



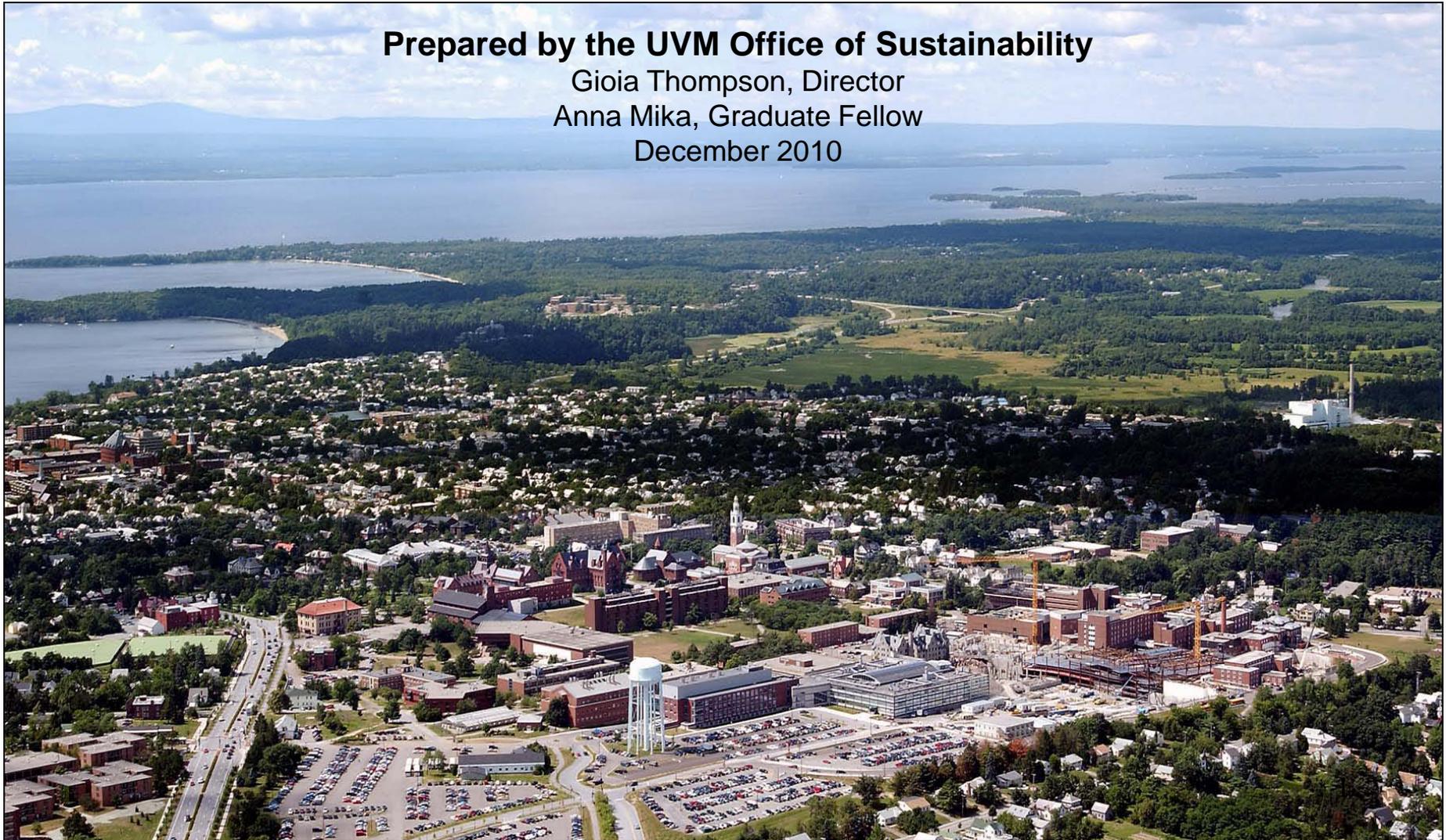
University of Vermont 2010 Climate Action Plan

Prepared by the UVM Office of Sustainability

Gioia Thompson, Director

Anna Mika, Graduate Fellow

December 2010





Presidents' Climate Commitment



AMERICAN COLLEGE & UNIVERSITY
PRESIDENTS CLIMATE COMMITMENT



- More than 670 college and university presidents have committed to climate action
- UVM became a Charter Signatory in 2007
- Commitment requires defining a date for achieving climate neutrality, and submitting a climate action plan with financing mechanisms
- Achieving climate neutrality includes efficiency and switching to primarily renewable energy
- Also means buying carbon credits or other ways to compensate for carbon pollution



Why Did UVM Sign the Climate Commitment?

- **Our leadership:** UVM is committed to being a leader in environmental responsibility. Signing the climate commitment makes clear our intentions and helps us identify new resources and mechanisms for achieving goals.
- **Energy costs** are likely to include **carbon costs** in the future, whether on a voluntary or mandatory basis. It is a control and business risk to rely on fossil fuels as primary sources of energy 10 years from now.
- **Federal regulation** has already begun and reductions may be mandated in the future. As of 2010 UVM is required to report as a large emitter.
- **Voluntary markets** for carbon trading are emerging and creating opportunities for the long-term good of the university and region. Quality control is improving.
- **A capital planning horizon** of many years is required for major infrastructure changes. Commitment is needed early in the planning process to integrate a new set of climate and energy values into our university's buildings.



Elements of the UVM Climate Action Plan

Goal 1: Climate Neutrality

- Emissions inventory, sources and trends
- Targets for emissions reductions
- Financing neutrality goals

Goal 2: Sustainability Education

- Tracking Progress using STARS
- Financing educational goals



Goal 1: UVM Climate Neutrality

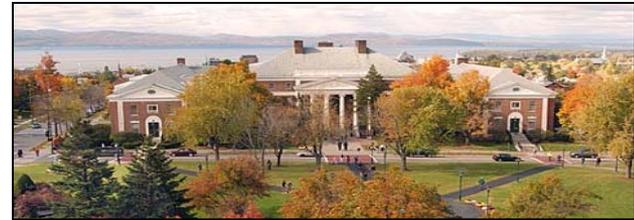
Attain climate neutrality by 2025:

2012: Define new energy efficiency and carbon reduction funding sources

2015: Reach net zero electricity

2020: Reach net zero heating, cooling and fleet

2025: Address all remaining major sources



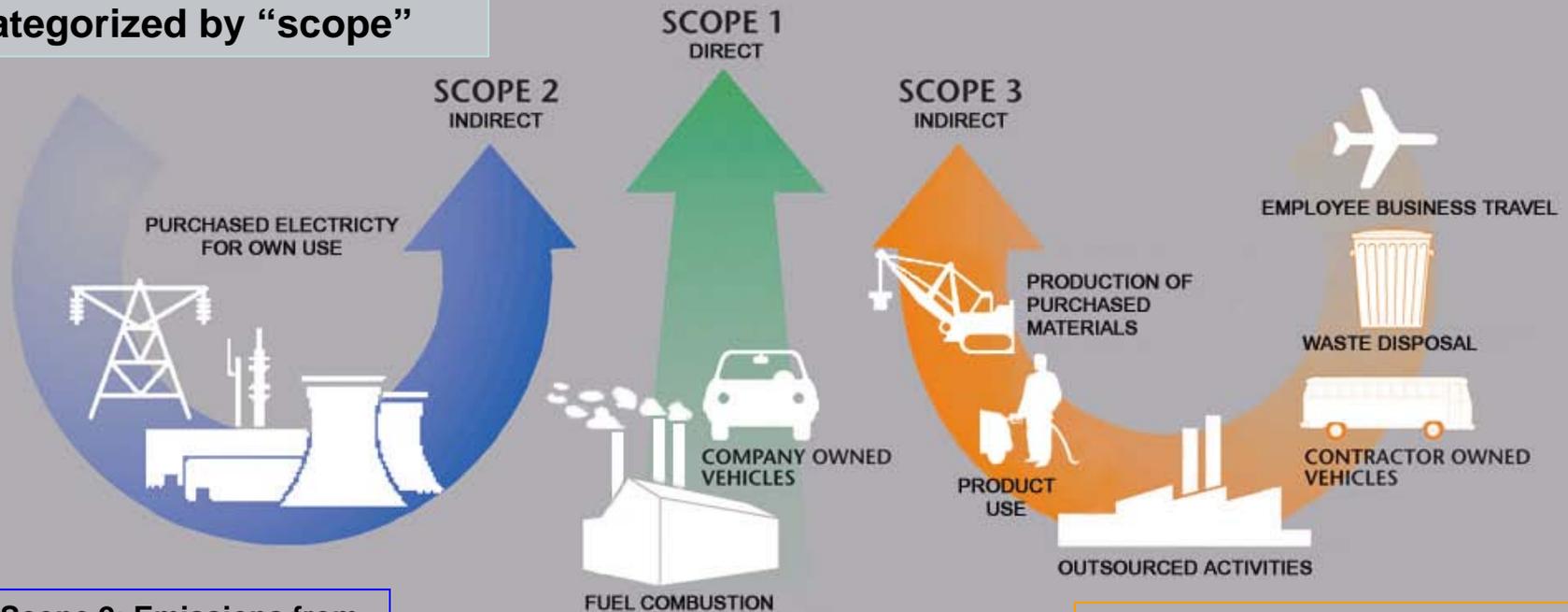


Quantifying Emissions: Carbon Equivalents & Inventory Scopes

1. Six gases are converted to metric tons carbon dioxide equivalents, or MTCDE

CO₂ SF₆ CH₄ N₂O HFCs PCFs

2. Responsibility level is categorized by “scope”



Scope 2: Emissions from utility production not at the institution

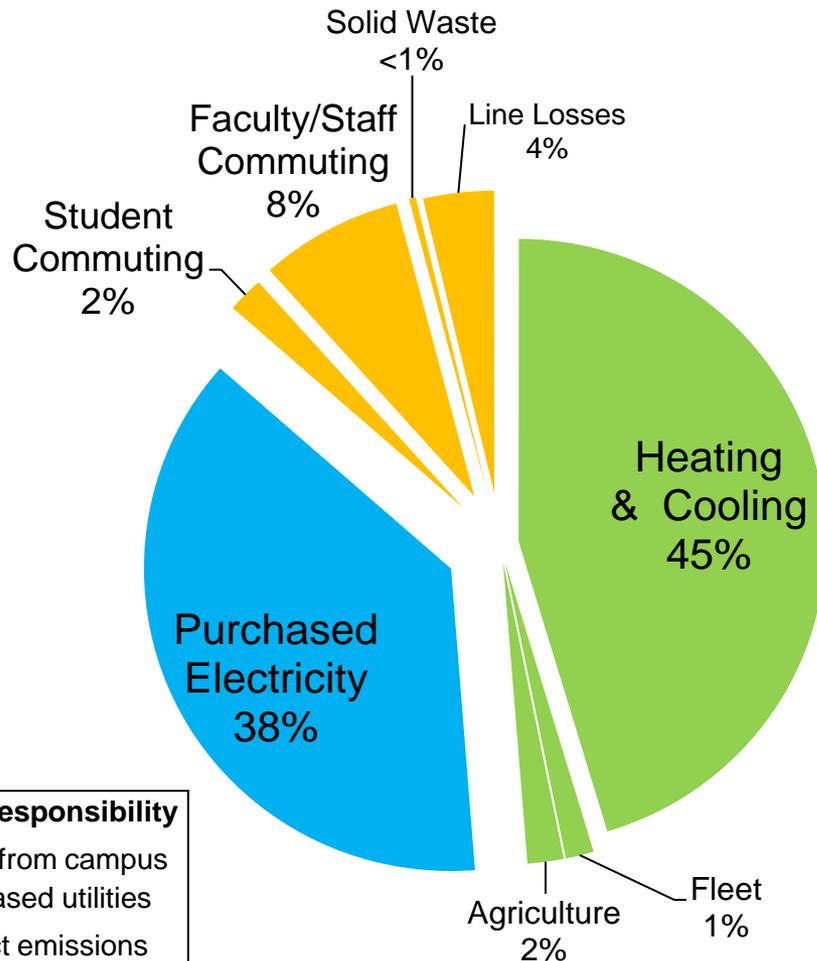
Scope 1: Emissions from the direct activities of the campus

Scope 3: Indirect emissions including agriculture, transportation, waste disposal



Emissions Measured in 2010 UVM Plan

Total in 2009 \approx 70,000 Tons



1. Buildings (83%)

- Electricity
- Heating, cooling fuels

2. Transportation (11%)

- Commuting
- Fleet

3. Other (6%)

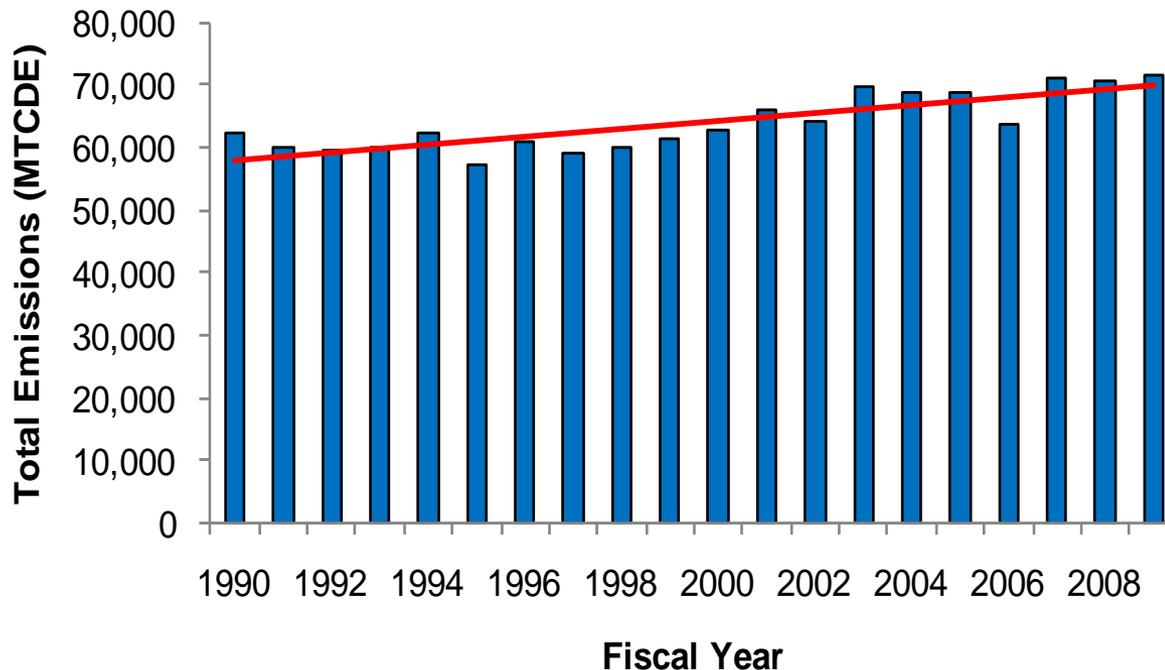
- Solid waste
- Agriculture
- Line losses from distant power sources

* Not included in this plan: refrigerants (*de minimis*, <1%), air and business travel, off-campus housing, carbon sequestration, food transportation, wastewater, paper, etc.



UVM Emissions 1990-2009

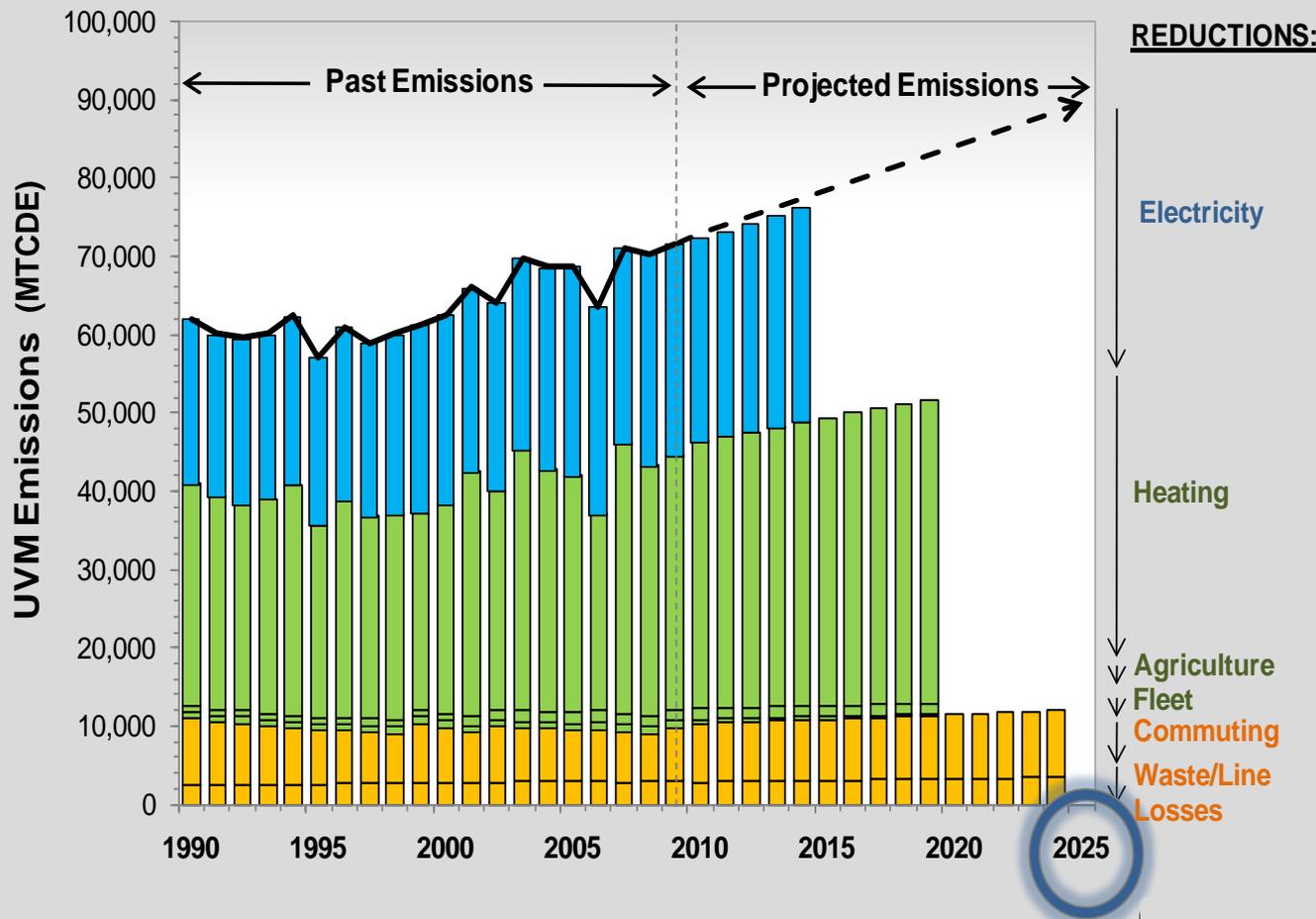
Annual UVM Emissions, 1990-2009



- Emissions have grown more slowly at UVM than at many other institutions
- Emissions continue to rise despite efficiency efforts—which must also continue
- Mostly fossil fuel use for heating and power, and no ready alternative
- Climate commitment requires finding ways to reduce to **net zero emissions**



Path to Climate Neutrality by 2025



Targets for climate neutrality:

2015: Electricity

through certified renewable energy or offsets

2020: Heating, Cooling & Fleet

net emissions reduced to zero through efficiency, cleaner fuels and market mechanisms

2025: Remainder

carbon offsets for all remaining emissions by 2025.



Strategies for Addressing Climate Neutrality

a. Continue focus on reducing energy use

- Keep funding priority of energy management and demand reduction in capital and budget plans

b. Switch from primarily fossil fuels to primarily local, renewable energy

- Educate the campus about energy use and renewables with the Clean Energy Fund
- Identify new funding mechanisms to switch buildings to primarily renewable energy sources by 2020
- Incorporate targets into strategic planning

c. Engage with the energy and carbon markets

- Purchase 100% renewable electricity in 2015
- Explore innovative financing for renewables and carbon management
- Offset remaining emissions using clear criteria



Financing Climate Neutrality through Emissions Reduction & Mitigation

Funded Priorities

- ✓ \$175k revolving loan fund for energy upgrades since 1992
- ✓ Policy of LEED Silver minimum for buildings, striving for Gold or higher
- ✓ \$100k annually for membership in CATMA, the Transportation Demand Management Association, to promote alternatives to driving
- ✓ \$350k annually pays for unlimited access to bus transportation for students, faculty and staff
- ✓ \$225k annual student fee for Clean Energy Fund that contributes to conservation via behavior change
- ✓ \$1M+ annual funding of efficiency and facilities maintenance

Not-yet-funded Priorities

- ✓ \$40M Environmental Utilities Infrastructure project is on strategic capital plan in 2010, up from \$32M in 2009
- Current long-term budget discussions are focused on significantly increasing spending on facilities maintenance, thereby achieving substantial energy efficiency gains
- Options for carbon-related resource allocation are to be discussed in the 2011-12 climate action planning process



Goal 2: Sustainability Education

**Advance
sustainability**
through teaching,
research,
co-curricular, and
community activities





Strategies for Addressing Sustainability Education

a. Infuse sustainability into new courses

- Continue Sustainability Faculty Fellows program with campus-wide scope
- Consult with faculty to define and document sustainability in academics using STARS assessment system

b. Describe role of research

- Continue to build the Transdisciplinary Research Initiative focus on Food Systems
- Describe sustainability-focused research activity on the university website using STARS
- Address energy use of research buildings with five-year plan

c. Support experiential and service learning

- Further strengthen service learning program's connections with community sustainability efforts
- Continue full representation of Eco-Reps in residence halls, develop campus-wide program starting with student center



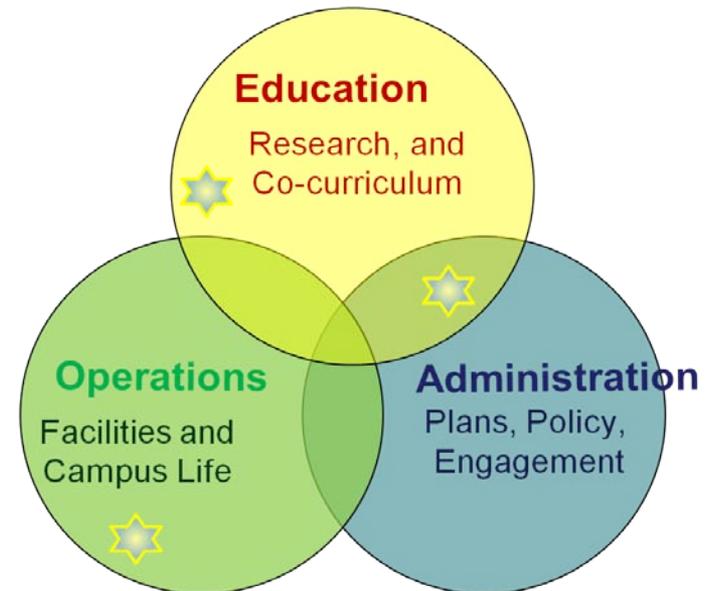
Tracking Progress on Educational Goals



Using STARS to track progress with Education, Research and Outreach climate goals

- Voluntary, self-reporting framework for gauging relative progress toward sustainability
- 300 possible points awarded total, 100 points per section
- Similar to LEED, with bronze, silver, gold, platinum levels; can opt to submit data for rating
- Developed by the Association for the Advancement of Sustainability in Higher Education (AASHE)

STARS[®]
SUSTAINABILITY TRACKING
ASSESSMENT & RATING SYSTEM





Financing & Managing Educational Goals

a. Teaching & Research

- ✓ \$225k annually since 2008 for Clean Energy Fund to promote understanding of renewables through courses and installations
- ✓ \$12k annually 2009 and 2010 for Faculty Sustainability Fellows program
- ✓ Long-standing environmentally related academic programs, many related research centers
- ✓ Strong service-learning program
- ✓ Transdisciplinary Research Initiative includes Food Systems Spire, with sustainability approach
- General Education Requirement could include sustainability

b. Outreach

- ✓ \$300K annually Office of Sustainability encourages collaboration among campus and community members
- ✓ \$50K annually for Eco-Reps to promote conservation behaviors in residential areas and support student leadership
- ✓ Campus Sustainability, permanent course ENVS 187 will track progress
- STARS will be used to document sustainability in academics



Schedule of UVM Climate Action Planning

	DATE	ACTION
2008	January	✓ President Daniel Mark Fogel announces new Office of Sustainability
2009	July Spring, fall	✓ Inventory 1990-2008 online ✓ Discussions with campus community about goals
2010	November December	✓ President Fogel announces climate neutrality goal and progress to date ✓ UVM submits 2010 climate action plan to ACUPCC
2011	Feb – Nov December	➤ Senior leaders incorporate climate goals into strategic plans and 10-year budget planning process ➤ President reviews strategic plans and overall financial plan for climate commitment
2012	February June	➤ Trustees review revised Climate Action Plan ➤ Office of Sustainability finalizes and resubmits plan
2015-2024	June	➤ Climate Action Plan revised and resubmitted every three years