

# ET Summit 2019

Presented by



# An All-electric ZNE Townhome Community

From Design to Reality

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## All-electric, ZNE Townhome Development

Southern California's first all-electric zero net energy townhome community located in the heart of the Irvine Business Complex.



## Community Details

- Forty-four townhomes in six buildings
- The homes are all 4-bedroom, 3 ½ -bath, and vary in size from in size from 1,868 sq. feet to 2,171 sq. feet.
- Each unit features a two car garage.
- The community includes an exterior common space equipped with barbecues and fire pits.
- First units available for sale now; construction expected to be completed November 2019.

## Project Objectives

- Demonstrate the technical and economic feasibility of the advanced measures for all-electric ZNE homes within the MF housing sector.
- Study how all-electric ZNE MF homes can better integrate with the electric grid via load management.

## Project Partners

- Southern California Edison
- Meritage Homes
- Electric Power Research Institute (EPRI)

## Interior Features

- 100% LED Overhead Lighting
- Smart Wi-Fi Light Switches
- Induction Cooktops
- Efficient Kitchen Appliances
- Hybrid Heat Pump Water Heater
- Efficient Space Conditioning Heat Pump rated at 16 SEER/EER 13.5
- Smart Wi-Fi Connected Thermostats
- EV Ready Garages



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## Exterior Features



- R-13 Open Cell Spray Foam Wall Insulation
- R-4 Styrofoam Continuous Insulation
- Efficient Windows: Low-E, Air-filled, Double Glazing

- Rooftop Solar Systems

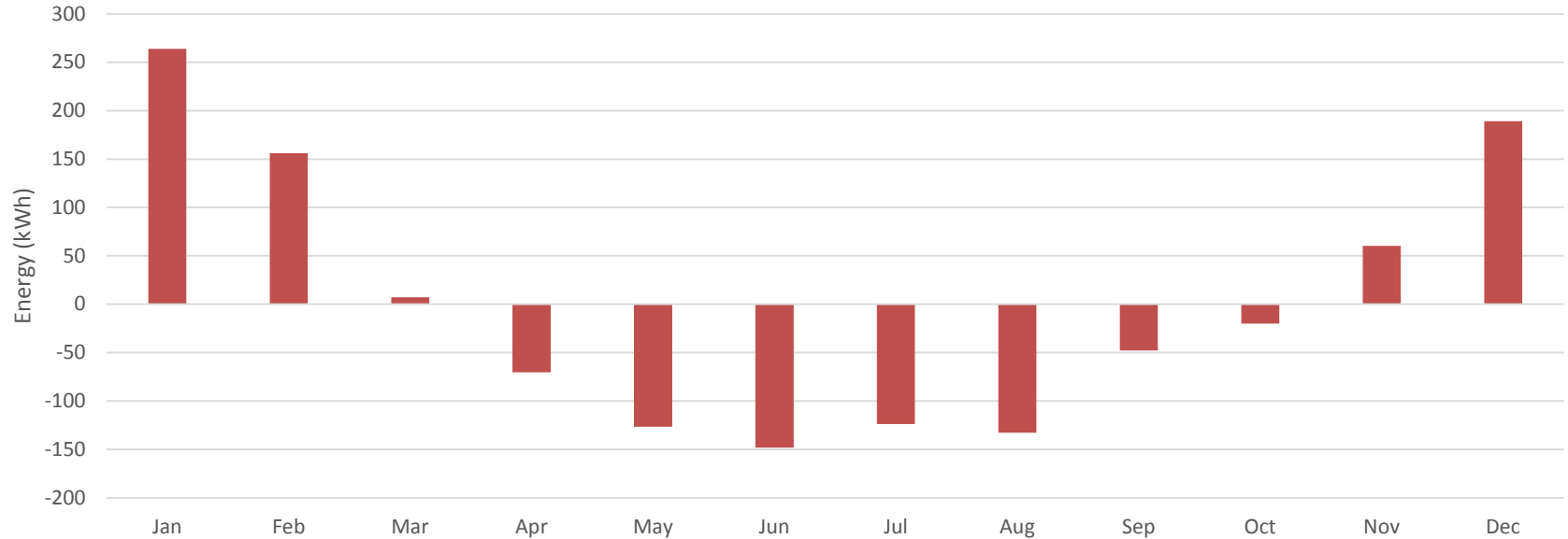


- Raised Heel Truss Roof with R-50 Spray Foam



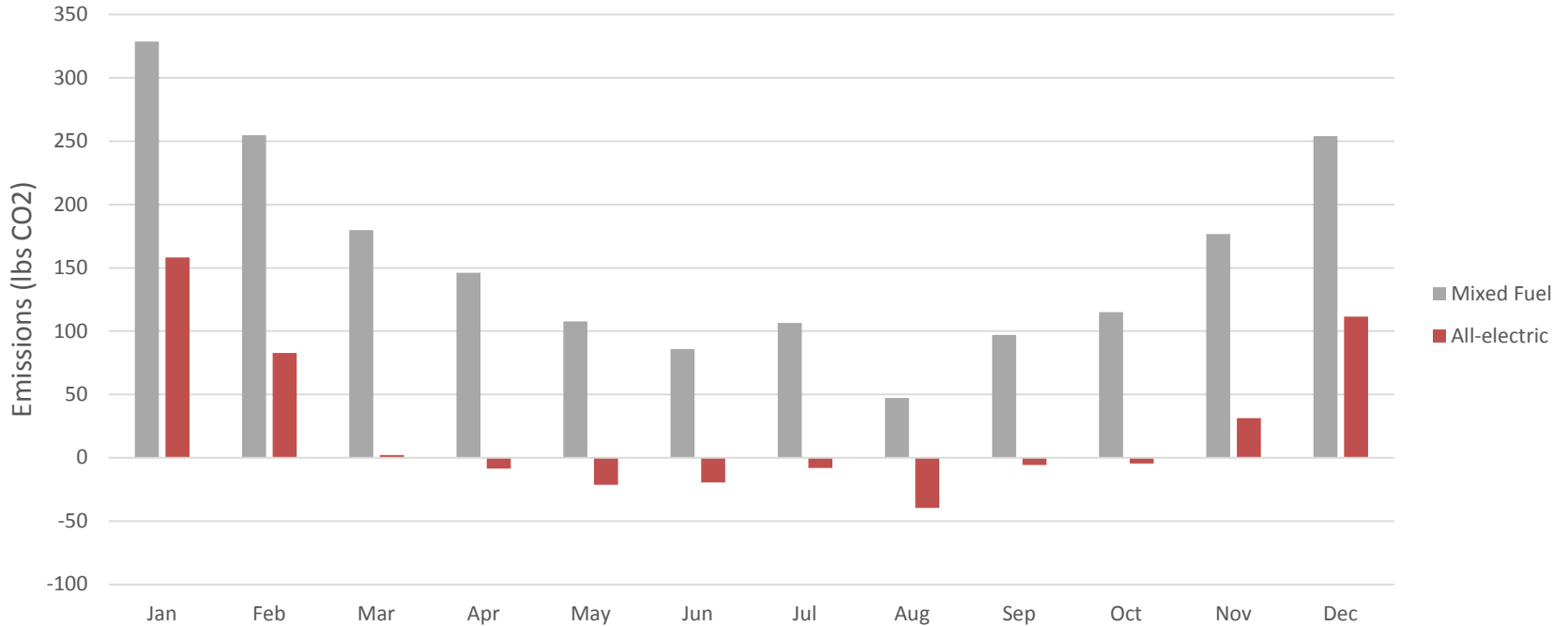
## Anticipated Performance - Energy

Simulated Monthly Net Energy



## Anticipated Performance - Emissions

Simulated Monthly Net Emissions



## SCE Support

- SCE has committed \$500K to this project through the Statewide Emerging Technologies (ET) Program and the Emerging Markets & Technology (EM&T) Program. SCE is also providing technical, engineering, and planning support.
- SCE funding will go towards the incremental cost of the advanced home features

## Future Community Assessment

- Conduct comprehensive power monitoring all end-uses
- Explore the benefits of wireless DR controls thermostats and distributed energy resources
- Identify the incremental measure costs and cost-effectiveness for advanced home features

## Anticipated Project Outcomes

- Access to detailed real-world information on the interaction of building technologies with residents.
- Energy and cost savings for owners.
- Assistance in educating occupants on how to live in a high-performance building to take advantage of dynamic energy features.
- Increased understanding of all-electric ZNE installation costs and barriers.
- Improved planning future multi-family developments.

This project was funded by the California Emerging Technologies Program.

For more information, contact Ryan McFadyen at [ryan.mcfadyen@sce.com](mailto:ryan.mcfadyen@sce.com).

Community Website:

[https://www.meritagehomes.com/state/ca/southern-ca/citysquare?gclid=EAlaIQobChMIzPeym6rY5AIVrx6tBh3buwYTEAAYASAAEgLpgvD\\_BwE](https://www.meritagehomes.com/state/ca/southern-ca/citysquare?gclid=EAlaIQobChMIzPeym6rY5AIVrx6tBh3buwYTEAAYASAAEgLpgvD_BwE)

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