

STATUS REPORT
FY 20-21

VIII. 15% LOWER ENERGY USAGE INTENSITY BY 2025





BASELINE METRIC(S):

- Net energy usage intensity reduction
- Reduction of annual costs
- Percentage of Energy Star Appliances

Q2 ACTIVITY:

Focus has been on refining the Revolving Fund proposal to facilitate funding of conservation projects. This work includes collaboration with Faculty member Jan Whittington, UW Solar and Dan Petersen, Treasury. Efforts have been focused on developing the screening criteria for financial modeling. The goal is to present the Revolving Fund to Planning & Budgeting and Provost.

Q1 CHALLENGES ADDRESSED:

We received feedback from Finance and Facilities leaders to ensure the financial model is accurately capturing projected energy savings. Group has worked to prioritize the types of projects to make sure our forecast is finely tuned up so we can preview the proposal with OPB.

Lack of funding for WCUP Phase II project.

Action Owner:	Norm Menter
Target Team:	Claudia Christensen Aleanna Kondelis - action 3

ACTION STATUS:



Action: Implement Cost Effective Conservation Investments	
Action: Expand Campus Meter Monitor O&M Program	
Action: Purchase Only Energy Star Appliances	

MITIGATING RISK:

At this time we don't see imminent risk with this aspect of the plan target.

NEXT QUARTER ACTION:

Goal is to get approval from OPB & the Provost to return utility savings to the the Revolving Fund and begin using it.

VIII. 15% LOWER ENERGY USAGE INTENSITY BY 2025

- Target Actions
- Implement Cost Effective Conservation Investments
 - Expand Campus Meter Monitor O&M Program
 - Purchase Only Energy Star Appliances



Sustainability Plan guiding principle



Use resources responsibly



STEPS STATUS:

<p>Action 1: Implement Cost Effective Conservation Investments</p>	<p>Step 1: Conservation projects </p>	<p>Step 2: WCUP project</p>	<p>Step 3: Major renovation/deep retrofit</p>
<p>Action 2: Expand Campus Meter Monitor O&M Program</p>	<p>Step 1: Hardware/software </p>	<p>Step 2: Staffing</p>	<p>Step 3: Future investment</p>
<p>Action 3: Purchase Only Energy Star Appliances</p>	<p>Step 1: Communications</p>	<p>Step 2: Reporting</p>	<p>Step 3: Promoting</p>


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Sustainability Plan guiding principle



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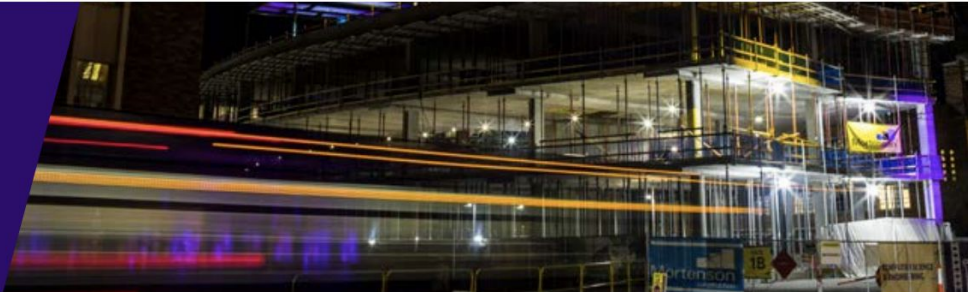
 **Note:** Copy and Paste the appropriate 'status icon' into the upper right hand corner of each **step** above to complete the Steps Status.





ACTION:

Implement Cost Effective Conservation Investments



Steps we will take in FY 2021

1. Execute 17 minor conservation projects in 32 campus buildings avoiding an estimated \$1 million annual utility cost (starting mid FY22). Estimated capital cost will be \$3.2M, of which \$1.6 million can be recovered in utility rebates.
2. Begin initial design, permitting and equipment procurement for a Phase II expansion of the West Campus Utility Plant. This project will pilot seasonal hot water energy transfer to a select group of high-EUI buildings in west and south campus, using a new, 1,300 ton heat recovery chiller.
3. Conduct in-house energy engineering analysis in coordination with the One Capital Plan and other initiatives to identify one or more co-funding opportunities for a major renovation or deep retrofit in FY2022-FY2023, that can support future revolving fund revenues.

Statuses and linkages

From 2015 to present, the resource conservation program has invested \$5 million in 32 projects capturing \$2.2 million in utility rebates and avoiding \$624,000 in annual utility cost. These past and future building efficiency activities incrementally bring the campus into compliance with Washington State Clean Buildings Code, City of Seattle Benchmarking and Tune-up Ordinances. These Actions also support the overarching initiative to meet State greenhouse gas reduction targets (see Target X below).

Future investments must be coordinated and augmented with the One Capital Plan, facility preservation fund and program renewal investment funds. Additionally, resource conservation investments must be coordinated with self-sustaining units' capital investment programs.

Financing



A centralized energy management revolving investment fund has been conceptually approved by senior leadership. Currently, the detailed design of the fund is underway. Assuming the conceptual intent is borne out in the detailed design and approved by UW decision makers, the revolving fund will be seeded with sufficient funding to generate future revenue.

For Phase II expansion of the West Campus Utility Plant, an ongoing feasibility study suggests a \$1.2M utility cost avoidance on an \$8M capital investment. \$1.8 million of the initial investment is required in FY2021.

Metrics

- Net energy usage intensity (EUI) reduction (weather and gross square footage use intensity normalized).
- Return on investment (lifetime utility cost avoided/net value invested).
- Simple payback (net capital invested/annual utility cost avoided).

This action may impact STARS credits OP-2 *Greenhouse Gas Emissions* where UW shows a points gap of 3.91, and OP-5 *Building Energy Efficiency* where UW shows a points gap of 2.16.

3.91 AAHSE STARS POINTS OPPORTUNITY

2.16 AAHSE STARS POINTS OPPORTUNITY

NO
PROGRESS

ON TIME

SOME
PROGRESS

Implement Cost Effective Conservation Investments

STEP 1: Conservation Projects

Execute 17 minor conservation projects in 32 campus buildings avoiding an estimated \$1 million annual utility cost (starting mid FY22). Estimated capital cost will be \$3.2M, of which \$1.6 million can be recovered in utility rebates

ACTIONS THAT OCCURRED/ONGOING OCT - DEC 2020:

\$3.2M of projects were scoped and prioritized (talking to stakeholders, ensuring the correct buildings were targeted, field investigation to ensure feasibility).

CHALLENGES ENCOUNTERED OCT - DEC 2020:

Aligning resource conservation priorities with minor capital priorities (challenge with new staff and working remotely).

PLAN FOR JANUARY - MARCH 2021:

Load projects into the Green Revolving Fund model and secure funding approval.

NO
PROGRESS

ON TIME

SOME
PROGRESS

Implement Cost Effective Conservation Investments

STEP 2: WCUP project

Begin initial design, permitting and equipment procurement for a Phase II expansion of the West Campus Utility Plant. This project will pilot seasonal hot water energy transfer to a select group of high-EUI buildings in west and south campus, using a new, 1,300 ton heat recovery chiller.

ACTIONS THAT OCCURRED/ONGOING OCT - DEC 2020:

Engineering feasibility report developed and shared with operational customer.

CHALLENGES ENCOUNTERED OCT - DEC 2020:

Aligning resource conservation priorities with minor capital priorities (challenge with new staff and working remotely). This project depends on the Green Revolving Fund. We need a planning commitment to align efforts.

PLAN FOR JANUARY - MARCH 2021

Submitting for a Commerce Grant to provide a \$1M match. Will work on procurement.

NO
PROGRESS

ON TIME

SOME
PROGRESS

Implement Cost Effective Conservation Investments

STEP 3: Major Renovation/Deep Retrofit

Conduct in-house energy engineering analysis in coordination with the One Capital Plan and other initiatives to identify one or more co-funding opportunities for a major renovation or deep retrofit in FY2022-FY2023, that can support future revolving fund revenues.

ACTIONS THAT OCCURRED/ONGOING OCT - DEC 2020:

Has morphed into the WCUP phase 2 project which will enable Magnuson Health Sciences K wing, I wing, Physics Astronomy, Foege and potentially Population Health to use waste heat.

CHALLENGES ENCOUNTERED OCT - DEC 2020:

The One Capital Plan does not include major building renovations in this planning time frame, so turned attention to the WCUP project. This will allow for greater savings than any 1 resource conservation project.

PLAN FOR JANUARY - MARCH 2021:

Will be positioned to use the Revolving Fund to take advantage of funds that come through mechanisms outside the One Capital Plan.

METRICS & LINKAGES:

The metrics for this action include:

- Net energy usage intensity (EUI) reduction (weather and gross square footage use intensity normalized)
- Return on investment (lifetime utility cost avoided/net value invested)
- Simple payback (net capital invested/annual utility cost avoided)

METRICS:

Fill in text box

LINKAGES:

Fill in text box

ACTION:

Expand Campus Meter Monitor O&M Program



Steps we will take in FY 2021

1. Fund \$250k to purchase, configure, and document equipment, and train UW Facilities operators. Existing staff time will be turned toward new information technology hardware and software per May 11, 2020 recommendations by the UW Meter Monitor Team. Operationalize the Meter Monitor Program's "MBCx process" in seven additional campus buildings.
2. Fund \$250k in on-going annual program operations & maintenance, hire a Meter Monitor Program Manager, operationalize MBCx process in 14 buildings by end of FY2021.
3. Conduct analysis for future Meter Monitor investment strategy, including investments in additional steam and water meters at all state funded buildings.

Financing

 Financing for this Action is shared with *Action Implement Cost Effective Conservation Investments* above.

Step 3 will likely identify a funding gap in the \$6 million to \$7 million range for some metering equipment that cannot be fully covered with the associated return on investment.

Metrics

- Maintenance of net EUI reduction over time.
- Reduction of annual Operations and Maintenance cost, divided by work order cost of implementing target EUI outcome.

This action may induce indirect points gains in STARS credits OP-4 *Building Operations and Maintenance* where UW shows a point gap of 3.50, and OP-5 *Building Energy Efficiency* where UW shows a point gap of 2.16.



3.50 AAHSE STARS POINTS OPPORTUNITY

2.16 AAHSE STARS POINTS OPPORTUNITY

Statuses and linkages

The Meter Monitor Program is an extension of a American Recovery and Reinvestment Act legacy Smart Grid program.

In addition to ensuring the persistence of utility costs avoided by the Action Implement Cost Effective Conservation Investments above, this Action is an early contributor to the Portfolio Management Strategy that is a UW Facilities strategic priority for FY2021. This Action will significantly improve UW Facilities operational and maintenance efficiency.

 NO
PROGRESS ON TIME SOME
PROGRESS

Expand Campus Meter Monitor O&M Program

STEP 1: Hardware/software

Fund \$250k to purchase, configure, and document equipment, and train UW Facilities operators. Existing staff time will be turned toward new information technology hardware and software per May 11, 2020 recommendations by the UW Meter Monitor Team. Operationalize the Meter Monitor Program's "MBCx process" in seven additional campus buildings.

ACTIONS THAT OCCURRED/ONGOING OCT - DEC 2020:



We secured funding via the Resource Conservation budget!

CHALLENGES ENCOUNTERED OCT - DEC 2020:

Had to change procurement method (we weren't able to use the contract we had proposed).

PLAN FOR JANUARY - MARCH 2021:

Execute the purchase order (through Ariba).

 NO
PROGRESS ON TIME SOME
PROGRESS

Expand Campus Meter Monitor O&M Program

STEP 2: Staffing

Fund \$250k in on-going annual program operations & maintenance, hire a Meter Monitor Program Manager, operationalize MBCx process in 14 buildings by end of FY2021.

ACTIONS THAT OCCURRED/ONGOING OCT - DEC 2020:

Unsure whether this job has been posted.

2 operational technology resources (people) have been assigned to operations within the BIT group. This is helping to close gaps we were having in the program.

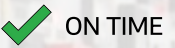
Conversations with McKinstry around the Connected Communities DOE grant have helped push this conversation forward.

CHALLENGES ENCOUNTERED OCT - DEC 2020:

Difficulty communicating while working remotely.

PLAN FOR JANUARY - MARCH 2021:

We've been working on collaboration to install meters (software side) while McKinstry does physical installations. This should speed up adoption.

NO
PROGRESS

ON TIME

SOME
PROGRESS

Expand Campus Meter Monitor O&M Program

STEP 3: Future Investment

Conduct analysis for future Meter Monitor investment strategy, including investments in additional steam and water meters at all state funded buildings.

ACTIONS THAT OCCURRED/ONGOING OCT - DEC 2020:

UW Campus Engineering worked to identify and prioritize the metering gaps.

Realized the new OSI software is able to receive PSE gas meter consumption data easily. McKinstry put together a propose to integrate this data into the OSI system when we're ready. This will help us automate the process of GHG emission accounting.

We'll now have highly granular data about NG consumption (rather than just monthly data).

CHALLENGES ENCOUNTERED OCT - DEC 2020:

It's been hard to figure out how to connect disparate data sources for metering. GeoSIMS building space use data needs to be combined energy consumption data to get accurate EUI values for buildings.

PLAN FOR JANUARY - MARCH 2021:

We are meeting as a group to roadmap processes for the coming year relative to issues like bringing in the GIS data and bringing in rules around how we'll consume/integrate that data.

Once the OSI system is up and running in March we should be able to execute and configure the system so we'll have campus & building EUIs in the new biennium and we can create a baseline to track improvements in EUI going forward.

METRICS & LINKAGES:

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METRICS:

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LINKAGES:

Fill in text box

ACTION:

Purchase Only Energy Star Appliances



Steps we will take in FY 2021

1. Develop regular communications highlighting Procurement guidelines for Energy Star purchasing requirements.
2. Develop annual reporting for Energy Star appliances.
3. Work with UW Facilities and HFS to promote Energy Star appliances for all new buildings.

Financing



No additional financing needed in FY 2021.

Metrics

- Percentage of Energy Star appliance purchases compared to total spend on a quarterly basis.

This action may impact STARS credit OP-5 *Building Energy Efficiency* where UW shows a points gap of 2.16.

Statuses and linkages

Procurement Services promotes environmentally preferred purchasing (EPP) as defined by the National Associate of Educational Procurement, meaning that environmental and social considerations are “taken with equal weight to the price, availability and performance criteria that colleges and universities use to make purchasing decisions.”

The University's buying staff leverage current supplier relationships to raise awareness of the purchasing considerations necessary to reduce our environmental impact and to maximize resource efficiency.

In order to further the University's commitment to sustainability, individual departments are encouraged to purchase recycled and environmentally preferable products, when quality, performance and price are comparable to alternatives.

Procurement works with manufacturers and Seattle City Light to identify equipment subject to Seattle City Light energy rebates.

Purchase Only Energy Star Appliances

NO
PROGRESS

ON TIME

SOME
PROGRESS

STEP 1: Communications

Develop regular communications highlighting Procurement guidelines for Energy Star purchasing requirements.

ACTIONS THAT OCCURRED/ONGOING OCT - DEC 2020:

Appliances purchased for new buildings and alterations were specified as Energy Star

CHALLENGES ENCOUNTERED OCT - DEC 2020:

No major challenges -- minimal purchasing activity during this time frame

PLAN FOR JANUARY - MARCH 2021:

- Consider incorporating this requirement into the Facilities Design Standard Documents
- Campus outreach visits will include this topic; in addition to other sustainability related behavior we would like campus to consider prior to making a purchase

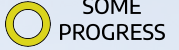
Purchase Only Energy Star Appliances



NO
PROGRESS



ON TIME



SOME
PROGRESS

STEP 2: Reporting

Develop annual reporting for Energy Star appliances.

ACTIONS THAT OCCURRED/ONGOING OCT - DEC 2020:

Campus newsletters promoted the utilization and purchase of energy star products, including appliance and ultra-low freezers subject to Seattle City Light Rebate

CHALLENGES ENCOUNTERED OCT - DEC 2020:

No major challenges

PLAN FOR JANUARY - MARCH 2021:

Establish a reporting process to obtain and consolidate information from contract suppliers

Purchase Only Energy Star Appliances

NO
PROGRESS

ON TIME

SOME
PROGRESS

STEP 3: Promoting

Work with UW Facilities and HFS to promote Energy Star appliances for all new buildings.

ACTIONS THAT OCCURRED/ONGOING OCT - DEC 2020:

Newsletter article and website updated with information regarding energy star products

CHALLENGES ENCOUNTERED OCT - DEC 2020:

No major challenges

PLAN FOR JANUARY - MARCH 2021:

- Consider incorporating this requirement into the Facilities Design Standard Document
- Update procurement exceptions list to call out the requirement to purchase only energy star appliances.
- Embed in department outreach framework as a standing topic

METRICS & LINKAGES:

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