

Managing a fair transition away from coal in India

A conversation starter roundtable

Date: Friday, December 20, 2019

Time: 10.30 – 15:30 IST

Venue: Conference room, Centre for Policy Research, Dharam Marg, Chanakyapuri
New Delhi 110021 (Map: <https://goo.gl/maps/g68e1R8nQypfmgAN6>)

An energy transition is already underway in India, driven by a rapid fall in prices of renewable energy (mainly wind and solar), rise in prices of coal-based electricity, and increasing environmental and climate-change related pressures. Early signs of this transition are evident from the emerging trends in electricity generation capacity addition. Between April 2016 and March 2019, while the country's utilities added 9.2 GW of coal-based capacity, they added 31.7 GW of renewables-based capacity¹. The Central Electricity Authority has projected a similar future growth trajectory in its draft report on the optimal generation capacity mix by 2029-30². According to this report, while the net increase in coal-fired capacity in this period would be about 70 GW (including capacity in the pipeline), the net addition of renewables would be about 375 GW. As a result, the share of coal-based capacity in the mix by 2029-30 would be down to 32% from about 57% in January 2019. Electricity storage prices are expected to fall at a rate similar to the fall in price of renewables, further accelerating the transition away from coal by helping to deal with some of the challenges of infirm renewable electricity.

However, this does not imply that India will stop depending on coal any time soon. Indeed, it is likely that coal consumption will increase in absolute terms – albeit slower than earlier – for at least a few more years. But its share in the overall energy basket is expected to reduce given the increasing difficulty in securing finance for coal-based generation capacity and cost trends. The push for electrification and use of other fuels in industry is likely to reduce the importance of coal for industrial heating applications too. Given the critical importance of coal not only to the energy system, but also to various other aspects such as livelihoods and political economy in some parts of the country and to some sectors of the economy, the slow but inevitable transition away from coal will have many ramifications. Therefore, it is important that this transition be understood well so that it can be fair and well managed, and its negative implications are minimised. Moreover, given the various linkages of the coal sector with other sectors, the transition is likely to be complex. Therefore, it would be prudent to begin exploring and understanding the various dimensions of this transition away from coal at an early date. A round-table discussion is being organized to serve as a conversation starter to help this exploration and understanding. Further details of the event are given below.

¹ The two capacity addition numbers are not strictly comparable given their different usage factors, but these numbers nonetheless indicate a shift away from coal. Indeed, in 2018-19, according to Central Electricity Authority data, utility coal-based capacity actually fell by 2.7 GW.

² http://cea.nic.in/reports/others/planning/irp/Optimal_generation_mix_report.pdf



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Range of issues

There are a range of issues that intersect with the coal sector, and would therefore be affected by the transition away from coal. The following paragraphs illustrate some of the important issues for consideration. These have been classified into three broad (and overlapping) categories for ease of discussion.

People and Communities: The coal sector is a major source of employment for many people in coal-bearing areas. This employment is either provided directly by companies such as CIL and its subsidiaries, or indirectly through contractors (called Mine Development Operators or MDOs) used by coal mining companies. The employment may either be formal or informal. In addition, there are also a large number of people who are employed in the coal value-chain, even if not the coal mining sector itself. This includes those employed by coal-based power plants, coal transporters, ancillary service providers (canteens, local services, contractors, shops and other services in coal colonies and so on) etc. While firm numbers for the people directly or indirectly employed by the coal sector are hard to get, it is estimated to be in the region of about 1 million people.

In addition to employment, communities are also some times dependent on coal mining companies. For example, it is understood that public sector coal companies such as CIL provide physical and social infrastructure such as schools, hospitals, water supply and roads in some locations. Hence, the transition would have to be managed such that livelihoods of families and welfare of communities currently dependent on coal are protected.

Resources and Restoration: The future of the coal economy has considerable implications for natural resources such as land, water and air. Anticipating future coal needs would help minimise these ancillary costs and avoid lock-ins.

The importance of coal in the electricity system has been reducing over the last few years. The average usage factor of coal-based generation plants has fallen from about 70% in 2012-13 to about 61% in 2018-19. With an increasing share of renewable energy sources in the generation supply mix, these usage factors are expected to fall further. This creates a danger of significant under-utilisation of any coal mines that may be newly opened or coal-based power units that may be newly set up. Therefore, the 'business-as-usual' approach of assuming a normative load factor to decide whether to open new mines or power plants needs to be revisited to avoid the danger of locking up precious resources of land and water, and destroying forests. Such preventive measures are also critical to minimise the adverse impacts of re-settlement and rehabilitation for communities affected by such projects.

Coal mining has major impacts on the land from which coal is mined, particularly because of the open-cast mining predominant in India. Two major kinds of impacts are the creation of large coal mine pits from which coal is extracted and overburden mounds where the extracted earth is dumped. Both these tend to change the landscape significantly in addition to affecting water sources and channels. Coal use in power plants leads to the further problem of large ash ponds and ash dumps where vast quantities of ash generated from burning coal are stored. Typically, such lands used either for coal mining, overburden storage or ash dumps are not usable at the end of life of the coal mine or power plant. Restoration of these lands and making them productive again would be one of the challenges to be dealt with as part of the transition away from coal. In addition, coal mines in India intersect heavily with some of India's most dense forests. Coal mining and allied activities such as coal washing and power generation impact these forests adversely. Such forests would need to be restored as part of managing the transition. Different



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approaches to effective mine closure and restoration could potentially be tried out through closing the many smaller, inefficient mines of CIL.

Finance and Politics: Coal mining is predominantly concentrated in the central and eastern parts of the country in states such as Chhattisgarh, Odisha, Jharkhand and West Bengal. Such states would be the most affected by the phasing out of the coal industry, not only because of the loss of employment, but also because these states receive a significant amount of revenue from coal mining and associated activities. These include revenues from royalty on coal mining and contributions to the District Mineral Fund, in addition to their share of the Goods and Services Tax as applicable. Considering that the coal-bearing states are also among the poorer states of the country, loss of coal-related revenue could further exacerbate regional inequities in the country. Therefore, this issue would need to be dealt with sensitively.

The transition is likely to both impact as well as be impacted by the state of the financial sector. Coal-based thermal power plants are one of the leading causes of stress in the financial sector. 34 plants owed about ₹1.74 trillion to financial institutions in 2018, and were declared as stressed assets. In this backdrop, there is an increasing reluctance on the part of financial institutions to support coal-based capacity, impacting the pace of the transition away from coal. At the same time, the large exposure of financial institutions to coal-based electricity also makes them vulnerable to any increased stress on the coal-based electricity sector. Moreover, since the financial institutions supporting coal-based electricity are predominantly public sector institutions, the threat may spill over beyond the financial sector.

Indian Railways would be significantly affected by the phasing out of coal. It currently cross-subsidises its passenger traffic by over-charging its freight traffic, and coal is the largest source of revenue among the different kinds of freight with as much as 46% of the total freight revenue for Indian Railways in 2017-18 being contributed by the coal sector. Therefore, as coal is phased out, Indian Railways' current business model would come under strain, and it would need to find other ways to remain viable.

The above is a selection of the most important issues around the gradual phasing out of the coal sector. As is evident, all the issues presented are complex and would require careful planning and significant lead time to prepare for the requisite changes to minimise negative impacts and ensure fairness. Therefore, it would be prudent to begin the conversation around these issues early.

Roundtable details

The roundtable discussion is intended to be a conversation starter with representation from academic and research organizations, grass-roots organizations, activists, trade unions and consultants. The discussions would be held under Chatham house rules, where comments and statements would not be attributed to individuals, but may be recorded as part of the final proceedings of the roundtable. After the roundtable, a record of proceedings would be published which would contain a summary of the discussions at the roundtable and a list of participants. The summary would be made available publicly.

Tentative agenda

10:30 – 10:45	Welcome and Introductions Ashok Sreenivas
10:45 – 12:00	Session I: People and Communities Moderator: Shripad Dharmadhikary Opening Remarks: Shweta Narayan Ashim Roy <i>Floor Discussion</i>
12:00 – 13:15	Session II: Resources and Restoration Moderator: Sreedhar Ramamurthi Opening Remarks: Ritwick Dutta Sreedhar Ramamurthi <i>Floor Discussion</i>
13:15 – 14:00	Lunch
14:00 – 15:15	Session III: Finance and Politics Moderator: Ashwini K Swain Opening Remarks: Anish De Rohit Chandra <i>Floor Discussion</i>
15:15 – 15:30	Summing up and Closure Navroz K Dubash

The sessions are organised around the three broad themes identified in the note. Each session will start with two brief opening remarks to introduce the theme. Discussion will be lightly moderated to keep it focused.