WHITE PAPER

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Impact of the One Big Beautiful Bill (OBBB)

on Light Vehicle Emissions and Lightweighting Material Adoption

Introduction

The 2025 budget reconciliation law, widely dubbed the 'One Big Beautiful Bill' (OBBB), was signed on July 4, 2025. It makes sweeping energy and environmental changes. In transportation, it eliminates enforceable CAFE penalties by setting them to $0, weakens the state-level ratchet by voiding California's emissions waivers via the Congressional Review Act, and terminates federal EV tax credits after Sept 30, 2025. Together, these actions reduce regulatory pressure to improve fuel economy and slow the U.S. shift toward electrified technologies.

Changes to Emission and Fuel-Economy Standards

- **CAFE enforcement nullified.** OBBB (H.R. 1) resets CAFE civil penalties to $0, eliminating automakers' exposure for non-compliance and undercutting the value of CAFE credits. NHTSA has confirmed the effect, including no fines for MY 2022–2024 shortfalls. In short, the long-term ramp-up in miles-per-gallon has been effectively scrapped.

- **EPA tailpipe rules remain on the books but weakened by preemption and policy shifts.** The OBBB law itself does not explicitly repeal the EPA's greenhouse-gas (GHG) tailpipe standards for light vehicles, so those rules remain on the books "for now". However, the Trump administration has announced plans to roll back or reconsider them, and Congress used a fast-track process to revoke California's Clean Air Act waiver. That waiver had allowed California (and 17 other states) to set stricter GHG limits. With the waiver voided, those states cannot enforce their tighter standards. Thus, while nominal standards remain, the new policy offers to stall emission improvements.

- **Regulatory freeze by agencies.** Coinciding with OBBB, U.S. agencies have signaled a freeze on vehicle rules. In January 2025 DOT said it would revisit its pending fuel-economy rule, and in June issued an interpretive rule effectively suspending enforcement of the 2020–25 CAFE standards. (The OBBB law will keep this freeze in place via the $0 penalty.) In sum, no new efficiency gain is legally required, and any planning by automakers that depended on tightening standards must be revised.

Automaker Compliance Strategies

- **Incentive structure upended.** With enforcement gone, automakers face little regulatory pressure to improve or even build high-MPG or low-GHG vehicles. With penalties at $0 and state waivers voided, the business case for incremental MPG/GHG tech weakens—especially for ICE fleets—though global programs (EU/China) still demand efficiency/electrification.

- **CAFE credit market largely collapses.** Previously, companies exceeding the fuel-economy standard earned credits they could sell to peers. With no penalties, those credits lose all value. EV makers (especially Tesla) will lose a major revenue source from selling credits, since others can buy the credits at no cost. In effect, one compliance "lever" has been removed from automakers' toolkits.

- **Long-term uncertainty.** Some industry observers argue that vehicle companies might pause but not ditch efficiency efforts, since global markets (e.g., Europe, China) still demand them to engage in electrification. Manufacturers cannot "turn on a dime" and must consider that penalties could be reinstated by future Congresses. Nonetheless, the current OBBB environment actively disincentivizes efficiency as automakers are likely not to do it if they don't have to do it.

Consumer Incentives and EV Adoption

OBBB cancels consumer EV subsidies, cutting the federal EV tax credit early. The Inflation Reduction Act had offered up to extend the $7,500 tax credit per new EV through 2033, but OBBB terminates this scheme after Sept. 30, 2025. It also eliminates the 30% credit for new commercial low emission trucks and ends credits for used EV purchase. In practice, EVs will cost more upfront and stall demand ramp-up.

- **Fewer EVs.** Modeling shows the impact is huge. Rhodium Group finds that simply removing the EV tax credits cuts the light-duty EV stock in 2035 by **27 to 41 million vehicles** (20–34%) relative to the baseline (rhg.com). When combined with the expected rollback of standards and other policy changes, total EVs on the road in 2035 shrink by **34 to 70 million vehicles** (37–65%) (rhg.com). As the figure above illustrates, even under a "mid" scenario the EV fleet in 2035 is dramatically lower with OBBB. In short, OBBB turns back years of growth in EV adoption by stripping away subsidies.
- **Charging infrastructure, rebates, etc.** Though not the focus of this analysis, other consumer incentives are also cut. Congress rescinded IRA funding of $7.5Bn for EV charging stations and related programs. Experts note that these cuts, plus the tax-credit loss, will slow the build-out of charging infrastructure and other EV support programs. Overall, "support for electric vehicles" is being pulled back on multiple fronts.

The OBBB also occurs at a period of time when OEMs and Tier suppliers struggle to get the EV supply and value chain off the ground in North America due to geopolitical tensions.

- **China is slowing down on exports of processed materials** for batteries, preferring the exports of finished products to secure its local manufacturing.
- US trade policies driven by tariffs have intensified the Chinese retention strategy on processed materials and components which further impedes the ramp up of electrified technologies manufacturing in North America. As a side effect, industry production volumes and margins on EVs might be further damaged.
- **June 4, 2025: U.S. raised Section 232 tariffs on imported steel and aluminum to 50%** (incl. derivative articles)—a material cost headwind that will factor into OEM lightweighting vs. steel tradeoffs.

Impact on Lightweight Material Adoption

OEMs increase competitiveness with design, innovation, safety, improved fuel economy, and reduced environmental impact. The emission aspects are largely driven by continuously stricter fuel economy and greenhouse gas (GHG) standards. This combination of competitiveness and norms encourages OEMs reducing vehicle weight and improving fuel efficiency or extending EV range. However, with CAFE penalties eliminated and EPA tailpipe rules in limbo, the financial and regulatory drivers that justified the higher cost of lightweighting are now weakened.

Therefore, one side-effect of the relaxed emission rules under OBBB's reduced sanctions and targets is the lack of incentive for automakers to adopt lightweight materials and assembly solutions. This will potentially slow the growth trajectory for innovative solutions employing lightweight materials, like magnesium, aluminum, composites. OEMs may choose to extend platform lifecycles, and may lead them to revert to, lower cost and heavier internal combustion engine (ICE) platforms. While EVs and global OEM programs may continue to support lightweighting trends and electrification, the U.S. market's reduced regulatory pressure may lead to stagnation in lightweighting needs.

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