

Greening State Government



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Taking Action

- Governor Corzine's Executive Order 11
 - Reduce energy consumption and cost
 - Increase energy efficiency
 - Reduce environmental impact
 - For all State agencies
- Established Office of Energy Savings
 - Housed in Dept of the Treasury





Strategy Summary

- **Set goal:** 10% reduction by 2012
- **Develop** energy profile, baseline
- **Optimize** supply portfolio
- **Improve** operations, conserve
- **Invest** in beneficial projects
- **Measure** results





Energy Profile

- 7 trillion BTU's consumed annually
- \$171M annual cost
- 739,000 metric tons CO2 emissions
- 18 State Departments, 300+ Agencies
- 300 Facilities, 4,000+ Buildings
- 14,000+ Vehicles in State fleet





Results to Date

- \$8.6 M cost reduction benefit
 - Will be realized over next three years
 - Supply and conservation actions
- 22.5 billion BTU energy use reduction
- 3,026 metric ton reduction of CO₂
 - Equivalent to:
 - Planting 1,600 acres of trees
 - Removing 400 cars from the road
- Achieved at very low cost





What is Clean?

- The cleanest kilowatt is the one not generated (used)
- Energy conservation & efficiency
- Low/no emission energy supply
- Preference is renewable supply
 - Sustainable in the long run
 - Prevents depletion of finite natural resources





Clean Energy Supply

- Electricity - Class I renewables
- Combined heat and power supply
- Solar systems
- Landfill gas
- Biodiesel





Electricity



- Over 42,000 MWh per year comes from Class I renewable sources
- Enough renewable power to supply over 4,000 homes





Combined Heat & Power

- 102 State buildings using CHP energy
- Electricity, chilled/hot water, and steam
- Supplied from local CHP plants
- Higher efficiency
- Lower air emissions





State Solar Systems



- DMAVA - Fort Dix
- DMAVA - Lawrenceville
- State Police EOC – Trenton
- Health Lab – under construction

- > 1 MW total capacity
- > 1 million kWh per year
- 650 MT CO₂ reduction





Landfill Gas

- Utilizing landfill gas to produce steam for Dept. of Human Services - Woodbine Facility
- Prevents release of methane
- Investigating CHP option
 - Generate renewable electricity
 - Class I renewable energy credits





Biodiesel



- Testing B20 for DOT vehicles
 - 20% biodiesel, 80% petroleum diesel
- No vehicle retrofit required
- Plan to expand use where feasible
- Will reduce GGE petroleum consumption and air emissions





Demand-Side Initiatives

- Building energy audits
- Energy Star scoring
- Energy conservation measures
- Information technology
- Energy efficiency upgrades





Building Energy Audits

- Starts with billing evaluation
 - Gather all cost and volume data
- Determine key performance metrics
 - Energy Star score, BTUs/sf, \$/sf, trend
- Rank buildings by performance
- Target poor performers for more intensive, onsite review





Energy Star

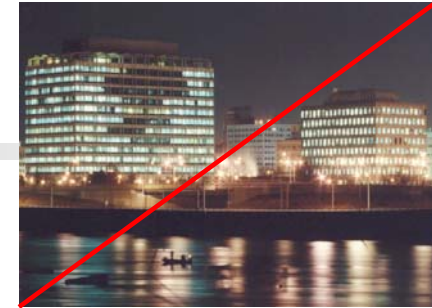


- Using portfolio manager to determine Energy Star scores for State buildings
- Ranking by energy intensity
- Targeting inefficient buildings for evaluation and improvement
 - 4% improvement since program start
- Expanding program over time





Energy Conservation



- Eliminating energy waste
- Reviewing equipment & operations
- Optimizing control schedules
 - Expanding night setback (time and load)
- Improving maintenance practices
- Team approach gets results
 - Energy, Operations, Maintenance





Information Technology

- Consolidating printers, faxes, copiers
- Fewer machines, higher efficiency
- Automated shutdown of desktops
- Reviewing data centers for efficiency
- Using “2-sided” as default setting for eligible printers
 - Cutting paper consumption in half





Lighting



- State House lighting upgrade
 - New fixtures, ballasts, T8 lamps
 - 58% reduction in electricity use
- Other State buildings to follow
- New State contract for lamps
 - Focus on higher efficiency
 - Low-mercury content
 - Longer life
 - Lower maintenance





Heating & Cooling



- Evaluating efficiency at system level
- High efficiency replacements for equipment at end of rated life
 - Boilers, chillers, pumps, motors
- Enhanced control, variable speed
- Operator training
- Testing new technologies





State Vehicle Fleet

- LDV's subject to EPACT AFV rule
- Seeking EPACT compliance flexibility
- Vehicle "right-sizing"
- Increase use of electric hybrids
- Green driving campaign
- Maximize use of clean fuels





Legislative Update

- Law: Phase-out of incandescents
- Law: Purchase Energy Star products
- Bill: Green Building Standards
- Bill: Guaranteed Energy Savings Act
 - Applies to State/local government
 - Allows long term energy service contracts
 - Integrated approach for energy upgrades
 - Savings cover project payments





Moving Forward

- Emphasis on reducing environmental impact
- Ongoing energy conservation
- Investment in energy efficiency
- Testing new energy technologies
- Increase number of renewable energy systems at State facilities
- Measurement of energy performance
- Drive continuous improvement

