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**

**AASHE STARS categories**

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**BASELINE METRIC(S):**
- Percentage of total UW Fleet hat is PHEV or electric,

**CHALLENGES ADDRESSED:**
- 

**Q3 & Q4 ACTIVITY:**
- Completed Draft of 10 year replacement plan for PHEV & EV vehicles.
- Drafting EV Charging plan

**ACTION STATUS:**

<table>
<thead>
<tr>
<th>Action</th>
<th>Owner</th>
<th>Team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrify UW Transportation Services</td>
<td>Jeff Seidel</td>
<td>Marilyn Ostergren, Jan Whittington, Eric Johnson, Norm Menter, Anne Eskridge</td>
</tr>
<tr>
<td>Plan to repower Seattle campus</td>
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<tr>
<td>Implement campus solar plan</td>
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**MITIGATING RISK:**
- 

**FY22 ACTION:**
- Working to with Departments on ordering F23 vehicle replacements and educating them on electric vehicle options that are available.
### STEPS STATUS:

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<th>Action 1: Electrify UW Transportation Services</th>
<th>Step 1: Convert to electric vehicles</th>
<th>Step 2: Develop vehicle charging infrastructure</th>
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<td>Step 1: Hire energy program manager</td>
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<td>Step 1: Complete solar plan</td>
<td>Step 2: Fund solar plan</td>
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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.
Steps we will take in FY 2021


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.

Statues 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.
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.

ACTIONS THAT OCCURRED/ONGOING JAN - MARCH 2021:

ACTIONS THAT OCCURRED/ONGOING JULY-OCTOBER 2020:

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.
**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 JULY-OCTOBER 2020:**

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

- 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 an evaluation of the charger types and costs.

- No additional vehicle chargers purchased this quarter.

**CHALLENGES ENCOUNTERED JULY-OCTOBER 2020:**

- 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 OCTOBER 2020-DECEMBER 2020:**

**CHALLENGES ENCOUNTERED FEBRUARY-MARCH 2021:**

**ON TIME**

**SOME PROGRESS**

**NO PROGRESS**

**ACTIONS THAT OCCURRED/ONGOING JAN - MARCH 2021:**

**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 JULY-OCTOBER 2020:

None

PLAN FOR NOVEMBER 2020-FEBRUARY 2021:

Instructions: Replace this text with a brief, bulleted description of actions you hope to take during the next quarter.

CHALLENGES ENCOUNTERED JULY-OCTOBER 2020:

ACTION 1

ACTIONS THAT OCCURRED/ONGOING PLAN FOR OCTOBER 2020-DECEMBER 2020:

ON TIME
SOME PROGRESS
NO PROGRESS

ON TIME
SOME PROGRESS
NO PROGRESS

ACTIONS THAT OCCURRED/ONGOING JAN - MARCH 2021:

None

PLAN FOR APRIL - JUNE:

CHALLENGES ENCOUNTERED JAN - MARCH 2021:

ACTION 1

ACTIONS THAT OCCURRED/ONGOING JULY-OCTOBER 2020:

PLAN FOR FY22:

ON TIME
SOME PROGRESS
NO PROGRESS

ON TIME
SOME PROGRESS
NO PROGRESS

ACTIONS THAT OCCURRED/ONGOING PLAN FOR NOVEMBER 2020-FEBRUARY 2021:

Instructions: Replace this text with a brief, bulleted description of actions you hope to take during the next quarter.

CHALLENGES ENCOUNTERED JULY-SEPTEMBER 2020:

ACTION 1

ACTIONS THAT OCCURRED/ONGOING JAN - MARCH 2021:

None

PLAN FOR APRIL - JUNE:

CHALLENGES ENCOUNTERED JAN - MARCH 2021:

ACTION 1

ACTIONS THAT OCCURRED/ONGOING JULY-OCTOBER 2020:

PLAN FOR FY22:
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 & LINKAGES:**

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**ACTION 1**
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 | AAHE STARS POINTS OPPORTUNITY |
| 3.93 | AAHE STARS POINTS OPPORTUNITY |
Plan to Repower the Seattle Campus

**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:
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.

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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.

Statues 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.
ACTIONS THAT OCCURRED/ONGOING JULY-OCTOBER 2020:

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.

PLAN FOR NOVEMBER 2020-FEBRUARY 2021:

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CHALLENGES ENCOUNTERED JULY-OCTOBER 2020:

ACTIONS THAT OCCURRED/ONGOING JAN - MARCH 2021:

PLAN FOR APRIL - JUNE 2021:

CHALLENGES ENCOUNTERED JAN - MARCH 2021:

ON TIME
SOME PROGRESS
NO PROGRESS
ON TIME
SOME PROGRESS
NO PROGRESS

ACTION 3

ACTIONS THAT OCCURRED/ONGOING JULY-OCTOBER 2020:

PLAN FOR NOVEMBER 2020-FEBRUARY 2021:

CHALLENGES ENCOUNTERED JULY-OCTOBER 2020:

ACTIONS THAT OCCURRED/ONGOING JAN - JUNE 2021:

PLAN FOR FY22:

CHALLENGES ENCOUNTERED JAN - JUNE 2021:
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 JULY-OCTOBER 2020:

PLAN FOR NOVEMBER 2020-FEBRUARY 2021:

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PLAN FOR FY22:

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