

MINISTRY OF POWER

DRAFT NOTIFICATION

New Delhi, the 16th July, 2026

S.O. XXXX(E). In exercise of the powers conferred by clauses (a),(b) & (c) of Section 14 read with Section 18 of the Energy Conservation Act, 2001 (52 of 2001) the Central Government in consultation with the Bureau of Energy Efficiency, hereby proposes to specify energy consumption standards for M1 category motor vehicles with effect from 1st April 2027 and herein after referred to as 'CAFE 2027', and hereby invites objections and suggestions from all persons likely to be affected thereby.

Notice is hereby given that the said draft CAFE 2027 will be taken into consideration after the expiry of twenty-one (21) days from the date of publishing of this draft on the website of Ministry of Power and Bureau of Energy Efficiency and made available to the public.

Any objections or suggestions which may be received from any person in respect of the proposed CAFE 2027 before the expiry of the aforesaid period will be considered by the Central Government.

Objections and suggestions to proposed CAFE 2027, if any, may be addressed and sent to the Under Secretary, Energy Conservation, R. No.-6424, Hall No.-4, 6th Floor, GPOA-3, Africa Avenue, Netaji Nagar, New Delhi and may be sent at the e-mail address saket-upsc@gov.in.

1. Applicability: These standards shall be applicable to M1 category motor vehicles as specified under Central Motor Vehicles Rules (CMVR),1989.

2. Definitions:

- a. **"Annual Average Fuel Consumption Standard"** means the weighted Average Fuel Consumption permitted of vehicles manufactured or imported by any manufacturer and is calculated in accordance with the sub-para 3(1) of this notification. It will be expressed in petrol equivalent litre/100 km and rounded up to three decimal places.
- b. **"Annual Average of Actual Fuel Consumption"**, means the weighted average petrol equivalent fuel consumption of all eligible vehicles manufactured/imported during a reporting period by any manufacturer and is calculated in accordance with the sub-para 4(1a) of this notification. It will be expressed in petrol equivalent litre/100 km and rounded up to three decimal places.

- c. **“Assessment year”** means the year following the reporting period, during which the compiled data under CAFE 2027 is verified and reported to the Ministry of Power and Bureau of Energy Efficiency.
- d. **“Credit”** means the positive compliance balance accrued when a manufacturer’s Corporate Average Fuel Consumption is better (lower) than the applicable target, expressed in terms of ‘g CO₂/km’.
- e. **“Debit”** means the shortfall arising when a manufacturer’s Corporate Average Fuel Consumption exceeds the prescribed target. These credits and debits expressed in terms of ‘g CO₂/km’ are recorded in a compliance account commonly referred to as a “passbook,” which is maintained for each manufacturer or importer.
- f. **“Flex fuel ethanol vehicle”** means a flex fuel vehicle that can run on gasoline or a mixture of gasoline and ethanol with 85 or 100 per cent ethanol blend (E85 or E100).
- g. **“Manufacturer”** means an organization engaged in the manufacture and/or import of motor vehicles which are subjected to type approval and intended for domestic sale.
- h. **“Manufacturer Declared CO₂ (p_i)”** for a model ‘i’ and its variant(s) means the specific emission of CO₂ in gram per kilometre declared by a manufacturer and verified during type approval.
- i. **“Passbook”** means a credits and debits account for each manufacturer and maintained, recorded, tracked, carried forward, and adjusted across compliance periods.
- j. **“Petrol Equivalent Fuel Consumption (FC_i)”** for a model ‘i’ and its variant(s) means the petrol equivalent fuel consumption in litre per 100 kilometres of a model ‘i’ and its variants(s). It is equal to tailpipe CO₂ value in gram per kilometre declared by manufacturer and divided by 23.7135.
- k. **“Plug-in hybrid electric vehicle/ Range Extended Electric Vehicle (REEV)”** means a strong hybrid electric vehicle which has a provision for off Vehicle charging (OVC) of rechargeable energy storage system.
- l. **“Pooling”** means a voluntary compliance mechanism that allows exchange of credits between vehicle manufacturers for meeting Annual Average Fuel Consumption permitted for respective manufacturer.
- m. **“Reporting period”** means the twelve-month period starting from 1st April to 31st March of the preceding assessment year under CAFE 2027, both dates inclusive.

- n. **“Small Volume Manufacturer”** means the manufacturer whose manufactured / imported volume of eligible vehicle is less than 1,000 units in a reporting period (sales year).
- o. **“Strong Hybrid Electric Vehicle”** means a hybrid electric vehicle which has a 'stop-start' arrangement, 'electric regenerative braking system' and a 'motor drive' where motor alone is capable to propel the vehicle from a stationary condition.
- p. **“Type Approval Agency”**, means the testing agencies notified under the Central Motor Vehicles Rules (CMVR), 1989 for the purpose of conducting tests and granting type approval certificates to motor vehicles and their components, to ensure compliance with the provisions of the Motor Vehicles Act and the CMVR, 1989.
- q. **“Test or Driving Cycle”** means a standardized driving pattern represented as a speed -time profile that vehicles must follow on a chassis dynamometer to evaluate fuel consumption and emissions under controlled conditions. It simulates typical driving behaviour such as idling, acceleration, cruising, and braking to ensure uniform and comparable results across manufacturers. In India, earlier testing was based on the Modified Indian Driving Cycle (MIDC), while newer regulations have transitioned to the more realistic and globally harmonized Worldwide Harmonized Light Vehicles Test Procedure (WLTP), enabling better representation of real-world driving conditions
- r. **“Volume (n_i)”** means the total number of manufactured/imported vehicles of a type approved model ‘i’, including its variant(s) in a reporting period as declared by the manufacturer for which excise duty or GST/customs duty has been paid.

3. Norms and standards

(1) **Annual** Average Fuel Consumption Standards in petrol equivalent litre per 100 kilometres for each manufacturer of the said motor vehicles shall be calculated on Modified Indian Driving Cycle (MIDC) and in accordance with following equation:

(a) **The Annual Average Fuel Consumption Standard = a x (W - b) + c**, where,

Annual Average Fuel Consumption Standard = Annual Average Fuel Consumption Standard of manufacturer on MIDC;

a = Constant Multiplier;

b = Fixed Constant;

c = Fixed Constant;

W = weighted average of unladen mass in kilogram (kg) of all new said motor vehicle, manufactured or imported for sale by the manufacturer;

(b) the constant multiplier and the fixed constants shall be determined from Table 1.1 as given below depending upon the year of manufacturing or import of the said motor vehicle in India,

Table 1.1
(From fiscal year 2027-28 to 2031-32)

Year	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32
a (l/100 km per kg)	0.00158	0.00152	0.00148	0.00139	0.00131
b (kg)	1229				
c (l/100 km per kg)	3.9960	3.8600	3.7585	3.5313	3.3273
Average Fuel Consumption Standard for Manufacturer in petrol equivalent (l/100 km)	[a x (W - b) + c]				

(c) where Annual weighted average unladen mass (W) for a manufacturer is calculated as per the following formula:

$$W = \frac{\sum n_i W_i}{\sum n_i}$$

where,

n_i = number of the said motor manufactured or imported for sale in India of a model i in the respective fiscal year;

W_i = Unladen mass in kilogram of a model i in the respective fiscal year.

4. Performance assessment

(1) The Annual Average of Actual Fuel Consumption for each manufacturer of the said motor vehicles shall be calculated on Modified Indian Driving Cycle (MIDC) and in accordance with the following procedure:

- (a) Annual Average of Actual Fuel Consumption in petrol equivalent litre per one hundred kilometres for a manufacturer is the weighted average fuel consumption of all the said motor vehicles, manufactured or imported in a fiscal year and shall be determined as per the following formula: -

$$\text{Annual Average of Actual Fuel Consumption} = \frac{\sum v_i n_i [FC_i \times (1 - C.N.F_i) - c_i]}{\sum v_i n_i}$$

where,

n_i = number of the said motor manufactured or imported for sale in India of a model i in the respective fiscal year;

v_i = volume derogation factor for super credits for model i as defined in Table 1.4 under sub-para 4(6) of this notification;

FC_i = Petrol equivalent fuel consumption in litre per 100 kilometres of a model i ;

$C.N.F_i$ = Applicable Carbon Neutral Factor in percentage for model i as defined in sub-para 4(5) of this notification;

c_i = Petrol Equivalent Fuel Consumption reducing technology derogation (c_i) factor for model i as defined in sub-para 4(3) & 4(4) of this notification.

- (2) The Fuel Consumption (FC) in litre per one hundred kilometres of every model shall be determined as per the following formula:

- (a) the actual fuel consumption of every model in terms of litre per one hundred kilometre (in the case of petrol, LPG or diesel) and in kilogram per one hundred kilometre in the case of CNG shall be calculated by the following formulae:

$$FC_{\text{Petrol}} = 0.04217 \times CO_2$$

$$FC_{\text{Diesel}} = 0.03776 \times CO_2$$

$$FC_{\text{LPG}} = 0.06150 \times CO_2$$

$$FC_{\text{CNG}} = 0.03647 \times CO_2$$

where,

CO_2 = the performance p_i i.e. the measured tailpipe emission of carbon dioxide in gram per kilometre as per type approval;

Provided that manufacturers shall report to designated agency the performance p_i (MIDC) and Performance p_i (WLTP) for each model, tested on MIDC and WLTP notified by MoRTH.

- (b) the actual fuel consumption of every electricity driven model shall be measured in terms of kWh per one hundred kilometre as per type approval;
- (c) the actual fuel consumption in petrol equivalent for diesel, LPG, CNG and electricity driven motor vehicles shall be obtained by multiplying the actual fuel consumption referred to in (a) and (b) above with the conversion factors specified in Table 1.2 below:

Table 1.2

Fuel type	Conversion factor to petrol equivalent
Diesel	1.1168
LPG	0.6857
CNG	1.1563
Electricity	0.1028

- (3) In the absence of notified government approved demonstration procedures, the overall cap on Petrol Equivalent Fuel Consumption reducing technology derogation shall be 9.0 g CO₂/km or (0.3795 litre/100 km) on MIDC. Manufacturer can claim discounts on the respective car model towards deployment of energy-efficient automotive technologies that are technically proven, certified, and adopted globally in major automobile markets. Each technology shall be assigned a benefit of 1.0 g CO₂/km (0.0422 litre/100 km) on MIDC. An indicative list of eligible technologies is provided in Table 1.3.
- (4) Ministry of Road Transport and Highways (MoRTH) may separately develop appropriate certification methodologies to certify reduction of fuel consumption from these technologies.

Table 1.3

S.no.	Technology	Minimum Criteria
1	Start-Stop System	Engine stops automatically during idling and again starts automatically during operating condition. Min. time before system activates ≤ 2 seconds
2	Tyre Pressure Monitoring System	Evaluate the inflation pressure of the tyres or the variation of this inflation pressure over time. Atleast 3% fuel savings.
3	Regenerative Braking System	During deceleration, provides for the conversion of vehicle kinetic energy into electrical energy. Min. Energy Recovery on MIDC ≥ 6 %
4	6-Speed or Higher Transmission	Transmission with provision of selection of 6 or more gear ratio for forward movement. 5% Fuel efficiency improvement.
5	12V/48V Efficient Alternator	Improved version of a conventional alternator that generates electricity more efficiently. Min. Efficiency of Alternator ≥ 67% for ≥ 70A to ≤ 90A rating ≥ 72% for ≥ 90A to < 150A rating ≥ 74% for ≥ 150A rating
6	12V/48V Motor-Generator (Micro-Hybrid)	A device that can start the engine, assist it during acceleration, and recover energy during braking. Min. Efficiency of Motor Generator ≥ 78%

7	Exterior LED Lighting	All exterior lights of a vehicle installed for illumination for vehicle visibility and signalling shall be LED. Min. luminous efficacy $\geq 75 \text{ lm/W}$ (tolerance of 10 lm/W)
8	Advanced Glass / Glazing	High-performance window technologies designed to control heat, light, and UV transmission for better energy efficiency and comfort. Min. Solar Heat Gain Constant $\leq 58\%$
9	Electric Water Pump	Coolant pump powered by an electric motor that circulates coolant independently of engine speed. Min. efficiency improvement over mechanical pump $\geq 0.2\%$
10	High-Efficiency Air-Conditioning System	Self-declaration by Manufacturers & to be Benchmarked after 1 st Block Period
11	Solar-Reflective Paint	Self-declaration by Manufacturers & to be Benchmarked after 1 st Block Period
12	PWM-Controlled Radiator Fan	Variable-speed cooling fan controlled by pulse width modulation to optimize temperature, reduce energy consumption, and improve vehicle efficiency. Min. reduction in electrical energy consumption vs fixed-speed fan $\geq 3\%$

- (5) Carbon Neutrality Factor (CNF) shall be applicable on Petrol, CNG & Flex Fuel Ethanol Vehicles, discounting manufacturer declared CO₂ (p_i), for a model 'i' as follows:
- For Ethanol blended petrol (E20 or such higher blends as specified) vehicles including SHEV, PHEV: 8% CNF on tailpipe CO₂.
 - For Flex Fuel Ethanol Vehicles & Strong Hybrid Electric Vehicles (Flex Fuel Ethanol) 22.3% CNF on tailpipe CO₂.
 - For CNG vehicles CNF of 5% or CBG blending percentage notified by MoPNG whichever is higher.
 - For Diesel vehicles, CNF on tailpipe CO₂ emission shall be as per biofuel blending percentage notified by MoPNG.
- (6) A manufacturer may consider using Volume Derogation factors given below in Table 1.4, for each of its model:

Table 1.4

S. no.	Vehicle type	Volume derogation factor for super credit (v_i)
1	Battery Electric Vehicle / Range Extended Electric Vehicle	3.0
2	Plug in Hybrid Electric Vehicle / Strong Hybrid Electric Vehicle (Flex Fuel Ethanol)	2.5
3	Strong Hybrid Electric Vehicle	1.6
4	Flex Fuel Ethanol Vehicles	1.1

The effective Volume (N_i) of a model 'i' and its variant(s) shall be calculated as below:

$$N_i = v_i \times n_i$$

- (7) Manufacturers shall declare the Performance p_i (MIDC) & Performance p_i (WLTP) (in g CO₂/km) for each model sold from 1st April 2026 onwards, tested on both existing Modified Indian Driving Cycle (MIDC) and Worldwide Harmonized Light Vehicles Test Procedure (WLTP) notified by MoRTH to designated agency.
- (8) Every manufacturer for the reported volume (n_i) shall furnish to the designated agency, on an annual basis along with the final compliance report, the state-wise sales data of its vehicles.
- (9) The conversion factor for CAFE 2027 targets from MIDC to WLTP shall be separately notified by the Ministry of Power in consultation with Bureau of Energy Efficiency based upon the data reported to Bureau of Energy Efficiency by designated agency as per sub-para 4(7) of this notification.
- (10) The difference in Annual Average of Actual Fuel Consumption for each manufacturer and Annual Average Fuel Consumption Standards applicable to the respective manufacturer shall result into credit or debit as follows:

$$\text{Credit} = (T - P) \times n_i$$

$$\text{Debit} = (P - T) \times n_i$$

where,

- a. T is Annual Average Fuel Consumption Standard in g CO₂/km applicable to a manufacturer
- b. P is Annual Average of Actual Fuel Consumption in g CO₂/km of respective manufacturer
- c. n_i means the total number of manufactured / imported vehicles of a type approved model 'i', including its variant(s) in a reporting period as declared by the manufacturer.

Credits and debits shall be assessed on an annual basis for individual manufacturer(s) and shall be recorded in manufacturer's passbook. Such credits and debits may be carried forward within the compliance block. The compliance block shall be of three years from 2027-28 and two years from 2030-31. Any credits remaining unsettled at the end of the compliance block shall stand lapsed.

(11) **Pooling**

Individual manufacturer may **exchange or trade** credits with other manufacturer(s) **for the purpose of compliance** on their mutually agreed terms and conditions. Result of trading or **exchange** of credits by individual manufacturer(s) shall be completed and furnished to the designated agency.

(12) **Credits Buyout from BEE**

Manufacturers shall also be permitted to offset any debit balance accumulated in their respective passbooks through the buyout of credits from the Bureau of Energy Efficiency. The price INR per g CO₂/km of such credits shall be as prescribed for each reporting period: FY 2028 – INR 2,500; FY 2029 – INR 3,000; FY 2030 – INR 3,500; FY 2031 – INR 4,000; and FY 2032 – INR 4,500 respectively.

5. Penalty

All penalties payable by entities referred to in Rule 2 of the Energy Conservation (Compliance Enforcement) Rules, 2025 and sums received from buyout of credits for compliance shall be credited to the Central Energy Conservation Fund established under Section 20 of the Energy Conservation Act, 2001 (52 of 2001). Of the total amount so credited, ninety per cent shall be transferred to the respective State Governments and ten per cent shall be retained by the Central Government. The State Governments' share shall be apportioned to the Consolidated Fund of each concerned State in proportion to its share in the total sales of the vehicles by the respective manufacturer or importer during the compliance period.

6. Implementing agency

The Ministry of Road Transport and Highways shall enforce provisions related to testing and calculation methodologies, reporting, conformity of production, derogation, carbon neutrality factor for use of biofuels, volume derogation factor for super-credits (v_i) and petrol equivalent fuel consumption reducing technology derogation factor (c_i) for all motor vehicles under the Central Motor Vehicle Rules, 1989, in consultation with Ministries concerned.

7. Timeline for reporting

Offsetting of debits through exchange of credits under sub-para 4(11) of this notification and/or buyout of credits from BEE under sub-para 4(12) of this notification shall be allowed only within the designated trading window of thirty (30) days, i.e. till 30th September of each assessment year, from the date of generation of the initial compliance report. The designated agency shall collate and submit to Bureau of Energy Efficiency the final passbook within thirty days from the closure of the trading window i.e., before 31st October of each assessment year.

8. Compliance

- (a) In any fiscal year commencing from the 1st day of April, 2027 onwards, the Annual Average of Actual Fuel Consumption as specified in **para 4** of this notification for a manufacturer shall be less than or equal to Annual Average Fuel Consumption Standard as specified in **para 3** of this notification, of the respective fiscal year for the respective manufacturer.

- (b) Compliance shall be assessed on an annual basis, and penalty shall be imposed on individual manufacturer at the end of a block period, subsequent to settlement of credits. Penalty shall be estimated on the entire sales made in a block period by an individual manufacturer or a pool. The non-compliance in petrol equivalent litre/100km at the end of the block period shall be calculated as per the following formula: -

$$\text{Non-compliance in litre/100km} = \frac{\text{Total Debit at the end of the block period in (g CO}_2\text{/km)}}{\text{Total Sales in block period} \times 23.7135}$$

If a manufacturer fails to comply with the provisions contained under para 4 of this notification, it shall be liable to a Penalty as per the Section 26 read with Section 27 and 28 of Energy Conservation Act, 2001 (52 of 2001).

- (c) Small volume manufacturers are exempt from meeting specific emission target under CAFE 2027.

9. Power to amend: The Ministry of Power, in consultation with the Bureau of Energy Efficiency, may modify, amend, or rescind any provision of the CAFE 2027, as may be deemed necessary for its effective implementation.

[F. No. 10/3/2021-EC]

..... Addl. Secy.

Note: The principal notification was published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (ii) dated the 23rd April, 2015 vide number S.O. 1072(E).

Explanatory Note on Corporate Average Fuel Economy (CAFE) 2027 Regulations for Passenger cars

1. Background

The passenger vehicle segment constitutes a substantial share of the country's transport energy demand and contributes significantly to fossil fuel consumption. Although considerable progress has been achieved under the existing Corporate Average Fuel Economy (CAFE) regulations, rapid technological advancements, increasing adoption of alternative fuels, and the emergence of electrified vehicle technologies necessitate a comprehensive revision of the regulatory framework. CAFE 2027 regulations represent a significant evolution of India's passenger vehicle fuel efficiency framework. By integrating fleet-based standards, petrol-equivalent fuel accounting, carbon neutrality recognition for renewable fuels, technology incentives, super credits for advanced vehicles provides a comprehensive and balanced approach for improving the energy efficiency of India's passenger car fleet.

Indian automobile industries have performed well against fuel economy target under CAFE cycles started from 2017. Under CAFE cycle 1, the average industry performance was 10% better than the target whereas under CAFE cycle 2, industry performed was 9% better than targets. This consistent achievement has contributed to national emission reduction and supported the country's energy security by reducing dependence on imported fuel.

2. Rationale

1. The existing CAFE framework was developed primarily for conventional internal combustion engine vehicles, however over the years diversity of fuel type vehicles have increased and automobile technologies have leapfrogged.
2. In the context of above, CAFE 2027 is needed to establish a framework that adequately addresses fuel diversity and technological range.
3. CAFE 2027 introduces a year-on-year clearly defined targets for 5 year horizon. This methodology will provide motivation for continuous technology adoption and product planning across the compliance period.
4. CAFE 2027 also strengthens recognition of renewable fuels' contribution to lifecycle carbon reduction.
5. During last few years, advanced fuel saving technologies are being adopted by manufacturers. CAFE 2027 provides provisioning for additional advanced fuel-saving technologies.
6. CAFE 2027 provides ease of doing business by introducing flexible compliance mechanisms.

3. Proposed CAFE 2027 Framework

1. The proposed CAFE 2027 Regulations establish a modern, technology neutral and performance based regulatory framework applicable to all M1 category passenger vehicles manufactured or imported for sale in India during FY 2027–28 to FY 2031–32. The framework continues to regulate

manufacturers on the basis of annual fleet-average fuel consumption while prescribing progressively stringent standards. The principal features of the proposed framework are as follows:

- a. Manufacturer specific Annual Average Fuel Consumption Standards will continue to be determined on the basis of the weighted average unladen mass of vehicles sold during each reporting year.
- b. Fleet performance will be assessed using a sales weighted average petrol-equivalent fuel consumption methodology.
- c. Tailpipe carbon dioxide emissions measured during vehicle type approval will be converted into equivalent fuel consumption using standardized conversion factors applicable across different fuels and propulsion technologies, thereby enabling uniform comparison of vehicle performance.
- d. Carbon Neutrality Factors (CNFs) are proposed to recognize the contribution of renewable fuels by permitting specified reductions in declared tailpipe carbon dioxide emissions before compliance assessment.
- e. The proposed framework provides differentiated CNFs for renewable fuel blending such as ethanol, CBG and bio-fuel based on notified blending percentages.
- f. Manufacturers will be eligible to claim up to 9.0 gCO₂/km fuel consumption reductions for approved fuel saving technologies (1gCO₂/km per technology). These include automatic start-stop systems, regenerative braking, tyre pressure monitoring systems, efficient alternators, LED lighting, efficient air-conditioning systems, advanced glazing, solar reflective coatings etc. subject to prescribed technical criteria.
- g. Battery electric vehicles, range-extended electric vehicles, plug-in hybrid electric vehicles, strong hybrid electric vehicles and flex-fuel vehicles will receive volume derogation factors (super credits) while calculating fleet average fuel consumption, thereby encouraging greater market penetration of cleaner technologies.
- h. Manufacturers performing better than their prescribed target will generate compliance credits that may be carried forward within specified compliance blocks. Manufacturers with compliance shortfalls (performance exceeding the target) may utilize carry-forward provisions, voluntary pooling arrangements among OEMs or purchase compliance credits from the Bureau of Energy Efficiency under a transparent buyout mechanism.
- i. Manufacturers will submit annual compliance reports containing prescribed vehicle wise information on sales, fuel consumption, carbon dioxide emissions and unladen mass.
- j. Reporting under both the Modified Indian Driving Cycle (MIDC) and the Worldwide Harmonized Light Vehicles Test Procedure (WLTP) is proposed to facilitate India's gradual transition towards globally harmonized testing procedures.
- k. Vehicle testing and type approval will continue under the Ministry of Road Transport and Highways, while administration of the credit mechanism will be overseen by the Bureau of Energy Efficiency in consultation with ICAT.
- l. Small volume manufacturers below 1000 number annual sales will remain exempted from fleet-average obligations.

4. Expected Outcomes

- a. The proposed CAFE 2027 norms are expected to accelerate the adoption of

advanced fuel-efficient technologies and cleaner propulsion systems, including battery electric vehicles (BEVs) and hybrid electric vehicles (HEVs), leading to lower emissions from the passenger vehicle fleet.

- b. The norms are also expected to improve the average fuel efficiency of passenger vehicles, resulting in lower fuel consumption, reduced dependence on imported crude oil, enhanced energy security, and a lower oil import bill, while supporting technological innovation and India's commitment to achieving net-zero emissions by 2070.