

Sustainability at The University of Montana



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Sustainability: A Core Value at UM

“Consistent with the broader concept of sustainability, the University’s initiatives ultimately seek to enhance students’ understanding of the *interconnectedness of ecological, social, and economic issues.*”

--UM Strategic Plan

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Committing to Action

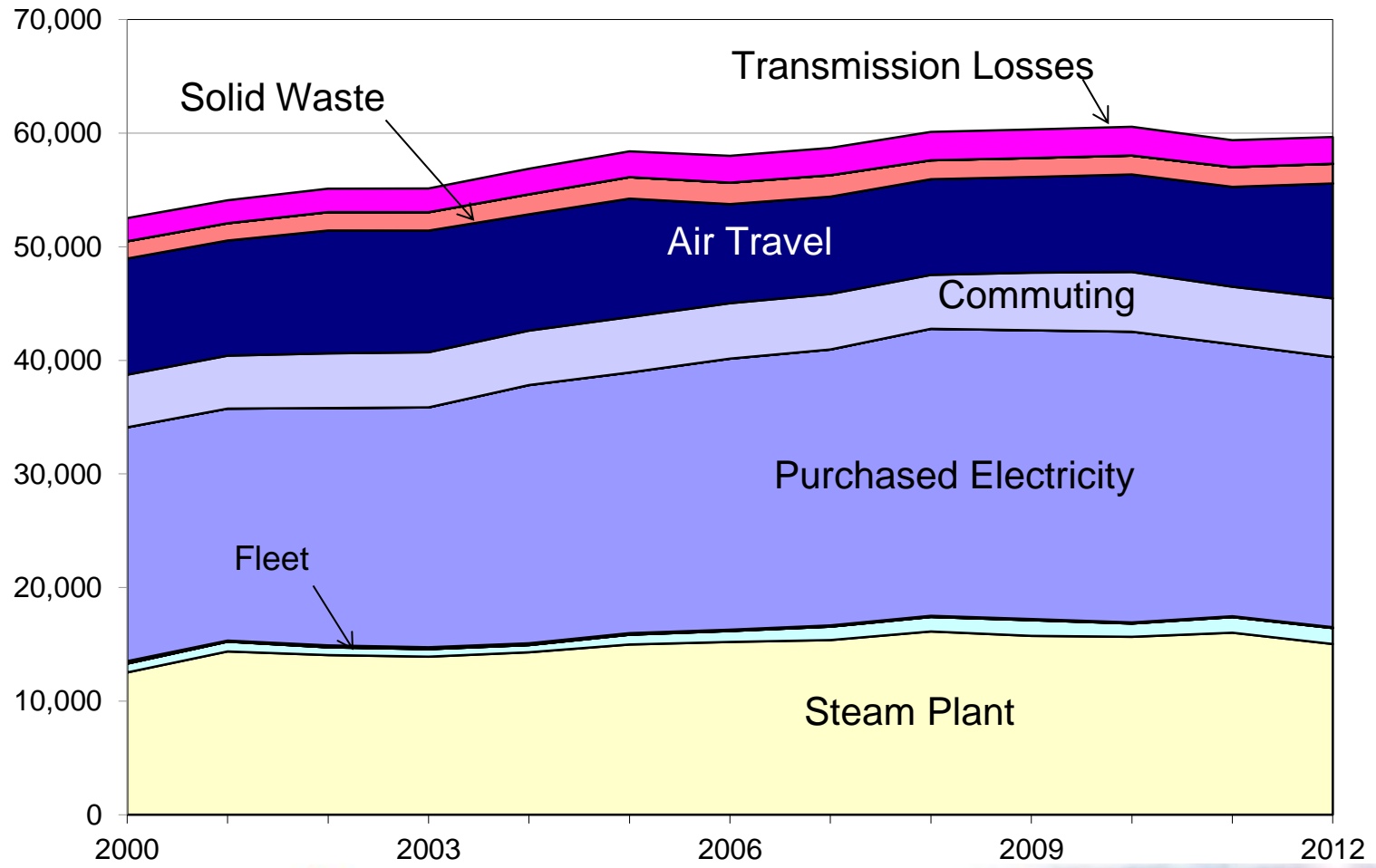
- 2007 American College and University Presidents Climate Commitment
- 2008/2010/2012 Greenhouse Gas (GHG) Inventories
- 2010 Climate Action Plan
 - Climate Neutral by 2020



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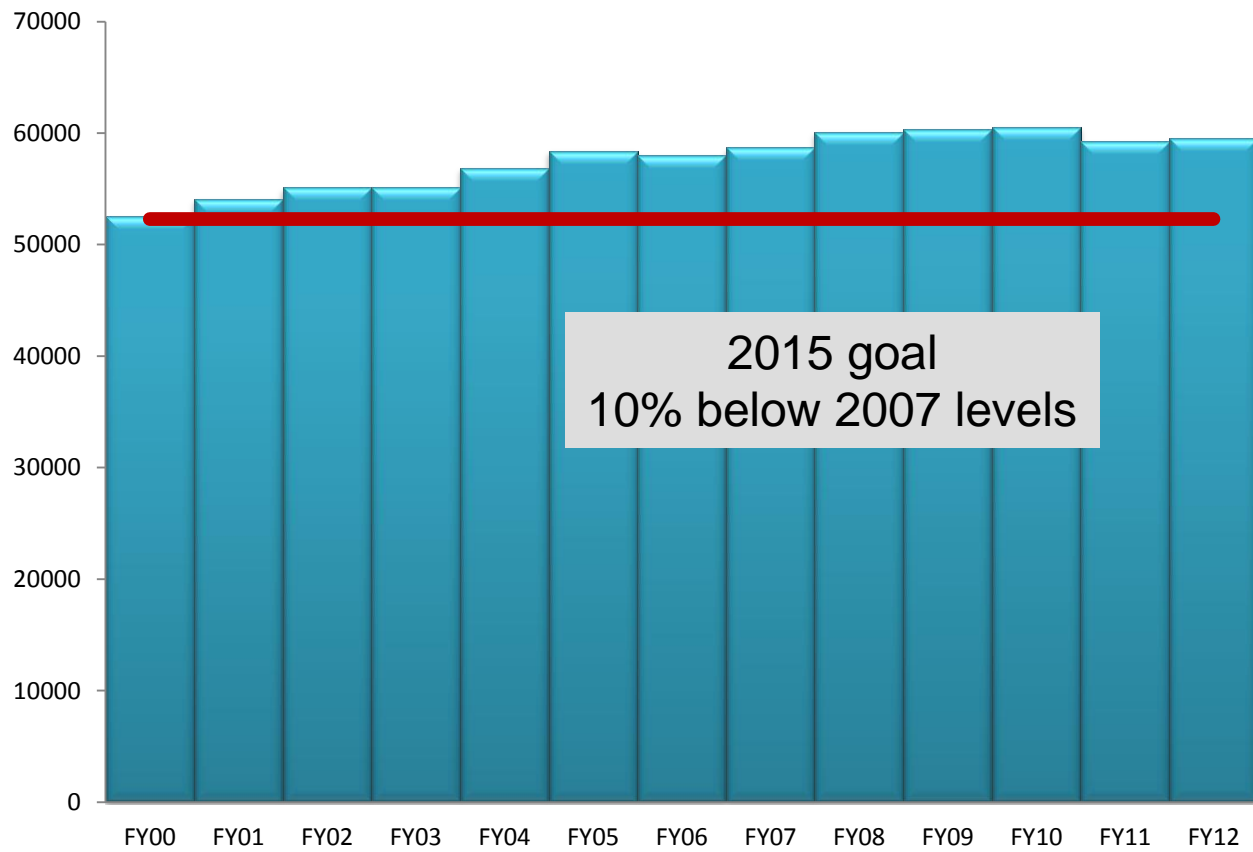
UM Total Emissions MTeCO2 (Metric Tonnes of CO2 Equivalent)



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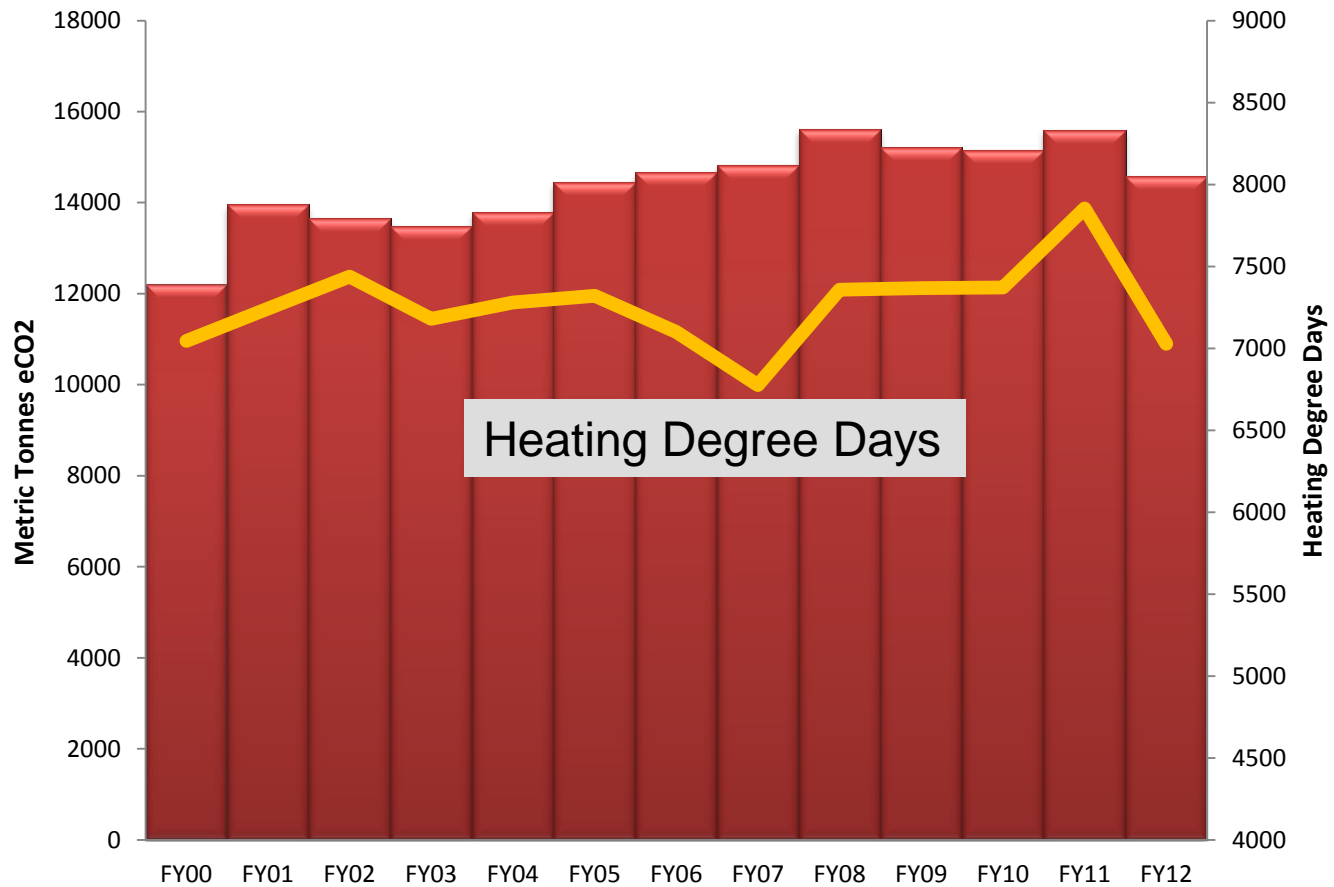
Total Greenhouse Gas Emissions, MTeCO₂



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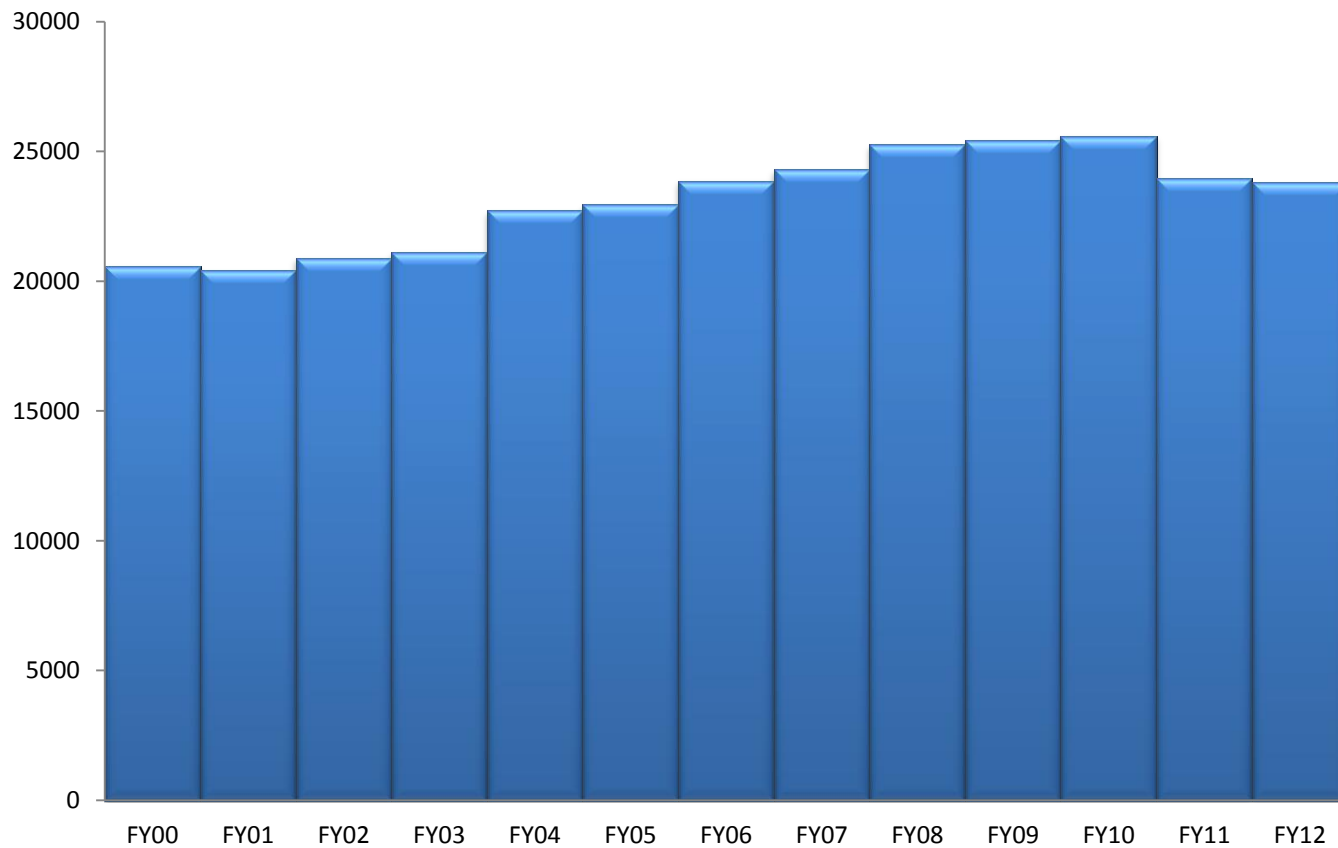
Steam Plant Emissions, MTeCO2 (not normalized for weather)



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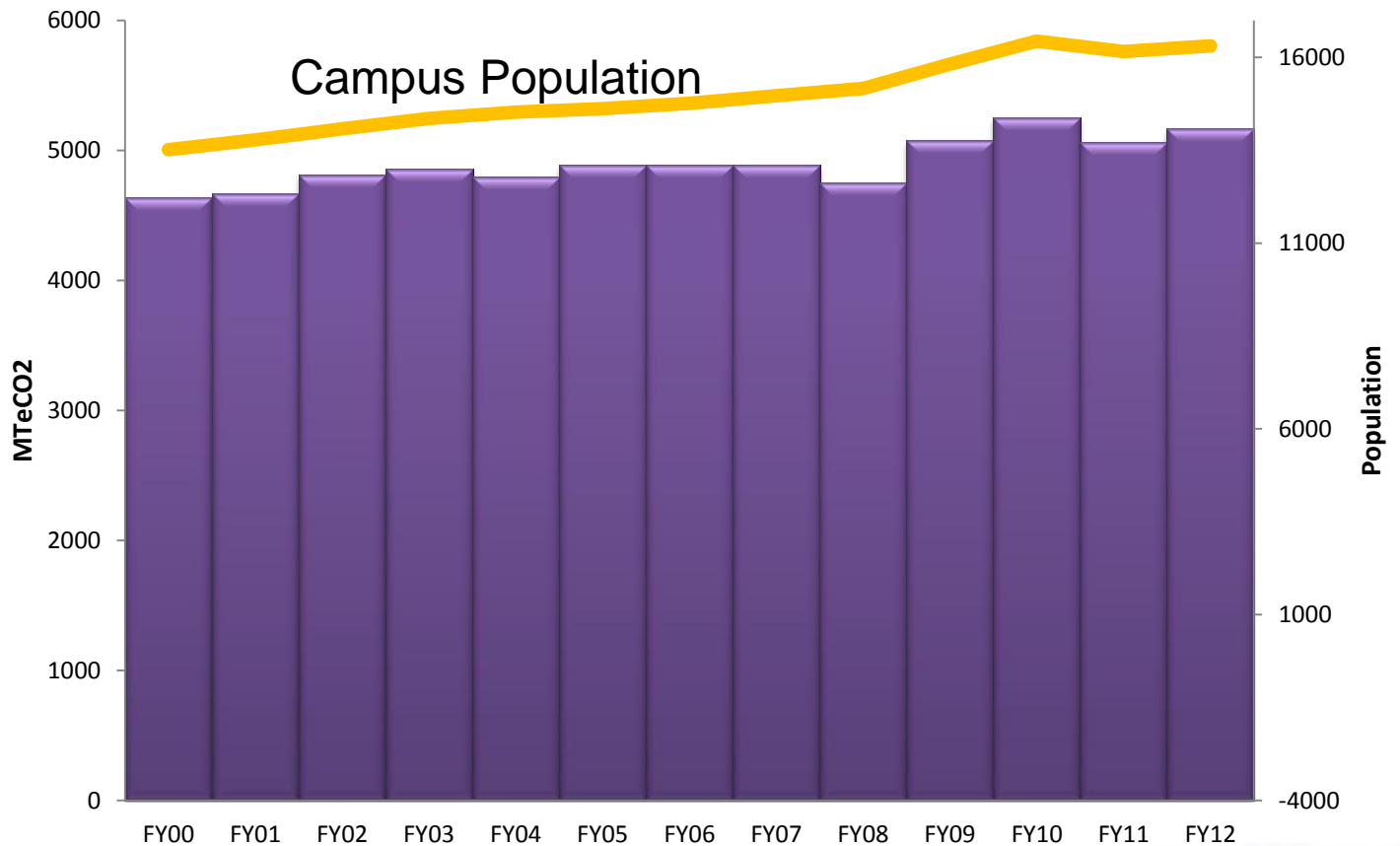
Purchased Electricity Emissions, MTeCO2



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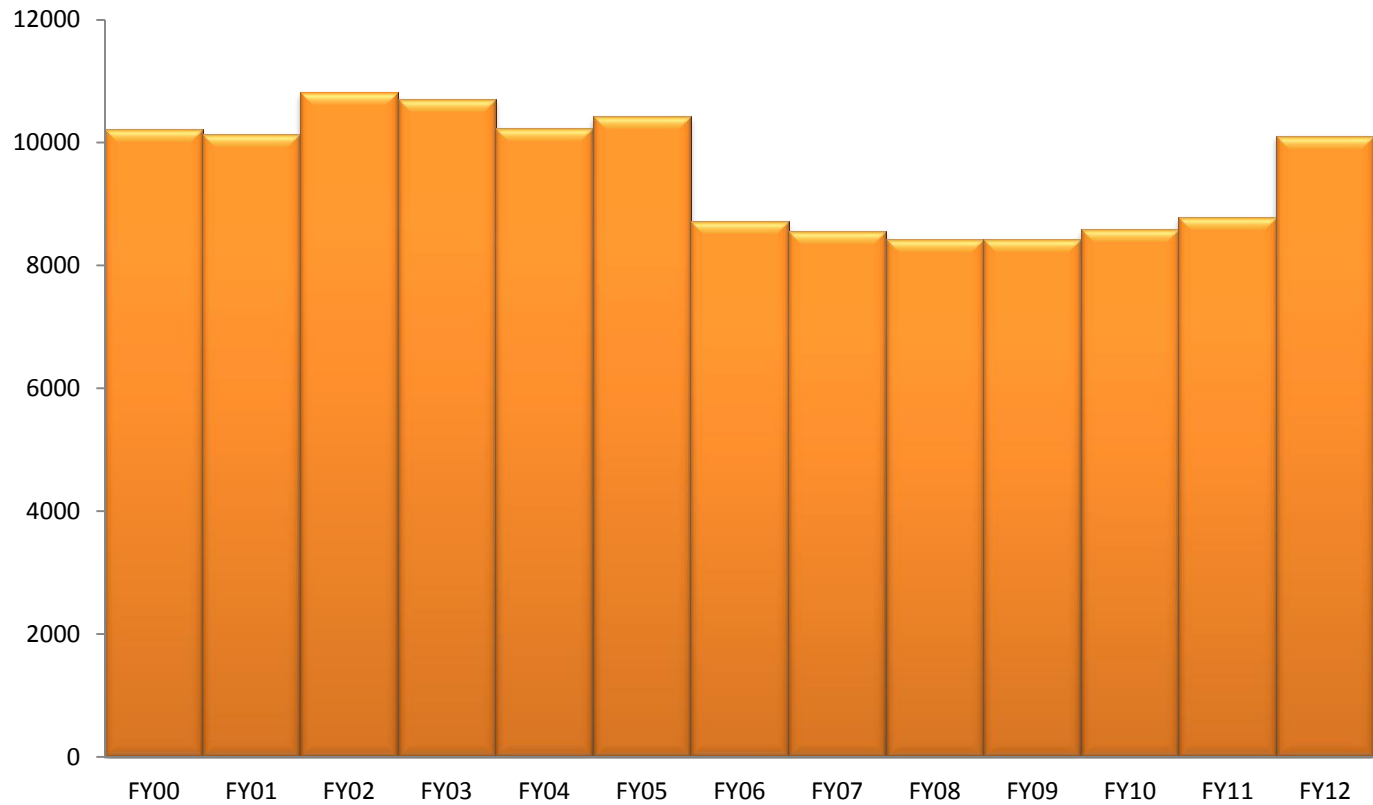
Commuting Emissions, MTeCO2



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Air Travel Emissions, MTeCO2



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Climate Action Plan

2010

The University of Montana
Climate Action Plan



- Strategies to reduce GHG Emissions
- Strategies to include sustainability in education, outreach, and research
- Public Involvement



Energy Efficiency and Conservation

- Energy manager
- Smart meters
- Real-time monitoring
- Energy audits
- Equipment retrofits
- Retro-commission HVAC systems
- Behavior change



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Renewable Energy

- Biomass
- Solar photovoltaic
- Solar thermal
- Wind Power



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Green Buildings

- LEED New Construction (NC) Silver certification required for all new buildings



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Transportation

- Increase incentives to bike, walk, and bus
- Disincentives for parking
- Replace fleet with fuel efficient vehicles
- Increase teleconferencing
- Purchase carbon offsets for air travel



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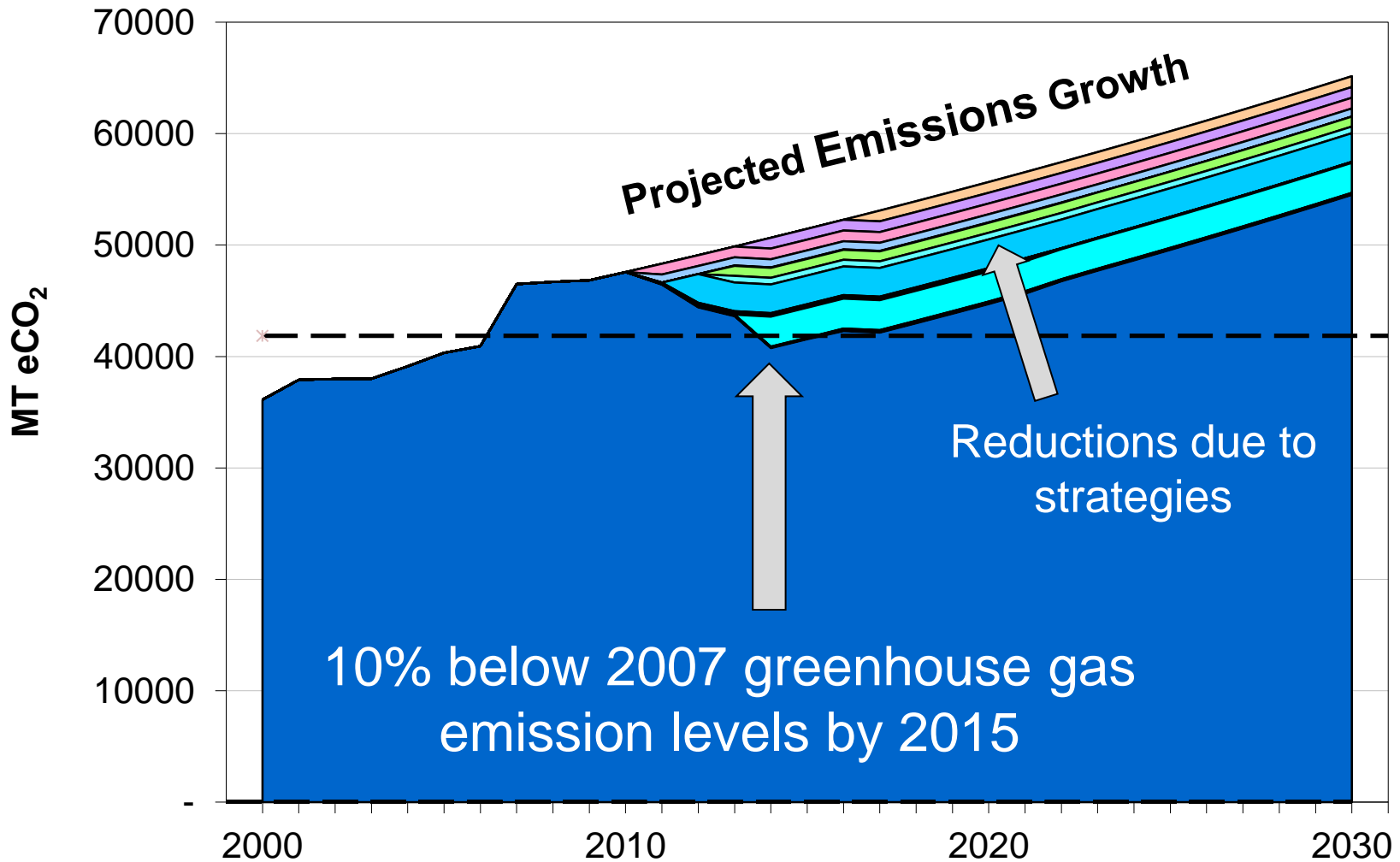
Offsetting Emissions

- Carbon Offsets
- Renewable Energy Credits

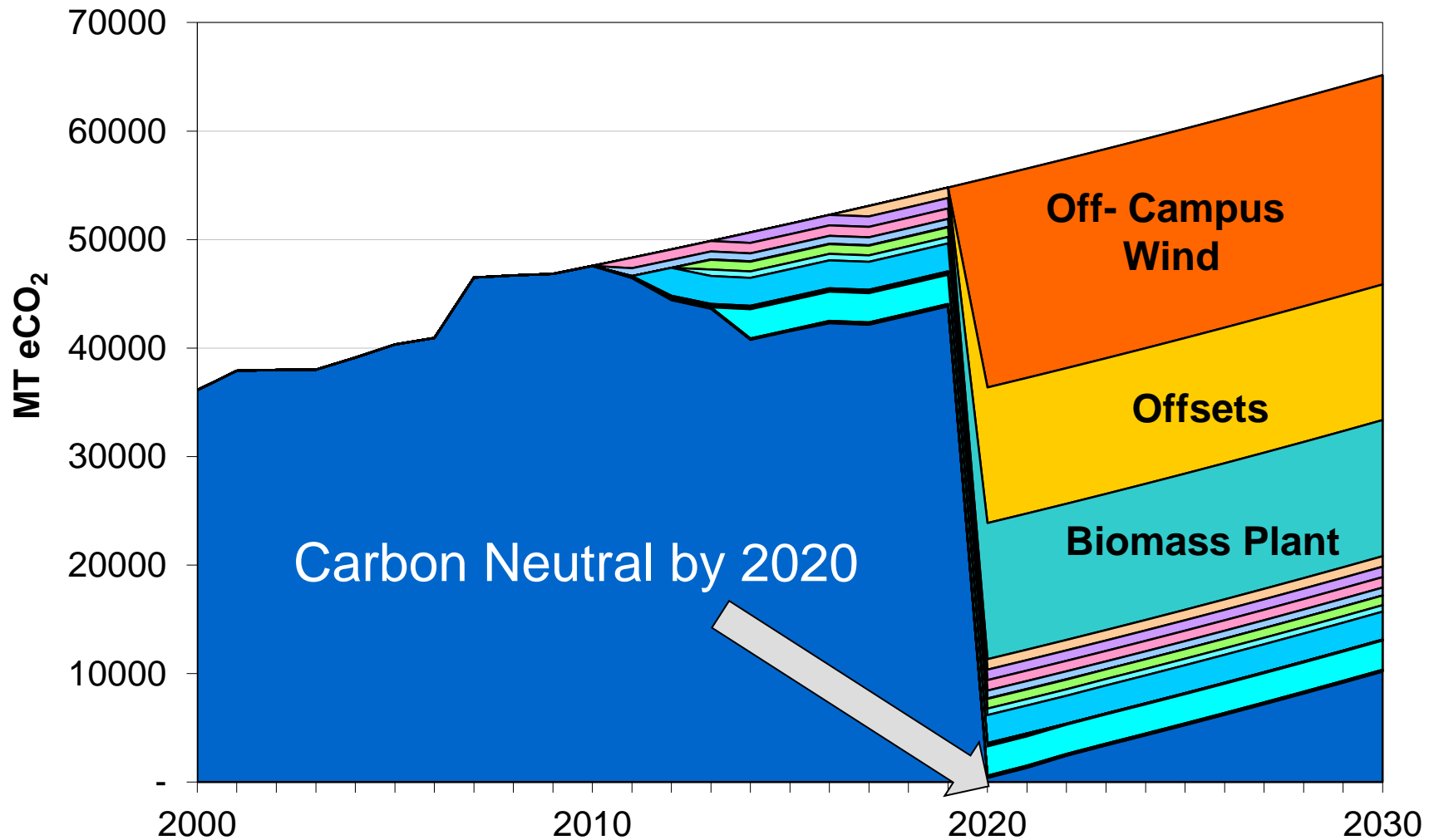


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Climate Action Plan Interim Goal- 10% by 2015



Climate Action Plan Neutrality Target- Carbon Neutral by 2020



Sustainability in the Curriculum

- Climate Change Studies Minor
 - Available to students of any discipline
- Green Thread
 - Faculty training workshop
 - Infuses sustainability throughout the curriculum

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Campus Sustainability

- Recycling
 - Campus-wide
 - Student fee funded
- UM FLAT
 - Forum for Living with Appropriate Technology
 - House dedicated to student experiential learning



Campus Sustainability

- Farm-to-College
 - Locally grown food
 - Campus gardens
 - Composting



- Kless Revolving Energy Loan Fund
 - Student fee created
 - Energy-saving projects
 - Savings pay back loan



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Architecture and Sustainability

“What is ecologically appropriate, what is socially and psychologically valuable, what is beautiful to the eye, what is comforting to the soul - these are all wrapped up together in the global judgment of wholeness.”

Christopher Alexander, author, architect,
professor



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Architecture and Sustainability

- **Why is architecture important to sustainability?**
 - 48% of energy consumed in the US is attributed to the building sector
 - Other sectors are transportation and industry
 - 42% of electricity in US comes from coal
 - 76% of this electricity is consumed by the building sector
 - Architecture 2030 and US Energy Information Administration

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Architecture and Sustainability

- **Why is architecture important to sustainability?**
 - Embodies human values
 - Buildings as connection or barrier with nature
 - Dwelling in alignment with values can create positive feelings

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LEED

Leadership and Energy and Environmental Design

- Internationally recognized green building program
- LEED certification program is managed by the US Green Building Council
- Provides a framework to identify and measure green building strategies
- Payne Family Native American Center achieved LEED Platinum, the highest rating possible

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LEED Certification Process

- Select rating system
 - New Construction and Major Renovation
 - Commercial Interior
 - Core and Shell
 - Retail
 - Schools
 - Homes
 - Healthcare
 - Neighborhood Development
 - Existing Buildings Operation and Maintenance



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LEED Certification Process

- Register project and pay fee (\$1200)
- Submit certification application and pay fee (varies according to scope of project)
 - Application includes templates filled out for each credit
 - Back-up data can be extensive
 - Credits are worth points
 - The more point earned, the higher the rating: Certified, Bronze, Silver, Gold, Platinum

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LEED Certification Process

- Credits, or points, are given for things like:
 - Energy efficiency
 - Green cleaning
 - Using local or recycled-content materials
 - Water efficiency
 - Daylight and views for people occupying building
 - Renewable energy
- USGBC reviews application and grants certification

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LEED Credentials

- LEED professionals
 - LEED Green Associate
 - LEED Accredited Professional with specialty
 - LEED Fellow
- LEED at UM
 - All new buildings will be minimum LEED Silver
 - LEED EBOM (Existing Building Operation and Maintenance) researched and implementation planned if funded

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Payne Family Native American Center



- LEED Platinum certified
- Second-most energy efficient building on campus for heat and power

(Rankin Hall most energy efficient but it is not fully conditioned and the NAC is.)

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More Information

<http://www.umt.edu/greeningum/>

Office of Sustainability

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