

Zero Net Energy

Proposed Policies for GSA Green Building Advisory Committee

GBAC ZNE Task Group

November 12, 2013

Background

- Executive Order 13514 (Oct. 2009)
 - All new Federal buildings entering the planning process in 2020 or thereafter to be “designed to achieve zero-net-energy by 2030”
- Priorities

1. REDUCE

- Deep energy efficiency retrofits
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2.

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 1. REDUCE, REDUCE, REDUCE!
 - Deep energy efficiency retrofits
 - Reduced plug loads
 - Conservation measures
 2. PRODUCE

Obstacles to ZNE

- Funding
- Current restrictions on PPA's to 10 years
 - DoD got authority to establish PPA's for 30+ years, although civilian side still limited to 10 years
- Lack of new projects budgeted

Definitions of ZNE

- **Net Zero Site Energy**
 - Produces at least as much energy as it uses in a year, when accounted for at the site
- **Net Zero Source Energy**
 - Includes upstream energy, transmission & distribution losses
- **Net Zero Energy Costs**
 - \$0 utility bill
- **Net Zero Energy Emissions**
 - No energy use or generation resulting in emissions

Prioritizing Sources of Renewable Energy

1. Onsite clean renewable energy

- Using building envelope or site

2. Off-site renewable energy sources used to generate electricity or hot/chilled water

3. Purchase off-site energy from Green-E or other equivalent REC programs within community energy scheme

- Includes dedicated off-site generation
- Continue generating or purchasing to maintain status

Recommended Policies – New Construction & Major Renovations

1. All new construction & major renovations initiated by 2020 shall be designed and constructed to achieve ZNE by 2030
2. Each GSA region shall initiate at least three ZNE pilot projects by the next budget cycle
 - Other federal agencies are encouraged to follow similar targets
 - Agencies with larger building portfolios should lead the charge for implementing these recommendations

Recommended Policies – Existing Buildings

1. By 2020, each GSA region should retrofit and verify 1% of their building area to be ZNE
 - Other federal agencies are encouraged to follow similar targets
2. By 2025, each GSA region should retrofit and verify 10% of their building area to be ZNE
 - Other federal agencies are encouraged to follow similar targets
3. By 2030, each GSA region should retrofit and verify 50% of their building area to be ZNE
 - Other federal agencies are encouraged to follow similar targets