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JOINT COMMITTEE ON FINANCE

MEMORANDUM

To: Members
Joint Committee on Finance

From: Senator Mark Miller
Representative Mark Pocan

Date: July 28, 2010

Re: DOA Report on Energy Cost Reduction Plan

Attached is a report on energy cost reduction plan from the Department of Administration, pursuant to s. 16.953, Stats.

This report is being provided for your information only. No action by the Committee is required. Please feel free to contact us if you have any questions.

Attachments

MM:MP:jm

ENERGY COST REDUCTION PLAN

Agency: Department of Administration
Institution: Division of State Facilities, Bureau of Facilities Management
Time Period: July 1, 2010 to June 30, 2012

RECEIVED
JUL 28 2010
BY: Jt. Finance

Executive Order 145, Article 1 Goals: Reduce BTU/GSF from FY 2005
10% by beginning of FY 2008
20% by beginning of FY 2010

Anticipated Methods of Funding Energy Conservation Opportunities:

Funding Source	EE or RE Measure	Cost of Project	Energy Savings BTU/YR	Energy Cost Reduction
WS15 SP Energy Conservation Project Funds				
Performance Contracting-Agency				
Performance Contracting-Private				
Agency Funds	1 – Hill Farms Heating Plant boiler Replacement 2 – Milwaukee Crime Lab – Boiler	1 - $400,000 2 - $20,000	1 – 6700 MMBtu/yr(gas) 2 – 633 MMBtu/yr(gas)	1 - $60000 2 – $5700
Focus on Energy				
Utility Programs				
Equipment Lease or Lease Purchase				
Gifts & Grants				
Total				

State of Wisconsin

Energy Cost Reduction Plan - Energy Conservation Opportunities (ECO's)

BUILDING ENVELOPE

Door Closer Adjustment	Seal Conduit/Pipe/Duct Penetrations	Seal Openings in Building Exterior	Replace Damaged/Inadequate Insulation	Repair Construction, Control & Expansion Joints	Repair Cracked or Broken Windows	Prohibit Blocking Ext. Doors Open
C	P	P	P	P	C	C
C	C	C	C	P	P	C
C	C	C	C	P	P	C
C	C	C	C	P	P	C
C	C	C	C	C	C	C
C	P	P	P	P	P	C
C	P	P	C	P	C	C
P	P	P	P	P	P	NA
C	P	P	C	C	C	NA
c	c	c	c	c	c	c
c	c	c	c	c	c	c
C	C	C	C	C	C	C
C	C	C	C	C	C	C
C	C	C	C	C	C	C
C	C	C	C	C	C	C
C	C	P	C	P	P	C
C	C	C	C	C	C	C
C	C	C	C	C	C	C
C	C	C	C	C	C	C
C	C	C	C	C	C	C
C	C	C	P	P	C	C
C	C	P	C	C	C	C
C	C	C	P	C	C	C
c	c	c	c	c	c	c
C	C	C	C	C	C	C
C	C	C	C	C	C	C
C	C	C	C	C	C	C

PLUMBING

5-1.0 GPM Lavatory Aerator	1.5-2.2 GPM Sink Aerator	2.0-2.5 GPM Showerhead	5 GPF Urinal	1.0 GPF Urinal Flushvalve Retrofit	1.6 GPF Water Closet	1.25-1.6 GPM Prerinse Sprayhead (Food Service)	Repair Leaky Faucets, Water Closets, Valves, Etc.	Unoccupied Hot Water Recirc. Pump Shutdown	Minimize Booster Pump Pressure Setting/Runtime	VFD Booster Pump Control	Water Heater Heat Traps	Blowdown/Clean Water Heaters & Heat Exchangers	Unoccupied Electric Water Heater Shutdown	Unoccupied Water Cooler Shutdown	Domestic Water/Swimming Pool Solar Preheat	Replace Damaged/Inadequate Pipe/Tank Insulation	Replace Equipment w/ Higher Efficiency Equip.	High Efficiency Motors
P	P	P	P	P	P	C	C	C	P	P	P	P	P	P	C	P	P	
P	C	C	C	C	C	NA	C	P	C	C	P	P	P	NA	P	P	P	
P	P	P	P	P	P	P	P	P	P	P	P	P	P	C	P	P	P	
P	C	C	C	C	C	NA	C	P	C	C	P	P	P	NA	P	P	P	
P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
P	P	P	P	P	P	P	C	P	P	P	P	C	P	P	C	P	P	
P	P	P	P	P	P	P	C	P	P	P	P	C	P	P	C	P	P	
P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	NA	P	P	
P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	NA	P	P	
c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	p	p	p
c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	p	p	p
P	P	P	P	P	P	C	C	P	P	P	P	P	P	P	C	C	C	
P	P	P	P	P	P	NA	C	P	P	P	P	P	P	P	C	C	C	
P	P	P	P	P	P	P	C	C	P	P	P	P	C	P	C	C	C	
P	P	P	P	P	P	NA	C	P	P	P	P	P	P	P	C	C	C	
P	P	P	P	P	P	NA	C	P	NA	NA	NA	P	P	P	P	C	C	C
P	P	P	P	P	P	NA	C	P	NA	NA	NA	P	P	P	P	C	C	C
C	P	C	P	P	C	NA	C	P	C	NA	NA	C	P	P	NA	C	P	P
C	P	C	P	P	C	NA	C	P	NA	NA	NA	C	P	P	NA	C	P	P
P	P	P	P	P	P	NA	C	P	C	NA	NA	C	P	P	NA	C	P	P
C	C	NA	C	C	C	NA	C	C	C	P	NA	C	NA	P	NA	C	P	C
P	P	P	P	P	P	N/A	C	C	P	N/A	N/A	C	N/A	P	N/A	C	P	P
C	C	C	C	P	P	NA	C	C	NA	NA	N/A	C	C	C	NA	P	P	P
c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
P	P	P	P	P	P	P	C	C	C	C	C	C	N/A	P	C	C	P	P
P	P	P	P	P	P	P	C	C	C	C	C	C	N/A	P	C	C	P	P
P	P	P	P	P	P	P	C	C	C	C	C	C	N/A	P	C	C	P	P

HEATING, VENTILATING, AND AIR CONDITIONING

Inspect/Repair Damper Seals/Linkages/Operators	Inspect/Repair Valve Seals/Operators	Test/Repair Steam Traps	Blowdown/Clean Strainers	Replace Air Filters & Water Filter Elements	Clean Intake Louvers & Screens	Adjust Motor & Fan Belts	Clean Chiller Waterside Tubes	Clean Cooling Tower Fill, Nozzles, Basins	Clean Boiler Heat Exchange Surfaces	Clean Coil Air & Water Heat Exchange Surfaces	Chemical Treatment for Fouling, Scaling, Corrosion	Analyze Flue Gas & Optimize Fuel Air Ratio	Adjust Boiler & Cooling Tower Blowdown Cycles	Exhaust Heat Recovery	Flue Gas Heat Recovery	Replace Damaged/Inadequate Pipe/Duct Insulation	Replace Damaged/Inadequate Equipment Insulation	Seal Duct Leaks	Trim Pump Impellers Where Throttled	Reduce Laboratory Air Exchange Rate	Replace Equipment w/ Higher Efficiency Equip.	High Efficiency Motors	Tune Up Chiller Operation	Reduce Air/Water Flow & Rebalance If Feasible
C	C	C	C	C	C	C	C	C	P	P	P	P	P	P	C	C	C	P	P	P	P	P	C	P
C	C	C	C	C	C	C	NA	NA	NA	C	NA	NA	NA	NA	NA	P	P	P						
P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	NA	C	P	P	P
							NA	NA	NA	NA	NA	NA	NA	NA	NA									
P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	NA	P	P	P	P
P	P	P	P	C	C	C	P	P	P	C	P	P	P	P	P	P	P	P	P	P	P	P	P	P
P	P	P	P	C	C	C	P	P	P	C	P	P	P	P	P	P	P	P	P	P	P	P	P	P
P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	NA	P	P	P	P
NA	NA	NA	NA	P	P	P	NA	NA	NA	P	NA	NA	NA	NA	NA	NA	NA	P	NA	NA	P	P	P	NA
c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	p	p	c	c	c
c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	p	p	c	c	c
C	C	C	C	C	C	C	C	C	C	C	C	P	C	P	P	C	C	C	P	NA	P	P	C	C
C	C	C	C	C	C	C	C	C	C	C	C	P	C	P	P	C	C	C	P	P	P	P	C	P
C	C	C	C	C	C	C	C	C	C	C	C	P	C	P	P	C	C	C	P	NA	P	P	C	C
C	C	C	C	C	C	C	C	C	C	C	C	P	C	P	P	C	C	C	P	NA	P	P	C	P
C	C	NA	C	C	C	C	NA	NA	C	C	C	C	NA	P	P	C	C	C	P	NA	P	P	C	P
C	C	NA	C	C	C	C	NA	NA	C	C	C	C	NA	P	P	C	C	C	NA	NA	P	P	NA	P
C	C	C	C	C	C	C	C	C	NA	C	C	NA	C	C	NA	C	C	C	P	NA	P	P	C	P
C	C	C	C	C	C	C	C	NA	C	C	C	C	C	C	P	C	C	C	P	C	P	P	C	P
P	C	NA	C	C	C	C	C	C	C	C	C	C	C	P	P	C	C	C	C	NA	P	P	C	C
P	P	NA	C	C	C	C	C	C	P	C	C	C	C	P	P	C	C	P	P	NA	P	C	C	P
C	C	C	C	C	C	C	C	C	N/A	C	C	N/A	C	P	N/A	C	C	C	P	N/A	P	P	C	P
C	C	C	C	C	C	C	C	NA	C	C	C	C	C	P	P	P	P	P	P	P	P	P	C	P
c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
C	C	C	C	C	C	C	C	C	C	C	C	C	C	P	P	C	C	C	P	N/A	P	P	C	P
C	C	C	C	C	C	C	C	C	C	C	C	C	C	P	P	C	C	C	P	N/A	P	P	C	P
C	C	C	C	C	C	C	C	C	C	C	C	C	C	P	P	C	C	C	P	N/A	P	P	C	P

BUILDING AUTOMATION SYST

Unoccupied Air Conditioning Shutdown	Unoccupied Pump Shutdown	Unoccupied Zone Shutdown	Unoccupied Fan Shutdown	Unoccupied Setup/Setback of Clg/Htg Temps	Optimized Equipment Start Ups (DSF 23 09 93)	Stagger Startups & Limit Elect/Central Plant Demand	Maximize OA Reset Hot Water/Supply Air/Humidity	Demand Limiting Control Sequences	Reduce Outside Air to Match Occupancy	CO2 Control of Outside Air (DSF 23 09 93)
P	P	P	P	P	P	P	P	P	P	C
P	P	P	P	P	P	NA	P	P	P	P
P	P	P	P	P	P	P	P	P	P	P
P	P	P	P	P	P	P	P	P	P	P
P	P	P	P	P	P	C	P	P	P	P
P	P	P	P	P	P	C	P	P	P	P
P	P	P	P	P	P	P	P	P	P	P
P	P	P	P	P	P	P	P	P	P	P
P	NA	NA	NA	P	P	P	NA	P	P	P
c	c	c	p	c	c	p	c	c	c	c
c	c	c	p	c	c	p	c	c	c	c
C	C	C	C	C	C	C	P	P	P	C
C	C	C	C	C	C	C	P	P	P	P
C	C	C	C	C	C	C	C	C	P	C
C	C	C	C	C	C	C	P	P	P	P
C	C	C	C	C	C	C	P	P	P	P
C	C	C	C	C	C	C	P	P	P	NA
C	C	C	C	C	C	C	C	C	C	P
C	C	C	C	C	C	C	C	C	C	P
C	C	C	C	C	C	C	C	C	C	P
C	C	C	C	C	C	C	C	C	C	P
C	C	P	C	C	C	C	C	P	C	P
C	C	P	C	C	C	C	C	C	C	P
c	c	c	c	c	c	c	c	c	c	p
C	C	C	C	C	C	C	C	P	P	P
C	C	C	C	C	C	C	P	P	P	P
C	C	C	C	C	C	C	P	P	P	P

Transcribed by Jim Hoffman

State of Wisconsin

Energy Cost Reduction Plan - Energy Conservation Opportunities (ECO's)

ND TEMPERATURE CONTROLS

Optimize Cooling Tower Fans (DSF 23 09 93)	Floating Drybulb or Enthalpy Economizer (DSF 23 0	68o/76o Thermostat Settings (Energy Use Standard	Calibrate Thermostats and Pneumatic Controls	60o Unoccupied Winter Thermostat Setting	Install and/or Reprogram Setback Thermostats	Compressed Air System Survey & Leak Repair	Adjust Air Compressor Pressure/Review Runtime
C	C	C	C	P	C	P	P
NA	NA	C	C	C	P	P	P
P	P	P	P	NA	P	P	P
NA	NA	C	C	C	P	P	P
P	P	P	P	P	P	P	P
P	P	C	C	P	P	P	P
P	P	C	C	P	P	P	P
P	P	P	P	P	P	P	P
NA	NA	P	P	NA	P	NA	NA
c	p	c	c	c	c	c	c
c	p	c	c	c	c	c	c
C	C	C	P	C	C	P	P
C	C	C	P	P	C	P	P
C	C	C	C	C	C	C	C
C	C	C	P	P	P	NA	NA
C	C	C	P	C	C	P	P
NA	P	P	P	C	P	P	P
C	P	C	C	C	C	C	C
NA	P	C	C	C	C	C	C
C	P	C	C	C	C	P	C
C	P	C	C	C	NA	P	C
C	P	C	C	C	C	P	C
NA	P	C	C	C	C	P	C
c	c	c	c	c	c	c	c
C	P	C	C	C	C	C	C
C	P	C	C	C	C	C	C
C	P	C	C	C	C	C	C

LIGHTING AND ELECTRICAL

Convert Fluorescent T12 to T8 Lamps	Convert Magnetic Ballasts to Electronic	5000 K Lamps to Reduce Number of Lamps	Replace Incandescent w/ Compact Fluorescent	Reduce Lighting Levels to ASHRAE 90.1	Occupancy Sensor Lighting Controls	LED Exit Lights	Exterior Lighting Photocell/Timer Controls	Reduce Exterior Lighting	Programmable & Daylighting Controls	Energy Star Transformers	Task Lights in Lieu of General Lighting
C	C	C	C	C	C	C	C	C	C	C	C
C	C	C	C	P	P	P	C	P	P	P	NA
C	C	C	C	P	P	P	P	P	P	P	P
C	C	C	C	C	P	P	C	P	P	P	NA
C	C	P	P	P	P	C	P	P	P	P	P
C	C	C	C	C	C	P	C	C	P	P	C
C	C	C	C	C	C	P	C	C	P	P	C
C	C	C	C	C	C	P	C	C	P	P	C
P	P	P	P	P	P	P	P	P	P	P	P
c	c	c	c	c	c	c	c	c	c	c	c
c	c	c	c	c	c	c	c	c	c	c	c
C	C	C	C	C	C	C	C	P	C	C	C
C	C	C	C	C	C	C	C	P	C	C	C
C	C	C	C	C	C	C	C	P	C	C	C
C	C	C	C	C	C	C	C	P	C	C	C
C	C	C	C	C	C	C	C	P	C	C	C
C	C	C	C	C	C	C	C	P	C	C	C
P	P	P	C	P	P	P	C	P	P	P	P
P	C	P	C	P	P	P	C	P	P	P	P
C	P	C	C	C	C	P	C	P	P	P	C
C	P	C	C	C	C	P	C	P	P	P	C
P	P	P	C	P	P	P	C	P	P	P	C
C	P	P	C	P	P	P	C	C	P	P	C
c	c	p	c	p	c	c	c	c	c	p	c
C	C	C	C	P	P	P	C	C	P	P	C
C	C	C	C	P	P	P	C	C	P	P	C
C	C	C	C	P	P	P	C	C	P	P	C

FIXED EQUIPMENT

Reduce Number of Laboratory Fume Hoods	Close Fume Hood Sashes When Not In Use	Eliminate Unnecessary Process Equipment	Automated Process Equipment Shutdown	Reduce Preheat/Run Times (Kilns, Sterilizers, Oven	High Efficiency Motors
P	C	P	P	P	P
NA	NA	NA	NA	NA	NA
NA	NA	NA	C	NA	C
NA	NA	NA	NA	NA	NA
C	C	C	C	C	C
C	C	C	C	C	P
C	C	C	C	C	P
P	C	P	P	P	P
C	C	C	C	C	C
p	c	c	c	c	c
p	c	c	c	c	c
NA	NA	NA	NA	NA	NA
P	C	C	P	P	P
NA	NA	C	C	NA	C
NA	NA	NA	C	NA	C
NA	NA	NA	C	NA	C
NA	NA	NA	C	NA	C
NA	NA	NA	NA	NA	NA
P	C	C	P	P	P
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	C
NA	NA	NA	NA	NA	N/A
NA	NA	NA	NA	NA	N/A
NA	NA	NA	NA	NA	N/A

MOVABLE EQUIPMENT

Eve/Weekend Turn Off PCs, Printers, Coolers	Energy Star Office Equipment and Appliances	Sleep Mode On PCs, Printers, Copiers, FAXs	Occupancy Sensor Power Strips on Equipment	Energy Star Vending Machines	Vending Machine Energy Reduction Devices	Eliminate Individual Space Heaters, Humidifiers, etc	Eliminate Individual Coffee Makers, Hot Plates, etc	Centralize Refrigerators, Microwaves, etc.
P	P	P	P	P	P	P	P	P
P	P	P	P	P	P	P	P	P
P	P	P	P	NA	NA	P	NA	C
P	P	P	P	P	P	P	P	P
P	P	P	P	P	P	P	P	P
C	C	C	C	C	C	C	C	C
C	C	C	C	P	P	C	P	C
C	C	C	C	P	P	C	P	C
P	P	P	P	P	P	P	P	P
P	P	P	P	NA	NA	P	P	C
C	C	C	C	C	C	C	C	C
C	C	C	C	C	C	C	C	C
C	C	C	C	C	C	C	C	C
C	C	C	C	C	C	C	C	C
C	C	C	C	C	C	C	C	C
C	C	C	C	C	C	C	C	C
C	C	C	C	C	C	C	C	C
C	C	C	C	C	C	C	C	C
P	P	C	P	P	P	C	C	C
P	P	P	P	P	P	C	C	C
P	P	P	P	P	P	C	C	C
P	P	P	P	P	P	C	C	C
P	P	C	P	P	P	C	C	C
P	P	C	P	P	P	C	C	C
C	C	C	C	C	C	C	C	C
C	P	C	P	P	P	C	C	C
C	P	C	P	P	P	C	C	C
C	P	C	P	P	P	C	C	C

ALTERNATIVE ENERGY

Wood Waste	Agricultural Waste	Landfill Gas	Cogeneration	Geothermal	Wind	Photovoltaic
P	P	P	P	P	P	C
P	P	P	P	P	P	P
NA	NA	NA	NA	NA	Na	C
P	P	P	P	P	P	P
C	C	C	C	C	C	C
P	P	P	P	P	P	P
P	P	P	P	P	P	P
C	C	C	C	C	C	C
NA	NA	NA	NA	C	C	C
NA	NA	NA	NA	NA	NA	P
NA	NA	NA	NA	NA	NA	P
NA	NA	NA	NA	NA	NA	P
NA	NA	NA	NA	NA	NA	P
NA	NA	NA	NA	NA	NA	P
NA	NA	NA	NA	NA	NA	P
NA	NA	NA	NA	NA	NA	C
NA	NA	NA	NA	NA	NA	P
NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	P
NA	NA	NA	NA	NA	NA	P
N/A	N/A	N/A	P	N/A	N/A	N/A
NA	NA	NA	NA	NA	NA	NA
p	p	p	p	p	p	p
NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA

Turn Off Lighting & Equipment When Not in Use	Use Window Blinds When Air Conditioning	Close Windows When Heating or Air Conditioning
C	C	C
P	P	P
P	P	P
C	C	C
C	C	C
C	C	C
C	C	C
C	C	C
C	C	C
C	C	C
C	C	C
C	C	C
C	C	C
C	C	C
C	C	C
C	C	C
C	C	C
C	C	C
C	NA	NA
C	C	C
C	C	C
C	C	C
C	C	C
C	C	C
C	C	C
C	C	C
C	C	C
C	C	C
C	C	C
C	C	C

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State of Wisconsin

Energy Cost Reduction Plan - Energy Conservation Opportunities (ECO's)

EDUCATION PROGRAMS								
Promote Use of Stair in Lieu of Elevator	Communications - Newsletters, Posters, E-Mails							
P	P							
P	P							
NA	NA							
P	P							
P	P							
C	C							
C	C							
NA	P							
NA	P							
P	P							
P	P							
C	P							
C	P							
C	P							
C	P							
C	P							
C	P							
C	P							
NA	P							
C	P							
NA	P							
C	C							
C	C							
C	P							
C	C							
C	C							
C	C							