

**GHG Inventory Update Summary**  
**December 2014**  
**Data: FY 2013 & FY 2014**  
**Submitted by: Eva Roche, Sustainability Coordinator**

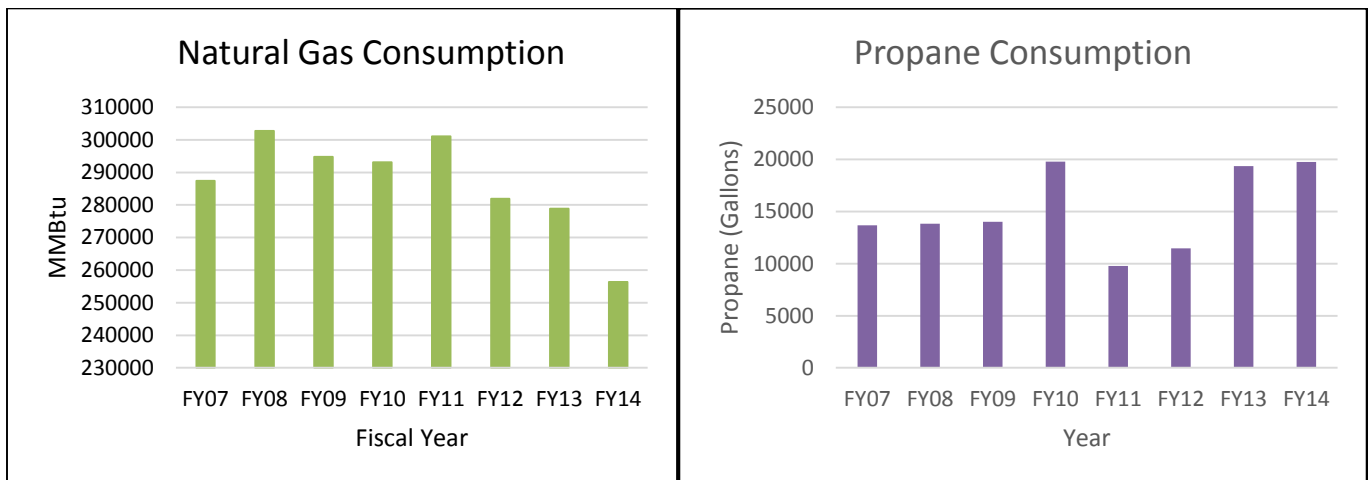
The American College and University Presidents' Climate Commitment (ACUPCC) requires biannual updates to university greenhouse gas (GHG) inventories. UM's third update was completed in early December 2014 and indicated a reduction in overall emissions. UM's 2011 and 2012 inventories also indicated a slight decrease in overall emissions, illustrating an **8.5% reduction in overall emissions from 2007 to 2014**. This decrease is due primarily to energy efficiency improvements in our campus buildings and, to some degree, decreased enrollment resulting in less air travel, less commuting, etc. In 2007, the university's emissions totaled **48,699 MTeCO<sub>2</sub>**. By the end of FY 2014, UM's footprint had shrunk to **44,575 MTeCO<sub>2</sub>**. Our goal for 2015 was to reach **43,829 MTeCO<sub>2</sub>**.

The data below includes Missoula College (both campuses), Bandy Ranch, Yellow Bay, UM Main Campus, Salmon Island Lodge, Lubrecht Experimental Forest buildings, and the biological station at Flathead Lake, all of which have been included in previous inventories. The first several charts illustrate campus consumption of electricity, gas/diesel, propane, and other fossil fuels that impact our emissions footprint. The summary concludes with a look at UM's total GHG emissions since FY 2000.

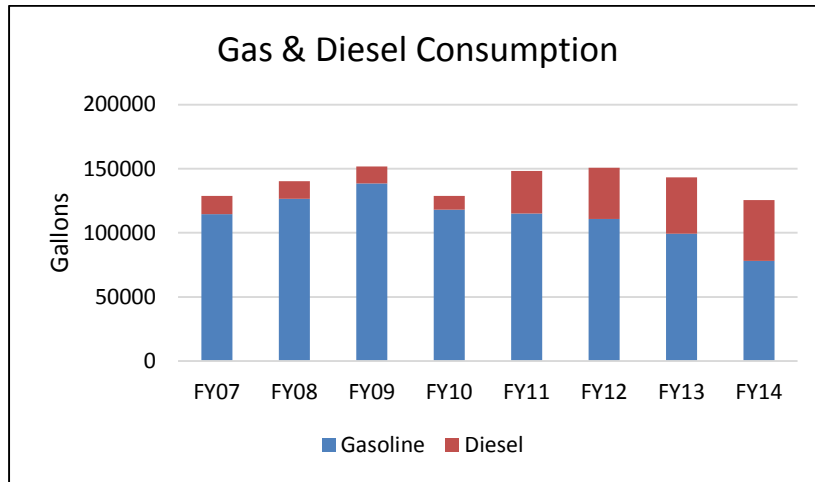
Scope 1:

Scope 1 includes direct emissions from sources that are owned and/or controlled by the University of Montana. For the University of Montana, this includes:

- Emissions from all on-campus fuel combustion (co-gen facility, heating oil, propane)
- Direct Transportation Sources (all fleet vehicles, gasoline & diesel use)
- Agriculture (fertilizer application and methane from livestock)

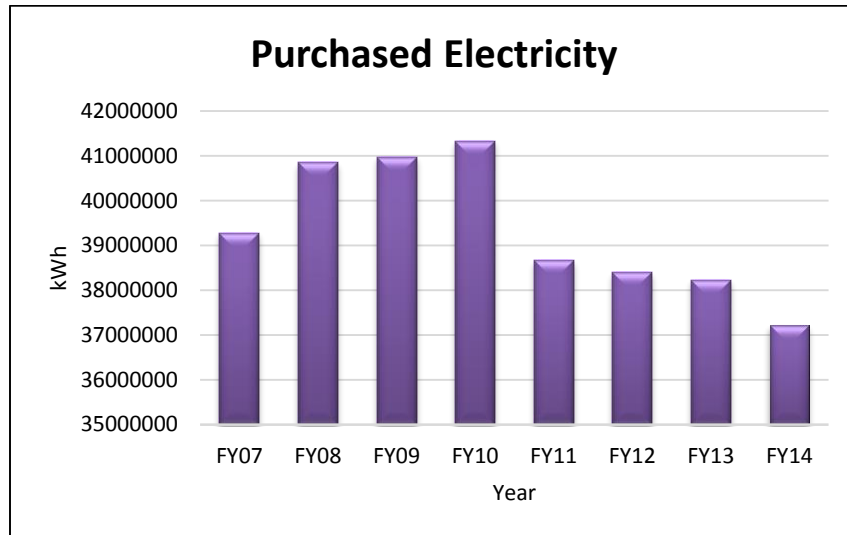


Several of the sites that are included in our inventory, including Lubrecht, Salmon Island, and the Flathead Lake biological station, use propane for the heating of their buildings. This is a possible reason for the increase in propane use from 2012 to 2014, as western Montana experienced a particularly cold winter in at least one of those years. The reasons for the increase in diesel consumption over the last 3 years is unknown. Not illustrated in these graphs but important to consider is our consumption of substantially more distillate (heating) oil in 2014 than in prior years. Because of several weather events, UM consumed 51,502 gallons of fuel oil in 2014 and only 4,661 gallons in 2013.



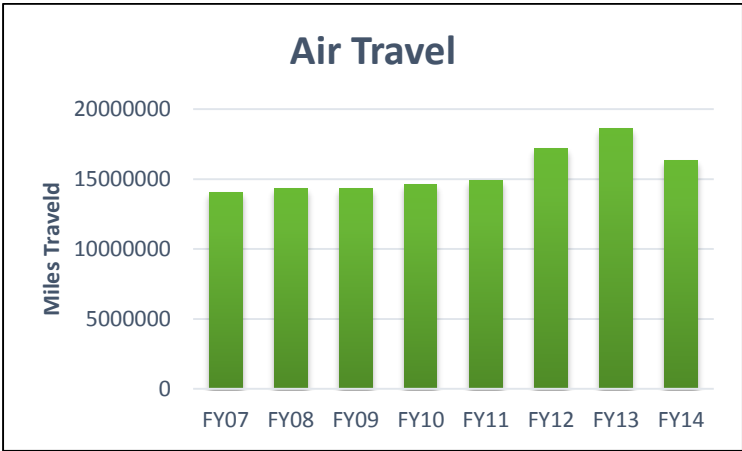
**Scope 2:**

Scope 2 includes indirect emissions from sources that are neither owned nor operated by UM but whose products are directly linked to on-campus energy consumption. For UM, this is simply purchased electricity from Northwestern Energy, Missoula Electric Cooperative, and Mission Valley Power. The chart below indicates a decrease in consumption of energy, but an additional factor in determining UM’s emissions footprint is the emissions factor of our purchased electricity. Simply put, the energy we buy changes in its green attributes, depending on how our utilities generate power (coal, wind, hydro, natural gas, etc.). In past inventories, a custom fuel mix was used to determine the EF of UM’s electricity. Because this information is difficult to obtain from NWE annually, an EPA-generated EF was used for the 2013/2014 calculations.



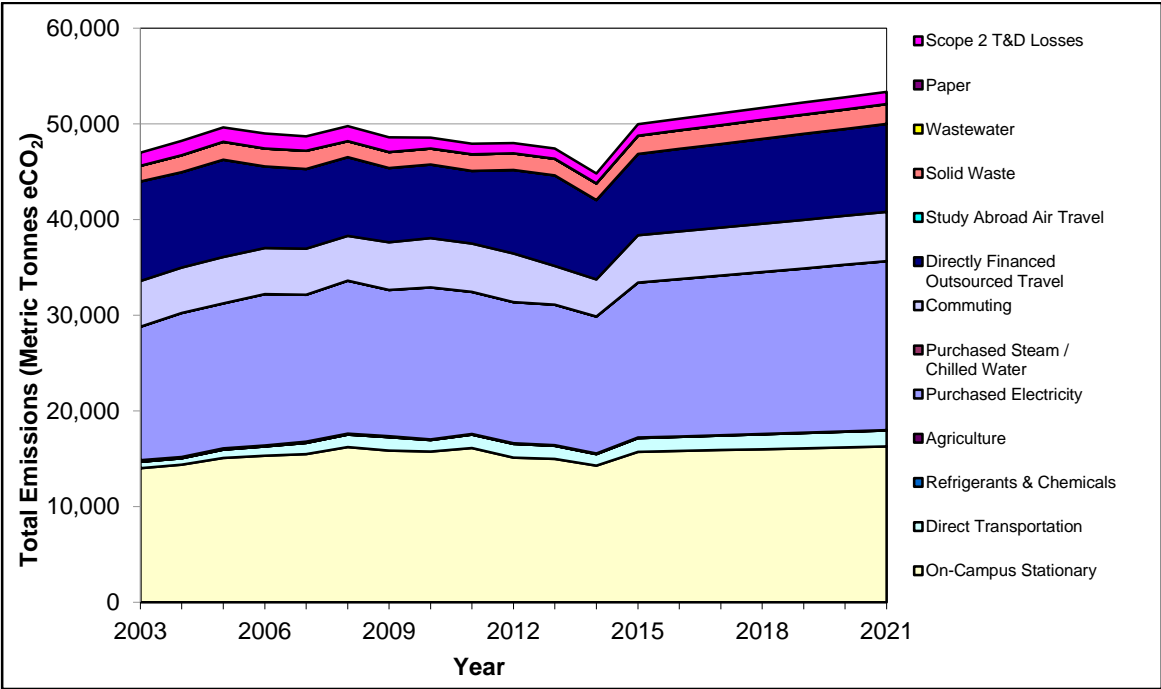
**Scope 3:**

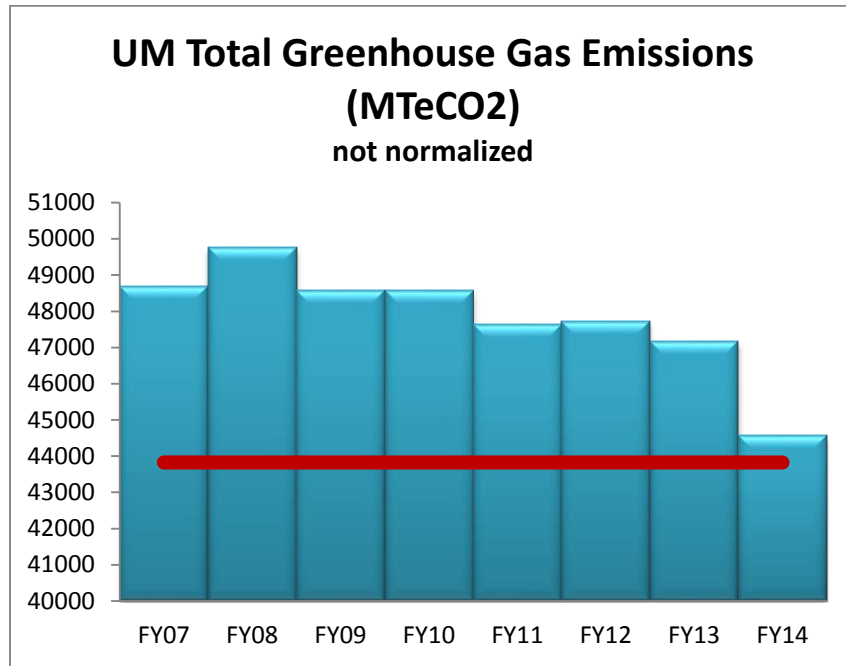
Scope 3 includes other emissions attributed to UM, deemed “operational” emissions by corporate inventories. This includes emissions from sources that are neither owned nor operated by UM but are either directly financed (i.e. commercial air travel paid for by UM) or are otherwise linked to the campus via influence or encouragement (i.e. air travel for study abroad programs, regular faculty, staff, and student commuting). Historically, UM has not included air travel associated with student study abroad programs, but we do include all airfare purchased by UM employees and with UM funds. Also of note is that our commuting data is old (from 2008 survey) and that ASUM Transportation and UM’s Sustainability Office are planning a new survey for spring 2015 that will provide more accurate data on campus commuter habits.



**Conclusions**

In joining the ACUPCC, UM committed to several interim emissions reduction goals. A 10% reduction in emissions below our 2007 emissions levels by January 2015 is the first of these goals. As of our January 15, 2015 reporting deadline, UM has reduced its emissions by 8.5%, not far from the reduction we aimed to achieve! The reduction is largely the result of our commitment to energy efficiency and building improvements over the last 5 years. Our next deadline is in 2016, when we have committed to reducing our emissions by 28% below our 2007 levels. To reach our 2015 goal, students, faculty, and non-academic departments have pulled together to fundraise for carbon offsets that we will be purchasing in January 2015, which will be a smaller quantity than originally anticipated (only 746 MTeCO<sub>2</sub>).





For Comparisons

Institution	Total Gross Emissions	Per Full-Time Enrollment	Per 1000 Square Feet
University of Montana	43,759 MTeCO <sub>2</sub> (2014)	3.6 CO <sub>2</sub> e	12.3 CO <sub>2</sub> e
Montana State University	62,968 MTeCO <sub>2</sub> (2012)	5.1 CO <sub>2</sub> e	14.4 CO <sub>2</sub> e