>0.1</td>
<td>0.0</td>
<td>88</td>
</tr>
<tr>
<td>1948</td>
<td>0.1</td>
<td>0.1</td>
<td>74</td>
</tr>
<tr>
<td>1950</td>
<td>0.2</td>
<td>0.2</td>
<td>73</td>
</tr>
<tr>
<td>1951</td>
<td>1.1</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>1954</td>
<td>1.4</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>1955</td>
<td>2.0</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>1957</td>
<td>2.8</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>1968</td>
<td>3.6</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>1970</td>
<td>4.6</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>1972</td>
<td>7.3</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>1974</td>
<td>11.1</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>1975</td>
<td>16.8</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>1976</td>
<td>24.0</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>1978</td>
<td>32.1</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>1980</td>
<td>41.3</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>1982</td>
<td>50.0</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>1984</td>
<td>58.9</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>1986</td>
<td>68.5</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>1988</td>
<td>79.0</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>1990</td>
<td>89.5</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>1992</td>
<td>100.0</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>1994</td>
<td>110.6</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>1996</td>
<td>122.0</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>1998</td>
<td>135.0</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>2000</td>
<td>149.0</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>2002</td>
<td>164.0</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>2004</td>
<td>181.0</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>2006</td>
<td>200.0</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>2008</td>
<td>220.0</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>2010</td>
<td>242.0</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>2012</td>
<td>265.0</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>2014</td>
<td>290.0</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>2016</td>
<td>320.0</td>
<td>0.9</td>
<td>73</td>
</tr>
<tr>
<td>2018</td>
<td>355.0</td>
<td>0.9</td>
<td>73</td>
</tr>
</tbody>
</table>

**Total India Coal**

<table>
<thead>
<tr>
<th>Year</th>
<th>Million tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970-2004</td>
<td>85.0</td>
</tr>
</tbody>
</table>

**Coal India**

- **Thermal Coal**
  - Million tons/year
  - Production: 1,216
  - Total: 1,216

**Total Coal**

- Million tons/year
- Production: 621
- Total: 621

---

### Coal India established 1973

- **Lignite**
  - Million tons/year
  - Production: 41,452
  - Total: 41,452

- **Sub-bituminous**
  - Million tons/year
  - Production: 10,633
  - Total: 10,633

- **Bituminous**
  - Million tons/year
  - Production: 621
  - Total: 621

- **Metallurgical**
  - Million tons/year
  - Production: 457
  - Total: 457

- **Total India 1980-2017**
  - | Total | 17,311 |
  - **Total India 1973-2018**
  - | Total | 12,165 |

**Coal India % of India**

- **Thermal Coal**
  - Total: 621
  - %: 3.7

**Coal Genetics**

- **Lignite**
  - Total: 41,452
  - %: 7.3

- **Sub-bituminous**
  - Total: 10,633
  - %: 18.8

- **Bituminous**
  - Total: 621
  - %: 2.8

- **Metallurgical**
  - Total: 457
  - %: 1.2

**Total India 1980-2017**

- | Total | 100.0%

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**Coal India prodn**

- **EIA data for India**
  - Million tons
  - Total: 19,588

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**CIL data**

- **Total India**
  - Million tons
  - Total: 37,530

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**India total**

- **% Coal India**
  - Total: 73

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**Zimmermann’s**

- Million tons
  - Total: 14,452

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**Coal India**

- **IPO in 2011**
  - Total: 100.00%

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**CIL data**

- **CIL data**
  - Million tons
  - Total: 607

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**EIA data for India**

- Million tons
  - Total: 782

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**CIL data**

- **CIL data**
  - Million tons
  - Total: 680
Operational Statistics

<table>
<thead>
<tr>
<th>Year</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>48,092</td>
<td>48,190</td>
<td>48,290</td>
<td>48,390</td>
<td>48,490</td>
</tr>
</tbody>
</table>

### Table 2: Typical coal characteristics in selected Indian power plants, compared to selected Chinese and U.S. coals

<table>
<thead>
<tr>
<th>Details, %</th>
<th>KanhJaip</th>
<th>SinhHai</th>
<th>Siat</th>
<th>US (Res)</th>
<th>China (Long Res)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>27.07</td>
<td>29.00</td>
<td>30.72</td>
<td>64.2</td>
<td>62.8</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>2.95</td>
<td>1.88</td>
<td>2.30</td>
<td>5.0</td>
<td>5.6</td>
</tr>
<tr>
<td>Nitrogen</td>
<td>0.50</td>
<td>0.52</td>
<td>0.60</td>
<td>1.3</td>
<td>1.4</td>
</tr>
<tr>
<td>Oxygen</td>
<td>6.71</td>
<td>6.96</td>
<td>5.35</td>
<td>11.8</td>
<td>21.7</td>
</tr>
<tr>
<td>Moisture</td>
<td>18.5</td>
<td>15.0</td>
<td>15.0</td>
<td>2.8</td>
<td>11.0</td>
</tr>
<tr>
<td>Sulphur</td>
<td>0.17</td>
<td>0.25</td>
<td>0.40</td>
<td>1.8</td>
<td>0.9</td>
</tr>
<tr>
<td>Ash</td>
<td>46.0</td>
<td>46.0</td>
<td>45.0</td>
<td>16.0</td>
<td>7.7</td>
</tr>
</tbody>
</table>

**Note:** Coal India does not specify the carbon content or calorific value of its coals (other than "thermal coal," " Coke," and "other.")

**OMS would normally apply average U.S. thermal coal emission factor (2.266 GCO2/tmne).**

However, given the very low calorific values of Indian powerplant coals compared to US plants (see below), OMS assigns the EF of sub-bituminous to Coal India’s thermal coal production (1.864 GCO2/tmne).
Coal production in India, 1940-1959


Coal production in India, 1940-1959

Comment: Rick Heede:
The Ministry of Coal has under its administrative control the Coal India Limited, a Public Sector Undertaking, with its 8 subsidiary companies. The Coal India Limited with its headquarters at Calcutta is the holding company in respect of its subsidiaries. It is also the apex body in coal industry and is responsible for laying down the policy guidelines and coordination work of subsidiaries. It also does the investment, planning, manpower, management, purchase of heavy machineries, financial budgeting etc on behalf of all its subsidiaries. The Ministry of Coal has also under its administrative control the Neyveli Lignite Corporation(NLC) with Registered Office at Chennai and Corporate Office at Neyveli in Tamil Nadu. The company is engaged in the exploitation of lignite deposits.

MBend.co.za quote: “About 88% of the total coal production in India is produced by various subsidiaries (a total of 390 mines) of Coal India Ltd. which is the largest supplier of coal (and one of the largest taxpayers) in the country. Although Coal India is currently State controlled, although efforts are being made to open the industry to Indian private investors. At present all private mines are allowed to operate only if they are producing coal to supply a specific industry (e.g. power station, industry). Coal India has seven coal producing subsidiary companies; viz. Central Coalfields, Eastern Coafields (Sanctoria), Bharat Coking Coal (Dhanbad), Northern Coalfields (Nagpur), Western Coalfields, Southern Eastern Coalfields (Bilaspur), Mahanadi Coalfields (Sambalpur) and the Central Mine Planning & Design Institute (CMDPI) at Ranchi Bihar, which is entrusted with the job of providing total research and consultancy support to the industry. South Eastern Coalfields are planning to increase production from two of its operations, the Gevra and Dipka mines that supply coal to power stations. The only other major producer outside of CL is the Singareni Collieries Company that is located in Andhra Pradesh. Singareni contributes about 7-8 % of India’s overall coal production, amounting to approximately 20 Mt each year.”

Through its six coal producing subsidiary companies, CL is the country’s largest coal producer. CL has a share in: Bharat Coking Coal Ltd - Dhanbad, India has a share in: Central Coafields Ltd - Bihar, India has a share in: Eastern Coalfields Ltd - West Bengal, India has a share in: Mahanadi Coalfields Ltd - Orissa, India has a share in: Northern Coafields Ltd, India has a share in: South Eastern Coalfields Ltd - Bilaspur, India has a share in: Western Coafields Ltd - Maharashtra, India has a shareholder: Government of India, India. CMS attributes 88 percent of total Indian coal production to Coal India Ltd. See also: Prasad, Anubhuti Ranjan (1986) Coal Industry of India, S.B. Nangia, New Delhi, 256 pp.

Cell: JP

Comment: Rick Heede:
90% owned by Govt of India, 10% public. Coal India IPO for $3.5 billion 20 Oct 2010. Reuters story, Coal demand to grow 11 percent/yr. Still listed as a “Govt of India Undertaking.” Wiki: “In 2010, CL’s initial public offering (IPO) got subscribed 15.28 times, collecting a record over 2.4 trillion—the highest IPO subscription so far.[5] On the first day of its listing on the Sensex, its stock closed 40% higher than IPO price.[6] It is India's largest ever public offer from Coal India Ltd. to raise up to 15,000 crore (US$2.73 billion).[7] It is currently 90% owned by the Government of India with the remaining 10% owned by the public.”

Cell: J10

Comment: Rick Heede:
Times of India (2010) Coal India IPO fetches mind-boggling Rs 2.36 crore, 22Oct10. "MBMEl: The Indian capital market turned black into gold this week. The initial public offer of Coal India was set to be the largest in Indian history from the moment it opened on Monday, but even the biggest bulls in the ring were left stunned by the money it mined by the time it closed on Thursday: a mobilization of Rs 2.36 lakh crore, over 15 times the target of Rs 15,500 crore.”

See also:
The Guardian, Jeremy Leggett (2010) Coal India IPO shows the mountain we have to climb Company’s prospectus did not mention climate change once in 510 pages of exhortation to invest, guardian.co.uk, 9Nov2010. “In the largest ever initial public offering on the Indian stock exchange, Coal India, a huge government-owned coal company, recently offered 10% of its shares to investors at home and abroad. What was at stake was essentially a $315bn (£171bn) bankrolling of enhanced global warming by the capital markets. Yet Coal India’s prospectus, crafted with the help of a clutch of big-name investment banks, did not mention climate change once in 510 pages of exhortation to invest and invest the fund managers did, unfortified by risk regulation or any meaningful requirement to place a value on the climate consequences of their scramble for short-term profit. The offering was oversubscribed 15 fold, and the stock soared on the first day of trading, 4 November, valued Coal India at $48bn. Those ending up owning stock include 484 foreign funds, 195 mutual funds, 44 insurance companies, and many banks. Many of these investors were using ordinary citizens' money, and this would have included the nest eggs of people worried about global warming and its dire impact on the world by the time they retire. But those people are mostly allowed no say in where their pension funds, insurance premiums, and banking deposits are invested.”

Cell: S11

Comment: Rick Heede:
Coal production by coal mining companies and state-owned enterprises, including subsidiaries of oil and gas companies. Coal types produced are not ordinarily reported by coal operators (except for metallurgical coal). We distinguish, where possible and reasonably well known, between hard (bituminous and subbituminous) and soft ( lignite or peat) coals, especially for the larger companies operating in regions such as Australia and India where soft coals are predominant. Soft coals have lower carbon content per tonne than do hard coals.

Cell: J17

Comment: Rick Heede:

Cell: E27

Comment: Rick Heede:
“About 88% of the total coal production in India is produced by various subsidiaries (a total of 390 mines) of Coal India Ltd. which is the largest supplier of coal (and one of the largest taxpayers) in the country. Although Coal India is currently State controlled, although efforts are being made to open the industry to Indian private investors. At present all private mines are allowed to operate only if they are producing coal to supply a specific industry (e.g. power station, industry). Coal India has seven coal producing subsidiary companies; viz. Central Coalfields, Eastern Coalfields (Sanctoria), Bharat Coking Coal (Dhanbad), Northern Coalfields (Nagpur), Western Coalfields, Southern Eastern Coalfields (Bilaspur), Mahanadi Coalfields (Sambalpur) and the Central Mine Planning & Design Institute (CMDPI) at Ranchi Bihar, which is entrusted with the job of providing total research and consultancy support to the industry. South Eastern Coalfields are planning to increase production from two of its operations, the Gevra and Dipka mines that supply coal to power stations. The only other major producer outside of CL is the Singareni Collieries Company that is located in Andhra Pradesh. Singareni contributes about 7-8 % of India’s overall coal production, amounting to approximately 20 Mt each year.”

Cell: D29

Comment: Rick Heede:

Cell: J30

Comment: Rick Heede:
US Bureau of Mines data.

Cell: M36

Comment: Rick Heede:
Parallel estimated coal production in India: 71 tonnes. Citing United Nations. At Coal India assumed equal to 88 percent of India, Coal India = 62.48 million tonnes.

Cell: D42

Comment: Rick Heede:
CAi uses EIA data on coal production in India from 1980 to the current year (as of July 2019, through 2017). Previous editions of world coal production by rank and by country attributed the majority of coal production as “bituminous” coal, and minor amounts of sub-bituminous. This has in recent years been revised to the preponderance of sub-bituminous, which CAi argued years ago was a more appropriate classification, based on coal resource assessments cited elsewhere. This does not affect earlier coal production data by EIA and US Bureau of Mines for 1960 to 1971, hence the interpolated data, while it appears mis-applied, works out mathematically between soft coals ( lignite and sub-bituminous) and hard coals (bituminous and metallurgical coal). In any case, we report production data from Coal India and do not rely on CAi data. https://www.eia.gov/beta/international/data/browser/index.cfm

Cell: M43

Comment: Rick Heede:
Wiki: “Coal India Limited was formed in 1973 as Coal Mines Authority Limited. In 1975 it was changed to Coal India Limited as a holding company with five subsidiaries: Bharat Coking Coal Limited (BCL)(Dhanbad), Jharkhand, Cental Coalfields Limited (CCL)(Ranchi, Jharkhand), Western Coalfields Limited (WCL)(Nagpur region), Eastern Coalfields Limited (ECIL)(Sanctoria, Assamol, West Bengal), Central Mine Planning and Design Institute Limited (CMDPI)(Ranchi, Jharkhand). In 1985 two more subsidiaries were added: South Eastern Coalfields Limited (SECL)(Bilaspur), and Northern Coalfields Limited, Singraul (NCL)(Singraul).

In 1992 one more subsidiary added: 7 Mahanadi Coalfields Limited (MCL) (Sambalpur) One International Subsidiary: Coal India Africaena Ltdada (CIAL) (Mozambique).

Cell: E45

Comment: Rick Heede (Feb10):
CMS has not found annual production data for Coal India from 1980 to 1999 — except as a derivative of “fatal accident rate per million tonnes of coal production.” CMS calculates CL coal production 1975 to 1999 on the basis of CL-published data on its fatality rate and coal production per fatality per year (available at www.coalindia.in, at HSE statistics). It is worth noting that CMS’ original calculation (81 percent of India’s total lignite plus bituminous coal production, EIA data), reproduced in column “M”, is in close agreement with CL data.

Production for 1999-2010 is based on actual “off take” production data.

Cell: D50

Comment: Rick Heede:

Coal Anglo North American.xls
Comment: Rick Heede:
Indian lignite production for 1980-2010 attributed to Coal India Ltd is estimated at 81.1% of India's total lignite production based on CIL's percentage in 2010 (AnnRpt: "CIL accounted for 81.1% of India's production"). This is converted to metric tonnes from column D.

Comment: Rick Heede:
Indian hard coal production for 1980-2010 attributed to Coal India Ltd is estimated at 81.1% of India's total hard coal production based on CIL's percentage in 2010 (AnnRpt: "CIL accounted for 81.1% of India's production"). This is converted to metric tonnes from column G.

Comment: Rick Heede:
Coal India AnnRpt 2010-2011, Operational Statistics, page 19. This table details raw coal production as well as "off take (Raw Coal)" -- the definitions of which are not listed. We use off take coal to inform our consideration of Coal India's rank of coals mined (which is not available in their reports). However, we use "Production of raw coal" in the production estimate, which are somewhat higher than off take coal, and (presumably) include company's own use and combustion of coal.

Note: CAI has not found definitive data regarding the coal quality as mined or dispatched, though the company discusses grades of coal and heat content. We conservatively apply the subbituminous emission factor (1.864 tCO2/tonne) for Coal India (as we do Singareni) in view of India's coal resources typically having high ash content and low calorific value. This may be revised with better information.


Comment: Rick Heede:
Annual report & Accounts 2014-2015, "Operational Statistics" (page 18) shows production of raw coal of 494.238 Mt (of which 459.2 Mt is opencast), and "off take (Raw Coal)" of 489.377 Mt (389.9 Mt of power coal). But their web data on coal production shows 435.84 Mt Te (in units of "Mt Te") -- confirm metric tonnes (of which 392.48 Mt Te listed as non-coking coal 1, remainder coking coal 2.

Coal India website, physical performance data, coal production 2012 - 2015. CIL fiscal year is Apr-Mar, and the 2015 data was revised to 494 Mt (from the previous report of 436 Mt).

Comment: Rick Heede:

Comment: Rick Heede:

Comment: Rick Heede:

Thus 2017 (2018 on their table) "raw coal production" "Non-Coking Coal 1" 534.09 Mt Te, plus Coking Coal 2 of 33.28 Mt Te. Also report 2018/2019" underground 14.80 Mt Te, and Opencast 241.66 Mt Te.

See Coal production data below.

Comment: Rick Heede:

Comment: Rick Heede:
Note: CIL has not found definitive data regarding the coal quality as mined or dispatched, though the company discusses grades of coal and heat content. We conservatively apply the subbituminous emission factor (1.864 tCO2/tonne) for Coal India (as we do Singareni) in view of India's coal resources typically having high ash content and low calorific value. This may be revised with better information. Alternately, thermal coal emission factor (2.266 tCO2/t) or bituminous coal may be applied. Note that EIA classifies coal production as predominantly bituminous.

Comment: Rick Heede:

Comment: Rick Heede: