

DOCKETED

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Overview of Clean Energy in Low-Income, Multifamily Housing

Joint Agency Workshop on Clean Energy in Low-Income Multifamily Buildings

California Energy Commission

May 30, 2018

Isaac Sevier

Natural Resources Defense Council

NRDC & Energy Efficiency for All

Founded in 1970, the **Natural Resources Defense Council** works to safeguard the earth—its people, its plants and animals, and the natural systems on which all life depends. (nrdc.org)



Energy Efficiency For All is a national initiative formed by several organizations including NRDC, National Housing Trust, Elevate America, the Energy Foundation, and the JPB Foundation. In California, EEFA advances healthy, affordable energy solutions for underserved California renters. (ee4a.org)



40% of Households in California are Low Income

200% of Federal Poverty Level in 2018 for household of 4 is \$50,200

Likely to be at least one of these:

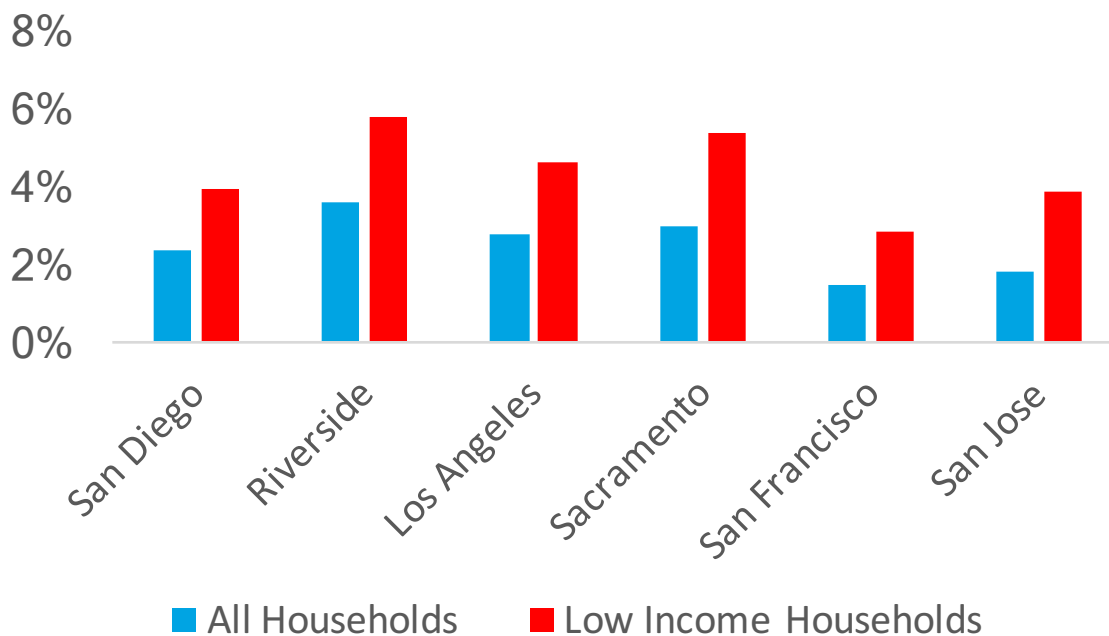
- Renting your home
- Living in multifamily housing
- Non-white
- Elderly or have someone elderly living in your home (on fixed incomes)
- Physically handicapped
- Energy insecure: making choices among energy, housing, food, medicine

HHS Poverty Guidelines for 2018 & US Census Bureau

And as a result, suffer from...

- Toxic stress response (children)
- Parental fear, housing instability (adults)
- Higher rates of asthma and respiratory problems
- Higher rates of heart disease
- Long-term negative implications for human development

Energy Burden in Low Income Households Is 160%-210% Higher Than for All Households

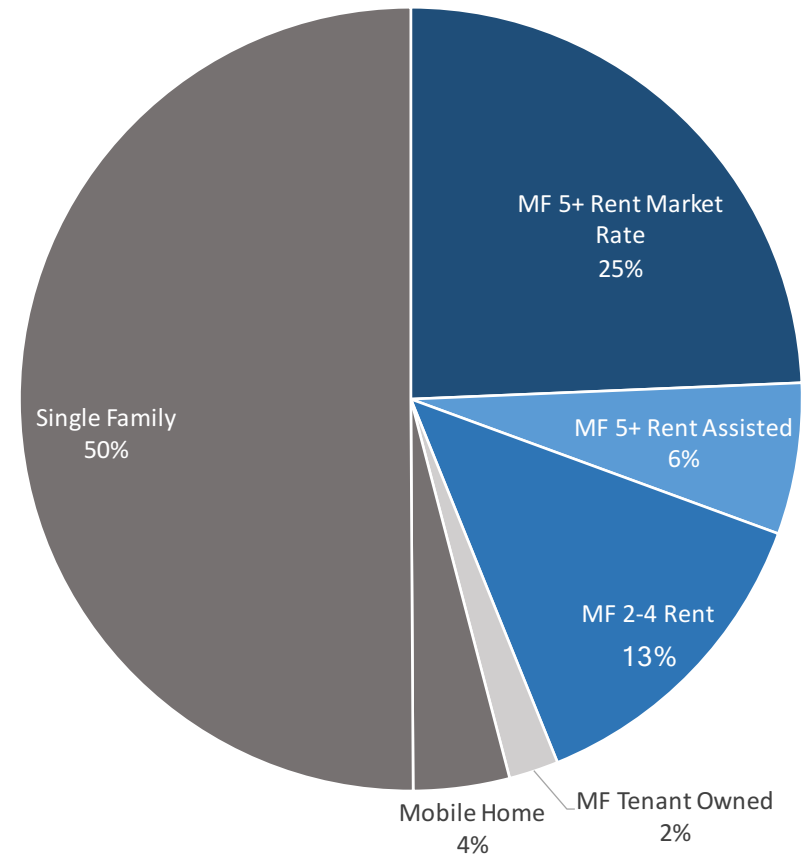


- Energy burden: displayed as *percentage* of income used to cover energy costs
- Low income Californians pay 1.6-2.1 times more of their income for energy in these 6 MSAs
- This does not represent the hottest climate zones in the Central Valley

Drehobl, Ross. "Lifting the High Energy Burden in America's Largest Cities" (2016). American Council for an Energy-Efficient Economy.

Low Income Housing Profile

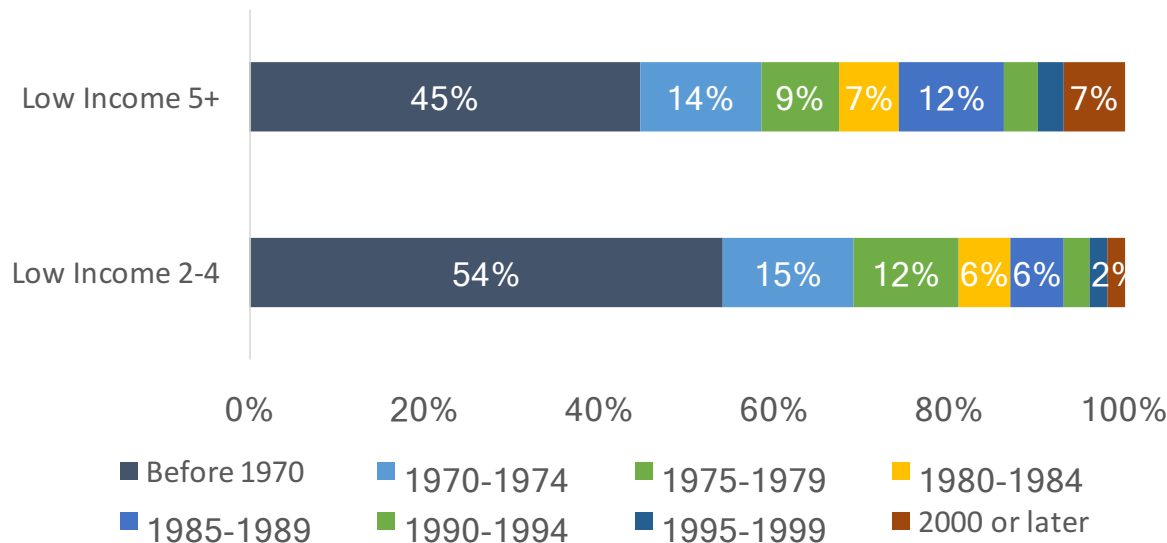
- 5.1 million households in California have low incomes (LI)
- 44% of CA LI households live in rented Multifamily (MF) housing (2.25 million households)
- Multifamily housing is not uniform and is treated differently by programs based primarily on 2 characteristics:
 - Number of units: Buildings with 5+ units vs. 2-4 units
 - Rental type: market rate vs. rent-assisted



The Cadmus Group. "ESA Program Multifamily Segment Study Vol. 1" (2013). & US Census Bureau.

Majority of Multifamily Housing Built Before 1980

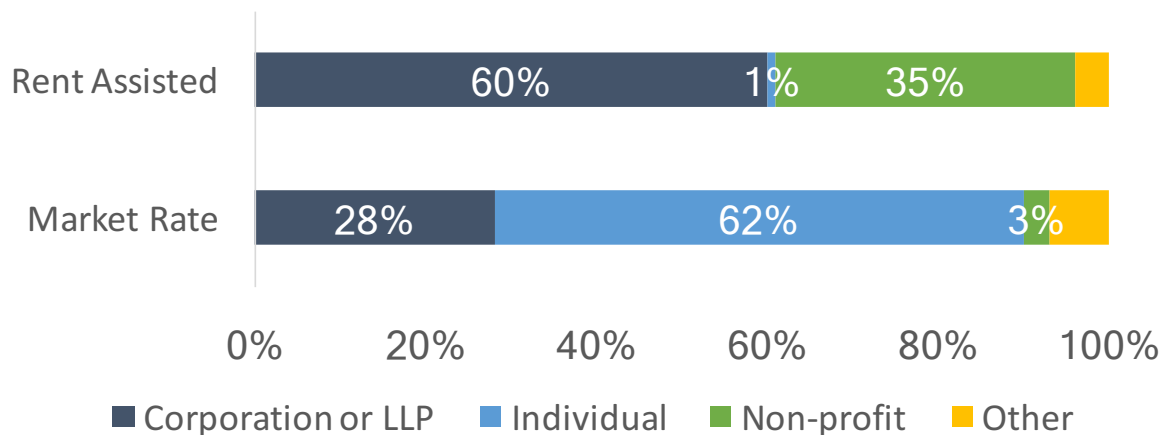
Proportions of LI MF housing vintages



- 80% of 5+ unit properties were built before 1980
- 70% of 2-4 units were built before 1980
- Represent large opportunity for envelope and equipment measures

Ownership of Multifamily Housing is Complex

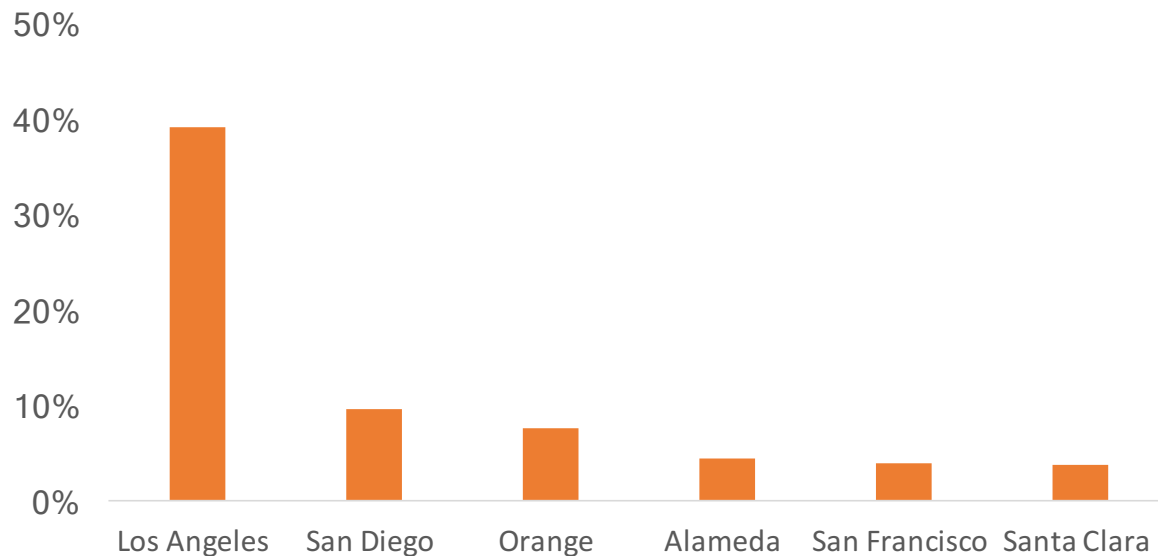
Proportions of LI MF housing ownership



- Rent Assisted properties are largely owned by corporations and non-profit groups
- Market Rate properties are largely owned by individuals
- Owners often comprised of multiple stakeholders requiring multiple approvals for any decision

The Cadmus Group. "ESA Program Multifamily Segment Study Vol. 1" (2013).

68% of All LI MF Housing Is in 6 Counties But Energy Consumption Is Highest in Central Valley

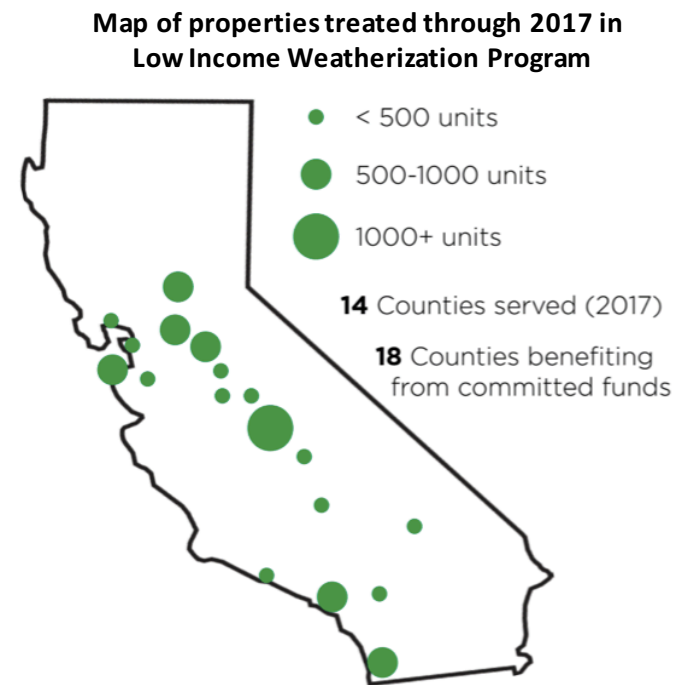


- These 6 counties represent 68% of all LI MF housing
- Housing stock location doesn't correspond to location of the highest energy usage
- Recommend a comprehensive approach that includes Central Valley communities

The Cadmus Group. "ESA Program Multifamily Segment Study Vol. 1" (2013).

Understanding Clean Energy Opportunities Needs More Attention, Existing Programs Show Promise

- No study to date has evaluated low income energy efficiency potential
- Major investor owned utility *Energy Savings Assistance* programs in California report an average **4.5% savings**
- The Community Services and Development *Low Income Weatherization Program* reports average **44% savings** in LI MF buildings treated
- New Solar on Multifamily Affordable Housing program launches in late 2018 and will install 300 MW of solar over 10 years



California Climate Investments. *Low Income Weatherization Program for Multifamily Properties Program Summary (2018)*.

Multifamily Faces Split Incentive Barrier And Known Issues With Metering Data

Building energy cost is a function of energy use by occupants, building envelope condition, and efficiency of equipment.



Split incentive problem exists when costs and benefits for improvements fall to different parties, e.g.:

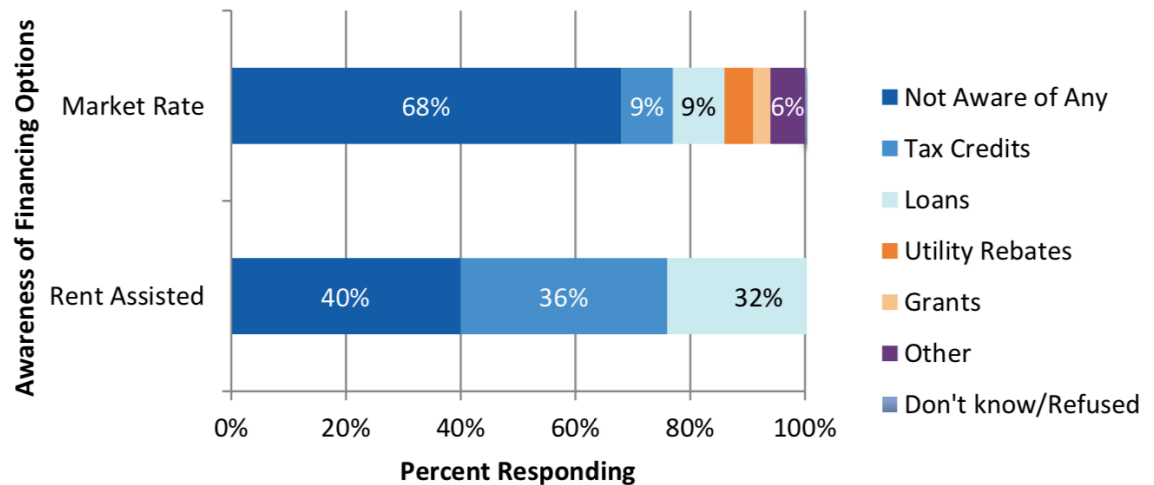
- Occupant is responsible for paying utility bills directly but has no control over building condition or equipment
- Occupant is not responsible for paying utility bills directly and has no signal to conserve

- Adding to the split incentive problem, MF buildings have different utility meter configurations (master meter vs. submeter) that are an obstacle for whole building evaluation of retrofits
- Retrofit projects are not always evaluated on an economic basis by building but by property or portfolio especially if central water heating is done for multiple buildings
- Submeters can include common area meters and tenant meters
- SOMAH to deliver majority of solar benefit to building tenants

Most LI MF Owners Lack Knowledge of Financing Options Available for Retrofits

- Owners of Market Rate stock largely unaware of financing options for energy retrofits
- Owners of Rent Assisted stock more aware than Market Rate but lack knowledge about rebate and state incentive programs

Awareness of financing options by property type



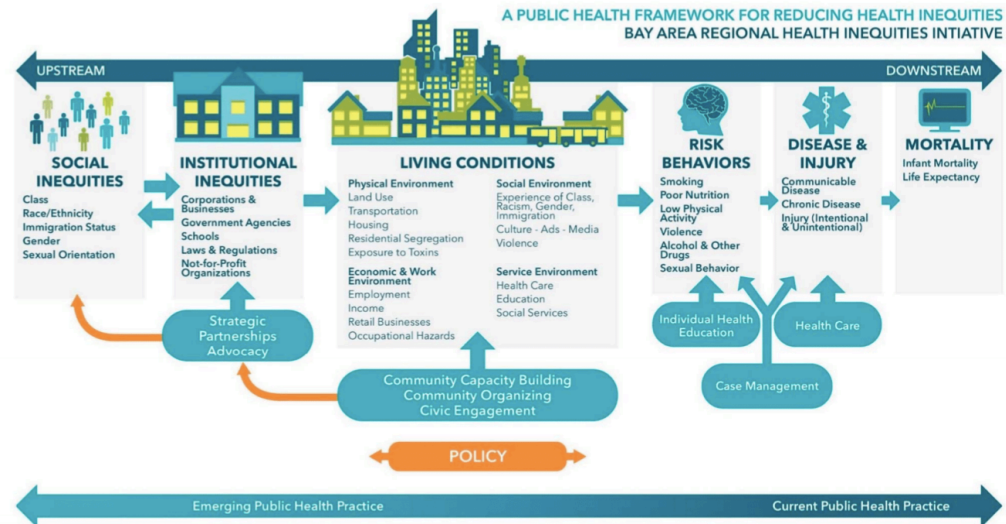
Financial Barriers Are Complex and Stakeholders Have Competing Priorities

- Without incentives, major retrofits are often limited to financing events, on 15 or 25 year schedules
- With incentives and outside of those short windows, retrofits must result in short payback period for owner investment
- Savings must be greater than cost of time to navigate, apply, and complete project
- It is often easier to increase revenue by raising rent not reducing costs

Health is an Important Component of Non-Energy Benefits for LI MF Sector

Top 6 non-energy benefits (NEB)

1. Reduced thermal stress (cold)
2. Improvement in prescription drug adherence and reduced asthma
3. Increased work productivity due to improved sleep
4. Reduced thermal stress (heat)
5. Reduced economic need for food assistance



Tonn et al., Oak Ridge National Lab, Health and Household-Related Benefits Attributable to the Weatherization Assistance Program (2014)

Additional Resources

- [ESA Program Multifamily Segment Study, The CADMUS Group \(2013\)](#)
- [MF HERCC Recommendations Report 2015 Update, Multifamily Subcommittee of the California Home Energy Retrofit Coordinating Committee \(2015\)](#)
- [Needs Assessment for the Energy Savings Assistance and the California Alternate Rates for Energy Programs, Evergreen Economics \(2016\)](#)
- [Lifting the High Energy Burden in America's Largest Cities: How Energy Efficiency Can Improve Low-Income and Underserved Communities, American Council for an Energy Efficient Economy \(2016\)](#)