Electrified Flex fuel vehicle

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Why is in news? World's first prototype of the BS 6 Stage II 'Electrified Flex fuel vehicle' launched today

Highlighting the potential of Flex Fuel Vehicle Technologies in energy and automobile industry, the Minister of Petroleum & Natural Gas and Housing & Urban Affairs, said that these vehicle **technologies provide opportunity of greater substitution of petrol by Ethanol** as it is capable of using any of the higher blends of ethanol mix beyond 20%.

India has huge Ethanol potential, much beyond E20 mixThis excess potential can be utilised by the country by promoting Flex Fuel vehicle (FFVs) and Flex Fuel Strong Hybrid Electric Vehicle (FFV-SHEV) / Electrified Flex Fuel Vehicle.

An Electrified Flex Fuel Vehicle has **both a Flexi Fuel engine and an electric powertrain**.

This gives it ability to **provide dual benefit of higher ethanol use and much higher fuel efficiency** as is in case of a Strong Hybrid Electric Vehicle (SHEV), which can provide 30-50% higher Fuel Efficiency as it can run 40-60% in EV mode with engine shut off.

About:

The flex-fuel engine-based vehicles use a **blend of the gasoline and ethanol**. FFVs will allow vehicles to use all the blends and also run on unblended fuel.

Flex fuel vehicles (FFV) are **capable of running on 100 per cent petrol or 100 per cent bio-ethanol or a combination** of both.

Ethanol is a by-product of sugarcane but can also be made from grains. In short, ethanol is a renewable fuel made from various plant materials collectively known as biomass.

Given the size of the country's sugarcane and grain production, India can meet most of its ethanol requirements indigenously.

In a **good flex-fuel vehicle**, **up to 83 per cent ethanol** can be mixed with petrol, which is a global standard.

Bio-ethanol contains less energy per litre than petrol but the calorific value (energy contained in the fuel) of bio-ethanol will become on par with petrol with use of advanced technology.

The government has also advised carmakers to start making Flex Fuel Strong Hybrid Electric Vehicles (FFSHEV).

Such a vehicle, though yet to be made widely available in world markets, essentially houses an electric motor which powers the vehicle alongside the traditional petrol engine.