January 16, 2020

Sustainability & Climate Action Plan Revision Preview

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Agenda

- Planning Process
- Carbon Commitment History
- Key Sustainability & Climate Action Plan issues
- Overview of Sustainability & Climate Action Plan goals

Objective

In advance of public forums, inform board of:

- proposed Carbon Neutrality date
- proposed 5 year % emission reduction target
- proposed revised Sustainability & Climate Action goals
  - Goals will be in place through FY21-FY26

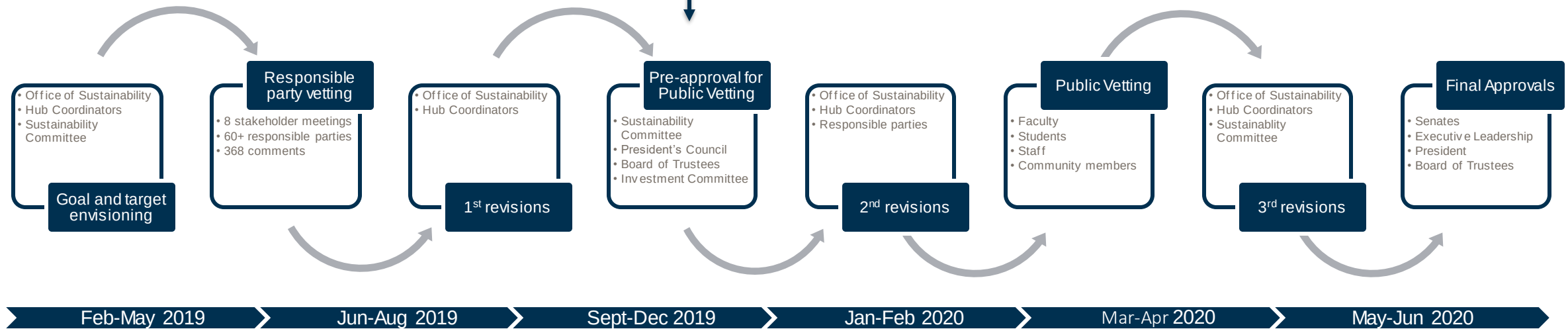
Planning Process

Existing plan

- 35 benchmarks

Updated plan

- 16 sections (12 themes, 3 core sections, 1 administrative support)
- 32 goals



Guiding principles

- Direct progress toward achievement of Presidential Carbon Commitment
- Align goals/metrics of STARS, Sustainability Plan and Climate Action Plan
- Provide triple bottom line cost benefit analyses for plan components

Carbon Commitment History

2006
- American College & University Presidents' Climate Commitment (ACUPCC) initiated in late 2006

2007
- Former Ohio University President Roderick McDavis signed the ACUPCC on March 15, as one of 336 charter signatories
- Required a carbon neutrality date; 2075 was "chosen" as default

2009
- Second Nature became lead supporting organization for the ACUPCC

2011
- Ohio University published first Sustainability Plan
- 2075 is listed as carbon neutrality date

2012
- Ohio University published first Climate Action Plan
- 2075 is listed as carbon neutrality date

2015
- ACUPCC rebranded as Presidents' Climate Leadership Commitments
- By default Ohio University becomes a Carbon Commitment signatory

2017
- Ohio University Climate Action Plan review and revision required
- Ohio University President Nellis signed the We Are Still In Declaration on June 12, which reaffirms Carbon Commitment

OHIO's Current Carbon Commitment

Requirements

1) Develop a Climate Action Plan to achieve carbon neutrality
   - ✓ Within two months of signing this document, create internal institutional structures to guide the development and implementation of the Plan
   - ✓ Within one year of the implementation start date, complete a greenhouse gas emissions inventory and identify near term opportunities for greenhouse gas reduction. Report these in the first annual evaluation of progress
   - ✓ Within two years of the implementation start date complete the Plan, which will include:
     - A target date for achieving carbon neutrality as soon as possible
     - Interim target dates for meeting milestones that will lead to carbon neutrality
     - Mechanisms and indicators for tracking progress
     - Actions to make carbon neutrality a part of the curriculum and other educational experiences for all students
     - Actions to expand research in carbon neutrality

   Review, revise if necessary, and resubmit the climate action plan not less frequently than every five years

2) Submit an annual evaluation of progress
   - ✓ Within one year of the implementation start date, and every year thereafter, complete an annual evaluation of progress
   - ✓ Make the action plan, annual evaluation of progress (including greenhouse gas inventory), publicly available by submitting them to Second Nature's reporting system for posting and dissemination

Sustainability & Climate Action Plan Key Issues

Issue #1: Carbon neutrality date

- Currently, OHIO carbon neutrality date is 2075:
  - The Carbon Commitment allows carbon neutrality dates out to 2075, but requests 2050 at the latest
  - OHIO communities expect carbon neutrality date to move closer to present
  - OHIO does not currently have an economically sustainable path to carbon neutrality

- Possible pathways to achieve carbon neutrality:
  - Electrification: current estimate is approximately $120 M in capital costs, plus additional costs for renewable installation, and/or additional operating costs
  - RECs and carbon offsets: current estimate for carbon neutrality is $160-200 K/year
  - New technologies may arise that are economically feasible within the next 30 years

➢ **Office of Sustainability recommendation: choose 2050 as carbon neutrality date for plan; attempt to reach carbon neutrality sooner**

Carbon Neutrality Dates and Data for Universities in Ohio

Institution	Commitment	State	Carnegie Classification	Total Emissions	% Change Emissions	Total Building Sq. Ft.	Enrollment (FTE)	RE Energy Generation (kWh)	Carbon Neutrality Date ▲
Oberlin College	Climate	OH	BA	20,679	-48.87	2,748,285	2,793	2,585,600	2025
Denison University	Carbon	OH	BA	17,353	-46.40	1,831,650	2,185	26,000	2030
Xavier University	Carbon	OH	MA	30,601	-15.16	2,343,240	6,190	0	2030
Bowling Green State University	Carbon	OH	DR	86,890	-26.79	5,038,421	14,489	0	2040
Kenyon College	Carbon	OH	BA	21,706	-10.58	1,626,800	1,703	31,486	2040
University of Mount Union	Carbon	OH	BA	18,747	11.04	1,329,415	2,208	60,000	2046
Case Western Reserve University	Carbon	OH	DR	173,299	-17.07	8,000,000	10,820	138,013	2050
Cuyahoga Community College	Carbon	OH	AS	51,582	-25.58	3,098,722	13,750	0	2050
The Ohio State University – Columbus	Carbon	OH	DR	623,558	-5.72	24,895,...	45,087	0	2050
University of Toledo	Carbon	OH	DR	519,432	-37.62	7,822,755	17,293	30,945,...	2058
Cleveland State University	Carbon	OH	DR	56,850	-36.08	5,452,445	13,772	0	2065
Ohio University	Carbon	OH	DR	116,395	-30.19	8,326,612	21,169	107,412	2075
University of Cincinnati	Carbon	OH	DR	222,556	-48.51	17,458,...	30,237	0	2075
University of Dayton	Climate	OH	DR	78,759	-1.67	5,330,033	10,569	22,848	

Sustainability & Climate Action Plan Key Issues

Issue #2: 5-year emissions reduction target

- Currently at 33% reduction (normalized for square footage) from FY12 baseline
  - This is excellent progress and has resulted in national/state awards
  - Investment in coal to natural gas boiler conversion was essential to the emissions reduction
  - Relies heavily on the purchase of 50% RECs in current electricity contracts

- Pathways to greater emissions reductions:
  - Purchase RECs for increased percentage of electricity
    - Current estimates are $50-$70K/year premium on total electric costs for 100% RECs
      - We currently pay approximately $42K/year for 50% RECs
    - Purchasing RECs is a simple, but not optimal, strategy for achieving reduction
  - Continued energy conservation
  - Square footage reduction
  - Renewable PPA
  - Some combination of all of these

➢ **Office of Sustainability recommendation: target of 50% emission reduction by FY26**

Sustainability & Climate Action Plan Key Issues

Issue #3: 32 goals; 16 thematic areas

Top priority goals (see appendix for full list by thematic section)

1. **Climate**: Reduce institutional greenhouse gas emissions
2. **Curriculum**: Increase opportunities for formal, experiential and community-engaged sustainability learning experiences
3. **Buildings**: Reduce building impacts by using best practices in construction, renovation and demolition
4. **Investments**: Increase investments that support sustainable economic activity
5. **Buildings**: Maintain and operate existing buildings to reduce impacts
6. **Engagement**: Create, enhance and track transformative sustainability engagement ecosystems
7. **Energy**: Decrease reliance on fossil fuel energy
8. **Food**: Promote mindful foods choices; collaborate with community to provide education on impacts of food choices
9. **Administrative Support**: Build resiliency into processes and infrastructure

- **Office of Sustainability recommendation: hold public forums on these 32 goals and their metrics, targets and proposed strategies; ensure that these align closely with Fearlessly First strategic initiatives**
- **Note that all goals can be met with minimal cost strategies, with the exception of the Climate goal**

Example Public Forum Display

OHIO UNIVERSITY

aashe
STARS OP 5 & 6

Energy

Hub: Infrastructure

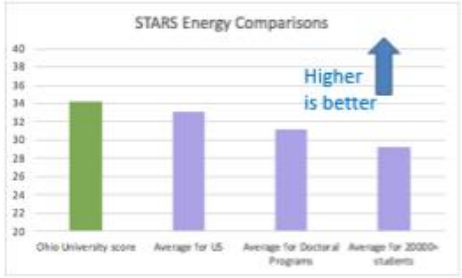
Aspiration: Minimize utilization of energy while maximizing renewable energy sourcing and resiliency

SUSTAINABLE DEVELOPMENT GOALS

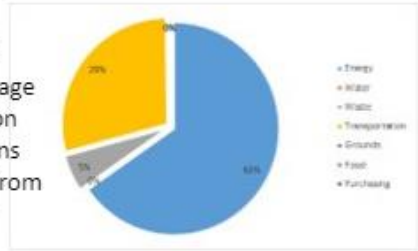
CARBON COMMITMENT
Scope 1 & 2 emissions

Where we are now

- ✓ Benchmark 1 : Reduce institutional greenhouse gas emissions **Target of 25% below baseline exceeded. Between Fiscal Year 2012 (FY12) and FY18, net emissions decreased by 30%.**
- ✓ Benchmark 2 : Reduce campus and building energy intensity **Nearing target of 20% reduction from 2004 baseline at 15% reduction.**
- ✓ Benchmark 3 : Increase renewable energy **Nearing target of 20% renewables at 17.9%.**



OHIO's highest percentage of carbon emissions comes from energy usage



Moving forward

Goal 1: **Reduce campus and building energy intensity** (Metric: EUI for campus and for building types)

- Create and implement Ohio University Low Impact Building Standards[1] for construction/renovation projects which align with our sustainability commitments
- Expand and institutionalize OHIO Sustainable Building Operations & Maintenance program
- Restart building energy competitions; educate OHIO campus and communities about energy efficiency

Benefits of Goal #1	Costs of Goal #1
Reduction in OpEx = $2M/yr	CapEx = $28M
$MTeCO_2$ reduction = 15,520 MT/yr	Maintenance cost increase
Occupant comfort/productivity	Increase in construction waste cost
Educational benefits	
Additional air/water/soil/biodiversity benefits	

Notes and Definitions

1. "Low impact" will be defined in the proposed OHIO Low Impact Building Standards.
2. Transportation fossil fuel energy is from gasoline & diesel used to operate OHIO fleet vehicles, as well as fuels used in commuting by faculty, staff & students, as required by the SIMAP Reporting Platform.
3. Renewable energy as defined by AASHE STARS, p 5 of Technical Manual, OP6.

Moving forward

Goal 2: **Decrease reliance on fossil fuel energy** (Metric: % of energy from fossil fuels: electricity, heating, cooling, and transportation[2])

- Pursue innovative and sustainable renewable energy options for all or parts of campus energy
- Consider regional campuses for siting of large on-site renewables

Benefits of Goal #2	Costs of Goal #2
OpEx reduction, variable	CapEx costs, variable
GHGe reduction = 34,227 $MTeCO_2/yr$	Maintenance costs, variable

Caption: Alex Burke, MSES student, with PV array at Building 22. Photo credit: Voinovich School of Leadership and Public Affairs

Sustainable Administration Hub

OHIO UNIVERSITY

Draft Goals

PROCUREMENT
Goal 1: Increase purchasing of sustainable and/or recycled products across a range of categories

HUMAN RESOURCES
Goal 1: Ensure that sustainability, diversity and inclusion are factors in employee hiring, professional development, retention, and assessments at Ohio University
Goal 2: Support and promote employee physical and mental health, wellness and resilience

CLIMATE
Goal 1: Reduce institutional greenhouse gas emissions
Goal 2: Reduce or eliminate air pollution from stationary and mobile sources

INVESTMENTS
Goal 1: Increase Ohio University's investments that support sustainable economic activity

Sustainable Infrastructure Hub

OHIO UNIVERSITY

Draft Goals

WASTE

Goal 1: Reduce municipal and Universal Solid Waste

Goal 2: Increase diversion from landfill to reuse, recycling and composting

BUILDINGS

Goal 1: Reduce building impacts by using best practices in construction, renovation and demolition

Goal 2: Maintain and operate existing buildings to reduce impacts

WATER

Goal 1: Work with communities to protect ground water quality and surface waters

Goal 2: Reduce impacts from storm water

Goal 3: Reduce potable water usage and water used for irrigation

ENERGY

Goal 1: Reduce campus and building energy intensity

Goal 2: Decrease reliance on fossil fuel energy

OHIO UNIVERSITY

Draft Goals

FOOD
Goal 1: Support the local food economy with preference to "neighborhood food" products
Goal 2: Promote mindful foods choices; collaborate with communities to provide education on impacts of food choices

GROUNDS
Goal 1: Create and maintain healthy, natural, biodiverse and beautiful landscapes that can act as the foundation for sustainability-oriented experiential learning opportunities
Goal 2: Reduce carbon emissions from grounds-related activities

TRANSPORTATION
Goal 1: Reduce carbon emissions from transportation
Goal 2: Create safe, efficient, affordable and healthy routes and options for non-single occupancy vehicle transit

STUDENT LIFE
Goal 1: Support and promote student physical and mental health, wellness and resilience
Goal 2: Prioritize sustainability, diversity & inclusion as positive student attributes in recruitment and retention efforts

Core Components Draft Goals

CURRICULUM CORE
Goal 1: Increase opportunities for formal, experiential, and community-engaged sustainability learning experiences
Goal 2: Assess and strengthen sustainability culture and literacy

ENGAGEMENT CORE
Goal 1: Create, enhance & track transformative sustainability engagement ecosystems
Goal 2: Offer opportunities to learn about or contribute to sustainability initiatives

ADMINISTRATIVE SUPPORT
Goal 1: Achieve recognition for innovative and robust sustainability planning, coordination & governance
Goal 2: Build resiliency into processes and infrastructure
Goal 3: Create funding mechanisms for sustainability initiatives outside of General Funds

RESEARCH CORE
Goal 1: Increase research focused on sustainability or carbon neutrality
Goal 2: Provide incentives and support to researchers who conduct sustainability engagement ecosystem research with triple bottom line benefits