

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

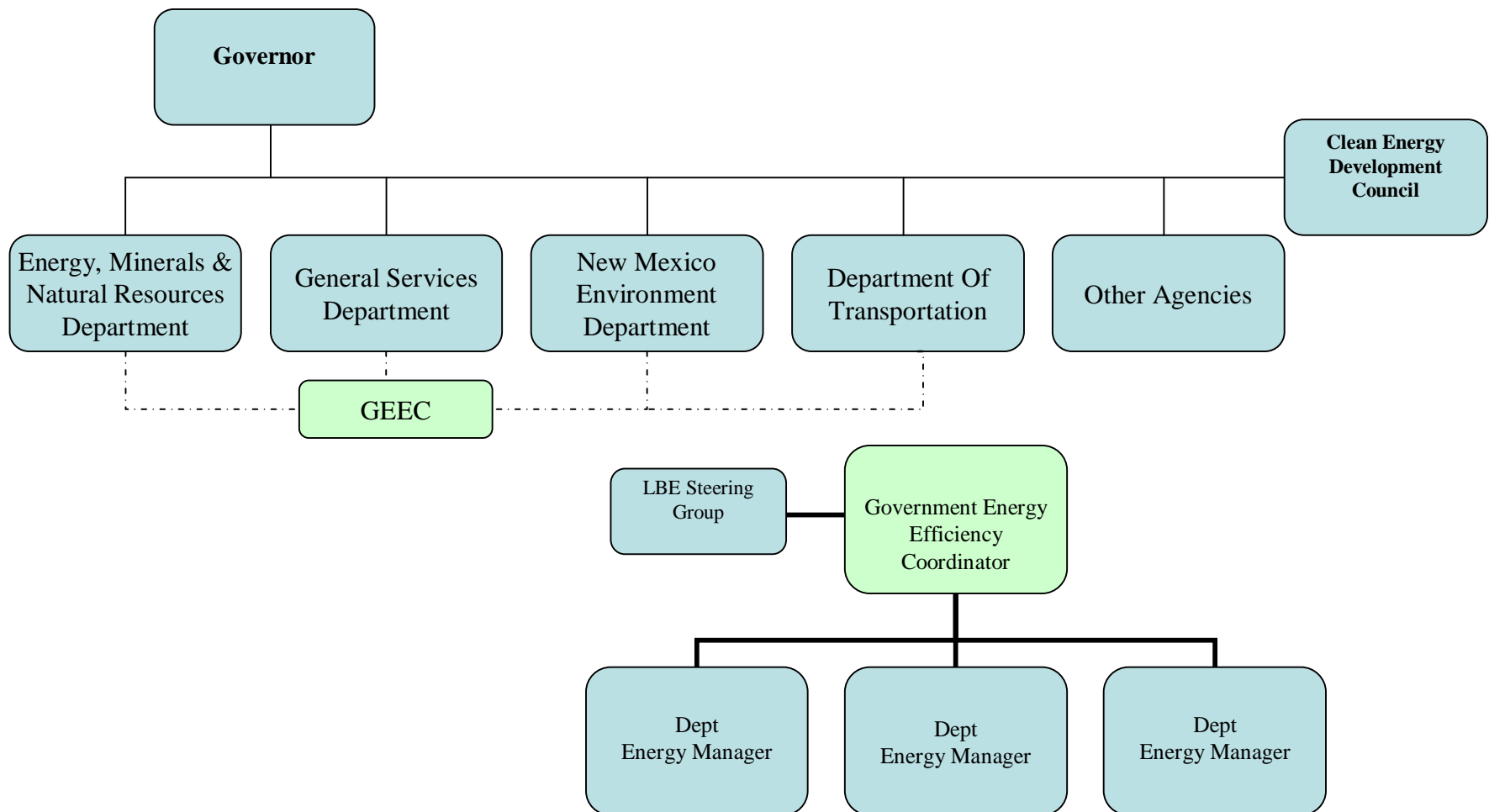
Erik Aaboe – NM Lead By Example Coordinator



Establishing LBE Activities

- Would an LBE position have an impact?
- Is there support throughout management?
- Are policies in place for Clean Energy, GHG Reduction, Energy Efficiency?
- Is there access to existing resources?
- Can existing staff expertise and activities be focused?

Suggested Organizational Structure – December 2006





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

- Strong management support
- 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
- Directly promote and manage EE projects



Always Expect the Unexpected

- Recycling Program Outreach
- Carpeting Price Agreement Involvement
- Commuting / Bicycling & Parking Issues
- New Employee Benefit Programs (in banking bailout and ARRA)
- Green Technology Presentations
- Unsolicited Suggestions



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 and policies



Implementing EE EO for Buildings

- EE targeted funding gets attention
- Educate Facility / Project Managers
- Discourage straight like-for-like replacements
- Encourage suggestions from maintenance technicians
- Be prepared for rapid turnaround funding opportunities
- Inform state employees / tenants of benefits of ongoing and completed projects

Lighting Retrofits – High Priority

- 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 uses a distributed payment of utilities
- 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 financial staff keys this info into EPA's Portfolio Manager
 - Facility information shared across accounts
 - Training in 3-4 hours
 - Ongoing responsibility of agency fiscal staff
 - "Compliance" a significant issue
- Green Power Purchases tracked on spreadsheets

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.

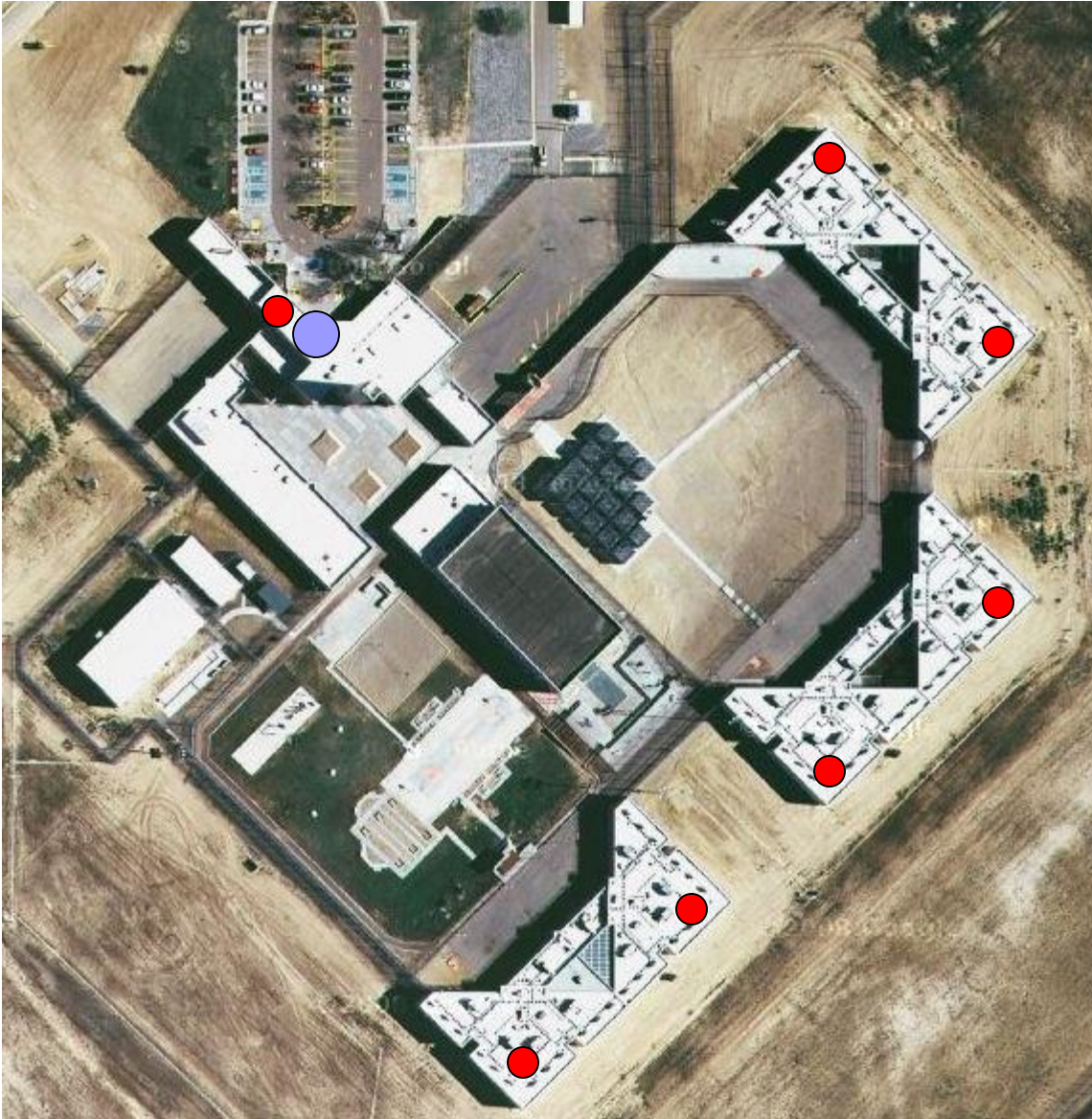
General Information Edit	
Address: PO Box 1059 , Santa Fe, NM 87504	
Year Built: 1985	
Property Type: Single Facility	
Baseline Rating: 31	Current Rating: 28
Eligibility for the ENERGY STAR	
Not Eligible: Rating must be 75 or above	

Facility Performance [Set Baseline Period](#) | [Set Energy Performance Target](#)

Select View: [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.)
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"
- Plan for Retrofit
 - Abandon loop
 - Replace w/ 7 high efficiency boilers ●
 - ~6 year payback



Helpful Resources

- EPA & DOE Tools
 - Portfolio Manager
 - Target Finder
 - www.fueleconomy.gov
 - EPA ENERGY STAR *Building Upgrade Manual*
 - *NAPEE Quick Start Energy Efficiency Programs*
- Federal, State and Local Peers
- Local Utility EE Programs
 - “Energy Academy”
 - Rebate Program Info
- State Energy Office
- Listserves and RSS Feeds

Erik Aaboe erik.aaboe@state.nm.us (505) 827-0676