

Energy Master Plan Progress: State Government



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Taking Early Action

In demonstration of his commitment to reduce energy usage, greenhouse gasses and improve the health and welfare of New Jersey citizens, Governor Corzine signed an Executive Order (11) in 2006 establishing the Office of Energy Savings.

Under this EO, this newly created office was charged with ensuring that New Jersey State government would lead by example, identifying and implementing ways to reduce energy consumption and cost in state buildings and utilizing clean, renewable energy alternatives.

In concert with the Statewide Energy Master Plan, this office has launched a series of initiatives to conserve energy, track and audit energy usage, increase energy efficiency, and undertake a variety of projects to meet the goals of the executive order and the spirit of the energy master plan.

The following pages illustrate how this office has worked with peer agencies in government, utility companies and other partners in making New Jersey state government greener and New Jersey's environment cleaner...





Energy Conservation

- Monitoring building energy performance in downtown Trenton
 - Energy Star Benchmarking against similar buildings around U.S.
 - Identified poor performers for onsite facility reviews
 - Team approach: Energy/Operations/Maintenance staff
- Implemented immediate energy conservation measures
- Achieved 9% average performance improvement
- Significant results at low cost, eliminating energy waste
 - \$820,000 annual cost reduction
 - 22 billion BTU energy reduction
 - 3,000 MT CO₂ reduction
- This technique will be replicated across all facilities





Energy Tracking System



- Launched new, online tool for State Government to manage energy use and cost across all buildings and facilities
- New State policy and system launched in July 2009
 - Centralized processing of all energy bills to audit and extract key data
 - Processed over 5,000 energy bills over past two months, all types
 - Electricity, natural gas, landfill gas, propane, heating oil, steam, hot water, chilled water
- Centralized oversight and expanded access to information
 - Measuring energy use intensity, cost, carbon footprint, trend
 - Performance reporting, expanded Energy Star scoring to more facilities
- Will permit strategic resource deployment
 - Technical and financial
- Continuous auditing of facility performance
- Department training by end of 2009





Facility Energy Audits



- Over 100 State buildings currently being audited
- Over 200 building audits will be underway by end of 2009
- Using standardized energy audit RFP process
- Identifying and ranking potential ECMs
 - Cost, energy savings, \$ savings, CO2 reduction
- Current emphasis on the State's largest facilities
- Energy Tracking System reporting and analysis will enable a more strategic and focused approach going forward





EE/RE Project Highlights

- Over 30 facility projects currently underway/planned, including:
 - Lighting retrofits and upgrades, including LED technology
 - Upgrading building controls and sensors, remote access
 - Various heating, ventilation, and cooling efficiency upgrades
 - Upgrading to premium efficiency motors, variable frequency drives
 - Eliminating #4 and #6 heavy oil use and reducing emissions
 - Converting to natural gas and clean landfill biogas (renewable)
 - New solar power systems, more than doubling on-site capacity
 - Wind turbine at DMAVA Sea Girt, environmental monitoring underway
- Expected impact from projects already underway
 - Over 53 billion BTU energy reduction
 - Over 13,000 MT CO₂ reduction
 - \$2.7M annual cost reduction
- Much more to come, in development





State ARRA Program



- Three large State institutions targeted for federal stimulus funds
 - Providing vital services for NJ's developmentally disabled citizens
- High priority, high potential for efficiency improvements
 - Numerous energy efficiency upgrade opportunities being investigated
 - Natural gas conversion to eliminate #6 oil use, reduce GHG emissions
- Energy audit phase currently underway
- Taking advantage of BPU Pay for Performance Program
- \$10.2 million in ARRA funding anticipated + P4P rebates
- Project engineering & installation planned for 2010



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Energy Star Recognition

- Mary Roebling Building, Trenton
 - 1st State building in NJ to receive the Energy Star label for superior energy performance
 - In the top quartile for energy performance versus similar buildings around the country
 - Achieved a 29% reduction in energy use
 - Aggressive conservation, controls optimization
 - Resolved heating & cooling problem
- 3 more State buildings now eligible for the Energy Star label
- More to come!





Facility Spotlight



- Regional Operations Intelligence Center (ROIC)
 - Constructed by the New Jersey Building Authority
 - State of the art emergency management facility for critical State operations
 - Combines solar and geothermal renewable energy technologies
- OES Completed energy review, first year of operations
- Lowest energy cost for a State building (\$0.40/square foot)
 - Net of avoided electricity purchases and SREC revenue
- OES teamwork with building staff to reduce consumption
 - Now: 63 kBTU/sf (site), 210 kBTU/sf (source), 80 Energy Star Rating
- Qualified for Energy Star label, certification pending





Getting Greener Everyday

- Fully utilize the new Energy Tracking System
- Ongoing energy conservation for all facilities
- Target facility energy audits for best opportunities
- Strategic investment in EE, RE opportunities
- Continue focus on budget stability, cost reduction
- Ongoing shift to high efficiency procurement
- Regular performance reporting
- Hold departments accountable
- Drive continuous improvement

