



India Begins Producing Reference Fuel

Source: [ET](#)

Why in News?

India has marked a significant milestone in its pursuit of self-reliance, **initiating the production of 'reference' grade petrol and diesel**. It holds the promise of not only catering to domestic requirements but also tapping into the export market.

- Historically, only a select few companies, primarily from Europe and the US, provided reference fuels to India.

What is Reference Fuel?

- **About:**
 - **Reference fuels (petrol and diesel)**, represent high-value premium products specifically utilized for **calibrating and testing vehicles by [automotive original equipment manufacturers \(OEMs\)](#)** and institutions engaged in automotive testing and certification.
- **Features:**
 - They have **higher specifications than regular or premium fuels**. It includes various specifications such as Cetane number, flash point, viscosity, sulfur and water content, hydrogen purity, and acid number.
 - For instance, reference grade petrol and diesel feature an **octane number of 97**, exceeding the octane numbers of regular and premium fuels, which stand at 87 and 91, respectively.
- **Indigenous Production by Indian Oil Corporation:**
 - India historically depended on imports to fulfill the need for these specialized fuels. However, the **[Indian Oil Corporation \(IOC\)](#)** has now indigenously developed 'reference' grade **petrol at its Paradip refinery in Odisha and diesel at its Panipat unit in Haryana**.
 - Reference gasoline (petrol) fuels will be available in **E0, E5, E10, E20, E85, E100** from Paradip refinery.
 - Reference diesel fuel shall be available in **B7 grade** from Panipat refinery.
 - **Benefit:**
 - **Cost Advantage:** The cost of the imported 'reference' fuel stands between **Rs 800-850 per litre**, whereas the domestic production is estimated to lower the cost to around Rs 450 a litre, signifying a substantial cost advantage.
 - **Benefit to Vehicle Manufacturers:** This development will provide minimum lead time for vehicle manufacturers, enabling import substitution at a better price.

Note

- **E0, E5, E10, E20, E85, E100** refer to different ethanol-gasoline blends. **[Ethanol blending](#)** is the process of mixing ethanol with gasoline to create various ethanol-gasoline blends. This blending is aimed at reducing the overall carbon footprint and emissions from gasoline-powered vehicles.
- Diesel B7 is a fuel with added **biocomponents of up to 7%**
- **Octane Number:**

- It measures the **fuel's resistance to engine knocking**. Higher octane numbers signify better resistance to premature combustion in gasoline.
- **Cetane Number:**
 - Indicates the **ignition quality of diesel fuel**. A higher cetane number signifies easier ignition.
- **Flash Point:**
 - It is the lowest temperature at which a substance produces enough vapor to ignite momentarily.
- **Viscosity:**
 - Measures a **fluid's resistance to flow**; higher viscosity indicates thicker, less fluid-like behavior.
- **Acid Number:**
 - It is a measurement of the amount of acidic substance in the oil.

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