



This document has been prepared as part of the Model Climate Laws Initiative, formerly known as Legal Pathways to Deep Decarbonization (Michael B. Gerrard and John C. Dernbach, eds. Environmental Law Institute [2019]). For more information, see modelclimatelaws.org.

AN OVERVIEW: MODEL STATE LAW FOR CORPORATE TAX CREDITS FOR ADVANCED FREIGHT VEHICLES

Background

The current landscape of freight transportation relies heavily on conventional vehicles that contribute to environmental pollution and are dependent on finite fossil fuels. Freight vehicles with a gross vehicle weight rating (GVWR) over 14,000 pounds that are also advanced technology vehicles (ATVs), as defined in 10 C.F.R. §611.2, including electric, hybrid, and hydrogen fuel cell vehicles, present an opportunity to address these challenges. However, the requirement of significant initial investments by fleet owners for ATVs is a significant barrier to their widespread adoption.

Tax credits have proven to be effective tools for encouraging business investments in modern technologies. By reducing the net cost of ATVs, tax credits can make these vehicles more financially accessible to fleet owners. The Internal Revenue Service (IRS) has already implemented measures such as Clean Vehicle and Energy Credits and the Commercial Clean Vehicle Credit, which previously provided up to \$40,000 for qualified commercial clean vehicles. Implementing tax credits at the state level to help make up for the lack of availability for federal credits could further stimulate market growth and promote the adoption of advanced technology freight vehicles to reduce greenhouse gas emissions and other air pollution from the transportation sector.¹

Therefore, to further incentivize the acquisition of zero-emission vehicles (ZEVs) and near-zero-emission vehicles (NZEVs) through corporate tax credits, addressing the transportation sector's significant contribution to pollution, the "model state law for corporate tax credits for advanced technology freight vehicles" (Model Law) accompanying this memorandum reflects best practices developed and honed in more experienced jurisdictions. States can seek to ensure coherence with any federal clean vehicle credits and prioritize deployment in disadvantaged communities. In so doing, state-level incentives hopefully will accelerate fleet electrification and advance public health.

Key Features of the Model Law

The Model Law has been drafted for adoption and implementation by states to align standards with federal policy or procedures and supplement previously available federal incentives when applicable. The terms and structure of the Model Law are inspired by the Federal Inflation Reduction Act's Commercial Clean Vehicle Credit, IRC §45W, as well as similar laws that have been enacted in other jurisdictions, such as California, Colorado and New Jersey. The Model Law allows each state legislature to tailor the

¹ Signed by President Trump on July 4, 2025, the One Big Beautiful Bill (OB BB) repealed the New Clean Vehicle Credit, the Used Clean Vehicle Credit and the Qualified Commercial Clean Vehicle Credit for vehicles acquired after September 30, 2025. If a vehicle is placed in service after Sept. 30, 2025, the taxpayer must have acquired the vehicle on or before Sept. 30, 2025, to be eligible for the credit.



provisions to other relevant laws and regulations and conditions in its jurisdiction. Key provisions of the Model Law, proposed to be cited as the “Clean Freight Vehicle Tax Credit Act,” or the “Act,” include:

- Authorizing a tax credit against the tax imposed by the state tax code for each advanced technology freight vehicle that a qualified taxpayer places in service during the taxable year (Section IV)
- Specifying the eligibility requirements of zero-emission vehicles or near-zero-emission vehicles to claim the tax credit (Section IV)
- Specifying how the credit for each qualifying vehicle will be calculated (Section V) – see below for more discussion on the rationale behind determining the percentages for credit calculations.
- Requiring qualified taxpayers to maintain records to demonstrate vehicle eligibility, including purchase price and emissions ratings (Section VI)
- Requiring the state departments of revenue to verify compliance (Section VI)
- Requiring the state departments of revenue to compile annual reports to the legislature detailing the number and total value of credits claimed under the Act and the types of vehicles purchased to inform evaluation of the program’s effectiveness (Section VII)
- Authorizing state departments of revenue, in consultation with the state environmental agencies/air quality or transportation agencies, to adopt regulations to implement and administer the Act, including but not limited to forms, verification procedures, and enforcement provisions, consistent with the purpose of promoting advanced technology freight vehicles (Section VIII)

These key provisions are intended to be consistent with applicable federal policy and procedures for tax credits and are intended to complement other state programs.

Regardless of the status of any similar federal tax credits, the Act is fully operable under existing federal law; it neither depends on nor assumes enactment of amendments to the Internal Revenue Code or the Clean Air Act.

Rationale for Credit Percentages in Clean Freight Vehicle Tax Law

a. Federal and State Incentive Context

Under the Federal Inflation Reduction Act, IRC §45W established a Commercial Clean Vehicle Credit that mirrors the 30%/15% split in the Model Law. IRS guidance explained that qualifying zero-emission (all-electric or fuel-cell) trucks qualify for a credit equal to 30% of the vehicle’s basis, whereas plug-in hybrids or other near-zero trucks (with a gasoline/diesel engine) get only 15% of basis.² In practice the credit is taken as the lesser of (a) those percentage-of-basis amounts or (b) the incremental cost over a diesel counterpart.³ Thus, the federal program itself directly tied the 30% vs. 15% split to vehicle powertrain: 30% for no-internal combustion engine (ICE) ZEVs, 15% for partial-ICE NZEVs. A state credit that applies 30% to ZEVs and 15% to NZEVs is thus aligned with the federal policy “benchmark” for subsidy intensity. In other words, these percentages already reflect expert judgment about how much subsidy is needed given

² For heavy trucks this was capped at \$40,000 per vehicle. See Commercial Clean Vehicle Credit | Internal Revenue Service.

³ See Commercial Clean Vehicle Credit | Internal Revenue Service.



the technological difference: fully electric trucks have no tailpipe emissions (hence a larger subsidy), while near-zero hybrids still burn fuel and thus warrant a smaller subsidy.

State commercial vehicle incentive programs tend to use incremental cost as the metric, so tying the credit to 30%/15% of incremental cost also echoes practice in successful voucher programs. For example, California Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) was originally set at 50% of the incremental cost of early EV trucks, and today provides vouchers that target the full incremental cost for zero-emission trucks.⁴ New York’s Truck Voucher Incentive Program (NYTVIP) similarly bases its vouchers on the cost premium: it pays up to 95% of the incremental cost for Class 4–8 BEV trucks (with per-vehicle caps).⁵ These state programs make the purchaser pay little or none of the extra cost up-front. A corporate tax credit at only 30% (ZEV) or 15% (NZEV) of incremental cost is obviously more modest than a 95–100% voucher – but it serves a different role. Unlike point-of-sale vouchers, a tax credit is “booked” by the company when filing taxes. Setting it to 30%/15% helps ensure the credit is a significant but partial offset, supplementing other incentives without fully covering the premium.

b. Incremental Cost of ZEV vs. NZEV Trucks

The incremental cost – the price premium of a clean truck over a comparable diesel – is the key market data. Recent analyses confirm that initial purchase of zero-emission heavy trucks cost far more than their diesel equivalents. For example, California Air Resources Board found that the average Class 8 Battery Electric Vehicle (BEV) tractor costs roughly \$435,800 vs. ~\$156,000 for a comparable diesel, i.e. an incremental premium on the order of \$280,000.⁶ U.S. Department of Energy modeling similarly shows incremental costs of \$297,500 for a Class 8 long-haul battery-electric truck and about \$164,000 for a plug-in hybrid counterpart.⁷ Even in smaller classes, BEV trucks carry multi-tens-of-thousands in extra cost (e.g. ~\$34,500 for a Class 4–6 BEV vs. diesel).⁸ In contrast, near-zero hybrids (plug-in or advanced ICE hybrids) have much smaller premiums – DOE shows ~\$28,000–93,500 for Class 4–7 plug-in hybrids.⁹

These numbers imply that a 30% credit on a ZEV’s incremental cost still leaves a large share of the premium to the buyer. For instance, 30% of \$300,000 is \$90,000 – a meaningful subsidy, but far short of full “parity.” By contrast, 15% of a \$164,000 NZEV premium is only about \$24,000. Thus the 30% vs 15% split roughly scales with the size of the cost premium: ZEVs’ premiums are often two to three times those of NZEVs, so a two times higher credit rate for ZEVs is proportionate. These percentages also loosely match the federal cap structure: for a heavy ZEV (where 30% of basis would normally exceed \$40,000), the federal program simply caps at \$40,000; here the state credit at 30% of incremental may exceed \$40,000 (so the state may impose its own cap), but in any event it delivers roughly the same order of magnitude benefit. For near-zero vehicles (with partial ICE), 15% of incremental often comes out well below even the federal \$7,500 cap for lighter vehicles.

⁴ See https://calstart.org/wp-content/uploads/2023/05/Voucher-Incentive-Programs-A-Tool-for-Zero-Emission-Commercial-Vehicle-Deployment_new.pdf.

⁵ See nyscrda.ny.gov

⁶ See ww2.arb.ca.gov.

⁷ See energy.gov.

⁸ Ibid.

⁹ Ibid.



c. Why 30% and 15% Are Reasonable Benchmarks

Consistency with Prior Federal Policy. As noted, using 30% and 15% exactly matches the federal clean truck credit’s logic. This promotes administrative simplicity and coherence; fleets that factored in the federal credit will find the state credit operates on the same principle.

Emission Benefits. ZEVs eliminate tailpipe pollution entirely, while NZEVs only reduce it. Giving ZEVs double the credit fraction reflects their roughly twice-better emissions profile (no NO_x, PM_{2.5} or greenhouse gas emissions) and helps justify the higher subsidy. This “heavier incentive for cleaner tech” is a common theme in state programs (e.g. California and New York give bigger subsidies to pure EVs than to hybrids).

Cost Parity Trajectory. Incremental cost data show EV truck purchase premiums around \$200–300,000 today.¹⁰ A 30% credit (plus federal and voucher support) still leaves a gap that the market must close over time via cost declines. Policymakers often intend incentives to jump-start adoption rather than ensure permanent equality. By covering a substantial slice of the premium (30% for ZEV, 15% for NZEV), the state credit can spur early purchases while recognizing that battery prices and economies of scale are expected to bring down costs in coming years. Indeed, DOE analysis anticipates falling increments as batteries and fuel cells get cheaper.¹¹

Complement to State Programs. In practice, fleets can combine multiple incentives. For example, a fleet buying a Class 8 BEV might receive an approximately \$215,000 NYTVIP voucher (95% of a \$227,000 incremental) and also claim 30% of incremental (\$70–\$90,000) as a state credit, on top of the previously available federal \$40,000. Even a private HVIP voucher (up to 90% of vehicle cost)¹² plus a 30% state credit effectively covers nearly all of today’s premium. For plug-in hybrids (NZEVs), vouchers have been rarer, so a 15% tax credit provides one of the few direct incentives available. In short, 30%/15% were chosen as reasonable benchmarks that mesh with the overall incentive landscape – they are substantial enough to matter (and match federal law) but not so high as to fully fund the conversion, thereby leveraging both public dollars and private innovation in reducing costs.

Experience from Other Programs. Voucher programs and other studies suggest incentive levels in the 50–100% range of incremental cost are highly effective, but they are expensive. In contrast, a tax credit is less costly to the state and simpler to administer. Setting it to 30% of incremental cost provides a strong “headline” rate while keeping the fiscal exposure moderate. It also ensures that the credit grows with vehicle cost (since it is a percentage), which is sensible given heavy-duty trucks vary widely in price. All these points make 30% for ZEV and 15% for NZEV a defensible benchmark for a state corporate tax credit – they align with federal norms, reflect the relative technology costs, and complement higher-share direct incentives offered elsewhere. While estimating the cost of these tax credits is uncertain, states may look to the Joint Committee on Taxation’s cost estimate of the IRA EV credits for guidance. The Joint Committee on Taxation’s (JCT) initial cost estimate of the EV credits in August 2022 was around \$14 billion from 2023 to 2031.¹³

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¹⁰ See ww2.arb.ca.gov.

¹¹ See energy.gov.

¹² See californiahvip.org.

¹³ See Estimated Budgetary Effects of H.R. 5376, the Inflation Reduction Act of 2022