

# Carmakers split over relief to flex-fuel, strong hybrids

Both technologies, if combined, may narrow EVs' emission edge

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Major electric vehicle (EV) makers have raised strong objections during internal industry discussions over the proposed Corporate Average Fuel Efficiency (CAFE) norms, arguing that the Bureau of Energy Efficiency's (BEE) revised draft offers undue advantages to flex-fuel and strong hybrid cars.

When both technologies are combined in a single model, according to them, the numerical benefits compound, allowing such vehicles to display carbon dioxide (CO<sub>2</sub>) emissions far closer to that of EVs in compliance calculations.

EV manufacturers point out that converting a regular petrol car into a flex-fuel vehicle requires only about ₹17,000–25,000 per unit, according to a NITI Aayog report from June 2021, whereas developing an EV demands vastly greater investments in research, battery development, and localisation. "These relaxations in draft CAFE norms for strong hybrids and flex fuel effectively reduce the compliance gap between EVs and other powertrains. That makes it harder to justify the capital-intensive transition to full-electric technology," said an executive at a major EV maker.

If a fuel blend contains at least 85 per cent ethanol along with petrol, it is classified as flex fuel. The CAFE framework sets average carbon dioxide emission targets that each automaker's fleet must meet, measured in grams of CO<sub>2</sub> per kilometre (g/km) for every model sold.

On 7 June 2024, the BEE published the first draft of the upcoming CAFE-3



## Points of contention

- Discussions around weight-based exemption for small cars had already divided the industry earlier this year
- The revised CAFE draft, issued in September 2025, not only introduced relief for small cars, but also extended it to flex-fuel cars, strong hybrids
- The old draft, issued in June 2024, proposed increasing the Volume Derogation Factor (VDF) — a multiplier

that increases the notional count of low-emission vehicles in CAFE calculations — for EVs from 3 to 4, and reducing it for strong hybrids from 2 to 1.2

- However, the September draft proposes keeping the VDF for EVs at 3 and for strong hybrids at 2, signalling the government's preference for strong hybrids
- If a strong hybrid car is capable of running on flex fuel, its VDF further increases to 2.5 as per the September draft

and CAFE-4 norms, which are to be implemented between April 2027 and March 2037. The Society of Indian Automobile Manufacturers (Siam) submitted its comments in December 2024, requesting certain changes. A few months later, Maruti Suzuki, the country's largest small-car manufacturer, approached the BEE seeking relief for small cars through weight-based exemptions.

The BEE issued a revised draft on September 25 this year, granting that relief by introducing a weight-based exemption for the first time. Under the

revision, petrol vehicles weighing up to 909 kg — with engine capacity below 1,200 cc and length under 4,000 mm — will get an additional 3 g/km deduction in their declared CO<sub>2</sub> emissions.

The discussion around such weight-based exemptions had already split the industry since earlier this year. The BEE's latest draft, proposing further relief for strong hybrids and flex-fuel vehicles, has deepened the divide even further. As a result, Siam has yet to form a composite industry position to submit to the BEE.

# CAFE norms: Carmakers split over relief to flex-fuel, strong hybrids

Rahul Bharti, senior executive officer (corporate affairs) at Maruti Suzuki, told *Business Standard*: “All of us in industry are discussing mutually to evolve a solution that is comprehensive, balanced, inclusive and progressive.”

Siam did not respond to *Business Standard*'s queries in connection the matter. According to the September draft, small cars can also claim credits for using fuel-saving technologies such as regenerative braking, start-stop systems, low-rolling-resistance tyres or improved aerodynamics.

The total deduction for such a small car, including the 3 g/km relief, is capped at 9 g/km. “A small car meeting all the criteria can claim the full nine-gram benefit just under this clause,” said an industry executive. Then comes the Volume Derogation Factor (VDF), a multiplier used to calculate a manufacturer's fleet-average CO<sub>2</sub> emissions. It allows certain low-emission vehicles to be counted as more than one vehicle, effectively lowering the overall fleet emission figure on paper and easing compliance.

In the June 2024 draft, the BEE had proposed raising the VDF for EVs from 3 to 4 while cutting it for strong hybrids from 2 to 1.2, which would have tightened the rules for hybrids and rewarded pure EVs. However, the September 2025 draft keeps the VDF at 3 for EVs and 2 for strong hybrids, signalling a government preference for maintaining more favourable treatment for strong hybrids.

Further, the September draft stipulates that if a strong hybrid is capable of running on flex fuel, its VDF rises to 2.5, offering even greater relief. Alongside this, the BEE has introduced a Carbon Neutrality Factor (CNF), a percentage discount on declared emissions based on fuel type.

Petrol vehicles using E20—E30 fuel blends get an 8 per cent discount, CNG vehicles 5 per cent, and flex-fuel or flex-fuel-compatible strong hybrids 22.3 per cent.

This means that if a carmaker produces a strong hybrid that can run on flex fuel, the combined effect of the 2.5 VDF multiplier and the 22.3 per cent CNF discount can sharply lower its CO<sub>2</sub> emissions on paper, bringing them close to EVs in compliance terms, even though their actual tailpipe emissions remain significantly higher. “On paper, a flex-fuel strong hybrid could end up appearing much closer to an EV in terms of cleanliness,” said an executive at an EV maker.

Currently, strong hybrids sold in India by Toyota, Innova, and Maruti Suzuki run on regular petrol and therefore qualify only for the 8 per cent petrol discount, not the 22.3 per cent CNF. To gain the full benefit, manufacturers would have to introduce flex-fuel strong hybrids, something Toyota has piloted in Brazil and showcased as a prototype in India. Meanwhile, the September 25 draft also places range-extender hybrid EVs in the same high-credit category as pure battery EVs, assigning both a VDF of 3. Industry officials warn that such ambiguity could be exploited. “Without specifying engine power or electric-only range, a company could fit a large engine, still call it a range-extender, and claim the same compliance benefit as a pure EV,” one executive said. Globally, regulators usually cap engine size (around 1.0 litre or 30–60 kW output) to ensure the range-extender's emissions remain low, a safeguard India's draft currently lacks. The absence of clear technical definitions affects not only range-extender hybrids but also plug-in hybrid cars.