

**Strategic Energy
Management
2022 Impact Report
Oregon Institute of
Technology**

OREGON INSTITUTE OF TECHNOLOGY

December 31, 2022

1. Executive Summary



Oregon Institute of Technology, 3201 Campus Drive, Klamath Falls, OR 97601. Year 3.

The Oregon Institute of Technology's (OIT) energy team began 2022 with a renewed team structure and commitment to Strategic Energy Management. Energy Champion Jennifer Berdyugin was able to enlist the help of four graduate students from the Oregon Renewable Energy Center (OREC), OIT's applied research center, so the team kicked off the year with a well-staffed team. The students assisted with multiple site walks, which logged many opportunities, as well as participation in monthly ops calls and SEM workshops. Team members from the facilities staff were also engaged and enthusiastic as the team re-formed and re-engaged in the first part of 2022. As student team members joined facilities staff for monthly operations calls and SEM workshops, the team became stronger and more effective.

However, in the second quarter of engagement, participation by the Energy Champion Jennifer Berdyugin decreased until midway through the year, when she left OIT to pursue other career options. Although graduate student Danny Voss did an admirable job temporarily filling in for some of the duties, without a faculty member to guide the students, their ability to follow up on identified projects was extremely limited and eventually the participation of graduate students came to an end. Facilities staff worked together to complete projects, meet minimum SEM engagement requirements and finish out the year, but the team will need to be re-structured in 2023 to fully support OIT's energy management goals. Due to the lack of an active Energy Champion, OIT's scheduled Energy Management Assessment (EMA) was postponed until early 2023.

The Oregon Institute of Technology earned \$3,383 in incentives in 2022. We look forward to their continued growth in SEM in 2023.

SEM Program Incentives

	Milestone Incentive Amount	Intern Incentive Amount	Energy Savings Incentive Amount	Total
Year 1 (2020)	\$2,000	\$0	\$18,500	\$20,500
Year 2 (2021)	\$1,500	\$0	\$4,156	\$5,656
Year 3 (2022)	\$1,000	\$0	\$2,383	\$3,383
Total	\$4,500	\$0	\$25,039	\$29,539

2. Energy Savings Summary



This methodology uses engagement and historical program savings rates to determine savings for each site, which is the current basis for paying incentives. Engagement is assessed through Performance Tracking Tool (PTT) updates, workshop attendance, monthly call attendance and the number of projects completed. To calculate energy savings, historical savings rates are determined by building type, model age and fuel type which is applied to each enrolled site.

Normally savings are calculated with meter-level energy models in participant PTTs. The extraordinary circumstances since 2020 have required that Energy Trust adapt commercial SEM savings methodologies and program offerings. Energy Trust is only permitted to account for savings and pay incentives for efforts that are directly attributed to participation in Energy Trust programs and will result in savings over future years. As a result, a new way to calculate savings and incentives for the full year has been developed. In 2022, SEM savings were recognized and incentivized if you:

- Implemented at least five opportunities that were identified on your Annual Energy Plan
- **And** you completed at least two of the following:
 - Attended 50% of operations calls
 - Attended 50% of core SEM workshops
 - Updated all PTTs at least four times

The following tables show Program Year 2022 engagement criteria and savings, and below the tables are notes describing what each column represents.

Engagement Metrics for Program Savings-Based Incentives	
Number of Workshops Attended	3/5
Number of Operations Calls Attended	8/12
Number of Times Performance Tracking Tools Were Updated	1
Number of Completed Qualifying SEM Projects for Incentive	5

	Electric Baseline (kWh)	SEM Incremental Electric Savings (kWh)	Gas Baseline (therms)	SEM Incremental Gas Savings (therms)	Total Incentive
Campus Wide	6,166,800	116,644	16,395	252	\$2,383
Grand Total	6,166,800	116,644	16,395	252	\$2,383

Electric/Gas Baseline is the annual energy use during the period prior to the program/model start date.

SEM Incremental Savings includes savings specific to SEM activities that occurred in the current engagement year (does not include capital savings). For continuation participants, this is your incremental incentivized savings that exceed SEM savings from previous years.

Total Incentive is the SEM Incremental Savings (kWh) x \$0.02 plus SEM Incremental Savings (therms) x \$0.20.

3. Program Highlights



OIT made solid progress in 2022 with improved engagement and planning in the first part of the year. The energy team identified many opportunities and was able to adapt to additional staff transition at the school. The later part of 2022 was challenging for the SEM program at OIT as they lost their Energy Champion, but team members from the facilities staff stepped up and helped the school complete another year in SEM.

Key Performance Indicators	
Milestones Achieved (Max. 4 out of 5)	
<input checked="" type="checkbox"/> <i>Annual Energy Plan</i>	<input type="checkbox"/> <i>Energy O&M Projects</i> <i>0 /10 complete</i>
<input type="checkbox"/> <i>Standard Operating Procedure</i>	<input type="checkbox"/> <i>50001 Ready Navigator</i>
<input type="checkbox"/> <i>Energy Team</i>	<input type="checkbox"/> <i>Bonus Electric Incentive</i> <i>Not eligible</i>
Treasure Hunts Conducted	0
EMA Total Score / Previous Score	8% (2020)

- Organizational Activities
 - Successes
 - Early in 2022, the energy team recruited four graduate students to be on the team. Their participation added a new energy to the team and increased opportunities for engagement at the college.
 - Challenges
 - The departure of the Energy Champion mid-year and difficulty in finding a replacement from the faculty or administration side of the college stalled the progress of the team.
 - Progress
 - The participation of facilities, students and faculty team members for the annual planning workshop was a big step in the right direction.
 - The energy team expanded their SEM page at <https://www.oit.edu/orec> with the addition of a link to provide feedback and ideas.

- Technical Activities
 - Successes
 - Backup Champion Jim Lake made great progress with more heat exchanger cleanings in the campus hydronic systems, as well as increased use of night flushes for summer cooling.
 - Challenges
 - The combination of staffing issues and post-covid operation challenges took its toll on the team’s ability to complete projects and remain fully engaged.
 - Progress
 - Data Champion Jessica Barnett has become an experienced member of the team who is now comfortable with updating the PTTs as her time allows.
 - The student team members completed site walks at four buildings on campus and identified 17 opportunities which were shared with the facilities department.

4. Participant Energy Team



Energy Champion: Jennifer Berdyugin, Engineering Instructor, OREC Lab Manager

Back-up Energy Champion: Jim Lake, Head of Facilities Maintenance

Executive Sponsor: Thom Darrah, Director of Facilities Management Services

Data Champion: Jessica Barnett, Facilities Services

Team Member: Danny Voss, OIT Grad Student

Team Member: William Stobaugh, OIT Graduate Student

Team Member: Hannah Keesey, OIT Graduate Student

Team Member: Ryan Kile, OIT Graduate Student

The OIT energy team expanded during the first half of 2022. However, it is currently primarily supported by committed staff from OIT’s facilities department. Additional team members will need to be identified for 2023 to replace former Energy Champion Jennifer Berdyugin and to round out the team with new student members or faculty members.

Phases below reference Tuckman’s stages of team development. The forming-storming-norming-performing model of group development proposes that each phase is necessary and inevitable for the team to grow, face challenges, tackle problems, find solutions, plan work and deliver results. Due to the change in staffing of the OIT energy team in mid-2022, coaches view this team to be in the reforming stage.

Energy Team Phase

<input type="checkbox"/> Forming	<input type="checkbox"/> Storming	<input type="checkbox"/> Norming	<input type="checkbox"/> Performing	<input checked="" type="checkbox"/> Reforming
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5. Plans for Future Success



OIT continues to look for ways to operate more efficiently and to save energy at the college. The school is investigating a complete re-work of their geothermal plan and distribution system, which could involve increased control of pumps and motors. However, their first step is to re-engage across the campus and find additional team members. The team showed their potential in 2022 and, with a similar but more sustained team effort in 2023, can be leaders in SEM.

- SEM Coaches recommend that OIT utilize the SEM intern incentive to bring an additional student on to the energy team.
- OIT can use their energy coaches to onboard new team members and offload some of the workload from existing team members.
- OIT should consider enrolling their Wilsonville Campus to find new team members and additional savings energy savings at the organization.

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