

## **VEHICULAR POLLUTION IN INDIA: A JUDICIAL APPROACH**

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### **ABSTRACT**

*This paper analyses the vehicular pollution which has become a source of air pollution in India. Man's ambition for limitless enjoyment and comfort has led him towards the exploitation of nature's wealth so indiscriminately and so shamelessly as to reduce nature's capacity for self-stabilization. Consequence of thousands' years indiscriminate exploitation of nature has created numerous environmental problems. The vehicles certainly speed up the life, but pollute the environment. The worst thing is that you can't avoid the vehicular emission, as it is emitted at the near ground level where we breathe. Vehicular emission is a deadly cocktail of poisonous grasses and particulates which affects the human beings, vegetation, agriculture and buildings. This paper also offers the measures for prevention of vehicular pollution in India.*

### **INTRODUCTION**

Our earth is like a little spaceship on which we travel together and are dependent on its vulnerable supplies of air, soil and water. Man not only survive and functions in his environment, but he also shapes it and he is shaped by it. Therefore, a careful husbandry of the earth, is regarded as a sine qua non for the survival of the human species and for the creation of decent ways of life for all the people of the earth. Though there are quite a number of factors that contribute to the environmental pollution. But we may cite the growing number of vehicles on roads as one of the salient contributors to the pollution. Air is an important natural life- sustaining resource. Man consumes daily about 2 kg of food, 3 kg of water and about 15 kg of air. Air is actually a mixture of gases that constitute our atmosphere. People have always been aspiring for a pollution free atmosphere which is essential for their health and life. But in the same time we must realize that man influences his environment in many subtle ways such as changing the composition of the atmosphere over a square meter quadrant by breathing its air and out.

Vehicular pollution has grown at an alarming rate due to growing urbanization in India. The air pollution from vehicle in urban areas, particularly in big cities, has become a serious problem. The pollution from vehicles has begun to tell through symptoms like cough, headache, nausea, irritation of eye, various bronchial & visibility, problem. The main pollutants emitted from the automobiles are hydrocarbons, lead/benzene carbon monoxide, sulphur dioxide nitrogen dioxide and particulate matter. The main cause of vehicular pollution is the rapidly growing number of vehicles. The other factors of vehicular pollution in the urban areas are 2 stroke engines, poor fuel quality, old vehicles, inadequate maintenance congested traffic, poor road condition & old automotive technologies and traffic management system.

### **Vehicular Pollution**

In India pollution is multidimensional problem. The factories, automobiles, solid liquid waste disposal, fast moving traffic are causing air, water and noise pollution to an extent that we are heading towards disaster. Among the many factors that contribute to air pollution, automotive exhaust is posing a serious problems, specially in metropolitan areas. Studies conducted by NEERI have revealed that the level of pollution due to automobile exhaust in Indian cities is reaching figures quite comparable with other major cities of the world.

In USA, of the 142 million tons of pollutants given off to the air every year by which 86 millions tons for motor vehicles. In India 50% is contributed by motor vehicles. This is so even though, the number of vehicles playing even in the Indian metropolitan cities, which have the highest number in USA, Europe and Japan.

But the inferior maintenance of vehicles in combination with lower combustion efficiency is making the vehicular exhaust a menace to the city dwellers. And the number of vehicles also is increasing every year.

If we look at the total emission picture of different cities in the year 2000's or 2010's, we would see three types of emission:

- From industrial sources including power plants.

- From vehicular sources.
- From household sources.

With the energy market changing especially in the 1960's and 1970's the use of kerosene and LPG spread through domestic urban kitchens, and replaced the smoky fire wood and coal. But a city is struck with its vehicles. They stay with the city and the city lives with them. Thus, they have to be tamed to cut down on pollution. This is the toughest part of urban air pollution control and hence, my decision to focus on vehicular pollution. That means expect to live in hell if we live in an Indian city for another 20 years, a hell that will rapidly and progressively worsen. People in different metropolitan cities of Indian should brace themselves for a wonderful, Oxygen less 21<sup>st</sup> century.

### **Two-Wheeler Boom:**

Unlike other countries where the two-wheeler is used for an individual's personal transport, for the Indian user his two-wheeler is a transport for the family- a veritable car on two-wheeler used for commuting to work, carrying children and the spouse to school, shopping and even social visits. Indeed, it is also his business transport for carrying loads- textiles, hardware, vegetables, fruit, milk etc. In many parts of the country, two wheelers have been the vehicles of change in the life styles and living standards of the community at large. Over the last few years, the growing in the sale of two wheelers in India has been increasing at the rate of over 15% every year; at times even touching a whopping 20%.

However motor vehicle penetration in India is low compared with developed countries. Although India and other developing countries lag behind in penetration rates (vehicle / 1000 persons) in case of four wheelers like cars, they have much higher two wheelers penetration level compared to developed countries.

Vehicular penetration in select developed & developing countries

Country	GNI per capita	Per 1000 person		
		Passenger Cars	Total Vehicles**	Two Wheelers
<b>Developed</b>	<b>2009 (US \$)</b>			
U.S.A	46360	439	828	26
U.K	41370	460	544	21
Japan	38080	617	617	28
Germany	42620	510	610	46
Australia	40240	550	717	28
France	42620	496	654	56
<b>Developing</b>				
Mexico	8960	191	288	11
Malaysia	7350	313	675	325
South Africa	5760	110	170	7
Brazil (*)	8070	165	275	68
China	3650	34	119	72
Korea ,Rep	19830	267	393	37
India (**)	1220	13	117	76

\*\* : Total Vehicles include passenger cars, buses + coaches, vans +lorries and Two wheelers

(\*) : Data relates to 2008,      \*\* : Data relates to 2011.

Sources: 1. World Road Statistics, 2011, International Road Federation, Geneva.

2. Calculated on the basis of data received from Offices of State Transport Commissioners/UT Admns.

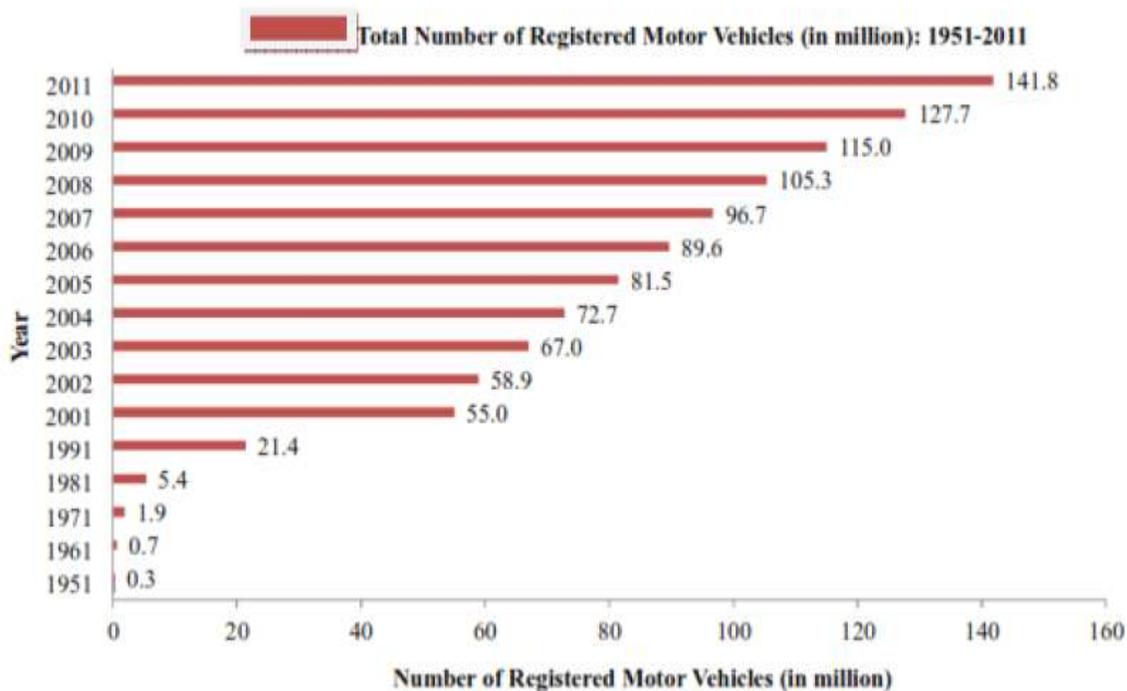
### Sources and Composition of Automobile Exhaust

Though all the types of transport namely air, water and land contribute to air pollution, the land transport is the most important. Land transport is by using vehicles of many types, fuelled by variety of products and emit varying amounts of both simple and complex pollutants. The omnipresence of automobile makes it a very important source. Automobiles are present every where-Urban or Suburban. Also the pollutants are emitted at ground level and the dispersion is very limited. Exhaust pipe is the major source of vehicular pollution from automobiles and accounts for about 65% to 70% of the pollution while about 20% occurs through blow by gases from crank case breather and the remaining through evaporative emissions from fuel tank breather carburetor and spillage losses. In addition to these there is a quantity of dust produced from the gradual wearing away of the rubber tyre brake living and clutch plates of the vehicles. Fuel used in the internal combustion engine is essentially carbon and hydrogen. Complete combustion at this fuel should lead to only Co<sub>2</sub>, O<sub>2</sub> and H<sub>2</sub>O but due to incomplete and combustion different pollutants are

produced.

Air is normally used as the source of O<sub>2</sub> and some N<sub>2</sub> and O<sub>2</sub> combine at the temperature normally reached in the combustion process to form nitric oxide and then much of NO gets converted into NO<sub>2</sub>. Some of the fuel remains unchanged and some is converted into other organic compounds. Apart from these products of incomplete combustion, most of the petrol contains anti-knock agents, which contains lead and lead compounds and these are also found in the exhaust.

### Trend in Growth of Registered Vehicles in India :



Source: Offices of State Transport Commissioners/UT Administrations.

India has experienced tremendous increase in the total number of registered vehicles from about 0.3 million on 31<sup>st</sup> March, 1951 to about 142 million as on 31<sup>st</sup> March, 2011. The total registered vehicles in the country grew at a Compound Annual Growth Rate ( CAGR ) of 9.9% between 2001 and 2011.

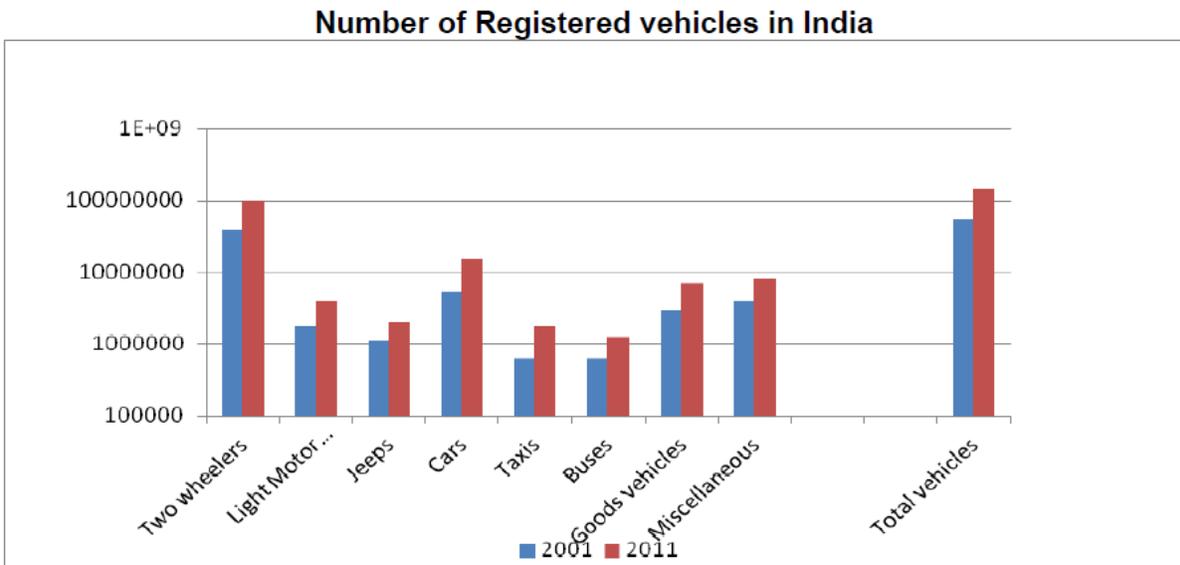
### **Traffic Composition:**

Urbanisation has a strong bearing on the travel demands in the country. Higher incomes, mobility, expanding cities and the proliferation of employment centres have increased the demand for motorized transport, resulting in a disproportionately high concentration of vehicles in urban centres. Irrational distance between homes and place of work, greater incentives for private transport and in adequate and poor quality public transport has aggravated the problem.

The Tata Energy Research Institute (TERI) estimates that of the total travel demand in 17 selected cities in India, the four metros will generate nearly 56% by 2010. In 1991 for example the vehicle population in India comprised about 14 million two wheelers 2.9 million cars, jeep and taxis and 1.7 million buses and goods vehicles.

The composition of traffic on city roads also affects emission. The future trends in vehicle growth can have serious implications for emission and fuel consumption pattern's warns V.S.N. Srinivasan, an energy expert from TERI. Scientists at the Delhi based Central Road Research Institute (CRRI) indicate that petrol cars emit 49.61 kg of total pollutants per 1,000 vehicle Km, followed by Buses and Trucks (30.05 kg). Three wheelers (35.79 KG), Two Wheelers (27.29 Kg) and Diesel Car (3.21 Kg).

During the last decade, while the number of two wheelers in India has multiplied by a factor of about 5.6 passenger cars have gone up about 2.6 times. An increase in the number of two-wheelers results in increased HC emission. Two and three wheelers with two stroke engines accounted for 70 per cent of the total unburned HC and 46% of CO emissions in 2011-15. Increasing use of buses or some other mass transit system would alleviate the pollution scenario. To carry the same number of people over the same distance a car emits 90 times more CO than a bus, a taxi emits 113 times more, a three wheelers 60 times and a two wheeler 49 times. In terms of HC emissions a car emits 93 times more, a taxi 55 times more, a three wheelers 121 times more and a two wheelers 100 times more when compared to emission from a bus.



### Hazard of vehicular pollution

Particulate, emitted by a variety of sources pose a hazard to the health of animals and plants and also to the longevity of structures and property. However, the damage due to the particulars in somewhat indirect and slow. Among the gaseous components, oxides of nitrogen and the nitrated organics and oxidants generated due to them are considered to be the most hazardous. Despite the mounting evidence on the serious health risks from particulate pollution even at relatively low concentrations, the biological mechanism by which it adversely affects humans is not understood properly.

The WHO estimates that about 5,00,000 deaths are caused per year throughout the world due to exposure to particular pollution. Shockingly, 20 percent of these deaths occur in India, WHO states that in India alone 1,00,000 people die due to particulate air pollution, well about 20 percent of the total toll. One recent hypothesis explains that on entering the lungs, particles restrict the availability of oxygen to the lung muscles, causing ischemia, a condition that affects the cardiac rhythm (heartbeat), resulting in heart attack. Yet another hypothesis states that particles cause inflammation of the lungs, which in turn affects the closely linked pulmonary and cardiovascular systems. It goes

without saying that if the effects on lungs and the respiratory system are experienced across a population, particulate air pollution can have substantial impacts on life expectancy. Even if the air pollution levels do not cause death, those affected can be expected to live anywhere between a few days to a few years. However, the quality of life and health will certainly be less than that experienced by a healthy individual of the same age.

Vehicular pollution is no longer just an intangible threat in cities like Delhi, Mumbai, Bangalore and Kolkata as the air grows perceptibly darker, and respiratory diseases increase in these and other up and coming Indian metros, its presence simply cannot be swept under the carpet. The cost of inaction: valuing the economy-wide cost of Environment Degradation in India, the health costs of ambient air pollution in Delhi alone is US \$100-400 million (Rs.350-1400 crore).

<b>AUTOMOBILE PRODUCTION TRENDS (NUMBER OF VEHICLES)</b>						
<b>Category</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>	<b>2014-15</b>
Passenger Vehicles	23,57,411	29,82,772	31,46,069	32,31,058	30,87,973	32,20,172
Commercial Vehicles	5,67,556	7,60,735	9,29,136	8,32,649	6,99,035	6,97,083
Three Wheelers	6,19,194	7,99,553	8,79,289	8,39,748	8,30,108	9,49,021
Two Wheelers	1,05,12,903	1,33,49,349	1,54,27,532	1,57,44,156	1,68,83,049	1,84,99,970
<b>Grand Total</b>	<b>1,40,57,064</b>	<b>1,78,92,409</b>	<b>2,03,82,026</b>	<b>2,06,47,611</b>	<b>2,15,00,165</b>	<b>2,33,66,246</b>

Source : [http://mospi.nic.in/mospi\\_new/upload/SYB2016/CH-20-MOTOR-VEHICLES/ch20.pdf](http://mospi.nic.in/mospi_new/upload/SYB2016/CH-20-MOTOR-VEHICLES/ch20.pdf)

### **Enforcement Machinery**

The major strategy is the enactment of the Air(Prevention and Control of Pollution) Act, 1981. This Act lays down in Section 16(1)(h) that the main functions of the central Board shall be to improve the quality air and to prevent control or abate air pollution in the country and that without prejudice to the generality of the foregoing functions the Central Board may law down standard for the quality of air. In India the Motor Vehicle Act, 1939 has however taken due care to legislate laws

regarding the issues of vehicular pollution and also air pollution.

Section 69 and 70 of the M.V. Act deals with the construction equipment and maintenance of Motor Vehicles Section 70 sub clause 2(a) concerns with the width, height, length and overhang of vehicles and on the loads carried, (h) the emission of smoke, visible valuer, sparks, ashes, grit of oil. Further Section 124 of the Act says that driving vehicle exceeding permissible weight shall be punishable for a first offence with fine which may extend to two hundred rupees and for a second or subsequent offences with fine which may extend to one thousand rupees.

Section 20 of the Air (Prevention and Control of Pollution) Act, 1981 is an assurance to the standard for emission of air pollution from automobile. Accordingly, the State Government is empowered to give such instructions as may be deemed necessary to the concerned authority in-charge to registration on Motor Vehicle under the M.V. Act, 1939.

Besides the above mentioned statutory provisions, the suggested remedies among others may be the legal control to stop the vehicle on roads as soon as normal running life of period has been achieved. Further, it is suggested that the State Government should appoint the M.V. Officers under Section 133-A of the M.V. Act, 1939. These officers should be recruited exclusively to prevent and control vehicular pollution generated by the heavy vehicles. They should be trained to discharge duties as desired under Section 20 and 26 of the Air Pollution Act, 1981.

Similarly Indian Penal Code makes various acts affecting environment as offences:

1. Spreading of infection of any disease dangerous to life under Section 269 IPC.
2. Making atmosphere noxious to health under Section 278 IPC. The code of Criminal Procedure 1973 authorises District Magistrate to control and remove all pollutions under Section 133, 143 and 144 of the Code.

Again, Article 21 of the Constitution of India guarantees that the right to life means a life of dignity to be lived in a proper environment, free of danger of disease and infection. The Supreme Court

through its wisdom and activism has expanded this right and it is hoped that a day would come soon when it may declare environmental pollution as violative of Article 21 of the Constitution. The Delhi Government proposed to impose a ban on further registration of two stroke engine vehicle as part of its drive to control vehicular pollution in the capital. It also contemplates conversion of buses that are more than eight years old to Compressed Natural Gas (CNG) technology, a steep hike in registration and parking fees and seizure of polluting vehicles. Now of course polluting three wheeler and four seaters have already been taken off Delhi roads, and unleaded petrol and improved diesel with less sulphur content made available. Officials admit that the measures taken so far to control air pollution have not produced the desired results. But it is true that suspended particulate matter (SPM) level has fallen by 12% and the level of sulphur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO) has been decreasing.

### **Role of Judiciary**

The Indian judiciary in recent years has demonstrated a progressive attitude in matter of environmental protection. In the case *RLEK Dehradun v State of Uttar Pradesh*, the Supreme Court came close to the ratio that the right to environmental protection can be considered as a part and parcel of 'right to live' under Article 21 of the Constitution. Similarly in *T. Damodar Rao v S.O. Municipal Corporation, Hyderabad*, the Supreme Court held that 'causing ecological disturbance and slow poisoning through environmental pollution should also be regarded as amounting to violation of Article 21 of Constitution. The Supreme Court derived a number of cases form the sense of human dignity implied by right to life. The human dignity is not limited only to freedom from pain, torture, neglect, exploitation, repression and suffering from drastic uses of power but also extended to freedom those negative aspects which slowly mix poison in food, air and water, the bases of our life.

In *Chhatriya Pradushan Mukti Sangram Samiti v State of Uttar Pradesh*, the Supreme Court held that "Every citizen has fundamental right to have enjoyment of quality of life and living as contemplated by Article 21 of the Constitution".

In *Kartar Singh v State of Punjab*, the Supreme Court has held that “Liberty aims at freedom not only from arbitrary restraints but also right to secure such conditions which are essential for development of personality”.

In *Subhash Kumar v State of Bihar*, the Supreme Court has held that “Right to enjoyment of pollution free water and air for the enjoyment of life is within the meaning of Article 21. It further says that if any thing endangers that quality of life, a citizen has right to recourse to Article 32 for removing pollution of water or air which may be detrimental to the quality of life”.

But in 21<sup>st</sup> century, our environment has gone to that extent that question of environmental protection is not only related to create a good quality of life but the very survival of millions of people.

The judiciary has played a major role in interpreting and expanding the scope of fundamental rights specially that of right to life enshrined in Article 21 of the Constitution of India to establish environmental production. Today we have unaccountable problems relating to environment which directly affect right to life. Law is what the law does. “if law does not eradicate inequalities and human sufferings and operates without reference to social goals, it becomes meaningless exercise in protection of vested interests.

## **CONCLUSION**

It is apparent from the above discussion that the subject of vehicular pollution is a serious problem, which is effecting to the precious right of the citizen envisaged in the Indian Constitution of the Article 21 that is Right to Live. The increasing growth of pollution in India has been due to the failure to enforce the existing legislative measures effectively rather than the absence of legislative provisions. However, neither court nor government alone can protect vehicular pollution. There is a strong people’s awareness is required at the grassroots level supporting the M.V. Act, 1939 and vehicular pollution provisions. The Government has a big responsibility, specially in this highly polluted country to take steps very seriously. Recently Delhi Government, said the State

Government is also planning to convert more than eight years old buses to CNG, adding that all vehicles in the city will have to comply with Euro II norms. But these Adhoc measures won't help tackle pollution completely therefore the following suggestions made by me for kind consideration.

### **Recommended and Suggestions**

Besides the above, the following are some other suggestions which may be helpful in preventing vehicular pollution due to automobiles.

1. It should be made obligatory for all motor vehicle manufactures to manufacture only such vehicle which do not pollute the atmosphere beyond permissible limits.
2. Traffic rules must be made stringent both for vehicle drivers and pedestrians and also awareness must be created among public about the traffic rules.
3. The traffic Inspector must be available at every stage and should caution the public.
4. Ring road must be provided.
5. Roads must be maintained and kept in a good condition.
6. Every Road Transport Office (RTO) must possess an emission testing machine alongwith a skilled operator.
7. Programmes must be launched to educate people about the provisions of M.V. Act relating to the prevention and control of air and noise pollution.
8. The Transport Authorities should insist all who come for vehicle licence be aware of the relevant provisions of pollution control.

9. Some roads should be reserved exclusively for automobiles traffic, on the other hand, conjuasted roads and lane etc should be declared as “automobile traffic control area” under the Air Pollution Act, 1981.
10. Electric trains may also be helpful for commuters for suburban areas. It will also be helpful tro prevent and control vehicular pollution.

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