

Portland State University

Energy  
Management Plan  
2015-2017

January 1, 2015

# Energy Management Plan

## ***Background***

Portland State University (PSU) is a recognized leader in the pursuit of sustainable solutions in higher education and has made great strides towards reducing energy consumption on campus. PSU released its first [Climate Action Plan](#) in 2010, following through on a commitment made as one of the initial signatories to the **American College and University Presidents' Climate Commitment (ACUPCC)** in 2007. The Climate Action Plan is a campus-wide plan for achieving carbon neutrality by reducing Green House Gas emissions associated with building energy use, university travel, materials consumption, and transportation. A three year [progress report](#) was released in 2013.

In the past decade, PSU has drastically renovated our district energy systems, opened eight LEED certified buildings, and implemented dozens of energy efficiency projects eligible for Energy Trust of Oregon incentives.

More recently, PSU has further increased energy efficiency efforts by replacing 50 year old boilers that serve the campus steam loop, creating a self-perpetuating [Green Revolving Fund](#) in support of quick payback projects and adopting [Energy Conservation Guidelines](#).

## ***About the Plan***

To aid in achieving the Buildings and Energy goals of the 2010 Climate Action Plan and assist in setting short and long term goals for the next revision, PSU underwent a Strategic Energy Management process involving the Campus Sustainability, Campus Planning, Facilities & Property Management, and Capital Projects & Construction Departments. As part of a pilot program offered by the Energy Trust of Oregon, PSU developed this guide focusing on strategies for reducing energy consumption and mitigating new energy demand on campus.

## ***Mission Statement***

The purpose of Portland State University's Energy Management Plan is to provide a framework to reduce energy consumption on campus through a comprehensive, multi-faceted approach involving numerous administrative departments. The plan will aid in the implementation of best practices, thoughtful design of new construction and renovations, verification and tracking of energy consumption against historical usage and established goals, and engagement of all categories of building occupants. These strategies will provide the framework for PSU to not only reduce operational costs, but be good stewards of natural resources and minimize the impact of providing a well-rounded educational experience.

## ***University Energy Efficiency Goals (pending CAP-IT goals)***

**Goal #1: Reduce average campus EUI by 20% from Fiscal year 2012 levels for all buildings by FY 2022.** This will result in \$1,200,000 in annual operating cost savings and prevent the release of 5,200 MtCO<sub>2</sub>e of greenhouse gases annually. Future energy efficiency goals will be established as part of our ongoing evaluation and assessment process with the assistance of the

Climate Action Plan Implementation Team, to be included in updates to this plan and to the Climate Action Plan.

**Goal #2: Reduce average campus EUI by 35% from Fiscal year 2012 levels for all buildings by FY 2030.**

**Goal #3: Establish a net zero target for new energy demand**

### ***PSU Energy Management Plan Objectives***

**Objective #1:** *Gain and maintain the organizational commitment needed to successfully apply best practices in managing our energy consumption to reach our energy reduction goal(s).*

**Objective #2:** *Identify and apply best practices in facility operations to minimize energy related operating costs and enhance the reliability and longevity of building systems, equipment and infrastructure.*

**Objective #3:** *Identify and invest in financially attractive facility upgrades that reduce the PSU's costs of asset ownership and contribute to reaching its energy reduction goal(s).*

**Objective #4:** *Establish and use purchasing and procurement standards that minimize PSU life cycle costs and total cost of ownership.*

**Objective #5:** *Adopt and apply new construction practices using integrated design principles to reduce the PSU's costs of asset ownership and contribute to reaching its energy reduction goal(s).*

**Objective #6:** *Engage and empower company employees and building occupants as partners in organizational efforts to effectively manage energy use and reduce consumption.*

**Objective #7:** *Track & report on PSU performance to assure organizational accountability and continuous improvement in company efforts to effectively manage energy use and reduce consumption.*

## Implementation Plan

**Objective #1: Gain and maintain the organizational commitment needed to successfully apply best practices in managing our energy consumption to reach our energy reduction goals.**

Actions	Steps	Accountability	Timeframe
A. Establish Executive Sponsor, Energy Champion & Energy Team	<ul style="list-style-type: none"> <li>Identify, approach and gain executive sponsor agreement</li> <li>Executive sponsor designates energy champion</li> <li>Create cross functional energy team</li> </ul>	<ul style="list-style-type: none"> <li>Utility Manager (UM)</li> <li>Executive Sponsor (EX SP)</li> <li>Utility Manager (UM)</li> </ul>	<ul style="list-style-type: none"> <li>Complete (FY 2013)</li> <li>Complete (FY 2013)</li> <li>Complete (FY 2013)</li> </ul>
B. Adopt Energy Management (EM) Policy	<ul style="list-style-type: none"> <li>Draft EM policy containing essential elements</li> <li>Vet draft policy with executive sponsor and other stakeholders (organizational process)</li> <li>Organization adopts/communicates policy</li> </ul>	<ul style="list-style-type: none"> <li>Energy Team – point person UM</li> <li>Campus Sustainability MGR (CSM)</li> <li>Climate Action Implementation Team</li> </ul>	<ul style="list-style-type: none"> <li>Complete (FY 2014)</li> <li>FY 2015</li> <li>FY 2015</li> </ul>
C. Organizational Approval of Strategic Energy Management (SEM) Plan & Facility Plans	<ul style="list-style-type: none"> <li>Conduct organizational and technical assessments</li> <li>Develop SEM plan and facility specific plans with energy team</li> <li>Executive sponsor support/org. approval</li> <li>Communicate plan elements to key org. stakeholders and decision-makers</li> </ul>	<ul style="list-style-type: none"> <li>(UM) (CSM)</li> <li>UM &amp; Assist Director Maintenance Operation (AD Maint. Op)</li> <li>EX SP</li> <li>UM, CSM, EX SP</li> </ul>	<ul style="list-style-type: none"> <li>FY 2014</li> <li>FY 2013/2014</li> <li>FY 2015</li> <li>FY 2015</li> </ul>
D. Energy Team Members and Others Accept SEM Roles and Responsibilities	<ul style="list-style-type: none"> <li>Communicate roles and responsibilities</li> <li>Appropriate staff acknowledge roles and responsibilities</li> <li>Company resources (staff time, \$, etc.) allocated for follow-through</li> <li>Mechanisms in place to track progress and hold staff accountable</li> </ul>	<ul style="list-style-type: none"> <li>UM</li> <li>EX SP</li> <li>EX SP</li> <li>EX SP</li> </ul>	<ul style="list-style-type: none"> <li>Complete (FY 2013)</li> <li>Complete (FY 2013)</li> <li>FY 2015</li> <li>FY 2015</li> </ul>
E. SEM Progress and Results are Reviewed, Recognized, Rewarded	<ul style="list-style-type: none"> <li>Monitor, track and report SEM progress</li> <li>Progress and achievements communicated organization-wide (&amp; publicly)</li> <li>Those most directly involved recognized and rewarded for their contributions</li> <li>Plan is reviewed annually, revised and updated as appropriate</li> </ul>	<ul style="list-style-type: none"> <li>UM</li> <li>CSM</li> <li>EX SP</li> <li>Energy Team (ET)</li> </ul>	<ul style="list-style-type: none"> <li>FY 2015 and beyond</li> <li>FY 2015 and beyond</li> <li>FY 2015</li> <li>FY 2015 and beyond</li> </ul>

**Objective #2: Identify and apply best practices in facility operations to minimize energy related operating costs and enhance the reliability and longevity of building systems, equipment and infrastructure.**

Actions	Steps	Accountability	Timeframe
A. Benchmark all buildings and facilities and track changes over time	<ul style="list-style-type: none"> <li>Gather and store energy cost/consumption data (e.g. Energy Star Portfolio Manager)</li> <li>Populate and complete bldg. benchmarking</li> <li>Review results and make adjustments</li> <li>Periodically re-benchmark buildings</li> </ul>	<ul style="list-style-type: none"> <li>UM</li> <li>UM</li> <li>UM</li> <li>UM</li> </ul>	<ul style="list-style-type: none"> <li>FY 2014</li> <li>FY 2015</li> <li>FY 2015</li> <li>FY 2016 and beyond</li> </ul>
B. Identify opportunities to “tune-up” buildings, systems and equipment	<ul style="list-style-type: none"> <li>Conduct building opportunity assessment training for key O&amp;M staff</li> <li>Perform assessments, starting with bldgs. that have low benchmark scores</li> <li>Create opportunity register containing high priority actions for follow through</li> <li>Re-assess buildings regularly</li> </ul>	<ul style="list-style-type: none"> <li>UM, AD MAINT OP, Chief Building Engineer (CBE)</li> <li>UM AD MAINT OP, CBE</li> <li>UM, AD MAINT OP, CBE</li> <li>UM, AD MAINT OP</li> </ul>	<ul style="list-style-type: none"> <li>FY 2015</li> <li>FY 2015</li> <li>FY 2015</li> <li>FY 2015 and beyond</li> </ul>
C. Improve routine operations and maintenance (O&M) practices	<ul style="list-style-type: none"> <li>Examine current building(s) operational data and O&amp;M practices</li> <li>Update AssetWorks Database to ensure that all assets and mechanical systems are being tracked and PM workorders are automatically generated</li> <li>Discuss and establish O&amp;M best practices</li> <li>Identify/develop support tools (procedures, protocols, checklists, recordkeeping, etc.)</li> <li>Integrate best practice activities into PM and daily routines.</li> <li>Provide instruction/support best practices</li> <li>Pursue LEED EB:OM Gold Certification for Campus Buildings with no major renovations planned</li> </ul>	<ul style="list-style-type: none"> <li>AD MAINT OP</li> <li>AD MAINT OP &amp; CBE</li> <li>AD MAINT OP &amp; CBE</li> <li>AD MAINT OP</li> <li>CBE</li> <li>AD MAINT OP</li> <li>CSO</li> </ul>	<ul style="list-style-type: none"> <li>FY 2015</li> <li>FY 2015</li> <li>FY 2015</li> <li>FY 2016</li> <li>FY 2015</li> <li>FY 2015</li> <li>FY 2016</li> </ul>

Actions	Steps	Accountability	Timeframe
<p>D. Establish building operating standards that improve and maintain performance</p>	<ul style="list-style-type: none"> <li>• Identify standards that optimize efficiency and meet comfort requirements</li> <li>• Work with executive sponsor to vet and obtain approval for the standards</li> <li>• Communicate standards/importance to employees and occupants</li> <li>• Work with Campus Planning Office to ensure Space Allocations are made with building operations and existing systems as considerations</li> </ul>	<ul style="list-style-type: none"> <li>• CBE</li> <li>• AD MAINT OP</li> <li>• EX SP</li> <li>• AD MAINT OP &amp; CBE</li> </ul>	<ul style="list-style-type: none"> <li>• FY 2014</li> <li>• FY 2015</li> <li>• FY 2015</li> <li>• FY 2015</li> </ul>
<p>E. Assess building O&amp;M staff training needs and provide training opportunities</p>	<ul style="list-style-type: none"> <li>• Develop building specific skills requirements based on existing systems and compare to a staff competency/identify training needs (topics, expertise, etc.)</li> <li>• ID training opportunities (in-house, external)</li> <li>• Provide appropriate training where needed</li> <li>• Create/maintain technical library</li> </ul>	<ul style="list-style-type: none"> <li>• AD MAINT OP &amp; CBE</li> <li>• AD MAINT OP &amp; CBE</li> <li>• AD MAINT OP &amp; CBE</li> <li>• CBE</li> </ul>	<ul style="list-style-type: none"> <li>• FY 2014</li> <li>• FY 2014</li> <li>• FY 2015</li> <li>• FY 2014</li> </ul>
<p>F. Examine service company contracts, revise to support enhanced performance</p>	<ul style="list-style-type: none"> <li>• Examine existing service co. contracts</li> <li>• Identify contract provisions that support enhanced bldg. operating performance</li> <li>• Make appropriate contract adjustments \</li> <li>• Investigate using Performance Contracting to implement future energy efficiency measures</li> </ul>	<ul style="list-style-type: none"> <li>• AD MAINT OP</li> <li>• AD MAINT OP</li> <li>• AD MAINT OP</li> </ul>	<ul style="list-style-type: none"> <li>• FY 2015</li> <li>• FY 2015</li> <li>• FY 2016</li> </ul>

**Objective #3: Identify and invest in financially attractive facility upgrades that reduce the company's costs of asset ownership and contribute to reaching its energy reduction goals.**

Actions	Steps	Accountability	Timeframe
A. Systematically examine potential building or equipment upgrade and retrofit opportunities	<ul style="list-style-type: none"> <li>• Conduct energy audits/analyses beginning with bldgs. that have low benchmark scores</li> <li>• Create opportunity register containing potential capital projects for follow through</li> <li>• Maintain/regularly updated opp. register</li> </ul>	<ul style="list-style-type: none"> <li>• CPC</li> <li>• CPC</li> <li>• CPC</li> </ul>	<ul style="list-style-type: none"> <li>• FY 2014</li> <li>• Complete (FY 2013)</li> <li>• FY 2014 and beyond</li> </ul>
A. Base upgrade decisions on total cost of ownership (TCO) and standard financial analysis methods	<ul style="list-style-type: none"> <li>• Research, discuss and establish standard financial analysis methods based on TCO</li> <li>• Identify attractive company financial ROI hurdle rate for screening projects</li> <li>• Include available outside financial incentives</li> </ul>	<ul style="list-style-type: none"> <li>• EX SP, CPC</li> <li>• EX SP</li> <li>• UM, CPC</li> </ul>	<ul style="list-style-type: none"> <li>• FY 2014</li> <li>• FY 2015</li> <li>• FY 2015 and beyond</li> </ul>
B. Conduct detailed engineering and financial analyses on high priority projects	<ul style="list-style-type: none"> <li>• Identify likely contract and other resources to conduct detailed engineering and financial analyses</li> <li>• Discuss expectations/assess capabilities</li> <li>• Include technical and financial requirements in soliciting outside assistance</li> <li>• Conduct or oversee detailed analyses</li> </ul>	<ul style="list-style-type: none"> <li>• CPC, AD MAINT OP, EX SP</li> <li>• CPC, AD MAINT OP, UM</li> <li>• CPC, AD MAINT OP, UM</li> <li>• CPC</li> </ul>	<ul style="list-style-type: none"> <li>• FY 2014</li> <li>• FY 2014</li> <li>• FY 2015</li> <li>• FY 2015 and beyond</li> </ul>
C. Include projects with attractive financial returns in the company's capital budget	<ul style="list-style-type: none"> <li>• Review detailed engineering and financial analyses for high priority projects</li> <li>• Discuss projects with executive sponsor and financial management</li> <li>• Include attractive projects in capital budgeting process</li> <li>• Consider viable external funding sources</li> </ul>	<ul style="list-style-type: none"> <li>• CPC, BA CMTE</li> <li>• CPC, BA CMTE</li> <li>• CPC</li> <li>• CPC BA CMTE</li> </ul>	<ul style="list-style-type: none"> <li>• FY 2015 and beyond</li> <li>• FY 2015 and beyond</li> <li>• FY 2015 and beyond</li> <li>• FY 2015 and beyond</li> </ul>

Actions	Steps	Accountability	Timeframe
D. Manage and evaluate upgrade projects	<ul style="list-style-type: none"> <li>• Include approved projects in operating plan</li> <li>• Manage project implementation</li> <li>• Review projects annually/compare to expectations</li> <li>• Enhance org. capabilities to assure quality investments and results</li> </ul>	<ul style="list-style-type: none"> <li>• CPC</li> <li>• CPC</li> <li>• CPC, UM, AD MAINT OP</li> <li>• CPC, UM , AD MAINT OP</li> </ul>	<ul style="list-style-type: none"> <li>• FY 2015 and beyond</li> <li>• FY 2015 and beyond</li> <li>• FY 2015 and beyond</li> <li>• FY 2015 and beyond</li> </ul>
E. Establish standards or procedures for various buying situations	<ul style="list-style-type: none"> <li>• Identify buying situations (planned, emergency, remodels, expansions)</li> <li>• Develop and implement standards or procedures that apply to each situation</li> </ul>	<ul style="list-style-type: none"> <li>• CPO, CPC, EX SP, AD MAINT, OP</li> <li>• CPO, CPC, EX SP, AD MAINT, OP</li> </ul>	<ul style="list-style-type: none"> <li>• FY 2016 and beyond</li> <li>• FY 2016 and beyond</li> </ul>



**Objective #4: Establish and use purchasing and procurement standards that minimize company life cycle costs and total cost of ownership.**

Actions	Steps	Accountability	Timeframe
A. Establish standards (specifications) for energy consuming equipment that is routinely replaced	<ul style="list-style-type: none"> <li>Identify equipment that is routinely replaced equipment (i.e., computers, copiers, lights, motors, unitary HVAC, etc.)</li> <li>Adopt or develop standards that minimize life cycle costs and total cost of ownership</li> <li>Integrate standards into supply chain, O&amp;M and IT buying procedures</li> </ul>	<ul style="list-style-type: none"> <li>UM, CSM, PROC</li> <li>UM, CSM, PROC</li> <li>UM, CSM, PROC</li> </ul>	<ul style="list-style-type: none"> <li>FY 2014</li> <li>FY 2015</li> <li>FY 2015</li> </ul>
B. Establish procedures for non-routine equipment purchases based on life cycle costs and lowest cost of ownership	<ul style="list-style-type: none"> <li>Identify existing procedures for non-routine equipment purchases (i.e., chillers, etc.)</li> <li>Adjust procedures as needed to assure use of life cycle costs and lowest cost of ownership</li> <li>Introduce new procedures for non-routine custom equipment purchases</li> </ul>	<ul style="list-style-type: none"> <li>CPC, UM, AD MAINT OP</li> <li>CPC, UM</li> <li>CPC</li> </ul>	<ul style="list-style-type: none"> <li>FY 2015</li> <li>FY 2016</li> <li>FY 2016</li> </ul>
C. Insure the standards and procedures are used by facility O&M staff, supply chain personnel, IT and contractors	<ul style="list-style-type: none"> <li>Monitor use of specifications and procedures to assess proper and consistent use</li> <li>Take appropriate actions when inadequate use is discovered</li> <li>Adjust and update standards and procedures as needed</li> </ul>	<ul style="list-style-type: none"> <li>CPC, AD MAINT OP</li> <li>CPC, AD MAINT OP</li> <li>CPC, AD MAINT OP</li> </ul>	<ul style="list-style-type: none"> <li>FY 2015</li> <li>FY 2015</li> <li>FY 2016 and beyond</li> </ul>
D. Examine and apply to group purchasing practices to the extent practical	<ul style="list-style-type: none"> <li>Identify and review any organizational group purchasing practices</li> <li>Discuss equipment efficiency specifications and procedures with other group members</li> <li>Apply equipment efficiency standards and procedures to group purchasing practices</li> </ul>	<ul style="list-style-type: none"> <li>PROC, CPC, AD MAINT OP</li> <li>CPC, AD MAINT OP</li> <li>CPC, AD MAINT OP, PROC</li> </ul>	<ul style="list-style-type: none"> <li>FY 2015</li> <li>FY 2016</li> <li>FY 2016</li> </ul>

Actions	Steps	Accountability	Timeframe
E. Examine and act on opportunities to minimize energy commodity costs and risks	<ul style="list-style-type: none"> <li>• Examine opportunities to minimize energy commodity costs (if applicable)</li> <li>• Taking risks into account, take appropriate actions to minimize energy commodity costs</li> <li>• Monitor ongoing market conditions and tariff options and make appropriate adjustments</li> </ul>	<ul style="list-style-type: none"> <li>• UM</li> <li>• UM, EX SP</li> <li>• UM</li> </ul>	<ul style="list-style-type: none"> <li>• FY 2014</li> <li>• FY 2015</li> <li>• FY 2015 and beyond</li> </ul>

**Objective #5: Adopt and apply new construction practices using integrated design principles to reduce the company's costs of asset ownership and contribute to reaching its energy reduction goals.**

Actions	Steps	Accountability	Timeframe
A. Establish benchmarks or standards for energy related performance	<ul style="list-style-type: none"> <li>Identify energy performance benchmarks or standards currently used in the market</li> <li>Evaluate potential benchmarks or standards</li> <li>Choose a benchmark or standard that best meets the company's objectives</li> </ul>	<ul style="list-style-type: none"> <li>UM, CSM, CPC</li> <li>UM, CSM, CPC</li> <li>UM, CSM, CPC</li> </ul>	<ul style="list-style-type: none"> <li>FY 2014</li> <li>FY 2014</li> <li>FY 2014</li> </ul>
B. Set energy performance goals in advance for each new construction project	<ul style="list-style-type: none"> <li>Using the standard and market activity identify expected goals (i.e., 35% less)</li> <li>Set performance goals for each project</li> <li>Use the energy performance goal to drive integrated design on construction projects</li> </ul>	<ul style="list-style-type: none"> <li>UM, CSM, CPC</li> <li>UM, CSM, CPC</li> <li>CPC</li> </ul>	<ul style="list-style-type: none"> <li>FY 2014</li> <li>FY 2015 and beyond</li> <li>FY 2015 and beyond</li> </ul>
C. Demand contractors apply integrated building design and construction (D&C) practices	<ul style="list-style-type: none"> <li>Use the RFP to communicate expectations</li> <li>Evaluate contractor capabilities and approach as part of the selection process</li> <li>Include use of integrated design practices and energy performance goals in contracts</li> <li>Involve O&amp;M staff in D&amp;C process</li> </ul>	<ul style="list-style-type: none"> <li>CPC</li> <li>CPC</li> <li>CPC</li> <li>CPC, AD MAINT OP</li> </ul>	<ul style="list-style-type: none"> <li>FY 2014</li> <li>FY 2015 and beyond</li> <li>FY 2015 and beyond</li> <li>FY 2015 and beyond</li> </ul>
D. Use life cycle costing and total cost of ownership (TOC) in decision making processes	<ul style="list-style-type: none"> <li>Research, discuss and establish standard financial analysis methods based on TCO</li> <li>Apply to design and equipment alternatives within the integrated design process</li> <li>Choose alternatives that reduce TCO and meet or exceed energy performance goals</li> </ul>	<ul style="list-style-type: none"> <li>CPC, EX SP</li> <li>CPC</li> <li>CPC</li> </ul>	<ul style="list-style-type: none"> <li>FY 2015</li> <li>FY 2015</li> <li>FY 2016</li> </ul>

Actions	Steps	Accountability	Timeframe
E. Assure energy efficiency is not compromised in construction (value engineering)	<ul style="list-style-type: none"> <li>Review construction documents to assure adherence to energy related design features and equipment efficiencies</li> <li>Monitor construction to assure design features and equipment efficiencies are not compromised</li> </ul>	<ul style="list-style-type: none"> <li>CPC, UM</li> <li>CPC, UM, CSM</li> </ul>	<ul style="list-style-type: none"> <li>FY 2015 and beyond</li> <li>FY 2015 and beyond</li> </ul>
F. Commission building, systems and equipment; train building O&M staff	<ul style="list-style-type: none"> <li>Employ third party or in-house commissioning agents/establish procedures</li> <li>Conduct commissioning (bldg O&amp;M staff participation if possible)</li> <li>Train building O&amp;M staff on equip. &amp; systems</li> </ul>	<ul style="list-style-type: none"> <li>CPC</li> <li>AD MAINT OP</li> <li>AD MAINT OP, CBE</li> </ul>	<ul style="list-style-type: none"> <li>Complete (FY 2013)</li> <li>FY 2015 and beyond</li> <li>FY 2015 and beyond</li> </ul>

**Objective #6: Engage and empower company employees and building occupants as partners in organizational efforts to effectively manage energy use and reduce consumption.**

Actions	Steps	Accountability	Timeframe
A. Review past and current engagement strategy/activities	<ul style="list-style-type: none"> <li>Identify past and current engagement strategy and activities</li> <li>Review what has gone well and what can be improved</li> <li>Compare to comprehensive communication, education, and activities approach</li> </ul>	<ul style="list-style-type: none"> <li>CSM</li> <li>CSM</li> <li>CSM</li> </ul>	<ul style="list-style-type: none"> <li>Complete (FY 2013)</li> <li>FY 2014</li> <li>FY 2014</li> </ul>
B. Develop and initiate communications plan (Energy Awareness Campaign)	<ul style="list-style-type: none"> <li>Profile primary and secondary audiences and develop high level messages</li> <li>Identify communication channels for each audience and develop or obtain materials</li> <li>Initiate communications using appropriate channels and materials (access partnerships)</li> <li>Evaluate effectiveness and make adjustments</li> </ul>	<ul style="list-style-type: none"> <li>CSM</li> <li>CSM</li> <li>CSM</li> <li>CSM</li> </ul>	<ul style="list-style-type: none"> <li>FY 2014</li> <li>FY 2014</li> <li>FY 2014</li> <li>FY 2015 and beyond</li> </ul>
C. Develop and initiate employee/occupant education	<ul style="list-style-type: none"> <li>Identify viable educational venues for target audiences (i.e., orientations, training, etc.)</li> <li>Identify energy management topics to be addressed by audience and venue</li> <li>Research and develop appropriate content as appropriate (access partnerships)</li> <li>Initiate employee/occupant education</li> </ul>	<ul style="list-style-type: none"> <li>CSM</li> <li>CSM, UM</li> <li>CSM</li> <li>CSM</li> </ul>	<ul style="list-style-type: none"> <li>FY 2014</li> <li>FY 2014</li> <li>FY 2014</li> <li>FY 2014</li> </ul>
D. Identify, develop and initiate engagement activities	<ul style="list-style-type: none"> <li>Identify potential engagement activities, create and maintain opportunity register</li> <li>Scope high priority engagement activities and gain organizational approval</li> <li>Develop and initiate high priority engagement activities (access partnerships)</li> <li>Evaluate effectiveness and make adjustments</li> </ul>	<ul style="list-style-type: none"> <li>CSM</li> <li>CSM</li> <li>CSM</li> </ul>	<ul style="list-style-type: none"> <li>FY 2014</li> <li>FY 2015</li> <li>FY 2015</li> <li>FY 2016 and beyond</li> </ul>

Actions	Steps	Accountability	Timeframe
E. Reinforce good energy management habits & routines	<ul style="list-style-type: none"> <li>• Identify reinforcement activities (i.e., status, reminders, interaction, rewards, etc.)</li> <li>• Initiate reinforcement activities</li> <li>• Evaluate effectiveness and make adjustments</li> </ul>	<ul style="list-style-type: none"> <li>• CSM</li> <li>• CSM</li> <li>• CSM</li> </ul>	<ul style="list-style-type: none"> <li>• FY 2015</li> <li>• FY 2015</li> <li>• FY 2016 and beyond</li> </ul>

**Objective #7: Track & report on company performance to assure organizational accountability and continuous improvement in company efforts to effectively manage energy use and reduce consumption.**

Actions	Steps	Accountability	Timeframe
A. Develop appropriate metrics for tracking and reporting building operating performance and overall initiative progress	<ul style="list-style-type: none"> <li>Identify EnPIs for tracking and reporting building specific operating performance (i.e., weather normalized kWh or therms /sq. ft.)</li> <li>Identify metrics for tracking and reporting progress to executive sponsor (i.e., total weather normalized kWh &amp; therms /sq. ft., cost savings, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>UM</li> <li>UM</li> </ul>	<ul style="list-style-type: none"> <li>FY 2014</li> <li>FY 2014</li> <li>3</li> </ul>
B. Put in place the necessary tools and protocols for tracking and analyzing energy use, energy and cost savings	<ul style="list-style-type: none"> <li>Baseline energy consumption for specific bldgs and company as a whole</li> <li>Select tool(s) for monitoring and tracking bldg energy use (at least monthly)</li> <li>Consider interval data and any sub-metering needs</li> <li>Set up and test tool for each specific bldg</li> </ul>	<ul style="list-style-type: none"> <li>UM</li> <li>UM</li> <li>UM</li> <li>UM</li> </ul>	<ul style="list-style-type: none"> <li>FY 2014</li> <li>FY 2014</li> <li>FY 2014</li> <li>FY 2014/15</li> </ul>
C. Develop parameters for expected performance and protocol or procedures for responding to underperformance	<ul style="list-style-type: none"> <li>Establish bldg specific energy consumption reduction targets</li> <li>Assure aggregate annual targets align with multi-year initiative goal</li> <li>Develop bldg specific protocol or procedures for responding to underperformance</li> </ul>	<ul style="list-style-type: none"> <li>UM</li> <li>UM</li> <li>UM</li> </ul>	<ul style="list-style-type: none"> <li>FY 2014</li> <li>FY 2014 and beyond</li> <li>FY 2015</li> </ul>
D. Identify responsibilities for tracking bldg specific metrics, responding to underperformance and frequency of reporting	<ul style="list-style-type: none"> <li>Assign responsibility for the overall bldg performance monitoring and tracking effort</li> <li>Assign responsibility for specific facilities</li> <li>Construct operations level dashboard used to inform facilities management</li> <li>Report to facilities management using dashboard on a regular basis (i.e., monthly)</li> </ul>	<ul style="list-style-type: none"> <li>UM</li> <li>UM</li> <li>UM</li> <li>UM</li> </ul>	<ul style="list-style-type: none"> <li>FY 2015</li> <li>FY 2015</li> <li>FY 2015</li> <li>FY 2015</li> </ul>

Actions	Steps	Accountability	Timeframe
E. Report to the executive sponsor on a regular basis using appropriate metrics	<ul style="list-style-type: none"> <li>• Construct executive dashboard to inform top management on initiative progress</li> <li>• Review dashboard with executive sponsor and make adjustments per feedback</li> <li>• Report to executive sponsor using dashboard on a regular basis (i.e., quarterly)</li> </ul>	<ul style="list-style-type: none"> <li>• UM</li> <li>• UM</li> <li>• UM</li> </ul>	<ul style="list-style-type: none"> <li>• FY 2015</li> <li>• FY 2015</li> <li>• FY 2015 and beyond</li> </ul>



## Appendix A. University Mission Statement

### **Portland State University Mission Statement**

*Our vision is to be an internationally recognized urban university known for excellence in student learning, innovative research, and community engagement that contributes to the economic vitality, environmental sustainability, and quality of life in the Portland region and beyond.*

#### **Mission**

*Portland State University's mission is to enhance the intellectual, social, cultural and economic qualities of urban life by providing access throughout the life span to a quality liberal education for undergraduates and an appropriate array of professional and graduate programs especially relevant to metropolitan areas. The University conducts research and community service that support a high quality educational environment and reflect issues important to the region. It actively promotes the development of a network of educational institutions to serve the community.*

#### **Values**

*The pursuit of our vision rests on our success in transforming undergraduate education, our growing research programs, our strong collaboration with the community, and the core values we hold. These values describe not only what PSU is now, but what it will be in the future: Learning and Discovery, Access to Learning, A Climate of Mutual Respect, Openness and Reflection and Community and Civic Engagement.*

#### **Learning and Discovery**

*PSU values intellectual inquiry in its undergraduate and graduate programs, provides leadership in the development of knowledge, and creates opportunities for the application of knowledge to real-world problems. We maintain a welcoming and stimulating environment that is conducive to success for students, faculty, and staff. We value tenure as an essential component of this environment.*

#### **Access to Learning**

*PSU is committed to providing access and opportunity to learners from regional, national, and international communities in their pursuit of lifelong learning and diverse educational goals.*

#### **A Climate of Mutual Respect**

*PSU values diversity and fosters a climate of mutual respect and reflection that supports different beliefs and points of view and the open exchange of ideas.*

#### **Openness and Reflection**

*PSU endeavors to improve continuously as a university through reflection and open assessment of our activities.*

#### **Community and Civic Engagement**

*PSU values its identity as an engaged university that promotes a reciprocal relationship between the community and the University in which knowledge serves the city and the city contributes to the knowledge of the University. We value our partnerships with other institutions, professional groups, the business community, and community organizations, and the talents and expertise these partnerships bring to the University. We embrace our role as a responsible citizen of the city, the state, the region, and the global community and foster actions, programs, and scholarship that will lead to a sustainable future.*



## Appendix B. Energy Conservation Guidelines

### Heating and Ventilation

- Conditioned spaces will be heated to a temperature range of 67-70 in the winter and cooled, where applicable, to a temperature range of 72-76. Plan for the season and dress appropriately.
- Personal or University owned space heaters will not be allowed, unless approval from FPM has been granted for cases where spaces cannot otherwise be heated to the appropriate range. Once approval has been granted, space heaters must comply with fire code, be turned off when a space is not being occupied and be selected with energy efficiency and safety as top priorities. FPM will then work to identify a long range solution to heating the space to and appropriate level.
- Building ventilation will be based on actual use of the space, as determined by Academic Schedules, Posted Building Occupancy, and Special Events.
- Windows in conditioned spaces are to remain closed when building conditioning systems are operating.
- All supply and return air vents in offices, classrooms, and laboratories must be unobstructed at all times.
- Utility Manager and Facilities staff will work with events scheduling team to consolidate activities into energy efficient buildings on campus.

### Purchasing

- When available, all electronic purchases must be Energy Star certified including laboratory, clinical, research, or other educational equipment.
- Computer purchases, per [OIT recommended configurations](#), should meet Energy Star and EPEAT GOLD certification

### Technology & Other Electronics

- All computers must comply with University Power Management Settings, that reduce electrical consumption of monitors and CPU's unless a valid reason exists for the CPU to always be on.
- Whenever possible, users should utilize networked printers and scanners. Exceptions may be made for extenuating circumstances, including but not limited to high volume of confidential documents, lack of accessibility to appropriate networked equipment.

- Refrigerators, microwaves and coffee makers are not authorized for use in individual spaces on campus

### **Lighting**

- All spaces will be lit to an appropriate lighting level for the tasks being performed. Extra effort will be made to ensure that unoccupied spaces are left at minimum acceptable levels.
- Building occupants are encouraged to take advantage of natural light, whenever possible.
- New construction and renovation will incorporate daylight sensing technology, allowing overhead fixtures to dim when outside lighting is sufficient.
- Utilize energy efficient bulbs in task lighting (i.e. compact fluorescent or LED)

### **Unoccupied Spaces**

- Through a combination of campus awareness and automated systems, campus facilities should be set to minimum energy consumption standards when unoccupied both during the day and after hours.
- Where possible, students, faculty, and staff, including custodial contractors, should turn lights off when vacating a space.
- When leaving at the end of the day, operable window covering should be lowered to prevent thermal losses during heating season and gains during cooling season.
- When leaving a lab, close fume hood sashes when not in use
- Turn off computers, monitors, and all other equipment at the end of each day.