



Missing steps: the role of regulatory process in delayed FGD installation

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The amendment to the Environment (Protection) Rules, 1986 was notified in December 2015, and aimed to address the emissions from thermal generation. Toward this end, these revised norms required some thermal plants to install Pollution Control Equipment (PCE). However, more than five years hence, there is little progress on the implementation of the revised norms, despite some attempts to streamline the process. While there are several components to this delay, this article focuses on the role of regulators. It uses the example of two PCE related cases at the APTEL to highlight the delays and missed opportunities in regulatory process, with regard to implementation of the environmental norms.

Coal based power generation plays a significant role in India's power mix, but it comes at considerable social and environmental cost. Given this, addressing emissions from thermal generation is essential. The [Environment \(Protection\) Amendment Rules, 2015](#), notified by the Ministry of Environment, Forest, and Climate Change (MoEFCC) on 7 December 2015, was a step in this direction. This notification amended the Environment (Protection) Rules, 1986, and revised the environmental norms applicable to all thermal power plants (TPPs). It amended the emission norms to include more stringent limits for particulate matter, introduced limits on specific water consumption, and added new norms for oxides of sulphur and nitrogen and mercury emission³. As per this initial notification, all plants were required to adhere to the norms within two years, i.e. by December 2017. However, this deadline was missed.

Thermal plants may be required to retrofit or install some pollution control equipment; such as Flue Gas Desulphurisation systems (FGDs), Electrostatic Precipitators (ESPs), and Selective Catalytic Reduction (SCR); in order to be compliant with the revised norms⁴. Depending on the technology, these installations can be time, cost, and resource intensive in varying degree. Given the timelines and costs involved, and the urgency with regard to pollution control, there is a need to ensure timely compliance while providing regulatory certainty about the recovery of additional costs. The need for a framework to address these concerns was recognised by the Ministry of Power (MoP), in its [directive](#) to the Central Electricity Regulatory Commission (CERC), dated 30 May 2018, after the deadline of December 2017 had lapsed. This directive communicated the central government's decision that the MoEFCC 2015 notification is a change in law event⁵, in an attempt to streamline timely implementation. Despite such attempts, significant delays persist in the implementation of the new environmental norms.

Since the deadline of December 2017 was missed with little to no progress on implementation, the MoEFCC extended the deadline to December 2022 and suggested a phased implementation schedule, considering issues of supply interruptions and synchronisation periods. As per this schedule, 33 units located in areas with high population density and critical pollution levels⁶ were required to comply with the revised norms by December 2019. But only two units of the 33 have adhered, and most have missed this deadline. There is a high likelihood of [many plants missing the 2022 deadline](#) as well.

The delays in adherence, and the causes behind such delays, are a major road block to compliance and merits scrutiny. Amongst other reasons, the regulatory process itself has contributed to these delays in implementation. As an example, this article looks at two cases⁷ at the Appellate Tribunal for Electricity

(APTEL) which deal with the installation of FGDs in cost plus (Section 62) and competitively bid (Section 63) plants.

1. Rejection at Regulatory Commissions

The first case considered is the [judgment](#) in Appeal No. 101 of 2020, dated 13 November 2020. The appellant, Lalitpur Power Generation Company Limited (LPGCL), is an independent power company which developed a 1,980 MW thermal generating station on a cost-plus basis, under Section 62 of the Electricity Act 2003. In order to comply with the revised environmental norms, the installation of FGD was recommended by the Central Electricity Authority (CEA), and LPGCL would incur capital and other expenditure towards this end. It then filed a petition with the Uttar Pradesh Electricity Regulatory Commission (UPERC), in November 2017, seeking regulatory certainty through in-principle approval of additional costs due to installation of FGD. According to LPGCL, these costs were to be incurred due to a change in law event (the MoEFCC 2015 Notification), and therefore, should be passed through.

However, the UPERC in its [order](#) dated 7 February 2020, denied such in-principle approval on the basis of the fact that in-principle approval for additional capitalisation was not permitted in the UPERC Generation Tariff Regulations 2019. According to these regulations, approval for any additional capital expenditure on account of uncontrollable factors, such as a change in law, could be claimed only after it has been incurred, at the time of truing up. Further, UPERC questioned the applicability of the MoEFCC 2015 notification as a change in law event in this case, as it interpreted the requirements⁸ in LPGCL's environmental clearance as a likely pre-existing obligation towards FGD installation. This order was challenged by LPGCL at the APTEL in Appeal No. 101 of 2020.

The second case is the [common judgement](#) in Appeal No. 21 of 2019 and Appeal No. 73 of 2019, dated 28 August 2020. The appellants in each case are the Punjab based power plants Talwandi Sabo Power Limited (TSPL) and Nabha Power Limited (NPL), respectively. Both TSPL and NPL are generating companies that sell power on a competitively bid basis, as per Section 63 of the Electricity Act 2003. Like LPGCL, the installation of FGDs was recommended by the CEA, and these generating companies were also required to incur additional expenses toward meeting the revised environmental norms. They filed petitions with the Punjab State Electricity Regulatory Commission (PSERC), in July 2017 and January 2018 respectively, to allow in-principle approvals for these costs, since they were on account of the MoEFCC 2015 Notification, which is claimed as a change in law event under the terms of their respective PPAs.

The PSERC issued orders in response to [TSPL's](#) and [NPL's](#) petitions on 21 December 2018 and 9 January 2019. In both the cases, the PSERC held that the MoEFCC 2015 Notification did not account for a change in law as defined by their PPAs, on account of pre-existing criteria⁹ in their environmental clearances¹⁰. Both these orders were challenged by TSPL and NPL at the APTEL in Appeal No. 21 of 2019 and Appeal No. 73 of 2019.

2. Action at the APTEL

In both the LPGCL judgement and the TSPL and NPL common judgement, the orders by the state ERCs have been set aside. The common judgement found that the MoEFCC 2015 Notification did qualify as a change in law event, and the costs associated with compliance to such an event must be included as additional capital cost. It posited that the requirements in the respective environment clearances were only regarding space for FGD, and this did not translate to FGD installation being envisaged prior to the notification of the revised environmental norms. The APTEL also directed the PSERC to devise a mechanism for payment of the costs from the procurers, after prudence checks for the expenditures. However, unlike

the LPGCL judgement, the APTEL did not require time bound action from the PSERC. No order has been issued in response by the PSERC, as on date.

The LPGCL judgement also found that the MoEFCC 2015 Notification was a change in law, and the in-principle approval for additional costs on this account should be granted. The APTEL noted that in spite the absence of such regulation from the state’s tariff regulations, the provision of in-principle approval is found in CERC tariff regulations 2019, and should be co-opted by the UPERC. It also directed the UPERC to fast track the proceedings and pass related orders within four weeks. In response, the state commission passed an [order](#) on 24 Jan 2021, accepting that the MoEFCC 2015 Notification is a change in law for this case, and allowing expenditure related to FGD installation.

3. Continuing delays

These APTEL judgements uphold the spirit of MoP’s directive to CERC, and support the need for regulatory certainty to ensure timely adherence to the revised environmental norms. In fact, in the common judgement, the APTEL states that *“There should not be regulatory uncertainty on the same Notification of 2015, otherwise it leads to chaos in the energy sector. Similarly placed generators in the country will have to face different orders of Regulatory Commissions on the issue”*. Timely FGD installation face several bottlenecks, in the form of supply constraints, high costs, and inaction from generators. Regulatory uncertainty is another wrench in the works. Table 1 illustrates the timelines with regard to FGD installation for the three generating companies considered.

Table 1. Timelines with regard to FGD installation for the examples considered

LPGCL	TSPL	NPL
Dec 2015: MoEFCC Notification		
Dec 2017: CPCB issued directions for compliance		
May 2018: MoP directive to CERC		
Nov 2017: filed petition with ERC for in-principle approval of FGD capital cost	Jul 2017: filed petition with ERC for in-principle approval of FGD capital cost	Jan 2018: filed petition with ERC for in-principle approval of FGD capital cost
Feb 2020: UPERC order disallowing in-principle approval	Dec 2018: PSERC disallowed change in law	Jan 2019: PSERC disallowed change in law
Nov 2020: APTEL judgement	Dec 2019: Old FGD deadline for TSPL and NPL units, missed	
Dec 2020: Unit 1 FGD deadline, missed (bid opened stage*)	Aug 2020: APTEL common judgement	
Jan 2021: UPERC order allowing in-principle approval	Oct 2020: Unit 3 new FGD deadline, missed (bid awarded stage*)	Feb 2021: Unit 2 new FGD deadline, missed (bid awarded stage*)
Feb 2021: Unit 2 FGD deadline, missed (bid opened stage*)	Dec 2020: Unit 2 new FGD deadline, missed (bid awarded stage*)	Apr 2021: Unit 1 new FGD deadline, (bid awarded stage*)
Oct 2021: Unit 3 FGD deadline, (bid opened stage*)	Feb 2021: Unit 1 new FGD deadline, missed (bid awarded stage*)	

Source: Prayas (Energy Group) compilation based on APTEL judgements and CEA status summary for FGD installation

*Note: *as of February 2021*

As per CEA’s status summary of the phased implementation of FGDs for [February 2020](#), the three units of LPGCL were required to install FGD in December 2020, February 2021, and October 2021. As per the summary, these units had issued notices inviting tenders as of February 2020. The same document recorded that the NPL and TSPL units were required to install FGDs by December 2019. However, they had only awarded bids towards FGD installation, and had missed that deadline.

In the [February 2021](#) iteration of the same status summary, these dates for TSPL and NPL were significantly pushed back, as seen in Table 1. But their status still remains at bids awarded. The installation dates for LPGCL, on the other hand, have not seen any revision, but the units have only progressed to the bid opened stage as of February 2021. Given that these units are still at early stages of the FGD installation process, and that the installation of FGDs could take up to 36 months, it is very likely that FGDs for these units will only be commissioned beyond the 2022 deadline.

4. Whose responsibility is it anyway?

The revision of the environmental norms by the MoEFCC was a positive, albeit partial, step towards addressing the pollution concerns on account of thermal generation. As recorded in MoP's directive to the CERC, *"implementation of revised emission standards would face challenges relating to stringent timelines, availability of suppliers and technology, shut down for longer periods, and revenue loss during shutdown"*. This extends to issues of regulatory certainty with regard to additional cost recovery on account of adherence to the new environmental norms. While the Central Government did decide that the MoEFCC 2015 Notification was a change in law event through MoP's directive, as an attempt to streamline timely implementation, it has not been completely successful in doing so. For a smooth roll out, this decision should have been supplemented with a regulatory framework and clear enabling guidelines. In the absence of such a framework, regulatory uncertainty abides regarding the MoEFCC 2015 Notification, and leaves it open for interpretation and invites ad hoc action, litigation, and associated delays, as illustrated by the cases considered.

There have been attempts to address this at the central level. The CERC gazetted the [first amendment](#) to its 2019 tariff regulations in February 2021, after public consultation. This accounted for the tariff impact of pollution control systems for cost plus plants. On 5 September 2020, the CERC released a [discussion paper](#) on the 'mechanism for compensation on account of change in law for compliance with revised emission standards notified by MoEFCC in respect of competitively bid thermal generating stations', and invited public comments on the same¹¹. While these are positive developments, they have been introduced after more than five years of the MoEFCC Notification, and are indicators of the precious little progress on this front.

There have been several missed opportunities as well. For instance, such implementation has far reaching impacts on larger public interest, and could fall into the ambit of the Forum of Regulators (FoR). The FoR could have, in this capacity, taken up the issue and set up an enabling framework. Similarly, the MoP could have strengthened its 2018 directive by issuing accompanying timebound guidelines to the CERC. However, such avenues were not explored.

Further, there are likely to be delays in implementation and the norms may still not be met few years hence. The generating companies¹² and the government shoulder a significant portion of the culpability, the lack of certainty from regulators and time taken to address these concerns on a regulatory forum also contribute to these delays. In the instance of the examples considered, the cases took around three years from filing the petition to reach resolution at the APTEL. Such delays in implementation of the revised norms dilute its significance.

In order to adhere to the norms in spirit, and achieve the aim of controlling emissions on account of thermal generation, timely action is crucial. The absence of a regulatory framework is a missed opportunity towards ensuring timely implementation and enforcement of the norms, and holding the non-compliant accountable. In conclusion, the existence and revision of the environmental norms, while a positive move, is only the first step towards addressing the environmental concerns related to thermal generation. Effective and timely implementation and checks on continued compliance are the missing pieces of this puzzle.

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² This article is part of an ongoing series called Power Perspectives which provides brief commentaries and analyses of important developments in the Indian power sector, in various states and at the national level. The portal with all the articles can be accessed here: <https://prayaspune.org/peg/resources/power-perspective-portal.html>. Comments and suggestions on the series are welcome and can be addressed to powerperspectives@prayaspune.org.

³ These norms have since been further amended in [2018](#) and [2020](#).

⁴ It is important to note that compliance to the norms is often conflated with the installation of FGDs, which are comparatively time, resource, and cost intensive. Given the differing parameters of thermal power plants, FGDs need not be the solution to emissions for all thermal power plants.

⁵ Except in cases where the associated Power Purchase Agreements (PPA) have a bid deadline on or after 7 December 2015 or if such pollution control equipment was already mandated as part of the thermal plant's environmental clearance

⁶ Within a 300 km radius of the Delhi NCR region

⁷ The declaration of the MoEFCC notification being a Change in Law event, has different impacts on cost plus and competitively bid plants.

⁸ LPGCL's environmental clearance was accorded through a letter dated 31 March 2011, and predated the MoEFCC Notification. It stated that the provision for installation of FGD shall be provided for future use.

⁹ TSPL's environmental clearance was dated 11 July 2008, and directed TSPL to keep space for retrofitting FGD if required at a later stage. NPL's environmental clearance also carried the same directives, and was dated 3 October 2008.

¹⁰ Further, in the TSPL order, the PSERC stated that granting relief in terms of costs involved "would also defeat the sanctity of the competitive bidding process as the other bidders who had participated in the competitive bidding would be pre-judicially affected". The APTEL, however, was of the opinion that no other bidder could have anticipated the new emissions norms of the present nature, and the conditions of competitive bidding in this regard would not be violated.

¹¹ No regulations have come up in this regard, as on date.

¹² The generating companies considered approached their respective ERCs only 19 to 25 months after the MoEFCC 2015 Notification. This type of delay in action would extend to most other TPPs as well.

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