

Summary of Clean Transportation Provisions in the Inflation Reduction Act

Executive Summary

The recently-passed Inflation Reduction Act (IRA) includes a \$369 billion investment in clean energy and climate to put more clean vehicles on the road and secure over a million new good-paying jobs right here in America. The provisions included in IRA are predicted to reduce greenhouse gas emissions by up to 42% from 2005 levels¹, making significant progress towards limiting global warming to 1.5 degrees Celsius, as laid out in the Paris Agreement².

Energy Innovation's analysis of the bill³ highlights that the IRA will create at least 1.5 million new jobs in 2030 concentrated in the manufacturing, construction and service industries, and would avoid up to 3,900 premature deaths and up to 100,000 asthma attacks annually by 2030.

The Inflation Reduction Act is the most comprehensive and significant piece of federal legislation in U.S. history to tackle the climate crisis and contains significant incentives to accelerate the adoption of zero-emission transportation technologies, including:

- An extension of the light-duty zero-emission vehicle credits
- A new tax credit for zero-emission commercial vehicles
- A new production tax credit (PTC) for U.S. battery manufacturing
- Additional funding for the Environmental Protection Agency and other federal agencies for clean transportation programs
- Funding for the United States Postal Service to transition its fleet to zero-emission vehicles

CALSTART and its members have been strong advocates for these critical investments. While we acknowledge that the bill is not perfect, it brings historic progress for the transition to clean transportation and we couldn't have done it without the support of our many engaged members, including those in the Zero-Emission Truck Coalition and the U.S. EV Battery Initiative.

¹ <u>https://repeatproject.org/docs/REPEAT_IRA_PreIminary_Report_2022-08-04.pdf</u>

² <u>https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement</u>

³ https://energyinnovation.org/wp-content/uploads/2022/08/Modeling-the-Inflation-Reduction-Act-with-the-US-Energy-Policy-Simulator_August.pdf

CALSTART will continue to advocate for stronger policies that bring more zero-emission vehicles and the needed infrastructure into deployment as quickly as possible.

The IRA has several key provisions that CALSTART and our members have prioritized in our advocacy. We celebrate the inclusion of the Clean Vehicle Credit, the Credit for Previously Owned Vehicles, the new Credit for Qualified Commercial Vehicles, and the Advanced Manufacturing Production Credit, which includes a significant PTC for battery manufacturing. We've summarized these provisions in detail below.

In addition to these priority items, the IRA also has several other new key investments that will help to accelerate the transition to clean transportation, which are also included in our summary. We know we have more work to do as the IRA is implemented. Nevertheless, this is a historic step in accelerating the deployment and adoption of zero-emission vehicles and technologies that will help stave off the worst effects of climate change.

Detailed Summary

VEHICLE INCENTIVES

Clean Vehicle Credit (Section 13401)

The 30D tax credit for "clean" vehicles from a "qualified" manufacturer is amended to provide a consumer tax credit of \$7,500 providing that the vehicle meets the following content requirements:

<u>Critical Mineral Requirement</u>: Electric vehicles considered eligible for this credit must have batteries that contain a minimum applicable percentage of critical minerals that have been extracted, processed, or recycled in the United States or in a nation with which the U.S. has a free trade agreement. The minimum applicable percentage to be met is dependent on the year in which the vehicle is placed into service:

- Before January 1, 2024: 40%
- CY 2024: 50%
- CY 2025: 60%
- CY 2026: 70%
- After December 31, 2026: 80%

<u>Battery Component Requirement:</u> Electric vehicles eligible for this credit must have batteries that contain a minimum applicable percentage of components produced or assembled in North America. The minimum applicable percentage is dependent on the year a vehicle is placed into service:

- Before January 1, 2024: 50%
- CY 2024 and 2025: 60%
- CY 2026: 70%
- CY 2027: 80%
- CY 2028: 90%
- After December 31, 2028: 100%

The fulfillment of each requirement provides the taxpayer with \$3,750 credit each for a total of \$7,500.

These credits are subject to the following limitations:

- Tax credits are only available for those with income less than: \$300,000 for married couples, \$225,000 for head of household and \$150,000 for any other instance.
- North American assembly is required.
- The credit is only available on vehicles below the following price caps: \$80,000 for vans, SUVs, pickup trucks, \$55,000 for any other vehicle; and is limited to one credit per vehicle. Taxpayers may elect to transfer the credit to the vehicle dealer. Limits one vehicle per taxpayer per year.

IMPACT: For manufacturers that have met their cap under the existing LDV tax credit, this amendment tax credit will provide an additional opportunity for incentives, subject to the income cap, price cap, and domestic content requirements (for which there are limited exemptions). The new content requirements will work to boost market demand for domestically produced critical minerals and battery components, providing great opportunities for the expansion of the domestic critical minerals and EV battery industry.

Credit for Previously Owned Clean Vehicles (Section 13402)

This is a new tax credit for the purchase of used plug-in and fuel cell electric cars through 2032 which will provide a \$4,000 credit or cover 30% of the sale price of the previously owned vehicle. The credit cannot exceed \$25,000 in cost and only applies to the first resale of the used vehicle. The taxpayer must meet eligibility requirements in the existing 30D provision for new clean vehicles and the vehicle must be a model year that is at least two years earlier than date of sale. There is a \$75,000 income requirement (\$150,000 for married couples, and \$112,500 for head of households) and the car must be bought from a dealership. The credit may be transferred to the seller of the previously owned vehicle to allow purchaser to access the value of the credit at time of sale.

IMPACT: One of the biggest changes to the existing incentive program is the addition of the Credit for Previously Owned Clean Vehicles, which will support increased purchases of used EVs.

Qualified Commercial Clean Vehicles (Section 13403)

This provision creates a new credit for qualified commercial clean vehicles (45W).

The qualified commercial clean vehicle credit is an amount equal to the lesser of 15% of the basis of such vehicle (30% in the case of a vehicle not powered by gasoline or diesel internal combustion engines), or the incremental cost of such vehicle. Vehicles purchased with the intention to lease also qualify. Qualified commercial electric vehicles mean vehicles that meet the requirement under 36C without regard to gross vehicle weight or are mobile machinery. Vehicles must have a battery that is 15-kilowatt hour or greater. Tax-exempt entities have the option of electing to receive direct payments. There is a \$40,000 cap on the credit for vehicles weighing more than 14,000 pounds and a \$7,500 cap on vehicles weighing less than 14,000 pounds. The credit is effective after December 31, 2022, until December 31, 2032.

IMPACT: The \$40,000 cap will somewhat limit the benefits of this tax credit. Larger clean commercial vehicles (e.g., Class 7 and Class 8 vehicles) with costs two times or more that of a comparable diesel

vehicle would remain significantly more expensive than their combustion counterparts with the current cap in place.

BATTERY INCENTIVES

Advanced Manufacturing Production Credit (Section 13502)

Establishes a new Advanced Manufacturing PTC (45X) for each eligible component produced and sold on the market, including a wide variety of clean energy technologies, including battery modules, cells, critical minerals, and battery electrode active materials. The PTC is provided for components produced and sold prior to January 1, 2030. Components sold after this date will receive a phased-out credit (25% reduction per year) until its end on December 31, 2032. Critical mineral credits are not subject to this credit phaseout.

The credit is structured as follows:

- For electrode active materials: 10% credit towards production cost
- Battery cells: \$35 per kilowatt hour of capacity
- Battery modules: \$10 per kilowatt hour of capacity
 - For modules without battery cells, the credit is \$45 per kilowatt hour of capacity
- Critical minerals: 10% credit towards production cost

Battery cells and modules eligible for this credit must not exceed a capacity-to-power ratio of 100:1. Projects eligible to receive credits may not "double dip" with credits provided under Section 48C (above) of this legislation. Battery components must be produced within the United States or within a possession of the United States to be considered eligible for this credit.

The legislation allows for all eligible recipients of this funding to opt for a direct pay credit. Private companies eligible to receive Section 45X credits are permitted to opt for direct pay for a single period of five consecutive years.

Applicable critical minerals: Aluminum, Barite, Beryllium, Cerium, Cesium, Chromium, Cobalt, Dysprosium, Europium, Fluorspar, Gadolinium, Germanium, Graphite, Indium, Lithium, Manganese, Neodymium, Nickel, Niobium, Tellurium, Tin, Tungsten, Vanadium, Yttrium

Other materials allowed with a 99% purity by mass: Arsenic, Bismuth, Erbium, Gallium, Hafnium, Holmium, Iridium, Lanthanum, Lutetium, Magnesium, Palladium, Platinum, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Scandium, Tantalum, Terbium, Thulium, Titanium, Ytterbium, Zinc, Zirconium

IMPACT: With many of the energy tax credits in IRA requiring the use of domestic content for bonus credit amounts and for full amounts upon a direct pay election, the credit for additional manufacturing of components in the U.S. will support investments needed to comply with those requirements.

Extension of the Advanced Energy Project Credit (Section 13501)

Effective January 1, 2023, the bill extends 48C qualified advanced energy property credit to include a variety of facilities, including projects to establish, expand, or re-equip facilities for the production, manufacturing, or recycling of advanced grid, energy storage, and fuel cells in addition to advanced vehicle (light, medium, and heavy duty) components and infrastructure.

The extension includes \$10,000,000,000 in tax credits, where \$4,000,000,000 of the allocation must be distributed to census tracts with former coal mine operations that have received no prior Section 48C project funding.

This provision allows for a base investment tax credit (ITC) rate of 6% of qualified investments in advanced energy projects and a bonus rate of 30% if prevailing wage and apprenticeship requirements are satisfied.

The Secretary of the Treasury will determine allocations to projects each year with a requirement that property is placed in service within four years of the date of the allocation.

IMPACT: The continued expansion of the ITC to additional technologies acknowledges the need to continue to incentivize clean energy technologies.

FUELS INCENTIVES

<u>Clean Fuels - Extension of Incentives for Biodiesel, Renewable Diesel, Second Generation Biofuel, and</u> <u>Alternative Fuels, Plus - Clean Fuels Production Credit (452)</u> (Section 13201, 13202, 13203, 13204 & 13704)

The extension of incentives for biodiesel, renewable diesel, and alternative fuels extends the income and excise tax credit for biodiesel and biodiesel mixtures at \$1 per gallon through December 2024. It also extends the \$0.10 per gallon small agri-biodiesel producer credit and the \$0.50 per gallon excise tax credit for alternative fuel and alternative fuel mixtures as well as second generation biofuels through 2024. Following 2024, the credit switches to a tech-neutral version.

The bill creates a new technology neutral 2-year tax credit for low-carbon transportation fuel. Maximum credit is \$1 per gallon (or \$1.75 per gallon for sustainable aviation fuel) multiplied by an emissions factor that is calculated proportional to a maximum emission rate standard of 50 kilograms of CO2e per 1 million Metric British Thermal Units. The bill also repeals liquid hydrogen as an alternative fuel under the alternative fuel and alternative fuel mixture credit and creates a \$1.25 per gallon sustainable aviation fuel tax credit. The credit is a refundable blenders credit for each gallon of sustainable aviation fuel sold as part of a qualified mixture starting in 2023. The tax credit applies to fuel sold or used in 2023 through 2024. Following this date, the credit switches to a tech-neutral version and expires completely at the end of 2027.

IMPACT: Except for the sustainable aviation fuel credit, these are long-standing tax incentives that have been modestly extended. The technology-neutral approach will advantage fuels with a lower greenhouse gas impact, but the credit is short-lived, which could result in minimal impact for incentivizing investments.

Clean Hydrogen (Section 13204)

This provision would create a new credit for the qualified production of clean hydrogen and would be available for qualified clean hydrogen produced at a qualifying facility during the facility's first 10 years of operation. The base credit amount would be \$0.60 per kilogram times the applicable percentage. Credit amounts would be indexed for inflation. The applicable percentage would be determined by the lifecycle greenhouse gas emissions rate achieved in producing clean hydrogen.

The applicable percentage would be 100% for hydrogen achieving a lifecycle greenhouse gas emissions rate of less than 0.45 kilograms of carbon dioxide equivalent (CO2e) per kilogram; 33.4% for hydrogen achieving a lifecycle greenhouse gas emission rate of less than 1.5 kilograms of CO2e per kg (but not less than 0.45 kilograms). For hydrogen with a lifecycle greenhouse gas emission rate of less than 2.5 kilograms of CO2e per kilogram (but not less than 1.5), the applicable percentage would be 25%, and for hydrogen with a lifecycle greenhouse gas emissions rate of less than 4 kilograms of CO2e per kilograms (but not less than 2.5), the applicable percentage would be 25%, and for hydrogen with a lifecycle greenhouse gas emissions rate of less than 4 kilograms of CO2e per kilograms (but not less than 2.5), the applicable percentage would be 20%.

The credit would be five times the base credit amount (i.e., up to \$3.00 per kilogram) if the clean hydrogen is produced at a facility that meets prevailing wage and registered apprenticeship requirements. The provision provides that for facilities financed with tax exempt bonds, the credit amount would be reduced by the lesser of (1) 15%; or (2) the fraction of the proceeds of a tax-exempt obligation used to finance the project over the aggregate amount of the project's financing costs.

To qualify for the credit, new facilities must begin construction before January 1, 2033. Facilities existing before January 1, 2023, would be able to qualify based on the date that modifications to their facility required to produce clean hydrogen are placed into service. Taxpayers may claim the PTC for electricity produced from renewable resources by the taxpayer if the electricity is used at a qualified clean hydrogen facility to produce qualified clean hydrogen. Taxpayers could elect to claim the energy ITC in lieu of the clean hydrogen production credit. Taxpayers could not claim credits for clean hydrogen produced at facilities that claimed credits for carbon capture under Section 45Q. The provision would terminate the alternative fuel excise tax credit for hydrogen.

IMPACT: This is a potentially significant incentive for increased production of low-carbon hydrogen. It will support investments in hydrogen as a fuel for manufacturing facilities and transportation enduses such as heavy-duty vehicles. Taxpayers engaged in hydrogen production will need to assess the lifecycle greenhouse gas emissions of such production to determine the credit amount for any hydrogen produced and sold.

Alternative Fuel Refueling Property Credit (Section 13404)

Extends and modifies the alternative refueling property credit through 2032, beginning 2022, and expands the credit for zero-emission charging and refueling infrastructure by providing a base credit of 6% and a bonus credit level of 30% for expenses up to \$100,000 for each charging station or refueling pump installed. Starting in 2023, charging or refueling property is only eligible if placed in low-income or rural census tract.

Bidirectional charging equipment is eligible property and expands the list to include electric charging stations for electric 2- and 3-wheeled motor vehicles manufactured for use on public street, roads, and highways, but only if such stations are intended for use on public roads.

In order to claim the bonus credit amount with respect to eligible property, taxpayers must satisfy prevailing wage requirements for the duration of the construction of such property.

IMPACT: Extends the alternative fuel refueling property credit 11 years to December 31, 2032.

GRID INCENTIVES

Clean Electricity Production and Investment Credits (Section 13701 and 13702)

This credit is an emissions-based incentive that is technology neutral. Taxpayers can choose between a PTC under section 45Y or an ITC under section 48D.

The provision creates a PTC credit of 1.5 cents per kilowatt hour of electricity produced and sold or stored at facilities placed into service after 2024 with zero or negative greenhouse gas emissions. Applies 10% bonus for any one of the following criteria:

- Located in an energy community
- Meets domestic manufacturing requirements
- Located in low-income communities or Tribal land

The credit also provides a 20% bonus for projects located in low-income residential buildings or part of low-income economic benefit projects.

Credits are set to phase out the later of 2032 or when emission targets are achieved (i.e., the electric power sector emits 75% less carbon than 2022 levels). Facilities will be able to claim a credit at 100% value in the first year, then 75%, then 50%, and then 0%.

IMPACT: This newly established, tech-neutral PTC replaces the Renewable Electricity PTC once it phases out at the end of 2024. 45Y is an emissions-based incentive that is neutral and flexible between clean electricity technologies. Taxpayers choose between a PTC (45Y) and an ITC (48D).

OTHER ELIGIBILITY REQUIREMENTS

<u>Elective Payment for Energy Property and Electricity Produced From Certain Renewable Resources and</u> <u>Transferability of Applicable Credits</u> (Section 13801)

Taxpayers can elect to treat the amount of credit as a payment of tax to accelerate utilization of the credits. This provision does not apply under section 45Q or 45V. For purposes under 45X, the credit is limited to a single period of 5 consecutive years.

IMPACT: This section makes many of the clean energy credits, including the credits for solar, wind, carbon capture, clean hydrogen, and others, refundable.

Additional Requirements to Qualify for Bonus Credits, Where Available⁴

⁴ https://www.hklaw.com/-

[/]media/files/insights/publications/2022/08/080822inflationreductionactsummary.pdf?la=en

Prevailing Wage: Under the prevailing wage requirements, a taxpayer must ensure that any laborers and mechanics are paid prevailing wages during the construction of a project and, during the relevant credit period, for the alteration and repair of such project. The IRA provides correction procedures and directs the Secretary of the Treasury to provide further guidance.

Apprenticeship: Under the apprenticeship requirements, a taxpayer must ensure that no less than the applicable percentage of total labor hours for the construction of the project are performed by qualified apprentices. The IRA provides correction procedures and directs the Secretary of the Treasury to provide further guidance.

Domestic Content: The taxpayer must certify that any steel, iron, or manufactured product which is part of a facility was produced in the United States. For this purpose, manufactured products will be considered manufactured in the United States if the "adjusted percentage" of the total cost of the components of such product are mined, produced, or manufactured in the United States.

Energy Community: Energy communities are defined to include: 1) brownfield sites; 2) a metropolitan or non-metropolitan area which (a) has direct employment or local tax revenues over an established percentage related to the extraction, processing, transport or storage of coal, oil or natural gas (b) has an unemployment rate at or above the national average; or 3) a census tract or any adjoining tract in which a coal mine closed after Dec. 31, 1999, or a coal fired electric power plant was retired after Dec. 31, 2009.

Low-Income: Low-income economic benefit projects are those where at least 50 percent of the financial benefits of the electricity produced must be provided to households with income either (a) less than 200 percent of the poverty line, or (b) less than 80 percent of area median gross income.

Key Concepts: Credit Monetization

Direct Pay: In certain limited circumstances a taxpayer can elect for direct payment of the tax credit. Importantly, direct payment is only available for an "applicable entity" which includes a tax-exempt entity, a state or political subdivision thereof, the Tennessee Valley Authority, an Indian Tribal Government or any Alaska Native Corporation. In certain cases, direct pay is phased out if domestic content requirements are not ascertained. This limited direct pay option is available for tax credits found in Sections 30C, 45(a), 45Q, 45U, 45V 45W, 45X, 45Y, 45Z, 48, 48C and 48E. The limited ability to elect direct pay by only those applicable entities is broadened under certain provisions (specifically Section 45Q, Section 45X, and 45V) for the first five years, opening the option to elect direct pay to a broader array of taxpayers.

Transferability: In certain circumstances, a taxpayer can elect to transfer all or any part of a tax credit to an unrelated taxpayer in exchange for cash. The ability to transfer is available for tax credits found in Sections 30C, 45(a), 45Q, 45U, 45V, 45X, 45Y, 45Z, 48, 48C and 48E.

FEDERAL FUNDING OPPORTUNITIES FOR CLEAN TRANSPORTATION

Improving Energy Efficiency or Water Efficiency or Climate Resilience of Affordable Housing (Section 30002)

Appropriates \$837,500,000 until September 30, 2028, for climate resiliency projects, including electric vehicle charging equipment through the Department of Housing and Urban Development.

Funding for Department of Energy Loan Programs Office (section 50141)

Appropriates \$3,000,000,000 for the Secretary of Energy to provide loans to eligible projects under section 1703 of the Energy Policy Act of 2005, including projects for: renewable energy systems, advancing fossil energy technology, hydrogen fuel cell technology, advanced nuclear energy facilities, carbon capture and sequestration projects, efficient electric generation and end-use energy technologies, producing fuel efficient vehicles, pollution control equipment, and refineries. This section also allows the Secretary of Energy to make commitments to guarantee loans up to a total principal amount of \$40,000,000,000.

Advanced Technology Vehicle Manufacturing (Section 50142)

Appropriates \$3,000,000,000 through September 30, 2028, to the Department of Energy for reequipping, expanding, or establishing a manufacturing facility in the U.S. for production or engineering integration for low emission medium and heavy-duty vehicles, trains/locomotives, maritime vessels, aircrafts, or hyperloop technology. This section eliminates the loan program cap of \$25,000,000,000.

Domestic Manufacturing Conversion Grants (Section 50143)

Appropriates \$2,000,000,000 for Department of Energy for grant funding to domestic production of efficient hybrid, plug-in electric hybrid, plug-in electric drive, and hydrogen fuel cell electric vehicles under section 712 of the Energy Policy Act of 2005.

Energy Infrastructure Reinvestment Financing (Section 50144)

Appropriates \$5,000,000,000 through September 30, 2026, for the Department of Energy in financial support for Energy Communities, per section 1706 of the Energy Policy Act of 2005. The funds are available to support workers who stand to be impacted by shifts to less energy-intensive goods, to communities that have been impacted by these same shifts, to accelerate the remediation of environmental damage caused by providing energy-intensive goods, and to mitigating customer impacts of shifting to lower carbon industries.

Clean Heavy-Duty Vehicles (Section 60101)

Appropriates \$1,000,000,000 to the Environmental Protection Agency to implement a program to replace eligible Class 6 or Class 7 vehicles with clean heavy-duty vehicles and the necessary infrastructure and workforce development until September 30, 2031. \$400,000,000 is specifically for areas in nonattainment.

Grants to Reduce Air Pollution at Ports (Section 60102)

Appropriates \$2,250,000 to the Environmental Protection Agency in rebates and grants until September 30, 2027, to purchase or install zero-emission equipment and technology for use at or to directly serve one or more ports, conduct any relevant planning or permitting in connection with such zero-emission port equipment and technology, and to develop qualified climate action plans. \$750,000,000 remains available for ports located in nonattainment areas.

Greenhouse Gas Reduction Fund (Section 60103)

Appropriates Environmental Protection Agency competitive grants to provide financial assistance to deploy zero-emission technologies or otherwise reduce greenhouse gas emissions. \$15,000,000,000 is dedicated for projects in low-income or disadvantaged communities.

- \$15,000,000,000 until September 30, 2024, in low or disadvantaged communities
- \$11,970,000,000 for general assistance available until September 30, 2024
- \$30,000,000 for administrative costs necessary to carry out activities under this section available until September 30, 2031

Diesel Emissions Reductions (Section 60104)

Appropriates \$60,000,000 until September 30, 2031, to the Environmental Protection Agency to reduce diesel emissions in goods movement. The program provides funding for grants, rebates, loans to identify and reduce diesel emission resulting from goods movements facilities, and vehicles servicing goods movement facilities, in low-income and disadvantaged communities to address the health impacts of such emissions.

Funding to Address Air Pollution at Schools (Section 60106)

Appropriates \$37,500,000 until September 30, 2031, to the Environmental Protection Agency for grants and other activities to monitor and reduce greenhouse gas emissions and other air pollutants at schools in low-income and disadvantaged communities. Includes \$12,500,000 for technical assistance.

Climate Pollution Reduction Grants (Section 60114)

Appropriates \$5,000,000,000 until September 30, 2031, to the Environmental Protection Agency for grants to states, tribes, and local governments to implement programs, policies, measures, and projects that will achieve or facilitate the reduction of greenhouse gas air pollution.

Environmental and Climate Justice Block Grants (Section 60201)

Appropriates \$3,000,000,000 for the Environmental Protection Agency until September 30, 2026, in grants and technical assistance to implement community-led projects to reduce air pollution and climate impacts in disadvantaged communities. \$200,000,000 is directed to be used for technical assistance. Funding can be used for low and zero-emission technologies and related infrastructure.

Neighborhood Access and Equity Grants (Section 60501)

Appropriates \$1,893,000,000 until September 30,2026, to the Federal Highway Administration for facilities to improve walkability, safety, and affordable transportation access. \$1,262,000,000 must be used in economically disadvantaged communities. \$50,000,000 to be used for technical assistance.

United States Postal Service Clean Fleets (Section 70002)

Appropriates \$3,000,000,000 through September 2031 to the United States Postal Service for the purchase of zero-emission delivery vehicles and the purchase, design, and installation of needed infrastructure.

Tribal Electrification Program (Section 80003)

Appropriates \$145,000,000 through September 30, 2031, to the Bureau of Indian Affairs to help Tribal communities transition to clean, zero-emission electric energy systems.
