



Climate Action at the University of Vermont

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Strategically bridging
academics and operations
in support of sustainable
development



Presidents' Climate Commitment— Now Called the Carbon Commitment



- UVM became a Charter Signatory in 2007 (now 670+ signed)
- Set a date for climate neutrality, and then make a plan
- Conduct inventory every two years
- Reduce emissions through efficiency
- Switch to renewable energy
- Buy carbon credits or RECs to compensate for carbon pollution
- Instill curriculum with climate science & action

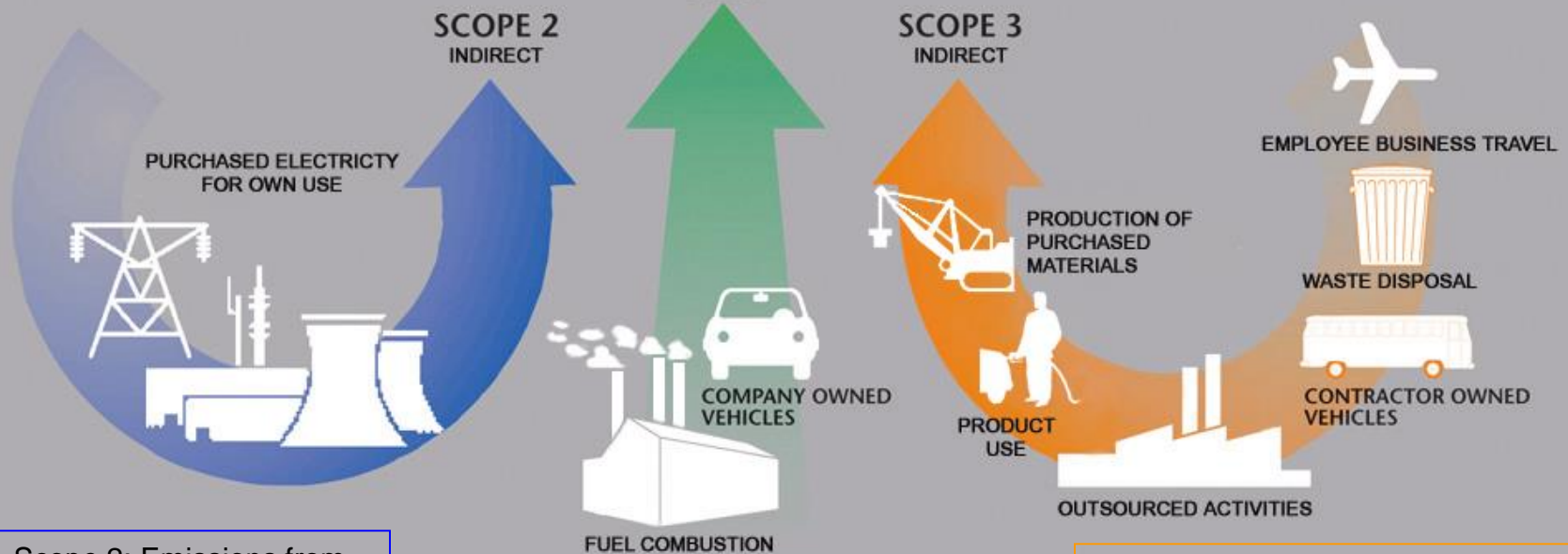


What Does a University Carbon (GHG) Inventory Look Like?

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 transportation and waste disposal



Priorities in Addressing Carbon Emissions

Carbon Mitigation Structure



AVOIDANCE:

- Prevent activities before they start
- **Example:** Increase space utilization instead of building or acquiring new space

ACTIVITY:

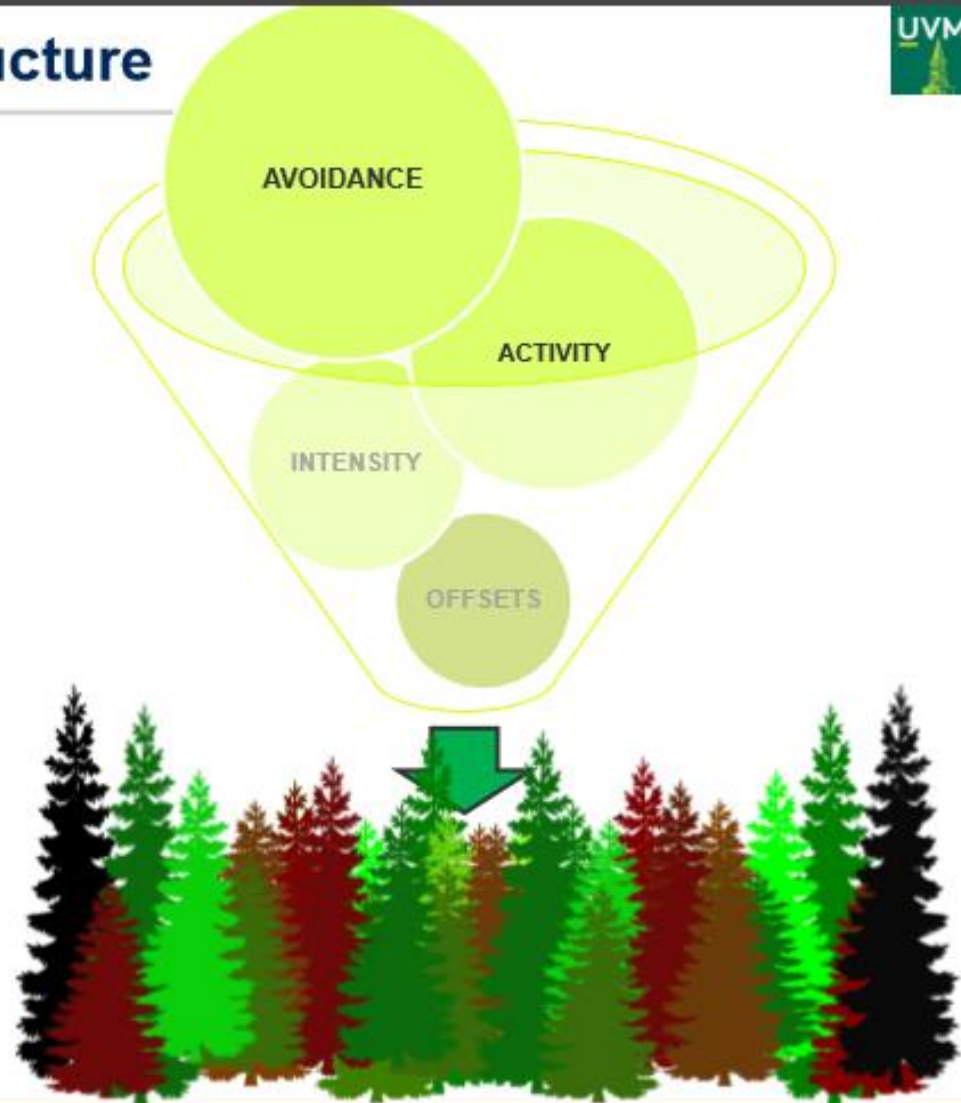
- Reduce the existing level of an activity
- **Example:** Consume fewer BTUS¹ of energy or travel fewer miles

INTENSITY:

- Lessening the carbon intensity of activities
- **Example:** Fuel switching (coal to natural gas; introducing renewables)

OFFSETS:

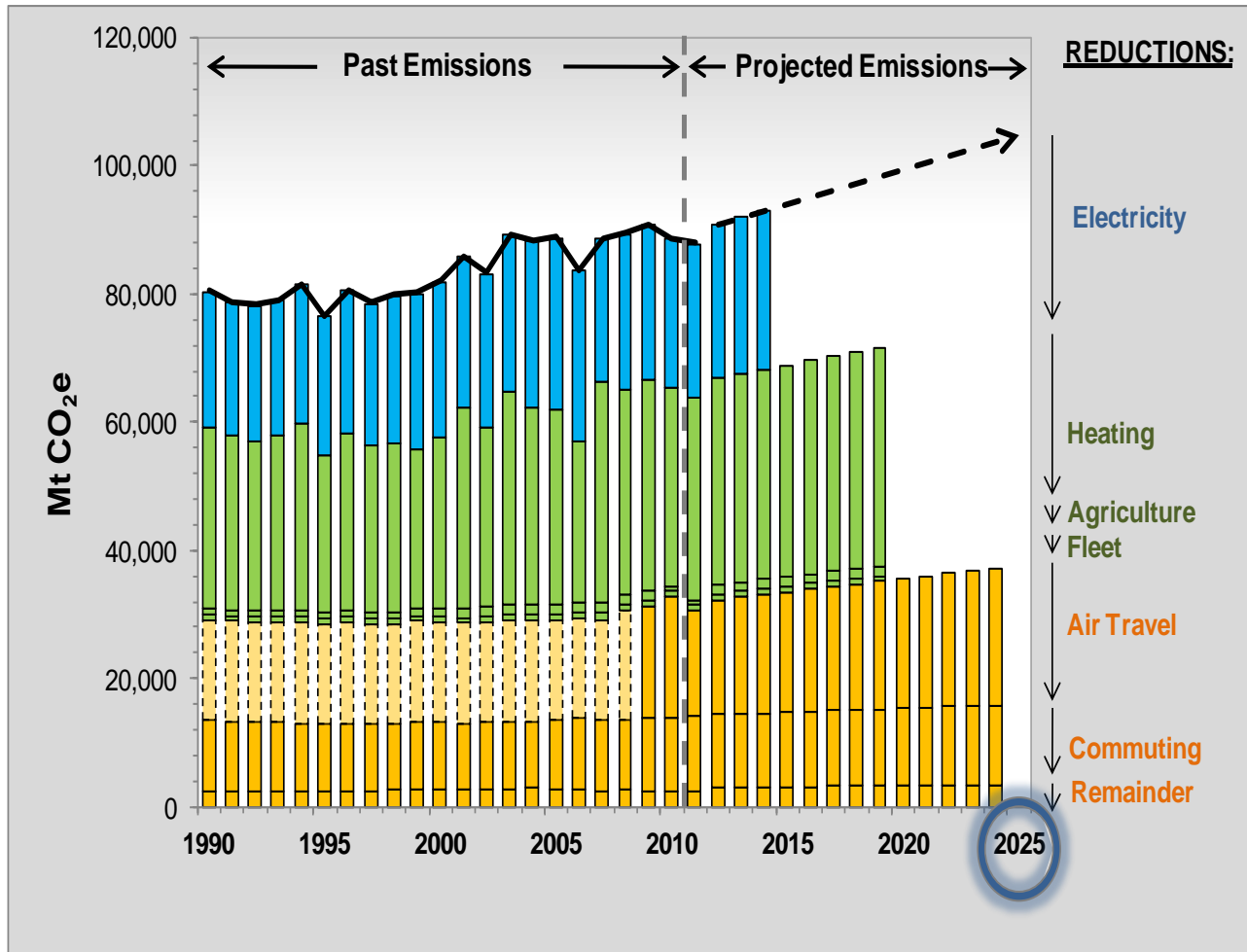
- Utilizing carbon offsets to neutralize unavoidable GHGs
- **Example:** RECs; sequestration; retail offsets





UVM 2010 Climate Action Plan Goals

Climate Neutrality by 2025



In 2010 UVM committed to aggressive carbon-neutrality goals:

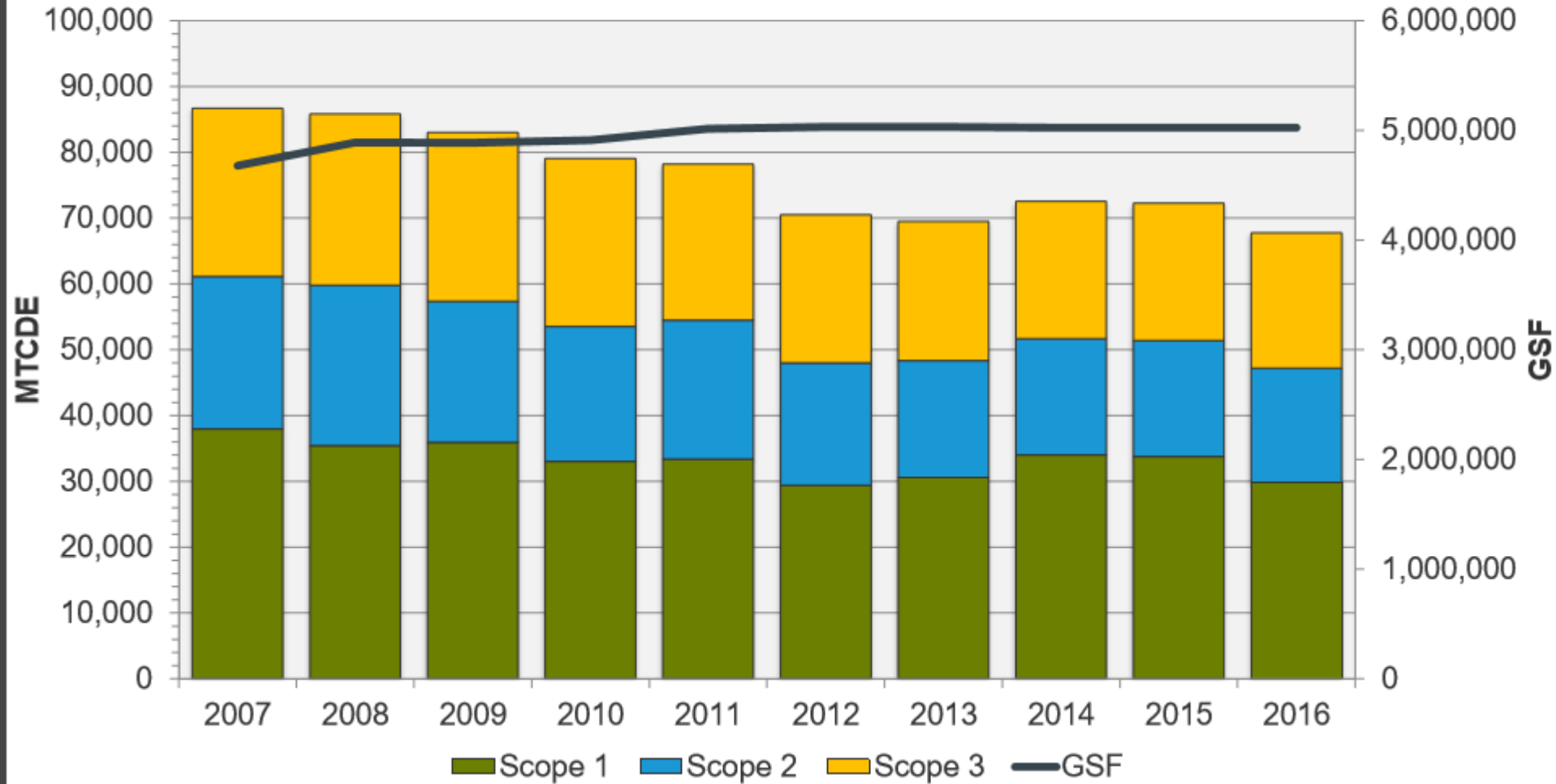
- **2015** for electricity
- **2020** for thermal energy
- **2025** for other major activities.

The commitment includes addressing sustainability in the curriculum.

Gross Emissions vs Campus GSF

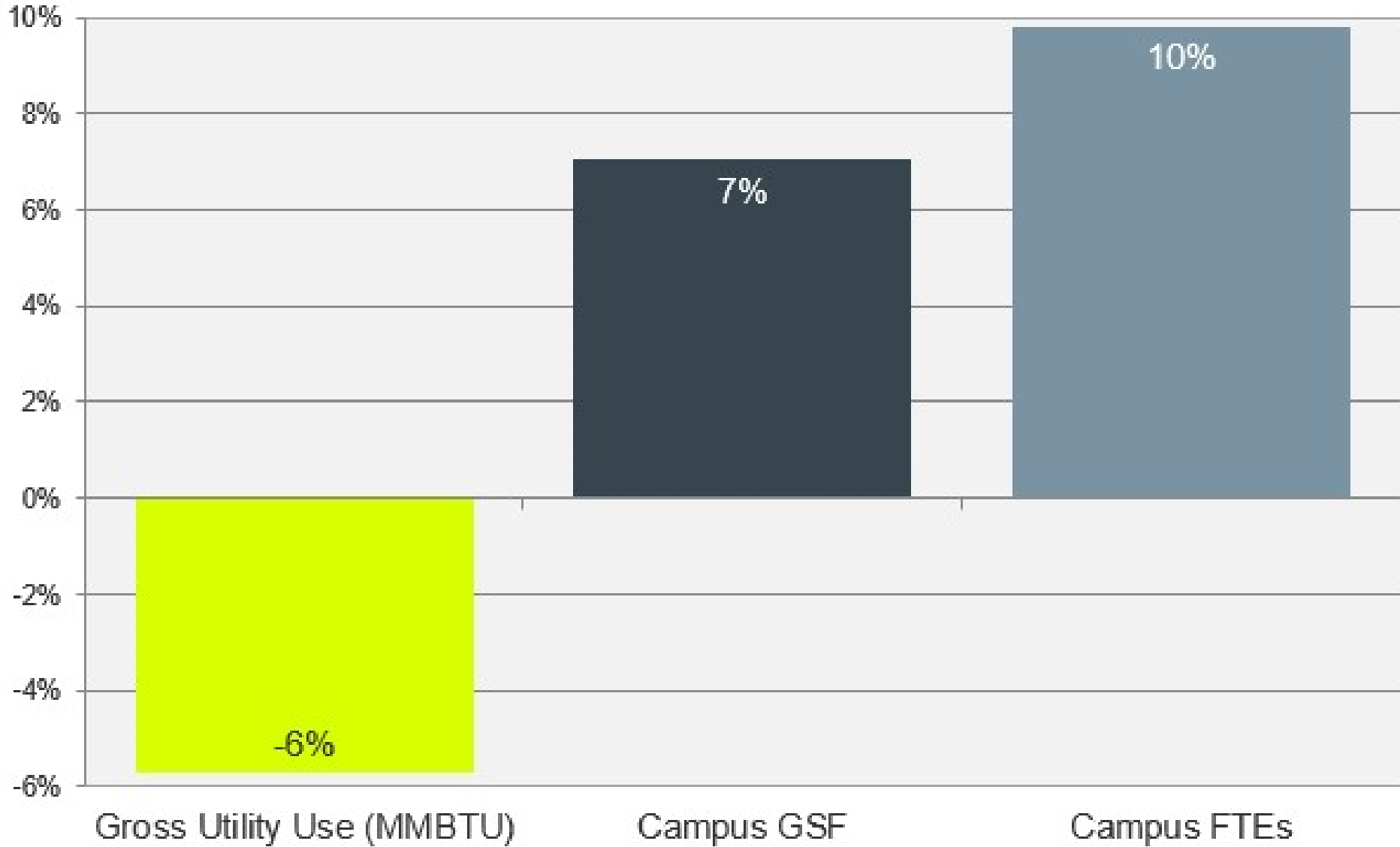
Despite campus growth through course of analysis, emissions decrease

Gross Emissions vs Gross Square Feet (GSF)



Energy Use Relative to Growth

FY2007-FY2014





The Power from the Grid is a Fluid Mix



Renewable Power



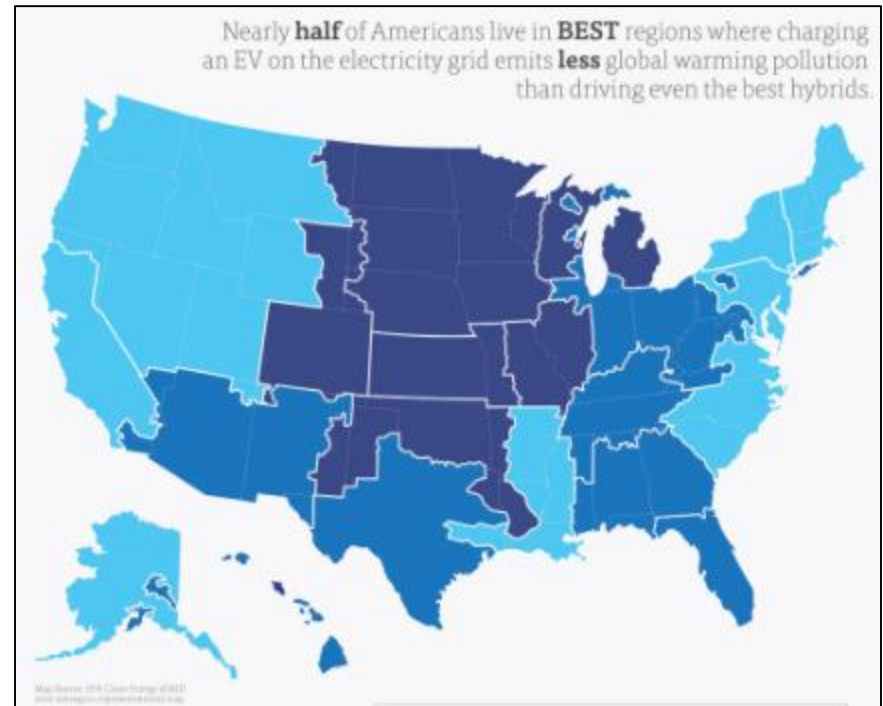
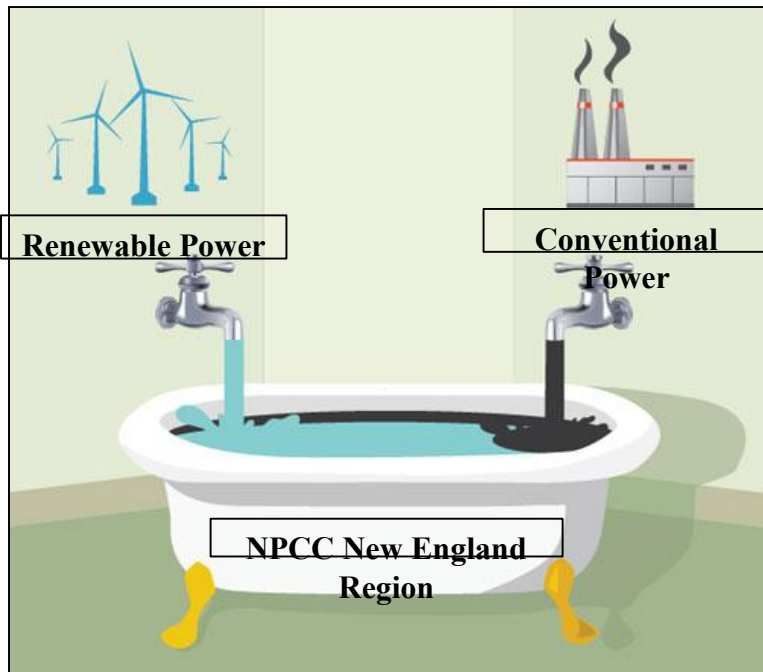
Conventional Power



NPCC New England Region

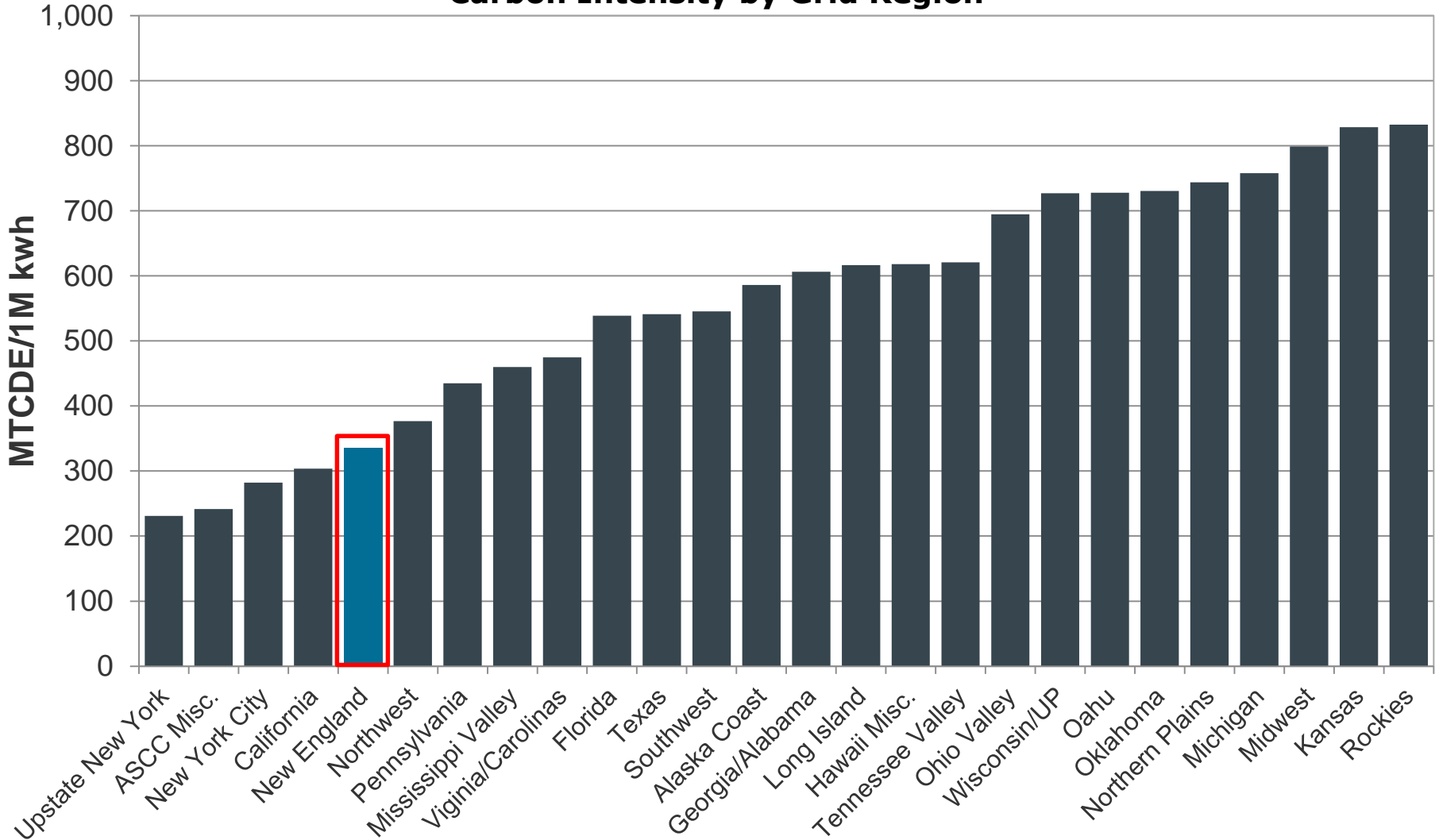


Each Grid Has a Fluid Mix, Some Cleaner



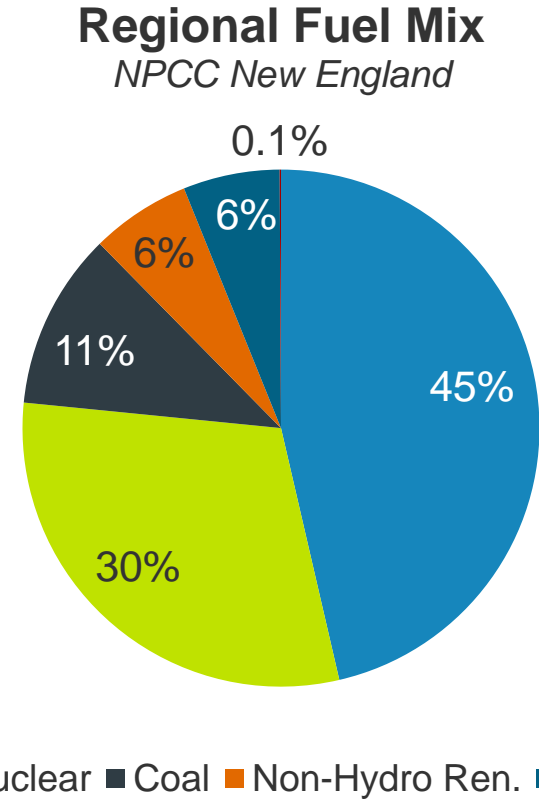
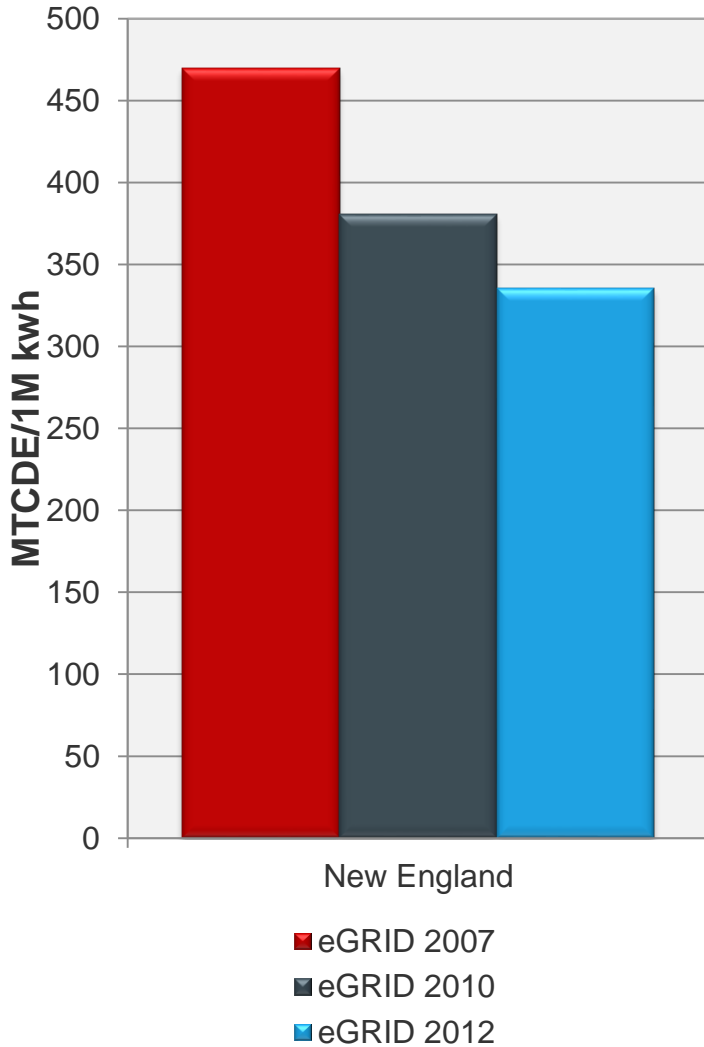
Northeast Is Among the Cleanest Grid Regions in US

Carbon Intensity by Grid Region



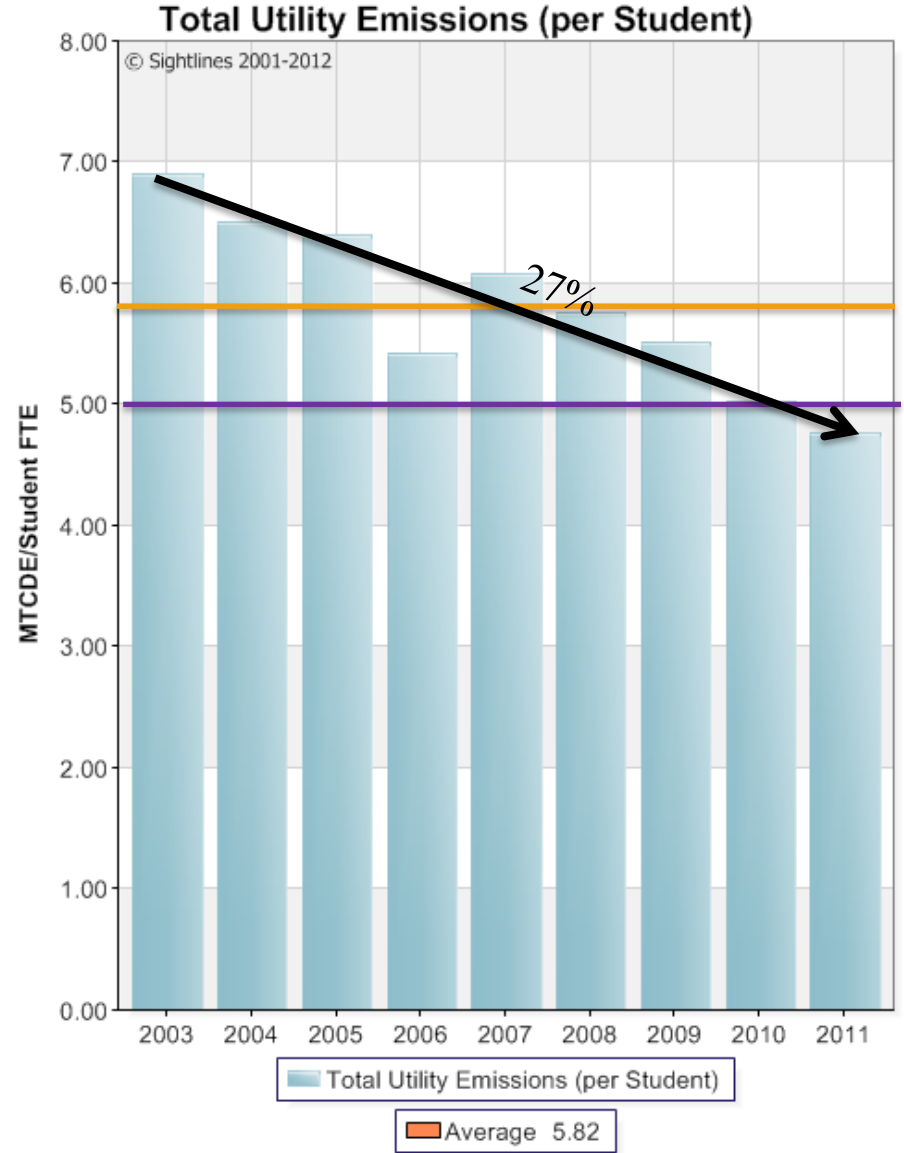
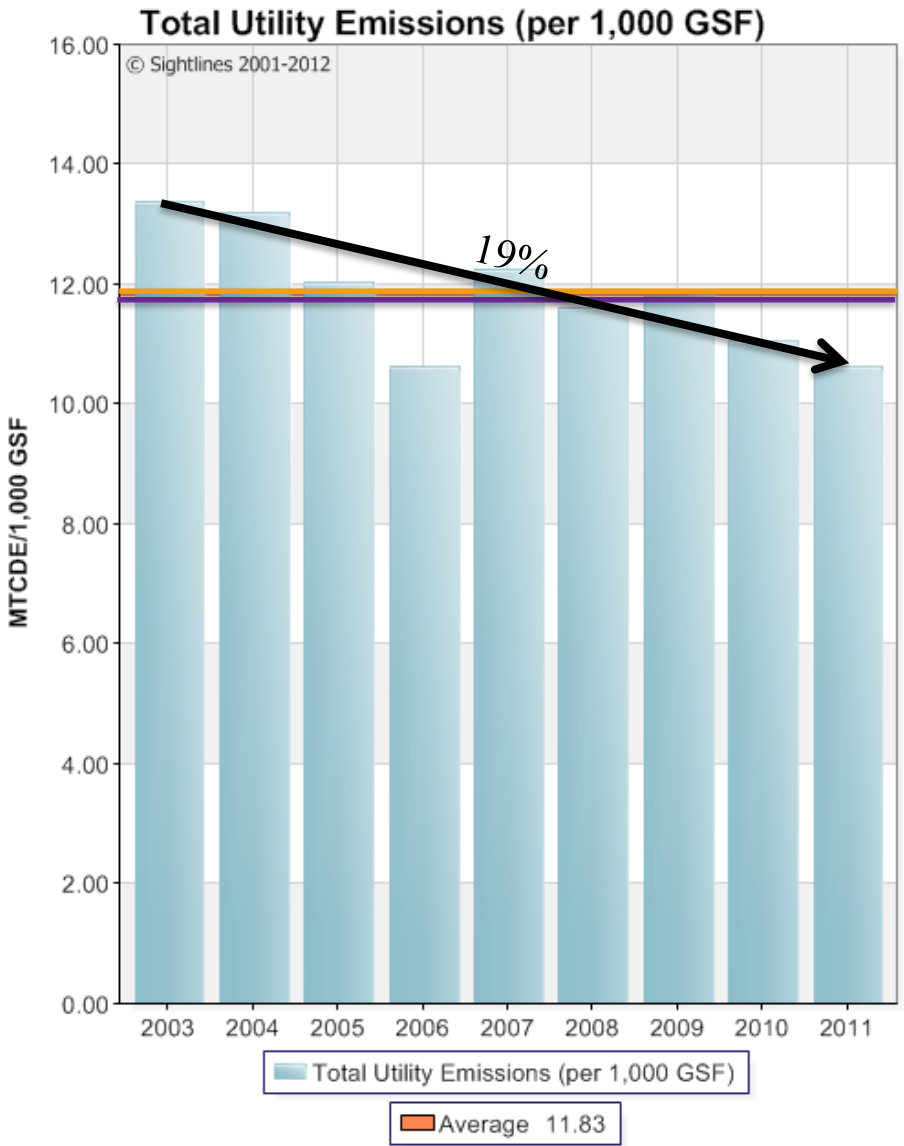
Regional Grid Continues to “Green”

Calculators of GHG use regional grid averages over three-years



Utilizing the EPA eGRID Released in Feb. 2014; Reflects Data Year 2010

Decreasing emissions from utilities

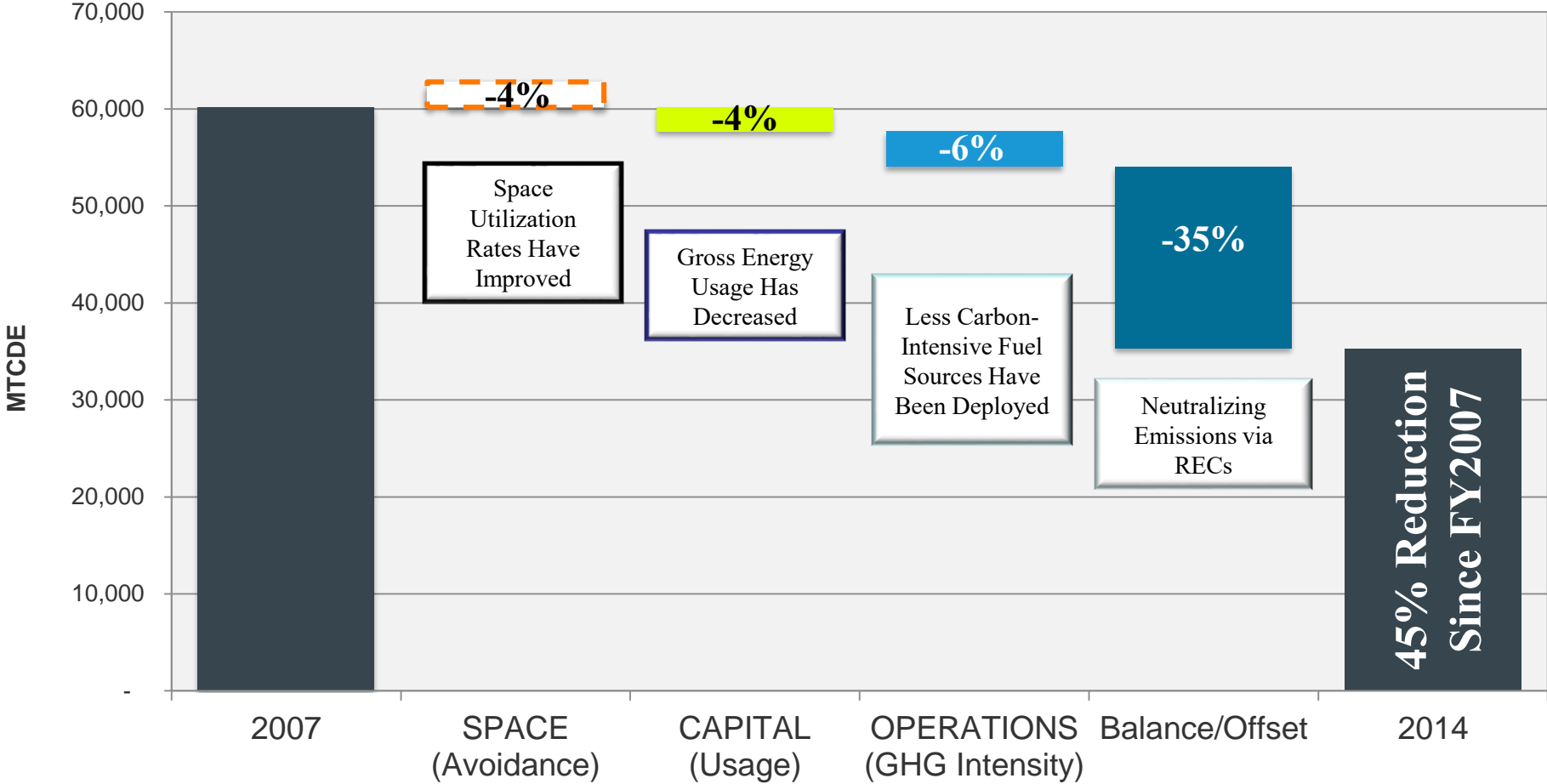


Database Average

Achieved a 45% reduction in net utility emissions since FY07

Net Change in UVM's Utility GHGs by Portfolio

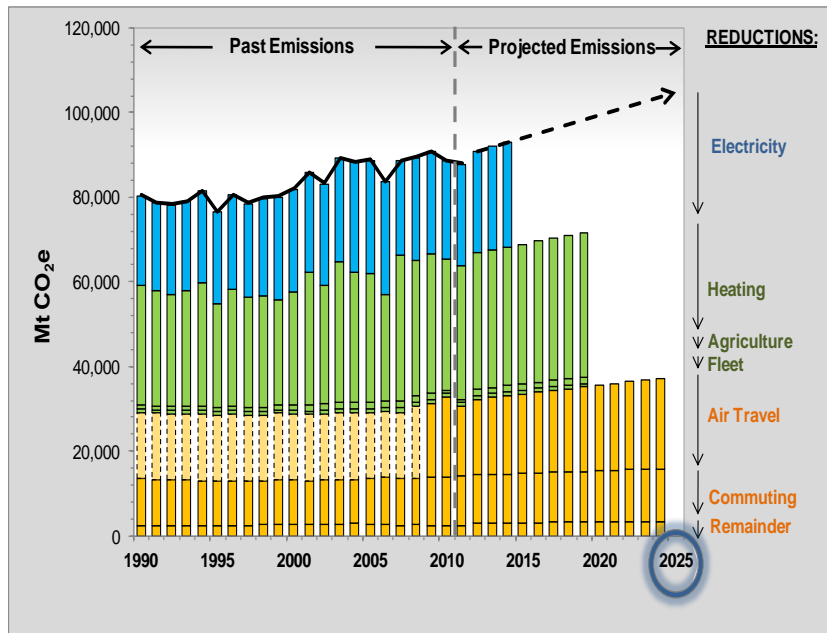
FY2007 – FY2014





UVM 2010 Climate Action Plan Goals

Climate Neutrality by 2025



2007-2017 UVM has:

- **Reversed the upward trend** for energy use by buildings and travel
- **Purchased 100% renewable electricity** through RECs starting in 2015
- **Upgraded the thermal plant** and explored options for renewable thermal energy
- **Reduced travel emissions** for other major activities. Created an Active Transportation Plan.
- Instituted a **general education requirement** for sustainability in the curriculum.

Core Observations

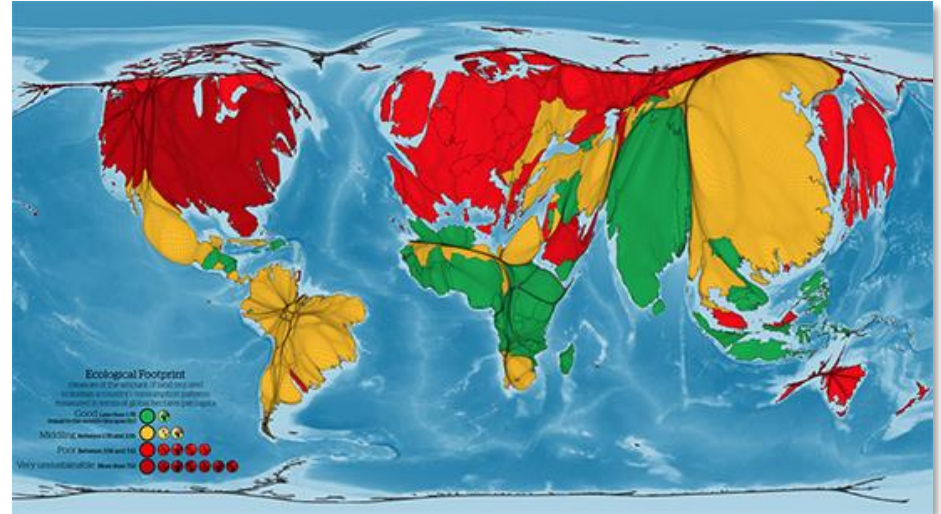
From Sightlines, LLC in 2016, comparing UVM with peers for climate zone, size, and type of institution

- UVM is at a competitive disadvantage when it comes to its physical profile compared to peers; average building size is half the peers, and the buildings are older.
- From the baseline year of 2007, UVM has seen its gross emissions profile decline by 22%.
- UVM has diverted over 45% of its waste through recycling, composting, and other diversion means.
- Through offsets, UVM vastly outperforms peers in both MTCDE/1k GSF and MTCDE/Student FTE



What Students Can Do To Reduce Emissions

- Turn off/unplug unneeded appliances and lights
- Limit electricity-intensive activities from 5-7pm
- Close windows, close shades judiciously
- Walk, use your own power
- Share rides. No idling vehicles!
- Separate waste for recycling
- Talk up what you know, and learn more
- Ask professors about incorporating climate change topics



Train yourself *now* to live more lightly on the planet.
What choices will you make when you leave UVM?