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2019 Building Energy Efficiency Standards

2018 IEPR Joint Agency Workshop on
Energy Reliability in Southern
California



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May 8, 2018
California Energy Commission



Progress Towards ZNE

The 2019 Standards:

1. Make progress toward the ZNE goal within the confines of cost effectiveness, NEM, and life cycle cost rules
2. Contribute to the State's GHG reduction goals
3. Promote self-utilization of the PV generation by encouraging or requiring demand flexibility and grid harmonization strategies
4. Provide independent compliance paths for both mixed-fuel and all-electric homes
5. Provide the tools for local governments to adopt ordinances to achieve ZNE through Part 11 Reach Codes, and other beyond code practices



2019 Standards Approach

The 2019 Standards recognize the following priority for efficiency and generation resources:

1. Envelope efficiency
2. Appropriately sized PVs
3. Grid harmonization strategies that maximize self-utilization of the PV output and limit exports to the grid





All-Electric Home Option

Standards allow all-electric home's PV size be the same as an equally sized mixed fuel home with similar features:

- The larger PV needed to displace the all-electric home kWhs, makes grid harmonization strategies, more important
- Requiring a much larger PV system on an all-electric home to displace the larger annual kWh may discourage all-electric homes





Parallel Prescriptive Paths

There will be two parallel prescriptive paths for compliance, one for each of:

1. Mixed fuel homes
2. All-electric homes

This allows the all-electric and mixed fuel homes to have their own prescriptive paths

NEEA Tier 3 HPWH models can easily be used to meet or exceed standard design using the performance path





PV System Sizing

- For Part 6, PV is sized to net out the building's expected annual kWhs
- Larger PV array can be installed but will not receive additional compliance credit
- For Part 11 compliance, CBECC allows PV array coupled with a 6 kWh battery storage system to be oversized by a factor of up to 1.6
 - The battery enables the increased PV capacity to be used by the utility to meet demand during critical peak periods
 - Promotes self-utilization on peak since PV system is coupled with battery storage





Compliance determined by Energy Design Rating

- A target EDR establishes a performance benchmark that the building must meet for compliance
- CBECC-Res software has the capability to calculate EDR scores for EE and PV separately
- Builders can use a combination of envelope energy efficiency features, better appliances, PVs, and other strategies to get to the target EDR
- Target EDR is fully compatible with reach codes. Local jurisdiction can simply identify a lower target EDR



Next Steps

- Energy Commission adoption hearing May 9th
- California Building Standards Commission approval Fall 2018
- Effective date of standards January 1, 2020
- Ability to adopt local ordinances available now



Questions?

CBECC modeling tool for energy and GHG emissions
available for download:

<http://www.energy.ca.gov/title24/>

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