

2016 Building Energy Efficiency Standards

2016 Building Standards

ACM Workshop

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AGENDA

- ACM Approval Manuals
- Standards Clean-up
- 2016 Compliance Options
- 2016 Reach Codes
- Open Discussion

ACM Approval Manuals

- Need quicker way to get Compliance Manager (CM) updates to ACM vendors
- Ability for ACM Vendors to use CM rulesets with their native building energy modeling framework
- Clarify language to enable automatic decertification of prior ACM versions with each CM update
- Add option for approved 2013 ACMs to produce whole building TDV/sf-yr based performance checks with CEC approval

Standards Clean Up

- Remove specific “Performance” criteria in 141, 150.2
- Remove specific ACM requirements from Reference Appendices
- Clarify summary of Performance Approach in sections 140.1, 150.1
- Add all relevant ACM software specifications to ACM Reference Manuals

2016 Compliance Options

- Residential ACM

PV Credit - Overview

1. Allow a PV credit that is large enough for tradeoff against both high performance attics (HPA) and high performance walls (HPW).
2. However, to take this credit in #1, the builders must perform QII to ensure building envelope and insulation integrity before using PV credit for tradeoff against the HPA and HPW.
3. The minimum mandatory baseline building, against which the PV tradeoff won't be available for the PV tradeoff, will be the 2013 Standards plus tankless water heater and QII.



PV Credit – Overview - Continued

4. Work with the CPUC and IOUs to provide incentives for HPA and HPW.
5. In addition to the HPA and HPW tradeoff, allow PV tradeoff for glazing areas that exceed the 5% west facing and 20% total glazing areas.
6. Require a minimum PV kW, such as 2 kW, to take advantage of this credit.



PV Credit - Overview

2,100 Square Feet Prototype – Single Story

PV Tradeoff, kW DC, 90 degrees Orientation			
Climate Zone	HPA	HPW	HPA&W
2	0.12	0.22	0.34
4	0.13	0.20	0.33
7	0.01	0.12	0.13
9	0.33	0.20	0.53
10	0.35	0.22	0.57
11	0.56	0.33	0.89
12	0.40	0.30	0.70
13	0.68	0.33	1.01
14	0.48	0.33	0.81
15	0.83	0.41	1.24
16	0.25	0.34	0.59



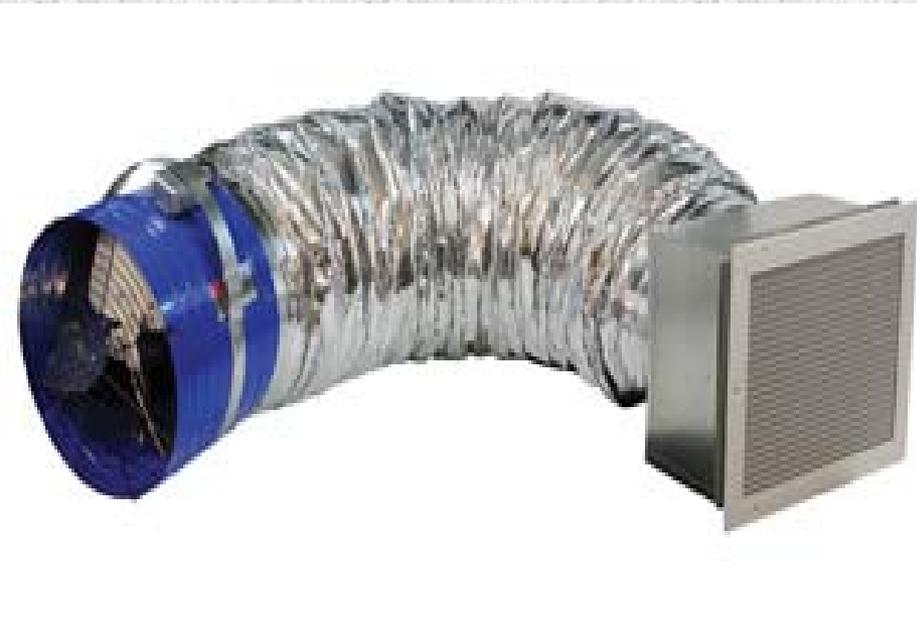
Advanced Whole House Fans - Overview

1. Prescriptive requirement under 2013 Standards in CZs 8-14
2. “Standard” central WHFs from big box stores comply
 - I. Tend to be noisy
 - II. Difficult to operate in smaller zones that are less than the full house
 - III. Concerns about security
3. Performance degraded by 75% to account for these factors
4. Central fan integrated ventilation systems as alternatives - in CZs 8-14 as compliance options



Advanced Whole House Fans

- For 2016 Standards, consider a compliance credit for advanced whole house fans similar to central fan integrated ventilation systems – at least two fans must be installed to get credit
 - Much quieter than standard WHFs
 - Can work in small zones in the house
 - Less concern about security



2016 Compliance Options

- Nonresidential ACM

2016 Reach Code

- Whole Building Energy Use Intensity (EUI) Targets
 - In kTDV/sf/yr
 - Same software implementation as ACM option to produce whole building EUIs for base code compliance

Open Discussion

