

# The Energy Policy Act of 2005 (*EPA* Act '05)

Public Law 109-58

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# Personal Opinions and Experience



## INTERESTING FACTS

Declaration of Independence	1 Page
Ten Commandments	10 Sentences
Gettysburg Address	235 Words
Energy Policy Act of 2005	<u>1,725</u> Pages
<b>TOTAL</b>	<b>1,971*</b>

\* We will try to be accurate and factual – but may not make sense –

so **ASK QUESTIONS.**



# Legislative History / Executive Orders



- Energy Policy and Conservation Act (1975)
- DOE Organization Act (1977)
- National Energy Conservation Policy Act (1978)
- Federal Energy Management Improvement Act (1988)
- Executive Order 12759 (1991)
- Energy Policy Act (1992)
- Executive Order 12902 (1994)
- Executive Order 13123 (1999)
- Executive Order 13221 (2001)
- Energy Policy Act of 2005 (*EPAAct '05*)



# EPAct 2005 Titles



- I Energy Efficiency**
- II Renewable Energy**
- III Oil and Gas**
- IV Coal**
- V Indian Energy**
- VI Nuclear Matters**
- VII Vehicles and Fuels**
- VIII Hydrogen**
- IX Research and Development**

# **EPA Act 2005 Titles**



**X Department of Energy Management**

**XI Personnel and Training**

**XII Electricity**

**XIII Energy Policy Tax Incentives**

**XIV Miscellaneous**

**XV Ethanol and Motor Fuels**

**XVI Climate Change**

**XVII Incentives for Innovative Technologies**

**XVIII Studies**

# **Title I: Energy Efficiency**

## **Subtitle A: Federal Programs**

EPAAct '05

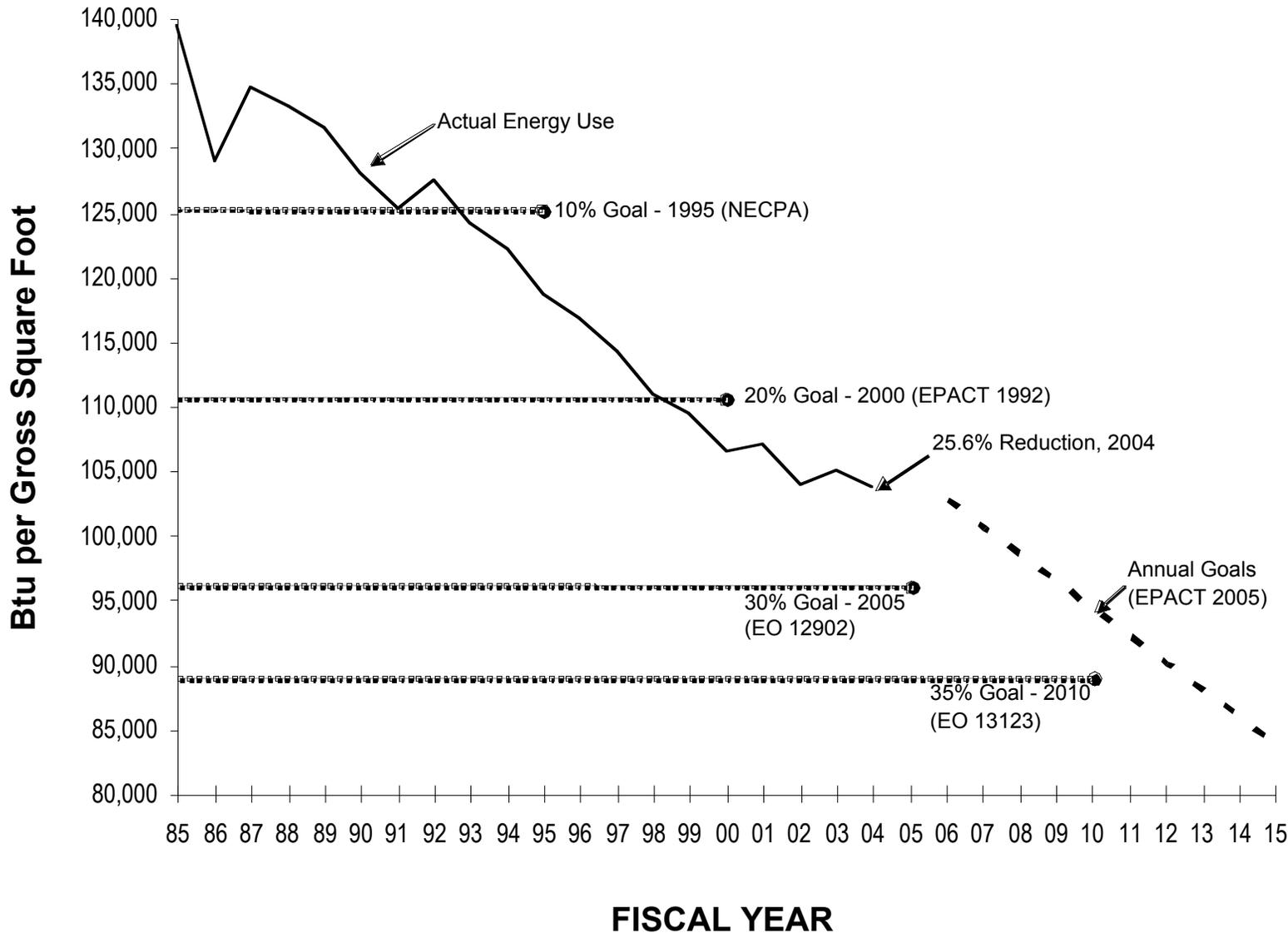


## Sec 102: Energy management requirements (for Federal agencies)



- **Energy reduction goals: Agencies will reduce energy consumption by 2% per year from FY2006—2015 on a gross square foot basis**
  - 10 percent through 2010
  - 20-percent improvement through 2015
- **Based on energy use per gross square foot (site energy consumption)**
- **Compared to the new baseline year of 2003**

# Building Energy Reduction Goals: Progress and EAct Requirements



# Sec. 102, cont.



- **Two categories of buildings: standard and excluded (industrial/laboratory no longer separately measured)**
- **DOE has issued guidelines for excluded buildings:**  
[http://www1.eere.energy.gov/femp/about/legislation\\_epact\\_05.html](http://www1.eere.energy.gov/femp/about/legislation_epact_05.html)
  - Example: impractical due to energy intensiveness or national security functions or assumed exclusion such as “Cold Iron Energy”

# Sec. 102, cont.



- Agencies may retain any energy and water savings not expended and must be used for energy efficiency, water conservation, or unconventional and renewable energy resource projects
- Sec 782: The lease or purchase of a fuel cell vehicle or hydrogen energy system will count towards the agency's energy efficiency goals

# Utility Metering: Making it Work

**Title I, Subtitle A, Sec 103**  
Energy use measurement &  
accountability

EPAct '05



# Why not?



*Ask not what a meter costs...*



*... But what it costs NOT to meter!*

# Legislative Requirements



- **No Later Than 10/1/12**
- **Each Federal building shall be metered**
  - For efficient use of energy
  - For electricity cost reduction (emphasis)
- **Use to maximum extent practicable**
  - Advanced metering devices
  - Measure at least hourly
  - Provide data at least daily



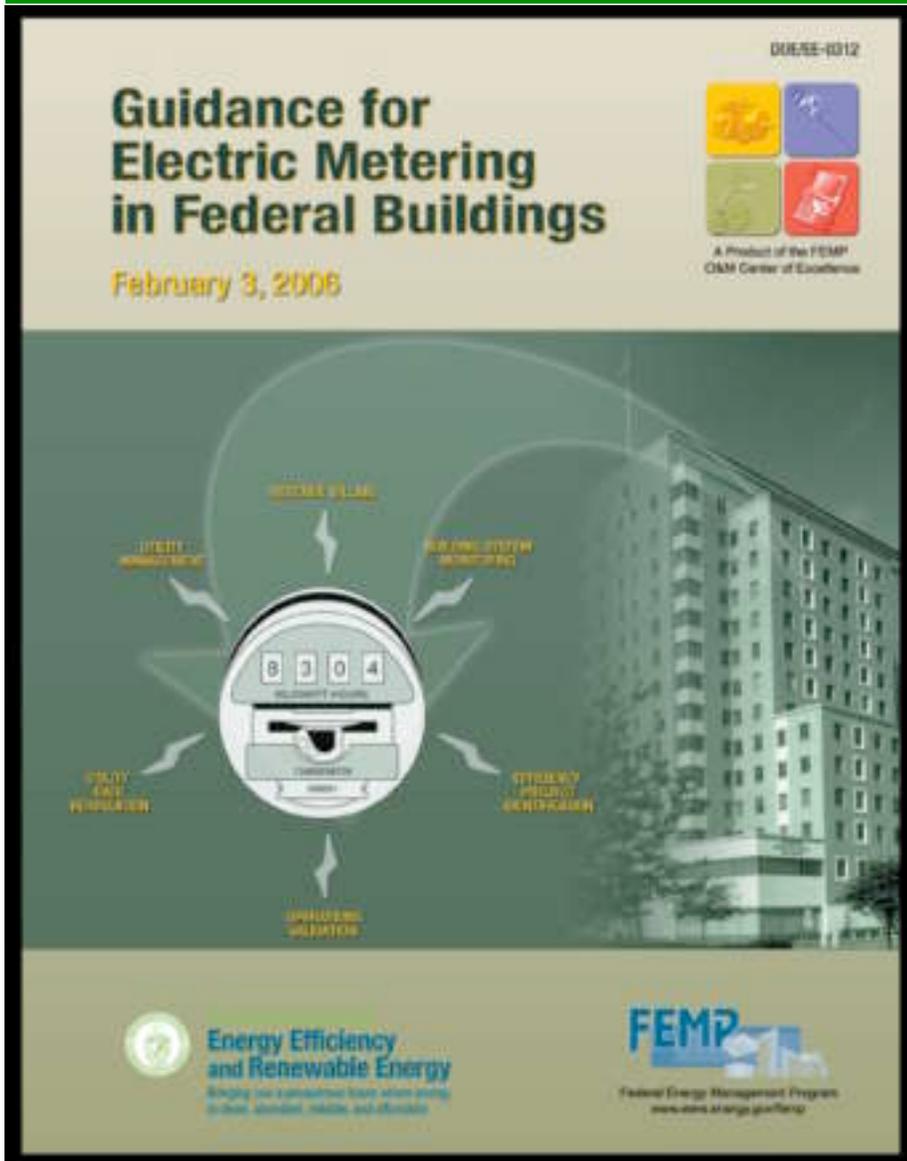
# Legislative Requirements



- In 6 months, DoE shall develop metering **guidelines** for all agencies
- In 6 months after DoE guidelines, each agency shall develop implementation plan



# DoE Guidelines



- “Advanced Metering” Definition
- Uses of Metered Data
- Metering Approaches and Technologies
- Metering Cost-Effectiveness
- Methods for Prioritizing Buildings
- Methods of Financing
- Template for an Agency Metering Plan
- Performance Measures
- Special Considerations
- Advanced Metering Terms & Definitions
- EPA Act ‘05 Metering Text

[http://www.eere.energy.gov/femp/pdfs/adv\\_metering.pdf](http://www.eere.energy.gov/femp/pdfs/adv_metering.pdf)



# What's Next?



- **Until August 2006**

- Large agencies will develop their own implementation plan
- Others will rely heavily on FEMP

- **Until October 2012**

- Multi-building campuses will be prioritized
- Funding & effective use of data will be paramount



# What's Next?



- **DoD still working on:**
  - Generic electric meter spec
  - Pilot projects to verify previously estimated costs & savings
- **DoE will be developing:**
  - Metering “Best Practices Guide”
  - Metering training



# Title I: Energy Efficiency

**Subtitle A: Federal Programs**  
**Section 104 (*purchasing*)**

**Subtitle C: Energy Efficient Products**  
**Sections 131–139 (*programs & stds*)**

**EPA Act '05**



# Energy Efficient Products: How to Buy

## Title I, Subtitle A, Sec 104

Procurement of energy efficient  
products

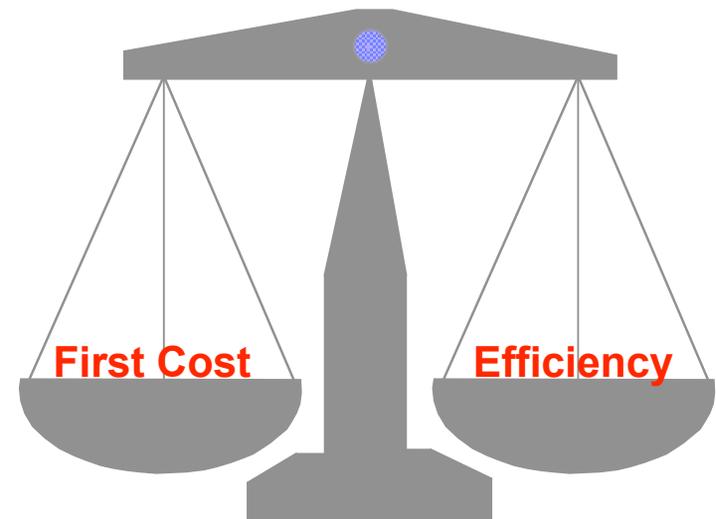
EPA Act '05



# Legislative Requirements



- All agencies required to purchase **ENERGY STAR®** or **FEMP-designated** products, unless:
  - Not cost effective
  - Not available



“**FEMP-designated**” = among highest 25% energy efficiency rating

# Legislative Requirements



- **So, what's new?**
  - Previously “directed” by:
    - Far Part 23
    - Executive Order 13123
    - Executive Order 13221
- **Now it's a law!**
  - GAO & agency IGs will audit
  - Report to Congress on implementation performance



# Legislative Requirements



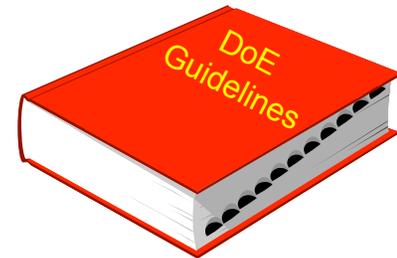
- **DOE to issue guidelines** (in 6 months)
- **Each agency will incorporate the criteria in specifications and contracts**
  - Construction and service contracts
  - Specific products (DoE standard)
    - 1-500 hp electric motors >> “premium” efficiency
    - Refrigerant additives “encouraged”
- **GSA and DLA clearly list these products in catalogs**



# DOE Guidelines



- **Draft (2/6/06)**
- **Federal Agency Requirements**
  - Direct Purchases
  - Construction, Renovation & Service Contracts
  - Guide Specifications & Project Specifications
- **Institutionalization**
- **Training & Outreach**
- **Exceptions & Reporting**
- **Requirements for Federal Supply Agencies (GSA & DLA)**
- **Requirements for FEMP & ENERGY STAR®**
- **Federal Acquisition Regulations**



# Tools: Websites



- **FEMP, GSA Advantage!, DoD EMALL & ENERGY STAR®**
  - Product listings (brand, model number, features)
  - Product specifications
  - Drop-in procurement language
  - Savings calculators/LCC

# Energy Efficient Products: Programs & Standards

**Title I, Subtitle C, Secs 131-139**

Procurement of energy efficient  
products

**EPA Act '05**



# **Sec 135: Energy conservation standards for additional products**



- **Amends/updates Sec 32\_ of NEPCA**
- **Defines products & test procedures**
- **Establishes efficiency standards or establishes development milestones**
- **May set more than 1 standard for products with more than 1 function**
- **Includes focus on stand-by modes**

# Sec 135: Energy conservation standards for additional products



## Covers 14 Product Types

- **Fluorescent ballasts**
- **Battery chargers**
- **External power supplies**
- **Ceiling fans & light kits**
- **Refrigerated beverage vending machines**
- **Illuminated exit signs**
- **Torchieres**
- **Mercury vapor lamp ballasts**
- **Low-voltage dry-type distribution transformers**
- **Traffic signal & pedestrian signal modules**
- **Unit heaters**
- **Medium-base compact fluorescent lamps**
- **Dehumidifiers**
- **Commercial pre-rinse spray valves (flow rate)**



**The only  
dishwasher  
with  
lower energy  
and water use  
than an  
ENERGY STAR  
product.**

# **Title I: Energy Efficiency**

## **Subtitle A: Federal Programs Section 105**

EPAAct '05

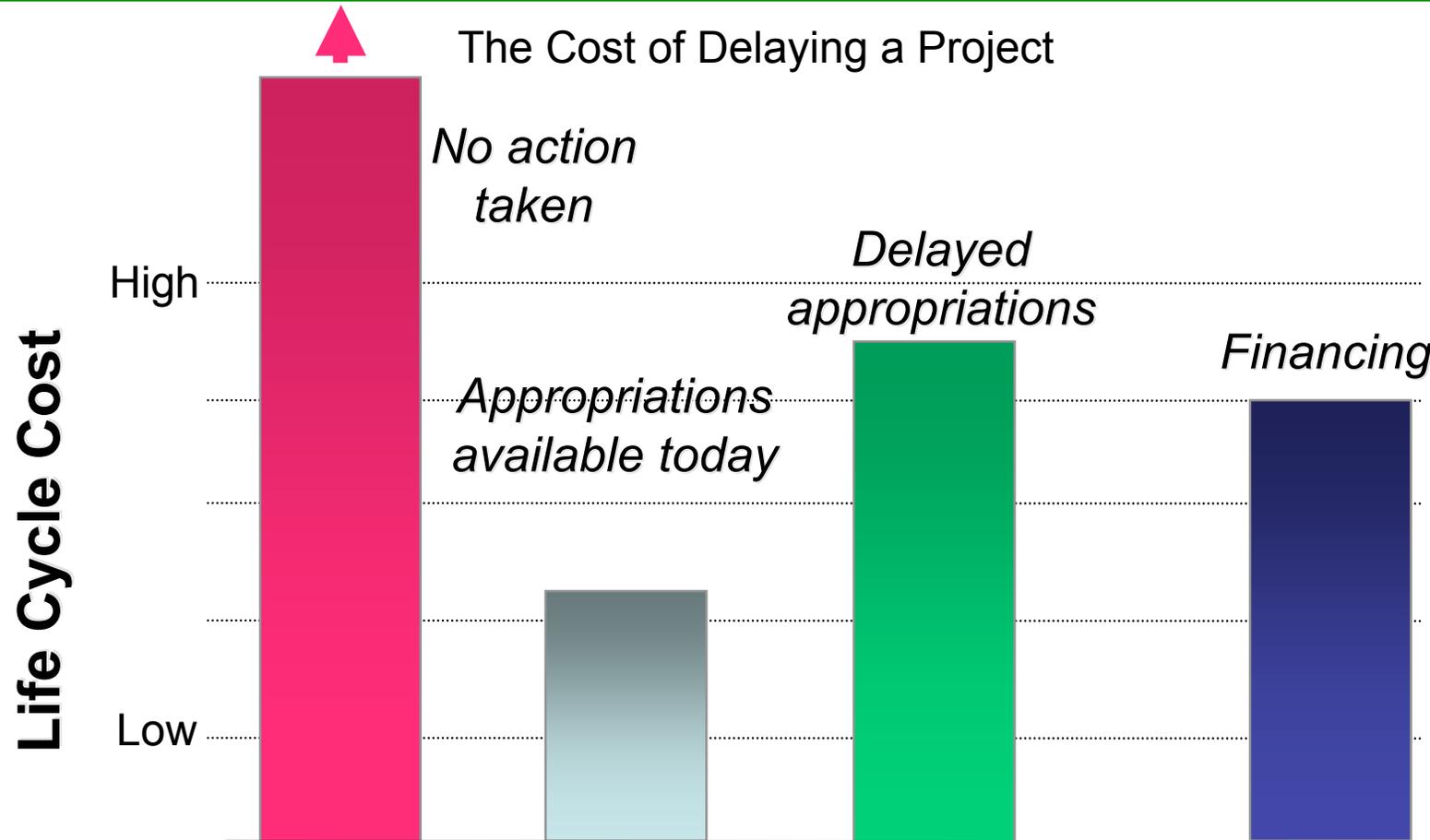


# Sec 105: Energy Savings Performance Contracts (ESPC)



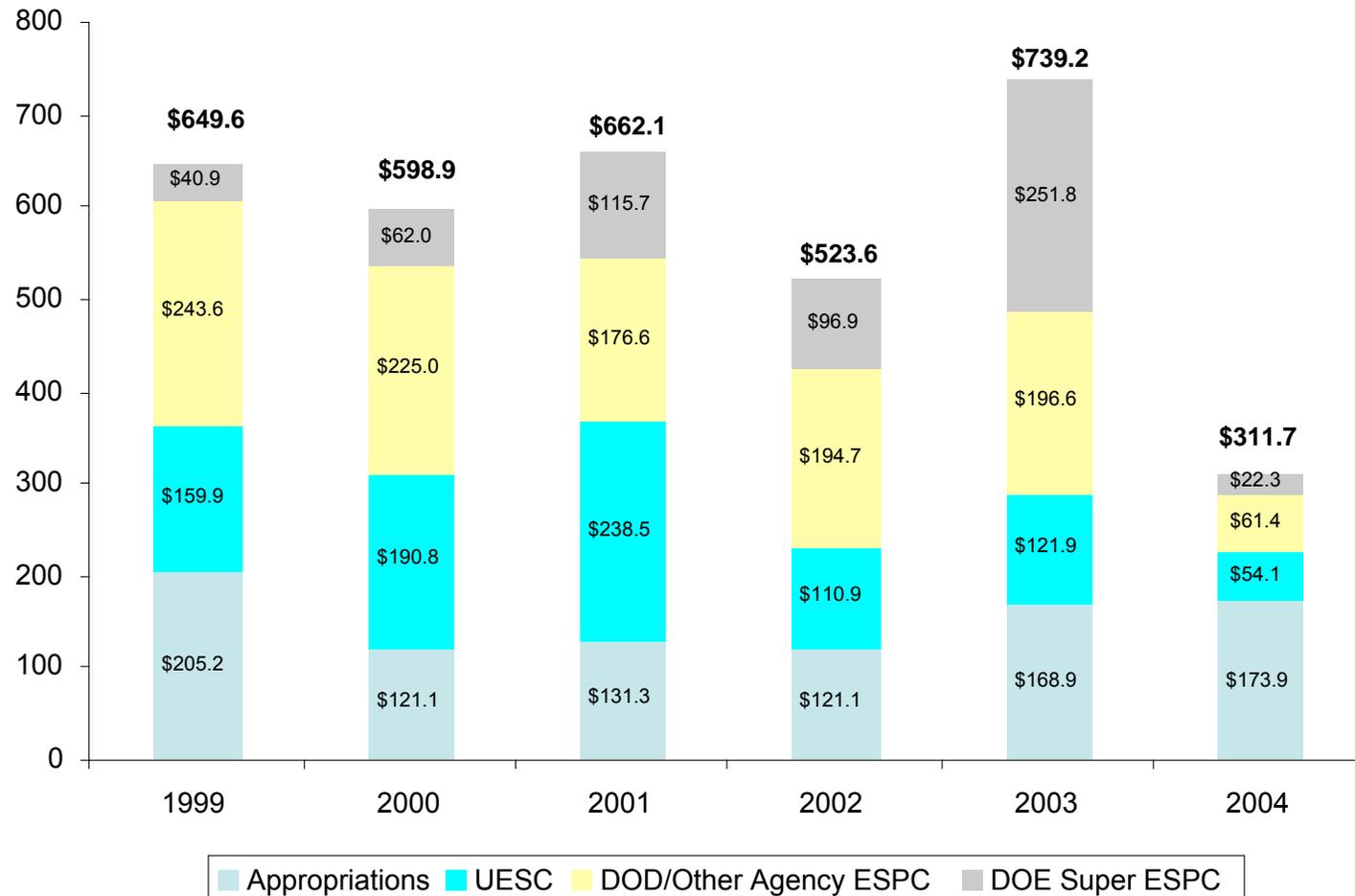
**Extended to 2016  
without  
limitations!**

# Energy Efficient Investments



**Any delay in project implementation results in loss of life cycle savings**

# Alternative Financing Funds 74% of Efficiency Improvements in US Federal Buildings



Source: FEMP

# **Title I: Energy Efficiency**

## **Subtitle A: Federal Programs Section 109**

EPAAct '05



# Sec 109: Federal building performance standards



- DOE rule NLT 1 year from enactment
- All buildings to be designed to be at least 30% more efficient than current ASHRAE or IECC
- Sustainable building principles to be applied to all new and replacement buildings – siting, design, and construction
- Water conservation technologies included where LCCE
- Agencies include in budget a list of new buildings and compliance certification

# Getting high performance buildings



**NREL** National Renewable Energy Laboratory

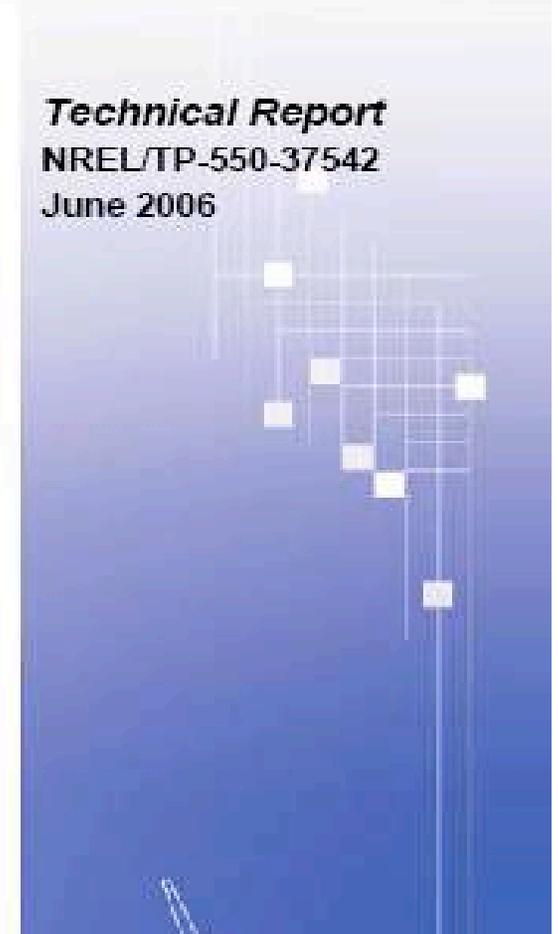
*Innovation for Our Energy Future*

*A national laboratory of the U.S. Department of Energy  
Office of Energy Efficiency & Renewable Energy*

## **Lessons Learned from Case Studies of Six High-Performance Buildings**

P. Torcellini, S. Pless, M. Deru, B. Griffith,  
N. Long, and R. Judkoff

*Technical Report*  
**NREL/TP-550-37542**  
June 2006



# **Title II: Renewable Energy**

## **Subtitle B: General Provisions**

EPAAct '05



# Sec 203: Federal purchase requirement



- Of the total electrical energy consumed by the Federal government, the percentage of renewable energy will be no less than:
  - **3% in FY 2007 – 2009**
  - **5% in FY 2010 – 2012**
  - **7.5% in FY 2013 and thereafter**
- Renewable energy definition expands to include ocean energy, municipal solid waste, and incremental hydro
- Renewable energy produced at a Federal facility or produced on Federal or Indian land and used at a Federal facility counts double

## Sec 204: Use of photovoltaic energy in public buildings



- **GSA may establish a photovoltaic energy commercialization program**
  - 20,000 buildings by 2010
  - At least 150 megawatts (peak) cumulative during the 5 years of the program
  - Funds authorized for projects for 5 years (\$50m/yr) and for evaluation studies (\$10m/yr)

## **Sec 206: Renewable energy security**

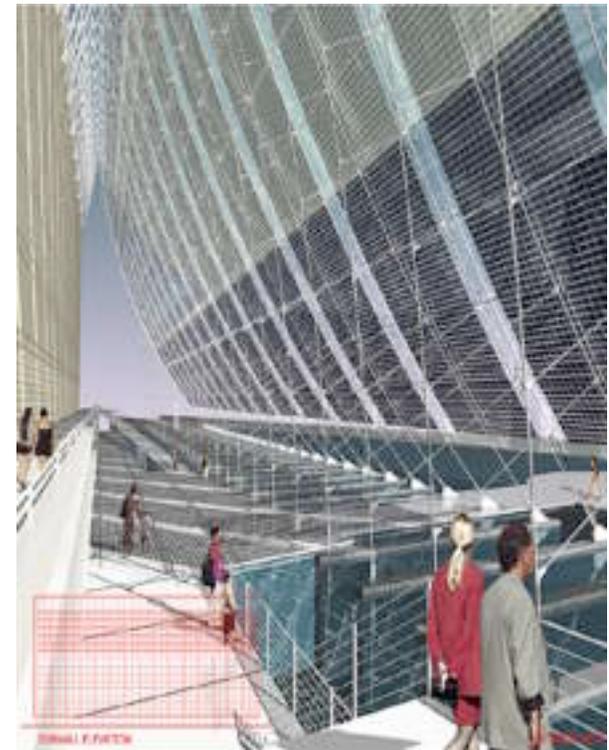


- **Weatherization program will include financial assistance for renewable energy systems up to \$3,000 per unit**
- **DOE shall establish a consumer rebate program for the installation of a renewable energy system for a dwelling unit or small business of up to \$3,000. Appropriations authorized for 5 years**

# Sec. 207: Installation of Photovoltaic System



**Appropriations authorized for GSA to install Sun Wall Design Project system on DOE HQ**



# Tax Incentives: How They Can Help

**Title XIII, Subtitle C, Sec 1331-7,  
1341 and 1342**

Conservation & energy efficiency  
provisions

Opportunities & tools

EPAct '05



# Intent



***The changes made to the tax code in EPAct '05 were made with the intent of supporting and accelerating the development and deployment of energy efficiency and renewable energy technologies.***

***The applicability of the changes to specific projects will require the analysis of tax law experts...***

# Deduction vs. Credit



- **Deduction**
  - Subtracted from income before tax liability is computed
- **Credit**
  - Subtracted directly from the total tax liability
  - Usually 3 or more times more advantageous to the taxpayer than a deduction
- **Example**
  - A tax credit of \$1,000 for someone in the 28% tax bracket is equivalent to a tax deduction of \$3,571

# § 1331: Energy Efficient Commercial Buildings Deduction



- For commercial buildings placed in service through 2007, a deduction of \$1.80/sq. ft. is allowed when the building energy use and cost is at least 50% less than ASHRAE 90.1-2001 and Illuminating Engineering Society 2003
- A partial deduction of \$.60/sq. ft. is allowed for subsystems, with interim rules for lighting systems
- Allocation of the deduction for public buildings can go to the person principally responsible for designing the property. This could have a major impact on the interest of the A&E community in energy efficiency!

# IRS Instructions: Commercial Buildings Deduction



[www.irs.gov/pub/irs-drop/n-06-52.pdf](http://www.irs.gov/pub/irs-drop/n-06-52.pdf)

NOT-160920-05

Part III - Administrative, Procedural, and Miscellaneous

Deduction for Energy Efficient Commercial Buildings

Notice 2006-52

## SECTION 1. PURPOSE

This notice sets forth interim guidance, pending the issuance of regulations, relating to the deduction for energy efficient commercial buildings under § 179D of the Internal Revenue Code. Specifically, this notice sets forth a process that allows a taxpayer who owns, or is a lessee of, a commercial building and installs property as part of the commercial building's interior lighting systems, heating, cooling, ventilation, and hot water systems, or building envelope to obtain a certification that the property satisfies the energy efficiency requirements of § 179D(c)(1) and (d). This notice also provides for a public list of software programs that must be used in calculating energy

# IRS Instructions: Commercial Buildings Deduction



**IRS Notice 2006-52** (*2 June '06*)

## **Partial credit allocation:**

$(100 - (6^{2/3} \times (40 - X)) = \% \text{ of } \$0.60$  if  $X=36.25$ , deduction is 75% of \$0.60

## **Performance Rating Method – 90.1-2001**

(methods of Appx. G of 90.1-2004 and CA Title 24 2005 non-res. Manual

**Qualified Individual** = licensed PE or contractor

**Taxpayer retains certification** – inspection of design and in-service operation using procedures prescribed by NREL

**Approved software** – DOE to maintain a list hourly calculations, etc., etc.

## § 1334 & 1335



- **§ 1334 – Credit for energy efficient appliances**
  - Provides incentives for appliance manufacturers to produce improved energy efficient products
- **§ 1335 – Credit for residential energy efficient property**
  - 30% for qualified photovoltaic systems – up to \$2,000
  - 30% for qualified solar water heating systems – up to \$2,000
  - 30% for qualified fuel cell systems - \$500 per 1/2 KW

*(For primary residences – but could apply to developers of privatized housing (?))*

# § 1341 & 1342



- **§ 1341 – Alternative motor vehicle credit**
  - Provides big deductions for owner/taxpayer for fuel cell and hybrid motor vehicles that exceed 2002 mileage standards – extremely complex
- **§ 1342 – Credit for alternative fuel vehicle refueling property**
  - 30% of the cost (up to \$30,000) of a station that dispenses at least 85% of the volume of which consists of one or more of the following:
    - ethanol, natural gas, compressed natural gas, liquefied natural gas, liquefied petroleum gas, or hydrogen, or
    - any mixture of biodiesel (as defined in section 40A(d)(1)) and diesel fuel (as defined in section 4083(a)(3)), determined without regard to any use of kerosene and containing at least 20 percent biodiesel

*(Could significantly increase the potential for AFV stations on Federal property)*

# TIAP Website



File Edit View Go Bookmarks Tools Help

http://www.energytaxincentives.org/

Getting Started Latest Headlines From Internet Explorer

**Consumers**  
Home Shell: *Insulation, Windows, Sealing*  
Heating & Cooling Equipment  
Passenger Vehicles  
Solar Energy Systems  
Fuel Cells

**Businesses**  
Commercial Buildings  
Commercial Vehicles  
Solar Energy Systems  
Fuel Cells & Microturbines

**Builders/Manufacturers**  
New Homes  
Appliances

**TIAP** [www.energytaxincentives.org](http://www.energytaxincentives.org)

The Tax Incentives Assistance Project (TIAP), sponsored by a coalition of public interest nonprofit groups, government agencies, and other organizations in the energy efficiency field, is designed to give consumers and businesses information they need to make use of the federal income tax incentives for energy efficient products and technologies passed by Congress as part of the Energy Policy Act of 2005.

There are several on-line Tax credit clarification Sites

# ASE Website



Internet Explorer browser window showing the URL: <http://www.ase.org/content/article/detail/2654>

Getting Started | Latest Headlines | From Internet Explorer

**ALLIANCE TO SAVE ENERGY**  
*Creating an Energy-Efficient World*

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Home > [Site Content](#) > New Energy-Efficiency Home and Vehicle Tax Credits

## Site Content

### New Energy-Efficiency Home and Vehicle Tax Credits

*Energy Efficiency Can Lower Your Federal Tax Bill as Well as Your Energy Bills*

**[En Español](#)**

- [1. Introduction to Tax Credits](#)
- [2. Tax Credit Examples](#)
- [3. Hybrid Vehicle Tax Credit](#)
- [4. Home Energy-Efficiency Improvement Tax Credit](#)
- [5. Solar Energy Tax Credit](#)
- [6. Appendix Information](#)

- [www.energytaxincentives.org](http://www.energytaxincentives.org) More tax credit info at TIAP (Tax Incentive Assistance Project) for businesses, builders, consumers and more

→ Donate Now

# Best of the Rest

Titles VII, XII, XV & XVIII

EPA Act '05



# Title VII – Vehicles and Fuels

## Subtitle A – Existing Programs

EPA Act '05



# Sec 701: Alternative Fuels by Dual Fueled Vehicles



- **Requires alternative fuel (AF) use in federal fleet dual fuel vehicles**
- **Sec Energy may provide an agency a waiver if:**
  - AF not reasonably available, or
  - cost of AF unreasonably more expensive
- **Agencies must certify to DOE that conditions justify waiver**
- **DOE must report annually to Congress on:**
  - extent to which AF is being used in dual-fuel vehicles
  - reductions in petroleum use
  - problems encountered in acquiring AFs
- **DOE will develop agency guidance in FY06**

# Sec 702: Incremental Cost Allocation



- **Requires that GSA “shall” distribute the incremental cost of AFVs across the entire fleet of vehicles**
- **Change here is from “may” to “shall”**

# Sec 707: Emergency Exemption



- **Expands list of excluded vehicles in section 301(9) to include:**
  - “vehicles directly used in the emergency repair of transmission lines and in the restoration of electricity service following power outages, as determined by the Secretary [of Energy].”
- **Some federal fleets may be affected**

## **Sec 782: Federal and State Procurement of Fuel Cell Vehicles (FCV) and Hydrogen Energy Systems**



- **Requires federal agencies that use light duty or heavy duty vehicles to acquire FCVs (fuel cell vehicles) and hydrogen energy systems**
- **Establishes authorization funding for DOE to pay incremental cost of FCVs and hydrogen energy systems**
- **DOE can provide exemptions if efficient and reliable FCVs or hydrogen energy systems are not available**
- **Does not establish percentage or numerical requirement**
- **Requirement effective – Jan. 1, 2010**
- **Authorization - 2008 – 2010 \$105M & such sums as necessary thereafter.**

# Where can you find an alternative fuel station?



## Alternative Fuels Data Center:

- <http://www.eere.energy.gov/afdc/>
- **Example:**
  - There are 16 ethanol 85% fuel stations within 25 miles of Chicago and 3 in the city itself
  - DOT Landscaping Facility, 1260 W. Augusta Blvd. (government only)
  - Gas City, 4070 N. Clark Street
  - Kean Oil Co., 2632 W. 111<sup>th</sup> St.

# **Title XII: Electricity**

## **Subtitle E: Amendments to PURPA**

EPAct '05



# Sec 1254: Interconnection



- **Utility company shall make grid interconnection available for any consumer with on-site generation**
- **Each State regulatory authority & all on-regulated utilities shall:**
  - Commence consideration NLT 1 year
  - Make a determination NLT 2 years

# **Title XV: Ethanol & Motor Fuels**

## **Subtitle B: Underground Storage Tank Compliance**

EPA Act '05



# Sec 1528: Federal facilities



- **NLT 1 year after Underground Storage Tank (UST) Compliance Act**
- **Each Federal agency shall:**
  - List locations & owners of all USTs
  - List all USTs not in compliance
  - List dates of last Federal or State inspection
  - Describe operator training
  - Describe actions to ensure compliance

# Title XVIII: Studies

EPAct '05



# Title XVIII: Studies



- **Sec 1803: Telecommuting study**
  - Energy conservation implications of widespread adoption of telecommuting by Federal employees in the U.S.
- **Sec 1826: Passive solar technologies**
  - Determine avoided costs and energy savings of passive solar over time and the effect of incentives
- **Sec 1829: Energy and water saving measures in congressional buildings**

# Title XVIII: Studies



- **Sec 1834: Increased hydroelectric generation at existing facilities**
  - Energy, Interior, and Army to study the potential of increasing electric power production capability at Federally owned or operated facilities
  - Most of the major hydroelectric facilities in this country are over 40 years old and haven't been upgraded to take advantage of advances in generator design. Studies have indicated significant efficiency improvement potential, but were faced with budget constraints. The potential application of the ESPC tool to the issue has unknown, but possibly significant impact.

# Questions?



## Energy Policy Act of '05



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