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April 25, 2006

MEMORANDUM

TO: Council Members

FROM: Tom Eckman

SUBJECT: Briefing on Implications of Energy Policy Act of 2005 for Regional Energy Efficiency Programs

The Energy Policy Act of 2005 (EPACT 2005) contained three major titles aimed at improving national energy efficiency. The purpose of this briefing is to provide Council members with an overview of the how the principal provisions of EPACT are likely to impact utility and state conservation programs and the attainment of the 5th Plan's conservation targets. In general, EPACT 2005's provisions are not anticipated to play a major role in accomplishing the Plan's near term conservation targets. However, certain provisions, if extended or fully funded could produce more significant long-term savings.

I intend to present only the first eight slides of the accompanying PowerPoint presentation during the meeting. The remaining slides provide additional details on specific provisions of EPACT 2005. I will be prepared to discuss the information on these slides either at the meeting or with you or your staffs at a later time. These slides may also be of use in responding to questions regarding the regional implications of this legislation.

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Implications for PNW Efficiency Programs of the Energy Efficiency Provisions of EPACT 2005

May 9, 2006



EPACT 2005's Energy Efficiency Provisions

- Title I – Energy Efficiency
 - Subtitle A - Federal Programs
 - Subtitle B - Energy Assistance and State Programs
 - Subtitle C - Energy Efficient Products
 - Subtitle D - Public Housing
- Title IX – Research and Development
 - Subtitle A – Energy Efficiency
- Title XIII – Energy Policy Tax Incentives
 - Subtitle C – Conservation and Energy Efficiency Provisions

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Certain versus Uncertain

- Will Happen
 - Improve product efficiency standards
 - Improve Energy Star efficiency levels
 - Extend daylight savings time
 - Add Federal tax incentives for efficiency
- May Happen if Funded*
 - Expand Programs for low-income, state programs, public housing, federal buildings
 - Expand Research, Development & Demonstration

**Funding dependent upon annual federal budget process*

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Savings From EPACT Product Standards Will Be Modest in PNW

- 7 of 15 products covered by EPACT already regulated by OR & WA statutes
 - Implementation dates differ
- OR & WA regulate one product (metal halide lamp fixtures) not covered by EPACT
- 5th Plan efficiency targets are higher than “minimums” set by state or federal standards
 - (e.g. Target efficiency for commercial clothes washers 75% above EPACT standard)

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Research & Development

Major Focus of Electric Efficiency R&D

- \$50 million/yr for FY07 – FY13 allocated for “next generation” lighting (white LEDs)*

**Funding dependent upon annual federal budget process*

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EPACT Tax Incentives

■ Provided for:

- Commercial building HVAC, Lighting
- New homes, including both site built and manufactured
- Residential heating and cooling equipment
- Shell improvements to existing homes
- High-efficiency appliances
- High-efficiency vehicles
- Stationary fuel cells and microturbines
- Solar systems

■ But:

- Short duration (two years)
- Some verification & documentation issues

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Energy Savings Impacts

- Total US Savings ~ 2.5 Quads in 2020—about 2% of total forecast consumption
- Oil savings negligible - conferees cut Senate 1 MBD savings target
 - Senate bill would have saved ~ 4% of 2020 oil use
- US Electricity savings 206 TWH, ~4% of 2020 forecast (Smaller % in PNW)
- US Natural gas savings 1.4 TCF, ~5% of 2020 forecast (Similar % in PNW)

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Implications for PNW Efficiency Programs

- Tax incentives may leverage demand for efficiency products & services
 - Increase the volume of utility, BPA and State programs
- Product standards require changes in current programs
 - Measures targeted
 - » (e.g. Pre-rinse spray heads now required by law)
 - Programs must target higher efficiency models
 - » (e.g. minimum efficiencies for ice-makers now set by law)
 - Savings estimates
 - » (e.g. new baseline efficiency levels 15 products)
- Near-term program focus – leverage tax incentives
 - New homes & HVAC equipment, new commercial buildings, clothes washers and refrigerators top priorities for PNW

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Details, Details, Details

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Summary of Title I *Uncertain Impacts*

- Less Utility Support May Be Required to Improve Federal Facilities*
- Funding for Federal Low Income Energy Assistance and Weatherization Programs May Increase*
- State Energy Efficiency Programs May Expand*
- Federal Support of State Efficiency Efforts May Increase*
- Public Housing projects May be made more efficient*

**Funding dependent upon annual federal budget process*

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Summary of Title I *Certain Impacts*

- New Federal Product Efficiency Standards Will Produce Modest Near-Term Savings
 - 15 New federal product efficiency standards set by statute
 - 9 New product efficiency standards to be set by rulemaking
- Expansion and Clarified of DOE Rulemaking Authority Will Improve Efficiency of Existing Standards
- Energy Star Savings Will Increase As A Result of Mandated Efficiency Levels Upgrades
- Daylight Savings Time Will Be Extended

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Summary of Title IX *Uncertain Impacts*

- Federal Energy Efficiency Research, Development and Demonstration May Expand*
- Major Focus of Electric Efficiency R&D
 - \$50 million/yr for FY07 – FY13 allocated for “next generation” lighting (i.e., white LEDs)*

**Funding dependent upon annual federal budget process*

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Summary of Title XIII *Certain Impacts*

- EPACT Provides Tax Incentives
 - Commercial buildings
 - New homes
 - Residential heating and cooling equipment
 - Shell improvements to existing homes
 - High-efficiency appliances
 - High-efficiency vehicles
 - Stationary fuel cells and microturbines
 - Solar systems

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Intent of Title XIII – Tax Incentives

- Focused on advanced technologies and practices
 - Exception is residential retrofits
- Use short-term incentives to promote long-term changes in the market
 - Increase volumes so product prices come down
 - Increase familiarity with products/practices among designers, installers, retailers, consumers

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Efficient Products –15 New Standards

| Product | Effective Date |
|---|---|
| Fluorescent lamp ballasts | Ballasts manufactured on or after July 1, 2009, or sold on or after October 1, 2009, or incorporated into a luminaries manufactured on or after July 1, 2010. |
| Ceiling fans and ceiling fan light kits | One year after enactment of EPACK 2005, but not later than August 8, 2006 |
| Illuminated exit signs | January 1, 2006 |
| Torchieres | January 1, 2006 |
| Low voltage dry-type distribution transformers | January 1, 2007 |
| Traffic signal modules and pedestrian modules | January 1, 2006 |
| Unit heaters | August 8, 2008 |
| Medium base compact fluorescent lamps | January 1, 2006 |
| Dehumidifiers | January 1, 2007 |
| Commercial pre-rinse spray valves | January 1, 2006 |
| Mercury vapor lamp ballasts | January 1, 2008 |
| Commercial package air conditioning and heating equipment | January 1, 2010 |
| Commercial refrigerators, freezers, and refrigerator-freezers | January 1, 2010 |
| Automatic commercial ice makers | January 1, 2010 |
| Commercial clothes washers | January 1, 2007 |

Efficient Products – 9 New Standards Rulemakings

| Product | Rulemaking Deadline |
|--|--|
| Ceiling fan light kits (niche products – candelabra base, halogen, etc.) | Dec. 31, 2006 |
| Commercial refrigeration – ice-cream freezers, packaged units without doors, remote-condensing equipment | January 1, 2009 |
| Battery chargers | August 1, 2009 |
| External power supplies | August 1, 2009 |
| Refrigerated beverage vending machines | August 1, 2009 |
| Dehumidifiers (revised standard) | October 1, 2009 |
| Commercial clothes washers (revised standards) | January 1, 2010 and January 1, 2015 |
| Commercial packaged refrigerators & freezers (revised standards) | 1/1/13 and every three years after standards take effect |
| Ice-makers (revised standards) | 1/1/15 and every 5 years after standards take effect |

Why Savings From EPACT Standards Will Be Modest

- 7 of 15 products covered by EPACT already regulated by Oregon and Washington statutes
 - Some federal standards have slightly earlier implementation dates, some later
- Oregon and Washington regulate one product (metal halide lamp fixtures) not covered by EPACT
- 5th Plan's efficiency targets are often beyond "minimums" set by state or federal standards
 - Target efficiency for commercial clothes washers 75% above EPACT standard

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EPACT 2005 Replicates Several Oregon & Washington Standard

| Product | OR | WA | EPACT |
|--|-------------|-------------|-------------|
| Commercial pre-rinse spray valves | 2007 | 2007 | 2006 |
| Illuminated exit signs | 2007 | 2007 | 2006 |
| Ceiling fans and ceiling fan light kits | Not Covered | Not Covered | 2007 |
| Commercial clothes washers | 2009 | 2007 | 2007 |
| Low-voltage dry-type transformers | 2003 | 2007 | 2007 |
| High intensity discharge lamp ballasts (mercury vapor) | Not Covered | Not Covered | 2008 |
| Automatic commercial ice makers | 2008 | 2008 | 2010 |
| Commercial refrigerators and freezers | 2007 | 2007 | 2010 |
| Large packaged AC >20 tons | Not Covered | Not Covered | 2010 |
| Single-voltage external power supplies | 2007 | 2007 | 2011 |
| Metal halide lamp fixtures | 2008 | 2008 | Not covered |

EPACT's Expansion and Clarified of DOE Rulemaking Authority Will Improve Efficiency of Existing Standards

- DOE authorized to prescribe energy standards that cover energy used to circulate heating and cooling air (potentially impacts HSPF, SEER & AFUE ratings and/or air handler motor and fan efficiency)
- Permits DOE to regulate
 - SEER/HSPF and EER
 - MEF and Water Factor
 - Heat Pump Efficiency (and Gas Furnace Efficiency) and Air Handler Efficiency

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Energy Star Efficiency Levels Are Being Upgraded

- EPACT Required EPA to adopt new Energy Star qualifying levels for Dishwashers and Clothes Washers
 - Dishwashers
 - EPA announce new level in December
 - Standard dishwashers – EF -0.65
 - Compact dishwashers – EF -0.88
 - Clothes washers
 - EPA announced new level for 2007 in December
 - MEF 1.72 and Water Factor 8.0

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Efficient Products – Consumer Education

- Establishes a “HVAC Maintenance” education program targeted at small businesses
 - Program coordinated with Energy Star Small Business Program
 - Authorizes establishment of a Small Business Energy Clearinghouse
 - » NCAT is only organization mentioned as “qualified resource provider” of such “clearinghouse” services.

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Efficient Products – Consumer Education

- DOE is authorized to establish and maintain a national “public energy education” program
 - Focus on need to reduce energy use and economic value of doing so
 - Provide practical guidance on “how-to” conserve
 - Authority terminates 12/31/10
 - » Mission accomplished?

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Energy Efficient Utilities

- NARUC & NASEO to directed to conduct a study of state and regional policies that promote energy efficiency and report results to DOE
 - Covers both IOU and Public utilities
 - Study to Consider
 - » Performance standards/targets
 - » Funding mechanisms
 - » Infrastructure planning
 - » Cost & Benefits of consumer education
 - » Barriers to utility implementation of efficiency programs
- Will address cost & benefits of “public benefits” funded efficiency programs

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Energy Efficiency Pilot Programs

- DOE to provide financial assistance to at least 3 but not more than 7 States to carry out pilot programs designed to reduce energy consumption by at least 0.75%/yr
 - State must submit independent verification of energy savings to DOE in order to claim the \$
- \$5 million/yr authorized* for FY2006-2010

**Funding dependent upon annual federal budget process*

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Public Housing

- Directs public housing agencies to purchase Energy Star and/or FEMP-designated products, unless such products are not cost-effective
- HOPE VI funded new or renovated housing must meet IECC efficiency standards
- HUD shall develop and implement an integrated strategy to reduce energy costs, including the establishment of energy savings targets
 - HUD Secretary to submit report with one year of enactment and every two years thereafter

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Research and Development

- Authorizes funds for energy efficiency research, development and demonstration
 - \$783 million for FY07
 - \$865 million for FY08
 - \$952 million for FY09
- \$50 million/yr for FY07 – FY13 allocated for “next generation” lighting (i.e., white LEDs)

**Funding dependent upon annual federal budget process*

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Research and Development

- Requires Office of Science and Technology to prepare a plan to carry out a “National Building Performance Initiative”
 - Plan to be submitted to Congress within one year
- DOE to establish a grant and technical assistance program to support development of consensus-based standards for high performance buildings

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New Commercial Buildings Tax Deduction - *Small Impact, Unless Extended*

- Provides \$1.80/sq ft *deduction* for buildings that reduce energy cost by at least 50% below ASHRAE 90.1-2001
 - Value depends on tax bracket (e.g., 30% tax bracket, deduction worth \$0.54/sq ft)
- Challenge is that building must be “placed in service” by Dec. 31, 2007
 - Congress being asked to extend date
- New and existing buildings covered
 - Public buildings may assign deduction to designer

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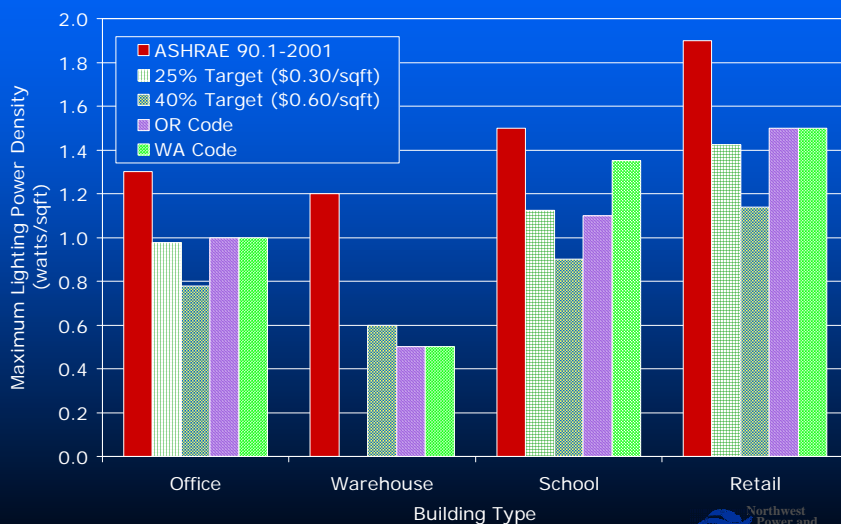
Tax Deduction for Commercial Lighting Efficiency - Good Idea

- Allows building owners to deduct the entire cost of a lighting or building upgrade in the year the equipment is placed in service
 - Deduction is capped
 - » @ \$0.30/sq ft for 25% lower than ASHRAE
 - » @ \$0.60/sq ft for 40% lower than ASHRAE (Exception: warehouses must be 50% under to get \$0.60 (no sliding scale))
- ASHRAE controls + “bi-level switching” required
- Industry has asked that provision be made permanent
 - More info: <http://www.lightingtaxdeduction.org/>

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Buildings That Meet or Slightly Exceeding PNW Codes May Be Eligible for Lighting Tax Credits



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Buildings Meeting PNW Codes May Be Eligible for Lighting Tax Credits

| Building Type | 90.1-2001 (watts/sqft) | 25% below (30 cents) (watts/sqft) | 40% below (60 cents) (watts/sqft) | Oregon Code | Washington Code |
|---------------|------------------------|-----------------------------------|-----------------------------------|-------------|-----------------|
| Office | 1.3 | 0.975 | 0.78 | 1.0 | 1.0 |
| Warehouse | 1.2 | Not Available | 0.6 (50% reduction) | 0.5 | 0.5 |
| School | 1.5 | 1.125 | 0.9 | 1.1 | 1.35 |
| Retail | 1.9 | 1.425 | 1.14 | 1.5 | 1.5 |

Tax Credit for Energy Efficient New Homes – Might Produce Modest Savings

- \$2000 credit provided for builders of site built homes that exceed IECC criteria by 50%
 - NW Alliance developing “prescriptive paths” for compliance
 - Not many electrically heated homes, mostly natural gas savings
- \$1000 credit provided to manufactured home producers exceeding IECC by 30% or meeting Energy Star criteria
 - PNW Manufacturers now offer complying products
- PNW State Energy Offices authorized to provide required “independent third party” certification
- Homes must be “substantially completed” after December 31, 2005 but before January 1, 2008.

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Tax Credits for Existing Homes – Savings Will Be Hard to Document

- \$300 tax credit for high efficiency
 - heat pumps, including geothermal
 - central air conditioners
 - heat pump water heaters
- Envelope measures eligible for deduction of 10% of cost, for:
 - Insulation & Windows (capped at \$200)
 - Duct sealing and infiltration reduction
 - Metal roofs with coatings to reduce heat gain
- Manufacturers must certify products are eligible; homeowners must keep copy of this certification
- **Only materials eligible, not labor, total credit capped @ \$500**

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Tax Credits for Appliance Manufacturers – Large Savings Likely

- Manufacturers of refrigerators, clothes washers, and dishwashers eligible for tax credits for production of high efficiency appliances*
- Credits tied to tiered efficiency criteria:
 - Clothes washers, \$100 for meeting 2007 Energy Star specification (1.72 MEF, 8.0 WF)
 - Refrigerators, \$75 for 15% savings relative to federal standard, \$125 for 20% savings, \$175 for 25% savings
 - Dishwashers, \$32.31 for meeting 2007 Energy Star specification (0.65 EF)
- Overall cap of \$75 million per manufacturer

*Council agreed to this provision when it endorsed agreement with manufactures on residential clothes washer standard

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Tax Incentives Assistance Project

- Multi-organization project to provide program administrators, trade allies, consumers and businesses information on the tax incentives and how to use them
- For more information on the tax incentives and TIAP:
www.energytaxincentives.org

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