

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

RAJYA SABHA
UNSTARRED QUESTION No. 2278
TO BE ANSWERED ON 09.08.2021

CNG as green fuel for vehicles

2278. SHRI SAMBHAJI CHHATRAPATI:

Will the Minister of ENVIRONMENT, FOREST AND CLIMATE CHANGE be pleased to state:

- (a) whether any extensive indigenous research has been conducted to establish that CNG is a green fuel and does not cause environmental pollution in comparison to petrol/diesel;
- (b) if so, the details thereof;
- (c) whether it is a fact that CNG produces ultrafine particles and ammonia, especially in urban areas, which could be hazardous to human health; and
- (d) if so, the details thereof and whether it is time to review the use of CNG for running vehicles in densely populated urban areas?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
(SHRI ASHWINI KUMAR CHOUBEY)

(a) & (b):

No such study has been conducted to establish that CNG is a green fuel. However, Automotive Research Association of India (ARAI) has conducted testing of various categories of in-service vehicles in year 2018 for generation of emission factors for post-2005 vehicles.

List of emission factors for PM, NO_x, HC, CO and CO₂ for vehicles running on Petrol, Diesel and CNG is enclosed as **Annexure-I**.

(c) & d) :

Ultra fine particles are considered to be less than PM_{2.5} and these are secondary pollutants formed in the ambient air because of availability of precursors. Emissions irrespective of type of fuel contribute to the precursors for formation of ultrafine particles. No specific study is carried out to prove that CNG produces ultrafine particles and ammonia and its effects on human health.

Annexure-I

Emission factors for PM, NO_x, HC, CO and CO₂ for vehicles running on Petrol, Diesel and CNG

Type of vehicle	PM (g/km)	NO_x (g/km)	CO (g/km)	HC (g/km)	CO₂ (g/km)
Passenger Cars <1600 CC (Petrol) BS III	0.0010	0.0395	0.9838	0.0948	138.9405
Passenger Cars <1600 CC (Diesel) BS III	0.0213	0.5483	0.3837	0.0753	137.6147
Passenger Cars <1600 CC (CNG) BS III	0.0007	0.7863	3.4340	0.6790	135.7137
Passenger Cars <1600 CC (Petrol) BS IV	0.0021	0.0683	0.8253	0.0790	113.7857
Passenger Cars <1600 CC (Diesel) BS IV	0.0228	0.4113	0.2988	0.0575	139.8605
Passenger Cars <1600 CC (CNG) BS IV	0.0007	0.0340	1.0205	0.1880	101.5885
MUV Diesel < 3000 CC BSIV	0.0493	0.4787	0.4740	0.0493	222.2923
MUV CNG < 3000 CC BSIV	0.0015	0.4070	1.3447	0.4273	132.7353
HCV Diesel Bus >5000 CC BSIII	0.4820	5.1715	4.7345	0.2118	711.1170
HCV CNG Bus >5000 CC BSIII	0.0225	15.1555	9.2210	7.8015	632.5695
