

ILLUMINATING INDIA'S FUTURE: A DEEP DIVE INTO THE ELECTRICITY (AMENDMENT) RULES 2024

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INTRODUCTION

India's power sector has witnessed a transformation in recent years, owing to the country's dedication to resolving environmental concerns and encouraging the use of renewable resources. Over the years, amendments to the Electricity Act 2003 have sought to address evolving challenges and opportunities in power sector. The Ministry of Power has recently introduced the Electricity (Amendment) Rules 2024, which is an important move toward attaining the broader objectives specified in Electricity Act 2003, as well as complying with India's ambitious climate goals. These new rules revise the existing Electricity Rules, 2005, with a major focus of improving the supply of electricity of large enterprises and expanding green energy sector. The amendments aim to create an enabling environment for the expansion of renewable energy projects and energy storage systems by addressing key issues such as licensing requirement, open access charges, and cost-reflective tariffs. The relaxation of license criteria intends to simplify the process of establishing renewable energy projects, lowering barriers, and increasing investment in the field. Furthermore, the standardization of open access charges aims to create a level playing field for renewable energy generators, encouraging fair competition, and allowing them to participate in energy market. The laws also provide procedures for achieving cost-reflective tariffs, which ensure that the full cost of energy generation, including environmental externalities, is precisely reflected in the price system. This strategy not only promotes transparency but also encourages the use of cleaner, more sustainable energy sources.¹

With the Electricity (Amendment) Rules, 2024, India demonstrated its commitment to environmental sustainability as well as recognition of the essential role that renewable energy sources play in mitigating the consequences of global warming. These regulations seek to expediate the transition to more environmentally friendly energy landscape by creating a favorable regulatory environment, in line with the country's overarching goals of achieving energy security, stimulating economic growth, and preserving the environment for future generations.

JUDICIAL INTERPRETATION SHAPING THE ELECTRICITY RULES

Over time, judicial interpretations and various amendments have shaped the current structure of the legislative framework that governs India's electricity sector. In *Tata Power Co. Ltd. v. Reliance Energy Ltd.*, the court emphasized the importance of open access in promoting competition and efficiency in the power sector. The

¹ Praveen Raju, Janhavi Joshi, & Amoolya Khurana, "Electricity Amendment Rules 2024: Reshaping the Energy landscape in India", ET Energy World, (5 April 2024), <https://energy.economictimes.indiatimes.com/news/power/electricity-amendment-rules-2024-reshaping-the-energylandscape-in-india/109056996> - :~:text=The 2024 Rules provide relief,establish, operate or maintain a.

court held that open access is a crucial tool for guaranteeing that customers have the freedom to choose their electricity suppliers, which promotes economy and efficiency.² In *PTC India Ltd. v. Central Electricity Regulatory Commission*, the court stresses the need for regulatory clarity and transparency in electricity industry. The court stated that stimulating growth and investment in the power industry necessitates transparent and stable regulatory environments.³ In *Energy Watchdog v. Central Electricity Regulatory Commission*, court held that tariffs should represent the actual costs incurred and compensatory tariffs should only be granted in circumstances of force majeure or significant changes in law that affects the viability of power projects.⁴ Furthermore, in *Adani Power (Mundra) Ltd. v. Gujarat Electricity Regulatory Commission*, court ruled that increased costs could be passed on to consumers through revised tariffs, underscoring the need for tariffs to reflect actual costs.⁵

These judicial decisions establish a strong legal framework and guiding principles, which have been included in amended rules. These rulings laid the groundwork for the new laws, ensuring that they address long-standing concerns and create a more efficient, competitive, and sustainable electricity market. Under 2024 Rules, open access enables customers to purchase power straight from sources, skipping distribution firms. This mechanism is essential for large consumers and entities involved in generation of renewable energy. Despite this, a major obstacle has been the disparate and often opaque structure of open access charges among the various states. The 2024 rules address this issue by standardizing the calculation of wheeling charges, that is the fees for using transmission and distribution networks. Amendment also states that distribution licensee' fixed cost of power purchase cannot be surpassed by additional fees on open access consumers. Additionally, in 2003 act, any organization engaged in the distribution and transmission of electricity is required to get a license from either the Central Electricity Regulatory Commission (CERC) or respective State Electricity Regulatory Commission (SERCs). However, the 2024 rules, include a significant exemption to this rule. Rule 2 permits the establishment, operation, and maintenance of transmission lines without a license for entities such as generating companies, captive generating plant operators, energy storage system, and consumers with a load of at least 25 MW for inter-state transmission and 10 MW for intra-state transmission. This provision aims to ease the regulatory process for large-scale users and green energy providers, encouraging the development of specialized electricity transmission infrastructure. Furthermore, in 2024 rules, tariffs should correctly reflect the costs that generation, transmission, and distribution companies actually incur. Rule 2 specifies that there can be no more than 3% gap between the expected yearly revenue from approved tariffs and the annual aggregate revenue requirement. By focusing on tariff reflectivity, power sector organizations will be able to recoup their expenses, strengthening their financial position and capacity to invest in new infrastructure and technology.⁶ The Electricity (Amendment) Act, 2024, have been strongly influenced by these rulings which highlights the need for financial stability, regulatory certainty, and openness in the power sector.

COMPARATIVE ANALYSIS WITH GLOBAL PRACTICES

The Electricity (Amendment) Rules 2024 in India and FERC Order 888 in Unites states⁷ share similarities in their approach despite having different timelines. Both of these aims to liberalize their respective markets by promoting competition and open access in the electricity sector. Although 2024 rules aim to integrate renewable energy sources through eased licensing for transmission lines, FERC Order 888 indirectly benefited

² Tata Power Co. Ltd. v. Reliance Energy Ltd., MANU/SC/2815/2008.

³ PTC India Ltd. v. Central Electricity Regulatory Commission, MANU/SC0164/2010.

⁴ Energy Watchdog v. Central Electricity Regulatory Commission, MANU/SC/0408/2017.

⁵ Adani Power (Mundra) Ltd. v. Gujarat Electricity Regulatory Commission, MANU/SC0869/2019.

⁶ Electricity Amendment Rules 2024, (Ministry of Power),

[https://powermin.gov.in/sites/default/files/Electricity Amendment Rules first amendment of 2024.pdf](https://powermin.gov.in/sites/default/files/Electricity%20Amendment%20Rules%20first%20amendment%20of%202024.pdf).

⁷ FERC Order 888, <https://www.ferc.gov/industries-data/electric/industry-activities/open-access-transmission-tariff-oatt-reform/history-oatt-reform/order-no-888>.

renewables by creating a more open market structure. These changes could boost the use of renewable energy sources and productivity. Long-term investment landscapes are impacted by both, with India's rules aiming to attract renewable investments, and FERC order 888 created a new investment paradigm that required industry adaptation.⁸

The negative environmental impact of FERC Order 888 gives valuable insight for predicting potential issue with 2024 rules. FERC 888 initially promoted the use of more coal plants, and sometimes favored cheaper, more polluting options, suggesting that India's rules may also favor cost over environmental concerns in short run. While FERC 888 eventually favored renewables, the delay in this effect indicated India might also experience delay in the adoption of the rules and significant renewable energy growth.⁹

India can benefit from the experiences while implementing FERC Order 888 as it implements 2024 rules. India should give first priority to environmental concerns, especially in light of past experience when FERC's order initially favored more expansive and polluting sources like coal. India should strive for well-rounded strategy that takes the economy and environmental sustainability in account. Taking a cue from the US, where benefits from renewable energy were recognized gradually, India should incentivize and accelerate the use of renewables. Subsidies, feed-in tariffs, or other supportive policies could be used to ensure a swift transition to renewable energy sources.

ENVIRONMENTAL IMPLICATIONS OF 2024 RULES

Further, from several legal precedents and landmark judgements, one can interpret the interplay between power sector and its impact on environment. In the case of *Hindustan Zinc Ltd. v. Rajasthan Electricity Regulatory Commission*, court upheld the validity of the Renewable Purchase Obligation mechanism, stating that it is an integral part of the Electricity Act 2003, and aims to promote sustainable development and environmental protection.¹⁰ This mechanism mandates a certain percentage of the total electricity consumption by distribution companies and certain obligated entities must be met through renewable energy sources. *M.C. Mehta v. Union of India* judgement set the foundation for considering environmental impacts in all industrial operations, including power sector. The emphasis on sustainable development directly influences how power plants and electricity generation projects are evaluated concerning their environmental footprints.¹¹ In *ACME Bhiwadi Solar Power Plant Pvt. Ltd. v. Rajasthan Electricity Regulatory Commission*, the court emphasized the importance of promoting renewable energy sources and providing a conducive regulatory environment for their growth.¹² *Alembic Pharmaceuticals Ltd. v. Rohit Prajapati* highlighted the importance of conducting comprehensive environmental impact assessments and adhering to environmental norms.¹³

2024 rules promise substantial transformation in India's power sector, and their impact on environment sector is multifaceted and far-reaching. The exemption from licensing requirements for dedicated transmission lines is expected to hasten the implementation of renewable energy projects. Project developers can now expedite their operations and accelerate the launch of renewable energy projects by eliminating the labors and complicated licensing process. Large-scale renewable energy projects like solar parks and wind farms, which frequently need specialized transmission lines to connect to the grid, will especially benefit from this

⁸ FERC ORDER 888, (Energy Knowledge Base), <https://energyknowledgebase.com/topics/ferc-order-888.asp>.

⁹ Time Woolf, Geoff Keith, David White, "Environmental challenges and opportunities of the evolving North American electricity market", Commission for Environment Cooperation, (June 2002), <http://www.cec.org/files/documents/publications/1820-retrospective-review-fercs-environmental-impact-statementopen-transmission-en.pdf>.

¹⁰ Hindustan Zinc Ltd. v. Rajasthan Electricity Regulatory Commission, MANU/SC/0641/2015.

¹¹ M.C. Mehta v. Union of India, MANU/SC/0175/1997.

¹² ACME Bhiwadi Solar Power Plant Pvt. Ltd. v. Rajasthan Electricity Regulatory Commission, MANU/CR/0111/2019.

¹³ Alembic Pharmaceuticals Ltd. v. Rohit Prajapati, MANU/SC/0353/2020.

provision. The reduced administrative burden and increased flexibility will encourage investment in these projects, contributing to India's renewable energy targets and reducing carbon footprints. This process can help attract investments and increase implementation of projects. Moreover, the rules make it easier to set up and run energy storage systems without requiring license for transmission lines. Energy storage system reduce the intermittent nature of renewable energy sources, increasing the reliability and sustainability of the grid. The 2024 rules help the successful integration of renewable energy sources into the grid and accelerate the shift to a more ecologically friendly and sustainable power industry by easing the deployment of energy storage system.

Purchasing electricity from renewable energy sources will become more cost-effective for consumers as open access charges become standardized and as additional surcharges eventually eliminate. India has a strong basis to quickly grow its portfolio of renewable energy sources as it is a fifth and fourth largest producer of solar and wind power respectively. Supportive government initiatives including tax rebates, subsidies, and the production linked incentive program help to manufacture solar PV modules. Investing in renewable energy not only reduces greenhouse emissions, but also promotes long-term energy security and economic stability by depending less on imported fossil fuels.¹⁴ Large firms, businesses, and industries will be more likely to adopt renewable energy as a result of enhanced affordability and transparency, driving the overall growth of the renewable sector energy.

Lastly, the rules contribute to reducing technical and commercial losses in the power distribution system by assuring the financial viability of distribution companies through fair and transparent pricing system. Lower losses indicate less wasted energy, which indirectly benefits the environment by eliminating wasteful and unnecessary generation and emissions.¹⁵ The 2024 rules offer numerous potentials for corporations to participate in renewable energy projects. India's renewable energy potential is substantial, with estimated capabilities for solar, biomass, wind, and hydro power far exceeding present installations, reaching over 1096GW. India can reach and exceed its lofty environmental and energy goals by enacting these transformative policies and maximizing on its renewable energy potential.¹⁶ These projects are now more appealing due to regulatory ease with which dedicated can be established and the favorable open access policy.

REAL-WORLD IMPACTS

The following case studies will illustrate how easy access to renewable energy projects have benefitted the environment:

- The Rajasthan Solar Park initiative has produced thousands of employments and has reduced carbon emissions significantly while also stimulating local economic development. The increases used of solar power plants has contributed to the reduction of greenhouse emissions and decreased reliance on fossil fuels.¹⁷
- Muppandal Wind Farm is one of largest wind power projects and provide considerable environmental and socioeconomic benefits. By replacing fossil-fuel based power generation, the farm helps to reduce greenhouse emissions and mitigate the effects of climate change. Furthermore, farm also offers job opportunities to village people and promote sustainable development in rural areas. Despite its success, farm faces grid-integration issue, this can be addressed by 2024 rules, which eliminate the need to obtain a license

¹⁴ Renewable Energy, (Invest India), <https://www.investindia.gov.in/sector/renewable-energy>.

¹⁵ Sangita Shetty, "Central government introduces sweeping amendments to Electricity rules 2024: focus on transmission lines, open access charges, and tariff reflectiveness", Solar Quarter (12 January 2024), <https://solarquarter.com/2024/01/12/central-government-introduces-sweeping-amendments-to-electricity-rules2025-focus-on-transmission-lines-open-access-charges-and-tariff-reflectiveness/>.

¹⁶ Rajesh Kumar, "Renewable energy for sustainable development in India: current status, future prospects, challenges, employment, and investment opportunities", BMC Energy Sustainability, and Society, <https://energysustainsoc.biomedcentral.com/articles/10.1186/s13705-019-0232-1>.

¹⁷ Kashish Shah, "India's Utility-Scale solar parks a global success story", Institute for Energy Economics and Financial Analysis, (May 2020), https://ieefa.org/wp-content/uploads/2020/05/Indias-Utility-Scale-Solar-ParksSuccess-Story_May-2020.pdf.

for transmission lines to connect to the grid.¹⁸

The 2024 rules have the potential to deliver major economic and environmental benefits. The case studies illustrate how renewable energy projects can generate jobs, promote local economies, and lower carbon emissions. These highlights the significance of enabling policies and regulatory frameworks in fostering sustainable development.

CHALLENGES AND RISK OF 2024 RULES

While it is evident that there are positive impact of 2024 rules, there are few negatives too. Firstly, the new rules ease the process of installing dedicated transmission lines by eliminating the need of license for certain businesses, it also poses serious risk of deforestation, loss of habitat, and environmental disturbances. Rapid construction can lead to widespread deforestation, destruction of wildlife habitats, and disturbance to ecological process. The construction of new lines frequently requires removal of large areas of land, which can fragment habitats and transform ecosystem. Construction activities can cause soil erosion, water pollution, and higher carbon emissions. For example- the field research on Bhadla Solar Park shows that developers are using existing scarce water resources. The solar panel are cleaned by using water from nearby, tube wells, canals, and ponds. There is no easy access to water in project area.¹⁹ If these projects are not planned and executed with stringent environmental safeguards, then overall environmental effects might be severe. Secondly, transmission lines connecting solar and wind farms to grid stations in arid regions have proven to be a major source of concern for Great Indian Bustard.²⁰ The court in *Veioze Citizens Welfare Forum v. Union of India*, has observed that the development and environment protection must go together. There should be a balance between these two.²¹ Thirdly, there could be a temptation to opt for less expensive, non-renewable sources like coal and natural gas over more costly renewable sources in order to keep prices low and ensure financial viability. This may result in higher greenhouse emissions which would negatively impact air quality and accelerate climate change. Similarly, court in *M.C. Mehta v. Union of India*, acknowledged that reliance on coal for electricity generation contributes significantly to air pollution and adversely affect public health and environment. Without strong environmental regulations and policies included into the new framework, there is a risk that drive for economic efficiency would be detrimental for the environment.²² Lastly, for renewable energy projects to be financially viable, attractive and stable tariff regimes are typically required. For instance, in 2018 Karnataka Electricity Regulatory Commission proposed significant increase in open access charges for renewable energy projects. This unexpected increase raised concerns among investors who had committed to long-term projects based on existing tariff structure. Many projects were put on hold while developers waited for clarity on new tariff regime.²³ Similarly, if there are changes or uncertainty in open access charges calculations, the financial model for these initiatives may be disrupted, discouraging investors. Because investors want tariff systems that are stable and predictable in order to commit to long-term renewable energy projects. Frequent changes or lack of clarity in open access charges can create an uncertain environment, discouraging investment and eventually slowing down the shift to cleaner energy sources.

¹⁸ Priyanka Shankar, "The wind farm paradox in Southern Tamil Nadu", Mongabay, (15 April 2022), <https://india.mongabay.com/2022/04/the-wind-farm-paradox-in-southern-tamil-nadu/>.

¹⁹ Raktim Majumer, "Solar Power in India: A case study of the Bhadla Solar Power Park", CFA, (December 2023), https://www.cenfa.org/wp-content/uploads/2024/01/Report_Solar-Power-in-India-A-Case-Study-of-the-BhadlaSolar-Power-Park.pdf.

²⁰ Simrin Sirur, "From 1260 to 150- why power transmission lines are biggest threat to Great Indian Bustard", The Print, (19 December 2021), <https://theprint.in/environment/from-1260-to-150-why-power-transmission-lines-arebiggest-threat-to-great-indian-bustard/783286/>.

²¹ Vellore Citizens Welfare Forum v. Union of India, MANU/SC/0686/1996.

²² M.C. Mehta v. Union of India, MANU/SC/0175/1997.

²³ Saumya Prateek, "Karnataka Court quashes KERC order increasing wheeling charges for open access power", Mercom, (20 March 2019), <https://www.mercomindia.com/karnataka-court-order-wheeling-open-access>.



CONCLUSION

The Electricity (Amendment) Rules 2024 are a major set of regulations designed to encourage sustainability, efficiency, and openness in India's power industry. The cited legal precedents emphasize the significance of regulatory certainty, justice, and transparency and offer a solid framework for comprehending the ramifications of these changes in regulation.

The 2024 rules have the potential to lead to favorable outcomes for both the environment and the electricity sector because these rules align with key judicial principals. The future of the power landscape in India is expected to be shaped by these regulatory reforms as the country moves on with its goal of sustainable and inclusive energy development.

While these rules offer benefits for enhancing power sector operating efficiency and promoting economic investment, they also pose significant environmental challenges. It is essential to address these issues with a balanced approach that incorporates strict environmental regulations and ensures that economic incentives align with long-term environmental sustainability goals.