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California Energy Commission

LEAD COMMISSIONER REPORT

Federal Financing Solutions for Inclusive Utility Investments – Senate Bill 1112 Final Report

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ABSTRACT

The *Federal Financing Opportunities for Inclusive Utility Investments – Senate Bill 1112* report is a statutorily mandated assessment of federal financing and investment solutions that could enable eligible entities to provide clean energy or decarbonizing residential building upgrades through inclusive utility investments, also known as *tariff on-bill financing*. The report discusses methods that could improve access to federal financing for inclusive utility investments, as mandated by Senate Bill 1112 (Becker, Chapter 834, Statutes of 2022).

This report was directed and developed during a time with a different federal policy climate. As such, some of the federal financing opportunities discussed have changed.

Inclusive utility investments could provide a scalable financing solution to support building decarbonization that is accessible to all Californians, yet to date have mainly been limited to energy efficiency measures. This limitation exists because project costs have primarily been recovered through utility bill savings achieved by improved energy efficiency.

The report provides an overview of inclusive utility investments, a financing mechanism that could accelerate and scale building decarbonization efforts in support of California's climate and energy goals. The discussion highlights potential federal financing and investment solutions that could help support inclusive utility investment as a source of third-party capital. These solutions include application strategies for different types of eligible entities to access federal financing.

Keywords: Decarbonization, efficiency, electrification, inclusive utility investments, existing buildings, residential buildings, financing, tariff-on-bill financing, equity

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EXECUTIVE SUMMARY

Purpose

This report examines federal financing opportunities that could support inclusive utility investments for decarbonizing California's buildings. The report:

- Identifies specific federal financing programs administered by the U.S. Department of Energy (DOE), U.S. Environmental Protection Agency (U.S. EPA), and U.S. Department of Agriculture (USDA).
- Analyzes barriers to accessing federal financing and challenges for inclusive utility investments for decarbonization to get to scale.
- Provides recommendations that could both improve access to federal financing and support adoption and growth of inclusive utility investments in California.

The findings aim to guide the Legislature and stakeholders toward pathways that could leverage federal resources for supporting and growing inclusive utility investments that align with California's climate and energy goals.

Findings

Inclusive utility investments, also known as *tariff on-bill financing*, have gained recognition as a financing solution to support energy efficiency upgrades to existing homes. This program model is designed to overcome affordability barriers by allowing utilities and other eligible entities to pay the upfront cost of investments for energy upgrades at specific properties. A tariff permits the utility to recover the cost of the investment through the utility bill, while helping ensure net annual bill savings for homeowners and renters. Personal credit checks are not required for program participation. Key features include:

- **No consumer loans:** Payments are tied to the utility meter at the building. Participants pay for only the costs of the energy upgrades while they reside in the property. When new occupants move in, they assume responsibility for payments.
- **Consumer protections:** Programs include protections such as standards for energy modeling to ensure participants experience net energy bill savings.
- **Technology agnostic:** Programs have historically focused on energy efficiency improvements. They may potentially support renewable energy, energy storage, electrification, and other decarbonization upgrades.

Inclusive Utility Investments in Practice

Inclusive utility investments have shown promise in other states through rural cooperative utilities. Recently, some investor-owned utilities and state housing financing authorities, such as in Vermont, Missouri, and North Carolina, have begun implementing inclusive utility investments.

In California, the only active inclusive utility investment program is the Water Upgrades $ave program, administered by the Bay Area Regional Energy Network. The Bay Area Regional Energy Network is a partnership of local governments focused on regional energy and water programs. The Water Upgrades $ave program partners with municipal water utilities and is aimed at water efficiency improvements. Bond financing issued through the Association of Bay Area Governments, a regional planning agency, provides funding for the program.

The California Public Utilities Commission (CPUC) is exploring inclusive utility investment programs aimed at measures beyond energy efficiency. In May 2024, several investor-owned utilities and Silicon Valley Clean Energy proposed pilot programs focused on a variety of decarbonizing building upgrades while testing several consumer protection elements. In December 2025, the CPUC adopted a decision ordering Southern California Edison to implement a tariff on-bill pilot program.

Federal Financing Opportunities

CEC staff identified four federal programs that could support inclusive utility investments. At the time of publication, the status and availability of the federal programs discussed are uncertain due to shifts in federal energy policy and may be affected by ongoing litigation, executive action, or federal legislation.

The four federal programs are:

- **US EPA National Clean Investment Fund:** Deploys financing through nonprofit institutions and state green banks for eligible projects, including building electrification.
  - Status: Awards to nonprofits are pending ongoing litigation.
- **DOE Title 17 Clean Energy Financing Program:** Provides financing for innovative clean energy technologies with additional flexibility for projects supported by states.
  - Status: Appropriation for Section 1703 is available through September 30, 2026.
- **USDA Energy Efficiency and Conservation Loan Program**: Offers loans to utilities serving rural communities for energy efficiency projects.
  - Status: Available
- **USDA Rural Energy Savings Program:** Provides zero-interest loans for energy cost reductions in rural areas.
  - Status: Available

These programs allow for a range of financing mechanisms, including direct loans to inclusive utility investment program administrators, aggregated, or combined, applications from multiple entities, and state-supported loan programs.

Federal Application Pathways

The report outlines three application pathways by which utilities and community choice aggregators might access these federal funds and considerations for each:

- Direct — a single entity applies directly to a federal program as a borrower

- Aggregated — multiple parties with similar goals jointly apply to a federal program.
- Statewide intermediary — a state entity accesses federal financing and then provides access to that capital for eligible entities to support inclusive utility investments.

Considerations for Inclusive Utility Investment Growth

Inclusive utility investments could present transformative potential for building decarbonization and equitable energy upgrades in California if the challenges identified below are adequately addressed.

- **Accessing federal financing:** State agencies, including the CEC, require statutory authority to borrow federal funds and administer financing programs.
- **Loan repayment risks:** Policy makers will need to consider how to fairly allocate loan repayment risk between utilities, ratepayers, and taxpayers.
- **Economic viability:** The extent to which inclusive utility investments can support investments in building decarbonization depends on the availability and magnitude of energy bill savings. The portion of energy upgrade costs that cannot be recovered through bill savings must come from other sources, such as participant copayments or incentives, which can limit uptake of investments.

Additional research is needed to identify and develop implementation strategies for other value streams beyond direct bill savings, such as grid and nonenergy benefits, that may support inclusive utility investments. For example, accurately calculating grid benefits, such as avoided new electrical infrastructure, may be possible for new construction but presents significant challenges for existing buildings and circuits. Similarly, nonenergy benefits can be calculated in a variety of ways, making it difficult to implement these values in a standardized, practical manner. Nonenergy benefits may include improved indoor air quality and health benefits.

Background

California's ambitious climate and energy goals have positioned the state as a leader in addressing climate change.

- Senate Bill 350 (De León, Chapter 547, Statutes of 2015) codified a state goal to double energy efficiency savings in electricity and gas end uses by 2030.
- Senate Bill 32 (Pavley, Chapter 249, Statutes of 2016) requires a 40 percent reduction in statewide greenhouse gas emissions relative to 1990 levels by 2030.
- Senate Bill 100 (De León, Chapter 312, Statutes of 2018) requires that 100 percent of retail sales of electricity to end-use customers be supplied by eligible renewable resources.
- Assembly Bill 1279 (Muratsuchi, Chapter 337, Statutes of 2022) sets a goal for achieving statewide carbon neutrality and reducing GHG emissions by at least 85 percent relative to 1990 levels by 2045.
- In a 2022 letter to the California Air Resources Board, Governor Gavin Newsom recognized that "[b]uildings are a large source of carbon pollution, and decarbonization

of California's buildings must be accelerated to achieve our climate targets" and established "a goal of 3 million climate-ready and climate-friendly homes by 2030 and 7 million homes by 2035, which shall be supplemented through the deployment of 6 million heat pumps statewide by 2030."

A key effort to meet these goals is decarbonizing existing homes and businesses, which contribute 24 percent of greenhouse gas (GHG) emissions in California. Retrofitting existing buildings with energy-efficient and emission-reducing measures is essential but faces challenges such as upfront costs, building conditions, and the split incentive barrier — where property owners bear the costs of energy upgrades, while renters primarily benefit from the upgrades.

Senate Bill 1112 (Becker, Chapter 834, Statutes of 2022) directs the California Energy Commission (CEC) to identify available state and federal financing and investment solutions that will enable electrical corporations, community choice aggregators, and other eligible entities to provide zero-emission, clean energy, or decarbonizing building upgrades consistent with the U.S. Environmental Protection Agency's inclusive utility investment policies. Decarbonizing means reducing greenhouse gas emissions, such as replacing fossil fuel powered equipment with highly efficient electric equipment.

This provision could be a promising approach to make clean energy upgrades more accessible to homeowners and renters without requiring loans or credit checks. SB 1112 also directs the CEC to report to the Legislature any statutory changes necessary to improve access to federal funding for finance and investment solutions.

Recommendations for Consideration

SB 1112 directs the CEC to submit a report to the Legislature that describes statutory changes necessary to improve access to federal funding for financing or investment solutions. The Legislature and policy makers may wish to consider the following:

1. **Authorize CEC or other appropriate state agencies to access federal financing.** The Legislature could consider authorizing the CEC or other state agencies to borrow directly from federal agencies and administer financing programs focused on decarbonization. This borrowing would enable the CEC to pursue federal financing for clean energy programs and support statewide decarbonization goals.
2. **Explore establishing a loan fund for administrators of inclusive utility investments.** The Legislature could consider establishing a low- or no-cost loan fund for investor-owned utilities, publicly owned utilities, community choice aggregators, and other eligible entities to borrow funds for inclusive utility investments as needed. As another option, the fund could be structured as a reserve, which absorbs at least some financial risk for program administrators and could support access to federal financing for inclusive utility investments.
3. **Leverage incentives, rebates, tax credits, and grid benefits** to enhance project economics and support cost recovery for inclusive utility investments. The Legislature

could continue to authorize programs that reduce upfront energy upgrade project costs and capture operational and deferred benefits of decarbonizing buildings. Additional investigation and analysis could simplify the combining of these value streams to improve project economics and recoverable portion of decarbonization projects.

4. **The CEC should explore facilitating energy data sharing with implementers** to support accurate estimates of energy savings and bill impacts of inclusive utility investments, in accordance with the Information Practices Act and other applicable laws. Many Californians are served by two distinct utilities for electricity and gas service. Building decarbonization shifts end uses from gas appliances to efficient electric appliances, which causes some costs to shift from customer gas bills to electricity bills. With participant authorization and consent, access to both electric and gas usage data helps implementers select cost-effective energy measures and assess impacts to electricity and gas utility bills.

CHAPTER 1: Introduction

California is leading the way in addressing climate change with some of the most ambitious energy and environmental goals in the world.

- Senate Bill 350 (De León, Chapter 547, Statutes of 2015) codified a state goal to double energy efficiency savings in electricity and gas end uses by 2030.
- Senate Bill 32 (Pavley, Chapter 249, Statutes of 2016) requires a 40 percent reduction in statewide greenhouse gas emissions relative to 1990 levels by 2030.
- Senate Bill 100 (De León, Chapter 312, Statutes of 2018) requires that 100 percent of retail sales of electricity to end-use customers be supplied by eligible renewable resources.
- Assembly Bill 1279 (Muratsuchi, Chapter 337, Statutes of 2022) sets a goal for achieving statewide carbon neutrality and reducing GHG emissions by at least 85 percent relative to 1990 levels by 2045.
- In a 2022 letter to the California Air Resource Board, Governor Gavin Newsom recognized that "[b]uildings are a large source of carbon pollution, and decarbonization of California's buildings must be accelerated to achieve our climate targets" and established "a goal of 3 million climate-ready and climate-friendly homes by 2030 and 7 million homes by 2035, which shall be supplemented through the deployment of 6 million heat pumps statewide by 2030."

Central to these efforts are the shift to clean energy sources and the reduction of greenhouse gas (GHG) emissions, alongside the electrification of key sectors of the economy, such as transportation, manufacturing, and agriculture. The residential and commercial building sectors alone contribute about 24 percent of GHG emissions, highlighting the importance of decarbonizing the building sector.[1]

Retrofitting existing buildings poses significant challenges, including the upfront costs for homeowners, building owners, and renters. Moreover, property owners may be hesitant to invest in energy upgrades due to the split incentive barrier. Property owners are usually responsible for the costs of energy upgrades, while the benefits primarily accrue to renters through energy cost savings and comfort. Renters are often reluctant to invest in upgrades on their own due to lack of property ownership.[2]

1 Kenney, Michael, Nicholas Janusch, Ingrid Neumann, and Mike Jaske. 2021. *California Building Decarbonization Assessment*. California Energy Commission. Publication Number: CEC-400-2021-006-CMF, https://www.energy.ca.gov/publications/2021/california-building-decarbonization-assessment.

2 Ibid.

The *2021 Integrated Energy Policy Report* (IEPR) recommended that "investing at scale is necessary to reduce GHG emissions from buildings and allows consumer to address climate change impacts from extreme heat and wildfires." It also recommends that "federal, state, and local agencies should coordinate incentives and various funding sources to enable diverse financing options for building decarbonization."[3]

The *2019 California Energy Efficiency Action Plan* includes a recommendation to "implement tariffed on-bill repayment programs statewide to open new financing mechanisms for low-to-middle-income households and multifamily units, with eligibility not based on credit score or income."[4]

Senate Bill 1112

Senate Bill (SB) 1112 (Becker, Chapter 834, Statutes of 2022), which directs the CEC, in coordination with the Governor's Office of Business and Economic Development, the California Public Utilities Commission (CPUC), and the State Treasurer, to:

- Identify available state and federal financing or investment solutions.
- Apply for federal financing or investment solutions, as applicable.
- Provide technical assistance to electrical corporations, community choice aggregators (CCAs), or other eligible entities to apply for state and federal financing or investment solutions.

SB 1112 defines *financing and investment solutions* to mean "solutions that are consistent with the U.S. Environmental Protection Agency's (USEPA) inclusive utility investments policies or other industry best practices, that will enable electrical corporations, community choice aggregators, and other eligible entities to provide zero-emission, clean energy, and decarbonizing building upgrades."

SB 1112 authorizes the CEC to identify "state programs, authorizations, and administrative actions that enable, or could enable, access to federal funding for financing or investment solutions, including, but not limited to, Public Utilities Commission Rulemaking 20-08-022 (Order Instituting Rulemaking to Investigate and Design Clean Energy Financing Options for Electricity and Natural Gas Customers), filed August 27, 2020."

SB 1112 also directs the CEC to submit a report to the Legislature that describes statutory changes necessary to improve access to federal funding for financing or investment solutions.

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3 Kenney, Michael, Jacob Wahlgren, Kristina Duloglo, Tiffany Mateo, Danuta Drozdowicz, and Stephanie Bailey. February 2022. *Final 2021 Integrated Energy Policy Report, Volume I: Building Decarbonization.* California Energy Commission. Publication Number: CEC-100-2021-001-V1, https://efiling.energy.ca.gov/GetDocument.aspx?tn=241361.

4 Kenney, Michael, Heather Bird, and Heriberto Rosales. December 2019. *2019 California Energy Efficiency Action Plan.* California Energy Commission. Publication Number: CEC- 400-2019-010-CMF, https://efiling.energy.ca.gov/GetDocument.aspx?tn=231261&DocumentContentId=62916.

In May 2023, the CEC established a docket to collect comments and, in July 2023, issued a request for information (RFI) for comments pertinent to this report. The CEC received nine comments in response to the RFI. Unless otherwise noted, the term *docketed comments* refers to comments received by the CEC in response to the RFI or otherwise submitted to the docket.

Inclusive Utility Investments

Inclusive utility investments (IUIs), often referred to as tariff on-bill (TOB) financing, have garnered attention for the ability to promote equitable and affordable access to home energy efficiency upgrades and, potentially, decarbonization measures. The IUI structure is designed to help overcome affordability and equity barriers for renters, energy-burdened households, and households with limited or no access to capital or credit.[5]

This report focuses on identifying federal financing opportunities that meet the U.S. EPA's characterization of IUI and would help advance implementation of IUI in California. The U.S. EPA has adopted the term *inclusive utility investment* to refer to tariff on-bill mechanisms with strong consumer protection practices, such as those that are found in the Pay as You Save® programs, but without the trademark. This report predominately refers to IUI in deference to SB 1112, but in certain contexts, such as discussion of the CPUC Clean Energy Financing Proceeding (R.20-08-022), tariff on-bill, or TOB, is used for consistency.

IUI is a program model through which utilities make investments in energy upgrades at a specific location and then recover the cost of the investment through the participating customer's utility bill. Tariffs govern program rules, including the terms of the cost-recovery charge. Programs are designed to ensure net annual bill savings for participants, aligning cost-recovery payments with the energy savings generated by the upgrades.[6]

According to the U.S. EPA, three core tenets characterize IUI programs and distinguish them from other consumer energy financing programs:[7]

- Inclusive utility investment programs do not entail consumer lending or personal debt. They apply cost-recovery charges as part of the energy services tied to the metered location. The charges are transferred to future residents at the property, who also

5 Mast, Bruce, Holmes Hummel, and Jeanne Clinton. July 2020. *Towards an Accessible Financing Solution*. Building Decarbonization Coalition, http://buildingdecarb.org/wp-content/uploads/Towards-an-Accessible-Financing-Solution.pdf.

6 U.S. EPA defines IUI as a "financial solution for distributed clean energy upgrades (including energy efficiency) via a tariff for site-specific utility investment and cost recovery, approved by the utility's regulatory authority and designed to ensure net annual cost savings for participants."

Section 2 of SB 1112 defines a "decarbonization charge" to be added to the electric bill for site-specific decarbonization upgrades without a requirement that the charge be less than anticipated bill savings. It can be inferred that SB 1112 allows for IUI programs that do not require net bill savings for utility customers.

7 ENERGY STAR. 2023. "Inclusive Utility Investment," https://www.energystar.gov/products/inclusive_utility_investment.

benefit from energy upgrades. The cost-recovery charge is removed from the utility bill when the investment is fully recovered.

- Programs rely on detailed, location-specific analyses to model energy and cost savings accurately. These estimates form the basis for selecting appropriate energy upgrades and determining cost-recovery charges.
- The tariff generally requires that the cost-recovery charges remain lower than the estimated annual energy bill savings, to ensure net bill savings for participants. Bill savings can stem from increased energy efficiency or benefits delivered to the grid.

While IUI programs generally are designed to ensure bill savings for participants, not all programs guarantee savings. Additional factors such as energy usage patterns, performance of installed equipment, and cost of energy affect whether participants experience actual bill savings. Some programs may include additional consumer protections, such as equipment warranties. Participant program eligibility is generally based on utility bill payment history, rather than credit checks or income verification.

Finally, IUI programs have historically focused on energy efficiency improvements, such as insulation and lighting improvements. Other decarbonization measures, such as electrification, renewable technologies, and energy storage could also be included. Additional research is needed to understand the bill impacts of residential building decarbonization and to what extent bill savings from decarbonization can support inclusive utility investments.

Program Funding

IUI programs have historically sourced capital from ratepayers and nonratepayer funds. Programs must determine how to pay for the costs of project investments, as well as administrative expenses and cost of capital, if borrowing funds. Programs can recover a portion of expenses through some level of bill savings; the amount that is recoverable varies depending on the type of equipment, climate, and utility service area. Generally, programs are likely to require additional sources of funds to support the nonrecoverable project, administrative, and capital expenses.

The U.S. EPA has identified three nonratepayer sources of capital that could support development and implementation of IUI programs:

- Federal — Federal agencies provide loans or other types of financial assistance to program administrators to advance clean energy deployment. This provision is the focus and scope of this report.
- State and local — Green banks and financial institutions, such as community development finance institutions, can offer low-cost financing to utilities.
- Private — Investors may be attracted to inclusive utility investments as they are backed by the credit of utilities as opposed to individual credit of program participants.[8]

8 ENERGY STAR. 2023. Inclusive Utility Investment.

Inclusive Utility Investment History Outside California

As of 2024, IUI has been implemented in other states mostly by rural cooperative utilities for home energy efficiency improvements. According to Liberty Homes & Energy Efficiency Institute, the total projects completed numbered fewer than 6,000 as of 2021.[9] Most existing IUI programs are designed and implemented as Pay-As-You-Save® (PAYS) — a model with specific design elements trademarked by Energy Efficiency Institute, Inc (EEI). PAYS program design elements include requirements to help ensure expected utility bill savings such as restricting cost-recovery charges to a maximum of 80 percent of expected bill savings.

In recent years, a few program administrators have launched IUI initiatives on a larger scale. Lessons from these programs may be applicable in California as the CPUC seeks to explore similar models to encourage deeper investments in clean energy resources at customer sites. Some recent, larger IUI program initiatives include the following:

- In 2024, Duke Energy, an investor-owned utility (IOU) serving 2 million residential customers in North Carolina, launched an IUI program for energy efficiency measures with the goal of serving at least 5,800 households.[10]
- Ameren Missouri, an IOU with 1.2 million electric and 132,000 natural gas customers, launched an IUI program in 2021.
- The State of Vermont implemented a statewide effort in 2021, allocating $9 million in state funding to the Vermont Housing Finance Agency to oversee and implement the Weatherization Repayment Assistance Program (WRAP) as a two-year pilot. The program is operating at a reduced budget of $2 million and extended through June 2027. As of July 1, 2025, WRAP has completed 20 energy efficiency and electrification projects.[11]

More details on these programs are described in Appendix A.

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9 Energy Efficiency Institute. March 29, 2022. "2022 PAYS Status Update," https://www.eeivt.com/wp-content/uploads/2022/03/2022-PAYS-Status-Update_3_29_22.pdf.

10 Huber, Lon. Duke Energy. January 2024. "Revolutionizing Home Energy: Duke Energy Paves the Way for Affordable Upgrades." Smart Electric Power Alliance, https://sepapower.org/media-item/revolutionizing-home-energy-duke-energy-paves-the-way-for-affordable-upgrades/. Accessed January 29, 2024.

11 Watson, Mia. December 7, 2022. "New Weatherization Financing Program Available for Vermonters." Vermont Housing Finance Agency. Accessed January 29, 2024, https://www.vhfa.org/news/blog/new-weatherization-financing-program-available-vermonters.

Vermont Gas Systems. "Weatherization Repayment Assistance Program (WRAP)." Accessed January 29, 2024, https://vgsvt.com/weatherization-repayment-assistance-program/.

Vermont Housing Financing Agency, Weatherization Repayment Assistance Program. https://www.vhfa.org/sites/default/files/WRAP-overview.pdf. Accessed May 21, 2024.

Environmental and Energy Study Institute. August 2025. Vermont Weatherization Program Helps Residents Cut Energy Costs and Pollution. https://www.eesi.org/articles/view/vermont-weatherization-program-helps-residents-cut-energy-costs-and-pollution. Accessed February 11, 2026.

Inclusive Utility Investment Implementation in California

Existing IUI programs in California are aimed at water efficiency improvements. Using the authority established by the Water Bill Savings Act (Senate Bill 564, McGuire, Chapter 430, Statutes of 2017), the Bay Area Regional Energy Network (BayREN) and the Association of Bay Area Governments (ABAG) worked in partnership with the Sonoma County Regional Climate Protection Authority and municipal water utilities to offer an IUI pilot program for water-efficiency measures. Water efficiency upgrades are financed by ABAG, and costs are recovered through water utility bills from program participants.

The primary exploration of IUI for building decarbonization in California has been through a proceeding at the CPUC. In August 2020, the CPUC issued the *Order Instituting Rulemaking to Investigate and Design Clean Energy Financing Options for Electricity and Natural Gas Customers*. The proceeding aimed to examine options that would encourage larger-scale and deeper investments in one or more clean energy resources at customer sites.

In August 2023, the CPUC directed the IOUs and Silicon Valley Clean Energy (SVCE) to create a TOB working group, tasked with developing a proposal adhering to the U.S. EPA's principles for inclusive utility investments.[12]

In May 2024, the IOUs and SVCE (joint filers) submitted a proposal for a pilot program with individual proposed program budgets, pilot targets, and timelines.

- Southern California Edison (SCE) and San Diego Gas & Electric (SDG&E) each proposed a TOB program that would reach 200 and 100 customers, respectively, with a combination of electrification and efficiency measures.
- Southern California Gas (SCG) proposed a TOB program installing tankless water heaters and energy efficiency measures for 500 customers.
- SVCE planned, and has since implemented, a field trial financing program serving 150–250 customers with heat pump space and water heating, energy efficiency, and battery storage and solar measures. SVCE will use its own funds, as well as funding from TECH Clean California.[13]

None of the joint filers proposed to seek federal financing or other third-party capital for the programs, primarily because these are pilot-scale proposals. SCE and SDG&E proposed to use ratepayer funds, while SCG proposed to use a combination of utility capital and ratepayer funds to support the program. However, SCG would seek to recover utility capital investments from ratepayers through a future general rate case.

12 CPUC. August 2023. Decision on Clean Energy Financing Proposals. D.23-08-026. http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=517717993

13 Ibid.

In December 2025, the CPUC adopted a decision ordering Southern California Edison to implement a tariff on-bill pilot program.[14]

As of August 2026, publicly owned electric utilities (POUs) and other CCAs in California have not implemented IUI programs.

Decarbonization Project Economics

As noted above, the portion of energy upgrade costs that can be recovered through bill savings depends on factors such as installed equipment, building condition, climate zone, utility service provider, and other factors.[15]

In the Joint TOB Proposal, the filers state that energy upgrade project costs cannot be supported by bill savings alone and will require additional incentives or copayments to ensure program participants do not experience bill increases.[16] Parties in the proceeding estimated that for the participant to experience net annual bill savings, only 15 to 25 percent of the energy upgrade costs can be recovered through the participant's bill.[17] This estimate was based on an analysis of heat pump installations for space and water heating and may not generalize to all decarbonization measures. This means many residential decarbonization projects could require additional funding sources, such as rebates, incentives or customer copayments, which would likely constrain program participation rates.[18]

Additional research evaluating a combination of decarbonization measures, such as pairing electrification technologies with efficiency, energy storage, or load flexibility upgrades, may help determine whether integrated project designs can increase overall bill savings and increase the portion of energy upgrade costs that can be recovered through cost-recovery charges.

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14 CPUC. December 2025. Decision On Tariff On-Bill Pilot Proposals. D.25-12-021k https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M592/K314/592314779.PDF.

15 Mast, Bruce, Holmes Hummel, and Jeanne Clinton. June 2020. *Towards an Accessible Financing Solution, Building Decarbonization Coalition*

16 CPUC R.20-08-022 Compliance Filing. May 14, 2024. *Joint TOB Proposal of PG&E, SDG&E, SVCE, SCE, SCG. Compliance Filing.*

17 Ibid.

18 Ibid.

SVCE notes in the Joint TOB Proposal that "[m]odeling shows that many customers capable of including on-site solar generation can generate sufficient bill savings to make the TOB project economics work; however, there may be other issues with on-site solar generation adoption, particularly with low-income customers (e.g., the need for a roof replacement if not obtained through a solar incentive program)."

Scope and Organization of Report

This report focuses on potential federal financing opportunities for IUI programs administered by investor-owned utilities, publicly owned utilities, community choice aggregators, and other eligible entities in California. The report considers federal financing opportunities to be programs that offer loans or other types of financing products to entities administering IUI programs. To the extent that IUI program design choices affect access to federal financing, or third-party capital in general, they are included in the report. Program design criteria are outside the scope of this report.

Following this introductory chapter on IUI, Chapter 2 discusses the evaluation of four federal financing programs that could potentially support IUI programs for building decarbonization and potential application pathways.

Chapter 3 identifies challenges directly and indirectly related to accessing and using third-party capital, including federal financing programs.

Chapter 4 provides recommendations related to improving access to federal financing and using federal financing dollars to enable scalable IUI programs in California after incorporating stakeholder input from this draft report.

CHAPTER 2:
Federal Financing Programs for Inclusive Utility Investment Programs

Federal Financing Opportunities

The CEC identified four potential federal financing opportunities for IUI programs in California. However, at the time of this report, the status and availability of the federal programs discussed are uncertain due to shifts in federal energy policy and may be affected by ongoing litigation, executive action, or federal legislation.

Table 1: Overview of Federal Financing Programs

Federal Agency	Program Name	Program Goals	Target Applicants	Status as of February 2026
U.S. Department of Agriculture	Energy Efficiency and Conservation Loan Program	To help utilities manage their system load growth or more beneficial load profile in communities less than 20,000 people.	Utilities serving rural communities.	Available
U.S. Department of Agriculture	Rural Energy Savings Program	To help rural families & rural small businesses reduce energy costs or consumption.	Not limited to utilities, but applicants must serve rural communities.	Available
U.S. Department of Energy	Title 17 Clean Energy Financing Program	To accelerate the deployment of clean energy and decarbonization technologies in the United States.	No restrictions.	Partially reduced funding, thereby increasing loan costs. Section 1703 appropriation expires September 30, 2026

Federal Agency	Program Name	Program Goals	Target Applicants	Status as of February 2026
U.S. Environmental Protection Agency	National Clean Investment Fund	To provide accessible, affordable financing for clean technology projects across the country and mobilize private capital at scale.	National nonprofit clean financing institutions, to pass through to state and local green banks for further investment.	Grants to non-profits have been awarded but funds are frozen pending ongoing litigation. Unobligated funds have been repealed.

Source: Guidehouse, CEC staff analysis

In addition to the program requirements discussed below, these programs have reporting requirements and federal provisions that borrowers and program implementers must adhere to, including the Davis-Bacon Act, Build America Buy America Act, and National Historic Preservation Act.[19] A summary of additional program details is included in Appendix B.

USDA Loan Programs

The Energy Efficiency and Conservation Loan Program (EECLP) and Rural Energy Savings Program (RESP) offer loans to support energy efficiency and energy upgrade measures with a focus on rural communities. These programs are administered by the Rural Utilities Service (RUS), which is a federal agency that operates under the USDA.

Energy Efficiency and Conservation Loan Program

EECLP provides loans to utilities that provide retail electric service to rural communities for energy efficiency and conservation projects.[20] A rural community is defined as a town or unincorporated area that has a population fewer than 20,000. Eligible communities can be combined into service territories that exceed 20,000.[21]

EECLP supports on-bill financing programs, whereby utilities finance customers' energy efficiency improvements and recoup loan payments through utility bills. Roanoke Electric in

19 Not all federal provisions may be applicable to IUI Program. For example, while Build America, Buy America is a requirement of Title 17 loans, the applicability is to public infrastructure projects.

20 USDA. 2024. "Energy Efficiency and Conservation Loan Program," https://www.rd.usda.gov/programs-services/electric-programs/energy-efficiency-and-conservation-loan-program.

21 7 CFR §1710.2

In California, several small POUs may meet USDA's requirements of serving rural communities, including Healdsburg Electric Utility, Imperial Irrigation District, Lassen Municipal Utility District, Lodi Electric Utility, Merced Irrigation District, Modesto Irrigation District, Trinity Public Utilities District, and Turlock Irrigation District.

North Carolina is one example of a utility accessing EECLP funds for inclusive utility investments.[22]

Rural Energy Savings Program

The Rural Energy Savings Program provides loans for energy efficiency loan programs to consumers in rural communities, which is defined as any area with a population of 50,000 or fewer inhabitants.[23] The loan proceeds may be used to implement measures that reduce energy consumption or energy costs.

A broader range of borrowers are eligible under RESP compared to EECLP, including utilities, nonprofits, municipalities, states, and energy service providers. Previous RESP loans have been made to associations of electric cooperatives and public power districts that serve larger interstate or intrastate areas that encompass many rural communities of fewer than 50,000.[24] RESP loans can be used to support IUI programs offered by rural utility cooperatives.[25]

Key Features and Considerations

Key features, considerations, and loan terms of the EECLP and RESP programs include the following:

- The financing mechanism is direct loans to entities that implement inclusive utility investment programs.
- The interest rate is zero percent for RESP, and the U.S. Treasury rate for EECLP.
- The program is required to serve rural customers, as defined.
- Between 2021 and 2023, loan sizes ranged from $250,000 to $75 million with a median size of $8.3 million.

Only one EECLP loan has been made in the last five years due to stringent rural qualification requirements. USDA has allocated between $32 million and $201 million in RESP dollars each year during the same period.[26]

USDA EECLP and RESP programs would likely be most applicable to rural electric utilities in California such as Plumas-Sierra Rural Electric Cooperative, Anza Electric Cooperative, Trinity Public Utilities District, Lassen Municipal Utility District, and Surprise Valley Electrification Corporation.

22 Energy Efficiency Institute of Vermont. March 2022. "2022 PAYS® Status Update."

23 7 CFR §1719.2

24 USDA. 2024. "USDA Rural Development Grant Awards," https://www.rd.usda.gov/rural-data-gateway.

25 Energy Efficiency Institute of Vermont. March 2022. "2022 PAYS® Status Update."

26 Frances Nwachuku and Tina Reyes of Guidehouse spoke with Robert (Bob) Coates of the USDA on 2/08/2024.

Title 17 Clean Energy Financing Program

The Title 17 Clean Energy Financing Program,[27] administered by the U.S. Department of Energy (DOE) Office of Energy Dominance Financing (EDF), formerly known as the Loans Program Office (LPO), supports projects that decarbonize the energy sector and strengthen the supply of domestic clean energy. From 2010 to 2023, the Title 17 program issued loans totaling $30.6 billion, including $7 billion to projects in California.[28]

The IRA and Infrastructure Investment and Jobs Act (IIJA) expanded DOE's lending authority through the Title 17 programs by a combined $305 billion. The IIJA also created a State Energy Financing Institution (SEFI) pathway. A SEFI is "an entity established by a state, tribal entity, or Alaska Native corporation to provide financing support or credit enhancements for eligible projects."[29] Projects that receive meaningful financial support or credit enhancements from a DOE-designated SEFI do not have to meet an innovation requirement. The innovation requirement requires Title 17-financed projects to launch a new or significantly improved technology or manufacturing process that is technically proven but not widely commercialized.

Title 17, Section 1703

The Inflation Reduction Act provided an additional $40 billion of loan authority for loan guarantees under Section 1703 to remain available through September 30, 2026. Loans made under Section 1703 can finance projects that include one of 13 commercially ready technologies.[30] Three of these technologies are applicable to residential decarbonization:

- Renewable energy systems
- Efficient end-use technology
- Energy storage technologies

Support can be provided as grants, credit enhancements, colending, equity, or subordinate debt for specific project elements. Qualified SEFIs in California include the CEC, the California Infrastructure and Economic Development Bank (IBank), and the Strategic Growth Council.

The DOE's determination of whether SEFI support is "meaningful" is based on several factors, including overall amount of support, risk level of support, and whether the support is offered

27 DOE Office of Energy Dominance Financing. May 2026. *Program Guidance for Title 17 Clean Energy Financing Program,* https://www.energy.gov/lpo/articles/program-guidance-title-17-clean-energy-program.

28 DOE Loan Programs Office. Accessed May 2024. "Portfolio Projects," https://www.energy.gov/lpo/portfolio-projects.

29 DOE Office of Energy Dominance Financing. May 2026. *Program Guidance for Title 17 Clean Energy Financing Program*.

30 Section 1703-eligible technologies include renewable energy systems; advanced fossil energy technology; hydrogen fuel cell technology; advanced nuclear energy; carbon capture and sequestration technologies; efficient electrical generation, transmission, and distribution; efficient end-use energy technologies; production facilities for the manufacture of fuel-efficient vehicles or parts of those vehicles; pollution control equipment; oil refineries; energy storage technologies; industrial decarbonization technologies; and supply of critical minerals.

at below-market terms. A higher degree of risk-taking by the SEFI, such as a grant award, may be viewed by DOE as providing more meaningful support.[31]

Title 17, Section 1706

Under Section 1706, DOE is authorized to guarantee loans of up to a total principal amount of $250 billion through September 30, 2028, for eligible projects. The Energy Dominance Financing program, also known as the Energy Infrastructure Reinvestment (EIR) program, supports a wide range of energy projects.[32] The applicable EIR project areas for IUI are distributed energy projects, such as virtual power plants (VPPs).[33] Section 1706 is likely more restrictive than 1703 for IUI financing because investments in clean energy upgrades would need to qualify as a VPP per DOE's assessment.

Key Features and Considerations

Key features, considerations, and loan terms of the Title 17 Programs include the following:

- The loan interest rate is equal to the U.S. Treasury Rate, plus 0.375 percent, plus a risk-based charge. The risk-based interest charge ranges from 0 to 1.625 percent.[34]
- Loan fees include a one-time facility fee and annual maintenance fees.
- The typical loan size ranges from $100 million to more than $11 billion.
- DOE can guarantee up to 80 percent of eligible project costs, though many projects end up with guarantees in the 50 to 70 percent loan-to-value range.
- Loans can be split into smaller tranches to reduce interest expense during the early stages of a program.
- Loans issued under Section 1703 require financial support from a SEFI to waive the innovation requirement.
- Loans issued under Section 1703 may satisfy the innovation requirement through aggregation of distributed energy projects as a VPP.

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31 DOE Loan Programs Office. 2024. "State Energy Financing Institution Toolkit," https://www.energy.gov/lpo/state-energy-financing-institution-sefi-toolkit.

32 An eligible Section 1706 project as prescribed by statute is one that (1) retools, repowers, repurposes, or replaces Energy Infrastructure that has ceased operations; (2) enables operating Energy Infrastructure to increase capacity or output; or (3) supports or enables the provision of known or forecastable electric supply at time intervals necessary to maintain or enhance grid reliability or other system adequacy needs.

Energy Dominance Financing Amendments, 90 F.R. 48705 (proposed October 28, 2025) (to be codified at 10 CFR Part 609). https://www.govinfo.gov/content/pkg/FR-2025-10-28/pdf/2025-19675.pdf.

33 DOE Loan Programs Office. May 2023. *Program Guidance for Title 17 Clean Energy Financing Program*.

34 DOE. May 2024. *Credit-Based Interest Rate Spread for Title XVII,* https://www.energy.gov/sites/default/files/2015/04/f21/Credit-Based_Interest_Rate_Spread_7.9.14.pdf.

U.S. EPA Program — National Clean Investment Fund

The IRA established the federal Greenhouse Gas Reduction Fund, a $27 billion investment to mobilize financing and private capital for reducing greenhouse gas emissions and air pollution in communities across the nation.[35]

As stated in the introduction of this chapter, the status of the NCIF is uncertain. Although NCIF funds were awarded, in March 2025 the U.S. EPA terminated the grants that are discussed below.[36] Subsequently, the nonprofit recipients challenged U.S. EPA's actions. Furthermore, Public Law 119-2, Section 60002 repealed unobligated GGRF funds. Thus, the availability of the NCIF is pending ongoing litigation.[37]

Administered by the U.S. EPA, the federal Greenhouse Gas Reduction Fund includes the National Clean Investment Fund (NCIF), which provides competitive grant awards for national nonprofit clean financing institutions to develop financing programs for clean energy projects. These financing programs must meet a variety of NCIF-specific requirements, including leveraging private capital, achieving self-sustainability, supporting only commercial technologies, and delivering additional community benefits, among others. Priority project categories for the NCIF are distributed energy generation and storage, net-zero emissions buildings, and zero-emissions transportation.

The U.S. EPA announced awards in April 2024 to three national nonprofit clean financing institutions that will deliver accessible and affordable financing for clean energy projects:[38]

- Climate United Fund
- Coalition for Green Capital
- Power Forward Communities

35 U.S. Environmental Protection Agency. "Greenhouse Gas Reduction Fund." Accessed January 30, 2024, https://www.epa.gov/greenhouse-gas-reduction-fund.

36 U.S. Environmental Protection Agency. March 11, 2025. "Administrator Zeldin Terminates Biden-Harris $20B 'Gold Bar' Grants." Washington, D.C,. https://www.epa.gov/newsreleases/administrator-zeldin-terminates-biden-harris-20b-gold-bar-grants.

37 Coalition for Green Capital. September 2025. CGC Semi-Annual Report January-June 2025. https://cgcdata.app.box.com/s/589pxhwy6mwc66u4cscu3uzjwk8wf7on.

DiGangi, Diana. December 18, 2025. "Court Agrees to Rehear $14B Climate Funding Freeze Case." Utility Dive, https://www.utilitydive.com/news/appeals-court-rehear-climate-funding-freeze/808298/.

Pub. L. 119-21, July 4, 2025. An Act to provide for reconciliation pursuant to title II of H. Con. Res. 14, https://www.congress.gov/119/plaws/publ21/PLAW-119publ21.pdf.

38 USEPA. April 4, 2024. News release. "Biden-Harris Administration Announces $20 Billion in Grants to Mobilize Private Capital and Deliver Clean Energy and Climate Solutions to Communities Across America," https://www.epa.gov/newsreleases/biden-harris-administration-announces-20-billion-grants-mobilize-private-capital-and.

The California Infrastructure and Economic Development Bank (IBank) is a subrecipient of the award to Coalition for Green Capital and expected to receive up to $450 million.[39] IBank has announced three primary financing strategies, based on stakeholder outreach and interviews with market participants, to meet program requirements and deploy funds: loan participations, loan guarantees, and incentive bridge loans.

Key Features

The key features of the NCIF program include:

- Building decarbonization as a priority sector.
- Flexible opportunities and financing mechanisms to fill financing gaps for clean energy projects and technologies.
- Multiple actors with the potential to finance IUI.
- Affordable and accessible financing required to mobilize private capital.
- Requirement to deploy at least 40 percent of investment in low-income and disadvantaged communities.[40]

Application Pathways

This section provides an overview and framework of three potential application pathways applicable to the federal programs discussed in this report. The framework is intended to provide guidance on how electrical corporations, CCA, and other eligible entities in California could access the federal programs discussed to support IUI programs and goals.

Direct Application

In the context of this report, a *direct application pathway* refers to a single entity directly applying to a federal financing program as a borrower. This pathway is the most straightforward and may be best suited to organizations with the resources to manage federal application and administration requirements. Smaller organizations may not have sufficient capital needs or resources to apply for financing individually, aside from the USDA programs.

A direct application is most applicable for DOE Title 17 and USDA RESP programs. Programs and projects that receive SEFI support under the DOE Title 17 program are considered direct applications in the context of this report.

39 California Infrastructure and Economic Development Bank. April 2024. "Scott's Thoughts: April 24, 2024." Accessed May 27, 2024, https://www.IBank.ca.gov/april-24-2024/.

40 EPA Greenhouse Gas Reduction Fund. April 4, 2024. "NCIF and CCIA Fast Facts." https://www.epa.gov/greenhouse-gas-reduction-fund/ncif-and-ccia-fast-facts.

Aggregated Application

An *aggregated application* refers to a joint application to a federal program for multiple parties that have similar goals. This pathway can be used to aggregate financing needs for multiple IUI programs and share the administrative burden and financial risks.

For example, the Title 17 Clean Energy Financing Program, administered by the U.S. Department of Energy, is generally most appropriate for loans greater than $100 million. This would be a challenging threshold for any single eligible entity to meet.[41] Under an aggregated application structure, a single entity would need to represent the collective interests of multiple parties to simplify and coordinate an aggregated application.

An aggregated application is a proven pathway for Title 17 loans, with examples of multiple entities applying via a special purpose vehicle. An aggregated application is likely less relevant for NCIF because IBank is expected to administer financing programs on behalf of the state.

Disadvantages of an aggregated application include the required coordination for the parties involved and associated legal expenses and complexity of a joint application, such as how to share financial risk fairly.

Special Purpose Vehicle

An aggregated application may require the formation of a special purpose vehicle (SPV), a subsidiary created by one or more parent entities. SPVs may be strategic for pursuing federal financing as they limit financial risk for their owner(s)and create a legal entity that accepts assets and directions from multiple owners.

Under the aggregated applicant pathway, an SPV co-owned by a mix of IOUs, POUs, CCAs, RENs, or state agencies would be able to act as an applicant to a federal loan program. In the case that a state agency joins the ownership pool of an SPV, a public-private partnership is formed. A disadvantage of creating an SPV is the significant investment in startup costs with added legal complexities of joint ownership.

State Intermediary and Statewide Loan Facilities

A *state intermediary* refers to a pathway by which a state entity accesses federal financing and then provides access to that capital for eligible entities to support IUIs. For example, a state intermediary could aggregate the capital needs across all or several IUI programs in that state and offer financing applicable to multiple eligible entities. A benefit of this pathway is that the state could absorb the complexities of applying to a federal program and potentially some of the compliance requirements.

One federal financing program that may support a statewide loan facility is the NCIF. A state could use NCIF funds to set up a *statewide IUI loan facility* from which utilities, CCAs, and RENs could apply for financing to fund IUI programs in the state. One key benefit of the loan facility concept is that eligible entities can draw only the loan funds needed for specific project

41 Ardenna Energy comments. July 27, 2023. TN 251350. Docket 23-DECARB-02, https://efiling.energy.ca.gov/GetDocument.aspx?tn=251350.

investments, and then subsequently access additional funds as programs scale. Limiting fund access to what is strictly needed minimizes unnecessary borrowing, thereby reducing interest payments and administrative expenses associated with managing excess funds.

The statewide intermediary pathway is also allowable for USDA RESP loans. As a zero-percent interest loan, the risk and cost to any IUI program are relatively low if program participation rate is lower than expected. However, it is less applicable to a statewide program because the federal requirements would be met only in certain geographic rural areas. Regarding the Title 17 Program, the viability of a state intermediary approach would likely be more challenging due to the complexities of the large loan size and program requirements.

The statewide loan facility concept does not require federal funding as much as a source of seed capital without short-term return expectations. Several state entities have experience with administering loan funds or credit enhancement funds to support state environmental policy objectives, including the California Infrastructure and Economic Development Bank (IBank), the CEC, the California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA) and California Pollution Control Financing Agency (CPCFA).

CHAPTER 3:
Scaling Inclusive Utility Investments

This chapter discusses considerations for accessing the aforementioned federal financing programs and identifies other factors that could impact the growth of IUI programs, as financing alone will likely not be sufficient for IUI programs to scale.

Accessing Federal Financing

Any state agency that is either applying for federal financing or administering a program to support inclusive utility investments will need authority to do so. In addition, lenders are likely to assess how borrowers intend to manage the risk of uncollectable payments from IUI program participants or lost program revenue.

Authority for State Agencies to Incur Debt and Administer Financing Programs

As previously noted, state agencies could pursue federal financing with the intent to make funds available to IUI administrators either as part of an aggregated application in partnership with utilities, CCAs or RENs; or, on their own, by making the funds available through a statewide loan facility. State agencies may incur debt obligations to the federal government depending on the specifics of the federal program.[42] State agencies could also administer a loan facility funded by bond proceeds or state funds.

California Energy Commission

The CEC has existing authority to apply for and accept grants, contributions, and appropriations consistent with program goals or activities it is authorized to implement or administer.[43] The CEC would require additional authority to apply for and incur debt owed to the federal government or its agencies.

The CEC has existing authority to administer specific loan funds and financing programs, including:

- The Energy Conservation Assistance Act (ECAA) program, which offers loans to public schools, public institutions and tribes to finance eligible energy projects.[44]

42 Title 17 Clean Energy Financing and USDA EECLP are direct loan programs that require a counterparty as a borrower of record. USEPA NCIF is a federal grant program for national nonprofits to develop financing programs. IBank is a subrecipient of this grant award.

43 Public Resources Code 25218(a).

44 CEC. "Energy Conservation Assistance Act," https://www.energy.ca.gov/programs-and-topics/programs/energy-conservation-assistance-act.

Public Resources Code 25410–25422.

- Any program using funds from the American Recovery and Reinvestment Act (ARRA).[45]

The CEC would require additional authority to administer a financing program for IUI, which could include capital for a statewide loan facility.

California Infrastructure and Economic Development Bank

IBank has broad authority to apply for and accept federal loan or investment funds and implement those funds in a manner consistent with IUI program goals if such goals meet the federal loan or investment funds requirements. Therefore, IBank could serve as a statewide intermediary or administer statewide financial assistance for IUI programs if it complies with IBank's existing authority. Otherwise, legislation would be needed to amend existing authority.[46]

State Treasurer's Office Authorities

The California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA) has existing authority to apply for and accept grants, contributions, and loans from federal and other public agencies to support the efficient use of energy and lessen the state's dependence on fossil fuels. CAEATFA has structures in place to administer financing programs for utility customers using a variety of financing mechanisms.

Loan Repayment

The federal financing programs discussed in this report are primarily loan programs that require repayment of principal and any interest expense. For IUI programs, this repayment requirement presents a challenge because of the inherent risks of uncollectable cost recovery charges from some participants and potentially lower-than-expected program revenue from low program participation, especially during early implementation. To access and secure funds from federal financing programs, implementers will likely need a credit enhancement, such as a guarantee or support from a publicly funded tariff service reserve, to pledge as collateral or backstop[47] these loans.

Policy makers might traditionally consider two main options to provide this security. One option is to use ratepayer or public funds to backstop the loan. However, recent actions taken in response to the rising electric rates in California, including Executive Order N-5-24 and Assembly Bill 3264 (Petrie-Norris, Chapter 762, Statutes of 2024), have increased scrutiny on the use of ratepayer funds in efforts to support rate affordability.

Another option is assigning the repayment risk to the utility, but this may not fully shield ratepayers, as utilities could seek to recover any losses through future general rate cases. Lenders may view a guarantee from public funds as lower risk than a utility guarantee,

45 Public Resources Code 25460–25464.

46 Government Code 63025.1.

47 A backstop is a guarantee or reserve that covers losses or shortfalls in loan repayment, improving creditworthiness and lowering borrowing costs.

depending on the utility's credit rating and specific regulatory frameworks. Table 2 lays out some key considerations for each of these options.

Table 2: Backstopping Options for Federal Financing

Source of Funds	Considerations
Utilities	• Impacts utility capital structure and is subject to corporate governance requirements and regulatory body approval.[48] • IOUs expect to earn a rate of return when they assume investment risk. This may put upwards pressure on rates.
Ratepayers	• Subject to authorization by the CPUC or local governing boards. • Ratepayers would assume at least some risk and costs, which could impact future rate collections. • Likely considered a low-risk transaction from the perspective of federal financing agencies and therefore could lower financing costs.
Publicly funded financial assistance, inclusive utility investment reserve	• State funding would assume at least some program risk and costs. • Likely considered a low-risk transaction from the perspective of federal financing agencies and therefore may lower financing costs. • Requires statewide implementation and administration for oversight. • Likely has the least impact on rates and future collections from ratepayers.

Source: CEC staff analysis

Other Considerations

The extent to which IUIs can support and accelerate decarbonization of housing depends on the economics of retrofitting existing buildings with energy upgrades. In turn, the ability of programs to grow to scale is a prerequisite for some federal financing opportunities. IUI programs also face regulatory risks to implementation and growth, such as whether IUI program administrators would be subject to consumer lending laws.

Project Economics

48 Pacific Gas and Electric. August 23, 2023. PG&E Response to CEC RFI on Inclusive Utility Investment. TN 251860. Docket 23-DECARB-02, https://efiling.energy.ca.gov/GetDocument.aspx?tn=251860&DocumentContentId=86848.

Building decarbonization strategies such as electrification shift fuel use from gas to electric consumption. Electrification can lead to utility bill savings for many households, but the extent of those savings varies depending on factors such as climate zone and electric utility rates.

As noted in Chapter 1, the extent to which IUI can support investments in building decarbonization depends on the availability and magnitude of energy bill savings. The portion of energy upgrade costs that cannot be recovered through bill savings must come from other sources, such as copayments from participants or incentives.

In comments submitted to the CEC, Clean Energy Works noted that "[…] customer acceptance rates to an offer of an inclusive utility investment are affected by whether the upgrades are sufficiently cost-effective at that site to be made without a copayment by the customer." Clean Energy Works also stated, "Offers made with a higher copayment yield a lower rate of acceptance, which in turn yields higher program implementation costs due to the higher proportion of customers who are interested and seek site assessments but then do not participate."[49]

Ardenna Energy commented, "In many cases, customer bill savings from clean energy investments remain marginal. Field conditions that can include mild weather, high installed costs, and high retail electricity prices diminish the savings from distributed energy upgrades, resulting in low levels of IUI investment dependent on high upfront copayments at such locations unless there are other value streams, incentives, or assignable rebates that could buy down that copayment. Low IUI investment opportunities and high copayment requirements further exacerbate concerns about customer uptake rates and California's ability to scale IUI investments to a level that would unlock federal investment opportunities."[50]

As part of their TOB proposals submitted through the CPUC Clean Energy Financing Options proceeding, SCE and SVCE estimate the portion of energy upgrade costs that would be recoverable for their customers through bill savings as between 15 and 25 percent.[51] This estimate means that while many decarbonization projects could result in bill savings, the savings are marginal and would likely still require additional funding sources, such as rebates, or customer copayments to support the full energy upgrade costs.

Accordingly, careful consideration must be given to understand the bill impacts to households resulting from decarbonization, as well as strategies that could help increase bill savings.

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49 Clean Energy Works comments. July 27, 2023. TN 251217. Docket 23-DECARB-02, https://efiling.energy.ca.gov/GetDocument.aspx?tn=251217.

50 Ardenna Energy comments. July 27, 2023. TN 251350. Docket 23-DECARB-02, https://efiling.energy.ca.gov/GetDocument.aspx?tn=251350.

51 CPUC R.20-08-022 Compliance Filing. May 14, 2024. Joint TOB Proposal of PG&E, SDG&E, SVCE, SCE, SCG. Compliance Filing.

SVCE notes in the joint TOB proposal that "[m]odeling shows that many customers capable of including on-site solar generation can generate sufficient bill savings to make the TOB project economics work; however, there may be other issues with on-site solar generation adoption, particularly with low-income customers (e.g., the need for a roof replacement if not obtained through a solar incentive program)."

Research using comprehensive data, including cost of energy upgrade measures; utility bills; rate data; and other factors like climate zone, season, and building type or vintage, could help determine the effect of energy upgrades on combined gas and electric utility bills. Electrification-friendly rates, as well as onsite storage, energy efficiency, and demand flexibility measures, can further support the economics of IUI.

Moreover, according to a 2020 report by the Building Decarbonization Coalition, capturing the value of decarbonizing buildings beyond energy bill savings, such as grid benefits and nonenergy benefits, could improve decarbonization project economics. These additional benefits may ultimately expand the accessibility and reach of IUI programs by increasing both the number of potential projects that result in net annual bill savings for participants and the magnitude of those bill savings.

In March 2024, the CEC initiated an informational proceeding to determine methods for integrating nonenergy benefits and social costs into resource planning, processes, and decision making. The proceeding may lead to future work on assigning value to these benefits.[52]

Energy Modeling and Data Sharing

Accurate household energy usage data can help implementers model and analyze the effect of potential energy upgrades. This analysis helps programs design cost-recovery charges that ensure net annual bill savings for participants and identify impactful energy upgrades that reduce building GHG emissions.

However, many households in California are served by two distinct utilities for fossil gas and electric end uses. When program participants choose to replace gas equipment with highly efficient electric equipment, such as heat pump water heaters, some energy use and costs shift from the gas bill to the electricity bill. It is important for programs to have a holistic picture of both gas and electricity use to assess impacts to participants' combined gas and electricity costs.

With participant authorization and consent, sharing building gas and electric use data with IUI implementers could improve the accuracy of energy modeling and streamline program implementation and compliance. Eliminating the need for participants to manually provide energy usage records reduces administrative burdens and accelerates enrollment processes. The CEC collects meter-level energy demand data from eligible electric and gas utilities in accordance with California Code of Regulations, Title 20, Section 1353.[53]

According to Ardenna Energy, "Single fuel utilities face data access issues in implementing and administering IUI programs that incorporate measures that impact multiple fuels (including but

52 CEC. March 2024. Order Granting in Part and Denying in Part Petition for Rulemaking on NEBs and Social Costs, https://efiling.energy.ca.gov/GetDocument.aspx?tn=255179&DocumentContentId=90864.

53 20 CCR § 1353.

CEC. September 19, 2023. Blog post. "CEC Interactive Data Tools Show How California is Meeting Its Clean Energy Goals," https://www.calenergyblog.com/post/cec-interactive-data-tools-show-how-california-is-meeting-its-clean-energy-goals.

not limited to fuel switching) *[…]* The current lack of data sharing protocols between utilities with shared customers poses an impediment in this context."[54]

Consumer Lending

Inclusive utility investments face a potential risk to implementation if the Department of Financial Protection and Innovation (DFPI) requires program sponsors or administrators to be licensed as financial institutions and determines that they are subject to the Debt Collection Licensing Act and the California Finance Lenders Law.[55]

As part of their tariff on-bill proposal through the CPUC's Clean Energy Financing Program, the joint filers [IOUs and SVCE] state "If, however, a state, federal agency, or court determines that the Decarbonization Charge is a loan or tantamount to a loan and thus must be regulated or treated as such, the California regulated utilities strongly advocate against being required to operate a TOB model program if subject to consumer lending laws or licensing requirements from state or federal agencies other than the Commission. This is because the utilities' primary business is providing electric or gas service and not lending services beyond those incidentally offered through other programs, such as energy efficiency upgrades through OBF."[56]

Historically, DFPI has exempted utilities from these requirements when offering on-bill, commercial energy efficiency loans under CPUC oversight and more recently extended the exemption to on-bill, commercial loans for clean energy technologies.[57] However, while IUIs are not consumer loans, IUI programs are likely to focus on residential buildings and residential utility customers.

54 Ardenna Energy comments. July 27, 2023. TN 251350. Docket 23-DECARB-02, https://efiling.energy.ca.gov/GetDocument.aspx?tn=251350.

55 FIN 22000 et seq., FIN 100000 et seq.

56 CPUC R.20-08-022 Compliance Filing. May 14, 2024. Joint TOB Proposal of PG&E, SDG&E, SVCE, SCE, SCG. Compliance Filing.

57 DFPI. July 16, 2006. "Commissioner's Release — Finance Lender Law: 60 FS," https://dfpi.ca.gov/commissioners-release-60-fs/.

DFPI. June 24, 2024. Commissioner letter to CPUC Staff Advisory Attorney. OP 8381.

CHAPTER 4: Recommendations

This chapter includes recommendations for consideration that present opportunities to increase access to federal financing and support adoption and growth of inclusive utility investments in California.

1. **Authorize CEC or other appropriate state agencies to access federal financing.** The Legislature could consider authorizing the CEC or other state agencies to borrow directly from federal agencies and administer financing programs focused on decarbonization. This authorization would enable the CEC to pursue federal financing for clean energy programs and support statewide decarbonization goals.
2. **Explore establishing a loan fund for administrators of inclusive utility investments.** The Legislature could consider establishing a low- or no-cost loan fund for investor-owned utilities, publicly owned utilities, community choice aggregators, and other eligible entities to borrow funds for inclusive utility investments as needed. As another option, the fund could be structured as a reserve, which would absorb at least some financial risk for program administrators and could support access to federal financing for inclusive utility investments.
3. **Encourage value streams that support decarbonization.** The Legislature could continue to authorize programs that reduce upfront energy upgrade project costs and capture operational and deferred benefits of decarbonizing buildings. Additional research is needed to identify and develop implementation strategies for other value streams beyond direct bill savings, consistent with the state's goals of reducing GHG emissions, promoting grid resiliency, and maintaining affordability.
4. **Support energy data sharing.** The CEC should explore facilitating energy data sharing with implementers to support accurate estimates of energy savings and bill impacts of inclusive utility investments, in accordance with the Information Practices Act and other applicable laws. Many Californians are served by two distinct utilities for electricity and gas service. Building decarbonization shifts end uses from gas appliances to efficient electric appliances, which causes some costs to shift from customer gas bills to electricity bills. With participant authorization and consent, access to both electric and gas usage data can help implementers select cost-effective energy measures and assess impacts to electricity and gas utility bills. The CEC collects energy demand data in accordance with California Code of Regulations Title 20, Section 1353.

GLOSSARY

Association of Bay Area Governments (ABAG) is a regional planning agency composed of local governments that provides member service programs in areas of housing, land use, energy infrastructure, and financing guided by its equity platform.

Bay Area Regional Energy Network (BayREN) is a partnership of local governments in the nine Bay Area counties that focuses on energy, water, and greenhouse gas reduction at the regional level.

Bill savings refers to a modeled or measured reduction in monthly energy charges due to installation of energy efficiency and electrification measures.

Build America, Buy America (BABA), enacted as part of the Infrastructure Investment and Jobs Act on November 15, 2021, established a domestic content procurement preference for all Federal financial assistance obligated for infrastructure projects after May 14, 2022. The domestic content procurement preference requires that all iron, steel, manufactured products, and construction materials used in covered public infrastructure projects are produced in the United States.

Building Decarbonization Coalition is a national nonprofit organization that aligns stakeholders on a pathway to decarbonize buildings through policy, research, market development, and public engagement.

California Economic Development and Infrastructure Bank (IBank) was created in 1994 to finance public infrastructure and private development that promotes a healthy climate for jobs, contributes to a strong economy and improves the quality of life in California communities. IBank has broad authority to issue tax-exempt and taxable revenue bonds, provide financing to public agencies, provide credit enhancements, acquire or lease facilities, and leverage state and federal funds. IBank is a named subrecipient of the National Clean Investment Fund award.

California Public Utilities Commission (CPUC) is the state regulatory agency responsible for overseeing the safety, reliability, and affordability of public utilities in California, including electricity, fossil natural gas, telecommunications, water, and transportation services. The CPUC regulates the investor-owned utilities and ensures they adhere to state policies, including energy efficiency standards, renewable energy goals, and consumer protection measures. It authorizes energy rates, infrastructure projects, and promotes public safety.

Carbon neutrality means balancing greenhouse gas emissions emitted into the atmosphere with an equivalent amount removed or offset to achieve net zero greenhouse gas emissions.

Coalition for Green Capital (CGC) is a national nonprofit organization that partners with federal, state, and local governments to advocate for and establish green banks. CGC is a selected applicant of National Clean Investment Fund to establish national clean financing institutions.

Community choice aggregators (CCA) are local, public agencies such as cities, counties and other qualifying governmental entities located within the service areas of investor-owned utilities, which purchase or generate electricity for their residents and businesses. Investor-owned utilities continue to provide transmission and distribution, metering, billing, collection, and customer service to retail customers participating in CCA.

Community Development Financial Institutions (CDFIs) are mission driven lenders that provide affordable loans, financial services, and technical assistance to underserved communities. Certified by the U.S. Department of the Treasury's CDFI Fund, they aim to expand economic opportunity by financing small businesses, affordable housing, and community facilities.

Cost of capital has two meanings in this report. Regarding inclusive utility investments, it refers to the cost of debt or financing of project capital, which includes interest expenses and associated loan servicing fees, such as loan maintenance and facility fees. For investor-owned utilities, cost of capital is also referred to as the *rate of return* and is the weighted average cost of debt and equity that a utility has issued to finance its capital investments. The CPUC authorizes the rate of return on equity in cost of capital proceedings.

Davis-Bacon and Related Acts (DBA) are federal rules requiring contractors and subcontractors to pay their laborers and mechanics employed under the contract no less than the locally prevailing wages and fringe benefits for corresponding work on similar projects in the area. DBA applies to contractors and subcontractors performing on federally funded or assisted contracts valued at more than $2,000 for the construction, alteration, or repair of public buildings or public works.

Decarbonization refers to activities that reduce greenhouse gas emissions such as reducing or removing fossil fuel use in buildings.

Drawdown period is the period in which a loan recipient can access capital designated by the lender. Drawdown periods are typically no longer than 3 years. Interest starts to accrue when the funds are drawn.

Electrification refers to converting end uses from a combustible fuel source, such as fossil natural gas or propane, to electricity.

Funding in the context of this report is any grant-based award or incentive that does not require repayment.

Green banks are public, quasipublic, or nonprofit, mission-driven institutions that use innovative financing to accelerate the clean energy transition and promote sustainability. In California, the State Treasurer's Office and California Economic Development and Infrastructure Bank act as the state's green bank, supporting California's climate and sustainability goals through project financing, while creating good jobs and promoting economic development.

Inclusive utility investment (IUI) is a financing mechanism that allows utilities and program sponsors to make site-specific, behind-the-meter energy investments in building

energy efficiency and decarbonization upgrades and recover the cost of investments through customer bill payments, in alignment with approved tariffs. Financing is secured to the meter, meaning subsequent building occupants will assume responsibility for repayment of the investment.

Inflation Reduction Act (IRA) is a federal law that provides billions of federal dollars for clean energy and climate action through a combination of tax incentives, grants, loans, rebates, and other investments. It was signed into law by President Joe Biden on August 22, 2022.

Information Practices Act is a state law, codified in Civil Code Section 1798 et seq., that protects the privacy of individuals and limits how state agencies collect, use, maintain, and share personal information.

Investor-owned utility (IOU) is a private company that provides public utility service, such as electricity or fossil natural gas and is owned by shareholders who invest in the company. An IOU is a for-profit entity that operates under auspices of the California Public Utilities Commission and Federal Energy Regulatory Commission. Major IOUs include Pacific Gas and Electric, Southern California Edison, San Diego Gas & Electric, and SoCalGas.

Pay As You Save (PAYS®) is a trademarked inclusive utility investment program model that includes several consumer protections to effectively reach low- and moderate-income households, such as certification that savings estimates exceed payments.

Publicly owned utility (POU) is a nonprofit utility that is owned and operated by a public agency. POUs provide electricity or other utility services directly to residents and businesses within their jurisdiction. They are governed by local governing boards, and their primary focus is serving the community. Examples include the Los Angeles Department of Water and Power and the Sacramento Municipal Utility District.

Rate base is the value of property on which an investor-owned utility is authorized to earn a rate of return, in accordance with Federal Energy Regulatory Commission and CPUC policies.

Silicon Valley Clean Energy (SVCE) is a community choice aggregator serving residents and businesses in 13 Silicon Valley Communities.

Special purpose vehicle (SPV) is a subsidiary company created by one or more entities with a specific legal purpose, usually to mitigate certain financial risks. In the context of this report, an SPV can be an entity created and co-owned by any combination of IOUs, POUs, CCAs, RENs, state agencies, financial institutions, or other organizations to facilitate a joint application for federal financing.

State Energy Financing Institution (SEFI) as defined by the U.S. Department of Energy Title 17 Clean Energy Financing Program, is an entity established by a state, Tribal entity, or Alaska Native corporation, to provide financing support or credit enhancements for eligible projects and to take steps to reduce financial barriers to the deployment of existing and new eligible projects. SEFIs may include state green banks or financing authorities that promote investments in renewable energy, energy efficiency, and other clean energy projects. In

California, the California Energy Commission, California Economic Development and Infrastructure Bank and the Strategic Growth Council are SEFIs.

Statewide intermediary refers to a state entity that accesses federal financing, then provides access to that capital for all eligible entities within the state to support inclusive utility investments.

Tariff on-bill financing (TOB) is also known as inclusive utility investment**.**

TECH Clean California (TECH) is a statewide initiative to accelerate the adoption of clean space and water heating technology across California homes.

U.S. Department of Agriculture Energy Efficiency and Conservation Loan Program (EECLP) is authorized to loan up to $250 million per year to utilities to finance energy efficiency and conservation projects in rural communities with populations fewer than 20,000.

U.S. Department of Agriculture Rural Energy Savings Program (RESP) provides loans for eligible borrowers to offer energy efficiency loan programs for consumers in rural communities, which is defined as any area with a population of 50,000 or fewer inhabitants. The loan proceeds may be used to implement measures that reduce energy consumption or energy costs.

U.S. Department of Energy (DOE) Title 17 Clean Energy Financing Program supports projects that decarbonize the energy sector and strengthen the supply of domestic clean energy. The program offers loan guarantees by the DOE Office of Energy Dominance Financing (EDF) for commercial loans or loans from the U.S. Treasury's Federal Financing Bank.

U.S. Environmental Protection Agency (USEPA) Greenhouse Gas Reduction Fund (GGRF) authorized by the Inflation Reduction Act, is a $27 billion federal investment to mobilize financing and private capital for projects focused on reducing greenhouse gas emissions and air pollution. It consists of the National Clean Investment Fund, Clean Communities Investment Accelerator, and Solar for All programs.

APPENDIX A:
Additional information on IUI Programs Referenced

Table A-1: Comparison of Key Features of IUI Programs Referenced

State	Utility(ies) & Program Name	Program Purpose	Size/Scale[58]	Status	Noteworthy/Key Considerations	Source of Capital
MO	Ameren, Evergy, & Spire PAYS® Programs	Energy efficiency		• Ameren Electric & Energy- Active since 2021. • Ameren Gas & Spire – Active since 2023.	Compared to other IUI programs, represents a relatively large capital investment over a short timeframe.	Utility Capital Investments
NC	Duke Energy: Improve & Save TOB Program	Energy efficiency	Targets at least 5,800 projects for residential customers, more of IRA rebate funds are available to reduce the cost of investment.	Approved in December 2023	One of the first programs announced by a large IOU. Duke Energy has over 2 million customers.	• Ratepayer financing • $6 million utility capital investment.

58 For reference, in California, the largest utilities have the following customer bases: Pacific Gas and Electric: 5.5 million electric and 4.5 million gas; Southern California Gas Company: 5.9 million gas; Southern California Edison: 5 million electric; Los Angeles Department of Water and Power: 1.5 million electric customers; San Diego Gas & Electric: 2.4 million gas and electric; and Sacramento Metropolitan Utility District: 650,000 electric.

State	Utility(ies) & Program Name	Program Purpose	Size/Scale[58]	Status	Noteworthy/Key Considerations	Source of Capital
VT	Multiple Vermont Utilities: Weatherization Repayment Assistance Program (WRAP).	Comprehensive weatherization, electrification measures if project cash-flows allow	Initially targeted 1,000 projects but scaling down due to challenges with uptake.	Active since early 2023; still recruiting utilities to participate.	• State housing authority partnering with utilities • Prioritizes households at or below 120 percent of median income with high energy burdens.	$2 million in state funds

Source: CEC staff analysis utilizing the following source data:

i. EIA Residential Energy Usage Data 2022. https://www.eia.gov/consumption/residential/data/2020/index.php?view=state#ce. Accessed on April 30, 2024.

ii. Ameren Missouri 2024-26 MEEIA Energy Efficiency Plan: 152226 (mo.gov). Accessed on May 14, 2024.

iii. Duke Energy Progress LLC: NCUC Approval of Residential TOB. ViewFile.aspx (ncuc.gov). Accessed on March 27, 2024.

iv. Duke Energy News. January 12, 2024. Duke Energy Carolinas receives approval for new rates in North Carolina, implements new programs to help customers. https://news.duke-energy.com/releases/duke-energy-carolinas-receives-approval-for-new-rates-in-north-carolina-implements-new-programs-to-help-customers. Accessed May 10th, 2024.

v. Vermont Housing Finance Authority (VHFA). Weatherization Repayment Assistance Program (WRAP). WRAP-overview.pdf (vhfa.org). Accessed May 21, 2024.

vi. Vermont Housing Authority (VHFA). Weatherization Repayment Assistance Program: WRAP slides_CSM_2-16-23.pdf (vermont.gov). Accessed May 21, 2024.

vii. Environmental and Energy Study Institute. August 2025. Vermont Weatherization Program Helps Residents Cut Energy Costs and Pollution. https://www.eesi.org/articles/view/vermont-weatherization-program-helps-residents-cut-energy-costs-and-pollution. Accessed February 11, 2026.

APPENDIX B:
Federal Financing Programs Comparison

Table B-1: Comparison of Federal Financing Programs

Category	DOE EDF Title 17 Financing	USDA EECLP	USDA RESP	USEPA NCIF
Overview	Loan guarantees to accelerate deployment of clean energy, decarbonization tools and infrastructure reinvestment to reduce GHG and air pollution.	Loans to finance energy efficiency and conservation projects for qualifying utilities in the Rural Utilities Service (RUS) territories.	Loans to rural utilities and other companies that offer energy efficiency loans to customers for cost-effective energy efficiency measures.	Grants to three (3) new national nonprofit financing institutions that will partner with state and local green banks to leverage private capital and provide accessible and affordable financing for clean energy projects. The status of the program is uncertain pending ongoing litigation.
Status	• Section 1703 appropriation expires September 30, 2026. • PL 119-21 repealed credit subsidy.	Available	Available	• Grants to non-profits have been awarded but funds are frozen pending ongoing litigation. • PL 119-21 repealed unobligated funds.

Category	DOE EDF Title 17 Financing	USDA EECLP	USDA RESP	USEPA NCIF
Eligible Applicants	• Wide range of applicants including private entities, regulated utilities, and public power entities. • Possible aggregated application on behalf of utilities and/or CCAs through an apex entity or state agency.	Utilities with direct or indirect responsibility of providing retail electric service to customers in a rural area.	• Entities providing retail electric service in rural areas. • Utilities, nonprofits, municipalities, states, and eligible energy efficiency service providers.	• Coalition for Green Capital has been selected as one of the national nonprofit green banks, with California IBank as a named Coalition Member. • California public and private entities are expected to apply for capital to IBank, though CGC and the other awardees also plan direct investments.
Relevant Project Categories	Section 1703: • Renewable energy systems • Efficient end-use energy technologies • Energy storage technologies "Innovation Requirement" can be waived if project receives meaningful financial support from a State Energy Financing Institution (SEFI). Virtual Power Plants may also meet the Innovation Requirement. Section 1706: Distributed energy	• Energy efficiency measures • Distributed generation for on or off grid renewable energy systems • Demand side management Energy audits • Power factor correction equipment on the consumer side of the meter	Funds may be used to implement energy-saving measures, or to help reduce energy costs. Project types include: • Energy efficiency • Renewable energy • Energy storage • Energy conservation measures and related services, improvements, financing, or relending	• Distributed Energy Generation and Storage • Net-Zero Emissions Buildings • Zero Emission Transportation

Category	DOE EDF Title 17 Financing	USDA EECLP	USDA RESP	USEPA NCIF
Funding Type	Loan guarantees: 100% of principal and interest for projects financed by direct loans from the Federal Financing Bank (FFB); 90% of principal & interest for projects financed by commercial debt.	Direct Loans	Direct Loans	CGC expects to provide equity, credit enhancements, junior debt, and senior debt, both directly and through coalition members.
Beneficiary Requirements	Must include an analysis of how the proposed project will engage with and affect associated communities, as part of a Community Benefits Plan.	• Entire territory must be a rural community, defined as a town or unincorporated area that has a population less than 20,000. • Eligible communities can be combined into service territories that exceed 20,000.	Must serve rural families or small businesses; generally, a rural area means an area with a population of 50,000 or less.	Must meet qualified project requirements, including leveraging private capital, supporting only commercial technologies, delivering other community benefits, and being self-sustaining, among others.
Capital Available	• Section 1703: $55 billion in loan guarantee. • Section 1706: $250 billion in loan guarantee.	$250 million per year in federal loans and financial assistance under the purview of the USDA's RUS.	Annual total investment has ranged from $32 million to $201 million between fiscal years 2021 and 2023.	• $5 billion from EPA GGRF to be administered by CGC; IBank expects to receive up to $450 million. • CGC and IBank aim to leverage GGRF funding to access significant amounts of private capital.

Category	DOE EDF Title 17 Financing	USDA EECLP	USDA RESP	USEPA NCIF
Loan size and LTV	• Minimum of $100 million recommended due to the fixed costs and expected application fee of $2-$3million. • Guarantee for up to 80% of eligible project costs, although any projects end up in the 50 to 70% range.	Information not available	• Median loan size was $8.2 million between fiscal years 2021 and 2023. • Loans have ranged from $250,000 to $75 million in that 3-year period.	Terms of investment dependent on asset and ability to meet program goals.
Terms / Tenor	Up to the shorter of either thirty (30) years or ninety percent (90%) of asset.	Up to the greater of fifteen (15) years or expected life of asset.	Up to 20 years	Terms of investments to be set by IBank after award from CGC is finalized.
Interest Rates and Fees	U.S. Treasury Rate + 0.375% + Risk-Based Charge (0.000-1.625%).	U.S. Treasury Rate	0% interest and no fees	Interest rates and fees set based on product and creditworthiness of the borrower.
Disbursement / Fund Drawdown	• Drawdown periods are not preset but are determined during contract negotiations. • Borrowers can negotiate for milestone-based tranches OR single lump sum drawdown.	Information not available.	Drawdown timeline and amounts are determined on an individual case by case basis and finalized during the contracting process.	Drawdown and disbursements are determined during deal underwriting and diligence.

Category	DOE EDF Title 17 Financing	USDA EECLP	USDA RESP	USEPA NCIF
Additional terms	• Can share first lien position with other debt (pari passu) but cannot be subordinate. • No revolving credit facilities.	Loans made by RUS borrowers to customers may be secured or unsecured and charge up to 1.5% interest above the interest rate from RUS to the borrower.	• Recipient utilities may pass interest charges of up to 5% on to customers to fund reserves for repayment or to cover costs related to program administration. • Up to 4 percent of the loan total may be used for startup costs.	
Recent California Usage	No allocations to California projects since 2011.	• No loans made to CA borrowers since 2017; Only one EECLP loan disbursed nationwide since 2017. • Difficulty in accessing the loan is due to stringent rural definitions.	• One California award made between 2017 and 2023, to Anza Electric Coop. • 47 loans approved nationwide, to cooperative and publicly owned agencies during the same period.	N/A; new program.

Category	DOE EDF Title 17 Financing	USDA EECLP	USDA RESP	USEPA NCIF
Federal Flowdown Requirements	Included but not limited to: • National Environmental Policy Act (NEPA) • Davis Bacon Act / Prevailing Wage requirements • Cargo-Preference Act of 1954, 46 U.S.C. • 55305 • Build America, Buy America (BABA)	Included but not limited to: • Federal Acquisition Regulation (FAR); especially clause: 52.216-7 (Allowable Cost & Payment) • Section 504 of the Rehabilitation Act of 1973 • Environmental and Energy Requirements. Must meet specific performance threshold to ensure funds are utilized effectively.	Included but not limited to: • Equal Credit Opportunity Act • Nondiscrimination in Federally Assisted Programs of the USDA • Americans with Disabilities Act of 1990 • Title VI of the Civil Rights Act of 1964 • Section 504 of the Rehabilitation Act of 1973	Included but not limited to: • Davis-Bacon Act / Prevailing Wage Requirements • Build America, Buy America • Uniform Relocation Assistance and Real Property Acquisition Policies Act • National Historic Preservation Act
Considerations	• Funds need to be committed on or before September 30, 2026. • Requires source of state funds (from SEFI) to waive innovation requirement. • Application process may take 6 months to 1 year.	Utility programs must be approved by USDA Rural Utilities Service (RUS) prior to loan application. Single award nationwide in last 5 years.	Cost effectiveness requirement means USDA would need to accept that only a portion of decarbonization project costs are recoverable through bill savings.	The status of the program is uncertain pending ongoing litigation.

Source: CEC staff analysis utilizing the following source data:

i. Loan Program Office (LPO), 2023. Loan Program Guidance for Title 17 Clean Energy Financing Program. program-guidance-title-17-clean-energy-program. Accessed May 16, 2024.

ii. USDA: Energy Efficiency and Conservation Loan Program | Rural Development (usda.gov). Accessed on May 22, 2024.

iii. USDA: Rural Energy Program (RESP) Program. Rural Energy Savings Program | Rural Development (usda.gov). Accessed May 22, 2024.

iv. EPA National Clean Investment Fund (NCIF) – Greenhouse Gas Reduction Fund (GGRF). National Clean Investment Fund | US EPA. Accessed May 23, 2024.

v. Scott Wu. "Scott's Thoughts: April 24, 2024." IBank. https://www.ibank.ca.gov/april-24-2024/. Accessed May 27, 2024.

vi. USDA Tool Kit for Loan Applications Associated with EECLP Program. Accessed on May 20, 2024.

vii. USDA: Energy Efficiency and Conservation Loan Program Factsheet (usda.gov). Accessed February 15, 2024.

viii. Coalition for Green Capital (CGC), 2024. Coalition for Green Capital NCIF Application Details. https://www.epa.gov/system/files/documents/2024-04/cgc_narrative_proposal1_0.pdf. Accessed May 20, 2024.

ix. USDA RESP Data Repository. Rural Investments – Data Tables. https://www.rd.usda.gov/rural-data-gateway/rural-investments/data. Accessed May 21, 2024

x. Coalition for Green Capital. CGC Semi-Annual Report January-June 2025. September 2025. https://coalitionforgreencapital.com/wp-content/uploads/CGC-NCIF-Semi-Annual-Report-2025-1.pdf