
TAXING THE DIGITAL THIRST: A CRITICAL ANALYSIS OF INDIA'S GREEN TAXATION FRAMEWORK AND THE NECESSITY OF AN ANTICIPATORY MODEL

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ABSTRACT

India's approach to environmental taxation has been, almost without exception, a response to harms already done. The levies it has tried are the cess on coal, the age-based charge on out of date vehicles, the compensation cess that has replaced earlier taxes and is working as a cess on carbon price, attached to forms of pollution whose damage was visible, established, and in most cases decades old. This paper argues that such a framework, reactive by habit and by design, is poorly suited to the harm that is now gathering at the country's digital frontier. The rapid construction of data centres, drawn to India by the ambitions of an artificial-intelligence economy, is creating a new and concentrated demand upon two resources the country can least afford to waste firstly freshwater and then electricity. The harm is not yet large in the aggregate, but it is growing quickly, it is concentrated in regions already under water stress, and most importantly it is foreseeable. Drawing on the recent literature documenting the resource footprint of India's data-centre boom, on the history and recent unravelling of the country's green-tax instruments, and on the precautionary and polluter-pays principles that the Supreme Court has woven into Indian environmental law, the paper contends that the reactive model has reached the limit of its usefulness, and that the moment calls for an anticipatory model: a fiscal instrument calibrated to a foreseeable harm before that harm matures, designed to shape the siting and the resource intensity of digital infrastructure while it is still being built. The argument is offered not as a call for a new burden upon a nascent industry but as a plea for the right kind of discipline applied at the right time.

Keywords: green taxation; environmental fiscal policy; Pigouvian tax; data centres; water stress; precautionary principle; polluter pays; anticipatory regulation; carbon pricing; India.

I. Introduction: A Tax That Always Arrives Late

There is a pattern in the way India has taxed or penalised pollution, and the pattern is worth stating plainly at the outset, because the argument of this paper is in large part an argument against it. The pattern is that the tax arrives after the harm. The cess on coal came long after coal had become the mainstay of the national grid; the green levy on old vehicles came after a generation of vehicles had aged on the roads; the proposals for a carbon price are still being debated while the emissions they would discipline accumulate in the atmosphere. In each case the State has reached for the fiscal instrument once the damage was already done and largely irreversible, and has used the instrument less to prevent the harm than to raise revenue from it, or to be seen to be acting against it.

This habit of lateness is not, in itself, a scandal. Much of environmental law is necessarily reactive, for many harms are not visible until they have occurred. But there are harms whose arrival can be seen in advance, whose scale can be estimated, and whose shape is being fixed, even now, by decisions being taken today. For such harms the reactive instrument is the wrong instrument, and the argument of this paper is that the resource footprint of India's data-centre boom is precisely such a harm.¹

The figures are still modest in the aggregate, and the defenders of the industry are right to say so. Data centres accounted in 2025 for something on the order of half of one per cent of national electricity consumption, and for a comparably small fraction of national water use.²

But the aggregate is the wrong measure, for two reasons that the body of this paper develops. The first is that the demand is growing very fast: installed capacity has multiplied several times over in a handful of years, and the resource demand is projected to more than double again before the end of the decade.³

The second is that the demand is concentrated in particular regions, particular cities,

¹Rohini Krishnamurthy, *India's Digital Thirst: What Data Centre Giants Aren't Saying About Their Water Use*, Down to Earth, Nov. 10, 2025, <https://www.downtoearth.org.in/science-technology/indias-digital-thirst-what-data-centre-giants-arent-saying-about-their-water-use>.

²*Council on Energy, Environment and Water, How Is Data Centre Infrastructure in India Shaping Power and Water Use?*(2026). The report estimates that data centres accounted for roughly half of one per cent of national electricity consumption and approximately 150 billion litres of annual water use in 2025, with both figures projected to more than double by 2030.

³The expansion of installed capacity from about 375 MW in 2020 to nearly 1.5 GW in 2025 is widely reported; see the CEEW white paper, *supra*, and the contemporaneous press coverage of the sector's growth.

particular aquifers so that a use that is trivial at the national scale may be ruinous at the local one. A tax framework that waits, as India's framework has always waited, until the harm is large in the aggregate will arrive, once again, too late.

The paper proceeds in five further parts. The second recovers the theory of the corrective tax and the history of India's attempts to deploy it, in order to show both what the instrument can do and how, in Indian hands, it has repeatedly faltered. The third describes the new harm the digital thirst of the title with as much precision as the available data allow. The fourth sets out the constitutional and doctrinal warrant for an anticipatory response, drawing on the precautionary and polluter-pays principles. The fifth proposes the shape of an anticipatory levy and answers the objections it will attract. A short conclusion draws the threads together.

II. The Corrective Tax and Its Indian Career

Green taxation, also known as environmental tax, represents a necessary fiscal intervention that is levied upon goods, services, or activities that generate negative ecological effects. The architecture of these levies realise heavily on Pigouvian taxation theory, which postulates that any cost borne by the ecology due to private resource intensive activity should forcefully be aligned with the financial cost of impact through state imposed pricing mechanisms. In the context of domestic environmental injuries product, it is the economic manifestation of the Polluter Pays Principle, a doctrine that is embedded in Indian law through various landmark Supreme Court judgements. The judicial consensus dictates that burden of ecological degradation has to be borne by the enterprise that causes degradation rather than being absorbed by the public or the environment.⁴

In theory the instrument is elegant; in practice it is difficult, for the external harm is hard to measure, the politics of the levy are hard to manage, and the temptation to use the tax for revenue rather than for correction is ever present. India's career with the instrument illustrates each of these difficulties in turn.

A. The Coal Cess and Its Dilution

India's most ambitious levy in environmental taxation was the cess on coal, introduced in 2010 and credited to a National Clean Energy Fund intended to finance the country's transition

⁴A.C. Pigou, *The Economics of Welfare* (Macmillan 1920).

to cleaner sources of power.⁵

The design was, on paper, exactly what the theory prescribes: a charge upon the most carbon-intensive of fuels, with the proceeds earmarked for the mitigation of the very harm the fuel produced. The rate rose, over six years, to Rs. 400 per tonne. But the instrument was undone, by degrees, in the manner that has become characteristic of Indian environmental fiscal policy. First the earmarking was loosened, the Fund's proceeds drawn upon for purposes far removed from clean energy. Then, with the arrival of the Goods and Services Tax in 2017, the cess was subsumed altogether: the charge upon coal survived in name, at the same rate, but its proceeds were redirected to the compensation of States for the revenue they lost in the transition to the new tax, and its connection to any environmental purpose was severed.⁶

The final act came in September 2025, when the compensation cess, having discharged its transitional function, was notified to nil and the charge upon coal, by then an environmental levy in nothing but its distant origin, simply disappeared.⁷

The episode is instructive. India built a corrective tax, allowed its corrective purpose to be hollowed out by the demands of revenue and federal finance, and then dismantled the shell that remained. The instrument failed not because the theory was wrong but because the discipline that the theory requires — the earmarking, the calibration to harm, the insulation from the ordinary pressures of the exchequer — was not maintained.

B. The Green Tax on Vehicles: A Proxy for the Real Thing

The other prominent instance of green taxation in India, the so-called green tax upon older vehicles, exhibits a different but related defect. The charge is levied by reference to the age of the vehicle older vehicles pay more on the assumption that older vehicles pollute more.⁸

⁵The Finance Act, No. 14 of 2010, § 83 (India) (introducing the Clean Energy Cess on coal, lignite, and peat at an initial rate of Rs. 50 per tonne, subsequently raised in stages to Rs. 400 per tonne by 2016, with proceeds credited to the National Clean Energy Fund).

⁶On the introduction of the Goods and Services Tax in July 2017 the Clean Energy Cess was subsumed; the GST Compensation Cess that replaced the levy on coal retained the rate of Rs. 400 per tonne but redirected the proceeds to the compensation of States for transitional revenue loss, severing the levy from any earmarked environmental purpose.

⁷Ministry of Finance, Notification No. 02/2025-Compensation Cess (Rate), Gazette of India, Extraordinary, pt. II sec. 3(i), G.S.R. 659(E) (Sept. 17, 2025) [reducing the GST Compensation Cess on specified goods to nil with effect from September 22, 2025, issued under the Goods and Services Tax (Compensation to States) Act, No. 15 of 2017, § 8(2) (Ind.)]

⁸Ministry of Road Transport & Highways, Notification No. G.S.R. 117(E), Gazette of India, Extraordinary.

The assumption is broadly true but crudely so: it is a proxy for emissions rather than a measure of them, and it taxes the wrong thing for the right reason. A well-maintained older vehicle may pollute less than a poorly maintained newer one, yet the former pays and the latter does not. The instrument captures the political appeal of acting against pollution without doing the harder work of measuring it, and it stands as an example of the reactive model at its most approximate: a charge attached, after the fact, to a proxy for a harm, in a manner that neither prevents the harm nor prices it accurately.

Taken together, the two instruments define the Indian green-tax tradition and its limits. It is a tradition of reaction, of approximation, and of fiscal opportunism a tradition in which the environmental purpose of a levy is asserted at its birth and forgotten thereafter. It is against this tradition, and not against the idea of the corrective tax as such, that the present argument is directed.

III. The Digital Thirst: A Foreseeable Harm

India stands at a critical macroeconomic and ecological crossroads. The nation cannot afford to entirely reject the digital infrastructure that underpins the twenty-first-century global economy, nor can it allow the unchecked commodification and exhaustion of the municipal water tables that biologically sustain its population.

A. The Shape of the Demand

Al Kez et al. (2022) analyse the sustainability challenges within digitalisation and it establishes core operational reality of an internet data centre that is generation of immense, concentrated thermal output requiring massive continuous power and cooling systems. The authors note that “Data centers house a huge number of servers, which consume a vast amount of energy to respond to information requests and store files and large amounts of resulting data.” And consequently “Water is used extensively in data centers, both directly for liquid cooling and indirectly to generate electricity.”⁹ The thermal output is mitigated generally, through evaporative cooling systems, that rely heavily on continuous flow of fresh portable water, the academic consensus dictates that this depletion is not a by-product of any operational inefficiency that can be healed, but rather a deliberate certainty built into the architecture that

⁹Dlzar Al Kez et al., Exploring the Sustainability Challenges Facing Digitalization and Internet Data Centers, 371 J. Cleaner Production(2022).

comes with open loop cooling design. By analysing this, the literature confirms that environmental threat posed by data centres is unique as it is structural and separates it from other traditional industrial manufacturing where the pollution or emission that comes later can be technologically filtered as and when the point of emission arrives.

In a country differently endowed, neither demand would be cause for special concern. But India is not such a country. It supports close to a fifth of the world's population upon something like a twentieth of its freshwater, and the World Economic Forum has named water shortage as the country's foremost environmental risk. Into this constrained setting the data-centre industry is bringing a new, concentrated and fast-growing demand. The aggregate share remains small, but the projections show it more than doubling by 2030, and the geography of the demand makes the aggregate misleading.¹⁰

B. Concentration and the Tyranny of the Average

The decisive feature of the harm is its concentration. India's data centres are not spread evenly across the country; they cluster in and around a handful of metropolitan regions — and a large share of that capacity sits in areas already classified as water-stressed. A national average that reports data centres as consuming a fraction of a per cent of the country's water conceals the fact that, in a particular city drawing upon a particular aquifer, the same facilities may be competing directly with households and farms for a resource that is already scarce. The harm, in other words, is local even where the statistic is national, and a fiscal instrument calibrated to the national statistic would systematically understate it.

This is the sense in which the existing framework, attuned to aggregate and mature harms, is structurally unable to see the harm that is forming. By the time the data-centre share of national water and power use grows large enough to register on the instruments of reactive taxation, the siting decisions that determine where the burden falls will long since have been made, and the infrastructure will have been built, in concrete and steel, to last for decades.

C. Why the Harm Is Foreseeable

The crucial point, for the argument that follows, is that none of this is a surprise. The growth

¹⁰World Resources Institute India, More Than Half of India's Data Centres Are in Water-Stressed Regions, WRI India, <https://wri-india.org/data/more-half-indias-data-centres-are-water-stressed-regions>; Council on Energy, Environment & Water, *Supra* note 2.

of the sector is projected and published; the resource intensity of the cooling technologies is known; the water stress of the receiving regions is mapped. The harm is foreseeable in the strict sense that its existence, its direction, and its approximate magnitude can be stated in advance with reasonable confidence. And a harm that is foreseeable is a harm that may, in principle, be anticipated — which is to say, addressed before rather than after it matures. The State holds the country's water in trust for its people; a trustee who can foresee the depletion of the trust property and does nothing until the depletion is complete has not discharged the trust.¹¹

IV. The Constitutional Warrant for an Anticipatory Model

The proposal that the State act against a harm before the harm has fully arrived may sound, to ears trained in the reactive tradition, like an overreach — a tax upon a wrong not yet committed. It is nothing of the kind, and the doctrinal materials that show why are already present in Indian environmental law. The reactive habit is a habit of policy, not a command of the Constitution; the Constitution, properly read, points the other way.

A. The Precautionary Principle

The Supreme Court has, for nearly three decades, treated the precautionary principle as part of the law of the land. In the line of cases beginning with the *Vellore Citizen's Welfare Forum case*, the Court held that where there is a threat of serious environmental harm, the absence of full scientific certainty about the harm is not a reason for postponing measures to prevent it, and that the burden of showing an activity to be environmentally benign rests upon the actor who proposes it.¹²

The principle is, in its essence, a principle of anticipation: it licenses — indeed it requires — action in advance of certainty, precisely because to wait for certainty is often to wait until the harm is beyond repair. A fiscal instrument calibrated to a foreseeable but not-yet-mature resource harm is an application of the precautionary principle in the register of tax, and it stands on the same constitutional footing.

¹¹M. C. Mehta v. Kamal Nath, (1997) 1 SCC 388, recognising the public trust doctrine in Indian law; the State holds natural resources, including water, as trustee for the public, a holding that imposes a duty of stewardship inconsistent with the unpriced depletion of the resource.

¹²Vellore Citizens Welfare Forum v. Union of India, (1996) 5 SCC 647, in which the Supreme Court read the Precautionary Principle and the Polluter Pays Principle into the corpus of Indian environmental law as facets of the right to a wholesome environment under Article 21.

B. The Polluter Pays Principle and the Public Trust

To the precautionary principle the Court has joined the polluter-pays principle, under which the cost of environmental harm is to be borne by the party that causes it rather than by the public at large; and it has recognised, in the public-trust doctrine, that the State holds natural resources as trustee for the people and may not permit their unpriced depletion.

These principles supply both the justification for the levy and its measure. The data centre that draws heavily upon a stressed aquifer imposes a cost upon the community that shares the aquifer; the polluter-pays principle says that the data centre, and not the community, should bear that cost; and the public-trust doctrine says that the State, as trustee, is under a duty to ensure that it does. An anticipatory levy is the fiscal expression of these duties a means of internalising, in advance, a cost that would otherwise be externalised onto the most vulnerable. The right to life under Article 21, which the Court has read to include the right to clean water and a wholesome environment, completes the chain: the State's duty to protect that right is not suspended until the right has been violated.

V. The Shape of an Anticipatory Levy

A critique that identifies a defect owes a remedy, and the remedy here is not a single tax but a design a set of features that distinguish an anticipatory instrument from the reactive ones that have failed. Four features are essential, and a fifth answers the principal objection.¹³

A. Calibration to Measured Resource Use, Not to a Proxy

The levy must be charged upon the thing that does the harm actual metered consumption of water and of grid electricity and not upon a proxy such as the size or the age of the facility. This is the lesson of the vehicle green tax, which taxed a proxy and so taxed inaccurately. A charge upon measured consumption rewards the operator who invests in efficient cooling and clean power, and penalises the operator who does not; it shapes behaviour rather than merely raising revenue, which is the whole point of a corrective tax.

¹³The expression is used here to denote a fiscal instrument whose rate and base are calibrated to a harm that is foreseeable but not yet fully realised, by contrast with a reactive instrument that responds to a harm after it has matured. The distinction is one of timing and design, not of constitutional category.

B. Sensitivity to Local Scarcity

Because the harm is concentrated, the levy must be too. A litre of water drawn in a region of acute stress should cost the operator more than a litre drawn where water is abundant, so that the instrument steers new facilities toward locations that can bear them and away from those that cannot. A flat national rate, blind to the geography of scarcity, would repeat the error of the reactive model the tyranny of the average by pricing a local harm at a national rate. The siting decision is the decision that matters most, for it is made once and endures for decades, and the levy should bear upon it most heavily.

C. Anticipatory Timing

The instrument must engage with the facility while it is being planned and built, not merely once it is operating. A charge known in advance, varying with the chosen site and the chosen cooling technology, enters into the investment decision itself and shapes the infrastructure before it is locked into concrete. This is what distinguishes the anticipatory model from the reactive one: it acts upon the decision that fixes the harm, rather than upon the harm once it has been fixed.

D. Earmarking, Honestly Maintained

The proceeds of the levy should be earmarked for the mitigation of the harm for the recharge of stressed aquifers, for the support of efficient cooling and clean power, for the communities upon whom the burden falls and the earmarking should be protected against the fate that overtook the National Clean Energy Fund.

The Clean Energy Cess was subsumed into the GST Compensation Cess. While this consolidation resulted in immense revenue, exceeding ₹30,000 crore annually by 2020 the environmental intent was severely diluted. The funds were no longer reserved for ecological preservation or renewable energy projects, but instead were used to compensate individual states for general revenue.

The history of that Fund is the cautionary tale that every proposal of this kind must answer: an environmental levy whose proceeds are not ring-fenced will, sooner or later, be drawn into the general exchequer, and its corrective purpose will dissolve. The anticipatory levy must be designed from the first with the institutional safeguards a dedicated fund, transparent

accounting, a bar upon diversion that the coal cess was allowed to lose.

E. The Objection from Regressivity and Burden

The strongest objection to any new resource levy is that it will burden a nascent and strategically important industry, raise the cost of the digital infrastructure the country wishes to build, and fall, through higher prices, upon ordinary users.¹⁴

The objection has force and must be met rather than dismissed. The answer lies partly in design and partly in proportion. In design, the levy can be made to bite upon resource intensity rather than upon computation as such, so that the operator who builds efficiently pays little and the operator who builds wastefully pays much; the burden is then a burden upon waste, not upon digitisation. In proportion, the burden a well-designed levy imposes is modest in relation to the interest it protects the freshwater of a water-scarce nation and modest, too, in relation to the incentives the State is simultaneously extending to the industry through electricity-duty waivers and the like.¹⁵

A State that offers concessions to attract data centres while declining to price the resources they consume has not balanced the competing interests; it has weighed only one of them. The anticipatory levy restores the missing weight.

VI. Conclusion

India's green-tax framework has been, throughout its history, an instrument of reaction: a tax that arrives after the harm, attached to a proxy for the harm, and prone to lose its corrective purpose to the ordinary pressures of revenue and federal finance. Against the mature harms of coal and vehicle exhaust the framework was at least timely in the weak sense that the harm it addressed was already there to be addressed. Against the harm now forming at the country's digital frontier the concentrated and fast-growing thirst of its data centres for water and for power the reactive framework is not merely imperfect but structurally blind, for it is built to register harms in the aggregate and after the fact, and this harm is local in its incidence and foreseeable before its arrival.

¹⁴Cushman & Wakefield, Data Center Policies in India: A State-Wise Comparison (2022).

¹⁵Karnataka Data Centre Policy, 2022 (Department of Electronics, Information Technology, Biotechnology and Science & Technology, Government of Karnataka); Draft Data Centre Policy, 2020 (Ministry of Electronics and Information Technology, Government of India).

The argument of this paper has been that the moment calls for a different kind of instrument: an anticipatory levy, charged upon measured resource use, sensitive to local scarcity, engaging with the facility while it is still being designed, and earmarked honestly and durably for the mitigation of the harm it prices. Such an instrument is not an innovation upon the Constitution but an application of principles the Supreme Court settled long ago: the precautionary principle, which licenses action in advance of certainty; the polluter-pays principle, which assigns the cost to the party that causes it; and the public-trust doctrine, which forbids the trustee of the nation's water to permit its unpriced depletion.

The data centres are being built now, in the places and with the technologies that will fix their resource demand for a generation. The decisions that matter are being taken while the harm is still small enough to be called speculative which is to say, while it can still be shaped. To wait, as the reactive tradition counsels, until the harm is large enough to be undeniable is to wait until it can no longer be prevented. The case for the anticipatory model is, in the end, a case about time: the framework India has must always arrive late, and the harm at hand is one that a country with so little water to spare cannot afford to address late. The right instrument applied at the right moment is the whole of the argument, and the right moment is now.