



SMUD[®]

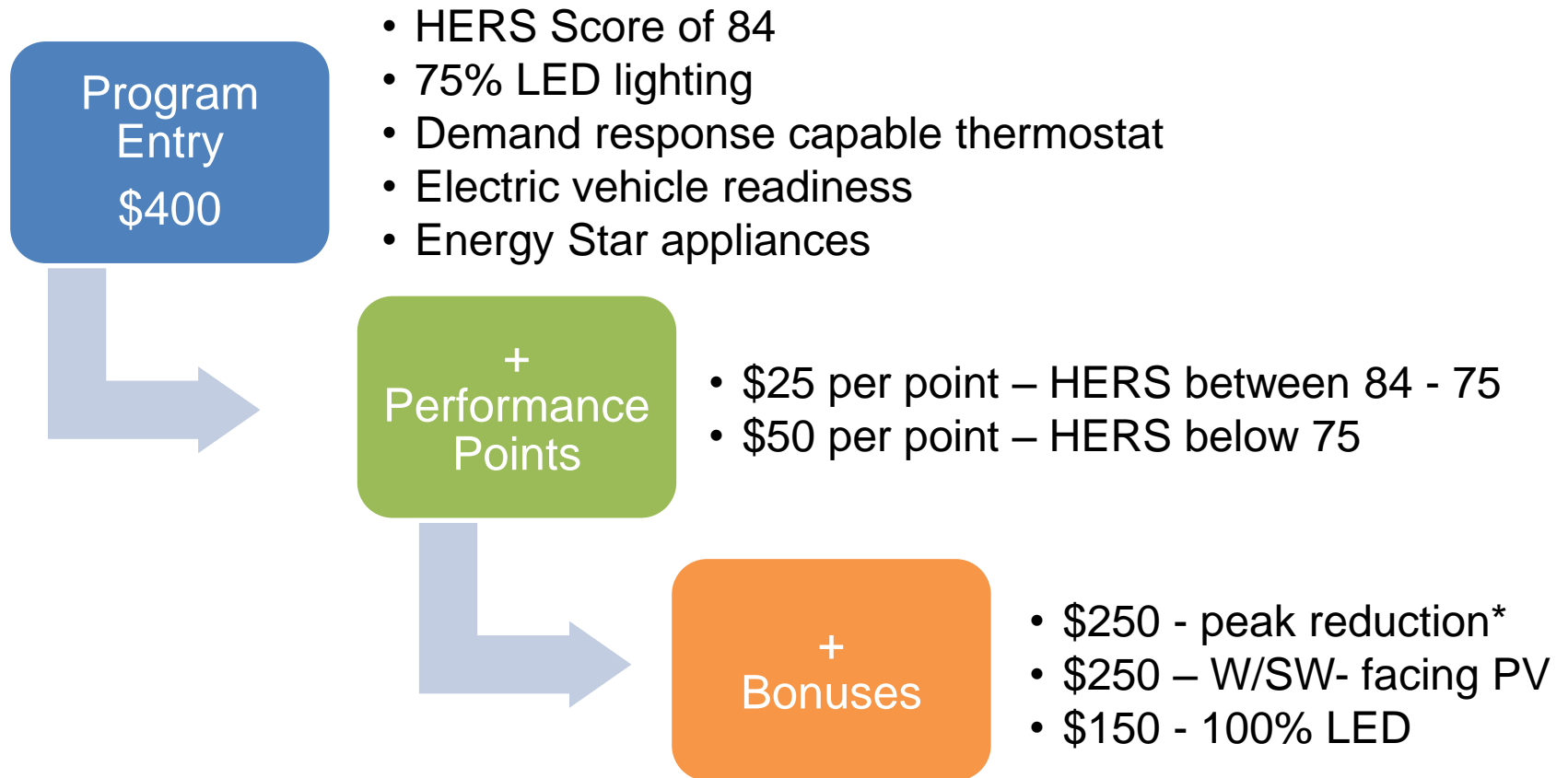
Smart Homes

Program Design Considerations

Maximizing benefits to customers, builder partners, and SMUD.

SMUD	Builder	Homeowner
<ul style="list-style-type: none">• Integrated DSM• Peak reduction• Long-term communication with customer• Ability to connect customer to future TOU rate	<ul style="list-style-type: none">• Market differentiation• Ease of participation• Clearly defined requirements• Consistency across geographic regions (alignment with IOU programs)• California ZNE (Zero Net Energy) policy goal readiness	<ul style="list-style-type: none">• High efficiency home• Connected and smart• Third-party field verified (QA)• EV-ready• Maximize savings on TOU rate• Most efficient appliances

Program Structure



*<1kW average peak demand

Program Entry Requirements



Source: Aluratek

- 75% LED
- 0% incandescent
- Meet Title 24 requirements



Source: Carrier

- Two way communication (WiFi or Zigbee)
- Receive/respond to pricing signals



Source: Compliance Signs

- Breaker space + conduit OR
- Grounded AC outlet

Bonuses: Peak Reduction & Lighting

Goals:

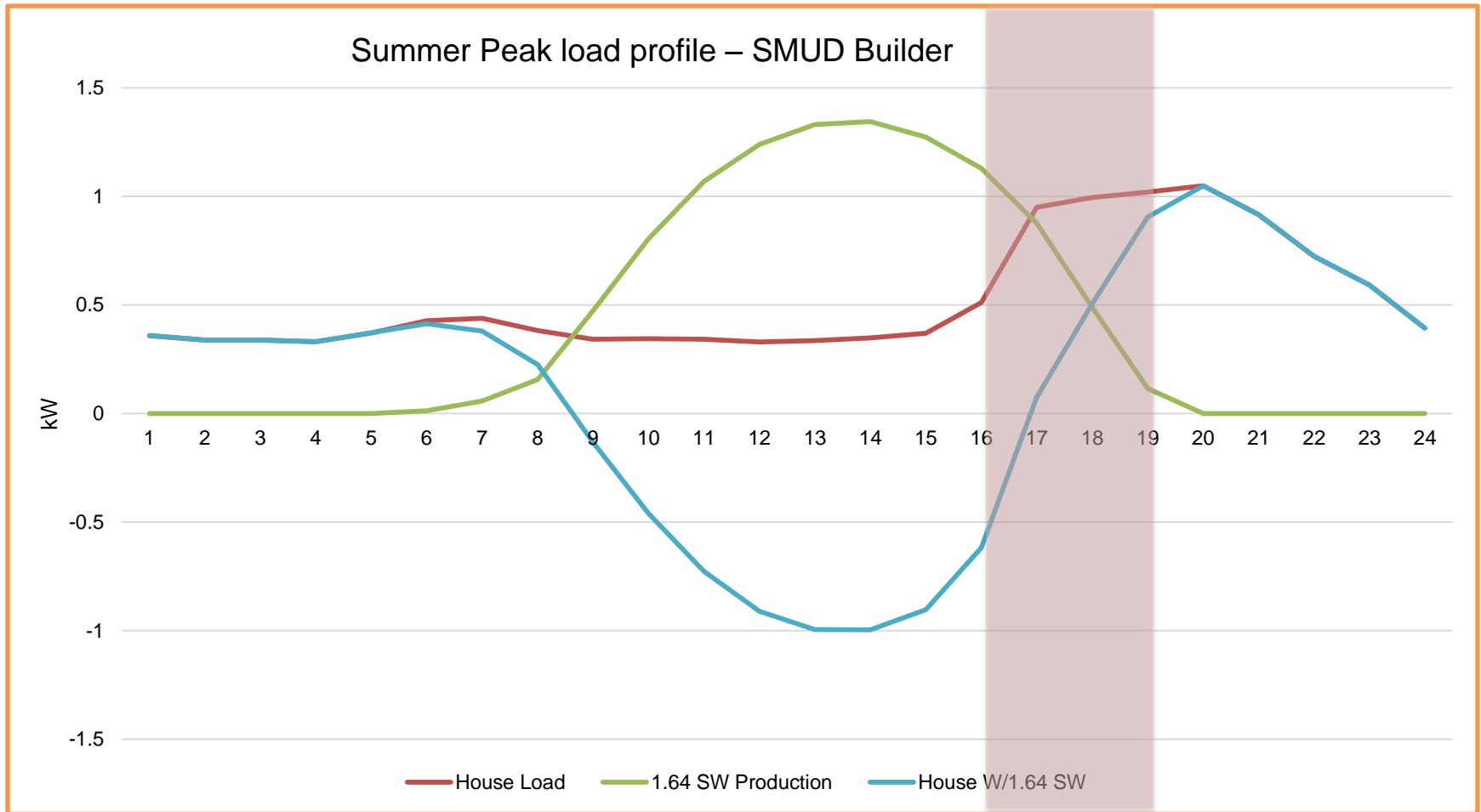
- Reduce daily energy use during residential summer peak
 - SMUD residential peak occurs later than system peak*
 - System peak: 4 - 7 pm
 - Residential peak: 6 - 8 pm, preferably 9 pm
 - Solar production falls off in the same hours and could cause a load spike
- Reduce the cooling energy use during a single event heat wave

Bonuses:

1. Low Peak Shell - \$250 rebate
 - < 1kW average house load, 7 – 9 pm
2. Low Peak Renewables - \$250 rebate
 - Southwest or West facing PV (1kW system minimum)
3. 100% LED Lighting - \$150 rebate

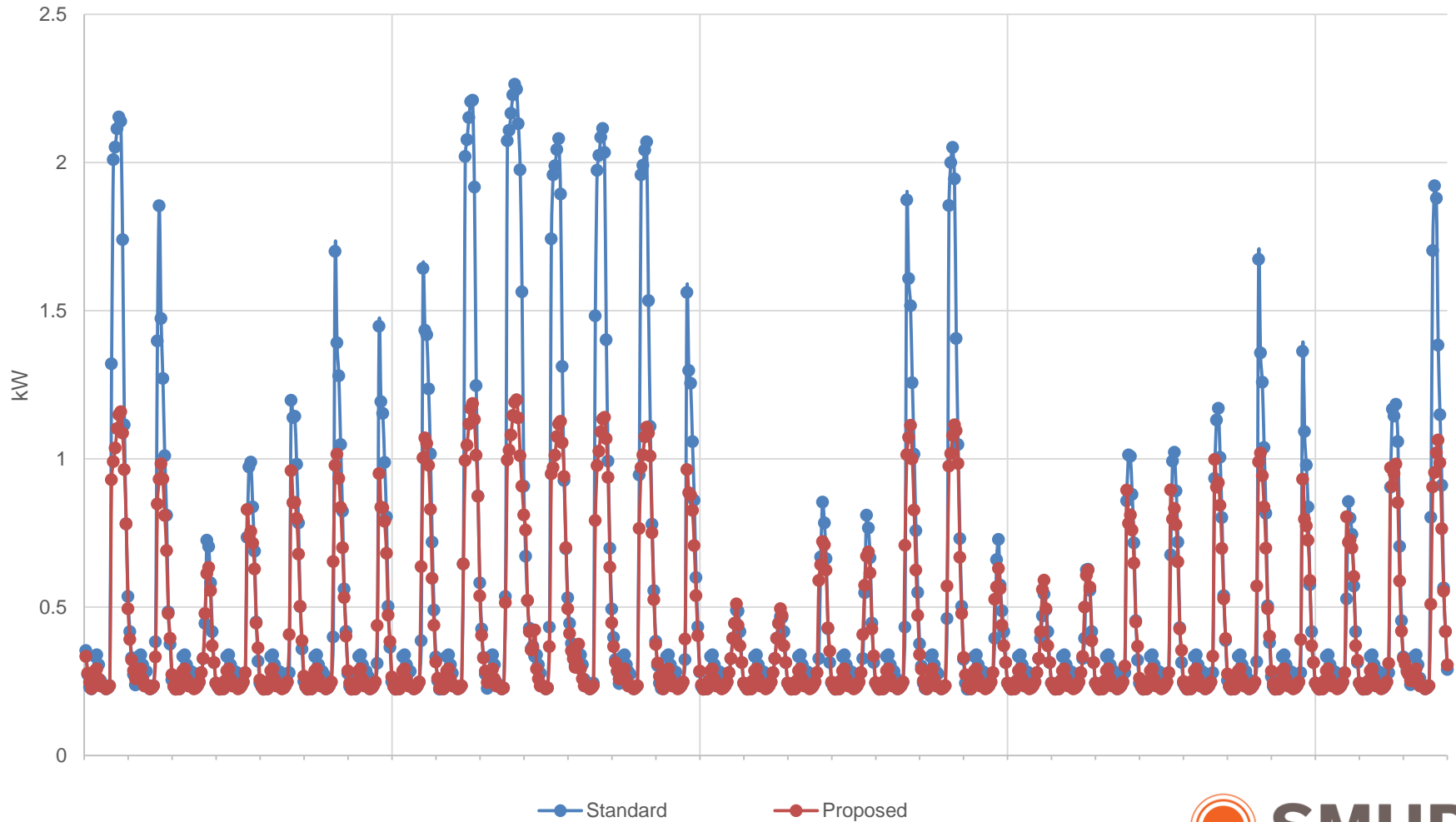
*Source: Bruce Cenicerros (ACEEE 2006)

Peak Reduction Example - Daily



Daily Peak Comparison: July in CZ 12

July Load Profiles: Standard Code Home vs. Participating Home



State of the Program

- **Barriers & Challenges**
 - Certain styles and/or existing distributor relationships make 75% LED lighting requirement difficult for some builders
 - HERS Score doesn't accurately account for all technologies (i.e. HPWH, Mini-splits, etc.)
 - Internally: how to measure & value IDSM
- **Builder Partners for 2015**
 - Watt Communities
 - Bardis Homes
 - Currently having conversations with 4 other builders



Questions?

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