OPEN Letter/*Petition* to the *hon' Chief Justice* Supreme Court of Pakistan, *hon' Chief Justice* Lahore High Court, *hon' Chief Justice Sindh* High Court , *hon' Chief Justice* Peshawar High Court and *hon' Chief Justice Balochistan High Court*

I am submitting this *petition* to the esteemed & *Hon' Superior Judiciary-subsequent to* a report titled **The Dark Clouds of Pakistan: An Investigative Report on Air Pollution & Smog**. The motivation stems from the tragic events of November 8, 2024, when Pakistan experienced a shocking surge in air pollution, with *Pakistan's* seven cities among the world's most polluted on the Global Air Quality Index. The economic ramifications are equally dire, with air pollution costing the nation *around* **$47 billion annually, as per World Bank assessments, equating to 5.9% of GDP (2013).** These alarming figures underscore the pressing need for decisive action to combat the environmental and economic crises affecting *Pakistan's citizens.*

In September this year, I sent a report to the Chief Minister of Punjab and Her Senior Minister conveying explicitly that instead of a massive media campaign, imposing lockdown, forcing shopping malls to import air filters, smog towers, closing educational institutions, and wasting students precious time and closing factories, brick kilns, generating sensationalism and sloganeering report another route to combat climate issues and environmental degradation had to be resorted to. In short, the government is doing everything except addressing the root cause of worst quality and smog using the best knowledge of science and engineering. What impact these measures made is made clear by the daily Air Quality Index data which presents a totally different outcome of the administrative moves taken so far.

To *summarize* the smog in Pakistan and South Asia is a harmful mix of pollutants, including *toxic pollutants like sulfur oxide and nitrous oxide cabin monoxide and particulates* (PM2.5, PM10, NOx, SO2, CO, VOC), and secondary pollutants like ground-level ozone, posing severe health risks. Emission inventories for Khyber Pakhtunkhwa, Punjab, and Lahore highlight key pollution sources such as transportation, industry, and agriculture. These insights are critical for crafting targeted strategies to mitigate emissions, improve air quality, and safeguard public health. The accompanying data*, verified through open sources in the public domain,* emphasizes the urgent need for actionable measures to combat environmental degradation in the region. *Similar to how a medical professional*

relies on pathology reports for accurate diagnoses, professional engineers and climate change experts base their analyses and decisions on reliable and verifiable data.

	Transport	Industries	Crop Residue Burning)	Waste Burning	Commercial	Domestic
Emissions Inventory of KPK[1]	85%	7.9	3.90%	4.3 %	0.48 %	1.9 %
Emissions Inventory of Lahore	83.15%	9.07%	3.90%	3.63%	0.14%	0.11%

The available emission inventories reveal that vehicle emissions are the primary culprit behind the worst air quality in the *provincial capital* Lahore and Khyber Pakhtunkhwa (KPK) *cities*, with the *province of* Punjab's data indicating that vehicular emissions are a major contributor to air pollution and smog, despite some of the inventory data being nearly seven years old.

	Transport	Industry	Energy	Agriculture	*Non – combustion Industrial Processes*	Others
Emission Inventory of Punjab[2]	39%	24%	16%	11%	9%	1%

The vehicular emissions are so dominant in making the worst air pollution and smog. In Pakistan, diesel and petrol typically have a high quality of sulfur benzene, and other harmful pollutants. The high sulfur content significantly influences particulate matter (PM) emissions during the combustion of fuel oil. Efforts to reduce sulfur levels in fuels have faced repeated delays. It was first decided*, at the policy level,* in the year 2008 to introduce Euro 5, a fuel standard that reduces harmful vehicle emissions, However, so far OGRA (Oil and Gas Regularity Authority and Ministry of Petroleum *(Power Division)* have failed to compel oil refineries to upgrade while China and India, once facing severe vehicular emissions converted to Euro 6 s*tandards*. Pakistan can only upgrade its long-awaited target of upgrading its refineries *by judicial intervention it seems*. No *significant* external funding is required but looking at the table below, the quantity of CO, HC, NOx,PM, and Sulfur limit (ppm) will reduce tremendously.

Stage	Date of Implementation	CO	HC	NOx	PM	Sulfur limit (ppm)
Euro I	1992	**4.5**	1.1	8	0.612	600
Euro VI	2013	**1.5**	0.13	0.4	0.01	10

Despite the Special Investment Facilitation Council (SIFC) directing the Petroleum Division to finalize refinery upgrades by November 10, 2024, this critical

target has been missed. The unholy alliance of refineries, holding the potential for significant environmental and economic impact, has failed to deliver, prolonging the nation's struggle against outdated practices

- The Federal Government's *openly* available findings in 2024 revealed that illicit Iranian diesel and petrol account for 30-40% of Pakistan's fuel consumption. These subpar fuels harbor high sulfur content and toxic contaminants like manganese and xylene, gravely endangering public health and the environment. How to stop this highly polluted Iranian fuel is a major concern for the government~~,~~ The US and the *West* imposed sanctions on Iran so Iran couldn't upgrade their oil refineries, ~~so~~ *hence* this low-quality petrol and diesel *continue to inflict damage* to the economy on account of taxes alone.
- One of the most serious issues of toxic vehicular emissions is unprecedented **Adulteration in fuel** that's why the transport sector is a main contributor to the release of toxic pollutants, including carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO_2), particulate matter (PM_{10} and $PM_{2.5}$), and volatile organic compounds (VOCs) such as benzene and toluene, both recognized as potent carcinogens. These emissions pose severe risks to human health while acting as precursors to ground-level ozone (O_3) formation and the amplification of particulate matter concentrations. Vehicular emissions of NO_x, SO_x, and CO undergo atmospheric transformations into secondary pollutants, collectively contributing to the photochemical haze commonly referred to as Los Angeles smog or, more broadly, as smog.
- Perhaps no single petroleum station meets fuel specifications, poisoning the nation with toxic substances~~.~~ **I *plead for the superior Judiciary to issue appropriate, time-bound, and monitored orders to* the Government of Pakistan to implement a real-time monitoring system across the entire fuel supply chain. This system should ensure both the quality and quantity of fuel, extending to mandatory monitoring at all petrol pump stations. Additionally, such a system would aid in auditing fuel distribution, preventing illegal storage, and eliminating hoarding practices.**
- .This system will meet the consumer's long-lasting demand, who are deprived of the quantity of fuel, which is mixed impurities.
- Pakistan's gas sector, overseen by OGRA, is struggling with declining domestic natural gas production while LPG consumption rises, now accounting for 1.5%

of the energy mix. Despite consuming over two million tons of LPG annually, only 40% is locally produced, with the rest smuggled across land borders. These imports, often of low quality from outdated refineries, worsen air pollution and smog. In Sindh and Punjab, LPG is adulterated with CO_2, increasing risks of hazardous accidents, allegedly facilitated by local authorities and OGRA.

- One of the major contributors to smog and air pollution in Pakistan is the extensive use of imported coal in brick kilns, the cement industry, and other general industries. This practice exacerbates environmental degradation and imposes a financial burden on the country, costing Pakistan nearly $2 billion annually.
- *Reiterating an earlier low-cost practical proposal* to the government through OGRA that now after phenomenal growth of roof-top solar systems, electricity consumers sending extra units to the national grid which is creating circular debt so all such consumers must be advised to use these units for the cooking at the electric stove, which will not only save import of LNG and LPG but also help to reduce the air pollution and smog too yet this proposal is pending the table of Minister petroleum. This is an opportunity to make Punjab and Pakistan at large the first model in the whole globe model of NET-ZERO. The UN defined it, as net zero means cutting carbon emissions to a small amount of residual emissions that can be absorbed and durably stored by nature and other carbon dioxide removal measures, leaving zero in the atmosphere.
- Pakistan has set an ambitious target of reducing its projected emissions by 50% by 2030, the reality paints a starkly different picture. Recent data from EDGAR, supported by the European Commission, reveals alarming statistics: Pakistan's total greenhouse gas (GHG) emissions surged to 546 million tons annually in 2022, a sharp increase from 307 million tons per year in 2002. This troubling trend underscores the urgent need for effective strategies and accountability to achieve its climate commitments.
- This alarming score underscores the necessity for integrating all climate change funding for Pakistan with a robust real-time monitoring system to measure greenhouse gas (GHG) emissions—a technically feasible solution. It is imperative to move beyond mere advocacy and ensure that donor funds are directed toward tangible, on-ground initiatives that effectively reduce GHG emissions, rather than perpetuating a cycle of expenditure without accountability or measurable impact.

- In July 2020, the Cabinet Division of the Government of Pakistan constituted an inquiry commission (*Notification No. 01/05/2020, Annex D*) to investigate the ineffectiveness of OGRA, the National Oil Regulator, and the Hydrocarbon Development Institute of Pakistan (HDIP). The inquiry commission highlighted extensive collusion between these entities and oil marketing companies, leading to widespread fuel adulteration—a practice with severe environmental repercussions, including escalating air pollution, smog, and public health crises. One of the key recommendations was to dissolve OGRA and HDIP due to their failure to regulate effectively. Unfortunately, the influence of powerful adulteration cartels thwarted these recommendations, allowing the illegal fuel adulteration business to persist at a tremendous environmental and societal cost.
- As of January 2024, Pakistan's combined circular debt reached an alarming PKR 5.4 trillion, pushing the nation closer to economic collapse. This staggering figure underscores the complete failure of the country's Oil and Gas(OGRA) and Electricity regulatory(NEPRA) authorities. Their inefficiencies and inability to ensure effective governance have significantly contributed to the nation's economic turmoil. Without these regulatory shortcomings, Pakistan could have been on a path to prosperity, free from the crippling burden of circular debt.

The Lahore Clean Air Commission's Failure

- The Lahore Clean Air Commission, established in 2003, has proven to be a dismal failure in its mission to combat air pollution. and the Commission's ineffectiveness was laid bare when the Hon' Lahore High Court made public its last report on May 28, 2018. The report highlighted the Commission's inability to develop effective strategies to mitigate the effects of smog in Punjab. The Commission's glaring oversight in recommending outdated Euro II/Pak II fuel standards in 2018, long after the global adoption of Euro VI limits for heavy-duty vehicles in 2009 and even earlier for light-duty vehicles, is a tragic reflection of its inadequacy.

Prayer

- It is proposed that OGRA and NEPRA be transformed into Artificial Intelligence (AI) driven systems to mitigate the economic devastation wrought by their incompetence. as officials of NEPRA and OGRA have consistently failed to harness this potential to introduce digital reforms in

the energy sector [1]. Despite being equipped with the latest technology, these officials have resisted embracing transparency and accountability in their decision-making processes. The parallels with the Patwari system, which has hindered the digitization of land records in Pakistan, are striking. In both cases, entrenched interests and a fear of transparency have prevented the adoption of modern technologies and practices [2].

- To address smog and air pollution effectively, it is imperative to upgrade all refineries in Pakistan to produce Euro-6-compliant fuel. Euro-6 fuel significantly reduces harmful emissions, including particulate matter (PM) and nitrogen oxides (NOx), thereby improving air quality and mitigating health risks associated with air pollution. Transitioning to this cleaner fuel standard is a critical step toward meeting international environmental benchmarks
- As recommended in paragraph 21.3, page 148, of the inquiry commission's report (Cabinet Division Notification No. 01/05/2020 Lit-III, dated July 28, 2020), OGRA should be dissolved through a parliamentary act within a month.-I recommend that the courts consider restructuring energy authorities, replacing them with autonomous bodies comprised of independent and credible experts proficient in AI technologies. I strongly suggest that the courts reevaluate and restructure the energy authorities, NEPRA and OGRA, replacing them with autonomous entities led by independent, credible experts. Alternatively, these authorities should be completely transformed using Artificial intelligence (AI) to ensure 100% transparency and accuracy. Artificial intelligence (AI) is being used in a variety of ways by regulatory authorities, including, Improving decision-making, AI can help identify potential risks and violations before they become more serious for the public and government.
- Real-time monitoring systems for Diesel, Petrol, and LNG must be implemented to ensure both the quality and quantity of fuel,-Now that surplus electricity is available, households supplying extra power to the national grid should have their natural gas connections discontinued. This measure would not only reduce circular debt but also significantly improve air quality. Methane emissions are a significant contributor to smog and air pollution.
- Methane can be harnessed and converted into various transport fuels, including CNG, diesel, methanol, and even aviation jet fuel. Additionally, methane can be used to produce dimethyl ether, a heavy condensate gas

that has the potential to replace LPG as cooking gas across Punjab and Pakistan. This approach not only addresses methane emissions but also provides an alternative, more sustainable energy source for the country.

Air Pollution is not a political issue because it carries no religion, caste, or color. It claims all, and yet leaves no trace that could be profitable at the hustings. The time has come for a full-fledged hearing on what is no longer a winter's Tale. A few weeks from the Courts' calendar would be a small price to pay if we can shepherd our children to a better tomorrow. Till then, we can hold our breath.
Yours sincerely,

I request you prevent public money from being wasted on such populist and ineffective strategies that aren't backed by science, data, engineering, and evidence.
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Yours sincerely,

Respectfully submitted before the Hon'; Superior Judiciary in the national interest

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