



## BS6 ENGINE

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## INTRODUCTIONS

The central government has mandated that vehicle makers must manufacture, sell and register only BS-VI (BS6) vehicles from April 1, 2020. The first emission norms were introduced in India in 1991 for petrol and in 1992 for diesel vehicles.



BS6



## Key word

bs norms-central pollution control board-ministry of environment-emission norms-what is bsr-electric control unit-new emission standards-difference between bs6 and bs4-bs6 emission norms-bs6 compliant-advantage of bsy-disadvantage of bs6

# BS Norms

The governing body, Bharat Stage Emission Standards (BSES), regulates the output of pollutants from vehicles plying in the country. The Central Pollution Control Board which falls under the Ministry of Environment, Forest and Climate Change sets the standards to regulate emissions from vehicles in India. The first emission standard or norm, introduced in the year 2000, was known as 'India 2000' and later, BS2 and BS3 were introduced in 2005 and 2010, respectively. While the first three emission norms were introduced at regular intervals, BS4 was introduced in 2017, after a gap of seven years. The BS6 emission standard is the sixth iteration of the emission norm and comparatively, it's a substantial leap in terms of reducing pollution compared to the outgoing BS4. This is also because the BS5 (BSV) has been skipped in an effort to move to better emission norms.

Bharat Stage Emission Norms			
Emission Norm	Reference	Year	Region
Bharat Stage 1	Euro 1	2000	Nationwide
Bharat Stage 2	Euro 2	2001	NCR, Mumbai, Kolkata, Chennai
		2003	NCR, 13 Cities
		2005	Nationwide
Bharat Stage 3	Euro 3	2005	NCR, 13 Cities
		2010	Nationwide
Bharat Stage 4	Euro 4	2010	NCR, 13 Cities
Bharat Stage 5	Euro 5	Skipped	
Bharat Stage 6	Euro 6	Apr-20	Nationwide

# BS4 Engine



Before we understand about BS6 emission or BS6 compliant engine, let's understand the current BS4 (BSIV) emission norms, engine, performance, and its significance. The BSES, which is the governing organization for emissions from all types of vehicles in the country, introduced the first emission norms with the name 'India 2000' in the year 2000. BS2 and BS3 were introduced in 2005 and 2010, while BS4 norms came into effect in 2017 with stricter emission standards or norms. Among the regulations set by the governing body, emission-related changes included tailpipe emissions, Electronic Control Unit (ECU), ignition control, etc. The most visible change was the AHO (Automatic Headlamp On), this is one of the norms under the BS4 which catered to the safety aspect of the new emission standards.

## What is the difference between BS6 and BS4?

The BS6 emission norms are stricter than the BS4 criteria. A vital difference is that a BS6 engine requires fuel containing five times lower sulphur traces than a BS4 engine. Also, Nitrogen Oxide (NO<sub>x</sub>) levels under BS6 norms have been lowered by 70% for diesel and 25% for petrol engines. BS6 compliant petrol cars are designed to emit no more than 60mg/km of NO<sub>x</sub> emissions, and the particulate matter (PM) limit is at 4.5mg/km. Furthermore, the emission norms for diesel engines are more stringent; NO<sub>x</sub> emission is to be reduced from 250mg/km to 80mg/km. Additionally, the PM emission is to go down from 25mg/km to 4.5mg/km, and the HC and NO<sub>x</sub> emissions must be brought down from 300mg/km to 170mg/km. Under the BS6 norms, Onboard Diagnostics (OBD) will become mandatory for all vehicles. Another significant difference between BS4 and BS6 is the introduction of Diesel Particulate Filter (DPF) and Selective Catalytic Reduction (SCR) in diesel engines. Lastly, vehicles will also have Real Driving Emissions (RDE) to measure the emission levels in real-world conditions.

# Advantages of BS6 engine

In the Indian urban areas, vehicle pollution is one of the major contributors to the worsening of air quality. Studies have shown that the release of SO<sub>2</sub>, CO<sub>2</sub>, NO<sub>x</sub>, and other particulate matters

harms the health of Indians. The BS6 vehicles are over 50% less polluting than the BS4 vehicles.

With the BS-6 standards, the NO<sub>x</sub> emission rate can come down by approximately 25% in the case of petrol engines and 70% in the case of diesel engines.

The cancer-causing particulate matter emissions from the diesel engines will also come down by 80%.

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## CONCLUSION

The Indian Government implement the BS6 norms to control Air pollution and Global warming. The BS6 vehicles are reduce the air pollution. But some demerits in BS6 engines

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