



U.S. Department of Energy
Energy Efficiency and Renewable Energy

Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable

is clean, abundant, reliable, and affordable

Federal Energy Management Program

EISA 2007 and Current Federal Regulation

Cyrus Nasser
Federal Energy Management Program





Background – Current DOE Rulemakings

- 10 Code of Federal Regulations (CFR) Part 433
 - new commercial and high-rise multi-family residential buildings whose design for construction started after January 3, 2007
- 10 CFR Part 435 Subpart A
 - new residential buildings whose design for construction started after January 3, 2007
- 10 CFR Part 436
 - Life cycle costing and procurement



Current Federal Requirements

- Commercial and High-Rise Residential – 30% savings over ANSI/ASHRAE/IESNA Standard 90.1-2004, if life cycle cost-effective
- Low-Rise Residential – 30% savings over 2004 IECC, if life cycle cost-effective
- Life cycle cost-effectiveness from 10 CFR 436



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Energy Independence and Security Act of 2007

- Section 431 – Energy Reduction Goals for Federal Buildings
- Section 432 – Management of Energy and Water Efficiency in Federal Buildings
- Section 433 – Federal Building Energy Efficiency Performance Standards
- Section 434 – Management of Federal Building Efficiency



Energy Independence and Security Act of 2007 (continued)

- Section 435 - Leasing
- Section 436 – High Performance Green Federal Buildings
- Section 437 – Federal Green Building Performance
- Section 441 – Public-Building Life Cycle Costs



Section 431 – Energy Reduction Goals for Federal Buildings

- Strengthens energy reduction goals for Federal agencies over requirements in EPCACT 2005
 - 3% instead of 2% in EPCACT 2005, still through 2015
- Not a design requirement – overall energy management requirement



Section 432 – Management of Energy and Water Efficiency in Federal Buildings

- Requires energy managers
- Requires energy and water evaluations
- Requires consideration of re-commissioning and/or retro-commissioning
- Web-based tracking of facilities
- Benchmarking of facilities



Section 433 – Federal Building Energy Efficiency Performance Standards

- Requires **steep** reduction in fossil fuel energy usage relative to usage in DOE's Commercial Building Energy Consumption Survey (CBECS) or Residential Energy Consumption Survey (RECS)
 - Applies only to buildings over \$2.5 million cost, or public buildings that GSA for which must file a prospectus to Congress
 - **Applies to new construction and major renovations**
- Also requires DOE to consult with DOD and GSA and select a green building rating system and level of performance for all Federal agencies to use if they rate their buildings



Section 434 – Management of Federal Building Efficiency

- Requires that large capital energy investments that are not major renovations be life cycle cost effective
 - Roof replacement
 - Lighting system replacement
 - HVAC replacement
 - Any single system replacement



Section 435 - Leasing

- Starting in FY10, requires Federal government to lease EnergyStar buildings or buildings that been renovated for all life-cycle cost-effective energy improvements



Section 441 – Public-Building Life Cycle Costs

- Changes life-cycle cost period from 25 to 40 years
 - Longer span for ESPC contracts
 - Longer evaluation period for all life cycle costing could lead to more measures being deemed cost-effective



Bottom Line for EISA 2007

- Greener buildings
- Fossil fuel usage reduction
- More buildings addressed (includes leases)
- More alterations covered (includes large capital investment)
- More tracking of “green” in Federal agencies



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Executive Order 13514 – Federal Leadership in Environmental, Energy, and Economic Performance

The Federal Government shall lead by example in creating a clean energy economy. Federal agencies shall:

- Increase energy efficiency;
- Measure, report and reduce their GHG emissions;
- Conserve and protect water resources;
- Eliminate waste, recycle, and prevent pollution;



Executive Order 13514 – Federal Leadership in Environmental, Energy, and Economic Performance

Federal agencies shall also:

- Leverage agency acquisition to foster markets for sustainable technologies and environmentally preferable materials, products and services;
- Design, construct, maintain, and operate high performance sustainable buildings in sustainable locations;
- Strengthen the vitality and livability of communities in which Federal facilities are located; and
- Inform Federal employees about and involve them in achieving these goals.



Upcoming Rulemakings

- Sustainable Design Notice of Proposed Rulemaking based on sustainable design requirements in Section 109 of EPA Act 2005 and Section 433 of EISA 2007 and the Guiding Principles in EO 13514
 - Will also include green building rating system requirements
- Fossil Fuel Notice of Proposed Rulemaking based on fossil fuel energy consumption reduction requirements in Section 433 of EISA 2007



Status of New Rulemakings

- Sustainable Design NOPR
 - First agency review via OMB in December 2009
 - Likely release for public review in February 2010
 - Agencies should already be meeting these requirements via EO 13514
- Fossil Fuel NOPR
 - Undergoing internal DOE review in January 2010
 - Likely release for public review in March 2010
 - Agencies should be aware of these requirements from Section 433 of EISA 2007



Update to Baseline Standards

- Section 109 of EPAct 2005 requires DOE to update the baseline standards as new versions of the prevailing private sector standards are released and are deemed cost-effective
- DOE will be evaluating the 2009 IECC and ASHRAE Standard 90.1-2007 for inclusion in Federal Standards in 2010



Sneak Preview – Sustainable Design NOPR

- The sustainable design NOPR is closely modeled on the Guiding Principles for High Performance and Sustainable Buildings that are already called out in several executive orders. If you are following those, you shouldn't see too much new.
- The sustainable design NOPR will have guidance for agencies seeking to select a green building rating system and level of performance to use for their buildings



Guiding Principles

I. Employ Integrated Design Principles

II. Optimize Energy Performance

III. Protect and Conserve Water

IV. Enhance Indoor Environmental Quality

V. Reduce Environmental Impact of Material

- See http://www.wbdg.org/pdfs/hpsb_guidance.pdf



Sneak Preview – Fossil Fuel NOPR

- Minimum of 55% less “fossil fuel” usage than a typical building in the 2003 CBECS, rising to 100% by 2030
 - “fossil fuel” includes fossil fuels used in the building and fossil fuels used to generate electricity consumed in the building
 - “all electric” buildings will not meet this requirement
- This applies to most Federal buildings but not all.
 - Small Federal buildings that cost less than \$2,500,000 will “only” have to meet the 30% savings requirements.



Sneak Preview – Fossil Fuel NOPR

- For an “all fossil fuel” building, 55% fossil fuel reduction is 55% energy savings. For an “all electric” building, 55% fossil fuel reduction is roughly 38% energy savings at national average of 70% electricity produced by fossil fuels
- This new rule will be tough to meet. You will have to design much better buildings and you will have to consider use of renewable energy.



Bottom Line

- If you aren't building high performance and sustainable buildings now, you will be in the future. And soon.

Questions?