

Please note: this FAQ was produced at the request of the [Environmental Stewardship Committee](#).

Many of the strategies outlined in this document are still under review and are not, at this time, established policies.

Frequently Asked Questions:

Setting and Meeting Greenhouse Gas Goals at UW

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Greenhouse gas (GHG) reduction goals

What are UW's GHG reduction goals?

UW will reduce its GHG emissions:

- 15% below 2005 levels by 2020;
- 36% below 2005 levels by 2035; and
- to zero by 2050, or as soon after 2050 as technology will allow.

Is UW legally bound to meet the goals?

The 2020 and 2035 goals are legally binding under Senate Bill 5560 (2009).

What about Second Nature?

Nonprofit organization Second Nature stewards the American College and University Presidents Climate Commitment, which UW signed in 2007. Signatories commit to work toward “climate neutrality,” set interim targets prescribing the path to climate neutrality, and develop a corresponding Climate Action Plan. UW’s Climate Action Plan was completed and published in September 2009. It commits UW to the 2020 and 2035 goals drawn from state law, and contains the original statement of the 2050 goal.

What about between goal years?

UW considers itself to be held to the 2020 emissions goal from 2020-2034, and to the 2035 emissions goal from 2035-2049.

Which UW campuses are included under the goals?

UW’s GHG inventory, and its goal achievement, are measured for the institution as a whole including the Seattle, Tacoma and Bothell campuses, and several outlying facilities as well.

Which emissions sources are subject to the goals?

UW’s GHG inventory compiles emissions ascribable to:

- real estate to which the University of Washington holds the title or a capital lease;
- equipment housed in such real estate;
- vehicles owned by the University of Washington;
- student, staff & faculty commuting;

- professional air travel; and
- certain off-campus medical facilities.

The inventory does not include upstream (e.g. manufacturing) emissions, except for upstream emissions associated with purchased electricity and purchased steam.

How will baseline adjustment affect the GHG reduction goals?

UW is in the process of adjusting its inventory definition, and adjusting its baseline year (2005) inventory to meet the new definition. The most notable changes in this *baseline adjustment* will be:

- Adding Northwest Hospital
- Adding carbon sequestration on UW-owned forestlands
- Adding Athletics and study abroad travel emissions
- Removing Harborview Medical Center

Several other, minor, improvements to inventory methodology will be incorporated as well. The additions of Northwest Hospital, Athletics travel and study abroad travel increase the inventory. Removing Harborview Medical Center decreases it. UW forestland emissions will be highly variable: positive in years of heavy logging, but negative otherwise. The net impact of all baseline adjustments is roughly neutral and will have only a small effect on the gross UW inventory and target achievement. The most noticeable effect will be the year-to-year volatility introduced by UW forestlands.

How UW is meeting the GHG reduction goals

Will UW meet its 2020 goal?

Probably. UW emissions, after baseline adjustment, are forecast to fall 8,400 tCO₂e (metric tons of carbon dioxide equivalent) below the goal. However, historical data includes year-to-year variations as high as 16,000 tCO₂e, so there is a reasonable chance of exceeding the goal by as much 7,600 tCO₂e.

What is UW doing toward meeting its goals?

UW has evaluated 92 potential GHG reduction measures and carefully quantified the GHG reduction potentials and marginal abatement costs for 36 of these. Out of the 36 quantified reduction measures, 19 were found to have merit for UW and combined into seven major recommendations for GHG mitigation actions at UW. Some measures are currently in progress, while others are still being evaluated:

1. Steam-to-Hot Water Conversion, with Submetering

2. Laboratory Energy Efficiency
3. Server Relocation and Virtualization
4. Comprehensive Building Retrocommissioning
5. Glazing Retrofits
6. Zero-Emissions Building Standard
7. Integrated Transportation Strategy

What happens if UW does not meet one of its goals?

We do not know. The state law does not state any consequences, and few other state agencies have begun to consider the implications of the 2020 goal (as of this writing, January 2017).

GHG offsets

What is a GHG offset?

Most greenhouse gases are globally mixed such that a GHG reduction in, say, New Zealand has the same effect on the global climate as an equal GHG reduction in Seattle. If UW cannot reduce its GHG inventory to meet its goals it can still have the same, positive impact on the climate by enabling GHG reductions elsewhere. A GHG offset is a certificate stating that 1 tCO₂e of GHG emissions have been avoided or sequestered by a specific project somewhere on the planet.

How do we know that a GHG offset is real?

UW can ensure that any offset it purchases truly represents 1 tCO₂e of GHG reduction by purchasing from a project that has been tested for additionality by a certified, third-party verifier. “Additionality” means that the GHG reduction project would not have happened, but for the additional funding from sales of GHG offsets.

Doesn't third-party verification make offsets expensive?

It certainly does add to the cost. Second Nature has proposed frameworks for “peer-reviewed” offsets and “innovative” offsets that offer a lower standard for verification yet support creative approaches to GHG reduction. Second Nature recommends capping the combined use of peer-reviewed and innovative offsets to 30% of the institution’s gross inventory.

What's "retirement?"

If UW buys a GHG offset, then UW owns 1 tCO₂e of GHG reduction. If UW re-sells the GHG offset then the new buyer owns that GHG reduction and UW can no longer claim it. When UW claims a GHG reduction against its inventory it must be able to claim, as well, that it will not re-sell the offsets underlying the reduction. Retirement is a formal status given to an offset preventing it from being re-sold – similar to canceling a postage stamp. The GHG offset registries that monitor and track offset certificates all offer a mechanism for offset retirement.

What is the difference between a GHG offset and an allowance?

An allowance is a certificate representing 1 tCO₂e of GHG emissions allowed in a regulated carbon market. For example, in the state of California all regulated GHG emitters combined are allowed to emit 358 million tCO₂e during 2018, 346 million tCO₂e during 2019 and 334 million tCO₂e during 2020. The state auctions corresponding allowances each year in 1 tCO₂e increments: if UW purchases some of the allowances and retires them, then California's regulated GHG emitters will be forced to reduce their emissions that much further. Buying and retiring allowances out of another jurisdiction's market provides even stronger additionality than the financial tests applied to third-party verified GHG offsets.

What is the difference between a GHG offset and a renewable energy certificate (REC)?

A REC represents the environmental attributes of 1 MWh (megawatt-hour) of renewable energy generation. The environmental attributes are unquantified, and RECs make no claim to additionality. Because RECs are traded in units of MWh, they are not interchangeable with offsets which are traded in units of tCO₂e. RECs should not be used to make GHG reduction claims since the environmental attributes are unquantified, and there is no proof of additionality.

Do GHG offset retirements qualify as meeting the legislated goal? How about allowance retirements?

State law does not make this clear. UW is moving ahead under the assumption that both third-party verified offsets and allowances will be considered an adequate substitute for direct reductions, when direct reductions are insufficient to meet a goal.

How much do offsets or allowances cost?

Offset prices range from about \$1.50/tCO₂e to over \$20/tCO₂e depending on the project type and developer. Allowances from the California cap-and-trade market cost \$12-\$13/tCO₂e.

How volatile are offset prices? Will they increase in the future?

Offset and allowance prices have been fairly stable for the last several years. Nationwide there are many jurisdictions and entities that have set 2020 as their first GHG target year, so we may see offset prices increase at that time if there is a surge in purchases. On November 1, 2021, entities regulated under California's cap-and-trade program must retire the balance of their required allowances, so we may see allowance prices escalate during the course of 2021.

Why would UW choose GHG offsets over direct reductions?

UW is implementing all direct reductions it can, that have marginal abatement costs of up to \$20/tCO₂e. If this is not enough to meet the goal, then meeting the goal with additional direct reductions would require paying marginal abatement costs much higher than the cost of offsets. It makes more sense to spend the same money in a part of the world that can achieve greater GHG reductions.

Can a power purchase agreement (PPA) substitute for GHG offsets?

The UW Seattle campus purchases electricity from a GHG-neutral utility (Seattle City Light). A PPA with a renewable energy producer cannot reduce the Seattle campus emissions. However, the Bothell campus purchases electricity from Puget Sound Energy, which has a higher emission rate. Displacing Puget Sound Energy electricity with renewable energy under a PPA would reduce UW's GHG inventory.

Can a virtual power purchase agreement (VPPA) substitute for GHG offsets?

No. VPPAs deliver their environmental benefit as RECs.

When do offsets expire?

There is no agreement in the offsets market or regulatory systems on this question. Offset registries do not assign expiration dates, but they do track *vintage*, which is the year in which the GHG reduction occurs. It is left up to the buyer to decide which vintages are acceptable. Brokers find that typical buyers request offsets no more than four years old.

Buying and retiring GHG offsets

How many offsets will UW need to retire each year?

The difference between actual, total emissions in the inventory and the goal emissions. That difference will first become defined in the first goal year of 2020, and could be anywhere from

0 tCO₂e (if actual emissions fall below the goal) up to about 7,600 tCO₂e if cold weather or other factors swing UW emissions to their highest possible level.

If UW commits to offsetting a certain portion of its inventory regardless of goal achievement, that will induce a different offset retirement equal to the size of the chosen portion of the inventory. For example, offsetting all professional travel will require retiring up to 20,800 tCO₂e per year.

Can UW buy ahead to cover future years' emissions?

Yes. Only UW's tolerance for "old" offsets limits the acceptable amount of offset stockpiling. (See *When do offsets expire?*) UW plans to buy ahead a minimum of one year as standard practice, so that current year emissions are always covered by offsets on hand (which will be retired the following May once the current year's emissions have been inventoried).

Who will keep track of UW's offsets?

Each offset's data, including its retirement status, stays in the same registry where the offset resided when originally purchased by UW. UW Facilities Services will keep the definitive record of all offset purchases and retirements. Facilities Services will report offset stock and purchase needs to the Environmental Stewardship Committee in May of each year, after the prior year's GHG inventory has been completed.

Who will pay for the offsets?

UW Facilities Services. The offsets will be accounted similarly to a utility cost.

UW is considering an internal carbon pricing mechanism to finance the offset purchases. Yale University is piloting this approach, see more here: <http://carbon.yale.edu/>.

How does UW control the quality of offsets it buys?

Through competitive purchasing. UW Purchasing will issue a request for procurement (RFP) describing the minimum requirements for offsets it is willing to purchase. Those minimum requirements can include a select list of offset project types (for example reforestation, residential energy efficiency, etc.), preferred registries, preferred additionality criteria, limits on vintage, and so forth. The RFP will be authored by a team of academic topic experts, UW Purchasing, UW Facilities Services, UW Sustainability, and UW's climate policy consultant Hammerschlag & Co. LLC.

Can UW buy offsets in partnership with other universities or state agencies?

Yes. All of Washington's two- and four-year public colleges and universities are members of the Washington Institutions for Public Higher Education (WIPHE) purchasing consortium. Once one WIPHE member creates a purchase order for offsets, the other members will be able to buy through the same purchase order without needing to issue a new RFP. So, it is in UW's interest to collaborate early with other WIPHE members to ensure that the first issued RFP is consistent with UW's interests in offset quality.

Through E&I Cooperative Services, UW can also reach out to educational institutional institutions nationally to make a collective GHG offsets purchase. Success with national outreach would require evidence that there is sufficient interest across the country to support E&I's efforts, and would require a long negotiation to reach agreement on RFP terms with the other participating educational institutions. UW is more likely to collaborate statewide through WIPHE than nationally through E&I.

UW may also be able to purchase offsets collectively with the state's executive branch agencies, coordinated by the state Department of Enterprise Services. At the time of this writing (January 2017) the terms of agency compliance with Senate Bill 5560 are still unknown, and agreement on those terms will be a prerequisite toward cooperation. So, it will be some time before collaboration with other state agencies becomes realistic.

Can UW schools, departments or units buy their own offsets?

Yes, but it is discouraged. The UW-wide offsets purchase is sufficient to meet GHG goals, the carefully authored RFP ensures offset quality, and the large central purchase ensures a competitive price.