



Energy Efficiency in State Government Operations – Lead By Example in New Mexico

Erik Aaboe – NM Lead By Example Coordinator

Governor Richardson's Climate & Energy Executive Orders

- 2004-019 – Declaring NM “The Clean Energy State,” creating Clean Energy Development Council in State Government.
- 2005-033 – Setting greenhouse gas (GHG) reduction goals, creating Climate Change Advisory Group to develop policy options.
- 2006-001 – Energy Efficient Green Building standards established for new/remodeled state buildings
- 2006-069 – Climate Action – Create staff team and implement specific GHG reduction policies
- 2007-053 – Set Energy Efficiency goals both for state government and statewide
- 2008-028 – Establish telework and flextime program

Executive Order 2007-053

“Increasing Energy Efficiency in State Government by 2015 and Statewide by 2012 and 2020”

Baseline year is 2005

■ Directives:

- Reduce State Building Energy Use 20% Below Baseline By 2015
- Reduce State Fleet And Transportation-related Energy Use 20% Below Baseline By 2015
- Reduce Per-capita Energy Use to 10% Below Baseline By 2012 And 20% Below Baseline By 2020
- Draft Building And Vehicle Energy Efficiency Recommendations And Implementation Plans
- GSD to Hire “Lead by Example Coordinator” To Develop And Implement RE/EE Strategies In State Government And Promote Statewide Lead By Example Efforts.
- Develop strategies to reach statewide per-capita reduction goals by 2020



Where to Begin?

- **New Mexico**

- Directives and policies already in place
- Energy Office has outreach mission/expertise
- Access to some possible project funding

- **NM LBE Program - Implementation Focus**

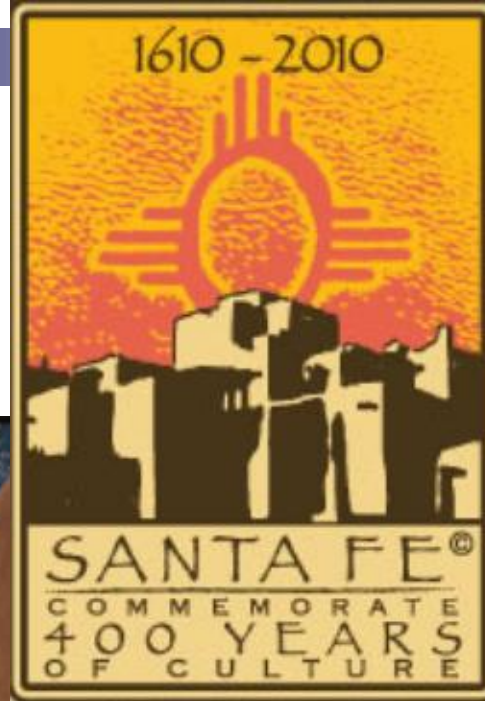
- Housed in General Services/Property Control
- Closer to Fleet & Building Management
- Build relationships with staff on the ground
- Manage EE projects



Implementing EE EO for Fuel

- Improve efficiency of vehicle stock
- Better apply technical solutions (limit trips / facilitate online meeting capabilities)
- Develop improved utilization policies
 - Investigating rideshare software
- Increase mass transit use
- Inform state employees of new projects, policies and successes.

Building Age



“We shape our buildings; thereafter they shape us.”

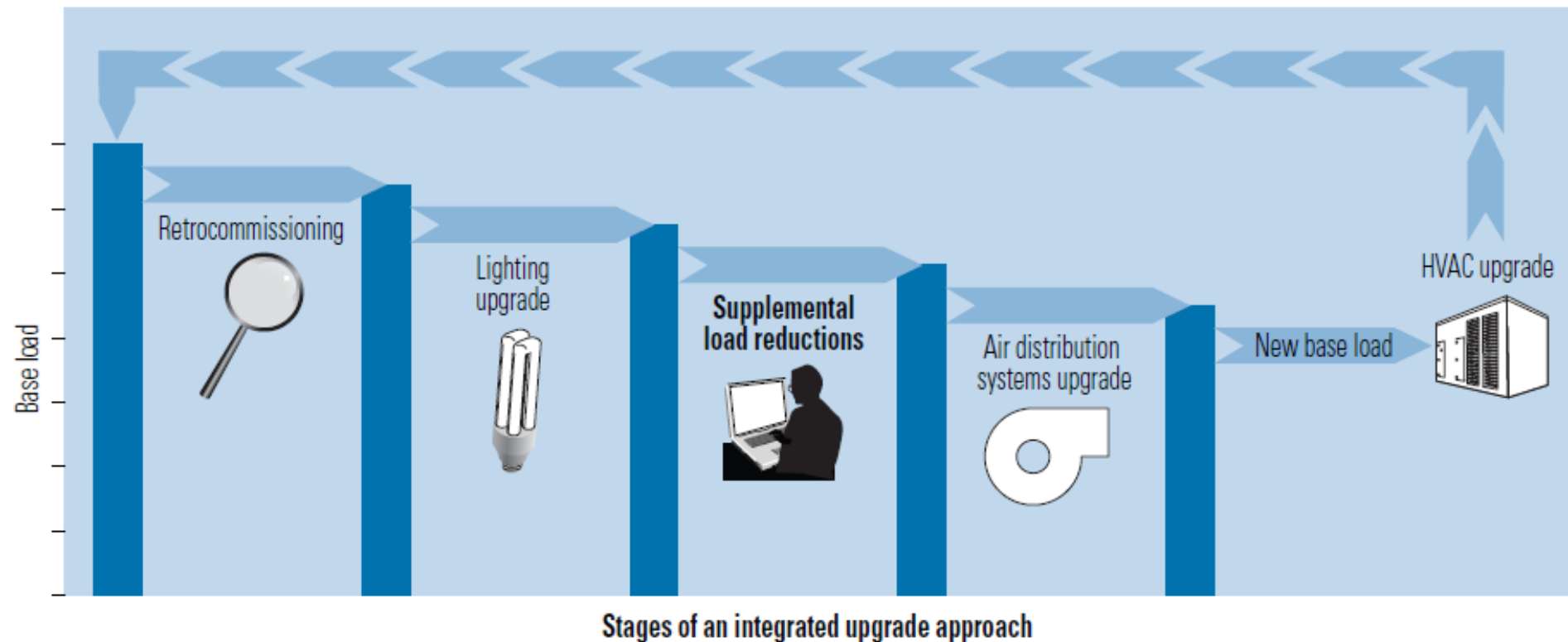
Winston Churchill

- Oldest Church
- Oldest House



Sequence of Building Efficiency Improvements

From ENERGY STAR's "*Building Upgrade Manual*"



Lighting Improvements

- Examine lighting levels, switching, technology options
- Retrofit T12 to T8 Fluorescents



- Use staff labor
- Contractor labor
- Recycle the lamps





Building Energy Use Tracking

- New Mexico has distributed utility payments
- Energy use is derived from monthly utility bills to benchmark building performance
 - Therms and cost from monthly natural gas bills
 - kWh and cost from monthly electricity bills
- NM keys this info into EPA's Portfolio Manager and spreadsheets (REC purchases)
 - Facility information shared across accounts
 - Training in 3-4 hours
 - Ongoing responsibility of agency fiscal staff

EPA Portfolio Manager Example

Facility Summary: Penitentiary of New Mexico

[How do I use this page?](#)

Building ID: 1577365

Level of Access: Facility/Profile Editor

Access Provided by : Trish Rudolph

Electric Distribution Utility: PNM - Public Service Co of NM

Regional Power Grid: [WECC Southwest](#)

[Select my Power Generation Plant](#) to calculate my electric emissions rate

Electric Emissions Rate (kgCO₂e/MBtu): 175.1 ([what is this?](#))

[Generate a Statement of Energy Performance](#) for uses other than applying for the ENERGY STAR.

General Information Edit	
Address: PO Box 1059 , Santa Fe, NM 87504	
Year Built: 1985	
Property Type: Single Facility	
Baseline Rating: 31	Current Rating: 28
Eligibility for the ENERGY STAR	
Not Eligible: Rating must be 75 or above	

Facility Performance Set Baseline Period Set Energy Performance Target							
Select View: <input type="text" value="Annual Energy Use and Cost"/> Create View Edit View							
12 Months Ending	Current Site Electric Use (kWh)	Current Site Natural Gas Use (therms)	Current Total Site Energy Use (kBtu)	Annual Energy Cost (US Dollars (\$))	Total Floor Space (Sq. Ft.)	Baseline Site Energy Intensity (kBtu/Sq. Ft.)	Current Site Energy Intensity (kBtu/Sq. Ft.)
<input type="text" value="December 2008 (Current)"/>	8,365,200.0	549,866.5	83,528,708.53	\$1,003,340.95	558,985	144.7	149.4

Penitentiary of New Mexico



- 150,000 sq ft
- 17,000 MBtu NG/yr
- Central boiler with 6,800 ft heat/hot water distribution loop
- 8" pipe insulated w/ "lightweight concrete"
- Abandon loop
- Replace w/ 7 high efficiency boilers
- ~6 year payback



Helpful Resources

- EPA & DOE Tools
 - Portfolio Manager
 - Target Finder
 - www.fueleconomy.gov
 - EPA *Building Upgrade Manual*
- Local Utility EE Programs
 - “Energy Academy”
 - Rebate Program Info
- State Energy Office

Thank you.

Questions?

