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Launching TECH and BUILD: Recommendations for Long-term Impact

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Natural Resources Defense Council

April 8, 2019



SB 1477 provides \$200 million over 4 years

This is a huge opportunity, but not a lot of money given the challenge...

We must use these funds wisely to set us on the path to 2045

= under \$20 per CA household

In comparison:

~\$1 billion / year for Energy Efficiency

\$100 million / year Solar on Multifamily Affordable Housing (MF only)

~\$2 billion California Solar Initiative

\$1.2 billion Self-Generation Incentive Program

\$400 million New Solar Homes Partnership (new homes only)



BUILD - Building Initiative for Low Emissions Development

GOAL: Spur the deployment of near-zero emissions technology to *significantly* reduce GHG emissions in **new** residential buildings through direct incentives to builders and developers

Recommendations:

- Must be a single **statewide** program
- Focus on helping the building industry to **gain wider experience** with zero-emission technologies
- **Minimize paperwork**; integrate process for claiming incentives into existing required processes
- Set a **minimum target for emission reductions** (e.g. 40%) and create simple incentives that are large enough to motivate builders
- Ensure **dependable incentives over several years**
- Provide **direct outreach, design, and modeling technical support to low income developers**, ideally through a 3rd party already familiar with this community
- Work with the builders and low income developers at **every step**



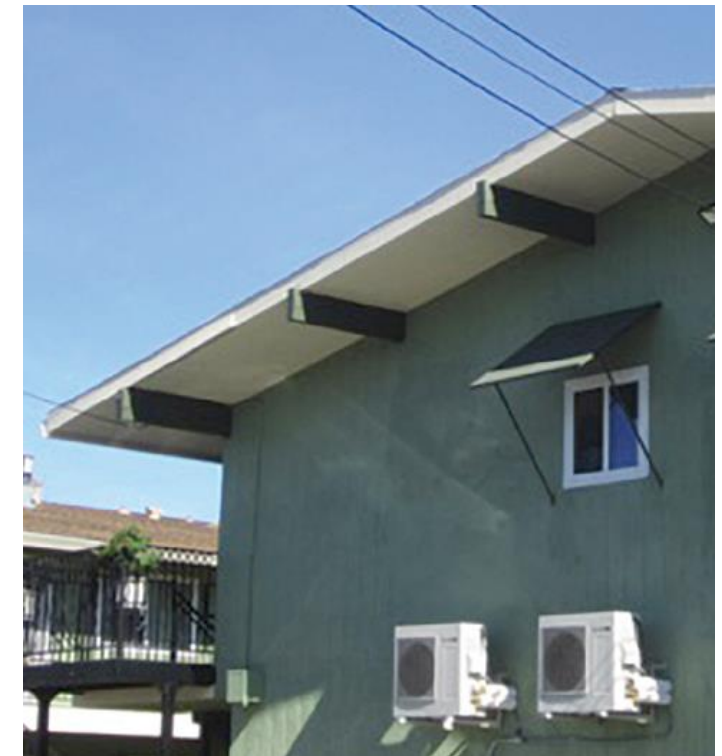
City Ventures solar all-electric home in West Oakland

TECH - Technology and Equipment for Clean Heating

GOAL: Spur statewide market development for low-emission space and water heating equipment through upstream and midstream engagement and incentives, contractor and vendor training, and consumer education.

Recommendations:

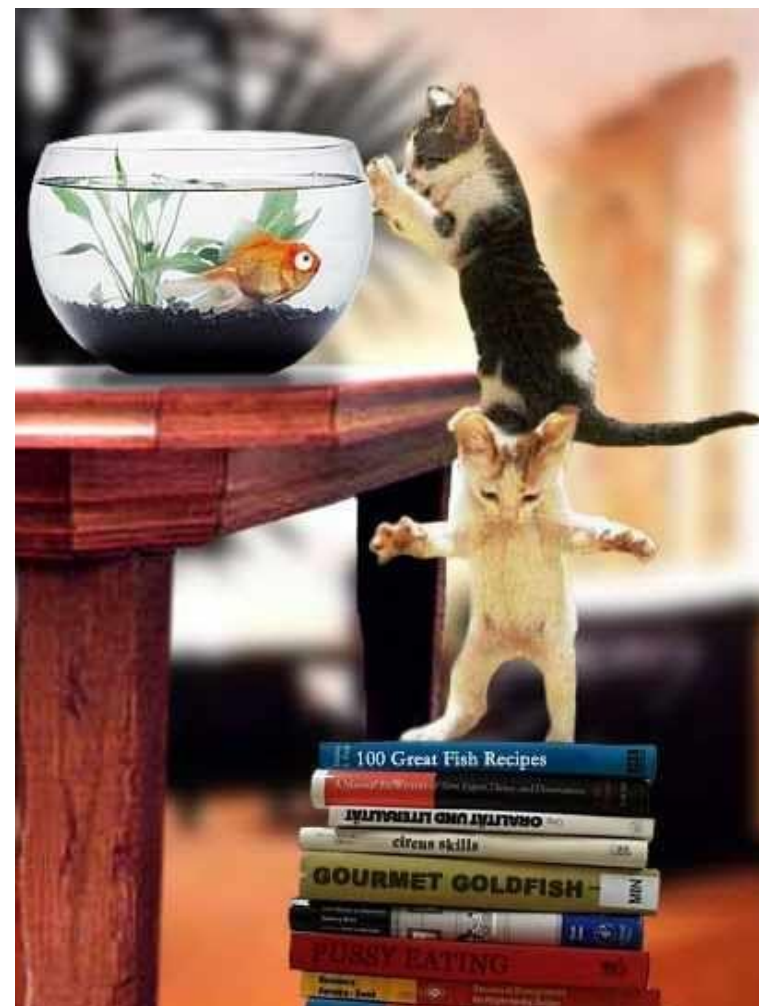
- Must be a single **statewide** program
- Combine “**quick start**” **mini-pilots** that launch in 3-6 months after administrator selection, with **market assessment work** to design 3-year+ programs
- **Focus on engagement of manufacturers, distributors and contractors;** early marketing should come through contractors; value prop for contractor is KEY to success
- **Ensure an equity focus** for TECH as well – at least 30% of these funds should be targeted to benefit low and moderate income Californians; e.g. technology support for multifamily buildings is needed.
- Consider public **reporting of install costs** for space and water heating technologies (like CSI) and reward/require quality assurance



Cascade Village project included energy efficiency, electrification and solar retrofit to 74 units serving low income residents in Sacramento

We must create a stable foundation to reach our 2045 carbon-neutrality goals

- **Coherent planning and dependable programs** are needed to spur market, not a potpourri of small one-off pilots
- Create an **SB 1477 Taskforce** to engage industry and community stakeholders to keep TECH and BUILD on track; similar to the New Solar Homes Partnership Taskforce
- Start thinking NOW about **longer-term funding** for building decarbonization – market transformation takes time



We Can Do This!



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Bonus Slides

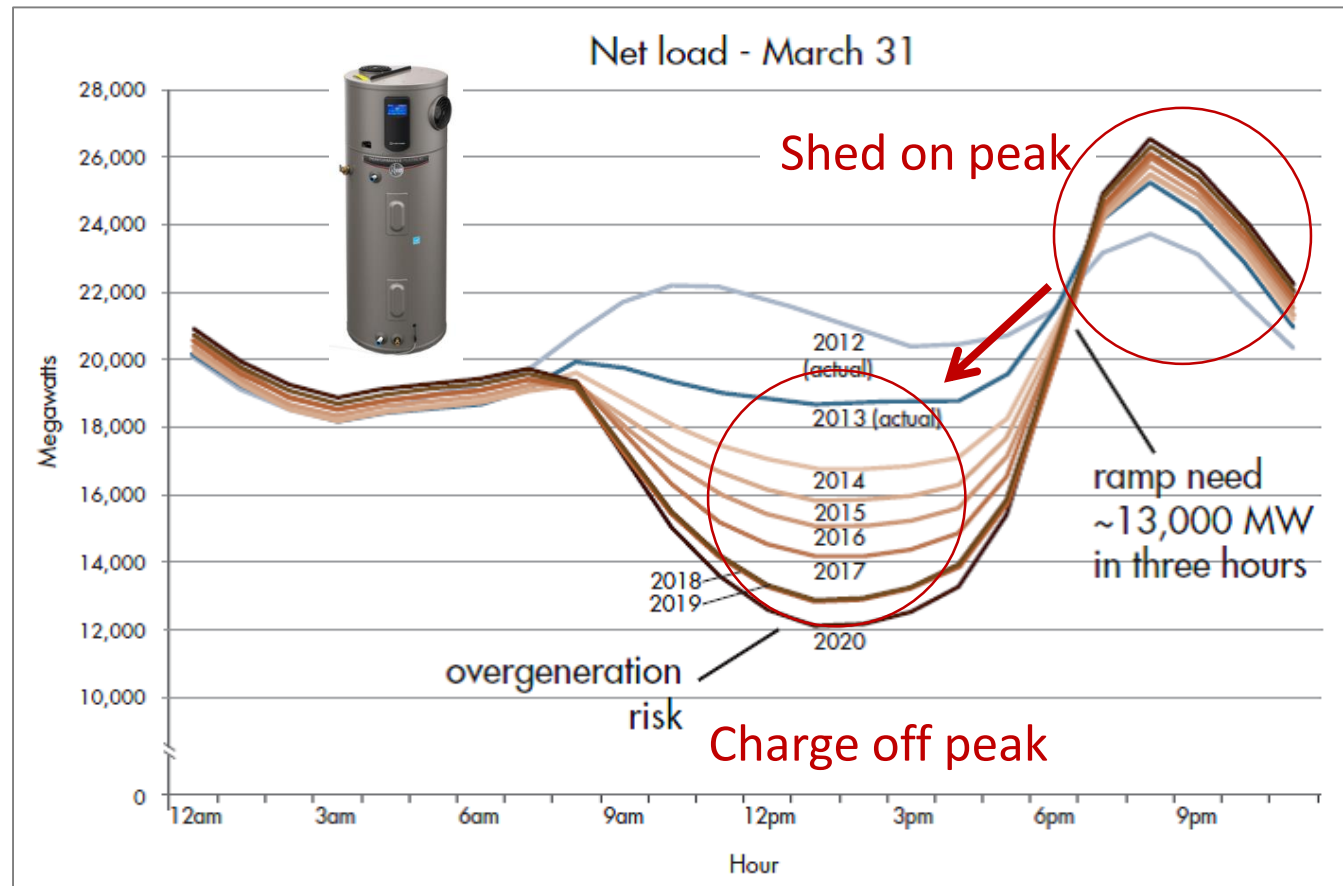
BUILD - Building Initiative for Low Emissions Development

	BUILD Parameters Set by SB 1477 (Stern)
Program Goal	Incentivize the deployment of near-zero emissions technology to significantly reduce GHG emissions in new buildings
Building Sector	Residential new construction, single-family and multifamily
Eligible Technologies	<ul style="list-style-type: none">• Near-zero emissions technologies that significantly reduce direct and indirect GHG emissions.• Buildings can deploy a range of technologies that reduce projected GHG emissions.
Eligible Recipients	<ul style="list-style-type: none">• Owners or developers of new residential housing
Eligible Interventions	<ul style="list-style-type: none">• Direct financial incentives
Low-income and Hard to Reach Requirements	A minimum of 30 percent of funds reserved for low-income residences (as defined by SB 1477). Administrator required to provide technical assistance to engage this demographic.
Other Requirements	Incentive amount shall take into account the availability of existing incentives and shall be based on the projected GHG reductions.

TECH - Technology and Equipment for Clean Heating

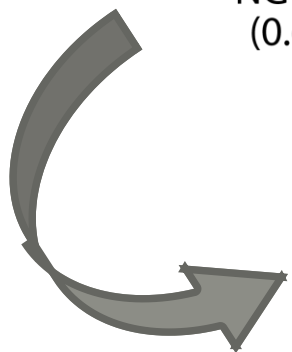
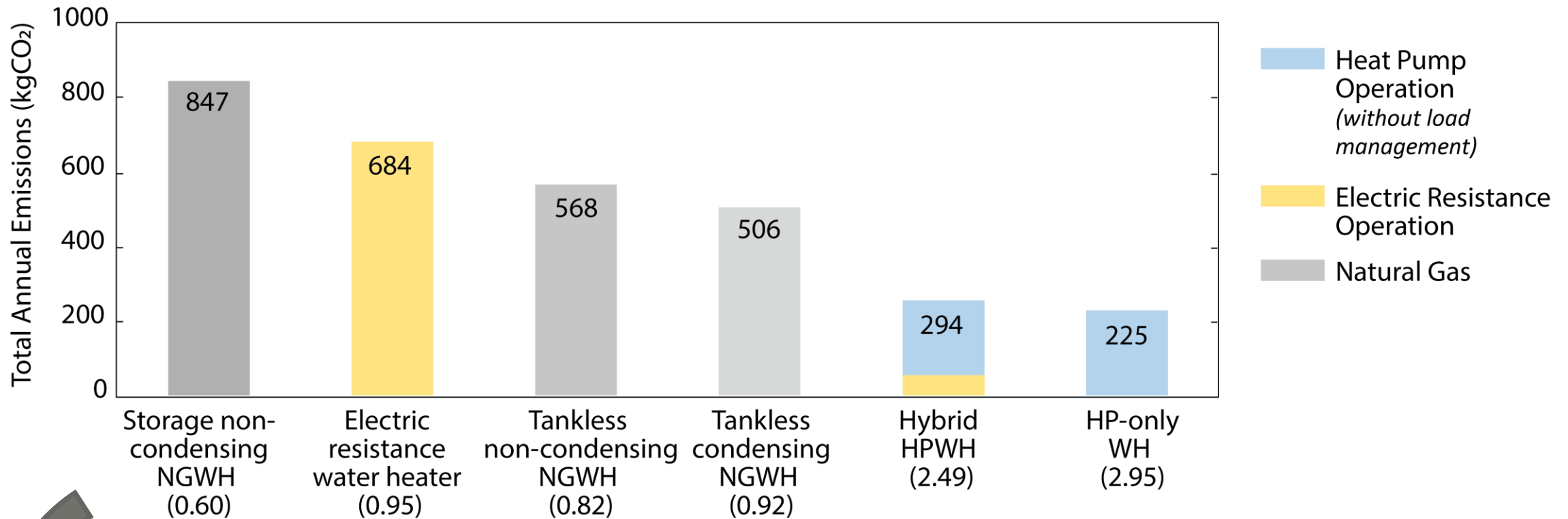
	TECH Parameters Set by SB 1477 (Stern)
Program Goal	Provide statewide market development for low-emission space and water heating equipment
Building Sector	Residential new and existing, single-family and multifamily
Eligible Technologies	Low-emission space and water heating technologies that are in early stages of market development and have greatest potential to reduce GHG emissions.
Eligible Recipients	<ul style="list-style-type: none">• The residential space and water heating industry supply chain.
Eligible Interventions	<ul style="list-style-type: none">• Interventions can include upstream and midstream market development and incentives, contractor and vendor training, and consumer education.
Low-income and Hard to Reach Requirements	<ul style="list-style-type: none">• Outreach to hard-to-reach customers.• Special consideration given to technologies that "that improve the health and safety of, and energy affordability for, low-income households."
Other Requirements	Program must be statewide.

With load management, water heating can be electrified using clean renewable energy without adding to peak load



NRDC and Ecotope study, ACEEE Aug. 2018

Results: Water heating emissions



Switching to a hybrid HPWH from...

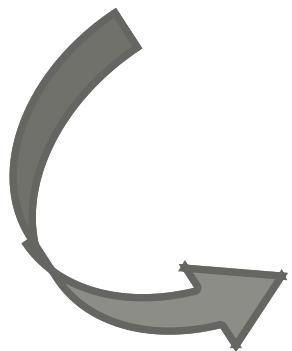
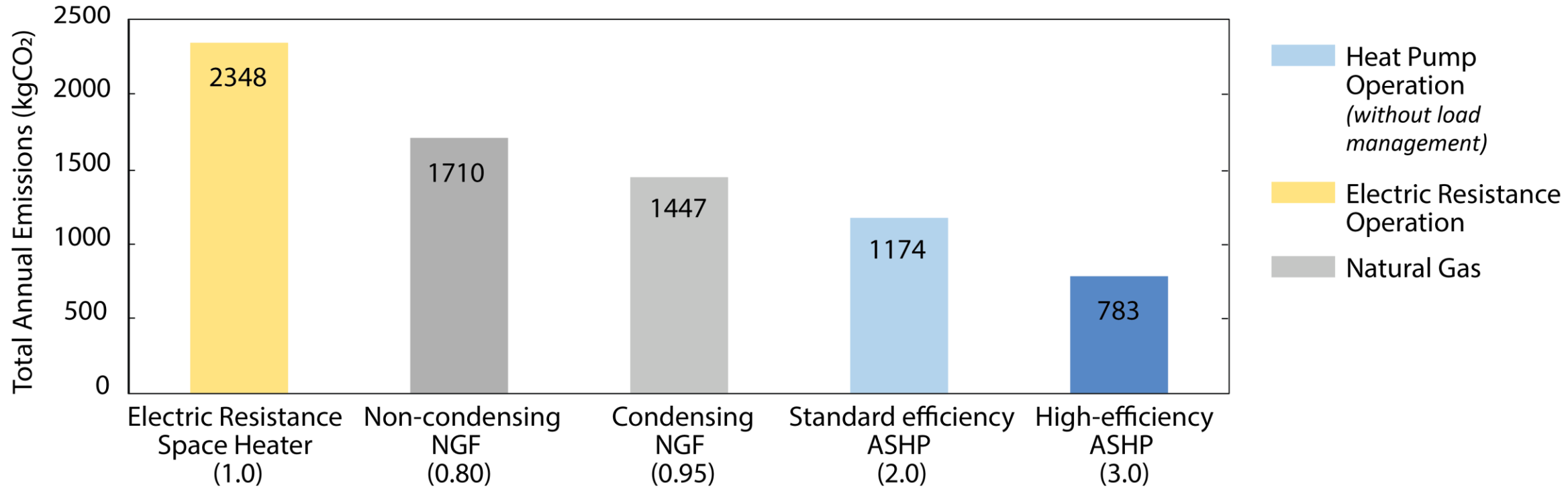
0.60 NGWH
0.82 NGWH
0.92 NGWH

Would reduce a CA household's annual water heating emissions by...

70
56
50

%

Results: Space heating emissions



Switching to a high-efficiency ASHP from...

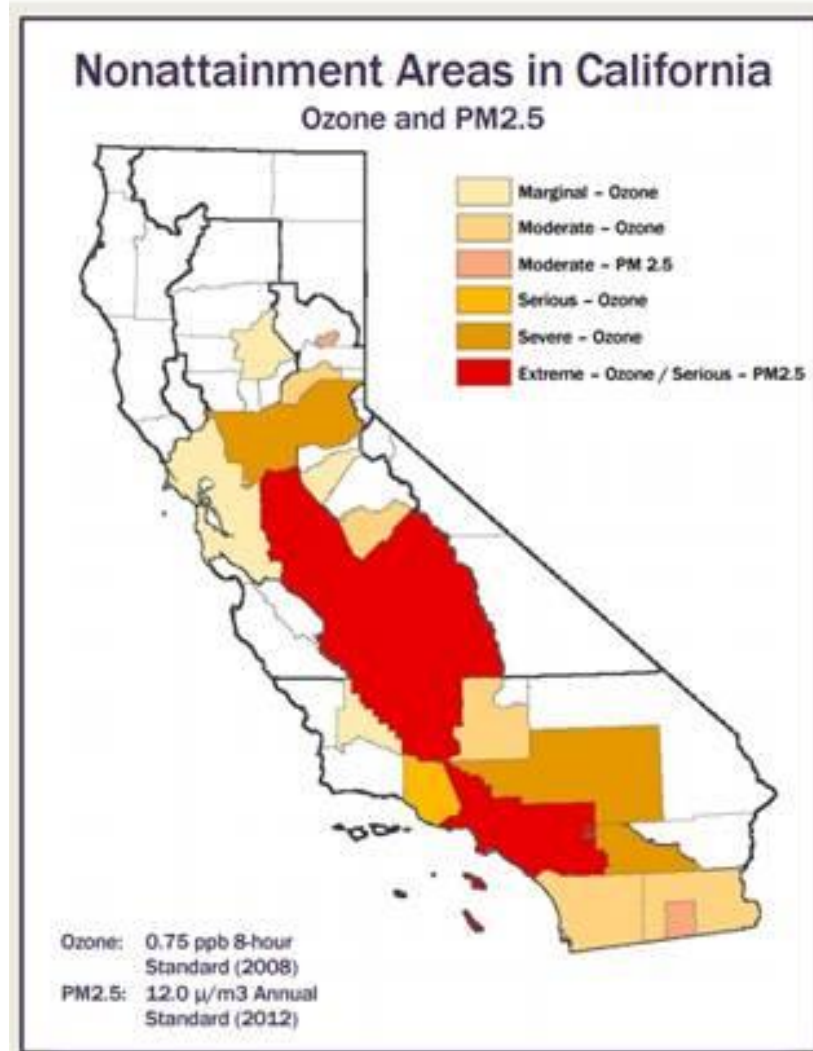
0.80 NGF
0.95 NGF

Would reduce a CA household's annual space heating emissions by...

54
46

%

California has some of the worst air quality in the nation



Buildings are one of the top NO_x emitters

NO_x in California

