

PHIUS+ Monitored Data



ORCHARDS AT ORENCO I

Hillsboro, OR

57 units

54,700 ft²

Central HVAC

ERVs w/Ducted Heat+Cool

Gas Water Heating

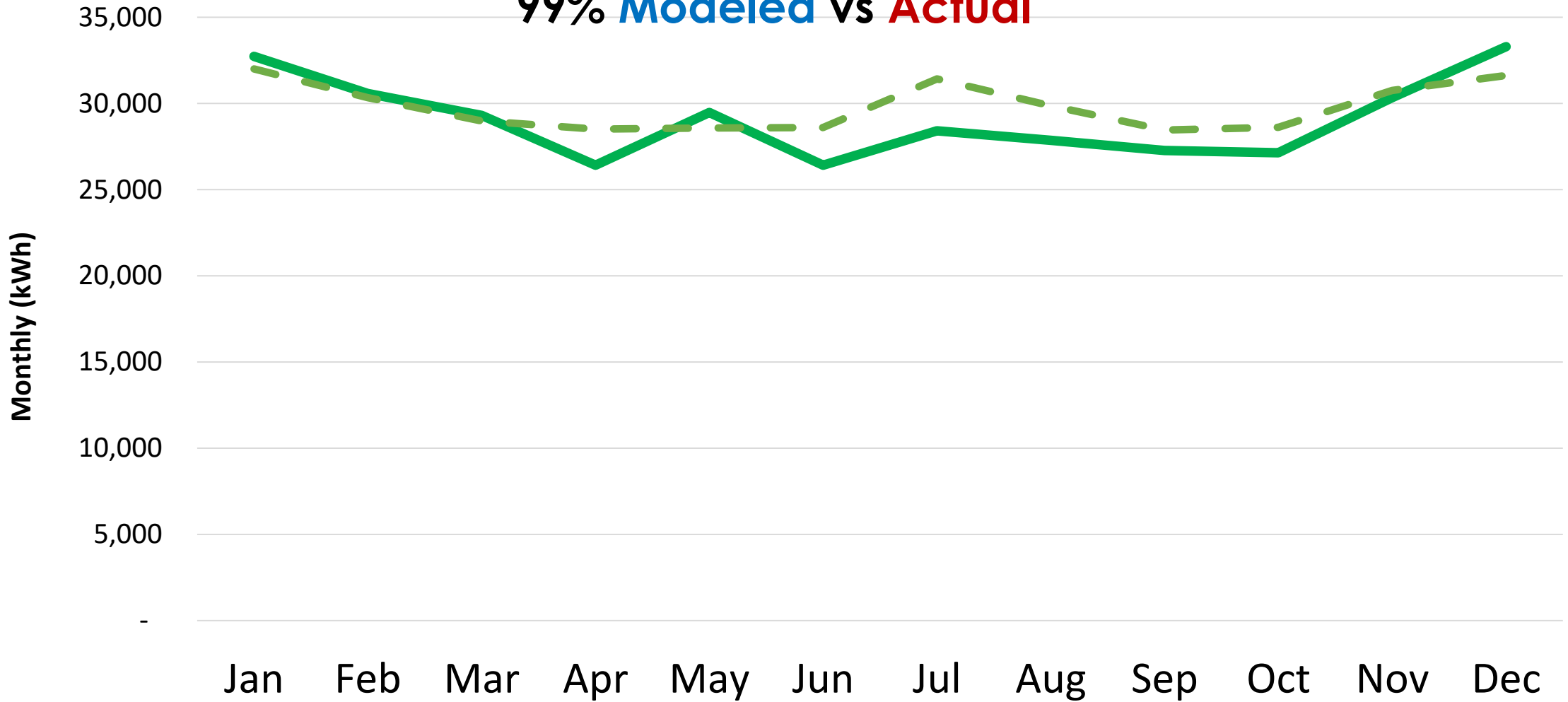
Unit Meter & Common

Meter



Site Energy: Monitored vs Modeled

99% Modeled vs Actual

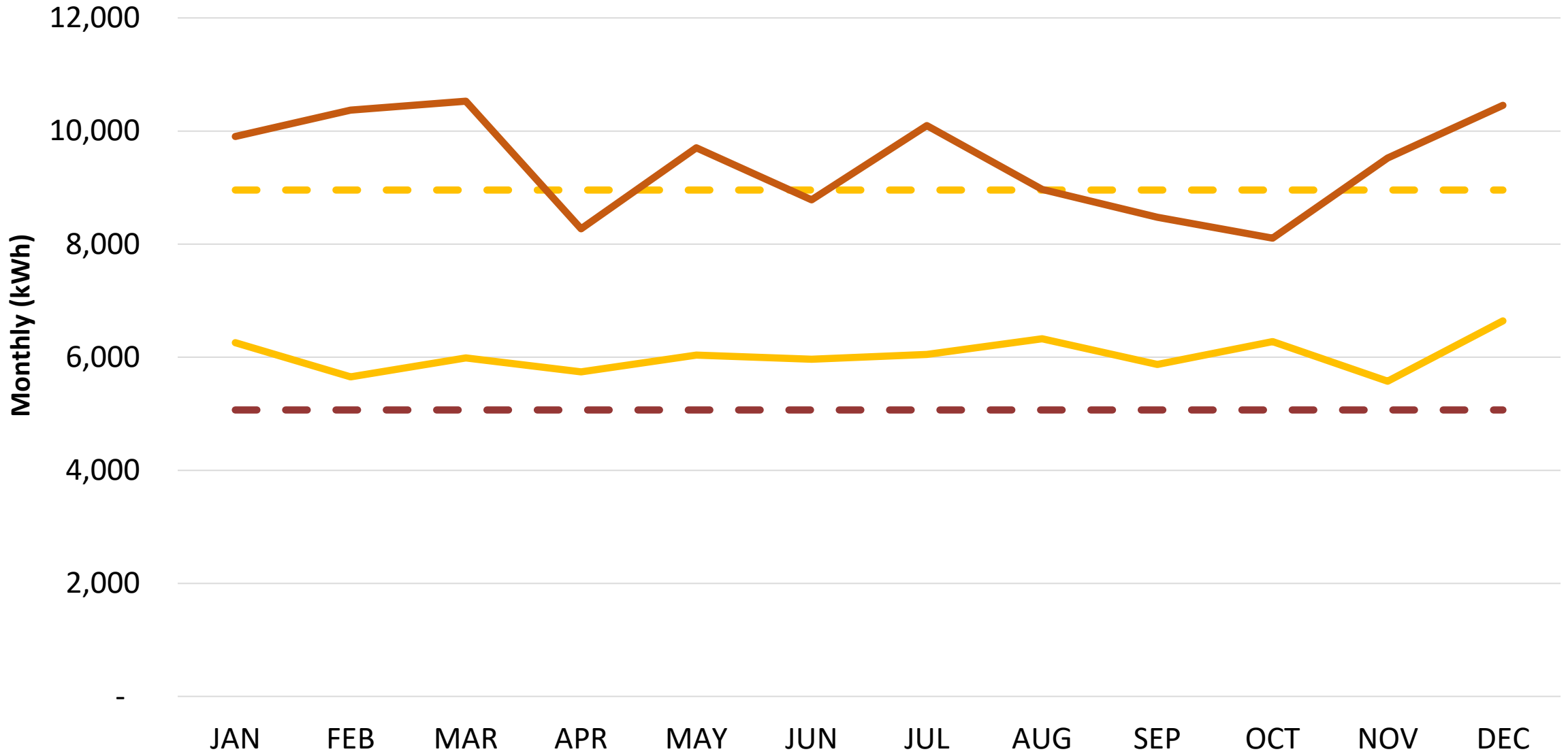


— Monitored (Electricity + Gas) kWh

— Modeled - PHIUS+ 2015

WUFI-Passive used as modeling tool

Site Energy: Monitored vs PHIUS+ 2015 Predicted



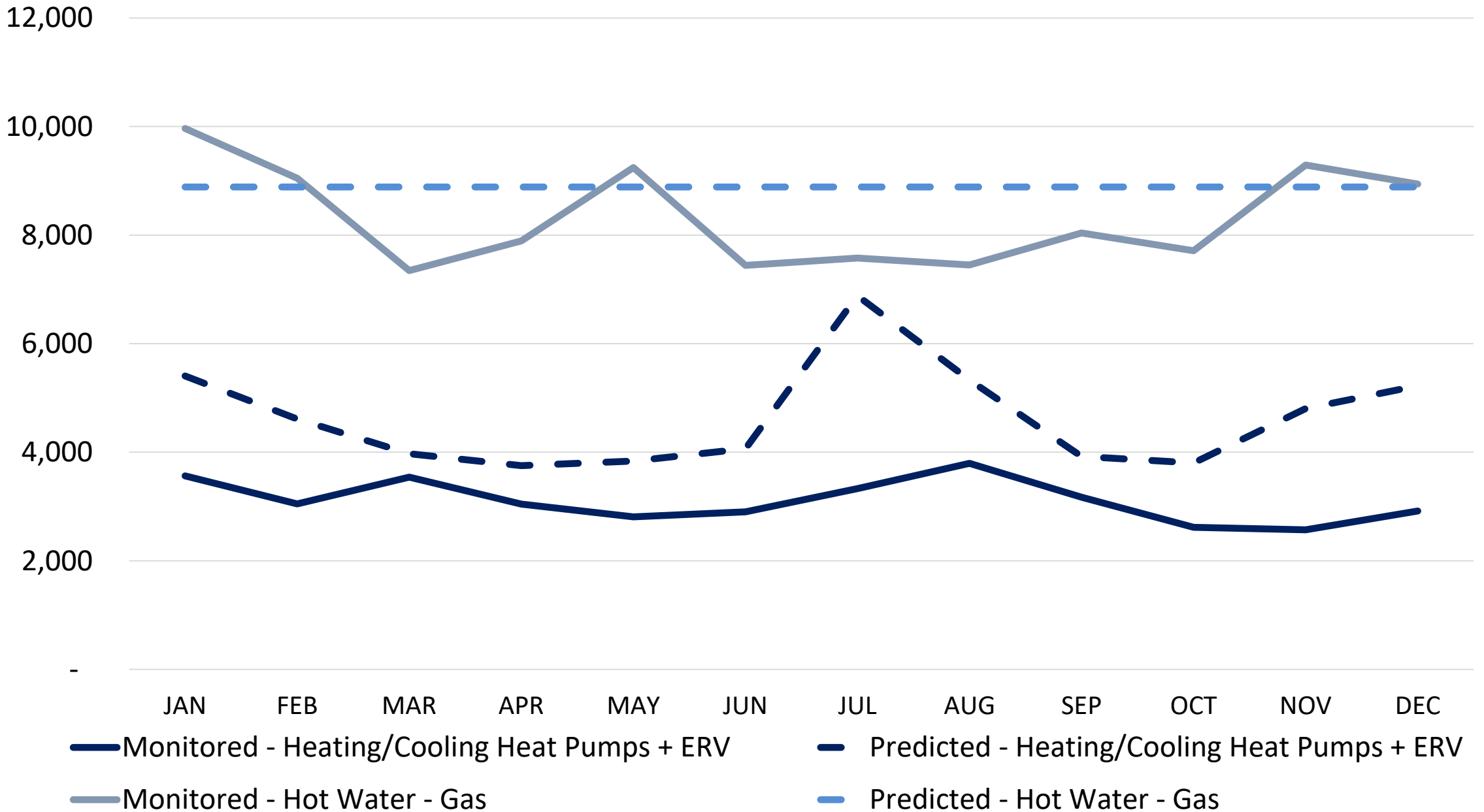
Monitored - Electricity - Apts

Monitored - Electricity - Commons

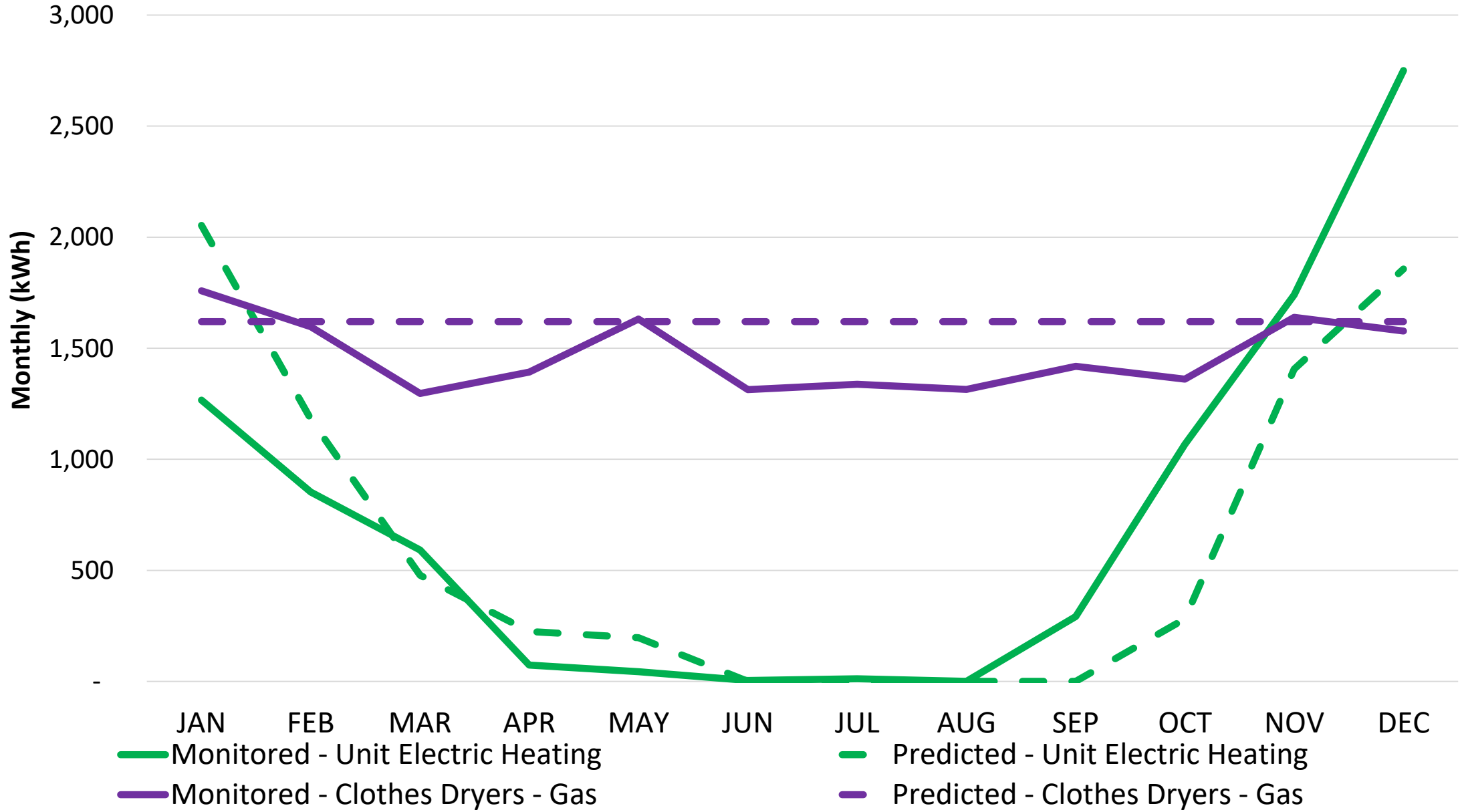
Predicted - Electricity - Apts

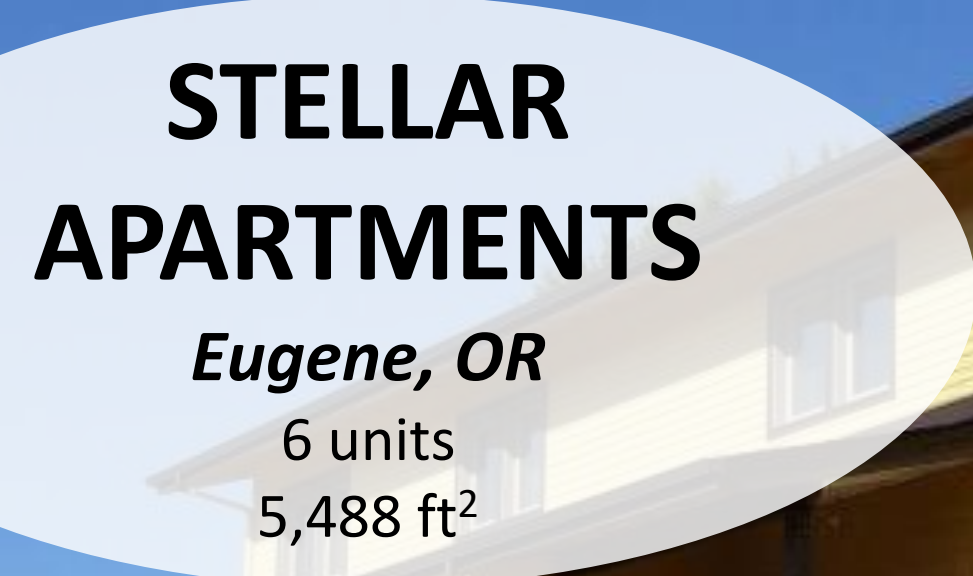
Predicted - Electricity - Commons

Site Energy: Monitored vs PHIUS+ 2015 Predicted



Site Energy: Monitored vs PHIUS+ 2015 Predicted





STELLAR APARTMENTS

Eugene, OR

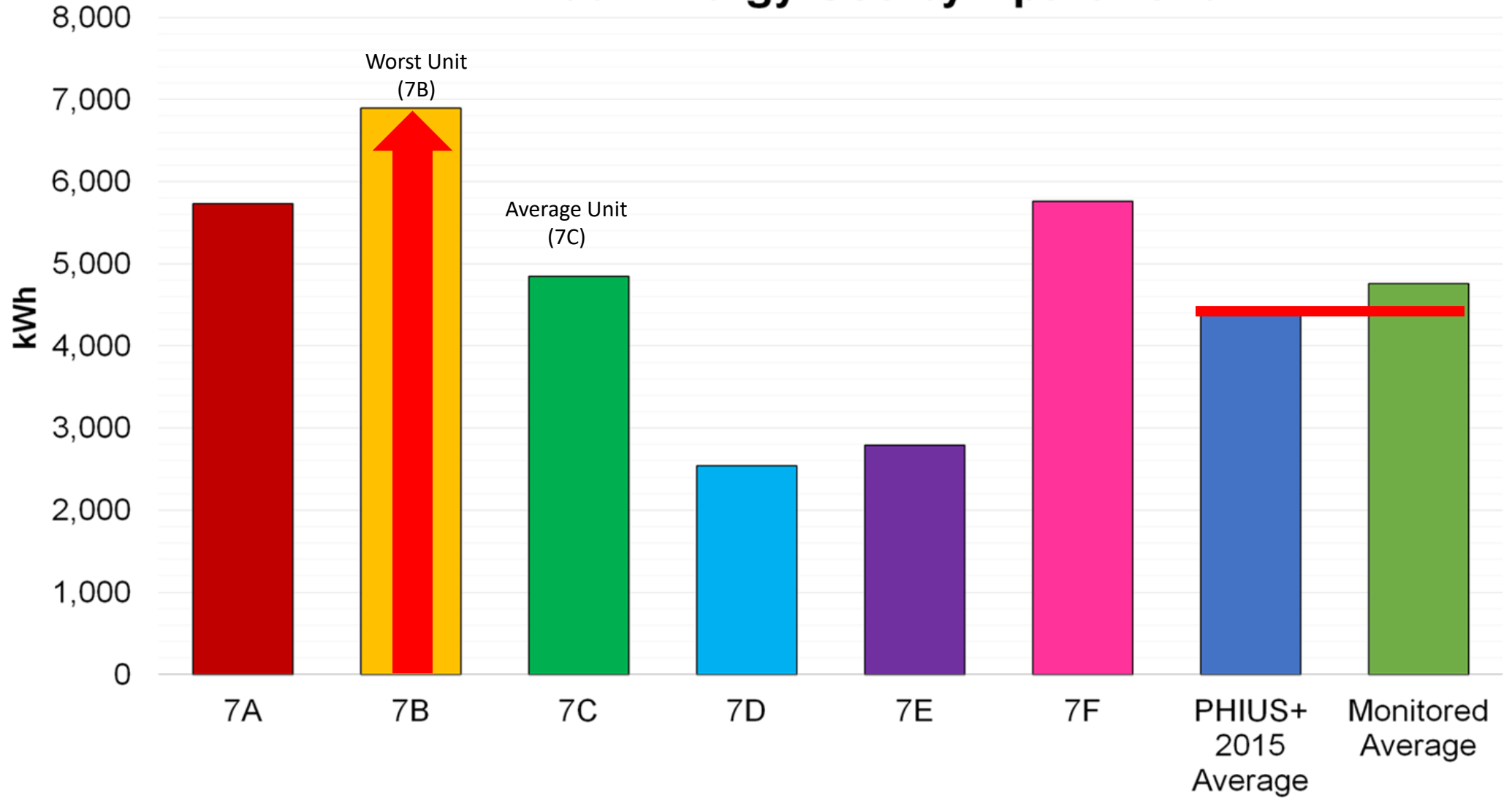
6 units

5,488 ft²

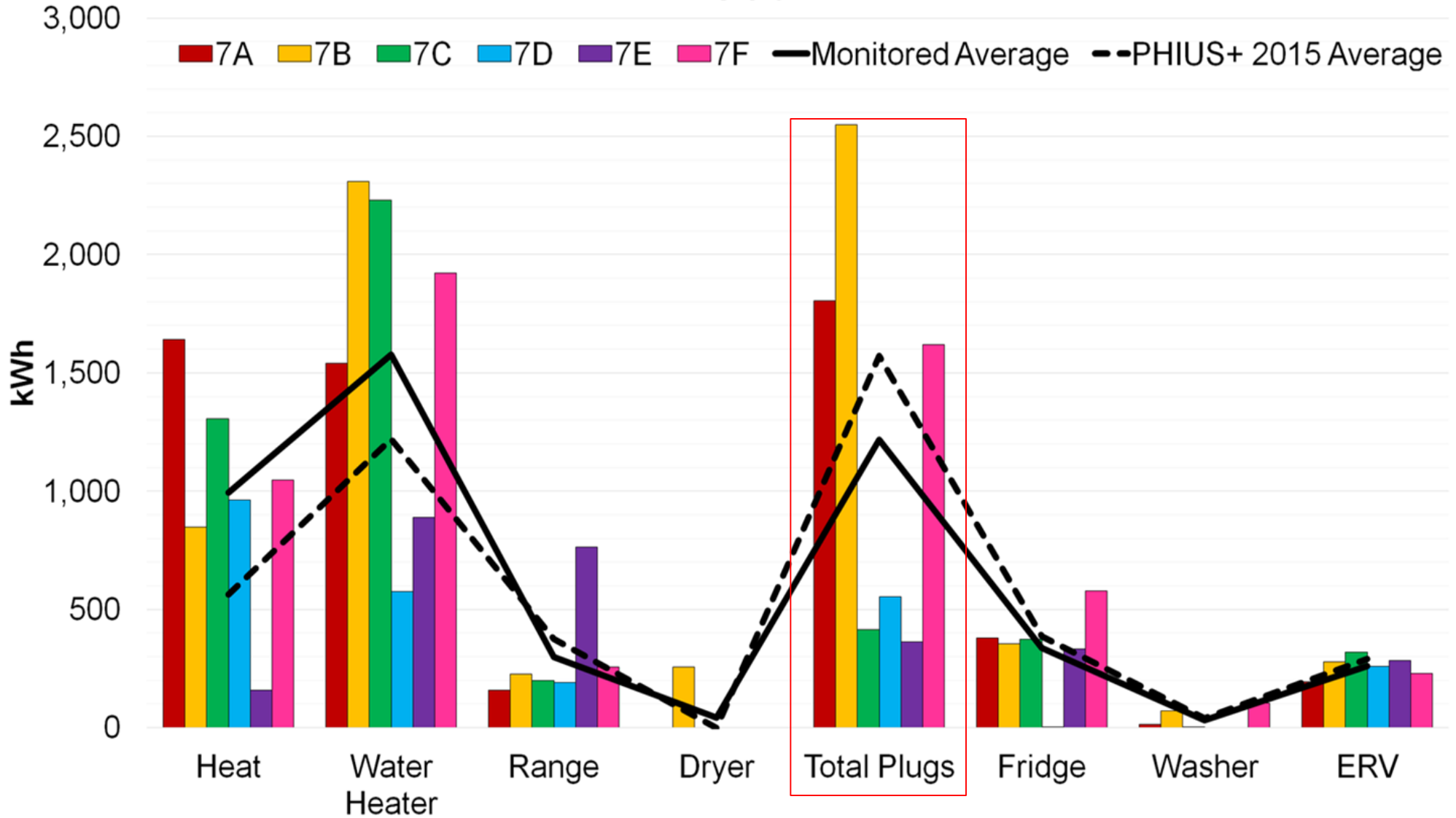


- 8 Meters per unit
- No common spaces
- Electric Heating
- No Cooling
- Heat Pump Water Heaters in outdoor mech closet

Annual Energy Use by Apartment



Individual Apartment Energy Use vs Average Energy Use



BAYSIDE ANCHOR

Portland, ME

45 Units
36,161 ft²

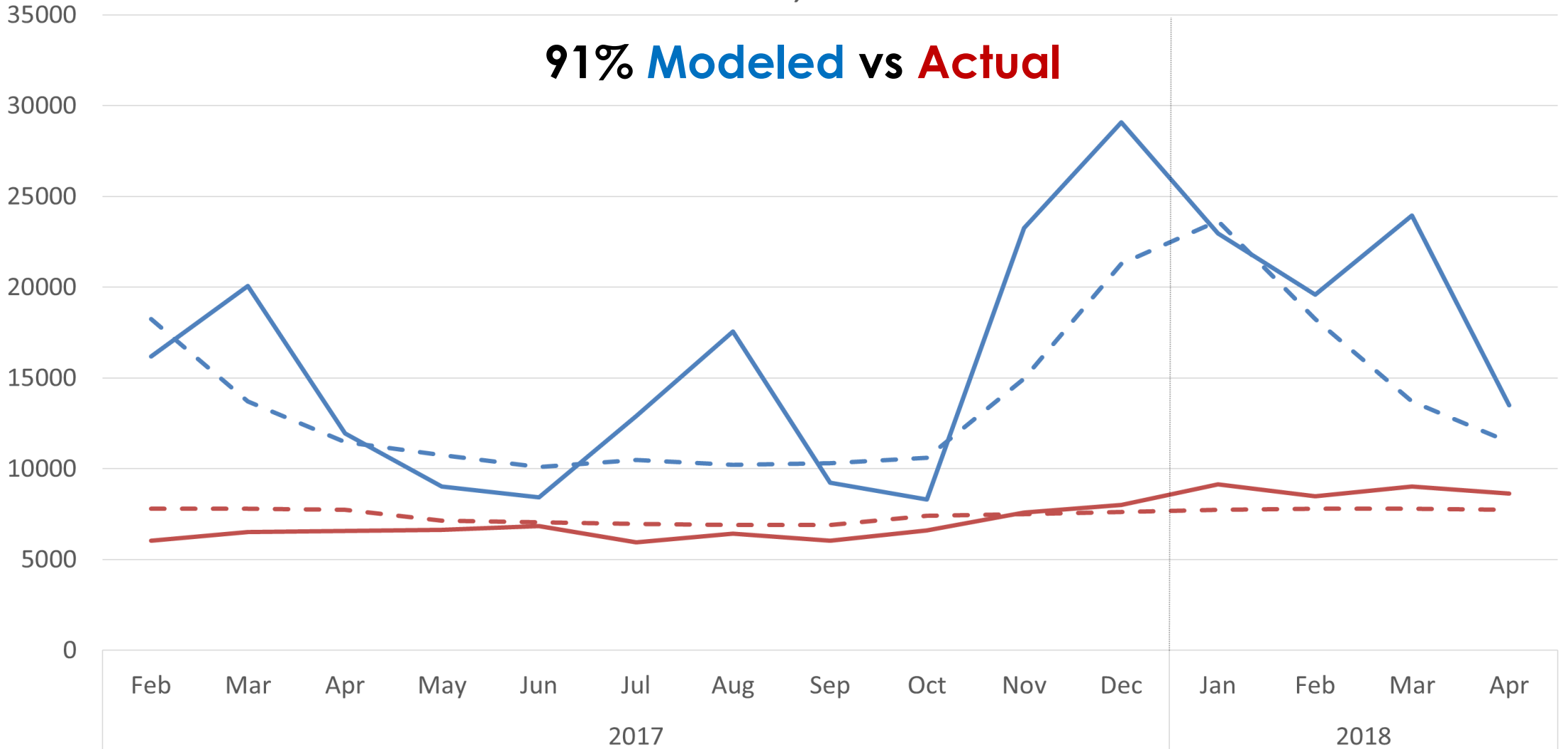
Electric heating, no cooling
Gas Water Heating
Gas Exhaust Dryers
All other electric



BAYSIDE ANCHOR

1343 - Bayside Anchor | Portland, ME
Modeled = Dashed Lines, Measured = Full Lines

91% Modeled vs Actual



— Modeled Elec (kWh)
WUFI-Passive used as modeling tool
— Measured Elec (kWh)

— Modeled Gas (kWh equiv)
WUFI-Passive used as modeling tool
— Measured Gas (kWh equiv)

SINGLE FAMILY CASE STUDIES



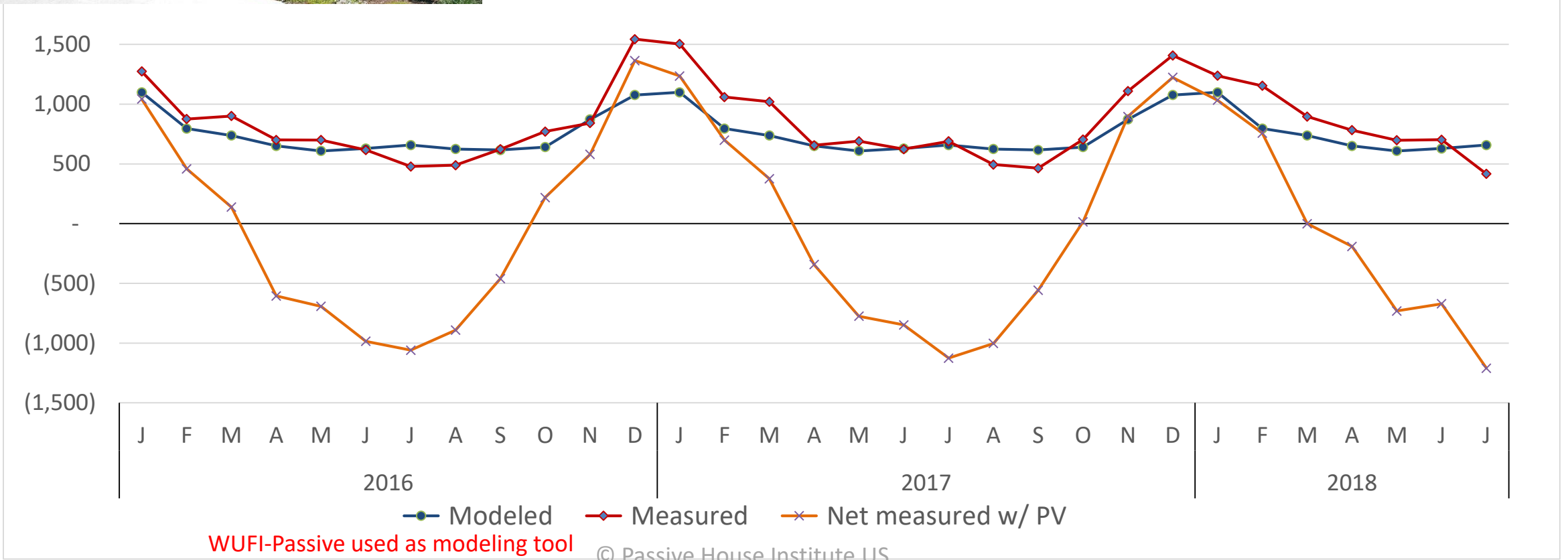


MADRONA

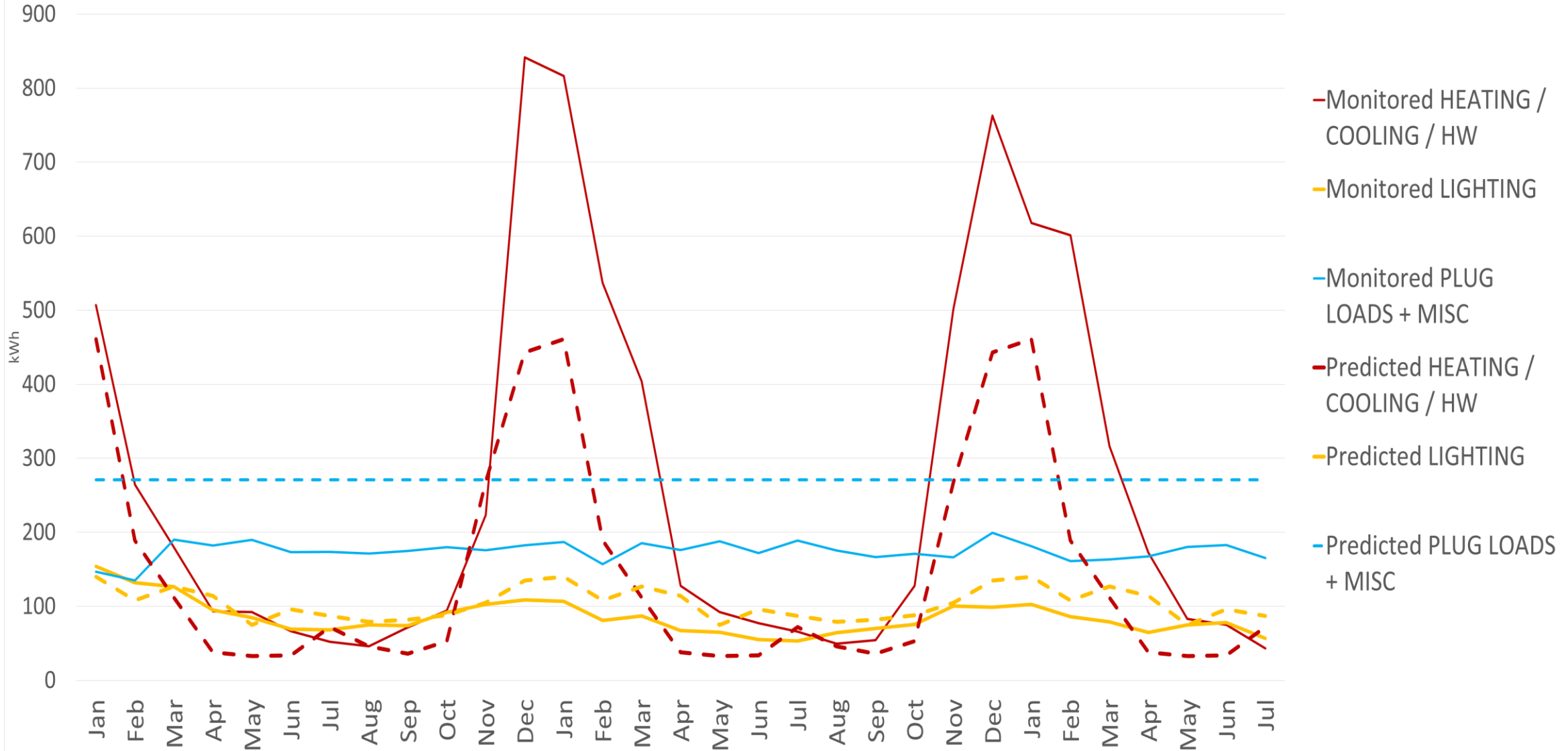
89% Modeled vs Actual

Type: Single family
 Occupants: 4
 Location: Seattle, WA
 CPHC: Dan Whitmore

1236 - Electric Consumption (kWh)

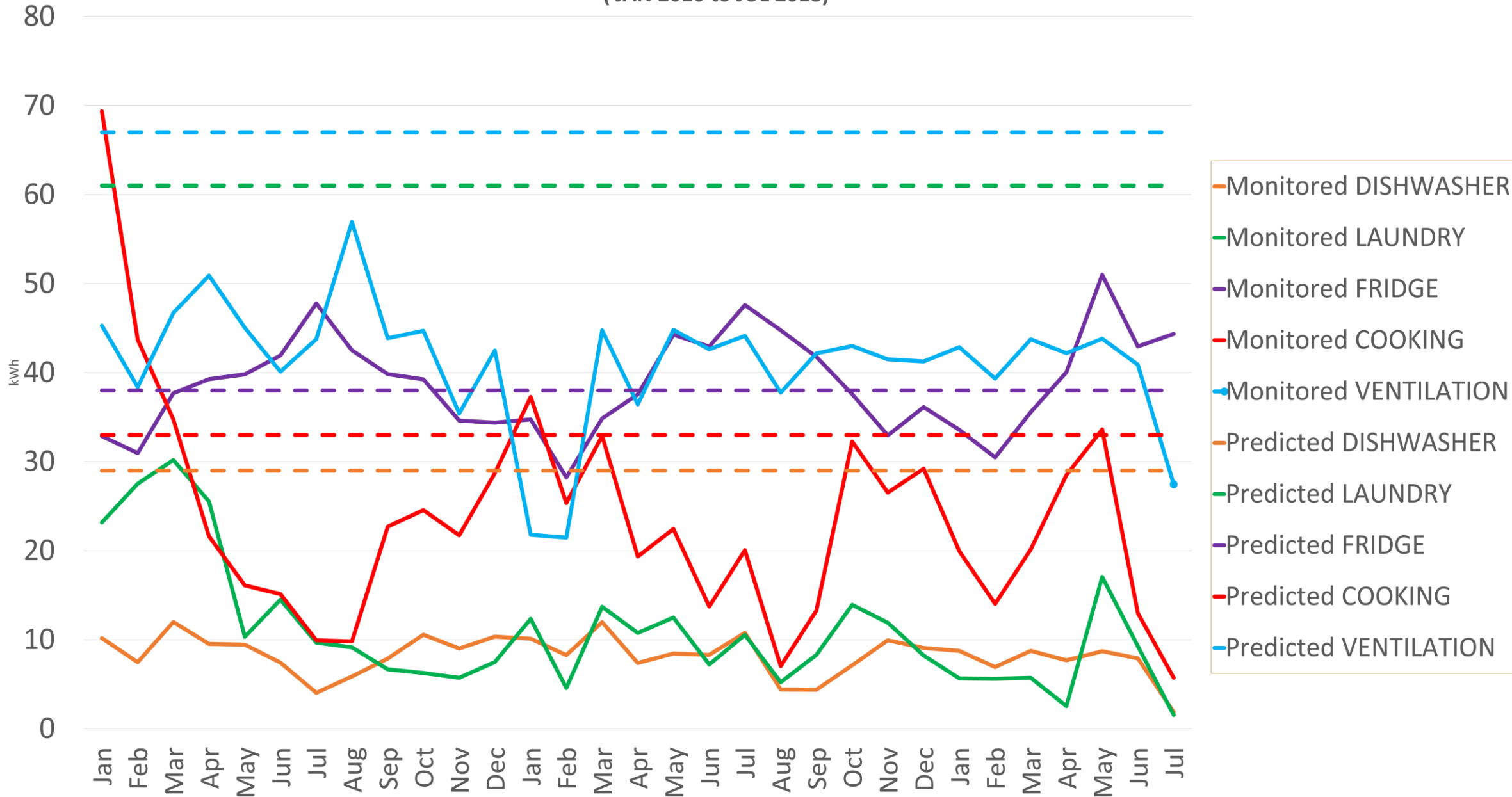


1236 - Madrona House - Site Energy (JAN 2016 to JUL 2018)



MADRONA

1236 - Madrona House - Site Energy
(JAN 2016 to JUL 2018)



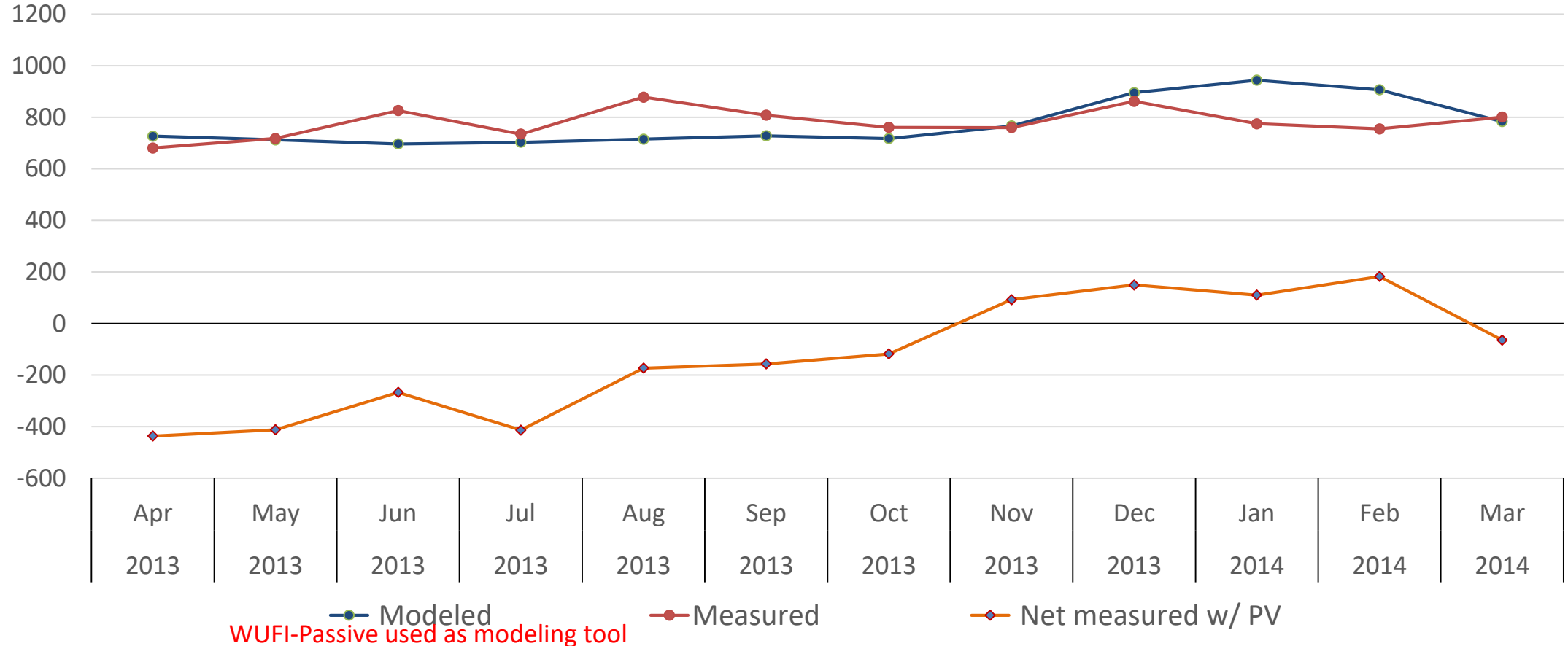
COTTLE ZEH

99% Modeled vs Actual



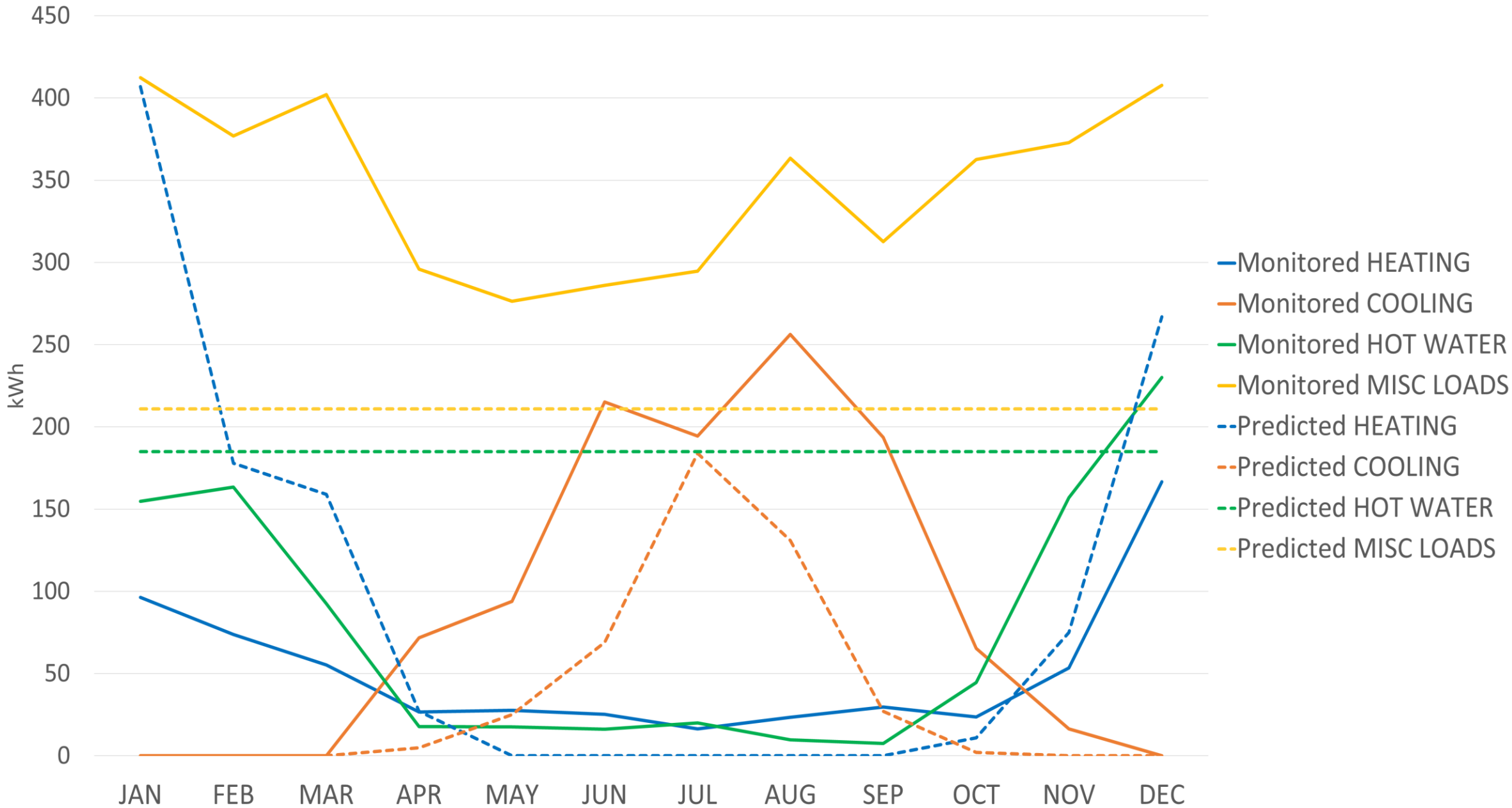
Type: Single family
Occupants: 3
Location: San Jose, CA
CPHC: Allen Gilliland

1070 - Electric Consumption (kWh)



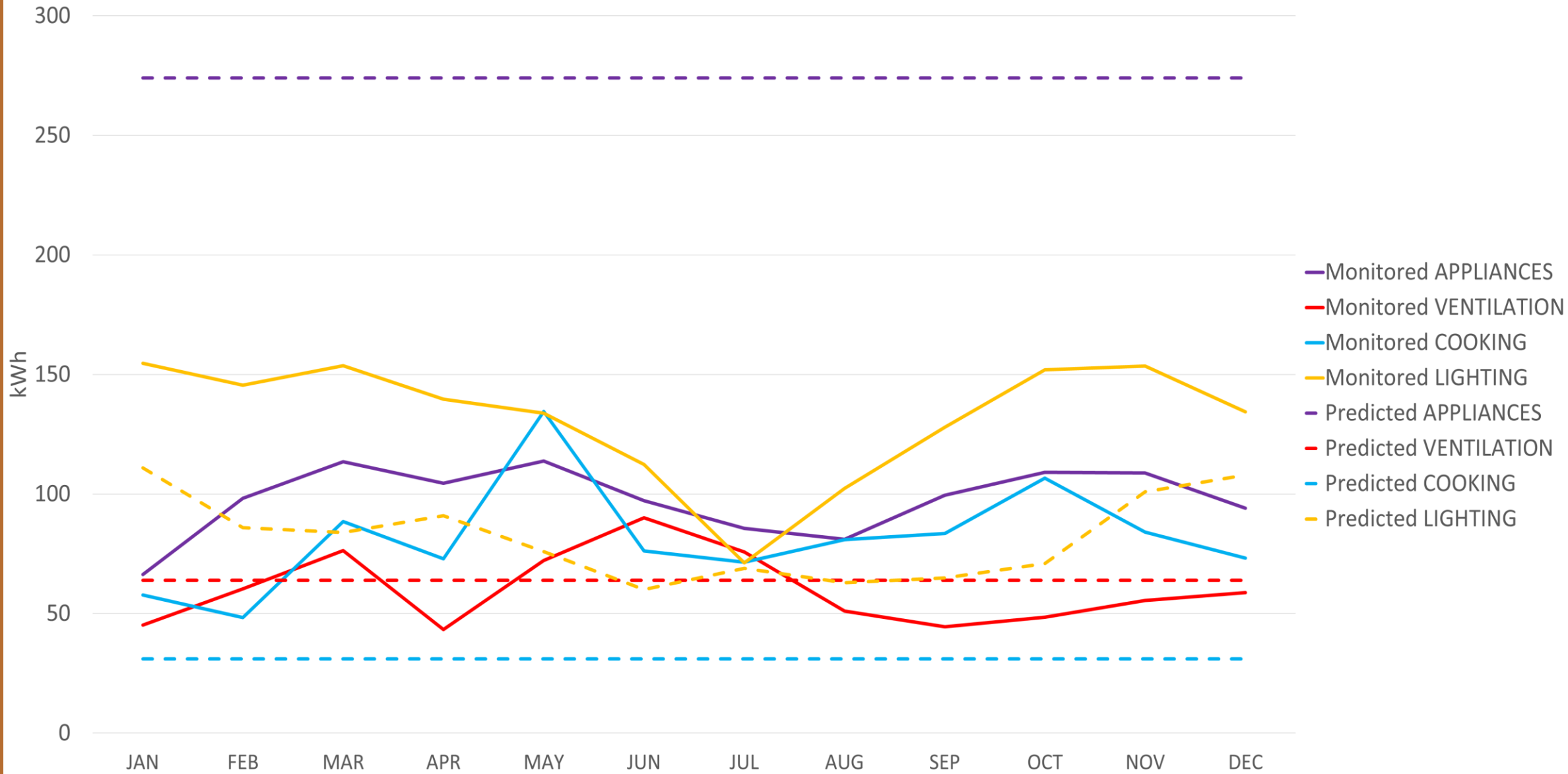
COTTLE ZEH

1070 - Cottle ZEH - Site Energy: Monitored vs PHIUS+ 2015 Predicted



COTTLE ZEH

1070 - Cottle ZEH - Site Energy: Monitored vs PHIUS+ 2015 Predicted



GEORGE RESIDENCE

70% Modeled vs Actual

Type: Single family

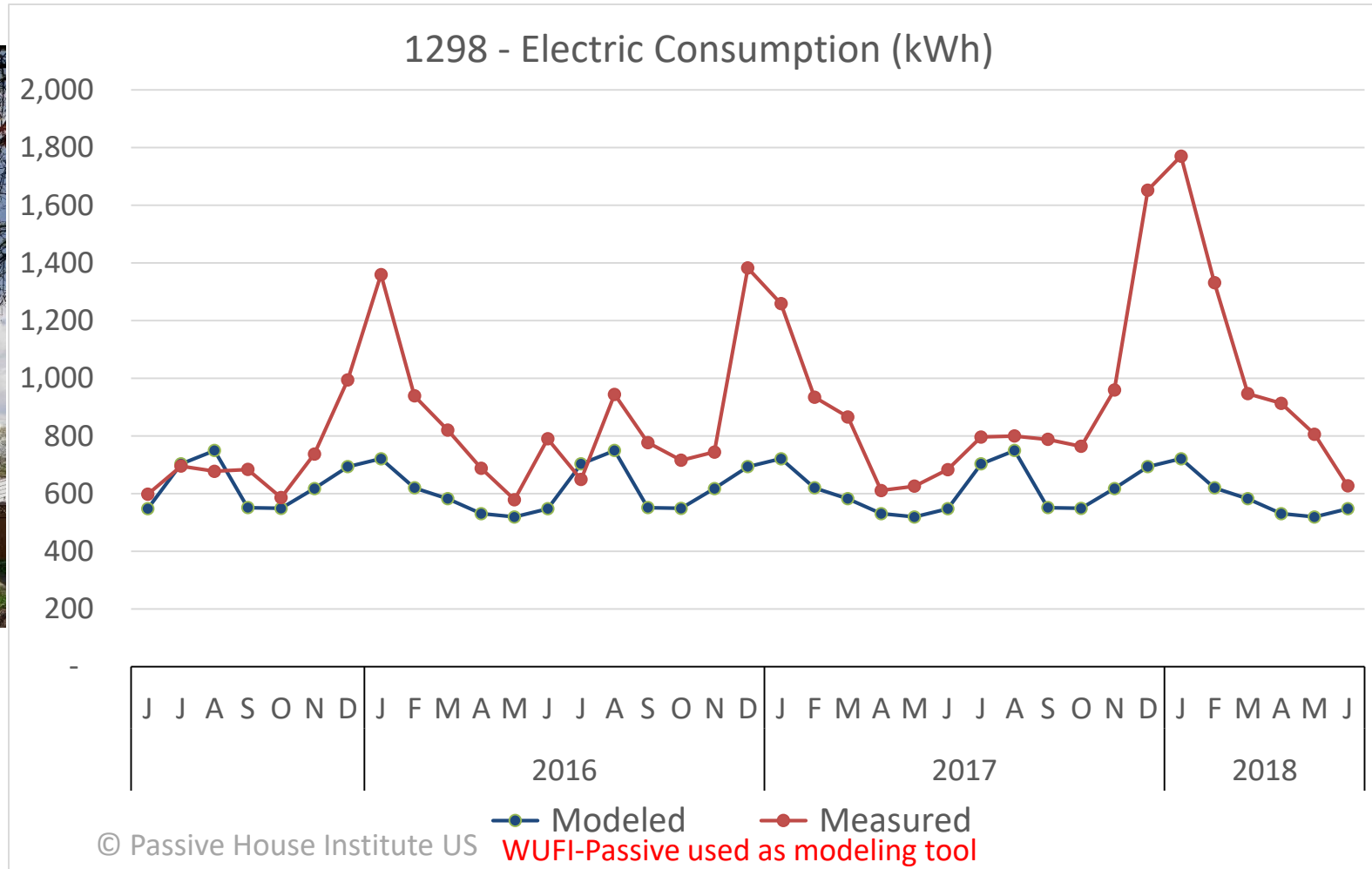
Occupants: 4

Location: Oak Park, IL

CPHC: Tom Bassett-Dilley



HPWH
Under-sized heat pump



BERKS / SOEDER

72% **Modeled** vs **Actual**

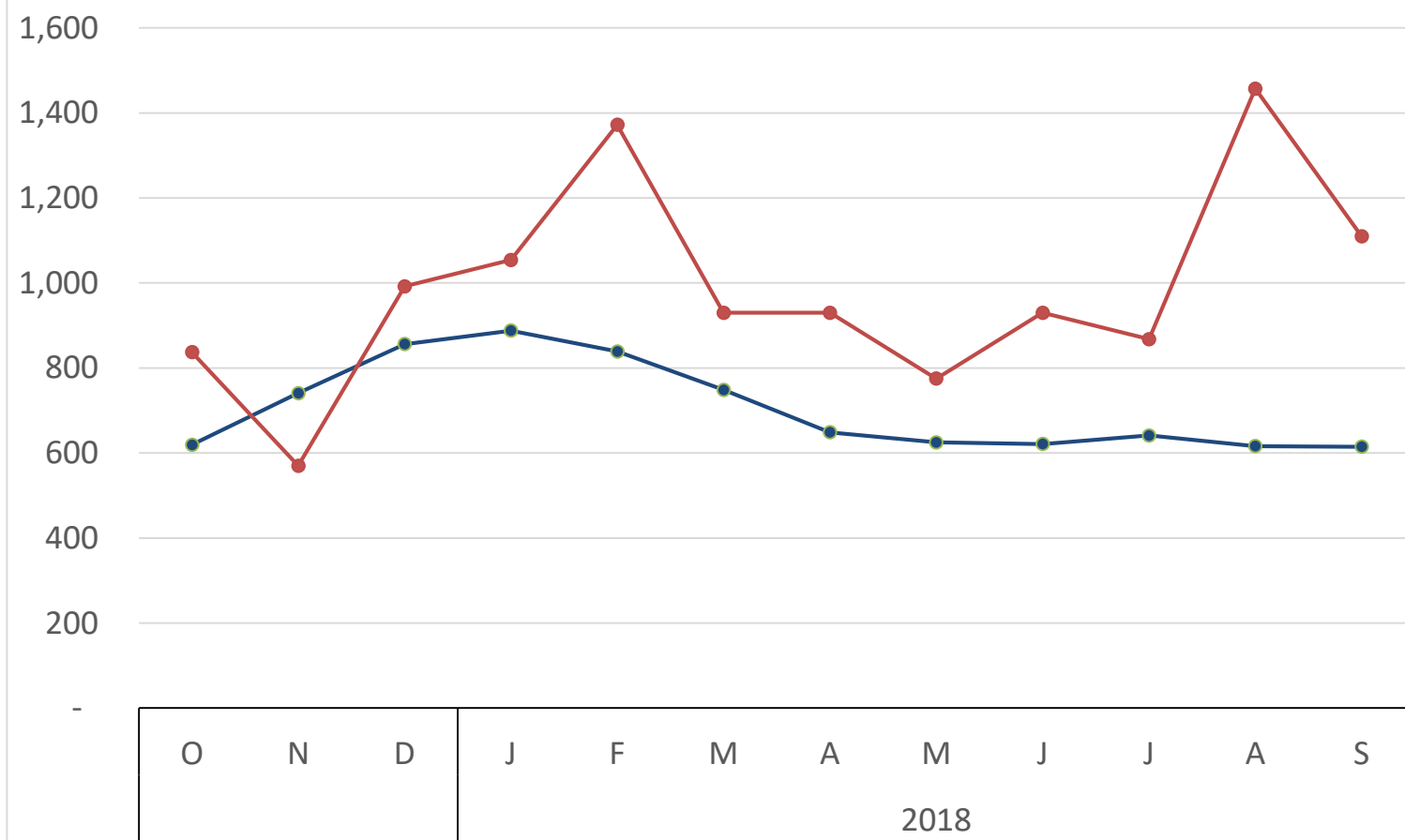
Type: Single family

Occupants: 6

Location: Scranton, PA

CPHC: Richard Pedranti

1300 - Electric Consumption (kWh)



—●— Modeled —●— Measured
WUFI-Passive used as modeling tool



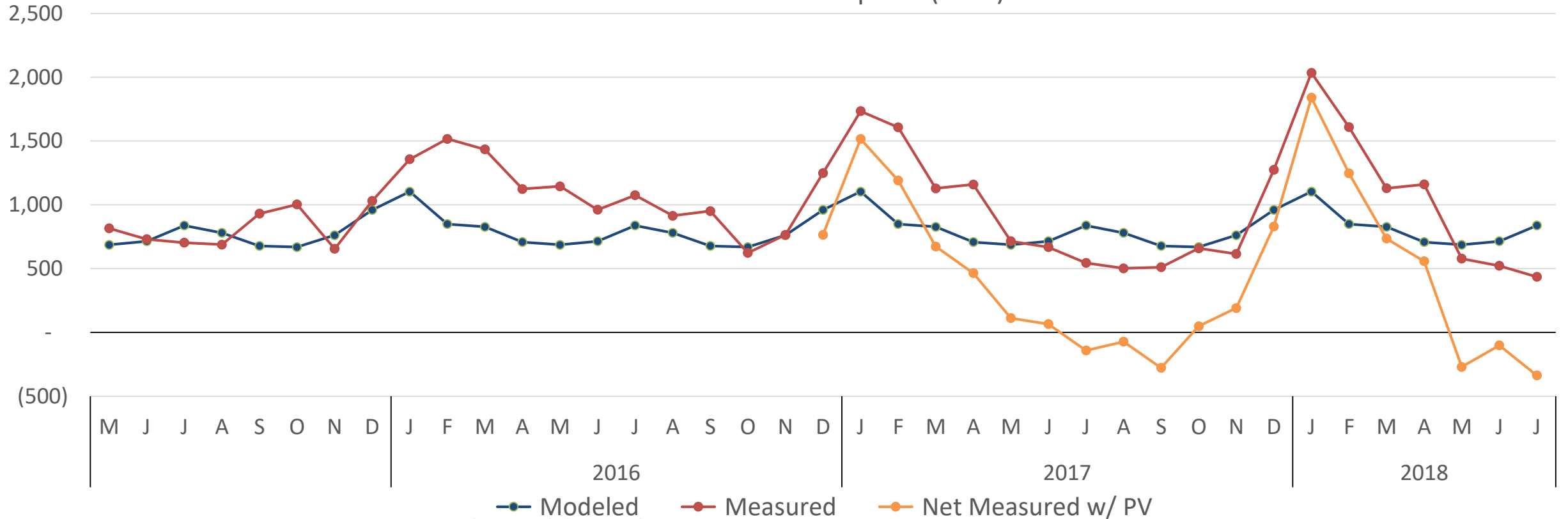
MOSKOWITZ PASSIVE HOUSE

Type: Single family
 Occupants: 3
 Location: Teaneck, NJ
 CPHC: Christine Liaukus
 Malka Van Bemmelen



79% Modeled vs Actual

1054 - Electric Consumption (kWh)



WUFI-Passive used as modeling tool

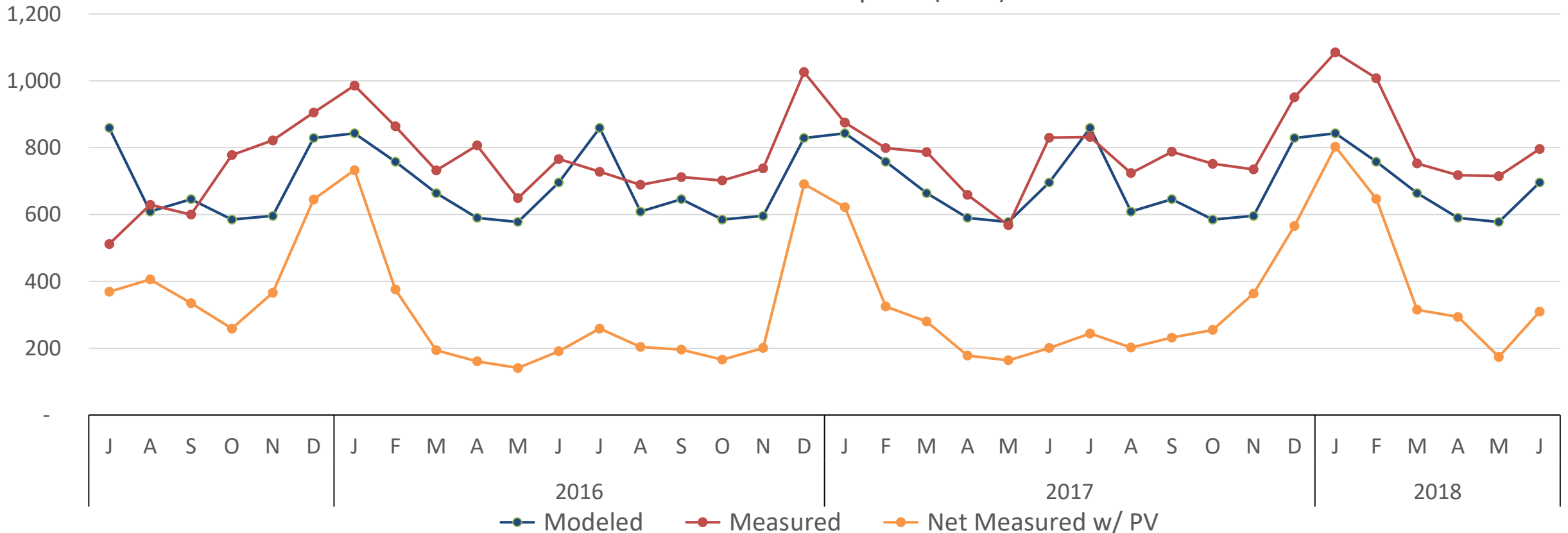
EAST LAWRENCE PH

88% Modeled vs Actual



Type: Single family
Occupants: 3
Location: Lawrence, KS
CPHC: Ryan Abendroth

1297 - Electric Consumption (kWh)



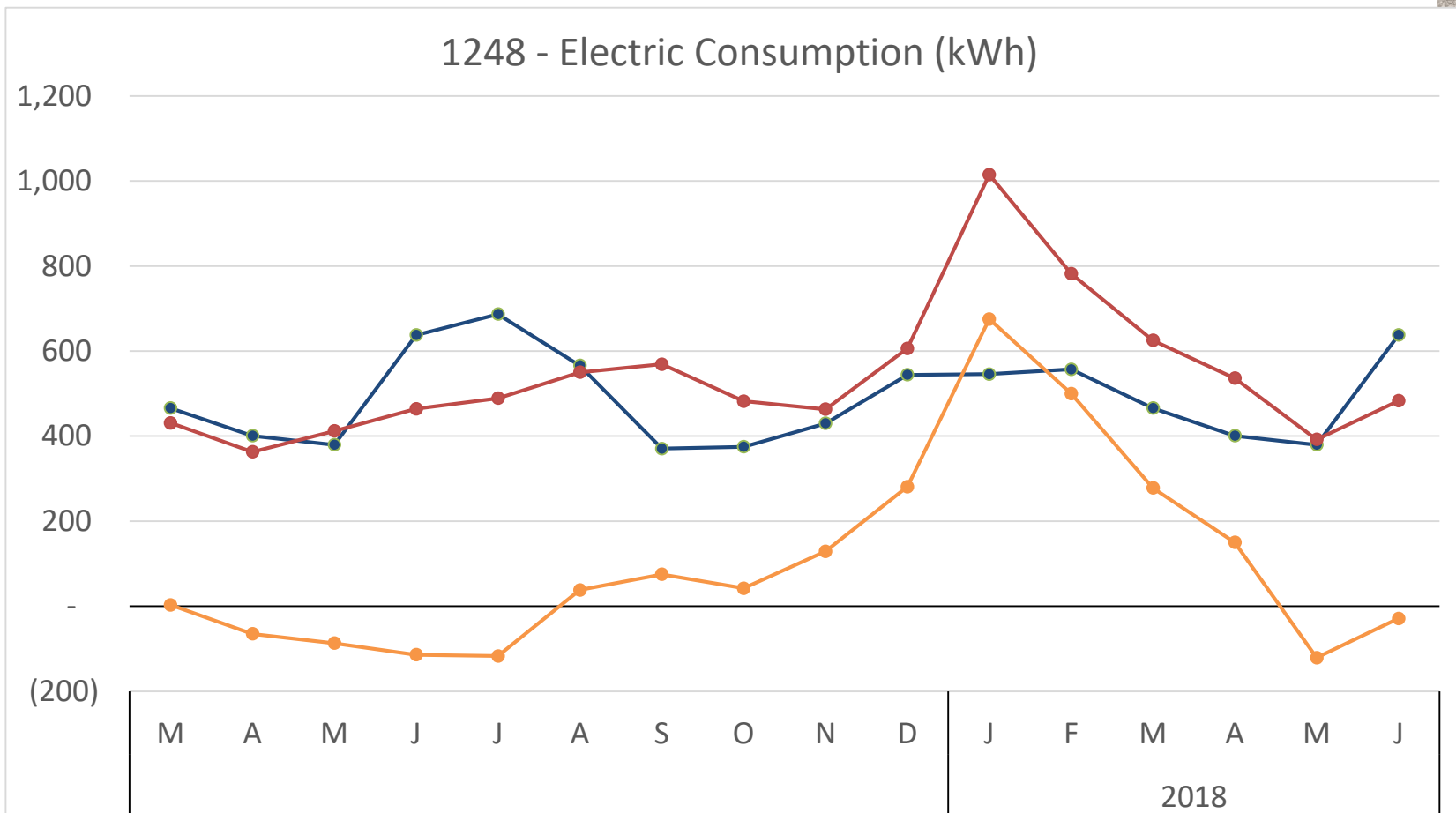
WUFI-Passive used as modeling tool

LOUGHRAN RESIDENCE

93% Modeled vs Actual



1248 - Electric Consumption (kWh)



Type: Single family
Occupants: 4
Location: Illinois
CPHC: Ryan Abendroth

—●— Modeled —●— Measured —●— Net Measured w/ PV

WUFI-Passive used as modeling tool

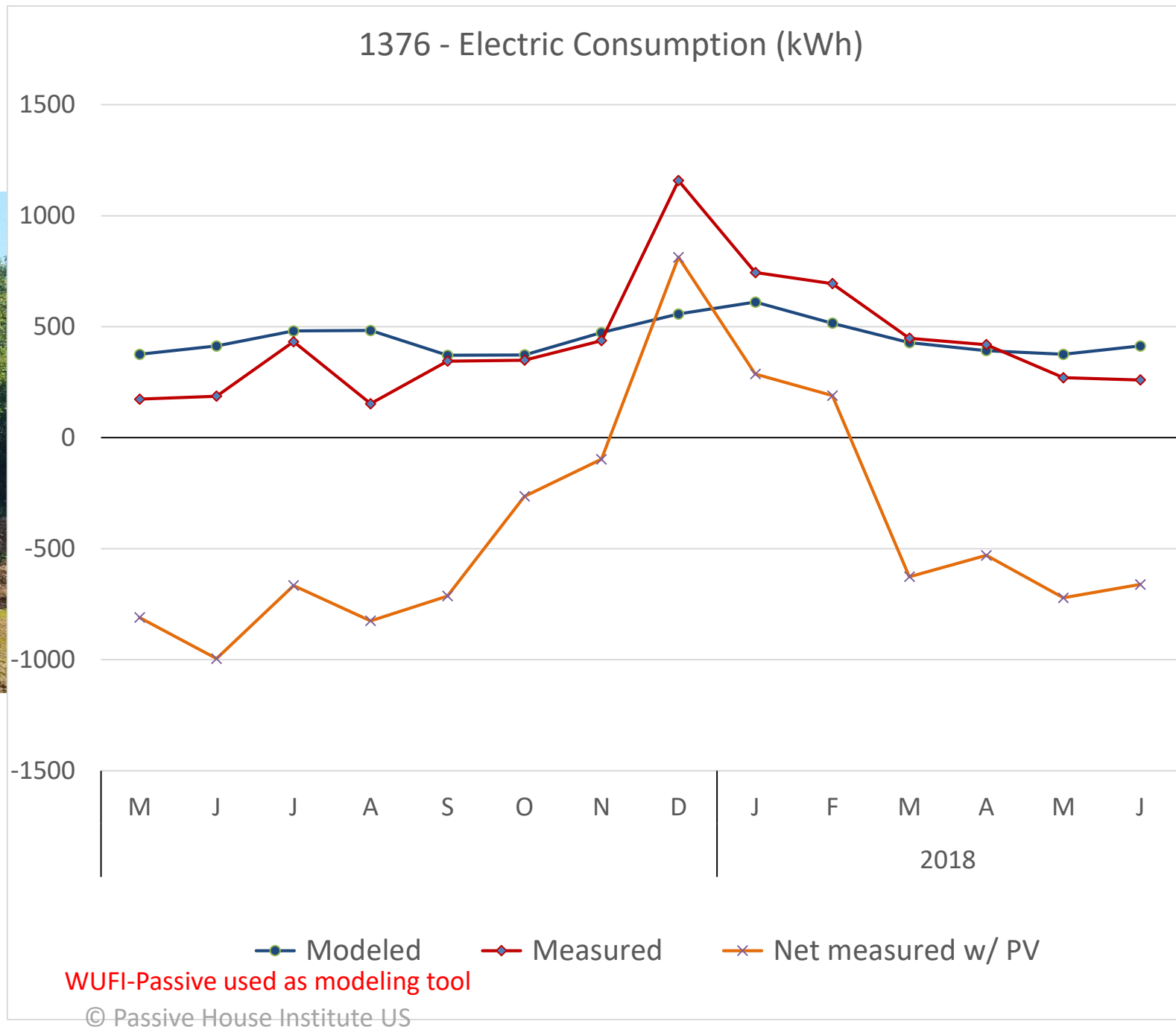
© Passive House Institute US

THE ROCKPILE

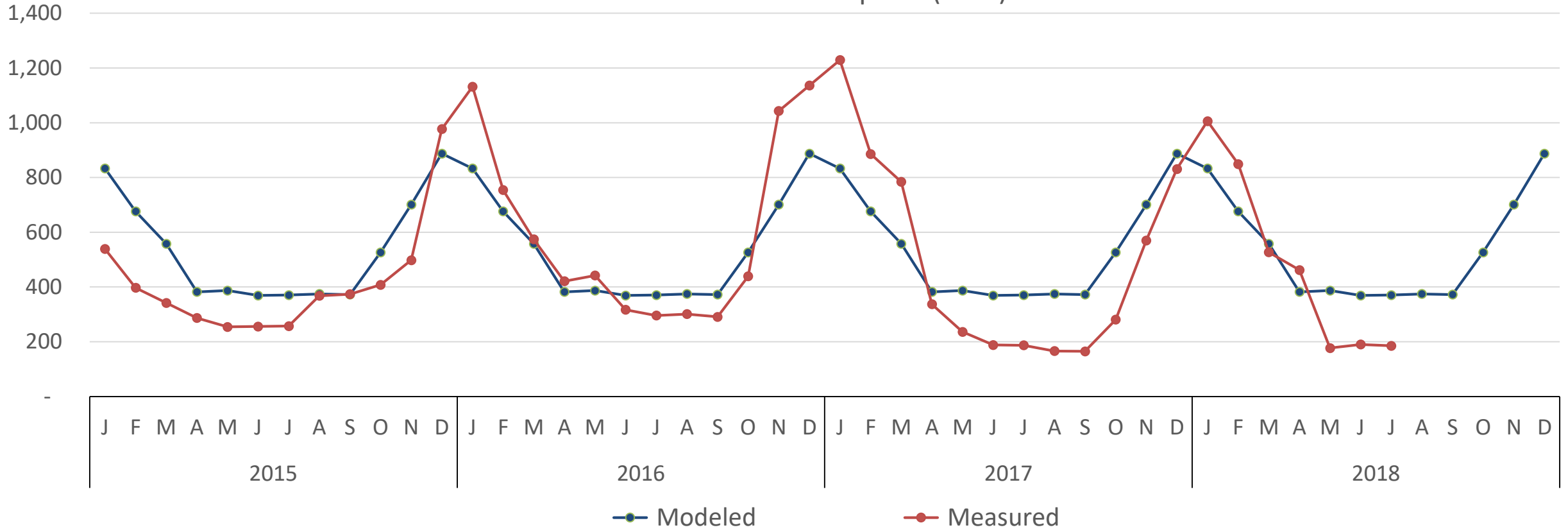
103% Modeled vs Actual



Type: Single family
Occupants: 2
Location: Dubuque, IA
CPHC: Shane Hoyer



1225 - Electric Consumption (kWh)



WUFI-Passive used as modeling tool

OWL HAVEN

107% Modeled vs Actual

Type: Single family
Occupants: 3
Location: Langley, WA
CPHC: Robert Moore

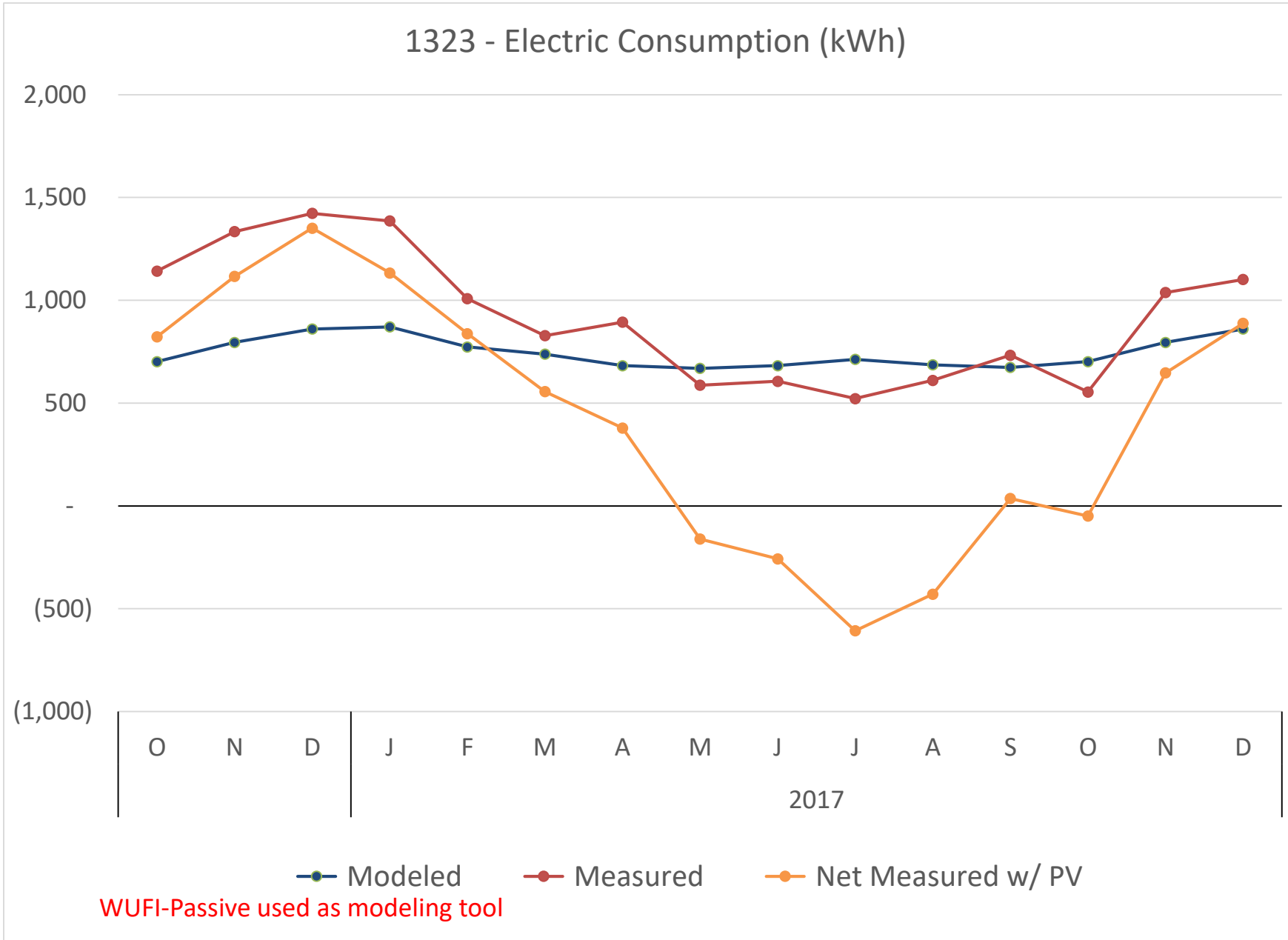




CHRISTIANSON

108% Modeled vs Actual

Type: Single family
Occupants: 5
Location: Corvallis, OR
CPHC: Jan Fillinger,
Win Swafford



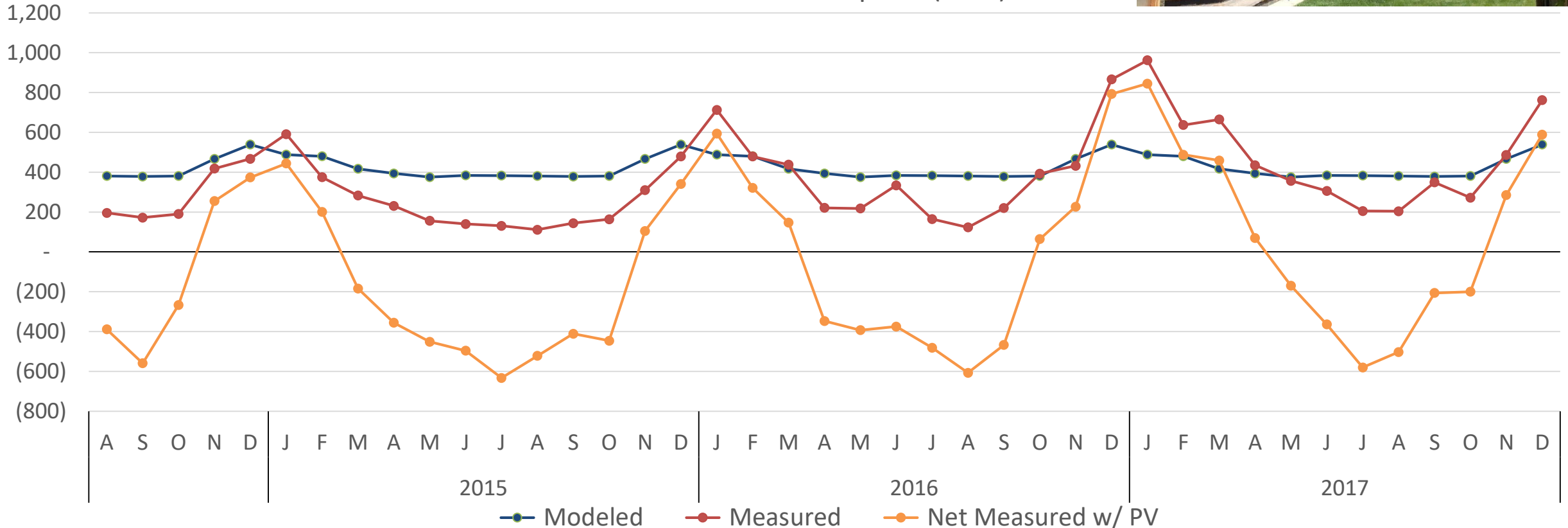
Type: Single family
 Occupants: 3
 Location: Eugene, OR
 CPHC: Win Swafford
 Jan Fillinger

ORCHARD ST

116% Modeled vs Actual



1058 - Electric Consumption (kWh)



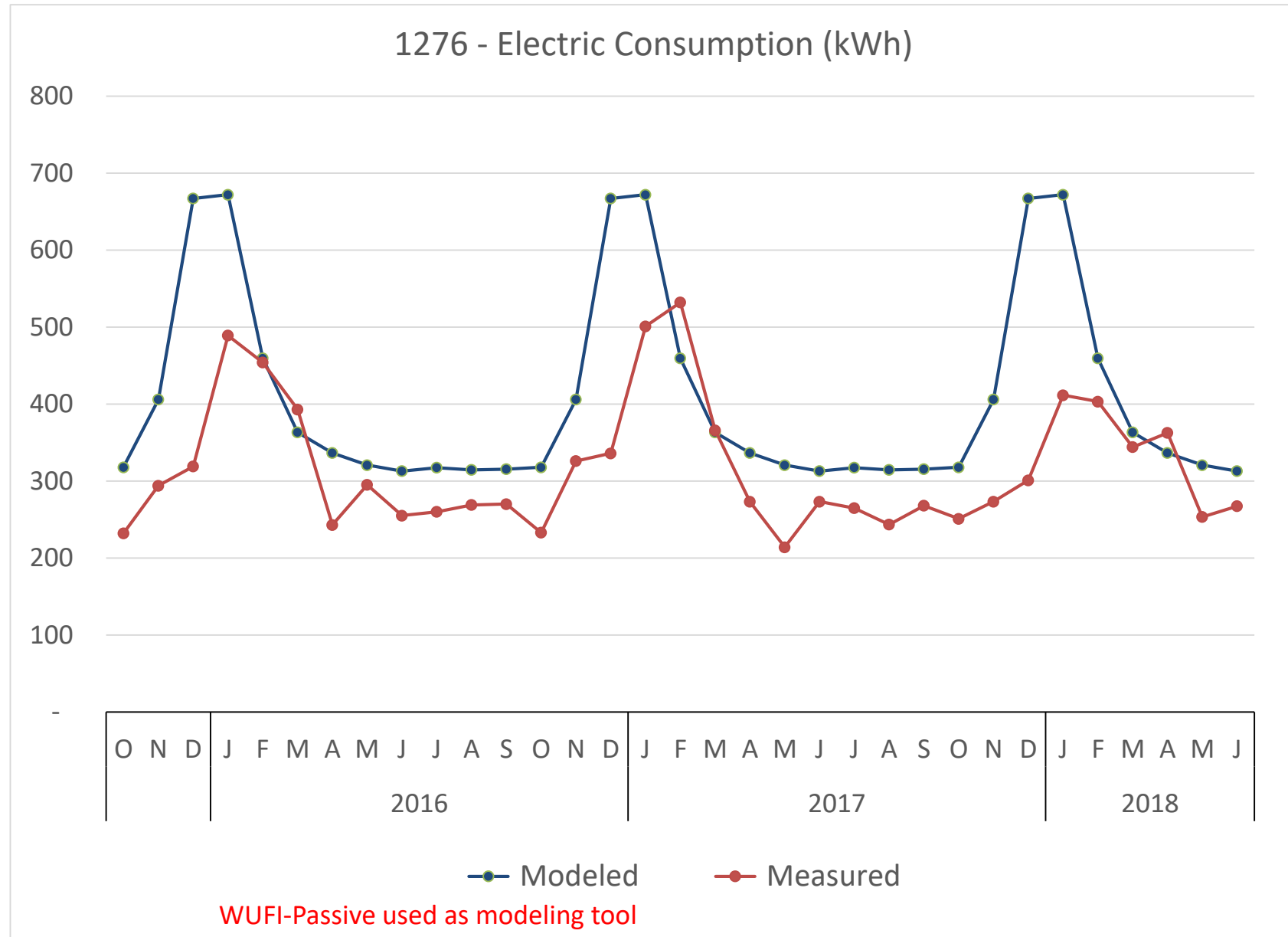
WUFI-Passive used as modeling tool © Passive House Institute US

ANCHOR BAY

128% Modeled vs Actual



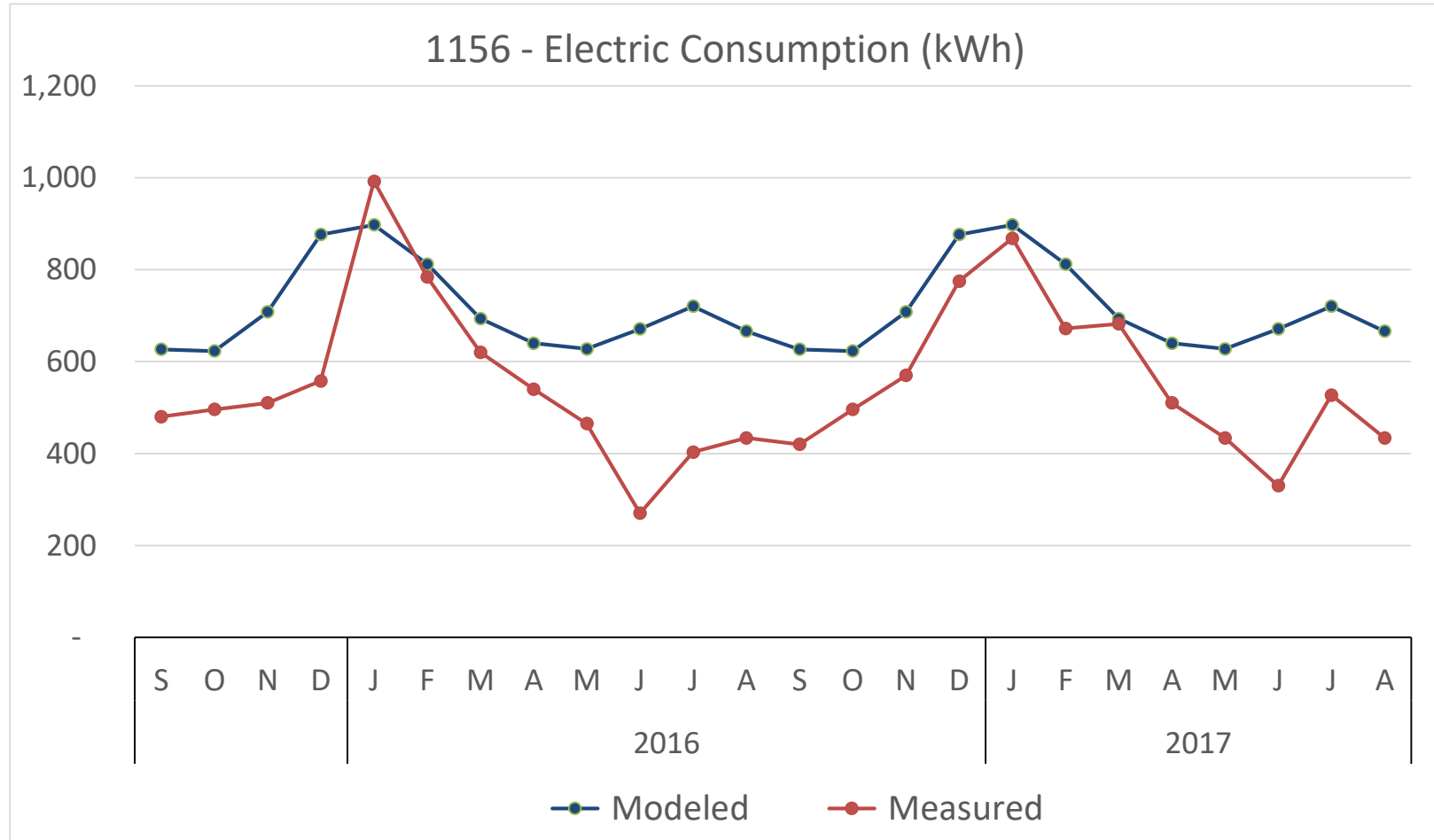
Type: Single family
Occupants: 4
Location: Gualala, CA
CPHC: Graham Irwin



KARPIAK MULHALL

130% Modeled vs Actual

Type: Single family
Occupants: 4
Location: Scranton, PA
CPHC: Richard Pedranti



WUFI-Passive used as modeling tool

93% Modeled vs Actual

