ED/ CHT/ 06/ 2879   26th July, 2021

Sub: **Lok Sabha Unstarred Diary No. 5227 on "Elimination of Diesel Vehicles" to be answered on 30.07.2021 from MoEF &CC**

Q (a)   **Whether any study has indicated that diesel vehicles produce more pollution as compared to petrol and CNG vehicles and if so, the details thereof;**

Ans. (a) There is no comprehensive study available comparing all fuels for all pollutants and CO_2 emission. However, some of the studies that have been conducted in India and abroad are given below (copies attached for ready reference);

1.   Gasoline vs. Diesel, comparing CO_2 emission levels of a modern medium size car model under laboratory and on-road testing conditions, May, 2019 by The International council on clean Transportation (ICCT), Europe

2.   CNG and diesel urban buses in India: A life-cycle cost comparison, International Journal of Sustainable Transportation, April 2019

3.   A Systematic Study on the Analysis of the Emission of CO, CO_2 and HC for Four-Wheelers and Its Impact on the Sustainable Ecosystem, Sustainability 2020, 12, 6707; doi:10.3390/su12176707 (www.mdpi.com/journal/sustainability)

4.   Fleets Run on Natural Gas by NGV America

In India BS-VI vehicular emission norms have been implemented country wide from 1st April,2020. As per the notification by MoRT&H dated 16.09.2016 (Table 1, Page 29), all BS VI heavy duty vehicular emission limits are same irrespective of fuel used and hence, they are fuel-neutral. Further, the emission limits for compression ignition (CI) – diesel vehicles and positive ignition (PI) – Petrol/CNG vehicles are given vide Table 1, Page 25 of the notification. As far as passenger cars are concerned, NOx (Oxides of nitrogen) permissible emissions limits are slightly higher with significantly low CO (carbon monoxide) limits in case of compression ignition (CI) – diesel vehicles compared to positive ignition (PI) – Petrol/CNG vehicles.

In general, CNG and Petrol vehicles produce lesser PM and Smoke emissions compared to diesel vehicles. As per study by ICCT, referred above, diesel cars tend to have lower volumetric fuel consumption than comparable gasoline vehicles. However, the benefit in terms of CO2 emissions is significantly lower, as the combustion of diesel fuel releases ~13% more CO2 than for the same volume of gasoline fuel. Diesel engines also require fuel-intensive NOx reduction technologies.

(Based on inputs from ARAI, Pune and IOC (R&D), Faridabad)

Q (b) **Whether in order to tackle the pollution problems in National Capital Region to eliminate diesel vehicles given a large number of alternate fuels are cleaner and greener;**

Q (c) **if so, the details thereof;**

Ans. (b & c) In order to reduce pollution from Diesel vehicles, improved fuel quality meeting BS-VI specifications have been implemented in NCT, Delhi from 1st April, 2018, NCR from 1st April, 2019 and country wide from 1st April, 2020.

All public transport has majorly been converted on CNG. IOC R&D has also undertaken trial on HCNG buses to further reduce emission.

In addition, Govt. has also launched SATAT scheme to promote compressed bio-gas in a big way. Besides the potential to boost availability of more affordable transport fuels, this initiative holds great promise for tackling the problem of polluted urban air due to farm stubble-burning.

Q (d) **Whether the Government proposes to promote exclusive use of LNG for heavy vehicles and CNG/EV for light vehicles which can letter be replaced by Hydrogen fuel cell; and**

Q (e) **if so, the details thereof along with the steps taken in this regard?**

Ans. (d & e): The thrust on decarbonisation aided by technological advancements, particularly due to falling costs of renewable power, is likely to result in progressive shift towards electric, LNG and green hydrogen. MoEFCC and MoRTH may further provide input in this regard.

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