Debate: IT'S TIME TO TARGET NUMBER OF PERSONAL VEHICLES ALSO

[5] The subject of air pollution is very complex and multi-factorial as there are many factors that affect it and are inter-related with no easy solution or easy way out. No doubt our government authorities are making tremendous efforts however; we are not getting desired results in those terms. Therefore it is time to make a scientific analysis of the situation why we are not getting results or what we need to do more. Before coming to any conclusion, a proper understanding of these all factors is essential. Kindly consider following alarming facts in relation to air pollution that might help Honb'le court in taking an appropriate decision in the interest common people suffering due to this severe air pollution in India.

ALARMING FACTS IN RELATION TO AIR POLLUTION IN INDIA
[A] Air pollution: an established epidemic in india:
[B] Explosive growth of vehicles: a major contributor to air pollution
[C] Old vehicles are more polluting
[D] air pollution increasing with time
[E] Phasing out of old vehicles is must to control air pollution & traffic jams
[F] Economic losses & expenditure to fight air pollution:
[G] Gravity of air pollution in Delhi/ NCR
[H] Trend of vehicles growth in Delhi
[I] studies on lockdown confirmed vehicular pollution a major contributor
[J] Need for proper income tax regulation while selling personal cars
[K] Still no consensus amongst various agencies regarding causes:
[L] Need of hour: to know basic causes, sources, severity & contribution of individual factors
[M] Disproportionate blame to dust pollution
[N] Phasing out of old non bs-6 cars is must for better results of bs 6 fuel
[O] There is a need to reclassify pollutants:
[P] Rights of polluter versus rights of sufferers [i.e right to property under article 14 vs right to live under article 21
[Q] it's time to target number of personal vehicles also
[R] Commercial vs personal four wheelers
[S] Industrial vs vehicular pollution:
[T] Justification of national program for air pollution

[31] DEBATE: RIGHTS OF POLLUTER VS RIGHTS OF SUFFERER
OR
RIGHT TO PROPERTY UNDER ARTICLE 14 VS RIGHT TO LIVE UNDER ARTICLE 21

"Safety and a clean environment on the road" is a fundamental right of all citizens and an essential condition for safe and secure living and a sustainable development of society. In the recent time, especially during the last two decades, this is being observed that weaker sections on roads, like non motorized vehicle owners and pedestrians are losing their rights of clean and safe roads.
[a] In present circumstances we need to debate this issue as 'RIGHT OF POLLUTERS VS RIGHTS OF SUFFERERS' or more specifically "DEMOCRATIC RIGHTS VS FUNDAMENTAL RIGHTS" of our citizens. Right to life, right to health or right to clean air is our basic fundamental or human right. Fundamental rights cannot be challenged in the name of democratic rights and it is statutory duty of government to protect fundamental rights. It is true that citizens have their basic right to purchase any number of vehicles of their choice or any other item for their personal use and no other people or government should show concern for it. However, this is also correct to say that when this item or vehicle is causing any inconvenience or posing any health hazards to a very large section of society or rather at country level to the extent that 11lakhs of people are dying every year and even fetuses and newborns are suffering its ill effects, then it also a basic or fundamental right of other people in the society/country to show their concern for it. Fundamental rights should always get priority over democratic right and govt is bound to give preference to fundamental rights.

[b] Here it is important to mention that at national level the car occupancy is about 2% therefore so it is not only the question of fundamental rights but more importantly that fundamental rights of majority [98%] population are being encroached by 2% of

citizens having cars. Though Delhi is declared worst amongst all but all other metro cities are just waiting to be leveled in the category similar to that of Delhi.

[c] If we categorize our populations in India it terms of polluters vs sufferers, we find that there are three categories: first group consists of car owners that is mainly a polluter group and in India only 2% population has cars. The second category consists of motorized two wheeler owners which are both polluters as well as sufferers on roads and around 14% population owns two wheelers. The third category i.e. remaining 84% belongs to NON MOTORIZED vehicle owners that do not pollute BUT ARE THE SUFFERERS ONLY.

[d] TODAY WE OBSERVE THAT FUNDAMENTAL RIGHTS OF MORE THAN 98% POPULATION ARE ENCROACHED BY THE LESS THAN 2% POPULATION ON INDIA. Not only it is the question of fundamental rights but more importantly that fundamental rights of majority [99%] population are being encroached by 2% of citizens having such cars. Even if reverse is true that 98% casing problems to 1% even than we have to protect the rights of 1%. Though Delhi is declared worst amongst all but all other metro cities are just waiting to be labeled like that of Delhi. This won't be wrong to say that govt. and courts are giving more importance to democratic rights of polluters over fundamental rights of sufferers! It seems polluters are taking undue advantage of leniency of our democracy. Applicant humbly reminds Honble court that on Dec 11 2015, The Chief Justice of India T S Thakur, speaking on the occasion of Human Rights Day on Thursday , said that "clean environment is also a part of fundamental right". Asserting that Supreme Court recognizes this `right to life', the CJI said, "So, if somebody is polluting the environment, he/she is not only violating the Environment Act, but also right of others." His remarks come at a time when a larger discussion has started on pollution and SC has agreed to examine banning of diesel cars.

[25] FACT: GRAVITY OF AIR POLLUTION IN DELHI/ NCR:
[a] As per recent report of 11th july 2020, by IQ Air and Greenpeace Southeast Asia based on 28 metropolitan cities around the world, Delhi lost around 24,000 lives in the first half of 2020 due to high PM2.5 and nitrogen dioxide (NO2) levels. This is despite cleaner air because of the lockdown, pollution continues to be a serious public health crisis and a threat to our economy. In Mumbai, air pollution from PM2.5 and NO2 was responsible for the loss of an estimated 14,000 lives.

[26] TREND OF VEHICLES GROWTH IN DELHI is also very dangerous : up to March 2018 there were about 1.1 crore motorized vehicles on Delhi roads. If we see the trend in motorized vehicles in the last three decades, we find that vehicles added in each decades are as follows: 12.5 lakh [1980-90], 18 lakhs [1990-2000], 29 lakhs [2000-2010] and 46 lakhs in just last 8 years [2011-2016]. If we compare this present figure of Delhi with that of 1980, motorized vehicles have increased by 22 TIMES. Out of total vehicles that have come up during last 25 years, 50% have been sold in the last 10 years only. There used to be 5 lakh vehicle in 1980 and now every year more than 5 lakh vehicles are coming on Delhi roads and one third of these are cars. During 2015-16 nine lakh vehicles have come up in Delhi. Personal Car ownership among total population of Delhi is around 15% which is five times more than the national average of 3%. Delhi adds roughly 1,500-2000 new vehicles a day or 500 cars a day.
GROWTH OF MOTORIZED VEHICLES IN DELHI [FROM 1980 TO 2018]

Year	total vehicles
1980	5.21 lakhs
1990	17.6 lakhs
2000	35.5 lakhs
20010	64,5 lakh
2015	88.3 lakh
2018	1.11 crore

Petitioner believes these 500 cars/day or 3000 cars per week must be causing pollution equal to a small polluting industry or we can say every week we are allowing one small polluting unit to settle in the city. That is the reason why air pollution in these cities is increasing despite controlling industrial pollution. For industry we need per. Study estimates that in Delhi alone 2.5 lakh litres of fuel is wasted every day due to idling vehicles. Cars were found to be idling for 24% of travel time.
The NCR accounts for 10% of fuel sales in the country, consuming 105,000 tonnes of petrol and 310,000 tonnes of diesel in a year.

FACT: IT'S TIME TO TARGET NUMBER OF PERSONAL VEHICLES ALSO

[15] on 12th May, 2017, Niti Aayog advocated to limit registration of petrol, diesel cars. The main recommendations include limiting the registration of petrol and diesel cars through public lotteries, providing fiscal and monetary incentives and subsidies to push sales of electric vehicles and using tax revenues from the sale of petrol and diesel cars to set up electric charging stations. It suggested three major transitions - a shift from private vehicle ownership to shared user ship, from petrol and diesel to electric vehicles and from cities designed for cars to cities designed for humans. The main recommendations include limiting the registration of petrol and diesel cars through public lotteries, providing fiscal and monetary incentives and subsidies to push sales of electric vehicles and using tax revenues from the sale of petrol and diesel cars to set up electric charging stations.

[16] on 30th March, 2019, Honble Supreme Court bench while dealing environmental matters expressed concern over Delhi residents owning multiple cars, resulting in congestion on roads and pollution. It said the number of cars and other vehicles in the city needed to be brought down to make Delhi a livable place. With the number of vehicles in the national capital crossing the one crore mark and increasing by over seven lakh every year, the Supreme Court on Friday said there should a family planning policy like 'Hum Do Hamare Do' to stop people from buying multiple cars. As per EPCA report, the per-capita emission of public transport vehicles was lower than private vehicles and they also travelled longer distances every day.

[17] Similarly on 2nd Oct, 2019, Honble National Green Tribunal has expressed serious concern over high number of vehicles in Delhi and asked Union road transport ministry to submit a report on the number of vehicles permitted to ply on Delhi roads in proportion to their capacity. It expressed displeasure for delay in submitting the report of study that was conducted in Oct 2018.

[18] This would not be wrong to say that road infrastructure of Indian cities is not meant for such a huge number of cars. In India, the percentage of road space in relation to total city area is very low i.e. around at 3-20 per cent of the total area, as against a standard 30 per cent in developed countries. Except Delhi, that has an area of 20%, other cities including even metros have a much lower area than required for the traffic load of the city [e.g. total road area in Mumbai is 12% and Kolkata is 6.4%]. Now even in Delhi, the most privileged city of India as far as the road space is concerned; it is really very-very tough to keep pace in terms of roads along with that of traffic load. So despite adequate road space, Delhi is facing a severe traffic congestion and air pollution.

[19] Due to a very high number of cars, these cities have consumed all possible parking space and roads have become a real parking area. The space of roads that we achieve by road widening is being misused by cars as practically one lane on either side is occupied by parked cars by the residents of the area or by customers in a commercial area. Thus practically a two lane roads becomes a one lane road

[20] We also need to review and make new guidelines in some selected heavily congested cities [like Delhi, Mumbai, Kolkata, Agra], to define capacity of present available road infrastructure in relation to total number of motorized vehicles in these cities to know about approximate number of motorized vehicles that can be accommodated safely without any serious consequences on air pollution or traffic congestion and also to laid down measures to control vehicular number if found to be above this capacity of road infrastructure of that particular city.

[21] Today approx 70% budget meant for decongestion of traffic is being spent of road infrastructure .i.e for road widening or flyovers that has to be judiciously diverted to other reforms also like for public transport or pedestrians pathways, etc.

[12] FACT: PHASING OUT OF OLD VEHICLES IS MUST TO CONTROL AIR POLLUTION & TRAFFIC JAMS

[a] phasing out of vehicles is also important to decongest roads thereby reducing air pollution Traffic Jams and traffic congestion is another alarming problem that can be directly linked with vehicular number. A reduction of speed from 50 km/hr to 25 km/hr can increase the emission of toxic fumes by about 100%. During congestion the pedestrians or two wheelers riders suffer much more than four wheeler drivers and at risk of this extra fuel burnt during the jam or congestion. Study estimates that in Delhi alone 2.5 lakh litres of fuel is wasted every day due to idling vehicles. Cars were found to be idling for 24% of travel time.

All over the world there is a consensus that diesel is much more toxic to human health.

[13] On May 06 2016**,** The Centre for Science and Environment (CSE) explained on BS4 vehicle**. "**One diesel car emits PM equivalent to five petrol cars; nine diesel cars emits equal to This means the total number of 68,384 diesel cars that got registered in Delhi in 2014-15 have virtually brought back more than 3.4 lakh petrol cars, or about 7,598 trucks or about 11,397 diesel buses to pollute the air of Delhi," CSE said. Although BS6 categories has been introduced or made mandatory since, however, still the majority of vehicle would remail BS4 category for 15-20 yrs depending on govt policy or it it would take that much time to replace all with BS6. CSE alleged that the auto industry was underplaying the toxicity concerns of diesel emissions and its link with higher cancer incidence. The CSE statement claimed that the auto industry kept silent on various factors associated with their emissions. "The industry is silent on the new emissions results from Europe and the US on diesel cars. Even after meeting Euro V and Euro VI emissions standards, NOx pollution is increasing in European cities. The UK government was dragged to the court for violating NOx standards. The latest emission testing results from the British, German and French authorities show how large car models...have failed to meet the official limit," it said.**"**All BS IV diesel cars sold in India today are highly polluting and their exhaust is carcinogenic. We estimate the addition of 10,000 new diesel vehicles in Delhi will cause at least an additional 25 premature deaths," said Anup Bandivadekar, programme director (India) at International Council on Clean Transportation.

[14] As per WHO during 2015, Delhi's annual mean PM2.5 levels, that comes mainly from vehicles, are three times the annual national standard and 12 times the WHO standard of 10 micrograms per cubic metres

[22] FACT: PHASING OUT OF OLD NON BS-6 CARS, ESPECIALLY DIESEL ONES IS MUST FOR BETTER RESULTS OF BS 6 FUEL.

At present available BS4 diesel cars in India are emitting 27 times more particulate matters and 10 times more NOx that counterpart BS 4 petrol car. In fact only BS6 diesel cars are more or less at par with petrol ones regarding PM emission THOUGH NOX FROM BS6 IS STILL 6 TIMES THAN BS6 PETROL ONES. All BS IV diesel cars sold in India today are not only more polluting but their exhaust is carcinogenic also and for the first time WHO & International Agency for Research on Cancer (IARC) have declared in Oct. 2013, diesel as a DIRECT MAJOR carcinogenic factor.

[a] on 1st April, 2018**,** IndianOil director (refineries) B V Rama Gopal said that Refineries had invested over Rs 55,000 crore for producing BS-III/IV fuels. They are pumping in another Rs 28,000 crore more for upgrading to BS-VI standards by 2020. However, Delhi will benefit from cleaner fuels only partially since the fleet of vehicles crowding its roads are of BS-IV vintage. Therefore, cleaner BS6 fuel will reduce particulate matter in vehicular emission, which has been identified as a major air pollutant, by 10-20% only.

[b] on 02-April-2018 our Honble Petroleum & Natural Gas Minister Dharmendra Pradhan said in Parliament at the launch of BS-VI compliant automotive fuels in Delhi, that we decided to proactively advance the roll-out of BS-VI fuel in Delhi from April 2018, instead of April 2020 after taking stock of the alarming pollution situation in Delhi in winters. BS-VI fuel will bring down sulphur by 5 times from the current BS-IV levels – this is an 80 percent reduction which makes it extremely clean. However, to take full advantage of the availability of such superior fuels, the vehicle technology has to move to BS-VI. Introduction of BS VI fuel will only give partial benefits if BS VI compliant vehicles are not put on the road. [PIB 02-April-2018 BS-VI fuel will bring down sulphur

[c] again On **24 Jul 2018**, Union ministry of petroleum and natural gas accepted before Supreme court in an affidavit that full benefits of the clean fuel can be derived only when engine of vehicles are BS6 compliant. The ministry's affidavit underlined that the expected emission benefits are much lower when BS-VI fuel is used in non BS-VI vehicles.. The Union ministry of petroleum and natural gas (MoPNG) told the Supreme Court that the sale and manufacture of non BS-VI vehicles should not be allowed from April 1, 2020, once the clean auto fuel is available across the country. "If BS-IV vehicles is allowed after March 31, 2020, this will adversely affect the benefits of introduction of BS-VI fuel," MoPNG said. Therefore the very pupose of this govt money would be go waste to a large extent.

[d] As per the report by Centre for Science and Environment on **17th Nov., 2018,** there are one crore registered vehicles in Delhi, of which around 60 lakh are two wheelers. The remaining 40 lakh four-wheelers. At present, Delhi has 5.09 lakh diesel vehicles that are less than 10 years old, 1.06 lakh that are between 10 and 15 years old and

another 2.18 lakh that are older than 15 years. Diesel cars are deemed to be more polluting by experts. “Legally, BS4 diesel cars emit three times more NOx than petrol cars. Diesel emission is so dangerous that it is in the same category with tobacco smoking in Class I carcinogens, with strong links with lung cancer,” said Anumita Roy Chowdhury, executive director, research and advocacy, Centre for Science and Environment. EPCA chairperson had told CPCB that given the high pollution load from vehicles in Delhi-NCR, a drastic reduction in vehicles was needed to reduce pollution levels during highly affected days. “Even after removing trucks and other diesel commercial vehicles, which are the highest segment of this pollution load, the remaining vehicles add up to substantial load, particularly private diesel vehicles which contribute substantially to both NOx and PM emissions. All cities, which have similar emergency plans, like Paris or Beijing, include restrictions on private vehicles, which is done by either number plate or by fuel type/age,” he said. The Central Pollution Control Board-led task force expert Dr T K Joshi told that banning all vehicles was a proposal that could not possibly be implemented in a city like Delhi. However, taking diesel vehicles off the road on highly polluted days could prove a more effective and feasible strategy. [

[6] FACT: AIR POLLUTION: AN ESTABLISHED EPIDEMIC IN INDIA:
[a] Out of many relevant international reports on ambient air pollution, the two most recent and detailed reports on air pollution that need to be considered are from Lancet[2017] and state of Global air 2018” by *Health Effects Institute which have confirmed that* air pollution is responsible for 61 lakhs deaths globally[2016] and out of these total deaths, 50% belongs to China and India alone! In India particulate matter$_{2.5}$ air pollution is responsible for 11 lakhs deaths or in other words two people in India are dying every minute due to air pollution PM 2.5 [Environmental Science: An Indian Journal , Vol 15 Iss 1]

[b] an Indian study published in Environmental Health with the aim to estimate the association of early-life exposure to ambient $PM_{2.5}$ with child health outcomes in India, showed Mother’s exposure to pollution may lead to shorter babies: Newborn babies and foetuses of women in their third trimester, who are exposed to high levels of air pollution, are at a higher risk of being shorter for their age or stunted in later life. Early life stunting leads to irreversible damage, it is associated with shorter adult height, lower cognitive ability, lower educational attainment, reduced adult income, and decreased offspring birth weight. Therefore, the health burden that we quantify here could potentially increase unless appropriate policy action is taken to reduce air pollution throughout India. [Environmental Health volume 18 09 July 2019]

[c] Another recent study published in August, 2020 on Effect of exposure to particulate matters of size below 10 $\mu g/m^3$ (PM_{10}) on child health done beyond metro cities including from 184 cities in India. Health data from the National Family Health Survey-4 (NFHS-4) and PM_{10} levels provided by the Central Pollution Control Board were matched for 184 Indian towns/cities on 23 954 births, found Exposure to PM_{10}, increases the risk of adverse child health outcomes. Child health outcomes included neonatal & post-neonatal mortality, premature births, children with symptoms of acute respiratory infections (ARI) and low birth weight. Analyses based on 23 954 births found that every 10-unit increase in PM_{10} level, increased the risk of neonatal mortality by 6% and the odds of symptoms of ARI among children by 7% and premature births by 8%. Effects of PM_{10} on child health outcomes remained similar for cities whether or not they were part of the National Clean Air Program (NCAP). [BMJ Global Health, August 2020, Vol 5, Issue 8]

[d] Today we have not only established that air pollution causes birth defects in newborns & fetuses, even this is also established that which individual birth defects would be caused by individual air pollutants or relationship with time of exposure during pregnancy versus type of adverse outcome of pregnancy or relationship of air pollution and fetal growth retardation, & premature birth or long term effects of pollutant resulting diseases later in life, etc. Studies on pregnant women have shown that chances of birth defects, fetal growth retardation and premature delivery are more in those cases where residence is close to busy roads. Studies established a clear dose-response for these effects in fetuses e.g. for women living in areas with heavily polluted levels, the risk tripled in comparison with women living in clean air areas. The higher the level of exposure to nitrogen dioxide, carbon monoxide .and particulate matter (PM2.5 and PM10), the greater is the risk of having low-weight babies. Approximately 25% of babies delivered in India suffer prematurity and fetal growth failure that would mean every year out of 2.6 crore babies delivered every year in India, 65 lakhs suffer this problem. Similarly if we believe the reported incidence of

birth defects occurring due to air pollution as 10% of total, that would mean out of total 17 lakhs babies of birth defects delivered every year in India, 1.7 lakhs babies develop such defects due to air pollution. A high pm level equal or more than 0.996 mg/m3 may increase risk of fetal death and similarly, 1 ppb increase in so2, a 10-ppb increase in no2 and 10-ppb exposure in o3 was significantly associated with stillbirth. [1 annexure own paper [Environmental Health volume 18 09 July 2019]

[e] WHO has also reported on effects of severe air pollution on children in its recent report in 2o18 "air pollution and child health summary **World Health Organization 2018"** show that air pollution has a vast and terrible impact on child health and survival. Globally, 93% of all children live in environments with air pollution levels above the WHO guidelines. More than one in every four deaths of children under 5 years of age is directly or indirectly related to environmental risks. Ambient air pollution was responsible for 4.2 million premature deaths in 2016; of these, almost 3 lakhs were children under the age of 5 years.

[f] UNICEF report on air pollution effects released in October, 2016 'Clear the Air for Children: The impact of air pollution on children' revealed that Air pollution is linked with diseases and infections that kill around 6 lakhs children under 5 years of age per year globally. Pneumonia accounts for up to 16% of all under-five deaths or more than half of childhood pneumonia deaths are associated. A mother's chronic exposure to severe air pollution during pregnancy is linked with low birth weight at term, intrauterine growth retardation and small for gestational age embryos. Studies have shown that chronic exposure to high levels of particulate matter (PM2.5) is associated with higher rates of early foetal loss, preterm delivery and lower birth weight. Outdoor air pollution tends to be worse in lower-income, urban communities.

[7] FACT: EXPLOSIVE GROWTH OF VEHICLES: A MAJOR CONTRIBUTOR TO AIR POLLUTION

[a] Air pollution is probably the worst side effect of very high number of motorized vehicles in India. Now at the time when polluting industries have been made to shift from most of the major cities like Delhi, Mumbai, Agra, etc, air pollution has become DIRECTLY proportional to the number of vehicles in a city. The dangerously increasing number of vehicles is not only posing the greatest threat to our health but also the fact that this health effects are increasing alarmingly every year. The worst fact about vehicular pollution is that emission occurs at the ground or breathing level of children.

[b] As per the latest data from society of Indian Automobile manufacturers [SIAM] on 31st March, 2021, there were about 35 crores motorized vehicles on Indian roads. In India motorized vehicles are increasing at a phenomenal rate and during last 30 years vehicles have increased 18 times from 1.9 crore [1990] to 35 crore [2021]. This would be an eye opener to know that during 40 years period, from 1950 to 1990, a total of 2 crore vehicles were sold in India and now for the last 6 years we are selling TWO CRORE VEHICLES EVERYYEAR! Its alarming to note that the total 13 crores vehicles have been sold during the last 6 years that is equal to number that was sold during last 60 yrs [from 1950 to 2010]. There is a very high tendency for indulgence in personal mobility as personalized vehicle population has been found to be more than 90%.2 [2 annexure 2]

GROWTH OF MOTORIZED VEHICLES IN INDIA [1950-2021]

Year	total vehicles
1950	3.5 lakhs
1990	1.9 crore
2000	4.9 crores
2010	13.1 crores
2015	21.978 crores
2020	33.41 crores
20-21	35.27 crores

Every year about 30 lakhs cars are sold in India and with that rate during last 5 years 1.5 crores cars have been sold!

[8] As per report of Central Pollution Control Board that old vehicles are more polluting including in India. It shows that 60% of air pollution is caused by the vehicles that are more than 10 years old and such vehicles constitute less than 30% of total vehicle pool

[9] As per research published in Journal of Environmental Research And Development in July 2013, Transport sectors contributes a major share to environmental pollution (around 70%). A among these pollutants CO is the major pollutant coming from the transport sector, contributing 90% of total emission. Rapid urbanization and growth of motor vehicles impose a serious effect on human life and its environment in recent years. Most of the cities of India are being suffered by extremely high level of urban air pollution particularly in the form of CO, SO2, NO2, PM (Particulate Matter). All these situations indicate that air pollution becoming a major problem in Indian context and there is an essential need to built up healthy environment and increase level of research around the world. [Journal of Environmental Research And Development Vol. 8 No. 1, July-September 2013

[10] A study in 2014 by Sita Lakshmi, Sumit Sharma, S Sundar (The Energy and Resources Institute, New Delhi) (The International Council on Clean Transportation) established that India has observed an unprecedented growth of registered vehicles, more specifically in the last decade. A large fleet of vehicles has not only led to problems of traffic management and congestion, but has also contributed to the deterioration of air quality. Vehicular emissions continue to be one of the major sources of urban air pollution in Indian cities, accounting for up to 22% PM and 74% of NOX emissions in Delhi and 16% PM and 60% NOX in Mumbai.*1* CPCB (2011) also stated high share of road transport in prevailing PM2.5 and NOx concentrations in different cities. While, there has been some improvement in regulating the emissions from new vehicles, there is still a lot to be done to maintain the compliance throughout their useful life**.** Furthermore, as vehicles age, their emission control devices deteriorate. This can lead to a situation in which vehicles emit more than they were designed to [? Sepate point]. Therefore, comprehensive in-use testing and compliance programmes are necessary to ensure that this does not happen. [Establishing a National In-use Vehicle testing Programme in India 2014, page 4 C Sita Lakshmi, Sumit Sharma, S Sundar (The Energy and Resources Institute, New Delhi) (The International Council on Clean Transportation, Washington, US

[11]JUSTIFICATION OF NATIONAL PROGRAM FOR AIR POLLUTION: on Mar 21, 2015**,** Our Honb'le Ministers of Environment expressed govt's serious commitment against air pollution and commented "**fresh air is the birth right" of every individual** and for that we need a campaign like that of polio**. However, when petitioner reminded honble minister for initiating this drive or National program, he didn't get any reply. A**gain on 08-February-2018 next Minister of Environment, Forest and Climate Change, Dr Harsh Vardhan also expressed serious concern and commented "Clean Air Campaign not just a symbolic exercise, but a serious effort to drastically bring down pollution levels" with 'Zero Tolerance to Polluters'

Air pollution is a disease and that too in an epidemic form and to be regarded as major killer instead of considering just an environmental imbalance. Considering very high deaths due to air pollution in India as 11 lakhs per year and if no serious efforts are made, this number is further expected to increase with time. Therefore, it enough justification to make a National Program against air pollution. All major epidemics or killers in India against which we have national program, have lower death rate as compared to air pollution e.g tuberculosis [3.5 lakhs/year], AIDS [78,000/year], malaria [1.2 lakhs/year. It has been observed that once an epidemic comes under national program, central agencies act in coordination with states in a better way with better utilization of funds and scientific knowledge. There are many examples where central govt. has successfully controlled many serious health problems of our country under a dedicated national program like, Polio, AIDS, Leprosy, small pox, tetanus. **.**

[23] FACT: STILL NO CONSENSUS AMONGST VARIOUS AGENCIES REGARDING CAUSES:

[a] Despite being an alarming situation, there are huge controversies in India regarding causes, diseases, deaths due to air pollution. Various govt agencies were always hesitant to accept the fact that vehicles are significant contributors to air pollution. There are so many contradictory reports amongst various government and non government agencies on what are the major or minor sources of air pollution. There is need to address the differences of opinions over the actual major contributors of pollution or what is actual percentage of individual sources to total air pollution. These controversies in data exist at every level.

[b] This fact of major contribution from vehicular source has also been supported by a study of Centre for Science and Environment on 17 Dec 2018. It said more than four-fold increase in the number of vehicles on Delhi's roads during the 2010-18 period had eroded the gains which could otherwise have accrued due to increasing footprint of Delhi Metro in the past eight years

[c] The Petroleum & Natural Gas Minister Dharmendra Pradhan on 02-April-2018 in parliament accepted on the basis of studies that air pollution takes 10,000-30,000 lives in Delhi every year [PIB 02-April-2018]
[d] As per the data of Delhi Government Statistical Handbook 2017, , 9,100 died in Delhi in 2016 due to air pollution'

[e] EPCA on 16th Oct, 2019 said Local sources to blame for 90% of Delhi pollution every winter and Not Crop Fires Choking Delhi-NCR. This is in contrast to Delhi Govt that has often blamed stubble burning in the neighbouring states for the deterioration in air quality in the city, SAFAR, the ministry of earth science's air quality and weather forecast service, has said that the share of stubble burning in the PM 2.5 concentration in Delhi has remained less than 10% so far.PM 2.5 stands for particulate matter less than 2.5 microns in diameter. They can be breathed deep into the lungs, and may even get into the bloodstream.
[f] However, Now Ministry of Earth Sciences accepted that vehicular pollution is responsible for 40% of air The first-ever high resolution emission inventory of major pollutants in Delhi-NCR, done by the Indian Institute of Tropical Meteorology (IITM), Pune, under ministry of earth sciences (MoES) [**4th Nov., 2019]**, showed the episodic sources such as stubble burning and firecrackers might have added to Delhi's air pollution woes but the capital cannot afford to overlook the constant sources of pollution — primarily transport, industry and dust — whose contributions put the entire National Capital Region in high risk for most of the year. It also showed that the share of vehicular emissions increased not only in Delhi but also in the entire NCR in 2018 as compared to 2010. It showed increase in share of transport sector in overall PM2.5 emissions from 25.4% in 2010 to 41% in 2018 in the capital, and from 32.1% in 2010 to 39.1% in 2018 in the NCR.
[g**]** On 6th dec, 2019, Honble Minister of Environment Prakash Javadekar told Lok "no Indian study has shown any correlation between pollution and shortening of lifespan. "Let us not create a fear psychosis among people," Javadekar told Lok Sabha in response to a query about studies that life expectancy is coming down due to pollution.

[24] FACT: STUDIES ON LOCKDOWN CONFIRMED VEHICULAR POLLUTION A MAJOR CONTRIBUTOR
[a] Besides direct evidence from report of ministry of earth science, there are some indirect evidences that also favour the fact that vehicles contribute a major share of air pollution. During unprecedented lockdown due to covid with almost no industrial units functioning in cities with barely any vehicles on the road during the curfew, pollutants, particularly NO2 and PM 2.5, showed a sharp decline. Vehicles are the major sourse of PM 2.5 and NO2. Since polluting industries have already banned in all metro cities, therefore its the control of vehicles movements in these cities that has probably brought down the relief. lockdown during covid resulted in four cities — Delhi, Mumbai, Kolkata and Bengaluru "This lockdown presents an opportunity to understand background pollution levels in India, which will be present even in the best-case scenario. lockdown data can act as marker for policy-makers Researchers found all the four cities managed to better their 2024 NCAP target; achieving 95% of their 2024 National Clean Air Programme (NCAP) targets in a short span of 74 days, says a study on concentration of different air pollutants in these cities for over 10 weeks during the March-June period.

[27] FACT: ECONOMIC LOSSES & EXPENDITURE TO FIGHT AIR POLLUTION:
[a] A report of 11th july 2020 by IQAir Air-Visual and Greenpeace Southeast Asia shows Delhi losing 6% of its GDP to bad air due to high PM2.5 and nitrogen dioxide (NO2) levels, while the economic cost was around Rs 26,230 crore. Of the 28 metropolitan cities around the world, Delhi has borne the highest economic cost followed by Beijing, Mumbai, Shanghai, Jakarta, Guangzhou, Bangkok, Moscow, Hong Kong and Seoul. These figures were expected to grow further in winter. These costs included absences at workplaces due to sick leave, number of people suffering from asthma and asthma-related trips to hospital, years of life lost and years lived with the disability and preterm births. In Mumbai, air pollution from PM2.5 and NO2 was responsible for the loss of an estimated 14,000 lives and a cost of Rs 15,750 crore since January

[b] A study report on 23rd Dec, 2020 estimated the economic loss due to lost output from premature deaths and disease caused by pollution in 2019 was estimated at around Rs 2.6 lakh crore, nearly 1.4% of gross domestic product (GDP) with Delhi suffering the highest per capita loss, followed by Haryana. The study was published in medical journal Lancet conducted by the India State-Level Disease Burden Initiatives a collaborative effort involving over 300 researchers from institutions like ICMR, Public

Health Foundation of India, Institute for Health Metrics and Evaluation. While household air pollution is decreasing in India resulting in 64% reduction in the death rate per 1,00,000 population attributable to it from 1990 to 2019, the death rate from outdoor air pollution has increased during this period by 115%.

[28] FACT: AIR POLLUTION INCREASING WITH TIME:
There are several reports from govt and non govt organizations that have clearly proved that air pollution is increasing with time. On the deteriorating air quality of Delhi, On 18th Jauary, 2019, Honble Justice Arun Mishra, in the bench along with Justice Deepak Gupta of Supreme Court commented "It is better not to live in Delhi. It is very difficult to live in Delhi. We do not wish to settle here... It is like a gas chamber,"
[a] As per report on 14th Jan., 2021 about a survey by a global location technology specialist among 416 cities across 56 countries on traffic congestion level parameters, revealed Delhi ranks world no. 8 in traffic congestion. Mumbai ranked second in the world, Bengaluru sixth, Delhi eighth. Out og top 10 most congested cities, three three belongs to India

[b] As per report on 24th January, 2021, Analysis of Air Quality Index[AQI] of last 3 years data by Central Pollution Control Board shows that Severe' air days this January 3 times more than last year and 2021 Records Worst AQI in 3 Years. The city has also seen a higher spike in pollution readings this January than in the last two. The average air quality index (AQI) for January this year was 324 as compared to 286 during the same period in 2020.

[c] A recent Analysis 17th Feb., 2021 regarding air pollution in Delhi by two independent agencies for the past few winters has revealed that PM2.5 levels in 2020-2021 were worse than the previous year. While one study was done by RWA body United Residents Joint Action (URJA) along with strategic communications outfit Climate Trends, the other was done by Respirer Living Sciences. The data set analysed by Respirer Living Sciences, showed that while March to September 2020 witnessed an improvement in air quality during the lockdown, the average PM2.5 level from October 2020 to February 2021 was 186 micrograms per cubic metre (µg/m3) compared with 160 µg/m3 in 2019-2020 in the same months. The second analysis conducted by Climate Trends, which took the levels at RK Puram monitoring station as a baseline to underscore the trends in the city, showed that PM2.5 levels September onwards ranged higher compared with the levels in the same months in 2019. The levels in Delhi were nine times higher than WHO standards as well as the national average.

[d] A Down to Earth Annual State of India's Environment 2021 in figures, published by Centre for Science and Environment, on 1st March 2021, has shown that air pollutants esp PM 2.5 are increasing with time. During last two decades, deaths in India due to ambient PM 2.5 have increased by more than 2.5 TIMES or from 2.8 lakh to 9.8 lakhs per year. Similarly, during last two decades, deaths due to Ozone have increased by 3 times or from 43,000 to 1.7 lakhs per year. So that Twenty two of the world's 30 most polluted cities, are in India, with Delhi being ranked as the most polluted capital city globally. [Annexure P/23, page]

[e] As per the report of the Health Effects Institute HEI jointly with the US Environmental Protection Agency in its annual 'State of Global Air 2020' report, Long-term exposure to air pollution contributed to around 6.7 million deaths globally from stroke, heart attack, diabetes, lung cancer, chronic lung diseases, and neonatal diseases in 2019 and 1.6 million or 16 lakhs in India. The Health Effects Institute HEI, an independent, non-profit research institute funded, industry, foundations, and development banks. HEI for the first time did a comprehensive analysis of air pollution's global impact on the newborn, found that particulate matter pollution" contributed to the deaths of nearly 5lakhs infants globally, including 1.16 lakh infants in India, in their first month of life.

[29] FACT: OLD VEHICLES ARE MORE POLLUTING
[a] As per report of 17th March, 2021, on the basis of an average annual PM2.5 concentration, air technology company, IQ Air in its World Air Quality Report, 2020 found Delhi the 10th most polluted city in the world and the most polluted capital with 22 of the top 30 most polluted cities belonged to India. Thirteen of the 15 most polluted cities in the world were from north India. Nine of these cities, are in the national capital region and as many as eight are in Uttar Pradesh. The report adjudged the Chinese city of Hotan as the most polluted in the world in 2020.

[b] Our Honble Minister for Road Transport and Highways, Shri Nitin Gadkari has accepted in Parliament on 18th March, 2021 that Older vehicles pollute the environment 10 to 12 times more than fit vehicles and pose a risk to road safety. He made a Suo Moto Statement on Proposed "Vehicle Scrapping Policy" in the Parliament. Vehicle Scrapping Policy" is aimed at creating an Eco-System for phasing out of Unfit and Polluting Vehicles. The objectives of the policy are to reduce population of old and defective vehicles, achieve reduction in vehicular air pollutants to fulfil India's climate commitments, improve road and vehicular safety, achieve better fuel

[c] as per details submitted by Union road transport minister on 29th March 2021**,** Delhi has nearly 50 lakh registered vehicles that are over 15 years old and 70% of these are more than 20 years old. The national capital has the third highest share of such vehicles in the country. At India level, there are at least four crore vehicles registered across states are more than 15 years old and nearly 50% of these are older than 20 years. "Currently, there is no mechanism to de-register vehicles until and unless the owners approach RTOs.

[c] most recently on 10th July. 2021, a study conducted by IIT-Delhi has revealed that the impact of acute exposure to PM2.5 on all-cause mortality was larger than that of PM10 exposure. There is a 0.52% increase in mortality for increase of every 10 micrograms per cubic metre (μg/m3). PM2.5 Takes Greater Toll In Winter

[31] COMMERCIAL VS PERSONAL FOUR WHEELERS: A recent explosive vehicular growth is neutralizing all our Government's efforts to control vehicular pollution. If we compare vehicle ownership of Delhi with that of national one, we find that in Delhi 50% population has motorized vehicle that is more than 3 times of national average of 16%. If we make a comparison of cars only, we see that in Delhi 16.7% population has cars while national average of car occupancy is only 2% i.e. car occupancy in Delhi is eight times more than national average! On the contrary if we consider all kinds of goods carriers that are diesel based [small, middle and heavy trucks] there number is only 86 thousands that is 1% of total vehicles of Delhi and even if we compare with total number of cars in Delhi [APPROX 30 LAKHS], we find total goods carriers are only 3% of total cars. We have not included buses as they are running on CNG. Therefore, inside Delhi it is not easy to pass on the blame to transport vehicles only. So we have to accept the fact that total number of cars would still remain a big deciding factor for pollution even if we control pollution due to outside transport vehicles!

[32] FACT: NEED OF HOUR: TO KNOW BASIC CAUSES, SOURCES, SEVERITY & CONTRIBUTION OF INDIVIDUAL FACTORS

This is true that air pollution is a complex and multifactorial, but we cannot solve any problem unless we know the basic aetiology, severity, magnitude and relative contribution of individual factors like vehicular, industrial, dust, etc. Only then we can customize our priority, planning, efforts and budget in that proportion. This is not only necessary to get the best results but also to replicate such model of actions to other polluted cities as air pollution is a pan India issue and people of those cities have equal constitutional rights. To arrive on a consensus on measures against pollutions, especially in relation to vehicular pollution, we need to answer some very basic question, that are probably yet to be ascertained in court. These are:

(a) Out of total air pollution [industrial, vehicular, dust or waste burning], how much is the contribution of vehicular pollution in India especially in metro city like Delhi.

(b) Out of total vehicular pollution, what is the contribution of individual fuels e.g. diesel, petrol, CNG, etc.

(c) Why we are not getting desired results in controlling air pollution despite shifting/shut down of industries in metro cities and after many serious efforts of our govt in terms of road reforms, fuel purification, CNG conversions, etc, etc.

[34] FACT: DISPROPORTIONATE BLAME TO DUST POLLUTION:

Many agencies and auto companies, instead of vehicular, have a tendency to pass on blame to other polluting factors : Society of Indian Automobile Manufacturers has quoted in court an IIT-Kanpur study to say that "one-third of pollution load in Delhi is contributed by sources from outside Delhi like burning of crops in Punjab and Haryana. Similarly dust Pollution has been labelled as contributing more than 50% of Delhi's pollution. Petitioner believes dust is getting a disproportionate attention or blame for air pollution. Probably, indirectly agencies are hesitant to accept the fact that vehicular pollution is a significant issue.

We need to find answer for two facts related to dust: Firstly, this dust is lying there on Delhi's roads for many decades, why this dust has become so significant

recently. Secondly, this dust is lying in all Indian cities, then why this dust has become an important cause in metro cities only! We strongly believe whatever pollution caused by this dust, to some extend it is directly or indirectly related with very high number of vehicles in the city. The possible reasons are:

- [a] Due to very high number of vehicles there is constant movements of vehicles so that dust remains suspended all the times in air or it is not allowed to settle down.
- [b] Due to explosive growth of vehicle numbers in Delhi-NCR, we are compelled for more and more road space. So there are constant construction activities like, flyovers, road widening causing more dust in and around roads. So apparently it is dust but in true sense it is the number of vehicles that is the real culprit. That is why this dust has become important in metros.
- [c] Dust particles act as a carrier for toxic substances that are emitted from exhaust. These dust particles loaded with pollutants are much more dangerous for health as compared to neutral particles.

Similarly crops burning are also disproportionately being blamed for pollution in Delhi NCR. It may explain to some extent in Delhi area but it may not be correct to blame it for equally polluted Patna or Kanpur or in other Indian cities that are also reeling under severe air pollution and included amongst worst polluted cities in the world!

[35] FACT: THERE IS A NEED TO RECLASSIFY POLLUTANTS:
Up till now we are classifying pollutants like:
[a] on the basis of Source of pollutant (vehicular, dust, industrial, crop or waste burning, Domestic fuels, etc)
[b] state of pollutant (solid, liquid, gas)
[c] size of particle (coarse, fine, ultrafine),
However we believe, besides above classification, there is a need to understand that in metro cities we need to have one more way to classify the pollution especially to define the quantum of total pollution in to two groups:
[i] baseline/local or all season factors of air pollution that are present throughout the year on all days like vehicular, industrial, waste burning and to some extent the dust. We have to accept the fact in Delhi NCR there is always baseline pollution and as per EPCA, the prime monitoring agency under honble Supreme Court, has accepted that local sources to blame for 90% of city pollution and not the crop fire, etc
[ii] Precipitating or aggravating factors that are seasonal or external or related to some meteorological factors like crop burning, crackers on diwali, winter or wind speed.

Now we have to address both type of these factors i.e. basic as well as precipitating one. It has been observed that various agencies are trying to pass on blame disproportionately to other polluting factors like dust or crop burning, etc. What happens when there is a severe spike of air pollution, we start blaming to acute or precipitating factors only like crop burning of neighboring states or diwali crackers or wind speed but forget to take in to account the basic air pollution that remains all the time in NCR.

Therefore, in order to customize our priority & planning against air pollution in Delhi-NCR, government need to conduct a source-apportionment study in order to label EXACT CONTRIBUTION of individual pollutants in terms of vehicular, industrial, crop/waste burning, dust, etc,

In fact today we are at the mercy of NATURE, like we have good air if we have adequate wind in the city and if there is no wind, the air quality worsen! Similarly the winter phobia is known entity today. The present air pollution is a manmade disaster for that we are mainly responsible but these innocent babies of next generation developing pollution induced birth defects, are suffering the punishment for our fault. This is certainly not a correct way to welcome our future generation.

[36] FACT: INDUSTRIAL VS VEHICULAR POLLUTION:
To check industrial air pollution all such industries causing air pollution [2200 industries in Delhi!] have been made to close/relocate away from Delhi, by hon'ble Supreme Court, however, hon'ble Supreme Court has not defined any limit on air pollution caused by vehicles inside the city as AT PESENT ANY NUMBER of such polluting vehicle can be added to a city irrespective to fact whether human body can tolerate this alarmingly high vehicular pollution or not and irrespective to fact whether its road infrastructure can accommodate these vehicles or not!. With the result in those cities where polluting industries are banned, today outdoor air pollution is directly proportional to number of vehicles in the city. On one hand to start an industry in a city there are various restrictions and guidelines while to add any number of cars [whether it is one thousand or one lakh cars], there is no such restriction. The worst thing about vehicular pollution is that emission occurs at the ground or breathing level causing toxic substance to directly enter lungs. In case of

industrial pollution, emission occurs at a much higher level and that too in an area little away from the city.

Although industries are very essential for employment, growth and development of the country, however, despite this fact hon'ble court has banned polluting industries just because that health of its citizens is of paramount importance and one cannot compromise with it. On the other hand all vehicles that are added each year or plying in the cities are not meant for productivity of the country. A significant number of personal four wheelers are being used for luxury or for not so very important purposes and probably the side effect of economic growth or high disposable income. Delhi adds roughly 1,400 new vehicles a day or 400 cars a day or 200 diesel cars per day. Applicant believes these 200 diesel cars must be causing pollution equal to a small polluting industry or we can say every day we are allowing one small polluting unit to settle in the city. That is the reason why air pollution in these cities is increasing despite controlling industrial pollution.

[33] THERE IS NEED TO ADDRESS THE DIFFERENCES OF OPINIONS over the actual major contributors of pollution or what is actual percentage of individual sources to total air pollution in Delhi-NCR. These controversies in data and management against vehicular pollution exist at every level. Data from government organizations [e.g. Ministry of Environment, Ministry of Road Transport, Ministry of Heavy Industries, Central Pollution Control Board, etc are different from non government organizations in a way that as per NGOs, contribution of vehicular pollution to total air pollution is much higher what government organization claims.

[a] There are controversies even within govt agencies like data from Central Pollution Control Board (CPCB) regarding vehicular emissions from of ministry of environment and forest (MoEF). While ministry of environment and forest (MoEF) submitted before Supreme Court on Jan 08, 2015 that air pollutions from vehicles, including trucks and light commercial vehicles, accounted for just 6.6%. In Delhi, vehicles contribute only 6.6% particulate matter (PM) emission, 18.3% oxides of nitrogen (NOx) and 0.3% of noxious sulphur dioxide (SO2) and dust's Share is 52% share. It is interesting that within 2 weeks Mo Environment took a U-turn in S Court on Delhi's vehicular pollution and filed a new affidavit with the help of another study saying that vehicular emission and PM is not 6.6 instead it is 20.5% [Annexure 6, page]. Similarly opinion of two pollution boards i.e. Central PCB differs from Delhi state PCB!

[b] Petitioner believes that by claiming vehicular pollution as minor contributory factor, probably government is trying to delay or deny the very fact that vehicular pollution is a big issue in our country with the possible reason; once you accept that this is a major issue than you have to react and are compelled to take actions. Here applicant would like to give an example of his case in NGT where NGT banned old diesel vehicles on his petition and MoRT produced a document based on a IIT delhi's study saying that old vehicles causes only 7% and rest is caused by new vehicles then applicant searched a study of CPCB that proved that old vehicles that are more than 10 yrs causes 60% of total vehicular pollution just to show that even IIT's research may have different results.

WHILE MAKING ARGUMENT IN DEBATE, OUT OF MANY CONTRADICTORY DATA OR RESULTS VEHICULAR POLLUTION LYING ON OUR DESK, WE INTELLIGENTLY SELECT THOSE THAT ARE IN OUR FAVOUR.