India’s Energy Transition:
Impact of Coal Phase Out on Government’s Tax Revenue
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Abbreviations

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<th>Abbreviation</th>
<th>Full Form</th>
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</thead>
<tbody>
<tr>
<td>BCCL</td>
<td>Bharat Coking Coal Limited</td>
</tr>
<tr>
<td>BT</td>
<td>Billion Tonnes</td>
</tr>
<tr>
<td>BU</td>
<td>Billion Units</td>
</tr>
<tr>
<td>CCL</td>
<td>Central Coalfields Limited</td>
</tr>
<tr>
<td>CIL</td>
<td>Coal India Limited</td>
</tr>
<tr>
<td>CSR</td>
<td>Corporate Social Responsibility</td>
</tr>
<tr>
<td>DMF</td>
<td>District Mineral Foundation</td>
</tr>
<tr>
<td>ECL</td>
<td>Eastern Coalfields Limited</td>
</tr>
<tr>
<td>FY</td>
<td>Financial Year</td>
</tr>
<tr>
<td>GST</td>
<td>Goods and Services Tax</td>
</tr>
<tr>
<td>INR</td>
<td>Indian Rupee</td>
</tr>
<tr>
<td>MCL</td>
<td>Mahanadi Coalfields Limited</td>
</tr>
<tr>
<td>MMDR</td>
<td>Mines and Minerals (Development and Regulation) Act</td>
</tr>
<tr>
<td>MT</td>
<td>Million Tonnes</td>
</tr>
<tr>
<td>Mtce</td>
<td>Million Tonnes of Coal Equivalent</td>
</tr>
<tr>
<td>NCEEF</td>
<td>National Clean Energy and Environment Fund</td>
</tr>
<tr>
<td>NCL</td>
<td>Northern Coalfields Limited</td>
</tr>
<tr>
<td>NECL</td>
<td>North-eastern Coalfields Limited</td>
</tr>
<tr>
<td>NMET</td>
<td>National Mineral Exploration Trust</td>
</tr>
<tr>
<td>Rs/te</td>
<td>Rupees per tonne</td>
</tr>
<tr>
<td>SECL</td>
<td>South-eastern Coalfields Limited</td>
</tr>
<tr>
<td>WCL</td>
<td>Western Coalfields Limited</td>
</tr>
</tbody>
</table>
The Indian coal industry pays a myriad of taxes to the state and central governments including royalty, Goods and Services Tax (GST), GST compensation cess, cess on coal, state sales tax, central sales tax, clean energy cess, and others. Presently, the government of India is highly dependent on the energy sector, with the central and state governments’ dependence being at 25% and 13% of their tax revenues, respectively. The coal industry is responsible for 10% and 2% of the central and state governments’ energy tax revenues, respectively. From a statutory levy of INR 59.81 per tonne of coal in 1990–91, the amount has increased to INR 797.86 per tonne in 2021–22 due to imposition of GST Compensation Cess, DMF, NMET and other levies.

India is in the initial phase of moving away from fossil fuels for its energy needs. However, as more clean energy policies are adopted, this transition may soon pick up pace, and this will severely affect the tax and non-tax revenues of the governments eventually impacting other economic sectors and India’s overall growth and development. Some recommendations are presented as follows:

- Assessment of effective tax rate
- Revision of subsidies
- Revision of royalty
- Development of energy data portal
- Substitution of coal in the manufacturing sector
- Diversification in coal-dependent communities
- Diversification of government’s sources of income
- Scrutiny of DMF Funds
- Favourable taxation policies for sub-segments of renewable energy
- Reestablishment of the National Clean Energy and Environment Fund
- Establishment of an energy taxation committee

Since energy transition is a complex and long-term process, further research is required to review and revise the current fiscal structure of the coal sector in India. We hope this report serves as a guide for research on economic implications of energy transition.
Introduction

Photo Credit: Justin Wilkens (www.unsplash.com)
In India, coal is the driving force behind growth of the energy sector as well as that of the economy. With a share of seventy-two percent in total power generation, the country is significantly dependent on coal for its energy needs (CEA, 2021), and although power generation from renewable energy is steadily increasing, coal remains the most reliable source of power and cannot be replaced until renewable energy contributes largely enough to account for India’s growing energy needs. To put it into perspective, as of Financial Year (FY) 22, 1041 billion Units (BU) of electricity was generated from coal and 169 BU from renewable energy sources (CEA, 2022). Despite the increase in global prices of coal, increase in input costs of coal production and the steep increase in demand as the economy recovered from Covid-19, coal continued to be available in India at affordable prices that have not increased in the last 4 years. Apart from generating electricity, coal contributes to several non-power sectors such as cement, brick, fertilisers, steel, sponge iron and various other industries (Ashwarya, 2020). It also contributes to the state and central governments, the Indian railways and provides direct and indirect livelihood to those living in the coal producing districts, making coal a very hard-to-replace fuel—at least in the near future.

The Indian coal industry pays a myriad of taxes to the state and central governments including royalty (a royalty is a payment made for the exploration and evaluation of minerals), Goods and Services Tax (GST), GST compensation cess, cess on coal (The coal cess is charged by the producers on coal and lignite dispatching to restrict the usage of coal by raising its cost), state sales tax, central sales tax, clean energy cess, and others. This amounts to thousands of crores at an annual basis and a phase out of coal, as targeted at the Conference of Parties (COP 26) in Glasgow, that will severely impact the tax collected by the governments and could eventually negatively impact the economy down to a micro-economic scale. This study, therefore, discusses the tax structure of the coal industry in India and the impact a coal phase out or a phase down will have on the economy. We also discuss the trends in pricing of coal as well as trends in tax collected over the last three decades, and present some recommendations for strategically reducing the dependence on the coal industry. The present study is limited to exploring the contributions made by the coal industry in the form of taxes alone, and does not delve into other sectors such as brick, cement, steel, etc. Also, since Coal India Limited (CIL) is the largest producer of coal in Indian and is the world’s largest government owned coal producer, we focus primarily on CIL and its subsidiaries. Presently, we have not included the private sector as it is still in its initial growth phase and the contributions made to the economy in the form of taxes and levies are not significant in terms of total amount.

**Box 1**

**- What is the difference between a tax and a levy?**

*Tax is a compulsory imposition of money by the government for public purpose*

*A levy is imposed to raise revenue for a specific declared purpose or to mitigate social challenges, such as, the District Mineral Foundation established for the interest and benefits of people and areas affected by mining operations*

Source: Authors own compilation showing the possible difference between a tax and a levy
Coal India Limited was formed in 1975 from a merger between Bharat Coking Coal Limited and Coal Mines Authority, which were responsible for producing coking and non-coking coal, respectively. CIL now supplies over 80% of India's coal from its 352 mines. The government of India holds a stake of 66.13% in CIL and received an interim dividend of INR 5705.89 crores and final dividend of INR 1426.47 crores in 2021–22. Furthermore, as part of Royalty, GST, District Mineral Foundation (DMF), National Mineral Exploration Trust (NMET) and others, CIL paid INR 49678.36 crores in 2021–22, making it one of the most significant contributors to the Indian economy (CIL, 2022a). It produced 623 million Tonnes (MT) of coal in 2021–22 and has set a target of producing 1 billion Tonnes (BT) by 2024–25 (CIL, 2022b). Although the share of coal in the country’s total primary energy demand will drop to 34% by 2040, the overall demand is expected to rise by 31% (IEA, 2021), thus keeping the production at high levels. This provides the government with sufficient time to adjust to reduced earnings from the coal industry, or at the very least, develop a plan to adjust with the same.

Presently, the government of India is highly dependent on the energy sector, with the central and state governments’ dependence at 25% and 13% of their tax revenues, respectively. The coal industry is responsible for 10% and 2% of the central and state governments’ energy tax revenues, respectively. Furthermore, electricity—which is majorly generated from the coal sector—also contributes 7% and 15% of the energy tax revenues to the central and state governments respectively (Prayas, 2021). The impact of a coal phase will clearly have a significant impact on tax revenues, with some states suffering more than the others. Due to a difference in resource availability, states with higher fossil fuel reserves and production contribute significantly to the state revenues through Royalty, e.g., Jharkhand and Chhattisgarh. This is discussed in detail in the next sections.

India is in the initial phase of moving away from fossil fuels for its energy needs. However, as more clean energy policies are adopted, this transition may soon pick up pace, and this will severely affect the tax and non-tax revenues of the governments, eventually impacting other economic sectors and India’s overall growth and development. The government, therefore, also needs to transition away from the coal sector for its energy revenues. Although energy transition will go about for at least a few decades—especially for a developing economy such as India’s—it is important to understand the current role of the fiscal policy and how it may be modified to account for the changing energy structure. This study therefore tries to build a discourse around this topic with the objective to familiarise researchers, policy makers and other stakeholders with the present tax structure of the coal sector in India while examining the trends in coal production and total tax and non-tax revenues. We also compare the trends with the predicted coal demands and assess the impact on the said revenues.

“The government of India is highly dependent on the energy sector, with the central and state governments’ dependence at 25% and 13% of their tax revenues, respectively.”
“Although energy transition will go about for at least a few decades— especially for a developing economy such as India’s— it is important to understand the current role of the fiscal policy and how it may be modified to account for the changing energy structure.”

“The coal industry is responsible for 10% and 2% of the central and state governments’ energy tax revenues, respectively.”
Coal pricing and tax structure in India
As the price of coal directly affects the price of electricity production—the burden of which falls on the consumers—it is important to understand the basic structure of coal pricing before examining the resultant tax and non-tax revenues coming out of it. Also, given the direct relationship between the coal produced, its price and tax revenue earned by the government, we first present the price structure of coal in India followed by that of taxes and other levies.

The price of coal at the time of purchase is a composition of several charges set by the company as well as the government. Apart from the basic pithead notified price, there is a wide range of charges such as that of sizing, transportation, loading, unloading and other statutory charges. The pithead value of coal is the basic value of coal at the pithead of the colliery for non-captive mines (Table 1). For captive collieries, the value is based on the company’s accounting policy, and in public sector units, the policy is based on no profit and no loss, and the price is calculated accordingly. For independent commercial units, the value is calculated based on unit value of realisation that includes the profit and loss per unit and excludes the transportation and other statutory costs.

### Table 1: Pithead prices of non-coking coal (2021–22)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Pithead price of non-coking coal applicable on ECL, CCL, BCCL, NCL, MCL and NEC</th>
<th>Pithead price of non-coking coal applicable on WCL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Price for Power utilities, Fertiliser and Defence Sector (Rs/te)</td>
<td>Price for sectors other than Power utilities, Fertiliser and Defence Sector (Rs/te)</td>
</tr>
<tr>
<td>G2</td>
<td>3288</td>
<td>3288</td>
</tr>
<tr>
<td>G3</td>
<td>3144</td>
<td>3144</td>
</tr>
<tr>
<td>G4</td>
<td>3000</td>
<td>3000</td>
</tr>
<tr>
<td>G5</td>
<td>2737</td>
<td>2737</td>
</tr>
<tr>
<td>G6</td>
<td>2317</td>
<td>2524</td>
</tr>
<tr>
<td>G7</td>
<td>1926</td>
<td>2311</td>
</tr>
<tr>
<td>G8</td>
<td>1465</td>
<td>1757</td>
</tr>
<tr>
<td>G9</td>
<td>1140</td>
<td>1368</td>
</tr>
<tr>
<td>G10</td>
<td>1024</td>
<td>1228</td>
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<tr>
<td>G11</td>
<td>955</td>
<td>1145</td>
</tr>
<tr>
<td>G12</td>
<td>886</td>
<td>1063</td>
</tr>
<tr>
<td>G13</td>
<td>817</td>
<td>980</td>
</tr>
<tr>
<td>G14</td>
<td>748</td>
<td>897</td>
</tr>
<tr>
<td>G15</td>
<td>590</td>
<td>708</td>
</tr>
<tr>
<td>G16</td>
<td>504</td>
<td>604</td>
</tr>
<tr>
<td>G17</td>
<td>447</td>
<td>536</td>
</tr>
</tbody>
</table>

Source: ECL, 2022
Coal companies classify coal on the basis of size requirements, known as the sizing or crushing charges, which tend to increase as the size decreases. The coal is then transported to the loading point from the Pithead and a surface transport cost is collected for the same. This is followed by the loading charges and then the cost of transportation, which varies based on the distance and the coal-producing company. For coal transported over longer distances—majorly through railways—dynamic prices are imposed by the Indian railways from loading to unloading points.

**Box 2**

- **Total Price of Coal**

  - **Basic Pithead price of coal**

  - **Cost of sizing/crushing, Cost of loading and unloading, Cost of transportation**

  - **Statutory levies:**
    - Royalty
  
  - **Additional royalty under MMDR Act:**
    - DMF & NMET
  
  - **Goods and Service Tax:**
    - Central Goods and Service Tax, State Goods and Service Tax & Integrated Goods and Service Tax, GST Compensation Cess, Cess on Coal, State Sales Tax/VAT, Central Sales Tax, Others

*Source: Author’s compilation and based on report by Phoumin et al. (2018)*

**GST Compensation Cess amounting to INR 400 per tonne accounts for over half of the levies paid by CIL.**
In addition, these are statutory charges are imposed by the government, which can be classified into tax and non-tax charges. A royalty of 14% is charged by the state governments for extraction of coal, except in West Bengal, where even though a lower royalty is charged, the state imposes an additional 25% cess per tonne of coal produced (Ministry of Mines, 2013). This is part of the non-tax revenue collected by the government. Other charges such as stowing excise duty, forestland adjustment charge, forest permit fee, central excise duty, value added tax, goods and services taxes as well as a clean energy cess are charged by the government and are included in the tax revenues. A total of basic pithead notified prices, transportations charges and statutory charges compose the overall cost of coal that is purchased by electricity, steel, cement, brick and aluminium-producing companies, among others. Table 1 depicts the pithead prices only, while the final price that a buyer paid in 2022 through online auctions were 300% over the notified price. Coal India can auction up to 20% of its coal to earn a higher profit compared to coal sold through fuel supply agreement.

GST Compensation Cess amounting to INR 400 per tonne accounts for over half of the levies paid by CIL. This is levied by the Goods and Services Tax (Compensation to States) Act 2017 to compensate the states for the loss of revenue as a result of GST implementation in 2017, and is followed by royalty paid that has a share of 25% and DMF with a share of 7%. The District Mineral Foundation (DMF) was established by The Mines and Minerals (Development and Regulation) Act (MMDR), 1957 with the objective of working towards the interest and benefits of people and areas affected by mining operations (Ministry of Mines, 2016). Figures 2 and 3 depict the statutory levies paid by the coal-producing states as well as the overall coal production in 2021–22.

![Figure 1](image_url)

**Figure 1**

- **Share of CIL’s statutory levies (2021–22)**

  - Royalty: 24%
  - DMF: 7%
  - NMET: 1%
  - CGST: 4%
  - SGST: 7%
  - IGST: 3%
  - GST Compensation Cess: 53%
  - Cess on Coal: 4%
  - State Sales Tax / VAT: 0%
  - Central Sales Tax: 0%
  - Others: 4%

Source: CIL, 2022a
“The levies paid by the coal industry to the state and central governments have increased over the years, and the tax and non-tax revenue collected by the government increased at an accelerated pace as compared to the total coal produced.”

Figure 2
- State-wise share of statutory levies paid by CIL (2021–22)

Source: Created from Provisional Coal Statistics, Coal Controller’s Organisation, 2022
Odisha is the largest producer of coal among all the states in India, and contributes (through Mahanadi Coalfields Limited) the highest number of statutory levies to the state and central governments. Although Chhattisgarh is the second largest producer, a higher levy comes from Jharkhand because there are three CIL subsidiaries present in the state—Eastern Coalfields Limited (ECL), Bharat Coking Coal Limited (BCCL) and Central Coalfields Limited (CCL)—compared to only South Eastern Coalfields Limited (SECL) in Chhattisgarh. Besides the GST Compensation Cess, Jharkhand pays higher Royalty, CGST, SGST and other levies compared to Chhattisgarh. These states are also highly dependent on coal in terms of high jobs dependence, high pensioners’ dependency, high DMF dependency and high CSR dependency (Pai, 2021). Therefore, a phase out will affect the economy at the micro level as well, besides the large amount of tax revenues that will have to be foregone by the government.

Source: Provisional Coal Statistics, Coal Controller’s Organization, 2022
Trends in levies paid vis-à-vis coal production
India’s fiscal policies are crucial to achieving its climate targets as part of the India’s Intended Nationally Determined Contributions (INDC). The levies paid by the coal industry to the state and central governments have increased over the years, and the tax and non-tax revenue collected by the government increased at an accelerated pace as compared to the total coal produced. From the introduction of District Mineral Foundation, Clean Energy Cess and other taxes, this value increased at a high pace, particularly in the last decade. In this section, we present the levies paid by CIL over the last three decades and analyse its movements compared to the amount of coal produced. Figures 4 and 5 depict the coal produced and statutory levies paid by CIL between 1990–91 and 2021–22.

**Figure 4**

- CIL’s coal production (1990–2022)

![Graph showing CIL’s coal production from 1991 to 2022](chart.png)

Source: Provisional Coal Statistics, Coal Controller’s Organisation 2022

**Figure 5**

- Statutory levies paid by CIL (1990–2022)

![Graph showing statutory levies paid by CIL from 1991 to 2022](chart.png)

Source: Annual Report, CIL, 2022
“With a tax to GDP ratio of 10%, India is heavily dependent on energy taxes, particularly fossil fuels. This highlights a narrow tax base that further increases the challenges of energy transition.”

It is evident that there is an accelerated rise in the amount of the statutory levies paid by CIL since FY 2011 (Figure 6). The coal production, however, increased at a roughly constant pace, with a few bumps and falls over the years. Although, the primary objective for such exponential increase in taxation may have been to discourage coal production and push energy generation from renewable sources, the process has however made the state and central governments heavily dependent on those revenues due to the huge amounts paid by CIL over the years. From a statutory levy of INR 59.81 per tonne of coal in 1990–91, the amount has increased to INR 797.86 per tonne (Figure 7). The growth rate in total levy per tonne of coal witnessed a significant rise in FY 2011 and FY 2012 as a result of clean energy cess (National Clean Energy and Environment Fund), and then again in FY 2016 and FY 2017 as a result of GST, GST Compensation Cess, DMF and NMET levies.
Figure 6
- Statutory levies paid by CIL (1975–2022)

Source: Based on author’s compilation

Note 1. NMET and DMF levies were paid at a combined rate as part of Additional Royalty (MMDR Act) till 2016
Note 2. GST Comp. Cess: GST Compensation Cess
The steep increase in total levies can be accrued to the introduction of several new taxes as explained below:

**District Mineral Foundation:**
The DMF was introduced by the government of India through MMDR Amendment Ordinance in 2015 as a funding mechanism to push the development of people and areas affected by mining. The funds have contributed over INR 400 billion so far, however, the implementation of development projects remain poor due to transparency issues (Aggarwal, 2021). A producer pays 30% of the royalty amount as part of the DMF fund if the mining lease was executed before 12th January 2015 and 10% of royalty if the lease was executed afterwards.

**National Mineral Exploration Trust:**
The NMET was established by the central government in 2015 and is now a non-profit autonomous body as per the amendments in MMDR Act, 2021. The NMET has completed 132 projects by incurring an expenditure of 513 crore till date and has approved a total of 238 projects (Ministry of Mines, 2022). Of the total of 244 crores paid to the NMET, over 60% was paid by SECL, NCL and MCL.

**Goods and Services Tax:**
The GST includes a wide range of taxes and was introduced in the year 2017 with the objective to simplify the tax administration procedures thereby improving tax efficiency. A sales tax rate of 11–12% was charged on coal as per the previous fiscal measures while post introduction of GST, this rate was reduced to 5%. This has reduced the cost of thermal power generation and has increased the cost of Solar Photovoltaic power generation. GST is paid in three parts by CIL as Central GST, State GST and Integrated GST. As of FY 2022, NCL paid the highest GST amounting to 661 crores, followed by SECL at 659 crores.

**GST Compensation Cess:**
The GST Compensation Cess replaced the Clean Environment Cess at the time of introduction of GST. Funds from the Clean Environment Cess were used to push development and installation of renewable energy technologies, however, the GST Compensation Cess was introduced to account for the losses as a result of GST introduction. The government of India levies INR 400 per tonne of this levy on coal. MCL paid the highest GST Compensation Cess amounting to INR 6924.33 crores in 2021–22 followed by SECL at INR 6215.98 crores and NCL at 4992.82 crores.

**Others:**
Cess on coal, State Sales Tax/Value Added Tax, Central Sales Tax and others are the remaining taxes that account for about 4% of total statutory levies paid by CIL. A summary of statutory levies is presented in Table 2 for the year 2021–22. An interesting thing to note here is that CIL continues to make profit despite the imposition of such enormous levies (Table 3). The profit per tonne witnessed a sharp fall with the introduction of GST, DMF and NMET and was later restored in 2018–19. It has been observed that more developed economies have lower dependency on energy taxes for revenue, unlike India which is heavily dependent on such taxes— particularly the coal-producing states. India’s tax to GDP ratio is 10%, which highlights a narrow tax base and hence the issues in shifting from fossil fuel tax to other sources.
Table 2: Statutory levies paid by CIL (2021–22)

<table>
<thead>
<tr>
<th>Particulars</th>
<th>States</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Madhya Pradesh</td>
<td>Chhattisgarh</td>
</tr>
<tr>
<td>Royalty</td>
<td>2197</td>
<td>2256</td>
</tr>
<tr>
<td>Additional Royalty Under MMDR Act</td>
<td>DMF</td>
<td>656</td>
</tr>
<tr>
<td></td>
<td>NMET</td>
<td>44</td>
</tr>
<tr>
<td>Goods and Services Tax</td>
<td>CGST</td>
<td>307</td>
</tr>
<tr>
<td></td>
<td>SGST</td>
<td>307</td>
</tr>
<tr>
<td></td>
<td>IGST</td>
<td>8</td>
</tr>
<tr>
<td>GST Compensation Cess</td>
<td>4732</td>
<td>5803</td>
</tr>
<tr>
<td></td>
<td>Cess on Coal</td>
<td>1911</td>
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<tr>
<td></td>
<td>State Sales Tax/VAT</td>
<td>1</td>
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<tr>
<td></td>
<td>Central Sales Tax</td>
<td>0.19</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>898</td>
</tr>
<tr>
<td>Total</td>
<td>9150</td>
<td>9773</td>
</tr>
</tbody>
</table>

Source: Annual Report, CIL, 2022

Table 3: CIL’s profit per tonne (2011–2022)

<table>
<thead>
<tr>
<th>Year</th>
<th>Profit after tax (INR crores)</th>
<th>Profit after tax per tonne (INR)</th>
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<tbody>
<tr>
<td>2011</td>
<td>10867</td>
<td>251.95</td>
</tr>
<tr>
<td>2012</td>
<td>14788</td>
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</tr>
<tr>
<td>2022</td>
<td>12702</td>
<td>204.00</td>
</tr>
</tbody>
</table>

Source: Author’s calculations based on Annual Report, CIL (2011–2022)
Impact of coal phase out on the Indian economy
Coal is the source of livelihood for people in many districts in India, with some districts almost entirely being dependent on it. The industry provides direct and indirect employment to a large chunk of the India population and hence, a phase out will require strategic structural reforms to pave way for new employment-generating sectors. In addition to this, coal mining promotes infrastructural development such as roads, schools and hospitals through CSR initiatives. CIL spends a large amount on healthcare, education and rural development through its CSR initiatives. In 2021-22 CIL spent INR 548.98 crores which is 19.53% higher than the statutory requirements. Therefore, phase out will hamper the development of several social projects and impact thousands of households. DMF funds were established as part of state intervention to cope with this, however, there have been several administrative issues due to lack of planning resulting in little to no improvements in areas heavily dependent on coal. Thus, strategic planning and implementation will be required to efficiently utilise the funds for a smooth and just transition.

As presented in the previous sections, CIL pays huge royalties to the government making it an important source of revenue and this financial dependence makes energy transition very challenging. It is also reported that the profits made by coal producing companies directly affects the revenue distribution between state and central governments (Noronha et al., 2009). This indicates that as profits drop due to increasing taxation on coal as a measure to shift to clean energy sources, the revenue earned by the government will also fluctuate and this will require the development of new industrial sectors that can serve as a stable source of revenue. Although increase in energy tax is one of the most significant measures of a shift to cleaner energy, it has other drawbacks that impact the general population. In order to increase energy access, outputs such as electricity have to be made available at cheaper prices. An increase in tax would increase the price of energy and decrease energy access. This presents a dilemma to choose between increasing energy taxes to phase out fossil fuels and not increasing the taxes to have affordable and accessible energy. Higher taxes also affect the manufacturing industry of India. Although electricity is not under the GST regime, the source of 72% of India's electricity generation is coal. In the previous sections, we discussed a myriad of taxes and levies imposed on coal, which are borne directly by the consumer when they receive the end product, electricity. To keep domestic tariffs low, electricity is supplied at a higher price to industrial consumers, which increases the cost of production; hence, making price of Indian goods uncompetitive in the global market.

**Box 3**

- **Demand for coal to shift from power generation to industrial production**

  ![Diagram](Source: IEA, 2021)
In the developed economies, energy taxes are utilised to accelerate energy transition. In India, however, this is not the case. The royalties, cesses and other levies serve as revenue for the state exchequer rather than promoting clean energy projects. The ‘clean energy cess’ which was introduced in 2010, was supposed to contribute to the National Clean Energy and Environment Fund to promote development in renewable energy technologies. It was later brought into the GST regime as GST compensation cess to the government to account for the loss in revenue with the introduction of GST. This makes shifting to cleaner technologies extremely challenging.

The International Energy Agency predicted the increase in demand of coal through its Stated Policy Scenario (Figure 7). Although by 2040, there will be an increase in demand for coal by 30% of the demand in 2019, the rate of growth in demand will significantly drop between 2030 and 2040. There is also a structural shift as coal is predominantly being used for power generation, which will shift to industrial production in 2040. Industries such as iron and steel use coking coal that is primarily imported for production, since India majorly produces non-coking coal for thermal power generation. This indicates that not only will the drop in demand for power affect total coal production and hence the revenues collected by the state and central governments but the structural shift in coal demand from power production to industries will also lead to higher imports of coking coal rather than domestic production, further intensifying the impact on production and revenue.

Energy subsidy is an important part of the Indian energy sector, the primary objectives of which are meeting energy demand and supporting economic growth. The government of India has taken several steps moving away from energy subsidies to push energy transition. However, when it comes to coal, the subsidies provided have remained the same over the last decade. These subsidies lower the input costs for coal based electricity generation, which is in line with the nation’s goal of providing reliable and affordable access to electricity. However, the non-quantified subsidies have declined. These include the cost of coal transportation through railways and the discontinuation of income tax exemption for coal. The future of coal subsidies depends on the importance of coal in pushing economic growth and providing energy subsidy. Therefore, further research is required in this domain to arrive at a balanced amount of taxes and subsidies in the coal industry that paves way for adoption of clean energy mechanisms without jeopardising the growth of the economy.

Source: Created from India Energy Outlook, IEA, 2021
“In the developed economies, energy taxes are utilised to accelerate energy transition. In India, however, this is not the case. The royalties, cesses and other levies serve as revenue for the state exchequer rather than promoting clean energy projects.”
The government of India has been implementing several fiscal measures to achieve the target of providing reliable and affordable energy to all, and taxes and subsidies play a major role in determining the price of energy outputs, such as electricity. In its efforts to shift to cleaner sources of energy production and to increase energy accessibility, the government of India faces the challenges of adjusting the fiscal policies to growth requirements of the country; even the implemented policies are sometimes not effective due to administrative inefficiency and improper scrutiny of steps taken at the ground level. In this section, we put forth some recommendations to help mitigate the fiscal challenges of energy transition.

**Recommendations**

1. The GST Compensation Cess and other statutory levies must be included in the tax assessment.
2. An analysis of the impact of a rise on the price of coal and the price of coal outputs (electricity, steel, and iron) is required.
3. A technical assessment should be conducted on the impact of subsidies on both coal and renewable energy sector.
4. A single data portal with information on all energy data of India needs to be created.
5. A rational measure to be implemented to charge royalty rates.
6. Priority should be given to the substitution of coal in the manufacturing sector.
7. More focus should be given to estimate the potential of sectors other than coal.
8. Regular scrutiny of DMF funds is required.
9. The state and central governments both need to substitute their source of income.
10. A favourable taxation policy is required for the sub-segments of the renewable energy.
12. Requirement of conducting research at the state and lower levels.
13. Formation of energy taxation committee.

**Assessment of effective taxation:**

Post the implementation of GST, the burden of tax on coal was supposed to have reduced. However, given the multitude of taxes imposed on coal, as depicted in the previous sections of this study, the story of taxation is quite different. This calls for conducting a technical assessment of the effective tax paid by the producers. Other levies, besides the GST such as the GST Compensation Cess and other statutory levies must be included in the tax assessment.
Impact on prices of energy outputs:

We depicted the steep rise in the statutory levies paid by coal in Section 3. An analysis needs to be conducted on the impact of this rise on the price of coal and hence on the price of coal outputs such as electricity, steel and iron as this will present a clear picture of the actual fluctuations in the price of energy outputs and how a coal phase out through further taxation will impact them in the long run.

Revision of royalty:

Presently, royalty is being charged on the basis of the amount of coal produced, that is, per tonne of coal and this is slightly unreasonable when the value of such coal is changed based on its grade. A rational measure would be to charge royalty rates based on the value of output rather than the quantity of coal without significantly affecting the decision-making processes used by producers and consumers. A plausible solution to this problem would be to charge the royalty rates on ad valorem basis.

Revision of subsidies:

The total subsidies provided to the coal sector are significantly higher than that in the renewable energy sector. Although for renewable energy, the subsidies have increased remarkably in the last decade, the coal subsidies have remained mostly stable. Therefore, a technical assessment should be conducted on the impact of subsidies on both coal and renewable energy sector as well as on the long-term impact of change in subsidies on the energy outputs so as to arrive at the appropriate number of subsidies that should be provided to both sectors. Steps may also be taken regarding steadily eliminating coal subsidies altogether in a fixed period.

Need for an improved database:

A single data portal with information on all energy data of India needs to be created to assist researchers and policy-makers. This should contain data from all energy sectors such as coal, oil, petroleum and renewable energy, among others. Additionally, information on Levelised Cost of Energy, taxes imposed, subsidies provided and trends in the economic scenario of these sectors should be presented apart from the technical information of installed capacity, generation and emissions.
Substitution of coal in the manufacturing sector:

Besides electricity, coal is utilised in the production of steel, iron, bricks and cements. The governments at both the global and national levels have been determined to substitute coal for generating electricity. Therefore, it is important to understand that once the production of coal decreases in India, the dependence on imports for coking coal will increase. Along with other financial implications of phasing out coal, this will have a drastic impact on the economy’s balance of payments once the adoption of other sources of energy in the manufacturing sector through technological developments followed by incentives to adopt cleaner mechanisms is pushed. We have discussed this briefly in India’s Energy Transition: A Handbook (Swarnakar and Chauhan, 2022).

Diversification of government’s sources of income:

As discussed earlier, the government of India is heavily dependent upon the tax and non-tax revenue from the coal sector (Jain, 2021). The state and central governments both need to substitute their source of income, and this will require a revision of their fiscal structure.

Diversification in coal dependent communities:

Policy makers in coal dependent communities such as Jharkhand and Chhattisgarh need to diversify their sources of income, which involves planning for taxes and levies on growing industrial sectors with the potential to absorb the displaced population as coal phases out. Although diversifying an economy is a challenging task, it seems to be the only option in the long run. Also, extensive research is required to estimate the potential of sectors other than coal in these communities so that appropriate fiscal policies may be adopted.

Scrutiny of DMF Funds:

Despite coal producers contributing thousands of crores to the DMF funds over the years, the state governments have not been able to utilise them for the purpose they were meant to serve. Regular scrutiny of DMF funds may improve efficiency in utilisation. The state governments also need to target their area of expenditure appropriately and help in development/restoration of mining-affected areas rather than utilising them for other purposes such as the development of urban areas.
Favourable taxation policies for sub-segments of renewable energy:

Presently, the taxation system of renewable energy technologies is very broadly classified. Some sub-segments of the renewable energy technologies are still in their initial growth phase and require a different tax structure such as offshore wind energy and other small-scale technologies.

Establishment of an energy taxation committee:

An independent committee should be set up to evaluate the taxes imposed upon all energy sources and outputs. This committee should be responsible for assessing the tax and subsidy and for making recommendations regarding revising them at regular intervals. They should ensure that the already affected and vulnerable communities are compensated for a just transition. This committee may also be responsible for evaluating the expenditure from the DMF funds.

Reestablishment of National Clean Energy and Environment Fund:

The NCEEF supported clean energy research and funded renewable energy technology projects. These funds are presently included in the GST Compensation Cess and may be reinstated to be utilised as a measure towards a just and sustainable transition.

State specific analysis:

Since the level of dependency on coal varies greatly from state to state, it is important to conduct research at the state and lower levels to arrive at optimal tax targets. State governments may be tasked with this assignment and taxes should be modified according to the regional requirements.
Conclusion

In this study, we present the current fiscal setting of the coal sector in India. The pricing mechanism of coal and statutory levies paid by CIL is depicted, followed by the trends in the levies paid with respect to the coal produced in the last three decades. We further assess the future of the government’s revenue from the coal sector based on the predicted demand in the next two decades. Finally, recommendations are presented, specifically, to review and reform the fiscal setting of the coal sector. It is important that the funds received by the government are judiciously utilised for the benefit of the people affected by mining activities and to generate alternate sources of employment for them to achieve a just transition. Institutional strengthening is required for the national, state and local governments to develop just transition targets and policies in a harmonious and sustainable approach. Finally, further research is required to assess the various direct and indirect impacts of changes in fiscal policy on not only the coal sector but also on other sectors.
References


Just Transition Research Centre (JTRC) leverages high quality academic environment to conduct cutting edge research to address the academic and policy requirements of the national and sub-national levels. The centre’s aim is aligned primarily with the seventh sustainable development goal of the United Nations: affordable and clean energy for all.

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