



# Background: Code Readiness Program Objectives

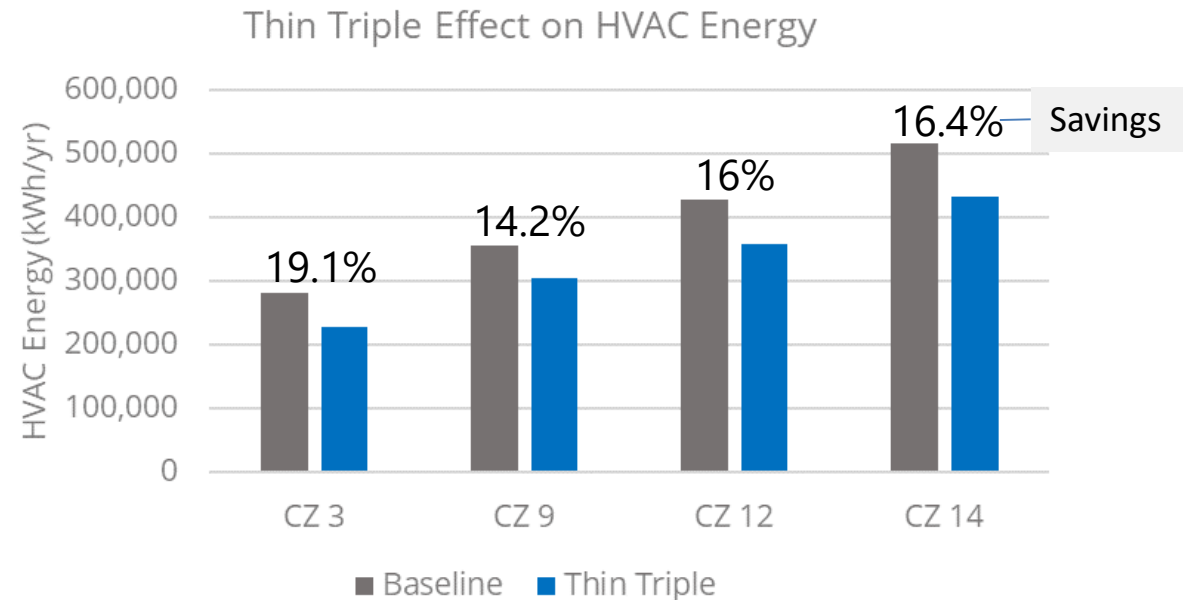
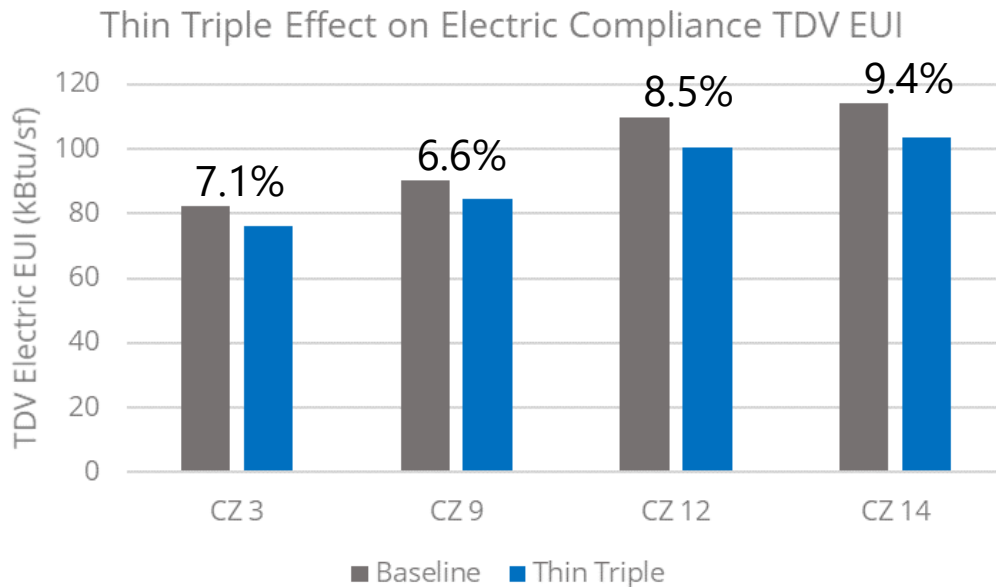
- Improve quality of C&S advocacy specifically by obtaining cost, performance, and compliance data to increase rigor of our C&S proposals
- Facilitate development of trade ally practices and business models to support advanced measures and designs associated with Code Readiness program “measure packages”
- Leverage Certified Energy Analysts (CEAs) and ATTs to facilitate other code compliance tools and practices, and ultimately
- Accelerate adoption of key C&S regulations to reduce PG&E and the State’s costs to achieve state policy goals

**Code Readiness Multifamily Team is evaluating  
“Skinny Triples” for inclusion in program**



# “Skinny Triples” may reduce HVAC energy use by 15-20%

## Skinny Triple Window Results – Energy & TDV – New Construction



Note:

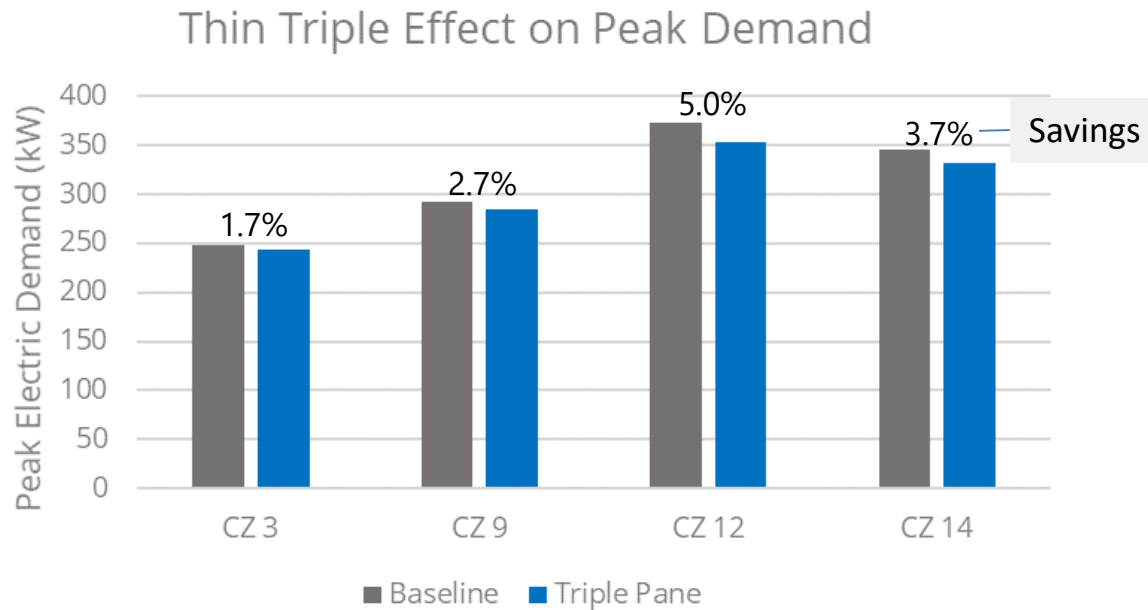
1. Model based on TRC’s mid-rise multifamily prototype model included in “Multifamily Prototypes” published April 30th, 2019
2. Model used Residential 2019 TDV Values – 0.089 \$/kBtu for 15 year period. Team will update with 30 year period, and investigate sensitivity to Residential vs. Non-Residential TDV
3. Model used constant thermostat setpoint @ 70F – results will be updated using Title 24 schedules which are 68F with a 60F setback for heating



# “Skinny Triples” may reduce peak demand by 2-5%

## Skinny Triple Window Results – Peak Demand – New Construction

Annual electrical peak demand for the baseline and proposed models is shown



Note:

1. Model based on TRC’s mid-rise multifamily prototype model included in “Multifamily Prototypes” published April 30th, 2019
2. Model used Residential 2019 TDV Values – 0.089 \$/kBtu for 15 year period. Team will update with 30 year period, and investigate sensitivity to Residential vs. Non-Residential TDV
3. Model used constant thermostat setpoint @ 70F – results will be updated using Title 24 schedules which are 68F with a 60F setback for heating



# “Skinny Triples” could yield ~\$3.50-6.50/sf of energy cost savings

## Thin Triple Results – Cost Effectiveness – New Construction

Model window area: 34,072 sf (10 stories)  
WWR: 20%

Residential 2019 TDV Values – 0.089 \$/kBtu of TDV for 15 year period

Thin Triple Preliminary Cost Effectiveness - New Construction		
	Cost Savings (2020 PV \$)	Cost Savings (\$/sf of Window area)
CZ 3	\$119,914	\$3.52
CZ 9	\$123,209	\$3.62
CZ 12	\$192,007	\$5.64
CZ 14	\$220,992	\$6.49

The Code Readiness program expects to provide financial support to customers participating in the MF program that participate in additional research activities including installation of "Skinny Triples"



# CR Team interested in evaluating field performance on “Skinny Triples”

## Ideal building type:

- 3-5 story podium-style multifamily building
- In CZ 11, 12 or 13
- Willing to install multiple measures e.g. HVAC, lighting controls, windows
- Enrolled in CMFNH program

## “Nice to have” features:

- High WWR, oriented with a southern exposure
- Decoupled space conditioning
- Common laundry
- Purpose-built e.g. senior, student, low income housing