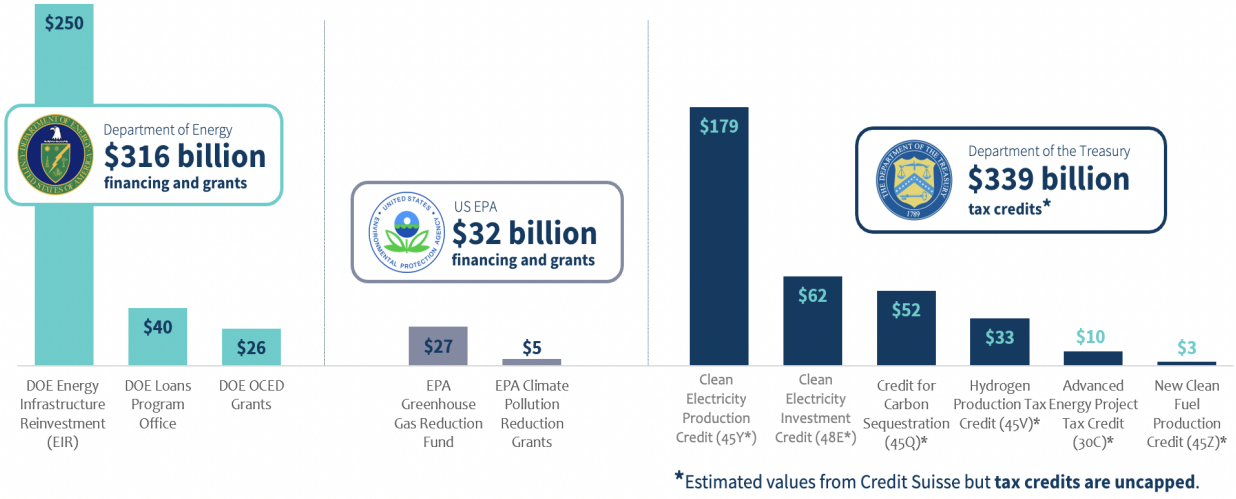
Federal, State and Local Incentives for Clean Industrial Deployment in the Los Angeles Area

This resource is actively being added to, please reach out to Taylor Krause (tkrause@rmi.org) and Jane Sadler (jsadler@rmi.org) if you have suggestions for policies to include or additional feedback.

Federal Funding Overview

The Bipartisan Infrastructure Law (BIL) and the Inflation Reduction Act (IRA) unlocked billions in funding for accelerating the deployment of clean industrial technologies that will help drive down greenhouse gas emissions but also represent an unprecedented economic opportunity. This primer highlights some of the largest financial vehicles—ranging from low-cost finance to grants and tax credits.

Summary of IRA federal incentives supporting clean industrial deployment



DOE Low-Cost Financing and Loan Guarantees

These federal programs offering financing and loan guarantees are focused on de-risking new technologies, driving domestic development of critical industries, and targeting investment in clean energy to communities impacted by pollution and the clean energy transition.

Program	Industry	Description	Amount
Energy Infrastructure Reinvestment (EIR) Program		Repurposing shuttered fossil energy facilities and retrofitting existing facilities to reduce emissions (incl. CCUS)	**$5 billion in credit subsidy to support up to $250 billion in loan authority**
Loan Programs Office (LPO) Innovative Clean Energies Loan Guarantee Program		Loan Guarantees for Innovative Clean Energy technology categories, including fossil energy and nuclear energy, and new categories of activities, including critical minerals.	**$3.6 billion in credit subsidy to support $40 billion in loan authority**

DOE Office of Clean Energy Demonstration Project Portfolio

The Office of Clean Energy Demonstration (OCED) will award $26 billion across 9 projects targeting a range of clean energy technologies, including clean hydrogen and carbon management. Most funding will be issued through a competitive process and require at least 50 percent cost share.

Program	Industry	Description	Amount
Industrial Demonstrations Program		Financial support for commercial-scale demonstration projects of greenhouse gas-reducing technologies in energy-intensive industries.	**$6.3 billion**
Carbon Capture Demonstration & Large-Scale Pilot Projects		Advance large-scale CCUS technologies by funding demonstration pilots, with a focus on power and industrial facilities using coal and natural gas.	**$3.5 billion**
Clean Energy Demonstration Program on Current and Former Mine Land		Fund up to 5 clean energy (including electricity) demonstration projects on current and former mine land.	**$500 million**
Energy Improvements in Rural or Remote Areas		Improve resilience, safety, reliability, and availability of energy in rural or remote areas, and increase environmental protection from adverse impacts of energy.	**$1 billion**

[Long-Duration Energy Storage Demonstrations]		Validate new technologies through long-duration energy storage demonstrations and enhance the capabilities of customers and communities to integrate grid storage more effectively.	**$505 million**
[Regional Clean Hydrogen Hubs]		Fund the buildout of 6-10 regional clean hydrogen hubs, which bring producers, consumers, and midstream infrastructure together to form regional networks.	**$8 billion**
[Regional Direct Air Capture Hubs]		Accelerate the commercialization of Direct Air Capture (DAC) technology through funding to establish four regional DAC hubs.	**$3.5 billion**

EPA Inflation Reduction Act Programs

In addition to the Department of Energy, the Environmental Protection Agency is administering substantial investments that clean industrial projects may be eligible for with a particular focus on delivering the environmental and economic benefits of the clean energy transition to disadvantaged communities.

Program	Industry	Use Case	Amount
[Greenhouse Gas Reduction Fund (GGRF)]		Competitive grant funding to develop national network of entities who will mobilize transition financing and leverage private capital into projects that reduce or avoid greenhouse gas emissions, with a focus on achieving benefits for low-income and disadvantaged communities.	**$27 billion to entities who will finance tech. assistance and projects that reduce emissions and/or energy costs**
[Climate Pollution Reduction Grants]		Grants to support states, air pollution control agencies, tribal governments, and local governments develop and implement strong climate pollution reduction strategies. High degree of flexibility. While not funding industrial projects directly, these funds could be an important lever to support local governments conducting complementary activities.	**$5 billion**

IIJA Industrial Decarbonization Programs

The Infrastructure Investment and Jobs Act (IIJA), also called the Bipartisan Infrastructure Law (BIL), included many different funding sources for industrial decarbonization. Because it was passed in 2021, its programs are more mature than many of IRA's tax credits.

DOT IIJA Programs

Program	Industry	Use Case	Amount
[Grants for charging and fueling infrastructure]		This program is administered by DOT for state/local/tribal governments to deploy publicly accessible electric vehicle charging infrastructure, hydrogen fueling infrastructure, propane fueling infrastructure, and natural gas fueling infrastructure along designated alternative fuel corridors or in certain	**$2.5 billion (2023-2027)**

		other locations that will be accessible to all drivers of electric vehicles, hydrogen vehicles, propane vehicles, and natural gas vehicles.	
Congestion mitigation and air quality improvement program		Adds eligibility to the Congestion Mitigation and Air Quality Improvement Program (CMAQ) for shared micromobility, including bike share and shared scooter systems, as well as for the purchase of medium- or heavy-duty zero emission vehicles and related charging equipment.	**$13.2 billion for the entire program**
Reduction of truck emissions at port facilities		Establishes a program to reduce truck idling and emissions at port facilities by requiring the Secretary of Transportation to coordinate and fund projects through competitive grants that reduce port-related emissions from idling trucks.	**$50m per year for 2022-2026**
Carbon reduction program		This is a broad purpose grant program to reduce transportation emissions including alternative fueling infrastructure (chargers or hydrogen/propane/natural gas), purchase or lease of zero-emissions construction vehicles, port electrification.	**$7 billion over 5 years**

DOE IIJA Programs

Program	Industry	Use Case	Amount
Advanced energy manufacturing and recycling grant program		Authorizes a grant program for facilities that produce or recycle advanced energy technologies (wind, solar, storage, fuel cells, microturbines, geothermal, hydrothermal, electric grid modernization equipment, CCUS equipment, renewable/low-carbon fuel refining) in communities where coal mines or coal power plants have closed.	**$750 million**
Carbon utilization program		Establishes a grant program for state and local governments to procure and use products derived from captured carbon oxides	**$310 million**
Carbon dioxide transportation infrastructure finance and innovation		Establishes CO2 Infrastructure Finance and Innovation Act (CIFIA) program, with low-interest loans available to companies building CO2 transport infrastructure over $100M. Also provides grants to pay part of the cost of initial excess capacity at a new facility.	**$2.1 billion**

DOE ARPA-e Programs

Program	Industry	Description	Amount
The Revolutionizing Ore to Steel to		This program seeks to improve the entire supply chain from ore to final steel production. ROSIE will fund the development and demonstration of novel technologies that	**$35 million**

Impact Emissions (ROSIE) program		produce iron-based products from iron-containing ores and alternative feedstocks without process emissions in the ironmaking step.	

Tax Strategies and Federal Incentive Stacking

Direct Pay. Some entities are eligible for tax credits but have no tax liability (also referred to as "tax appetite"). Direct pay (sometimes also referred to as "refundability") allows such entities to benefit from the tax credit through direct payments from the IRS. Some provisions of the IRA allow tax-exempt organizations as well as state, local, and tribal governments to take direct pay of tax credits for longer than for-profit enterprises.

Credit Transferability. Tax credit transferability allows entities that are eligible for credits to sell their tax credits to another party in exchange for cash. This mechanism allows for projects to monetize credits rather than engaging on more complex tax equity financing arrangements.

Stackability. In some cases, tax credits can be "stacked" or combined to increase the value of incentives to a project. One example is if a hydrogen project constructs new renewable energy capacity to meet its electricity needs, the project may be able to claim both the 45V and clean electricity tax credits, further reducing the levelized cost of hydrogen.

Tax Credits

Tax credits are potentially the largest source of support for clean industrial deployment because most tax credits are uncapped in size. Additional features like direct pay and credit transferability increase the flexibility of credits, enabling more projects to maximize the benefit of the credits to their business model.

Program	Industry	Use Case	Features[1]	Amount
Clean Electricity Production and Investment Tax Credits (45Y and 48E)	General Fund	Support renewables buildout for clean industrial projects	**D T S**	**$241 billion[2] (est. but uncapped)**
Credit for Carbon Oxide Sequestration (45Q)	Aluminum and Steel, General Fund, Chemicals, Cement	CCUS and Direct Air Capture Projects	**D T**	**$52 billion[2] (est. but uncapped)**
Clean Hydrogen Production Tax Credit (45V)	General Fund	Production of low-carbon hydrogen; rules for GHG accounting and certification are pending.	**D T**	**$33 billion[2] (est. but uncapped)**
Advanced Energy Project Tax Credit (48C)	General Fund, Aluminum and Steel	Retrofitting existing facilities to low emissions fuel and equipment	**D T**	**$10 billion**

				
Clean Fuel Production Credit (45Z)		Production of clean transportation fuels, including aviation fuels; replaces 40B SAF Credit in 2025	**D T**	**$3 billion[2] (est. but uncapped)**
Commercial Clean Vehicle Credit (45W)		Purchase of a qualified commercial clean vehicle by a business or tax-exempt organization	**D S**	**$4.5 billion[3] (est. but uncapped)**
Alternative Fuel Vehicle Refueling Property Credit (30C)		Establishing property for alternative fueling and charging in low income areas	**D T S**	**$2.3 billion[3] (est. but uncapped)**

[1] **D** = Direct Pay Eligible; **T** = Transferable; **S** = Stackable (see the Biden Administration's IRA Guidebook for more details)

[2] Estimated credit values from Credit Suisse

[3] Estimated credit values from CBO

Federal Incentive Bonuses

Many of the tax credits included in the IRA are structured to further incentivize companies to invest in workforce development, domestic manufacturing, and specific communities that are disproportionately impacted by the energy transition.

All major tax credits relevant to clean industrial deployment under the IRA include significant multipliers (as much as 5x) when companies meet **prevailing wage and apprenticeship requirements**. Prevailing wage thresholds are specific to the region and job type. Additionally, to support workforce development, a certain percentage (which will increase over time) of labor hours must be performed by apprentices.

Tax credits are increased further by 10% when projects use **domestic content** in their projects. Meeting domestic content requirements typically requires that all steel and iron used in a project be produced in the United States and a minimum percentage of certain product components be produced in the United States (though component requirements vary by tax credit).

Finally, an additional 10% bonus is available if projects are sited within an **energy community**. An energy community is an area that is (1) near a coal mine or coal-fired power plant that has closed OR (2) is a community that has been historically reliant on the extraction, processing, transport, or storage of coal, oil, or natural gas but now faces higher-than-average unemployment. For some incentives, such as the Advanced Energy Project Tax Credit, a portion of the funds are earmarked specifically for energy communities.

California State-Level Industrial Decarbonization Incentives

There are many state-level programs and grants that incentivize the deployment of low and zero carbon industrial projects. For the most part, these programs can be stacked and combined freely, both with other

state-level incentives as well as federal and local programs. The majority of these programs focus on trucking, hydrogen and shipping, but some extend to the other industrial sectors as well.

California Clean Transportation Program Incentives

The Clean Transportation Program is run by the California Energy Commission as part of Governor Newsom's $54 billion California Climate Commitment, and aims at increasing the state's charging and hydrogen refueling infrastructure. The budget for FY 2022-23 is more than 30x larger than the budget in 2019, and will be spent over the next four years. We have identified relevant programs below.

Program	Industry	Description	Amount
Innovative Charging Solutions for Medium- and Heavy-Duty Electric Vehicles		This is a two-phased competitive grant solicitation for projects that demonstrate transformative technology solutions and work to accelerate the successful commercial deployment of medium- and heavy-duty EV charging applications, including, but not limited to the following: innovative business models (e.g., truck parking, truck stops/charging hubs, charging corridors, and mobility/charging-as-a-service); and innovative technologies (e.g., large scale ultra-fast charging, interoperability, battery swapping, fuel-cell powered EV charging, wireless charging, inductive charging, overhead catenary, and vehicle-to-everything (V2X) technology).	**$20 million**
Clean Vehicle Rebate Project Fleets Program		The Clean Vehicle Rebate Project (CVRP) promotes clean vehicle adoption in California by offering rebates from $1,000 to $7,500 for the purchase or lease of new, eligible zero-emission vehicles, including electric, plug-in hybrid electric and fuel cell vehicles. Different rebate rates are applicable for different applicants (public entity or company), and public entities are eligible for up to 30 rebated vehicles per year.	**$1-7k per vehicle**

California Air Resources Board Incentives

CARB has approved a $2.6 billion plan to invest in clean transportation incentives, including consumer vehicle rebates and heavy-duty and off-road equipment investments.

Program	Industry	Description	Amount
Clean Truck and Bus Voucher Incentive Project (HVIP)		HVIP provides vouchers to eligible fleets to reduce the incremental cost of low carbon trucks and buses. Vouchers are available on a first-come, first-served basis. Only fleets that operate vehicles in California are eligible. Voucher amounts vary depending on whether the vehicles are located in a disadvantaged community.	**$1.7 b allocated**
AQIP: Advanced Technology Demonstration and Pilot Projects		This project's goal is to support a wide array of zero-emission off-road equipment and vessel projects as well as Green Zones, which has a very broad scope and is focused on supporting broad and creative roads to zero-emission adoption at the municipal level. Please	**$220 million**

		read program details for greater explanation of eligible projects. Projects funded under this Solicitation can support both pre-commercial technologies that are not yet offered for sale in the marketplace as well those commercial technologies that have already been deployed into the marketplace. All work must be completed and the CARB approved final report must be submitted to CARB by March 15, 2027. Only nonprofits and California public agencies qualify for this grant.	
Heavy-Duty Vehicle Air Quality Loan Program		CARB and The California Pollution Control Financing Authority (CPCFA) co-operate this grant program that offers a purchasing assistance program for MHD ZEV fleets. It is available for small fleets with 10 or fewer trucks at the time of application. The program ends July 31, 2023.	**$28.64 million**

Cost Share Programs

California offers programs to support the cost share requirements that organizations face once they have successfully solicited funding from other programs (often federal) that have cost share requirements. Each cost share program has its own requirements and different programs it supports.

Program	Industry	Description	Amount
Cost Share for Federal Clean Energy Funding Opportunities		The purpose of this solicitation is to provide cost share funding to applicants that apply for and receive one of the following: An award under an eligible federal Funding Opportunity Announcement (FOA) and meet the requirements of this solicitation, or Follow-on funding from the U.S. Department of Energy to continue research from a previously awarded federal grant that also received Energy Commission federal cost share funding under PON-14-308, GFO-18-902, or this GFO and the proposed project meets the requirements of this solicitation.	**$20 million**
Cost Share for Federal Funding Opportunities Industrial Decarbonization and Improvement of Grid Operations (INDIGO) Program and Food Production Investment Program (FPIP)		The purpose of this solicitation is to provide cost share funding to applicants that apply for and receive one of the following: an award under an eligible federal Funding Opportunity Announcement (FOA) for a project that meets the requirements of this solicitation, or Subsequent funding from the U.S. Department of Energy to continue research from a previously awarded federal grant that also received Energy Commission federal cost share funding under GFO-21-901 or this GFO (GFO-22-902) for a proposed project that meets the requirements of this solicitation.	**$20k set aside for INDIGO grants and $5m set aside for PFIP grants**

[Cost Share for Federal Clean Energy Funding Opportunities, Carbon Removal Innovation Support Program (CRISP)]		This solicitation only applies to the Carbon Removal Innovation Support Program (CRISP) for projects that meet the requirements in Section I.D and the applicable federal Funding Opportunity Announcement. The purpose of this solicitation is to provide cost-share funding to applicants that apply for and receive one of the following: An award under an eligible federal Funding Opportunity Announcement (FOA) and meet the requirements of this solicitation, or follow-on funding from the U.S. Department of Energy to continue research from a previously awarded federal grant that also received Energy Commission federal cost share funding under PON-14-308, GFO-18-902, or this GFO and the proposed project meets the requirements of this solicitation.	**$15 million**

Miscellaneous State Incentives

In addition to the larger funding programs, there are miscellaneous state-level decarbonization funds. These programs each have their own application criteria and project requirements.

Program	Industry	Description	Amount
[Industrial Decarbonization and Improvements to Grid Operations Program (INDIGO)]		This grant program will fund projects at industrial facilities that provide operational benefits to the electrical grid, reduce greenhouse gas emissions from the facility, achieve state emissions goals and/or exceed compliance requirements for the facility.	**$500k min-$5m max per award**
[Climate Innovation Program]		This program specifically targets the development and scaling up of clean energy and climate technologies, specifically in the power, transportation, buildings, and industrial sectors.	**$500 million/ project**

Clean Off-Road Equipment Voucher Incentive Project (CORE)		The Clean Off-Road Equipment Voucher Incentive Project (CORE) is a multi-million incentive project intended to encourage California off-road equipment users to purchase or lease currently commercialized zero-emission off-road equipment. This streamlined voucher incentive project helps offset the higher cost of zero-emission technology with a point-of-sale discount. There is no scrappage requirement, and additional funding is available for charging and fueling infrastructure, equipment deployed in disadvantaged communities, and small businesses.	**$62 million**
Energy Infrastructure Incentives for Zero-Emission (EnergIIZE) Commercial Vehicles Program		Project funding will provide the infrastructure needed to support the transition of old, polluting medium- and heavy-duty (MD/HD) equipment to zero-emission battery electric and hydrogen fuel cell vehicles	**$50 million**
Energy Conservation Assistance Act - Low-Interest Loans		Under the California Energy Conservation Assistance Act, the CEC will provide cities, counties, special districts, tribes, and certain other public institutions with 1%-interest loans to finance energy efficiency and energy generation. Eligible projects must have “proven energy or demand cost savings or both.” Renewable generation and thermal energy storage are specified as eligible technologies.	**Up to $3 million/ project**
Electric Vehicle Charging Station Financing Program		Loans enrolled in the Electric Vehicle Charging Station Financing Program can be used for the design, development, purchase, and installation of electric vehicle charging stations at small business locations in California. Funded by the California Energy Commission, the California Capital Access Program (CalCAP) may provide up to 100% coverage to lenders on certain loan defaults. Borrowers may be eligible to receive a rebate of 10-15% of the enrolled loan amount.	**$500k maximum loan amount**
CalRecycle GHG Reduction Loan Program		This program targets recycling manufacturers and aims to finance projects that reduce overall emissions and use waste feedstock to create biofuels and other forms of bioenergy.	**$2.5 million**
Co-Digestion Grant Program		This program funds new and expanded waste co-digestion projects. Eligible applicants include local governments, cities, counties, and regional or local sanitation and waste agencies. This program only supports food waste co-digestion systems sited at existing publicly owned wastewater treatment plants.	**$1 - 4 million/ project**
California Low Carbon Fuel Standard		The LCFS is designed to decrease the carbon intensity of CA’s transportation fuel pool by creating a carbon intensity standard that transportation fuel users must meet. Falling above or below the standard generates	**NA: Credit Market**

		credits and deficits that can be traded and bought to meet the standard.	

Local & Utility Incentives, by region

Southern California: Greater Los Angeles Metro Area

Program	Industry	Description	Amount
Port of Los Angeles Clean Truck Fund		Generates funds to transition to zero-emissions trucks by 2035, with a three-year spending plan allocating 100% of the fund for zero-emission trucks in the first year.	**$45 million**
Port of Long Beach Clean Truck Fund		Generates funds to transition to zero-emissions trucks by 2035, with a three-year spending plan allocating 100% of the fund for zero-emission trucks in the first year.	**$45 Million**
710 South Clean Truck Program		Aims to put 4,000 zero- and near-zero emissions trucks on I-710 to improve air quality for those living and working near the freeway.	**$200 million**
Commercial Electric Vehicle Charging Station Rebate - LADWP		Commercial customers purchasing and installing DCFC stations for medium- and heavy-duty vehicle usage may receive rebates up to $125,000 per station.	**$3 million**
Power Your Drive for Fleets Program		Provides incentives for medium- and heavy-duty EV charging stations, including a no-cost installation option or rebates up to 80% of installation costs and up to 50% of the charger purchase costs. Also includes Airport Ground Service Equipment. Must be in SDG&E service area.	**Up to $75,000 per charger**

Central California

Program	Industry	Description	Amount
San Joaquin Valley Truck Replacement Program		Helping to accelerate the replacement of eligible class 4-8 heavy-duty diesel trucks with zero-emission or low-NOx vehicles.	**Up to $410,000 per truck**
SLO Clean Air Fund		Provides grants to support qualified air quality improvement projects, including the purchase of alternative fuel infrastructure development in San Luis Obispo County.	**Up to $300k per project**
Santa Barbara Heavy-Duty Zero Emission Vehicle (ZEV) Grant		Grants for the replacement of heavy-duty vehicles with zero-emission technology including the purchase of battery-electric, hydrogen fuel cell, and natural gas vehicles in Santa Barbara County.	**Up to $401k per truck**
Santa Barbara Marine Diesel Engine Grants		Grants for the replacement or upgrade of commercial harbor craft diesel engines in Santa Barbara County.	**Up to $250,000 per project**
Santa Barbara Alternative Fuel Infrastructure Grant		Grants for the installation of fueling or energy infrastructure to fuel or power covered sources in Santa Barbara County.	**Up to $250,000 per project**

TID Commercial EV and EV Charging Station Rebates		Offers rebates for the installation of EV charging stations for medium- and heavy-duty vehicle fleets in Turlock Irrigation District's service territory, as well as for the purchase of electric fleet vehicles.	**Up to $20,000 per charger, up to $5,000 per vehicle**

Northern California

Program	Industry	Description	Amount
Sacramento Emergency Clean Air and Transportation (SECAT) Program		Provides grants for zero-emission heavy-duty vehicles within six counties in California, including the purchase of battery-electric or hydrogen fuel cell trucks.	**$4 million**
PG&E EV Fleet Program		Offers incentives for the installation of EV charging stations for medium- and heavy-duty vehicle fleets in PG&E's service territory, as well as for the purchase electric fleet vehicles.	**Up to $42,000 per charger, up to $9,000 per vehicle**
SMUD EV Rebates for Fleet Vehicles		Rebates to businesses for the purchase of new commercial light-, medium-, and heavy-duty EVs, up to $15,000 per vehicle for Class 8 vehicles. Must be in Sacramento Municipal Utility District.	**Up to $15,000 per vehicle**

Key RMI Contacts

Taylor Krause, Manager, US Federal Policy, tkrause@rmi.org

Jane Sadler, Associate, Clean Industrial Policy, jsadler@rmi.org

Mia Reback, Manager, Clean Industrial Hubs, mreback@rmi.org

Julia Thayne, Senior Principal, Clean Industrial Hubs, jthayne@rmi.org

Megan Gross, Associate, Clean Industrial Hubs, mgross@rmi.org