

which is expected to be somewhat similar to US EPA Tier IV (Final). This stage will require new technology engine oils, especially low SAPS oils.”

Dimitrov Krishnan, Vice President and Head, Volvo CE India, explains from an OEM point of view, “In India, emission compliance for construction equipment is still BS-III, whereas trucks are moving towards BS-VI in the future. The next stage of emission norms for off-road equipment will be BS-IV, probably in 2021 or 2022; it depends on the government. Volvo can introduce machines complying with upgraded emission levels as and when it is required in India. Today, Volvo is already selling Tier-IV machines in Europe and other such markets for the past three years or so. So we have the technology and can go for it as per market requirements in India.”

Diesel and contamination

The fuel is burnt through combustion and hence power is obtained through the movement of the piston. The burnt fuel is then let out into the environment as exhaust, which pollutes the atmosphere as they contain harmful gases and particulate matter that keep floating in the atmosphere. The poisonous gases and particulate matter affect the respiratory system of living organisms upon inhaling them. Hence, the quality and contents of the fuel used are highly important to reduce harmful emissions. Says **Pulkit Khemka, Vice President, Pensol Industries**, “To comply with the emission standards high quality fuel has to be used. While the fuel available in the Indian market is not that strengthen as developed economies, environment pollution due to vehicles is still a major threat. Hence higher quality fuels and more stringent rules are required to control pollution in a better way.”

Since diesel fuel is transported by several modes and also stored at various locations, it tends to get contaminated, both during transportation and storage. This is an

unavoidable phenomenon and the only sensible solution is the filtration of the diesel fuel at the premises of the end-user. In industries such as mining and construction, contamination of the diesel fuel is further aggravated by the dusty environment.

Says Sekharan, “The quality of diesel fuel is of paramount importance in controlling exhaust emissions from the engine. The Bureau of Indian Standards (BIS) has the responsibility for mandating the specifications of fuels, consistent with the prevalent emission standards. The sulphur content in diesel fuel is closely linked to the emission of Particulate Matter (PM). The major metros and large towns of India are already conforming to BS IV norms with the national oil companies supplying diesel fuel with a sulphur level of 50 ppm maximum and other improvements in the specs.”

He says that by April 2017, the entire nation is expected to comply with BS IV norms and the BS III diesel fuel with sulphur level of 350 ppm max will cease to exist. Sekharan elaborates, “In order to support BS VI emission norms from April 2020, diesel fuel will have to have a sulphur level of 10 ppm max. The national oil refineries are engaged in making large investments



“ADDING LUBRICITY ADDITIVES TO DIESEL MAY BECOME NECESSARY IN THE YEARS AHEAD.”

- KB Mathur, Director, Founder, Global Technical Services

in fuel sulphur reduction technologies to meet this target. In general, it can be said that the quality of fuel available in India is compliant with the prevailing emission norms, as mandated by the relevant BIS specs.”

According to Mathur, “With the reduction of sulphur from 500 to 300 ppm and 300 to 50 ppm, the inherent characteristics of diesel with regard to ‘lubricity’ will be hampered. This will affect maintenance of the fuel injection system. Hence lubricity has to be improved. Therefore, adding lubricity additives may become necessary in the years ahead. Also, clean diesel will be the ‘need’ in the future.”



Sulphur content in diesel fuel is closely linked to the emission of particulate matter.