About Bharat Stage Emission Norms

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Abstract – **Today the Emission is the bigger problem in our Country. The emission is generated from automobile vehicles exhaust gas. Then the central government change emission norm for the control emission. This paper analysis of Bharat Stage Emission Norm from BS1 to BS6, information about Bharat Stage Emission Norm as well as European Emission Standard and its Important, Advantages, Disadvantages, And Also Explain the importance of emission.**

KEYWORDS: Bharat Stage, Emission Norms, Euro Norms

I. INTRODUCTION

The Air pollution is the biggest challenge to our country as well as World. We know that the number of causes to produce the air pollution in our India like Industrialization, Automobile Vehicle, etc.

The capital of India i.e. Delhi is the largest pollutant city in India. Delhi is the very developed city that's way the number of people using Automobile Vehicle. Then the pollution of Delhi increases also the industrialization is one of the example of pollution. It is the increasing the pollution ofDelhi.

We know that in India the number of pollutant city like Mumbai, Chennai,Kolkata, etc.

In this century, the air pollution has emerged as one of the biggest environmental health risks, that's way pollutants in the atmosphere are altering climate and besides impacted human health.

II BHARAT STAGE

Bharat stage is emission norm in India; it was introduced in 2000 in India. It is regulate by central government.

The Bharat emission norm is completely based on European emission standard. I.e. Bharat stage, BS-II, BS-III, BS-IV and BS- VI are all based on Euro I, Euro II, Euro III, Euro IV and Euro VI, respectively. The Bharat stage-V (BS-V) was skipped in 2016; it was completely base on Euro-V and implements the BS-VI at 2020.

All the new vehicles are manufactured by the rule of emission standard norm after the implements of Bharat stage emission norm.

III. BS-II

The Bharat stage II (BS-II) was implementing at 2005 from the central government of India. It was fully base on Euro II. The mean reason of implement of BS-II was reduces toxic gas, thus was produce from Bharat Stage I Vehicle. The Bharat stage II in which major change in fuel system. The Carburetor fully replace by Multi point injected system.

IV BS-III

The Bharat Stage III was implementing at 2010. The mean purpose of implement of BS-III to reduce the emissions that was produced from BS-II Vehicle.

It was based on Euro III of European country.

The BS–III in which installing the catalytic convertor that curbed the discharge of carbon Monoxide and Hydrocarbon.

The following table is show the reading of BS-III Vehicle emission

Table 1; BS-III Vehicle Emission

Emission	**Petrol (g/km)**	**Diesel (g/km)**
CO	2.21	0.67
HC	0.21	0.52
NOx	0.17	0.53
PM	-	0.06

V.BS-IV

The Bharat Stage IV (BS-IV) was implementing at 1 April 2017. It had applied for reduce toxic gas that was produce from BS-III vehicle.

It was fully base on Euro IV.

The BS-IV in which use bigger catalytic convertor to reduce the nitrogen base emission.

The following table is show the reading ofBS-VI Vehicle emission

Table 3; BS-VI Vehicle Emission

Emission	Petrol (g/km)	Diesel (g/km)
CO	1	0.51
HC	0.12	0.07
NOx	0.07	0.18
PM	0	0.005

The following table is show the reading of BS-IV Vehicle emission

Table 2; BS-IV Vehicle Emission

Emission	Petrol (g/km)	Diesel (g/km)
CO	1	0.51
HC	0.12	0.23
NOx	0.09	0.29
PM	-	0.024

VI BS-V

It was fully base on Euro V, but Bharat stage V (BS-V) Skipped from CentralGovernment of India. And applied direct BS-VI.

VII BS-VI

The Bharat stage is applied in India at 1 April 2020, to reduce the biggest emission.

It is fully base on Euro VI Emission standard.

VII IMPORTANT OF BS

The Bharat stage emission norm is the most important in India. It is implying under central government of India.

It is implement to reduce the emission, thus are produce from automobile vehicle.

It is reduce toxic gas thus are produce from Automobile vehicle. It is danger to environment as well as Human Being.

IX ADVANTAGES OF BS

- It is reduce the toxic substances that areproduced from vehicle.

- It will reduce NOx drastically, thusimproving air quality.

- Also reduce Particulate matter (PM).

- It is also reduce Hydrocarbon.

X.DISADVANTAGES OF BS

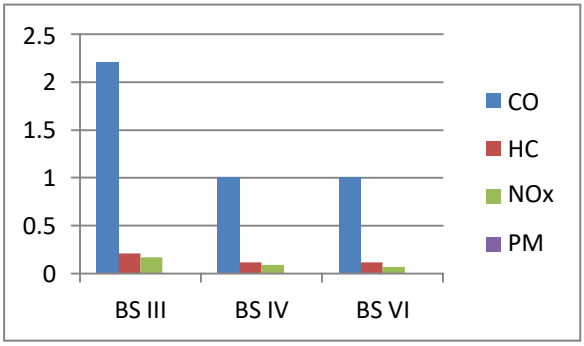
- After implementing of Bharat Stage Automatically increasing the Price of New Vehicle.

- Because the new system install in newvehicle.

- The installing new system automaticallyincreases the maintenance of new vehicle.

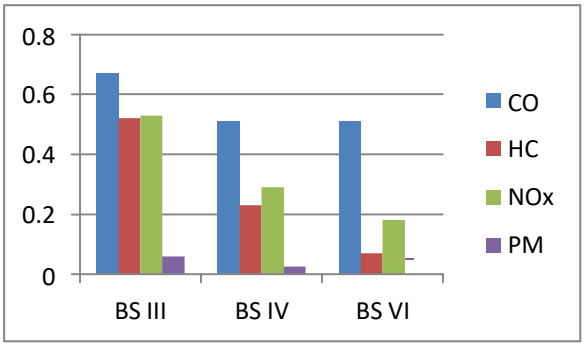
XI.GRAPHICALLY REPRESENTATION

The following graph is show the Petrol Engine vehicle emission from BS-III to BS- VI.



Graph 01; Petrol Engine Emission (g/km)

The following graph is show the Diesel Engine vehicle emission from BS-III to BS- VI.



Graph 02; Diesel Engine Emission (g/km)

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