Sustainability at Oregon State University

February 2017
About the Sustainability Office

- Created in November 2005
- Two full time employees
- 10 student workers:
  - Outreach, graphic design, project management (2), and data management
  - Five residence hall Eco-Reps
- Central support organization for sustainability efforts at OSU
What We Do

- **Infrastructure & Policy:** identify, arrange funding for (and occasionally manage) sustainability projects
- **Outreach:** networking, social norming and communications, both on and off campus
- **Student Engagement & Academic Support:** inside and outside the classroom
- **Assessment & Reporting:** STARS, greenhouse gas and annual sustainability reporting
National Recognition

- Sierra Club Cool Schools highest ranking in the NW, 11th in the nation (2013) and 24th (2010)
- EPA Green Power Leadership Award (2008)
What is STARS?

- A voluntary, self-reporting framework
- A guide for advancing sustainability in all sectors of higher education
- A common standard of measurement for sustainability in higher education
- A tool that promotes a comprehensive understanding of sustainability that includes its social, economic and environmental aspects
How Well Did OSU Perform?

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Submission Date</th>
<th>STARS Version</th>
<th>STARS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>Jan. 31, 2011</td>
<td>1.0</td>
<td>69.74</td>
</tr>
<tr>
<td>2012</td>
<td>May 11, 2013</td>
<td>1.2</td>
<td>68.95</td>
</tr>
<tr>
<td>2013</td>
<td>Apr. 30, 2014</td>
<td>2.0</td>
<td>70.94</td>
</tr>
<tr>
<td>2014</td>
<td>Apr. 30, 2015</td>
<td>2.0</td>
<td>72.78</td>
</tr>
<tr>
<td>2015</td>
<td>March 4, 2016</td>
<td>2.0</td>
<td>73.40</td>
</tr>
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</table>
Student Sustainability Initiative

Mission statement:
The Student Sustainability Initiative works to advance student efforts to create a culture of sustainability at Oregon State University through programming that fosters environmental, social, and economic justice.
Green Buildings
CH2M Hill Alumni Center

### Yearly comparisons to FY12 - Electricity

<table>
<thead>
<tr>
<th></th>
<th>KWH Used</th>
<th>% kWh change</th>
<th>$ change (savings)</th>
<th>% Cost difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY12</td>
<td>957,440</td>
<td></td>
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<tr>
<td>FY13</td>
<td>561,200</td>
<td>-41.4%</td>
<td>$28,326</td>
<td>-37.2%</td>
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<tr>
<td>FY14</td>
<td>693,360</td>
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<td>$16,966</td>
<td>-22.3%</td>
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<tr>
<td>FY15</td>
<td>569,432</td>
<td>-40.5%</td>
<td>$23,171</td>
<td>-30.4%</td>
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<tr>
<td>FY16</td>
<td>640,080</td>
<td>-33.1%</td>
<td>$18,755</td>
<td>-24.6%</td>
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</tbody>
</table>

### Yearly comparisons to FY12 - Gas

<table>
<thead>
<tr>
<th></th>
<th>BTUs Used</th>
<th>% BTU change</th>
<th>$ change (savings)</th>
<th>% Cost difference</th>
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</thead>
<tbody>
<tr>
<td>FY12</td>
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<tr>
<td>FY13</td>
<td>1,089,260,000</td>
<td>-38.3%</td>
<td>$6,626</td>
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<td>FY14</td>
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<td>-37.7%</td>
<td>$6,388</td>
<td>-40.6%</td>
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<tr>
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<tr>
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<td>-40.4%</td>
<td>$9,073</td>
<td>-57.6%</td>
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</table>
CH2M Hill Alumni Center

- Savings totals FY13–FY16: ~$116,800
  - $87,200 electricity
  - $29,600 natural gas
OSU Energy Center

- Replaced heat plant built in 1920 that houses 50-70 year old equipment
- Co-generating, or combined heat and power (CHP), technology greatly increases efficiencies by utilizing waste heat from the electrical generation process
- 5.5MW gas turbine and heat recovery steam generator
- Total plant capacity: 250,000 pounds of steam/hour
- The systems are configured for future use of renewable fuels, such as biodiesel and methane
- First LEED Platinum facility of its kind
- Supports future implementation of smart grid technologies.
EC reduces:

- greenhouse gas emissions from purchased electricity
- by about 30% the fossil fuel needed to produce OSU’s electricity and heat
- water consumption by up to 70% compared to conventional power generation
Ground mounted solar installations

- Started as “Solar by Degrees” by Oregon University System
- Goal: install five MW of solar power across all seven campuses, at little or no cost to universities via power purchase agreement (PPA)
http://fa.oregonstate.edu/sustainability/ground-mounted-photovoltaic-arrays
Improved Transportation Options

Alternatives to the single occupancy vehicle

1. Agreements with Corvallis Transit System, Linn-Benton Loop, Philomath Connection and Albany Transit System
2. An electronic carpool match system, Drive Less Connect
3. Free campus shuttle
4. Compressed work schedules and telecommuting options
5. Access to emergency rides home
6. Preferential parking for carpools and vanpools
7. A physical development plan promoting dense growth, not sprawl
8. Secure bicycle parking and showers
9. Car sharing through the Zipcar
10. Bike sharing with Zagster
Sustainability Advocates

- Represent various units across campus
- Communicate about events, funding and other resources
- Quarterly networking meetings over hosted lunch
- Advocates bring ideas for how to make their departments more sustainable
- Have fun with sustainability!
Eco-Representatives

Eco-Reps advance and institutionalize a culture of sustainability in the residence halls in which they live. They are supported by the Sustainability Office, Campus Recycling, SSI and University Housing & Dining Services and are responsible for:

- Educating residents about sustainable lifestyles and resources
- Assisting with marketing and outreach efforts for sustainability programs and creating their own programs
- Managing residence hall composting program.
- Running Kilowatt Crackdown annual energy reduction competition
Reser Parking lot Bioswale
Carbon Commitment

- Take interim steps by Nov. 15, 2007 to reduce GHG emissions
- Greenhouse gas inventory within one year, biennially thereafter
- Within two years, plan and timeline to become climate neutral
Carbon Commitment

OSU target date chosen based on state goals, OUS initiatives, campus community feedback, and other institutions’ goals:

- By 2010, arrest the growth of greenhouse gas emissions and begin to reduce emissions.
- By 2012, achieve net greenhouse gas emissions at least 10 percent below 1990 levels.
- By 2020, achieve net greenhouse gas emissions at least 75 percent below 1990 levels.
- By 2025, achieve net climate neutrality.
FY16 OSU COMPREHENSIVE GREENHOUSE GAS GROSS EMISSIONS

- Cogeneration: 32%
- Purchased Electricity: 43%
- Air Travel: 11%
- Other Directly Financed Travel: 2%
- Commute: 5%
- Refrigerants: 0%
- Solid Waste: 0%
- Agriculture: 2%
- Fleet & Maintenance: 2%
- Stationary Sources: 3%
Campus as a Living Laboratory

"On a sustainable campus, the built environment, operational systems, research, scholarship, and education are linked as a “living laboratory” for sustainability. Users (such as students, faculty, and staff) have access to research, teaching, and learning opportunities on connections between environmental, social, and economic issues."

- ISCN-GULF Sustainable Campus Charter
Find us

oregonstate.edu/sustainability/

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