



2.2: Reduce the cost of energy used by state owned facilities from \$3.23 sq. ft/ yr in 2012 to \$2.23 sq. ft/yr by 2017 - Supplemental report

Reported on 09-28-16



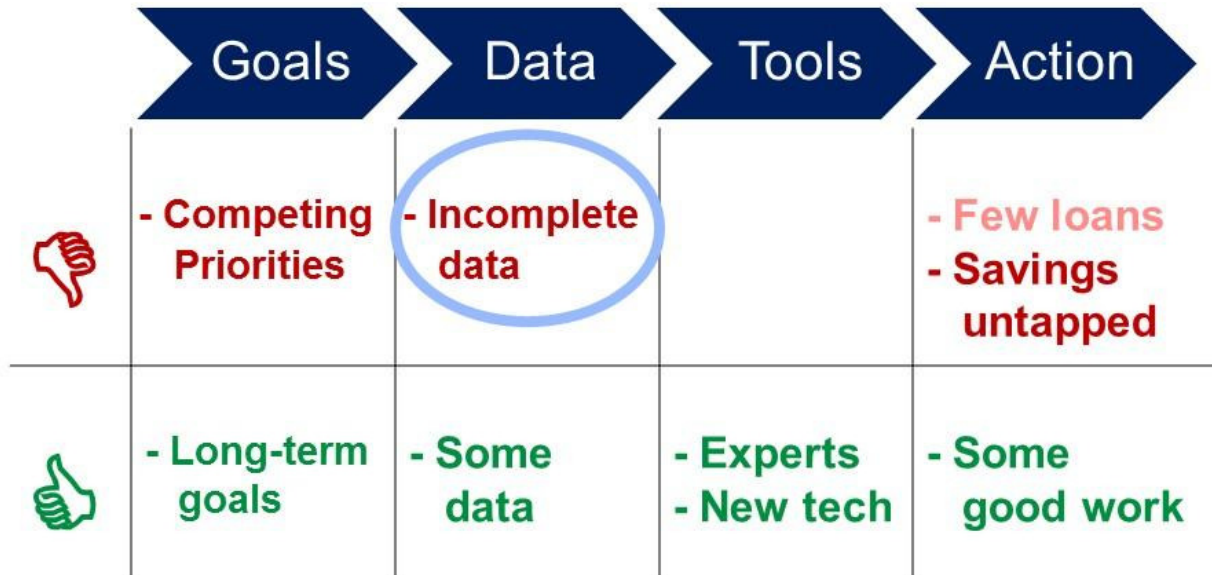
2.2: Reduce the cost of energy used by state owned facilities

Department of Enterprise Services

Ron Major, CEM
Dan McConnon, SEEP



Background: How We Cut Energy Use (& CO₂)



CO₂ - Carbon dioxide

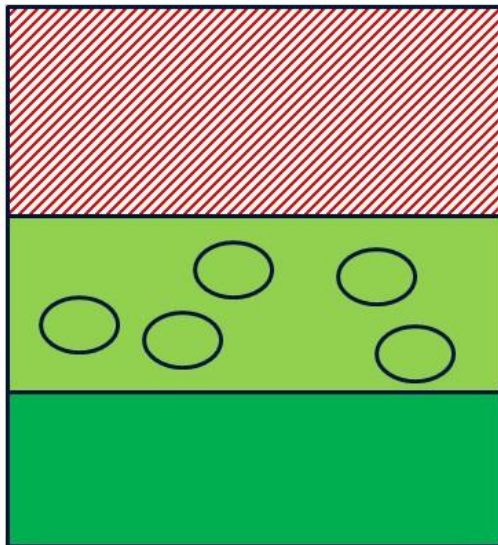
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Current State: Positive Beginnings



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Current State: Governor's Office Push for Better Data

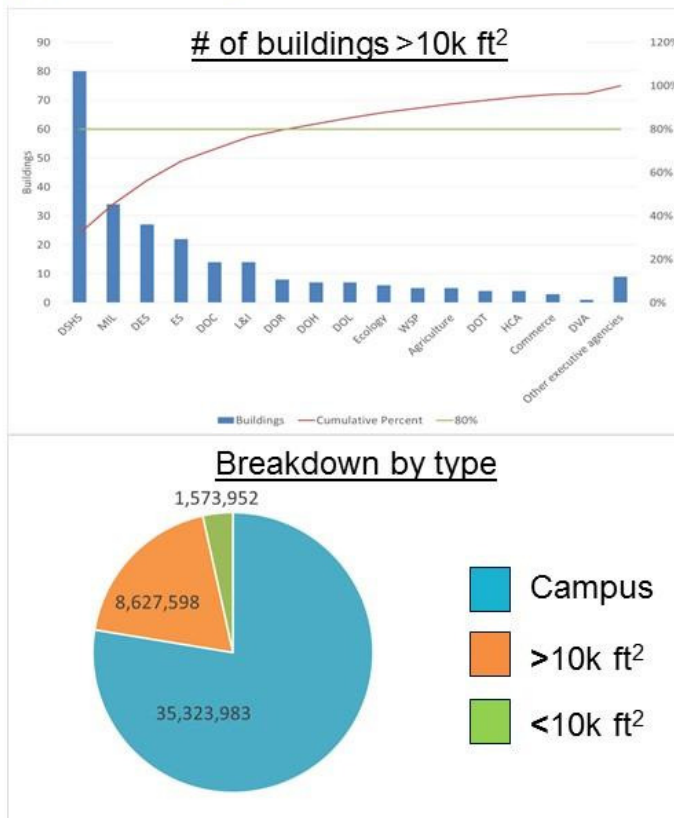


- ← Data still incomplete; learned we need a different approach
- ← Data we improved; showed us where to focus our energy savings efforts
- ← Data that was good all along

% of Buildings Benchmarked

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Opportunity: Focus on a smaller (better) target

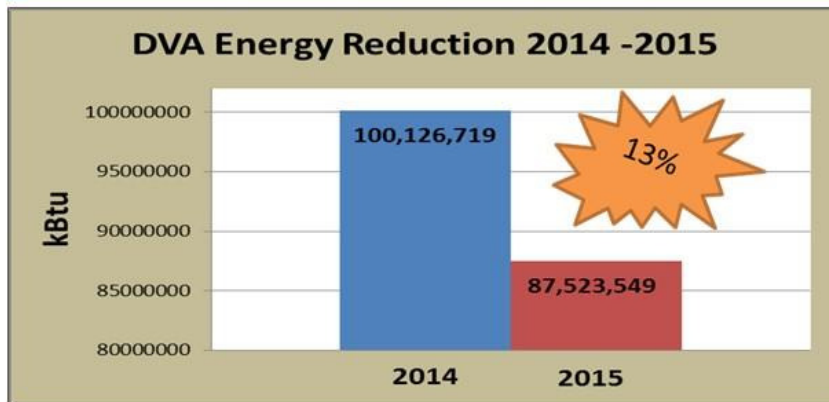
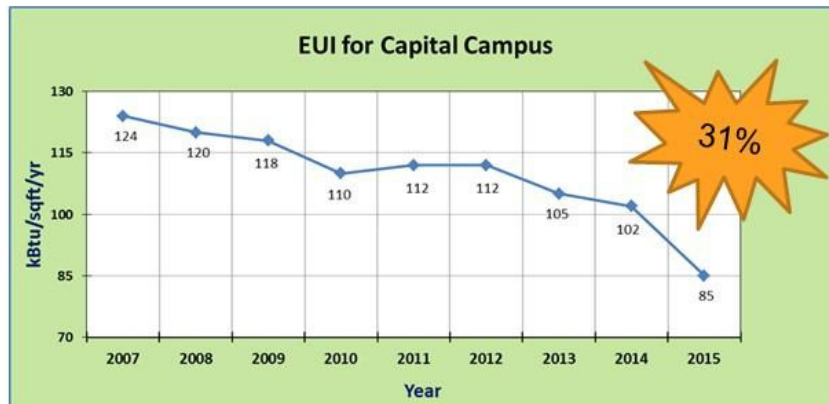


- 80% of all large buildings (>10k ft²) belong to 7 Executive agencies.

- 78% of those buildings are on a campus.

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Current State: Proven Success



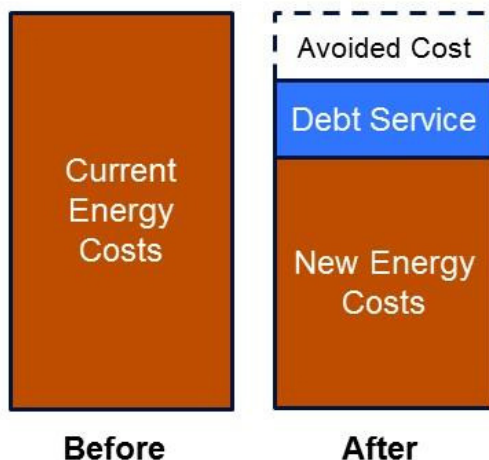
- Examples of what's possible
- Combination of energy projects + improved operations
- Strategic vs. reactive approach

EUI: energy use intensity,

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Opportunity: What if we had those savings everywhere?



It pays to invest in efficiency.



- Executive Agencies spend over **\$70 million/year** on energy
- We could **cut that 10-30%** with current tools
- **Every year, we leave \$7 to \$21 million** on the table in recurring costs

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Strategies: Identifying & addressing root causes

	Goals	Data	Tools	Action
	- Competing Priorities	- Need improved data	- Not using tools - Reactive	- Savings untapped
	- “EV Fleet Initiative” for Buildings	- Focus on biggest users	- Strategic approach (see example)	- ID & tap all opportunities - Reinvest savings

Strategy: The 1st Net-Zero Capitol Campus in America

Renewables



- Solar, wind, and geothermal installations
- Offset energy use with on-site energy production
- Solar canopies on NW lot would generate estimated 1.2MWh

LED Lighting




- Upgrade to LED lighting across campus
- Decrease wattage with an increased efficiency and lumen/watt output
- Estimated 2.5MWh savings

Building Retrofits

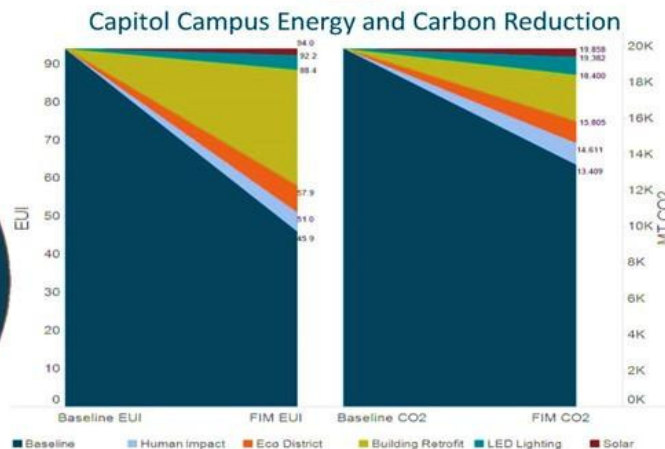


- Implement additional building HVAC and envelope upgrades
- Perform existing building commissioning
- Estimated 2.9MWh and 615,000 therms


Eco District



- Install heat recovery chillers and low temperature heat recovery loop
- Simultaneously serve campus heating and cooling needs
- Estimated 1.7MWh and 615,000 therm savings

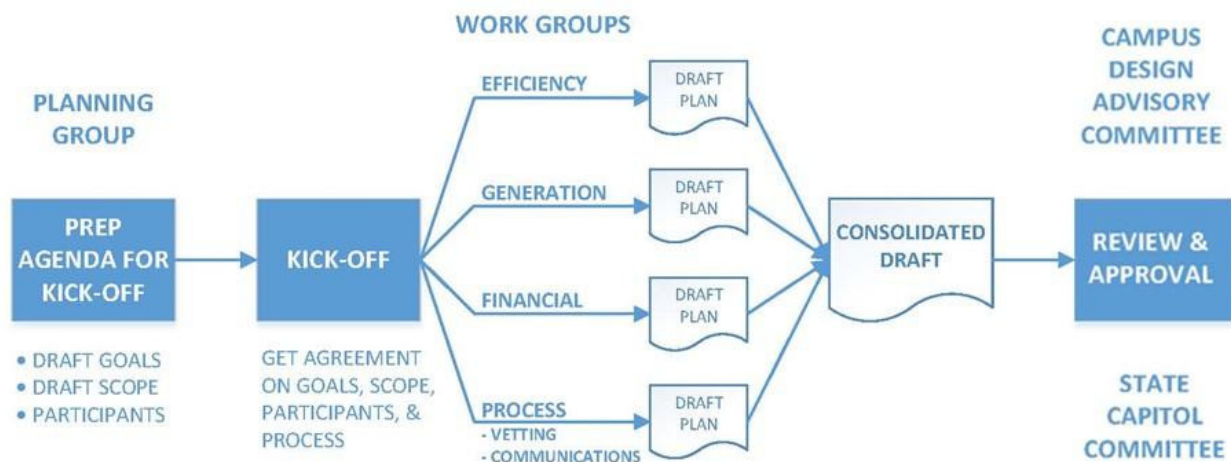


Human Impact



- Implement additional training for building operators focused on efficiency
- Engage building occupants to become stakeholders in campus energy reduction
- Estimated 2.8MWh and 24,000 therms

Creating a Comprehensive Campus Energy Plan:



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Assistance needed:

- Support for developing a comprehensive, enterprise-wide approach to saving energy & reducing GHG emissions
- Help us get active engagement by your Cabinet
- Support when agencies start pushing back

“No act of leadership goes unpunished.”

– Anonymous

Detailed Action Plan:

Task	Task Lead	Partners	Expected Outcome	Status	Due Date
Capitol Campus visioning exercise	Dan McConnon	PSE, NEEC, Private sector	Comprehensive plan to move Capitol Campus to Net Zero.	On track	Oct. 2016
Replicate visioning for other campuses	DES	DES, Commerce, DOC, DSHS	Develop strategic visions for top campuses to drive energy reductions.	Planning	July 2017
Expand use of RCMs statewide	DES	DES, client agencies	Provide technical assistance for ID'ing & exploiting opportunities for energy savings	Per budget	July 2017
Launch comprehensive energy reduction for top agencies	DES	DES, Commerce, Top agencies (by energy use)	Assist agencies in ID'ing & exploiting many more opportunities for energy savings	Planning	Feb. 2017

RCM: Resource Conservation Manager

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Agency Focus:

Department of Corrections

Stephen Sinclair

Assistant Secretary for Prisons and

Co-Director for the Sustainability in Prisons Project



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Sustainability in Corrections

Solid waste creation per prison facility

1.5 LBS
per offender
per day

Target | 1.5 LBS

Water use per prison facility

124 GAL
per offender
per day

Target | 120 GAL

Energy consumption per prison facility

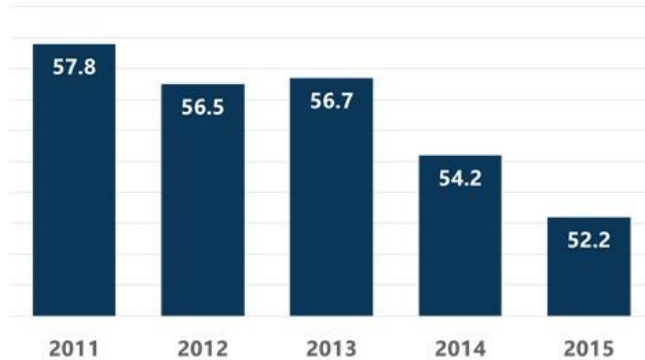
52.2 KWH
per offender
per day

Target | 54.8 KWH



Energy Consumption

DOC Purchased Power
kwh per offender per day



Energy consumption per prison facility

52.2 KWH
per offender
per day

Target | 54.8 KWH

- DOC achieved the Executive Order 12-06 mandate to reduce energy consumption by 20% by 2020
 - In the last 5 years, we have reduced consumption by 10%
- On track to meeting our CY2016 target
- We achieved this goal by:
 - Lighting retrofits
 - Preventative maintenance
 - ESCO / Energy Audits



We achieved these reductions by:

Smart initiatives

- Funding incentives (Pay it Forward) for plant managers to focus on projects with the best return on investment.
- Retrofitting equipment and lighting.
 - Interior lighting.
 - Exterior stadium lighting.
- Switching out old light bulbs for energy efficient lighting. These are available for purchase in our commissaries.

It is more than saving money

- Taking the risk (e.g., initial investment vs. long term ROI).
- Overcoming the fear of reducing your budget.
- System-wide sustainability/educational efforts for both employees and offenders.
- Thinking out of the box.



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