

SECTOR SPECIFIC REPORT (Automobile)

April 2022 Edition



*Policies
Covered In
The Edition*



1. Hydrogen Fuel Cell Vehicles: Move Towards Clean and Green India

2. Production Link Incentive Scheme for Automobile and Auto Component Sector

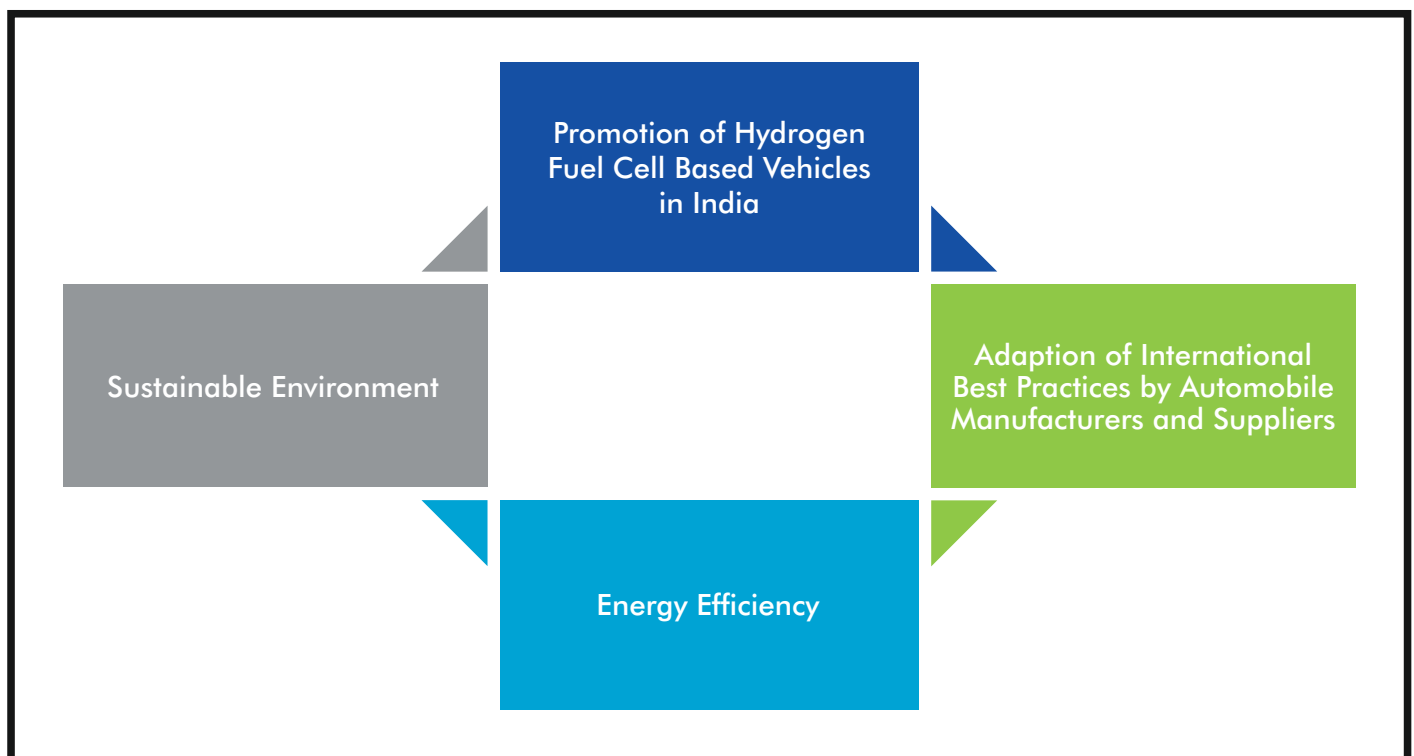
3. Flex-Fuel Vehicles: Bringing Sustainable Fuel Choice to Indian Transportation

Hydrogen Fuel Cell Vehicles: Move Towards Clean and Green India

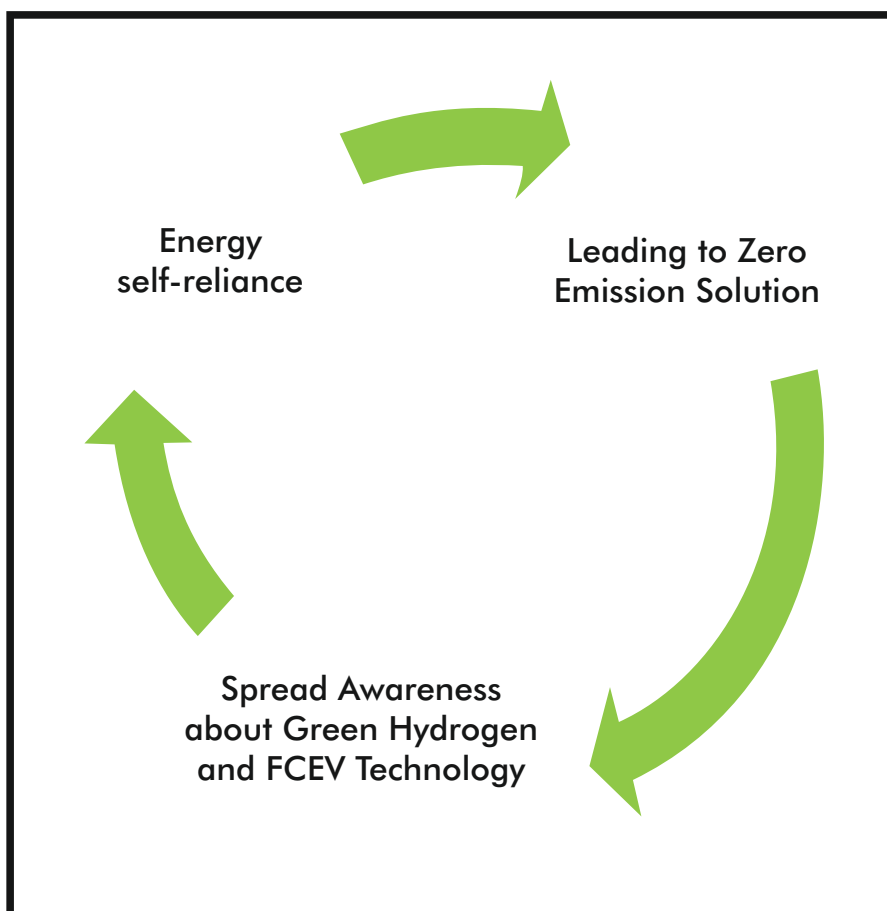
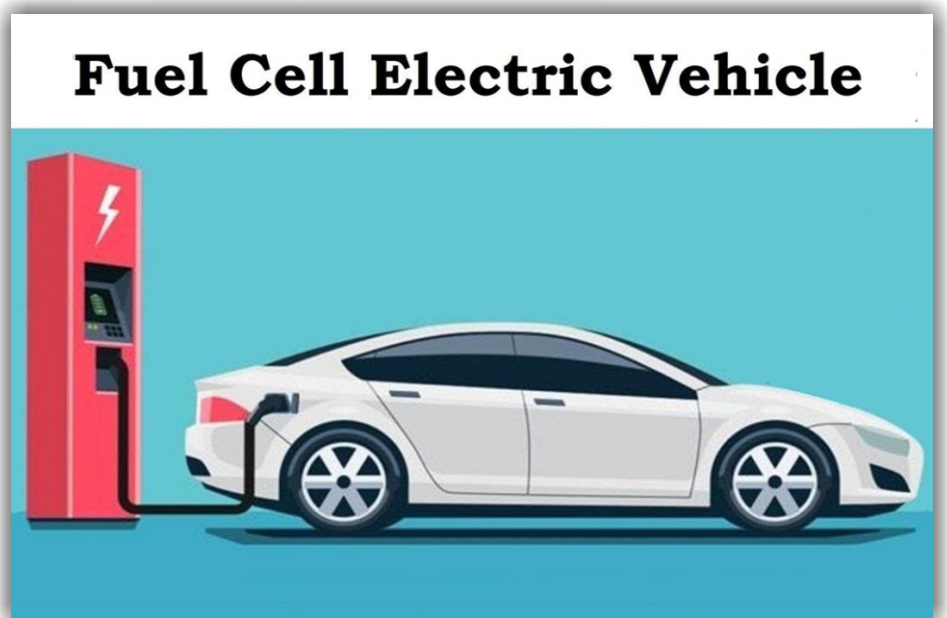
To strengthen the Government of India's commitment to the adaption of clean and green energy choices, the Toyota Kirloskar Motor Pvt Ltd along with the Indian esteemed Organization in the field, the International Center for Automotive Technology (ICAT) launched the first hydrogen fuel-based vehicle in India. The pilot project is launched to study and assess the performance of the hydrogen fuel cell-based vehicle named Toyota Mirai in Indian climate and road settings. The project is supposed to be the evaluation study of the most advanced Fuel Cell Electric Vehicle (FCEV) to fulfill the future mobility needs of Indian customers.

As the world needs a quick energy shift from conventional fossil fuels to renewable energy choices like hydrogen and thus the move will give a push to sustainable mobility in India and make India an energy self-reliant country by 2047. With the rising demand for urban mobility and road transportation in India, the industry is ready with tremendous opportunities for the adaptation of green hydrogen as a fuel to help in the decarbonization of the sector.

To provide the required policy support to the project, the Ministry of Road Transport and Highways has also amended the Central Motor Vehicles Rules 1989 and notified the guidelines related to the Safety Evaluation of Vehicles being propelled by Hydrogen Fuel Cells in 2020 and allowed 18% blending of hydrogen with CNG as automotive fuel on Indian roads. The move has facilitated:



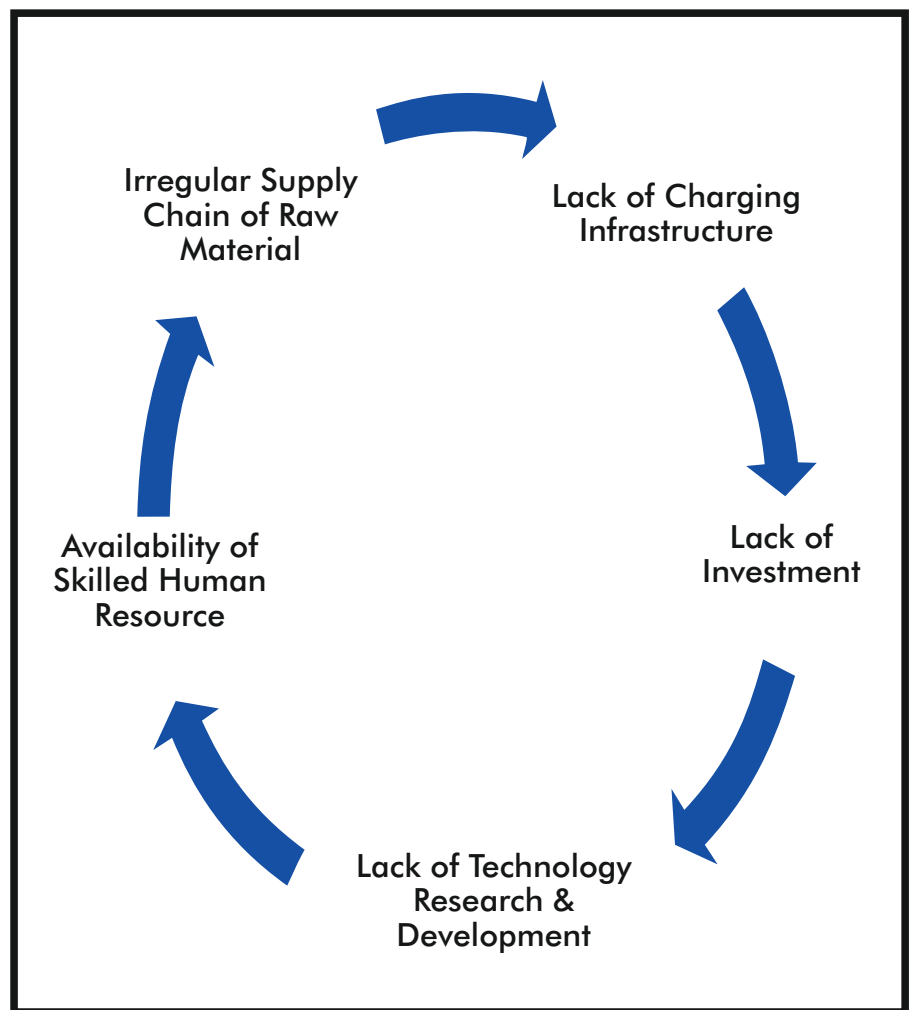
The Hydrogen fuel-based FCEVs are the best zero-emission mobility choices present in the contemporary world. Its availability as a renewable energy source is abundant in form of biomass. Thus, the Government of India's Ethanol Blending Program 2020-25, has set to provide due support to the availability of this clean and affordable fuel choice for India's future energy requirements. The Ministry of New and Renewable Energy is also playing a crucial role in strengthening the Hydrogen-based fuel cell development in the country under the Renewable Energy Research and Technology Development Programme.



As per the estimates of the Government of India, the hydrogen fuel cell-based electric vehicles will be scaled in the country after the successful implementation of the pilot project and provide clean and cutting-edge mobility to the Indian customers. This will also create sustainable employment opportunities in the Indian employment market while establishing the refuelling station infrastructure across the country.

The major significance of the development and adaption of Hydrogen Fuel Cell Vehicles in India over time will be:

With the rising global trends in electric mobility along with the reduced cost of batteries and up-gradation in infrastructure and performance, the demand for EVs in India is also picking up the momentum. The Indian Automobile industry scenario concerning electric vehicles (EVs) has shown a continuous encouraging trend since 2020, as for the first time, the EV registration in India crossed 50,000 units in December. But still, this accounts for less than 3% of overall vehicle purchases in the country and needs to go far. Despite all the efforts, the industry still faces some challenges in its quick acceptance and adaptation by the Indian masses.



Besides these challenges, the government of India through schemes like Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) and continuous enhancement in charging infrastructure, availability of raw material for Battery production, and other production linked schemes provides the much-needed policy support. This will strengthen India's strategic and economic positioning around the globe in electric mobility and help the Indian customers to be ready to adapt next-generation Hydrogen Fuel cell Vehicles for their daily mobility needs.

Production Link Incentive Scheme for Automobile and Auto Component Sector

The production Linked Incentive (PLI) scheme for the Automobile and Auto Component industry has seen a budgetary allocation of Rs 25,938 crore from the union government. The move is resonating with India's commitment to becoming Atmanirbhar in the manufacturing of automobile and auto components and thus started showing results for the overall growth of the industry and is expected to generate 7.6 lakh new employment opportunities in the sector.

Recently under the scheme, the industry has attracted an investment proposal of Rs 74,850 crores against the estimated target of Rs 42,500 crore over 5 years where the incentives will be based on sales determination of Indian manufactured products in the sector from 1st April 2022. The move is a leapfrog toward achieving India's ambitious goals of becoming one of the clean, safe, advanced, and sustainable automobile and auto component industries around the globe.

The scheme is designed for both existing automotive companies and new entrants in the business of automobile or auto component manufacturing. It is implemented in two components and the performance of both the components have shown the enthusiastic result for the sector:

S.No	Component of Scheme	Characteristic	Proposed Investment
1.	Champion OEM (Original Equipment Manufacturers) Scheme	Sales value linked component for Battery Electric and Hydrogen Fuel Cell Vehicles in all segments.	Rs 45,016 crore
2.	Champion Incentive Scheme	Sales value linked component for Advanced Automotive Technology vehicle components, Completely/ Semi Knocked Down kits, 2-Wheelers, 3-Wheelers, passenger vehicles, commercial vehicles and tractors vehicle aggregators, automobiles for military use, etc.	

The Champion Incentive Scheme is designed to cover the vehicle's manufacturing which the government may prescribe as other advanced automotive technology components based on the future course of technological developments and research. The scheme has a steller effect on the growth of the sector through financial incentives and increases domestic manufacturing of Advanced Automotive Technology products (AAT). It is also capable of attracting investment toward the automotive manufacturing value chain at par with global standards.



Production Linked Incentive Scheme for Automobile Sector



Union Cabinet approves Production Linked Incentive (PLI) Scheme of ₹ **25,938 crore** for the **Automobile Sector**



Will create **Advanced Automotive Technology Global Supply Chain in India**



Big boost to **Electric Vehicle** manufacturing in India



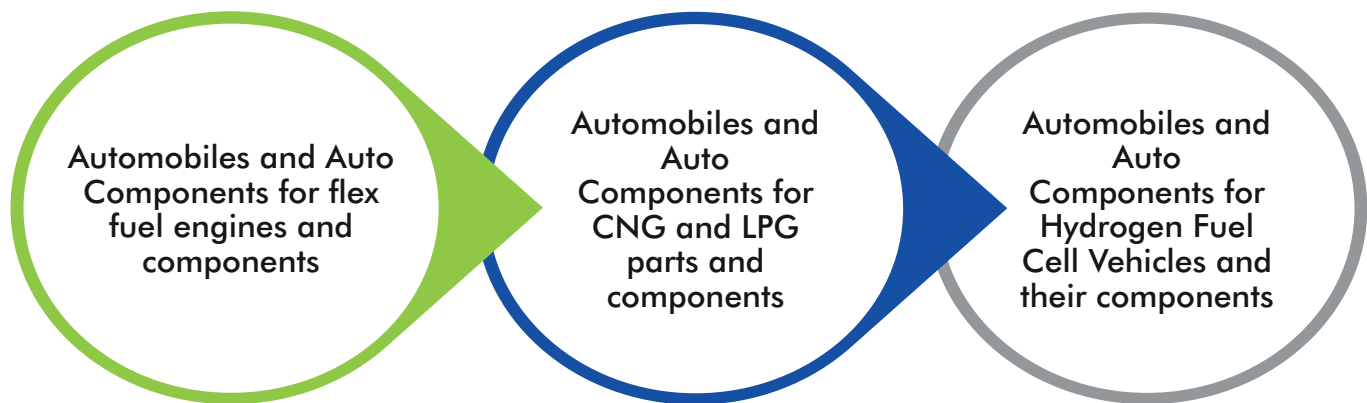
Incentive Payout **upto 18% of the sales value**

Benefits:

- Bring in investment of ₹**42,500 crore**
- Will lead to **incremental Production of ₹2,31,500 crore**
- **7.5 lakh jobs** to be created

The scheme is targeted to benefit the advanced automotive technology vehicles and auto component manufacturers where at the current level the local supply chains are dormant, weak,

order do not exist at all. For the battery EVs, the incentives under the scheme will be provided to only those who will meet the criteria of FAME II and other government notified schemes over time. The targeted beneficiaries for this scheme under the Ministry of Heavy Industries and Public Enterprise are:



Basic Criteria for the Eligible Automotive Companies :

S.No.	Category	Eligibility Criteria
1.	Existing Automotive Manufacturing Company	Minimum Revenue of Rs 100 Billion and Global Investment in Fixed Assets by Company or its Group Companies will be Rs 30 billion
2.	Existing Auto Component Company	Minimum Revenue of Rs 5 billion and Global Investment in Fixed Assets by Company or Group Companies will be Rs 1.50 billion
3.	New Non- Automotive Investor Company	Global Net Worth of Rs 10 billion as per the audited Financial Statement as per filing of 31 st march 2021 and should be committed to investing Minimum Amount as per New Domestic Investment Conditions over 5 years.

Thus the scheme provides a comprehensive package for the growth and development of the sector and is well equipped to bring new investments on board for sustainable mobility. It will help the Indian manufacturing industry and the sector to cut down its cost vulnerabilities and address the existing technological constraints. The structure of the scheme is encouraging for all the stakeholders involved in the process and will help India to enhance the competitiveness of Indigenous Advanced Automotive Technology products across the globe.

Flex-Fuel Vehicles: Bringing Sustainable Fuel Choices to Indian Transportation

To provide a major push for the flex-fuel vehicles in India, the Ministry of Heavy Industries has included some of the flex-fuel engine components into the Production Linked Incentive scheme issued for the Automobile and Auto Component sector. The auto components that can run up to 85% ethanol fuel (E85) are included under the eligibility list of Advanced Automotive Technology components for incentives. The components defined as eligible products for incentives in Flex Fuel Engines are:

Bs6 Complaint Flex Fuel Engine with capacity of running upto 85% Ethanol blending i.e. E85

Heated Fuel Rail for Flex Fuel Engines

Heating Elements

Heating Control Unit

Electronic Control Unit of minimum 32 bit processor

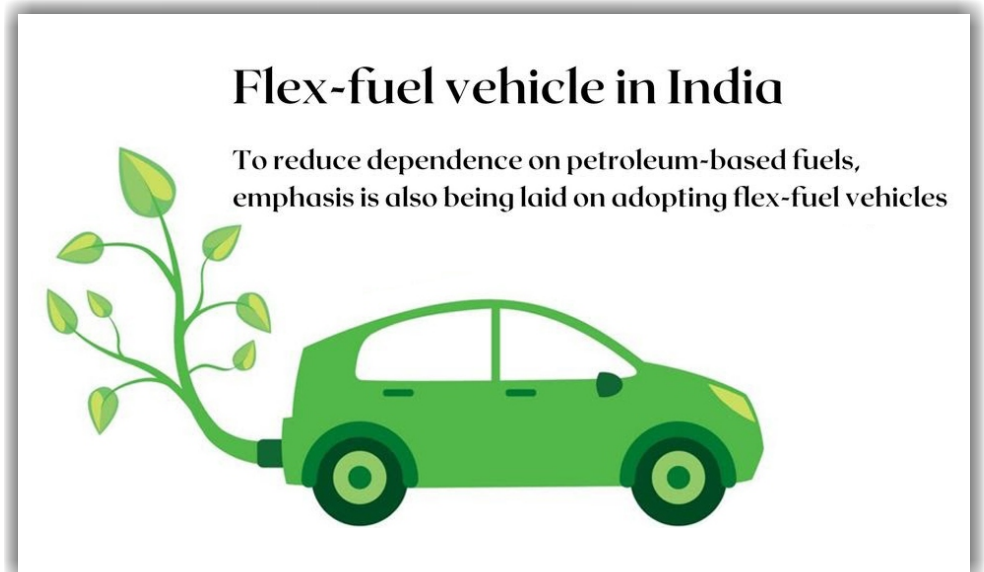
Ethanol Sensors

Flexible fuel engines are the ones, which have internal combustion engines having capabilities of running on gasoline as well as a blend of gasoline and ethanol or ethanol only. Thus, the move is to provide a sustainable transportation choice for Indian automobiles that can also be inline with the success of India's Ethanol Blending Programme 2020-25. The Ministry of Road Transport and Highways have already notified the G.S.R. 682 (E) to provide supporting guidelines related to mass emission standard for Flex Fuel engines operating as E85 and E100(100% Ethanol Blending) vehicles on Indian roads.

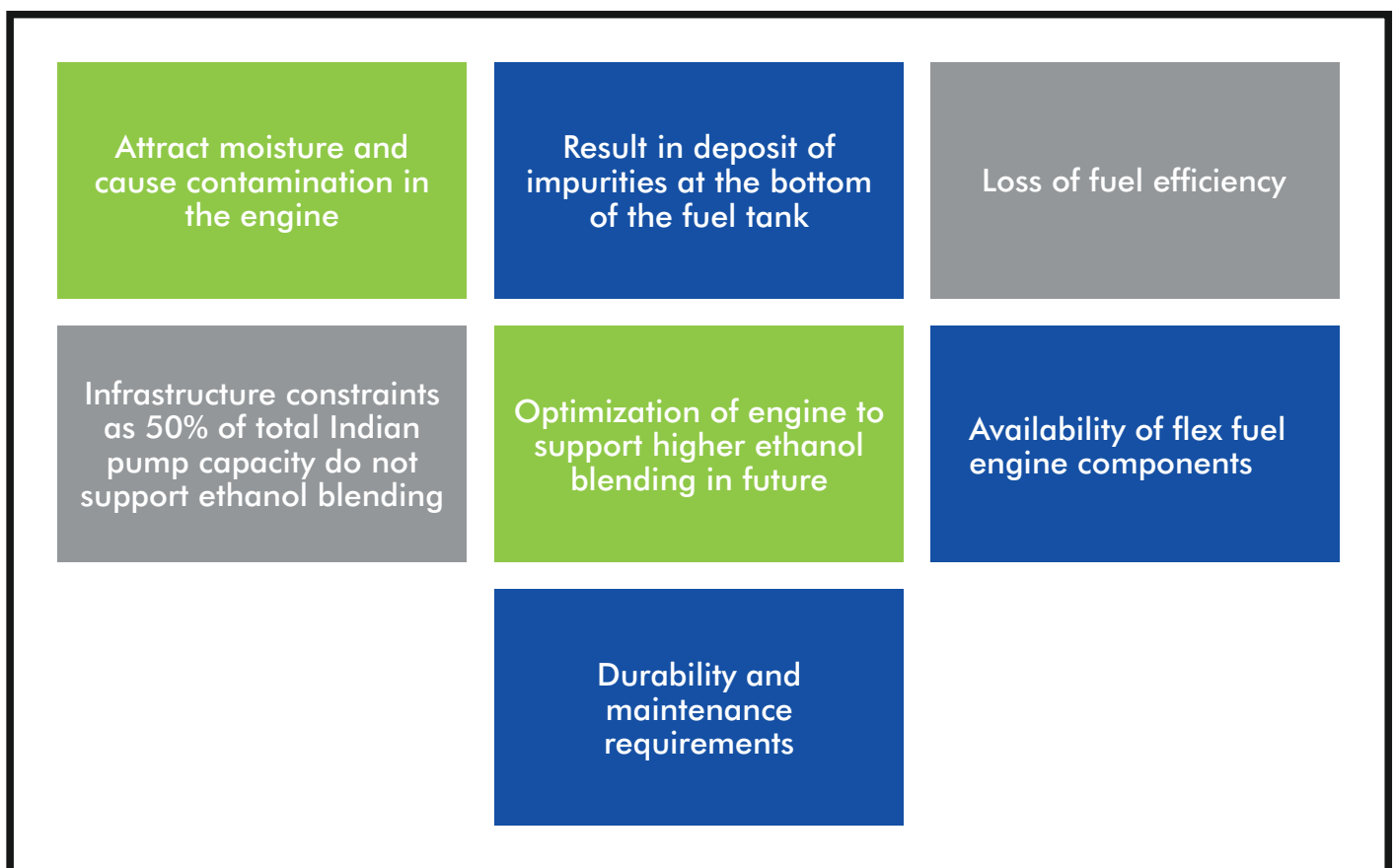
As per the Government of India mandate, the aim of achieving Flex-fuel engine availability with E10 (10% Ethanol Blending) capabilities is by 2022 whereas the E20(20% Ethanol Blending) capability will be achieved by 2025 at the pan India level. As per the statistics, a 20% drop in hydrocarbon emission is expected with the rollout of E10 and E20 ethanol-blended fuels in Flex-fuel vehicles across the country.

At present, in India, no automobile is available that is fully working with Flex-fuel engines, and thus needs to promote its advantages and incentives the manufacturers through various policy

frame works. The recent announcement of the Minister of Road Transport and Highways to start manufacturing Flex-fuel vehicles in India with in the 6 months and giving hope to Indian customers that the automobile companies will soon manufacture the vehicles with E100 capabilities also. Till then, the government will work on strengthening the ethanol pumping stations and related infrastructure in the country.



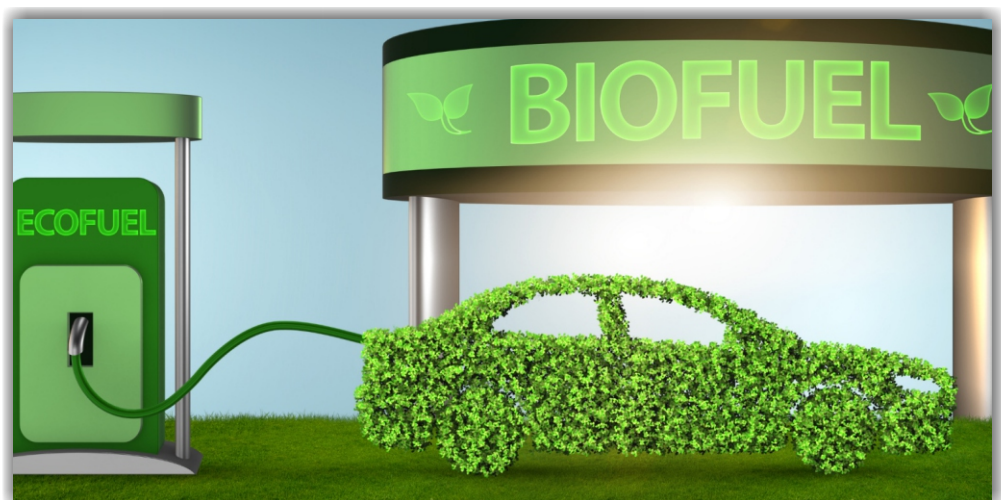
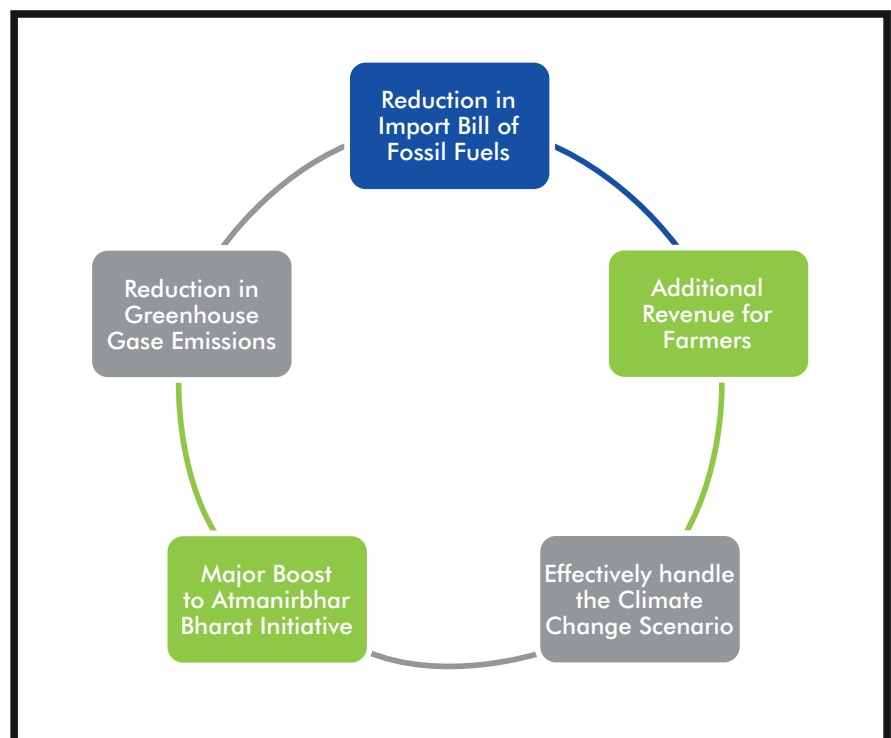
As ethanol has a hygroscopic tendency and absorbs moisture, thus there are many practical challenges in the rollout of flex-fuel engines with ethanol blending. Some of these are as follows:



To start manufacturing flex-fuel vehicles, automobile companies must be needing to significantly change their existing assembly line, and due to varying availability of ethanol across different Indian states make its adaption more challenging. To this, the continuous up-gradation of the sugar mill's infrastructure and its related supply chain must need huge investments and upgrade from respective state governments to ensure the continuous availability of raw materials.

In India, at present only about 2% off uel requirement from the transportation sector is met by bio fuels such as ethanol, and thus have a vast opportunity in the field for research, development, and production. To counter the continuous hike in fuel prices at the global level, India's transportation sector requires flex-fuel engines with the capability of E100 to be sustainable enough. Some of the major advantages of promoting Flex-fuel vehicles among Indian customers are as under:

Overall this will check the drain of the foreign reserves used in the import of fossil fuels and also help India to meet the Nationally Determined Contributions outlined in the Paris Agreement. Around the globe, the flex-fuel systems are already proved their significance and thus provide a successful case study for the adoption of such engines on Indian roads. It will also help India to take a sustainable path of economic as well as environmental prosperity to provide a much cleaner solution to India's rising urban mobility needs over time.



Resources

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