Opinion Dynamics

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WE CAN HAVE THE CAKE AND EAT IT TOO:

A CASE STUDY OF HOW FINANCING CAN BRING CLEAN ENERGY PROJECTS TO DISADVANTAGED COMMUNITIES

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Overview

- Explore the financing strategies to give disadvantaged communities (DACs) equitable access to clean energy
- California pursues ambitious climate protection goals in the energy sector aiming to decarbonize the retail delivery of electricity by 2045
  - These goals require the involvement of all California customers
- Recent market study characterizing the barriers and opportunities of DACs across the state
- Pros and cons of two financing models in the marketplace today

California and Climate Change

Latest reports on climate change have become increasingly dire.

- If greenhouse gas emissions continue, California will experience significantly higher daily temperatures, heat waves, and wildfire risks.
- Carbon emissions will rise if electric generation remains fossil-fuel based due to increased use of air conditioning.
- The increase in temperatures disproportionally affects vulnerable populations.

California has introduced bills aiming to:

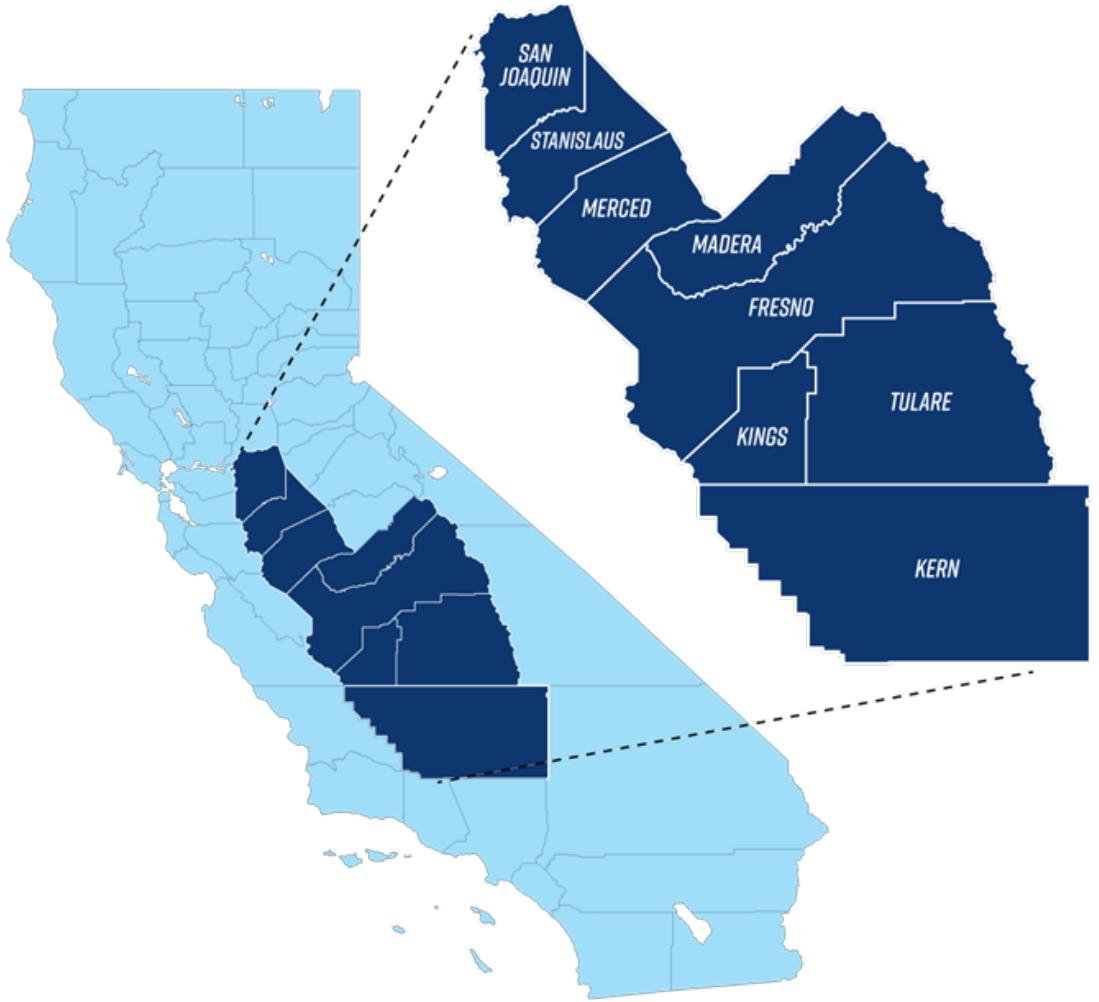
- Increase renewable electricity procurement with a goal of 50% by 2030
- Double statewide energy efficiency in electricity and natural gas by 2030
- Target of 100% carbon neutrality by 2045 and maintain net zero emissions thereafter

No One Left Behind

- California has 39 million people
- California has the third lowest rate of homeownership in the U.S. (55.2%.)
- Residents living in California's DACs will be disproportionately affected by climate change
- California is one of the three states tied for highest poverty rate (among Louisiana and Pennsylvania)

The San Joaquin Valley

- Contains counties of Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare.
- The SJV is home to many low-to-moderate Californians who lack access to natural gas pipelines
  - Often rely on electricity, propane, and wood
  - Results in a disproportionate energy and environmental burden
- At least 25% of residential households are enrolled in the California Alternate Rates for Energy (CARE) program



The SJV Data Gathering Effort

Important trends revealed:

1 Propane is the most common alternative fuel

72% of households without access to natural gas use propane

2 Access is the main barrier; not preferences

75% say the main reason they use propane is because they lack access to natural gas

3 Reliance on alternative fuels significantly increases energy costs

Regardless of income, customers who do not have access to natural gas pay on average 32% than customers with natural gas.

4 Reliance on alternative fuels significantly increases energy costs

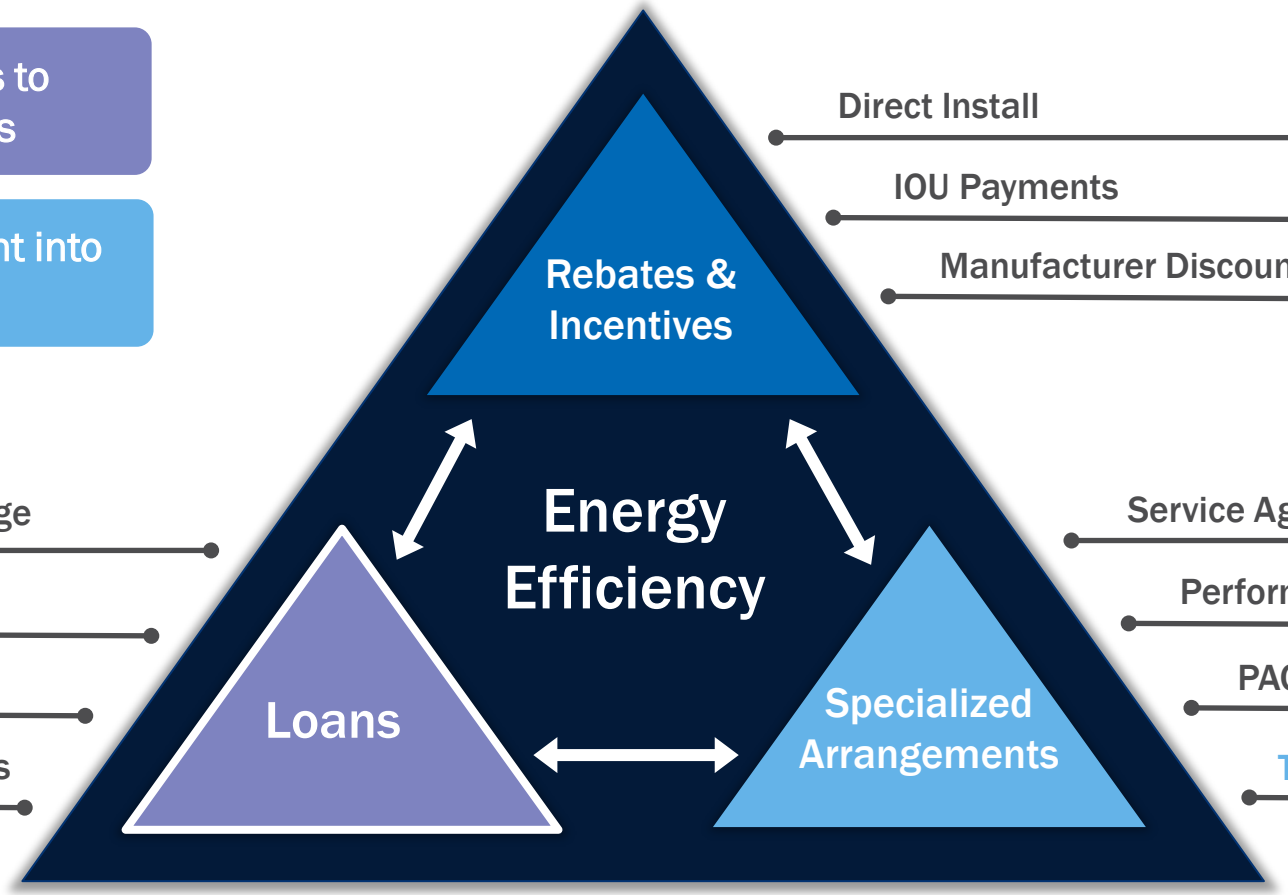
The SJV Data Gathering Effort

- While natural gas would be preferrable to propane, expanding to natural gas pipelines would require a massive investment.
  - Anticipating this, the CPUC is looking for alternatives to increasing natural gas access through several pilots.
- Financing, particularly programs that provide access to affordable financing for LMI or credit-challenged individuals, could help households afford high-efficiency electrification technologies, especially if paired with available incentives.
- There is no one-size-fits-all solution for the SJV DACs, but financing can be a major pinch-hitter where increasing access to natural gas does not make economic sense.

Financing Options

Loans: Borrowed funds to eliminate up-front costs

Tariff On-Bill: Investment into potential savings



- Direct Install
- IOU Payments
- Manufacturer Discounts
- Home Equity Line of Credit/Mortgage
- Credit Cards
- Profit Based Financial Institution
- Mission Based Financial Institutions
- Service Agreements
- Performance Contracting
- PACE
- Tariff On-Bill

A Deeper Dive into Financing Options

Loan

- Homeowner qualifies for and borrows funds
- Ideally, monthly bill reduction from energy savings is ≥ to the monthly loan repayment amount
- Upon sale of the home
  - borrower usually must pay off the loan
  - some allow transfer to next occupant
- EE and RE financing can help reduce household hassle costs

Tariff On-Bill

- Utility company invests in EE improvements at a specific residence
- Payment for those improvements recovered over time through the utility bill
  - Paid by current occupant
- Upon sale of the home
- Homeowners not required to repay the loan
- Once repayment is complete
  - renters expect lower energy bills
  - landlords can market the energy efficiency

Two Financing Options for LMI Customers

Prompt	Loan	Tariff
Allowable repayment mechanism?	On-bill or off-bill	On-bill only
Where does the financial obligation lie?	Usually, the individual who applied for the loan, but some states allow loans to be attached to meter, so if the resident moves, the next resident takes over the loan payments.	With the meter. If the member-consumer moves, the financial obligation stays where the energy improvements were made, and the new resident takes over payments.
Disconnect for non-payment?	Sometimes	Usually, yes
What laws are applicable?	Federal and state consumer lending laws, possibly some state public utility commission regulations	Regulations from state public utility commission, if applicable
Is bill neutrality a common program requirement?	Bill neutrality is rarely required for loan-based financing programs	Bill neutrality is a requirement for nearly all meter-attached financing programs

Example of a Loan

After 2.5 Years of REEL Being Implemented:

- Issued loans to over 200 households
- 1/3 are low- to moderate-income (LMI)
- Opportunity: Lenders say they would not be able to offer the same interest rates, terms, and loan amounts without REEL

Further Consideration:

- Barrier: Offering EE loans (even with low interest rates) is not viewed as a solution for truly low-income borrowers
  - Stakeholders are weary of programs that add financial stress to recipients
- Challenge: Creating a better option for moderate-income borrowers
  - For lower-income households, the savings-to-investment ratio should be > 1.0
  - Design changes could reach more LMI customers

Example of an On-Bill Tariff

Pay-As-You-Save system (PAYS)

- Relatively new program with reports of success and challenges
- **Opportunity:** LMI customers can reduce GHG emissions from residential buildings and increase energy savings
- **Challenge:** The electric utility is not allowed to claim gas savings and can only count electric savings.
- **Barrier:** Offering this model to dual-fuel customers can't meet the cost-effectiveness to participate.
  - This has caused the utility to introduce a monthly "copay" requirement for customers
  - Goes against the initial intent of this program to be "free" to customers and "cash positive" based on the energy savings.

Weighing the Pros and Cons

Loans

PROS

- Direct funding to qualified borrowers
- Eliminates upfront costs of EE investment
- Considered a “safer” investment

cons

- Some LMI may struggle to qualify
- Renters are not incentivized

Tariff on-bill

PROS

- Credit scores, debt-to-income ratios, or screen for homeownership is not required
- Considers the potential monetary savings achieved

cons

- Ineffective for dual-fuel customers
- Little data from diverse climates and jurisdictions

Conclusions

- Loans offer a safe option to procure investments primarily for homeowners looking to eliminate up front energy efficient upgrade costs.
  - Credit screening is involved to insure the loan is paid back.
- On-Bill Tariffs sidestep the cons of loans by associating the repayment of funds with the utility meter location, not an individual household account.
  - Not all programs are identical, and project policy changes can help this type of financing reach larger numbers DACs
- It is important to incorporate specific consumer protections (e.g., energy project performance) to mitigate unnecessary risks, particularly for LMI and DACs. The affordability threshold must be factored into finance plans.

Opinion Dynamics

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