

fuel (diesel with Compressed Natural Gas or Bio-Compressed Natural Gas or Liquefied Natural Gas), Di Methyl Ether (D100). The Government has also mandated mass emission standard for BS-VI throughout the country with effect from 1st April, 2020.

Further, for promotion of electric vehicles, Government has notified for retrofitment of hybrid electric system or electric kit to vehicles and has specified the type approval procedure of electric hybrid vehicles. The Government has notified that the registration mark for Battery Operated Vehicles to be in Green background. The Government, *vide* S.O. 5333(E) dated 18th October, 2018 has also granted exemption to the Battery Operated Transport Vehicles and Transport Vehicles running on Ethanol and Methanol fuels from the requirement of permit. The Department of Heavy Industry has notified Phase-II of the FAME India Scheme [Faster Adoption and Manufacturing of Electric (& Hybrid) Vehicles in India], *vide* S.O. 1300 dated 8th March 2019, with the approval of Cabinet with an outlay of ₹ 10,000 crore for a period of three years commencing from 1st April, 2019.

Further, the National Green Tribunal (NGT) *vide* its order dated 07.04.2015 has directed that Petrol vehicles which are more than 15 years old and diesel vehicles that are more than 10 years old shall not be registered in the NCR, Delhi.

Investment required for pavement construction in hilly areas

3323. SHRI RONALD SAPA TLAU: Will the Minister of ROAD TRANSPORT AND HIGHWAYS be pleased to state:

- (a) the Total amount of investments required for construction of Bitumin pavement and Reinforced Cement Concrete (RCC) pavement respectively, per km in highways in hilly areas for last 10 years;
- (b) in heavy monsoon areas, which system does Government recommend along with the reasons therefor; and
- (c) action taken by Government or needed to be taken to improve the pathetic conditions of roads/highways in the country to make those 'World Class'?

THE MINISTER OF ROAD TRANSPORT AND HIGHWAYS (SHRI NITIN JAIRAM GADKARI): (a) The cost of National Highways varies depending upon the terrain, type of pavement, width of highway, number and length of structure, availability of material

etc. In hilly areas, the normative civil works cost, excluding provision of various miscellaneous items, for widening to 2 lane with paved shoulder is ₹ 6.29 crore per km for flexible pavement as per the circular issued by the Ministry on 25.04.2018. However, the basic cost and additional cost is required for slope stabilization, landslide retention measures etc. depending on site condition. As per the earlier norms, the normative Total project cost (TPC) of widening to 2 lane with paved shoulder per km worked out was as under:

TPC per km (2009-10)*	TPC per km. (₹ in crore)						
	(2010-11)	(2011-12)	(2012-13)	(2013-14)	(2014-15)	(2015-16)	(2016-17)
3.5	3.83	4.18	4.48	4.75	4.845	4.724	4.606

(* Worked out by B K Chaturvedi Committee)

(b) The type of pavement to be adopted for National Highways projects is to be decided on the basis of durability, site constraints, drainage conditions, life cycle cost etc. Considering the issues related to longer service life, fuel consumption, resistance to extreme weather conditions, saving of natural resources and maintenance etc. the rigid pavements may be more advantageous. However, if price comparison between the rigid pavement and flexible pavement is not within an acceptable limit of 20%, the use of flexible pavements are continued.

(c) NHs are designed and constructed as per Standards /Guidelines issued by Indian Roads Congress (IRC) / Ministry. There are provisions in the contract agreement for checking quality during construction by the implementing agencies/independent Engineers/Authority Engineers etc. Further, for all the constructed works (NHs) there is minimum defect liability period within which Contractor/Concessionaire has to rectify the defects/repair at his own cost. Contractor /Concessionaire has to carry out repair work adhering to Ministry's Specification and IRC codes for maintenance of pavements.

Exclusive bays for basic facilities for trucks

3324. SHRIMATI VIJILA SATHYANANTH: Will the Minister of ROAD TRANSPORT AND HIGHWAYS be pleased to state:

(a) whether it is a fact that Government is considering to set up an exclusive lorry bays with basic facilities for resting and securing trucks on National Highways;