

STATUS REPORT
FY 20-21

X. 45% REDUCTION OF GREENHOUSE GAS EMISSIONS BY 2030





X. 45% REDUCTION OF GREENHOUSE GAS EMISSIONS BY 2030

Target Actions

- Electrify UW Transportation Services
- Plan to Repower the Seattle Campus
- Implement Campus Solar Plan

Sustainability Plan guiding principle



Decarbonize

AASHE STARS categories



BASELINE METRIC(S):

- Percentage of total UW Fleet that is PHEV or electric,

Q3 & Q4 ACTIVITY:

- Completed Draft of 10 year replacement plan for PHEV & EV vehicles.
- Drafting EV Charging plan

CHALLENGES ADDRESSED:

-

Action Owner:

Jeff Seidel

Target Team:

Marilyn Ostergren, Jan Whittington, Eric Johnson
Norm Menter, Anne Eskridge

ACTION STATUS:



Action: Electrify UW Transportation Services



Action: Plan to repower seattle campus

Action: Implement campus solar plan

MITIGATING RISK:

-

FY22 ACTION:

-Working to with Departments on ordering F23 vehicle replacements and educating them on electric vehicle options that are available.



X. 45% REDUCTION OF GREENHOUSE GAS EMISSIONS BY 2030

Target Actions

- Electrify UW Transportation Services
- Plan to Repower the Seattle Campus
- Implement Campus Solar Plan

Sustainability Plan guiding principle



AASHE STARS categories



STEPS STATUS:

Action 1: Electrify UW Transportation Services	Step 1: Convert to electric vehicles	Step 2: Develop vehicle charging infrastructure	Step 3: Develop solar canopy infrastructure
Action 2: Plan to repower seattle campus	Step 1: Hire energy program manager	Step 2: Bring on an owner's advocate	Step 3: WCUP pilot project
Action 3: Implement campus solar plan	Step 1: Complete solar plan	Step 2: Fund solar plan	

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

ACTION:

Electrify UW Transportation Services



Steps we will take in FY 2021

1. Complete and approve a strategy for transitioning the UW Fleet to electric vehicles by 2030, excepting emergency maintenance vehicles. Anticipated completion: December, 2020.
2. Complete and approve a strategy, including funding mechanisms, to develop electric vehicle charging infrastructure across UW parking facilities by 2030. Anticipated completion: March, 2021.
3. (concurrent with Step 2) Review and approve a strategy and funding methodology for developing solar canopy infrastructure on campus parking assets by 2030. Anticipated completion: March, 2021.

Statuses and linkages

Analysis of the opportunity to electrify the UW Seattle fleet and parking services, and capacity for parking to house solar canopies, has been completed, and a report will be released for review in Fall, 2020. The same analysis can be applied to the Bothell and Tacoma campuses in Fall, 2020. There are linkages between these targets and actions, and the goal of reducing commuting to campus via single occupancy vehicle.

Financing

🔍 Electric vehicles will be gradually added to the UW Fleet as older vehicles are retired. Steps 2 and 3, the development of charging infrastructure and solar canopies respectively, will require capital investment, but can recover cost through surcharges on the electricity delivered to plugged-in EVs. Seed funding will be required for the first two biennia (four years), but thereafter electric sales revenue can be used to continue expanding buildout of chargers and canopies in the form of a revolving fund.

Full buildout of 14 MW of solar is estimated to require a total \$28 - \$30 million in capital expenditures plus an additional \$438,000 for electrical distribution upgrades. Besides the funding stream from electric surcharges, we forecast \$46 - 48 million in cost avoidance from vehicle fuels.

Metrics

Progress toward completion of the Action will be measured by:

- Percentage of UW fleet vehicles that are plug-in electric vehicles. Plug-in hybrid electric vehicles will be included in the count.
- GW of charger-connected solar capacity.
- Percentage of parking spaces having charger access.

This Action can gain points in STARS credits OP-6 *Clean & Renewable Energy* where UW shows a point gap of 3.93.

3.93 AAHSE STARS
POINTS OPPORTUNITY

STATUS



ON TIME

SOME PROGRESS

NO PROGRESS



Electrify UW Transportation Services

STEP 1: Convert to electric vehicles

Complete and approve a strategy for transitioning the UW Fleet to electric vehicles by 2030, excepting emergency maintenance vehicles. Anticipated completion: March, 2022.

ACTIONS THAT OCCURRED/ONGOING JAN - JUNE 2021:

Fleet Services vehicle purchases for FY22 has been determined pending the approval of fleet rates by MAA. Maintaining fleet rates following the COVID pandemic has limited the number and type of vehicles to be replaced this fiscal year to twenty-one vehicles.

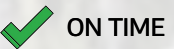
No additional EV vehicles are included in this purchase cycle.

CHALLENGES ENCOUNTERED JAN - JUNE 2021:

Budget restraints has limited the number of new vehicles purchased.

PLAN FOR FY22:

Electric vehicle replacement and charging infrastructure planning is ongoing with EV purchase options being explored for FY23 purchase cycle.



Electrify UW Transportation Services

STEP 2: Develop vehicle charging infrastructure

Complete and approve a strategy, including funding mechanisms, to develop electric vehicle charging infrastructure across UW parking facilities by 2030. Anticipated completion: March, 2022.

ACTIONS THAT OCCURRED/ONGOING JAN - JUNE 2021:

Fleet roof replacement design and construction planning is ongoing with the determination that a solar panel option to be included as part of the replacement design is not feasible.

Charging infrastructure planning continues including a evaluation of the charger types and costs.

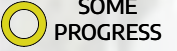
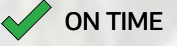
No additional vehicle chargers purchased this quarter.

CHALLENGES ENCOUNTERED JAN - JUNE 2021:

Budget restraints along with a change in program oversight within Transportation Services has necessitated a review of current vehicle charging implementation strategies taking additional time for reviews to be completed.

PLAN FOR FY22:

Electric vehicle charging infrastructure implementation planning is ongoing with additional charging stations options being explored for FY23.



Electrify UW Transportation Services

STEP 3: Develop Solar Canopy Infrastructure

(concurrent with Step 2) Review and approve a strategy and funding methodology for developing solar canopy infrastructure on campus parking assets by 2030. Anticipated completion: March, 2021.

ACTIONS THAT OCCURRED/ONGOING JAN - JUNE 2021:

None -

CHALLENGES ENCOUNTERED JAN - JUNE 2021:

PLAN FOR FY22:

METRICS & LINKAGES:

Analysis of the opportunity to electrify the UW Seattle fleet and parking services, and capacity for parking to house solar canopies, has been completed, and a report will be released for review in Fall, 2020. The same analysis can be applied to the Bothell and Tacoma campuses in Fall, 2020. There are linkages between these targets and actions, and the goal of reducing commuting to campus via single occupancy vehicle

METRICS:

Fill in text box

LINKAGES:

Fill in text box

ACTION:

Plan to Repower the Seattle Campus



Steps we will take in FY 2021


1. Hire an Energy Program Manager with the engineering and finance qualifications to oversee the heating plant and district energy renewal from start to finish.
2. Issue an RFP for, and contract, a consultant (owner's advocate) capable of helping UW select the best mix of technologies for the Seattle campus.
3. Develop engineering scope and funding pathway for a pilot project to use waste condenser heat from the West Central Utility Plant to reduce steam heating in nearby buildings.

Statuses and linkages

In March 2020, UW Facilities issued a Request for Information (RFI) to solicit ideas from experts around the country for planning, building, and financing a low-carbon energy system. These responses are currently being reviewed by the Energy Roadmap Team which includes support from the Engineering Services and UW Sustainability departments.

Several other universities have completed or launched similar projects. Stanford University recently completed a new combined heating and cooling plant that is perceived as a particularly successful example. The new Stanford plant, when combined with solar power procurement, reduced Stanford GHG emissions by about 72 percent from its peak levels.

Financing

 A thorough review of the engineering and financial options is needed before assigning a budget estimate to such a large scale project. UW is targeting development to start in 2023, with first phase completion in 2028.

Metrics

- Completion of each listed FY2021 Step shall serve as the measure of progress during FY2021.

Decarbonization (whether partial or total) of the Seattle campus central heating & cooling system will gain points in STARS credits OP-2 *Greenhouse Gas Emissions* where UW shows a point gap of 3.91. Depending on the fuel used for energy generation, the project may also gain points toward OP-6 *Clean & Renewable Energy* where UW shows a point gap of 3.93.

3.91 AAHSE STARS POINTS OPPORTUNITY

3.93 AAHSE STARS POINTS OPPORTUNITY

Plan to Repower the Seattle Campus



NO PROGRESS



ON TIME



SOME PROGRESS

STEP 1: Hire Energy Program Manager

Hire an Energy Program Manager with the engineering and finance qualifications to oversee the heating plant and district energy renewal from start to finish.

ACTIONS THAT OCCURRED/ONGOING JAN - JUNE 2021:

-

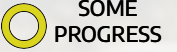
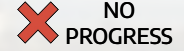
CHALLENGES ENCOUNTERED JAN - JUNE 2021:

-

PLAN FOR FY22:

-

Plan to Repower the Seattle Campus



STEP 2: Bring on a Readiness Consultant

Issue an RFP for, and contract, a consultant capable of helping UW select the best mix of technologies for the Seattle campus.

ACTIONS THAT OCCURRED/ONGOING JAN - JUNE 2021:

CHALLENGES ENCOUNTERED JAN - JUNE 2021:

PLAN FOR FY22:



Plan to Repower the Seattle Campus

STEP 3: WCUP Pilot Project

Develop engineering scope and funding pathway for a pilot project to use waste condenser heat from the West Central Utility Plant to reduce steam heating in nearby buildings.

ACTIONS THAT OCCURRED/ONGOING JAN - JUNE 2021:

-

CHALLENGES ENCOUNTERED JAN - JUNE 2021:

-

PLAN FOR FY22:

-

METRICS & LINKAGES:

In March 2020, UW Facilities issued a Request for Information (RFI) to solicit ideas from experts around the country for planning, building, and financing a low-carbon energy system. These responses are currently being reviewed by the Energy Roadmap Team which includes support from the Engineering Services and UW Sustainability departments. Several other universities have completed or launched similar projects. Stanford University recently completed a new combined heating and cooling plant that is perceived as a particularly successful example. The new Stanford plant, when combined with solar power procurement, reduced Stanford GHG emissions by about 72 percent from its peak levels.

METRICS:

-

LINKAGES:

Fill in text box

ACTION:

Implement Campus Solar Plan




Steps we will take in FY 2021

1. UW Solar Group will complete a plan and strategy for developing solar assets on the buildings of the three campuses by 2030. Anticipated completion: December 31, 2020.
2. Review and approve the strategy, with funding mechanisms, for developing solar assets on campus buildings by 2030. Anticipated completion: March 31, 2021.

Statuses and linkages

Solar installations on UW campuses also reduce building energy usage intensity, and can be integrated into thermal systems for compounded savings. On the Seattle campus, solar energy reduces the peak load demand for electricity, buying time to make larger scale investments needed to decarbonize the power plant. UW hosts solar photovoltaics developed by the UW Solar Group, part of the UW Clean Energy Institute, on the Mercer A Apartments (35 kW), Alder Hall (50 kW), Elm Hall (25 kW), Maple Hall (25 kW), the Life Sciences Building (105 kW), in rooftop and solar shading fins). In addition, research and student projects have resulted in arrays on the IMA Building, Merrill Hall, Power Plant roof, and the Mechanical Engineering Building. University of Washington's Bothell campus also hosts 122 kW of solar photovoltaic, on the library building and parking garages.

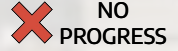
Financing

 The capital cost of systems envisioned for the Campus Solar Plan is estimated to be \$26-28 million, while the cost savings from avoided utility payments are estimated to be \$55 million over the 25 years of the warranted life of these solar assets. Solar, with reduced utility costs as returns on investment, fit the parameters for finance with a revolving fund. There is also potential for investments from local utilities, the U.S. Department of Energy, donors, or other parties.

AASHE STARS Scoring

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

2.16 AASHE STARS
POINTS OPPORTUNITY



**NO
PROGRESS**



ON TIME



**SOME
PROGRESS**

Implement Campus Solar Plan

STEP 1: Complete Solar Plan

UW Solar Group will complete a plan and strategy for developing solar assets on the buildings of the three campuses by 2030. Anticipated completion: December 31, 2020.

ACTIONS THAT OCCURRED/ONGOING JAN - JUNE 2021:

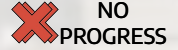
-

CHALLENGES ENCOUNTERED JAN - JUNE 2021:

-

PLAN FOR FY22:

-



NO PROGRESS



ON TIME



SOME PROGRESS

Implement Campus Solar Plan

STEP 2: Fund Solar Plan

Review and approve the strategy, with funding mechanisms, for developing solar assets on campus buildings by 2030. Anticipated completion: March 31, 2021.

ACTIONS THAT OCCURRED/ONGOING JAN - JUNE 2021:

CHALLENGES ENCOUNTERED JAN - JUNE 2021:

PLAN FOR FY22:

METRICS & LINKAGES:

Solar installations on UW campuses also reduce building energy usage intensity, and can be integrated into thermal systems for compounded savings. On the Seattle campus, solar energy reduces the peak load demand for electricity, buying time to make larger scale investments needed to decarbonize the power plant. UW hosts solar photovoltaics developed by the UW Solar Group, part of the UW Clean Energy Institute, on the Mercer A Apartments (35 kW), Alder Hall (50 kW), Elm Hall (25 kW), Maple Hall (25 kW), the Life Sciences Building (105 kW), in rooftop and solar shading fins). In addition, research and student projects have resulted in arrays on the IMA Building, Merrill Hall, Power Plant roof, and the Mechanical Engineering Building. University of Washington's Bothell campus also hosts 122 kW of solar photovoltaic, on the library building and parking garages.

METRICS:

Fill in text box

LINKAGES:

Fill in text box