ITEM NO.9 COURT NO.7 SECTION XVII

S U P R E M E C O U R T O F I N D I A
RECORD OF PROCEEDINGS

Civil Appeal No(s). 388/2021

RIDHIMA PANDEY **Appellant(s)**

VERSUS

UNION OF INDIA & ORS. **Respondent(s)**
Mr. Jay Cheema and Mr. Sudhir Mishra Amicus Curie and Mr Gaichargpou Gargmei Advocate on record will assist Amicus Curie
IA No. 16419/2025 - INTERVENTION/IMPLEADMENT
IA No. 15919/2025 - INTERVENTION/IMPLEADMENT

Date : 22-07-2025 This matter was called on for hearing today.

CORAM :
HON'BLE MR. JUSTICE PAMIDIGHANTAM SRI NARASIMHA
HON'BLE MR. JUSTICE ATUL S. CHANDURKAR

For Appellant(s) : Mr. Rahul Choudhary, Adv.
Ms. Srishti Agnihotri, AOR
Ms. Itisha Awasthi, Adv.
Ms. Sanjana Grace Thomas, Adv.
Mr. D.p.singh, Adv.
Ms. Tara Elizabeth Kurien, Adv.

For Respondent(s) :Mr. Vikramjit Banerjee, A.S.G.
Mr. Gurmeet Singh Makker, AOR
Mr. Nachiketa Joshi, Adv.
Mr. Ayush Anand, Adv.
Ms. Ruchi Kohli, Adv.
Ms. Swarupma Chaturvedi, Sr. Adv.
Mr. Raman Yadav, Adv.

Mr. Vikramjit Banerjee, A.S.G.
Ms. Nachiketa Joshi, Adv.
Mr. Ayush Anand, Adv.
Ms. Ruchi Kohli, Adv.
Ms. Swarupama Chaturvedi, Adv.
Mr. Chitvan Singhal, Adv.
Mr. Amrish Kumar, AOR

Mr. Vikramjit Banerjee, A.S.G.
Mr. Swarupama Chaturvedi, Sr.Adv.
Mr. Nachiketa Joshi, Adv.
Mr. Ayush Anand, Adv.

Ms. Ruchi Kohli, Adv.
Mr. Raman Yadav, Adv.
Mr. Sudarshan Lamba, AOR

Mr. Ashutosh Dubey, AOR
Mrs. Rajshri Dubey, Adv.
Mr. Ashutosh Dubey, Adv.
Mr. Abhishek Chauhan, Adv.
Mr. Amit P Shahi, Adv.
Mr. Rajendra Anbhule, Adv.
Mr. Rahul Sethi, Adv.
Ms. Chanda Trikha, Adv.

Mr. Sudhir Mishra, Adv.
Mr. Jatinder (jay) Cheema, Adv.
Mrs. Petal Chandhok, Adv.
Ms. Ritwika Nanda, Adv.
Ms. Swasti Mishra, Adv.
Mr. Ashish Bassi, Adv.
Mr. Gaichangpou Gangmei, AOR

Ms. Amrita Narayan, Adv.
Ms. Molshree Bhatnagar, Adv.
Mr. Shaida Das, Adv.
Mr. Harshit Dhamija, Adv.
Ms. Sukanya Lal, AOR

UPON hearing the counsel the Court made the following

O R D E R

1. By our order dated 21.02.2025, recognizing that climate change has ascended as one of the most existential global predicament, wielding profound ramifications beyond mere environmental degradation, escalating temperatures, erratic weather patterns, the proliferation of extreme climatic events such as floods, droughts, and heatwaves, we were of the opinion that it is compelling for individuals and institutions to converge and adopt a coordinated effort to effecting deal with the emerging situations.

2. Pursuant to our directions, the Ld. Amici Curiae and the Government of India have filed detailed written submissions. We now

propose to consider the impact of power generation and the consequential carbon emissions on climate change. In the written submissions carbon emissions arising from various sectors namely; construction sites (30%), Crop Residue Management (3%), Power Generation (8%), Waste Management etc. have been indicated by the Amici Curiae.

3. In so far as the carbon emissions from power generation are concerned, the written submissions filed by the Ld. Amici Curiae is extracted hereinbelow for ready reference;

> "11.6. Power Generation (8%)
>
> There are several coal-fired power plants in Punjab and Haryana, within 300 km of the NCR.

State	Power plant	Capacity (MW)	Fuel
Haryana	Deenbandhu Chhotu Ram Thermal Power Station, Yamuna Nagar	600	Coal
Haryana	Indira Gandhi Super Thermal Power Project, Jhajjar District.	1500	Coal
Haryana	Mahatma Gandhi Super Thermal Power Project, Jhajjar District.	1320	Coal
Haryana	Panipat Thermal Power Station	710	Coal
Haryana	Rajiv Gandhi Super Thermal Power Station, Hissar District.	1200	Coal
Punjab	Goindwal Sahib Power Plant, Tarn Taran	540	Coal

	District.		
Punjab	**Guru Gobind Singh Super Thermal Power Plant, Ropar**	**840**	**Coal**
Punjab	**Guru Hargobind Thermal Plant, Lehra Mohabbat**	**920**	**Coal**
Punjab	**Rajpura Thermal Power Plant, Patiala District**	**1400**	**Coal**
Punjab	**Talwandi Sabo Power Project, Mansa District**	**1980**	**Coal**

11.6.1 All these plants are located generally upwind of Delhi. In addition, there are a number of coal-fired power plants in Uttar Pradesh, generally to the east of Delhi.

11.6.2 A study based on the environmental status reports for these thermal power plants, sourced from the website of the Central Electricity Authority (CEA), a technical arm of the Union Ministry of Power, from April 2022 to August 2023, concluded that non-compliance with emission standards is contributing significantly to air pollution in the region. According to one report, these plants account for around 8% of the $PM_{2.5}$ pollution in Delhi-NCR.

11.6.3 On November 18, 2024, Delhi's Air Quality Index reached 481, in the 'severe' category. A report by the Centre for Research on Energy and Clean Air (CREA) focused on the spotlight on thermal power plants as a dominant, year-round source of sulphur dioxide (SO2) emissions, which emit SO2 at levels considerably greater than stubble burning, a seasonal contributor to emissions that often gets far more publicity.

11.6.4 Coal-fired power plants emit particulate matter ($PM_{2.5}$ and PM_{10}), nitrogen oxides, sulphur oxides, as well as carbon dioxide, a greenhouse gas. Unlike the smoke from open burning of stubble, emissions from power plants are discharged along with exhaust gases from tall stacks as buoyant plumes, which can transport the pollutants over greater distances. Emissions of sulphur oxides from power plants lead to the formation of secondary particulate matter, with

smaller aerodynamic diameters that disperse with exhaust gases and can affect ambient air quality at greater distances.

11.6.5 Studies show that the sulphur content in Indian coal is 0.7% or less.

11.6.6 Almost all this sulphur is converted to sulphur dioxide and trioxide during the combustion process. These emissions may be reduced by the use of Flue Gas Desulphurization (FGD) systems. Electrostatic precipitators (ESP) may be used to control particulate emissions. Only a small fraction of the TPPs that were required to install FGD systems have actually done so.

11.6.7 Nearly 540 power plant units nationwide were required by 2026 to install flue-gas desulphurization (FGD) systems that remove sulphur from the plants' exhaust gases but only about 8% have done so, including those run by state-run NTPC and privately held JSW Power 30.
11.6.8 By notification dated December 30, 2024, the Union Ministry of Environment, Forest and Climate Change (MoEF&CC) has reportedly issued yet another extension for thermal power plants (TPP) to comply with sulphur dioxide (SO2) emission norms, marking the fourth such delay". One reason for this could be the cost. It is argued that FGD systems do not actually improve air quality and the focus instead should be on cleaner-energy sources and India should phase out older and less efficient coal-based plants instead of spending money on FGD systems. Note that FGD systems do not control emissions of greenhouse gases. However, till such time as renewable sources such as solar and wind are capable of meeting the demand, coal-fired TPPs are going to be around. The question is whether coal-fired TPPs should continue to emit current levels of SO2 during the period of transition or if there is any alternative technology that the Government needs to discover and implement.

11.6.9 It was reported on 27 January 2025 in MC Mehta Vs UOI, that the Supreme Court of India has expressed concern over the deadline extension of three years given to NCR power plants for compliance with statutory emission norms for SO_2 and non- SO_2 pollutants. "If these timelines are extended, there will be a problem for Delhi."

11.6.10.Other control measures would include replacing dirtier fuels with cleaner fuels, e.g., low ash and low sulphur coal, coal with natural gas, or replacing fossil fuels with renewable energy sources.

11.6.11.According to projections by the Indian government, the requirement for electric power will double by 2030. While solar and wind will help in meeting this increased demand, coal will be the major contributor, at least till such time as green energy sources ramp up.

11.6.12. Renewable Energy

Increased use of renewable energy would reduce reliance on fossil fuels and the resulting emissions of pollutants and greenhouse gases. At the recent COP28 UN Climate Change Conference in Dubai, India made a commitment to have 50% of "cumulative electric power installed capacity" come from non-fossil fuels by 2030.

11.6.13 Solar

Solar energy offers a clean, climate-friendly, abundant and inexhaustible energy resource. The costs of solar energy have been falling rapidly; Solar Thermal Electricity (STE) and Solar Photo Voltaic Electricity (SPV) are generally competitive with conventional energy sources

11.6.14 Large utility-scale solar plants such as the Adani Green Energy Limited 30 GW plant being built on barren land at Khavda in Kutch, occupying an area of 538 sq km, bring efficiencies of scale, and will help reduce the need for TPPs when fully constructed.

11.6.15 The power generated by each individual household, industrial building, commercial building or any other type of building can be used to partly fulfill the requirements of the building occupants and surplus, if any, can be fed into the grid. Rooftop solar is generally more effective in rural and semi-rural areas; in urban areas, the effective rooftop area is believed to be a small fraction (5% to 6%) of total area.

11.6.16 The roof top SPV systems on building's

roof space can be installed to replace DG gensets for operation during load shedding. The price of power generated from solar plants installed today is at par with or lower than the commercial tariff for consumers. In grid connected rooftop or small SPV system, the DC power generated from SPV panel can be converted to AC power and fed to the grid on 440/220 Volt, three/single phase line depending on the capacity of the system.

11.6.17 Wind

`On 1st February 2014 Finance Minister Nirmata Sitharaman announced that 1 crore households will receive 300 units of free electricity through the rooftop solar scheme. This announcement has boosted interest in green energy.

11.6.18.Other potential sources of renewal energy are wind, both land-based and offshore. As of 2023, India's wind energy capacity was less than 42 gigawatts, ranking it fourth in the world. According to the Ministry of New & Renewable Energy, India's wind energy potential in estimated to be 302 gigawatts at 100 meters above ground level and 695.5 gigawatts at 120 meters above ground level, mostly in 8 windy States, including Tamil Nadu, Karnataka, Gujarat, Maharashtra and Rajasthan

11.6.19. The Government of India has set a target of 30 gigawatts (GW) of offshore wind installations by 2030. In February 2022, RWE Renewables GmbH and Tata Power Renewable Energy Limited, a 100 percent subsidiary of Tata Power, formed a partnership to explore the potential for a joint development of offshore wind projects in India,

11.6.20. Other

Other potential renewable sources include tidal energy in coastal areas. Non-fossil fuel alternatives include nuclear power plants and Small Modular Reactors; while these do not produce the emissions that fossil fuel plants do, long-term storage and disposal of radioactive wastes is an ongoing issue."

4. The Amici Curiae has also brought to our notice the latest

Notification dated 11.07.2025 issued by the Ministry of Environment, Forest and Climate Change deciding the 2025 Rules. It is submitted that these Rules in fact dilute the norms that have been laid down in the 2015 Notification.

5. Ms. Swarupama Chaturvedi appearing on behalf of the Union of India, has referred to the affidavit filed by the Ministry of Environment, Forest and Climate Change through the Nodal Agency indicating the plan and the steps that have been taken as regards controlling and regulating the carbon emissions arising out of power generation. Our attention is also drawn to paragraph 26 which is as under:

> ***26.I state that as per India's 4th Biennial Update Report BUR-4) to the UNFCCC, India's emission intensity of Gross Domestic Product (GDP) reduced by 36 percent between 2005 and 2020, By March 2025, the share of non-020/B) fossil sources in the installed electricity generation capacity is/48.03 percent. Total installed capacity of renewable power, including large hydropower, is 220.10 GW and cumulative renewable power installed capacity (excluding large hydro projects) has increased 4.8 times from 35.85 GW in March 2014 to 172.37 GW in March 2025. India's forest and tree cover has consistently increased and currently stands at 25.17% of the total geographical area of the country, During 2005 to 2021, additional carbon sink of billion tonnes of carbon dioxide (CO2) equivalent has peen created. That, despite India's very low contribution to LEZE ON torical emissions and the current levels of global emissions, India has taken proactive actions to combat climate change in the context of sustainable development and its developmental aspirations."***

6. In order to address the issue of carbon emissions arising out of power generation, we deem it necessary that all stakeholders must be on the same platform to discuss, formulate and implement the plan systematically and consistently for achieving short-term and long-term goals. It is therefore necessary to connect those involved in the process of power generation, transmission and distribution as well as the regulators. It is equally necessary to ensure that the policy makers are attuned with ground realities and the difficulties of the regulatory and executory machinery.

7. To this end, we deem it necessary to direct Central Electricity Authority constituted under Section 70 of the Electricity Act, the Central Electricity Regulatory Commission constituted under Section 76 to be impleaded as party respondent. We implead them as respondents and issue notices. We direct the Ministry of Power to convene a joint meeting with Central Electricity Authority and the Central Electricity Regulatory Commission to discuss about the plan of action with respect to reduction of carbon emissions in the power generation sector and file a joint affidavit indicating legal regime for this purpose and the plan of action in furtherance of the same. The affidavit shall be filed within four weeks from today.

8. List these matters for further hearing on 19.08.2025.

(INDU MARWAH)
AR-cum-PS

(NIDHI WASON)
COURT MASTER (NSH)