

February 2014



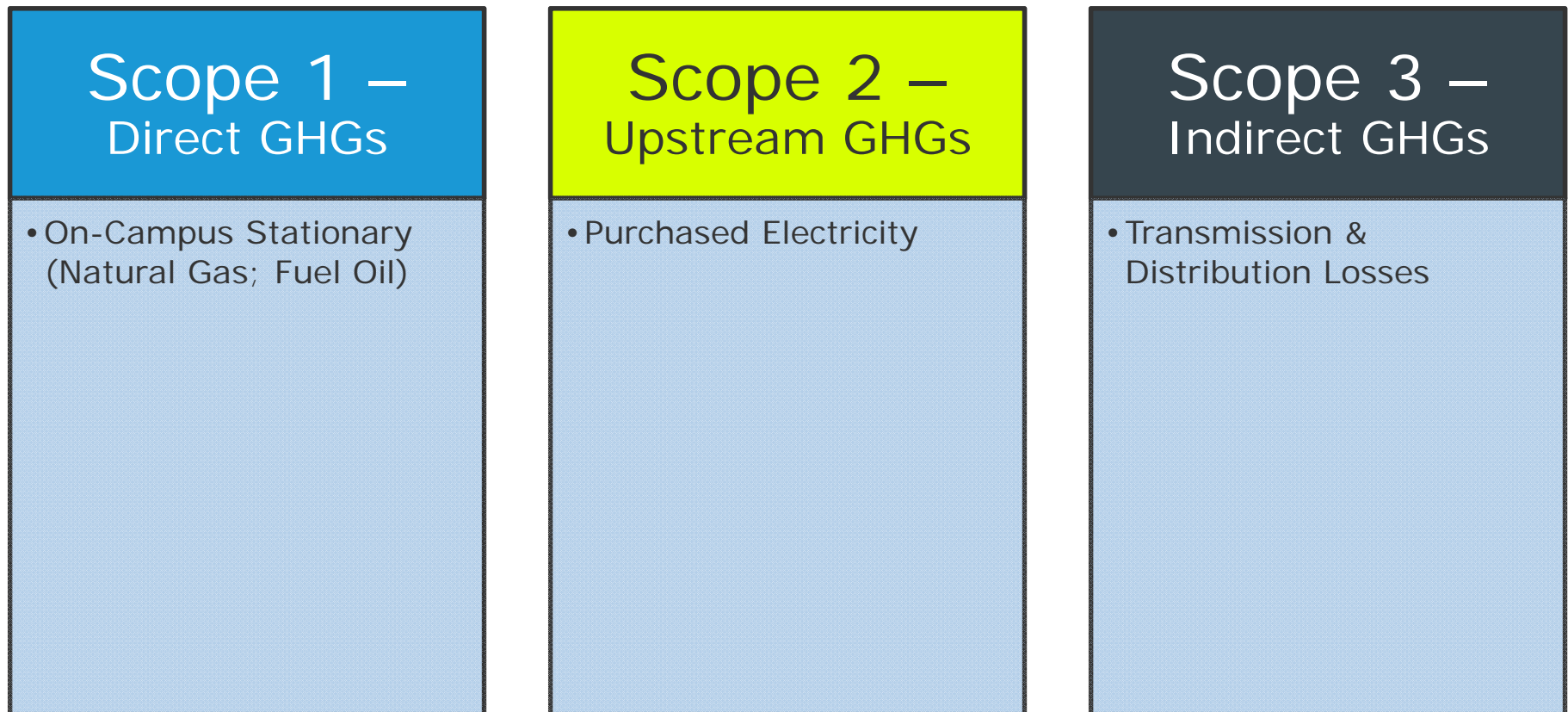
FY2013 Carbon Emissions Analysis

The Maine System



Collected carbon emissions at the Maine System

Analyzing utility-related emissions as MTCDE (Metric Tons of Carbon Dioxide Equivalent)



Sources required by the ACUPCC not included in this analysis:

Scope 1:

- Fleet Fuel
- Refrigerants
- Agriculture

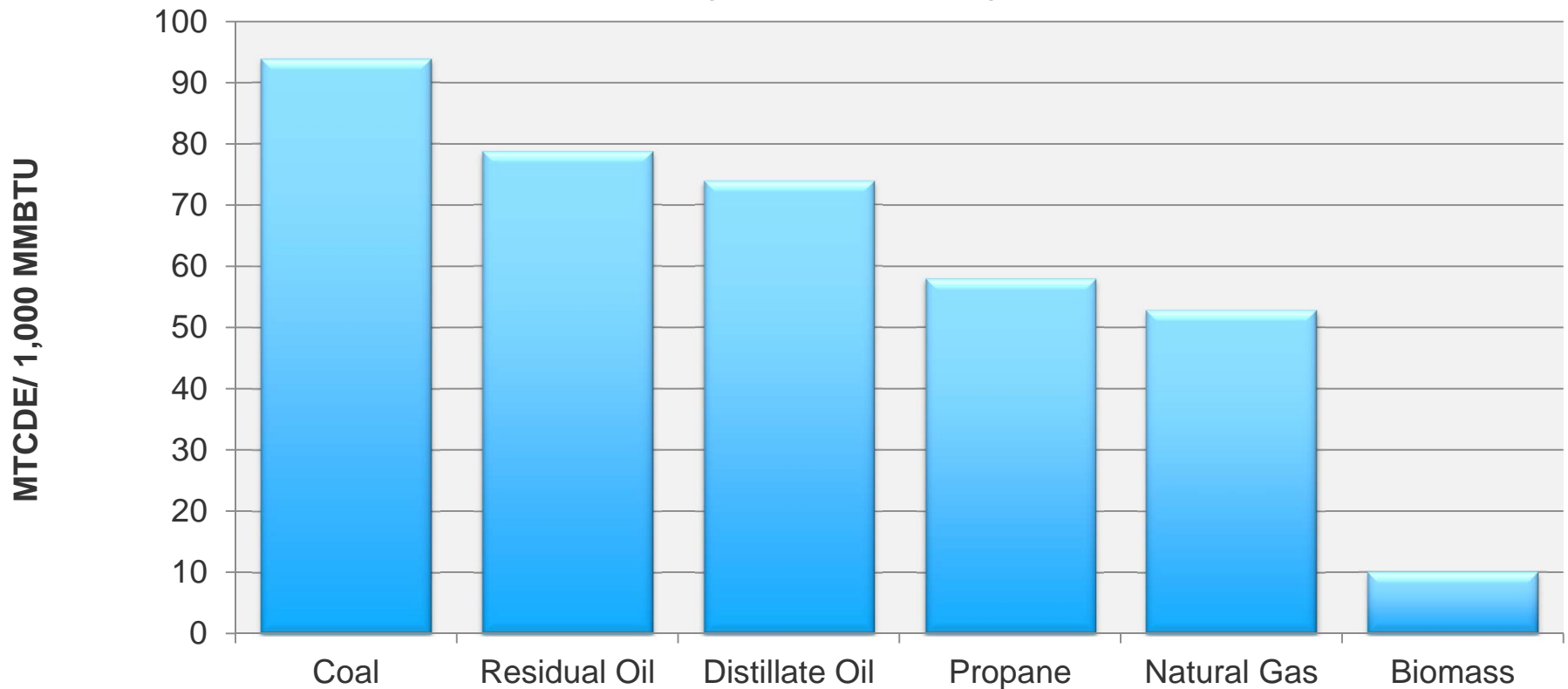
Scope 3:

- Employee & Student Commuting
- Air Travel
- Solid Waste & Wastewater

Carbon intensity of commonly used fuels

Natural Gas is the least carbon-intense fossil fuel

Carbon Intensity of Commonly Used Fuels



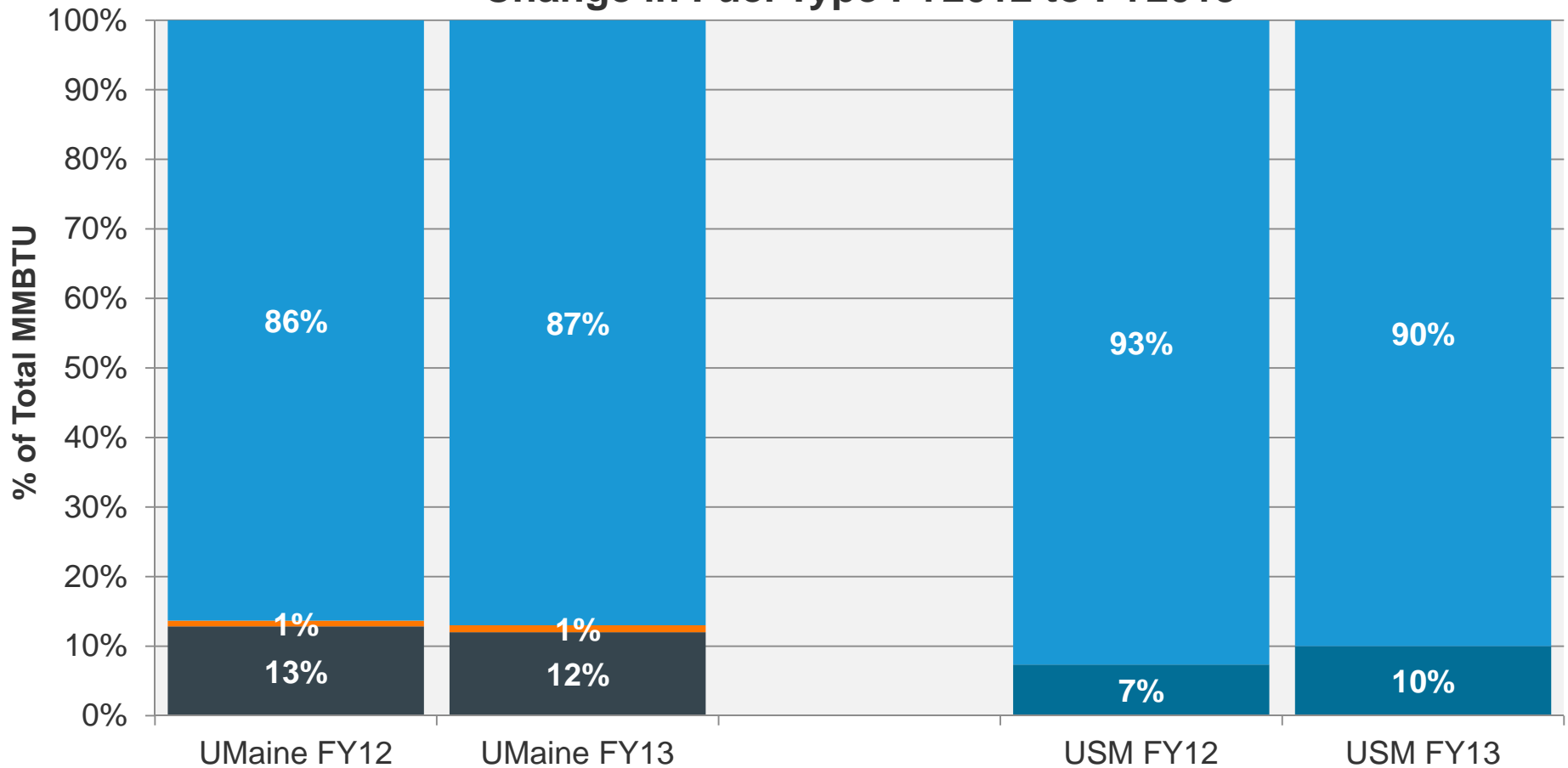
| | | | | | | |
|---------------------------|----|-----|-----|----|-----|----|
| UMaine & USM: | 0% | 10% | 2% | 1% | 87% | 0% |
| Regional Campuses: | 0% | 0% | 89% | 5% | 5% | 1% |

MTCDE = Metric Tons of Carbon Dioxide Equivalent

UMS switching to less carbon intense fuels

UMaine and USM

Change in Fuel Type FY2012 to FY2013

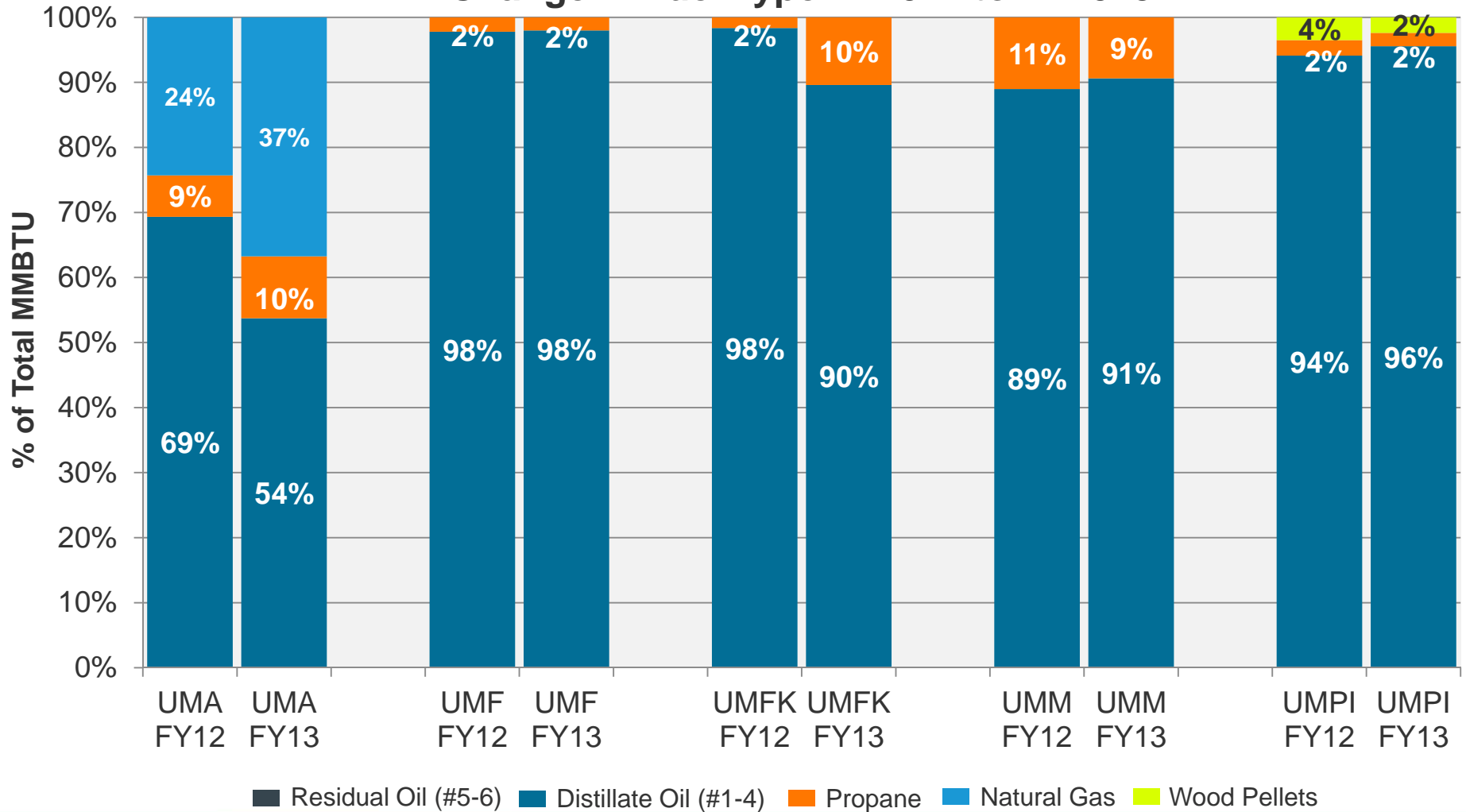


Residual Oil (#5-6) Distillate Oil (#1-4) Propane Natural Gas Wood Pellets

UMS switching to less carbon intense fuels

Regional Campuses

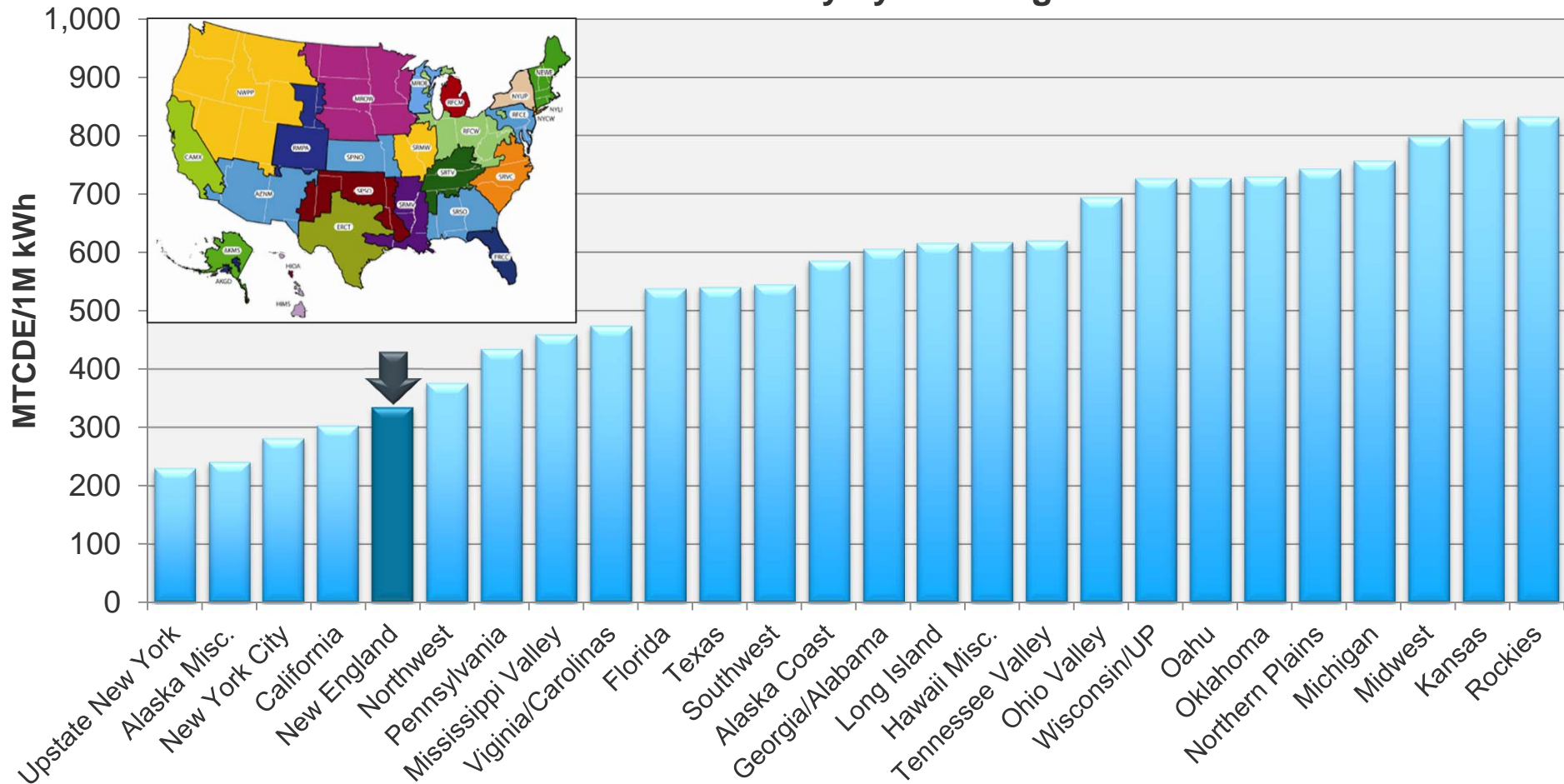
Change in Fuel Type FY2012 to FY2013



Comparing Maine's Grid to other US regions

New England has one of the cleanest eGrids in the country

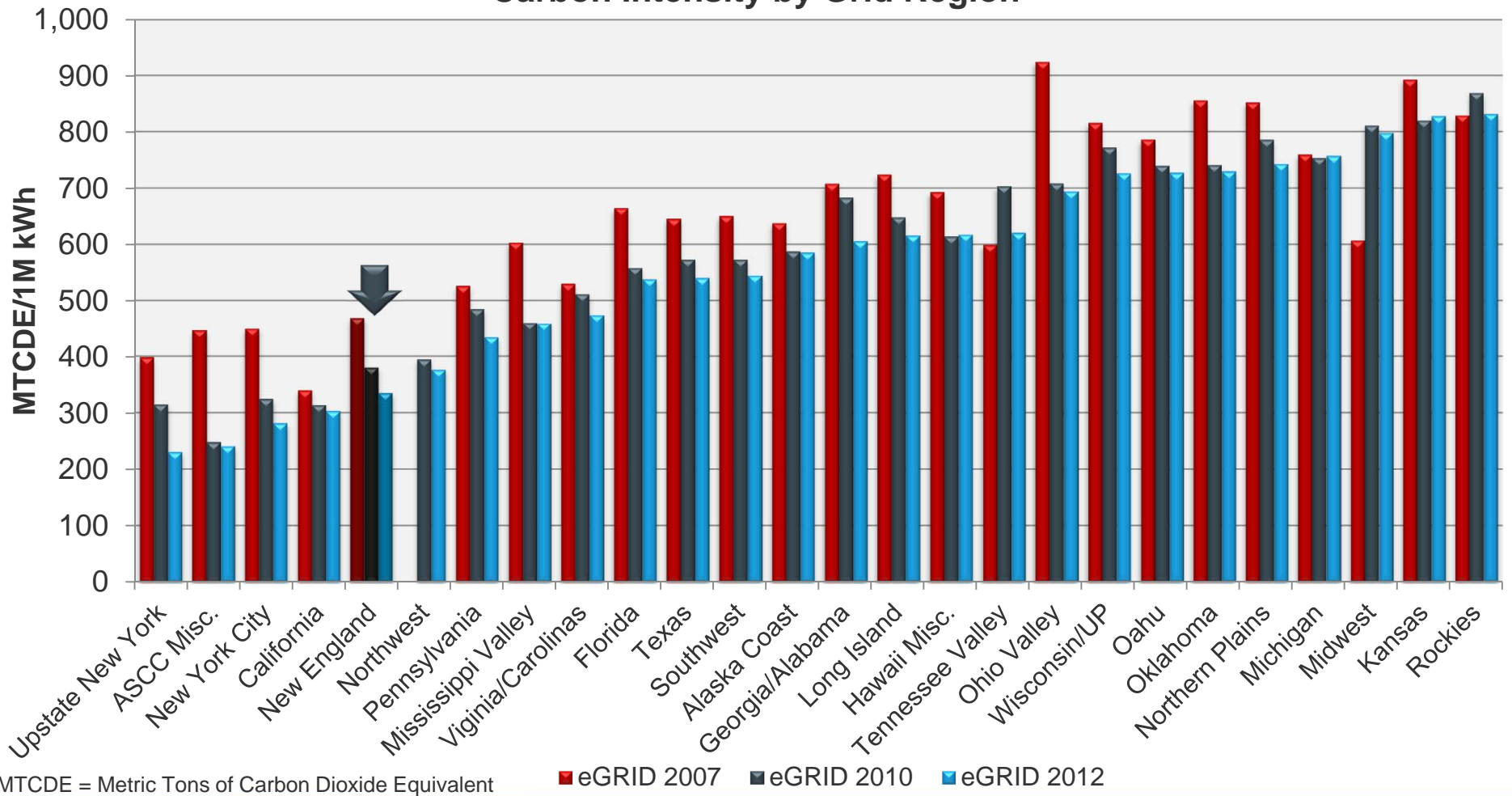
Carbon Intensity by Grid Region



MTCDE = Metric Tons of Carbon Dioxide Equivalent

Maine's Grid getting greener since 2007

Carbon Intensity by Grid Region



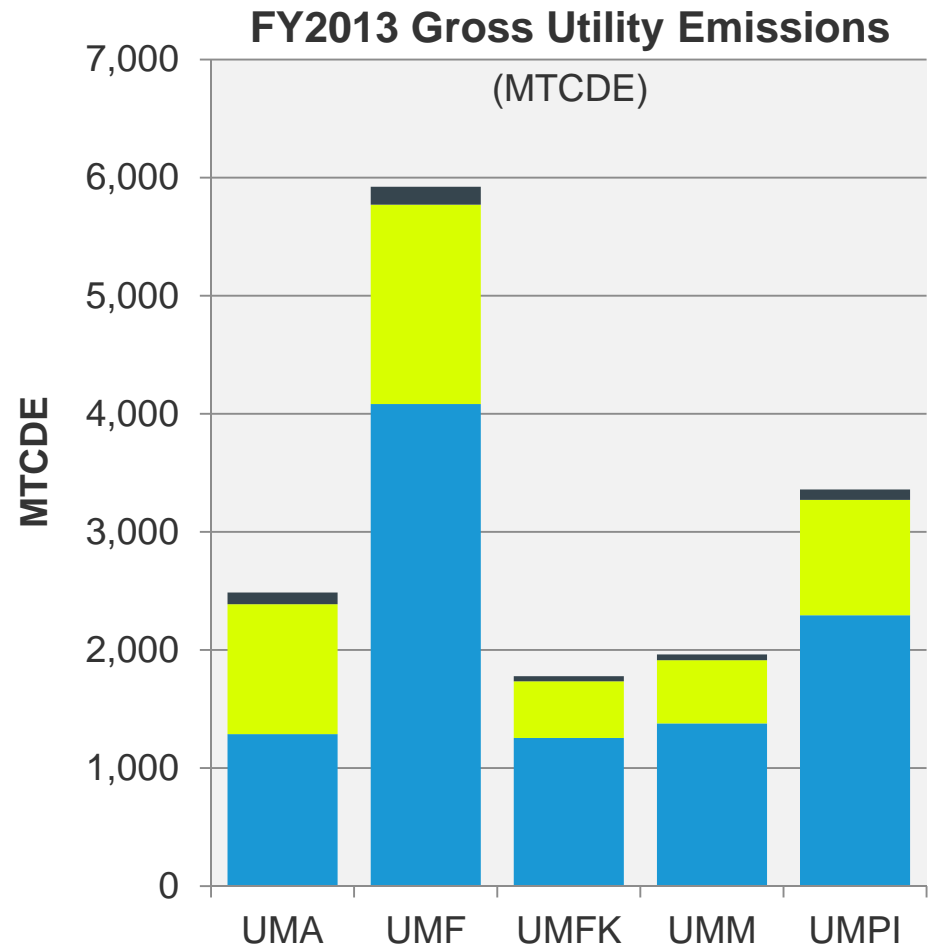
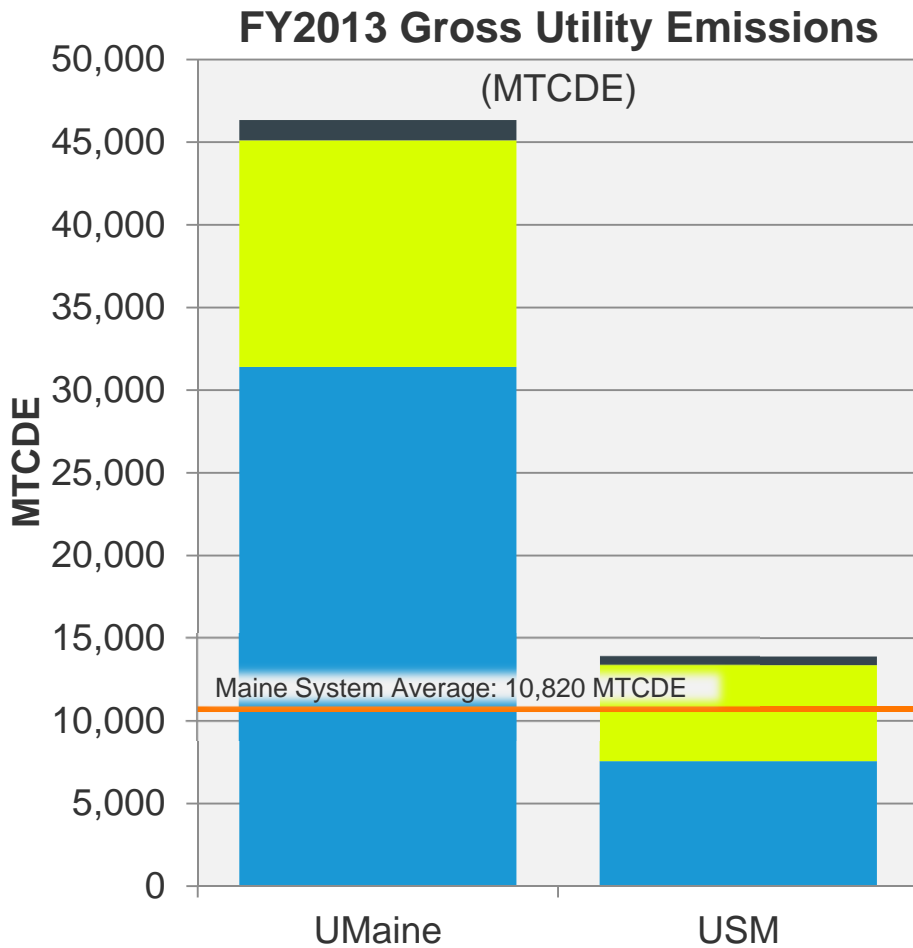
MTCDE = Metric Tons of Carbon Dioxide Equivalent

■ eGRID 2007 ■ eGRID 2010 ■ eGRID 2012

Maine System Gross Utility Emissions

FY2013

FY2013 utility emissions – state university detail



MTCDE = Metric Tons of Carbon Dioxide Equivalent

■ Scope 1 ■ Scope 2 ■ Scope 3

Two different ways to benchmark GHG emissions

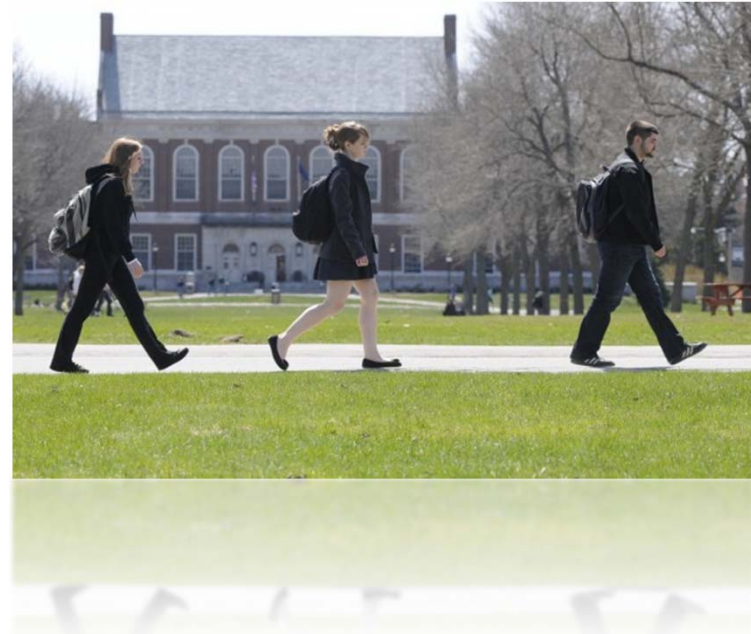
GHG Emissions per 1,000 GSF



Stresses intensity of operations.

$$\frac{\text{Gross GHG Emissions}}{\text{Total GSF in Footprint}} \times 1,000$$

GHG Emissions per Student

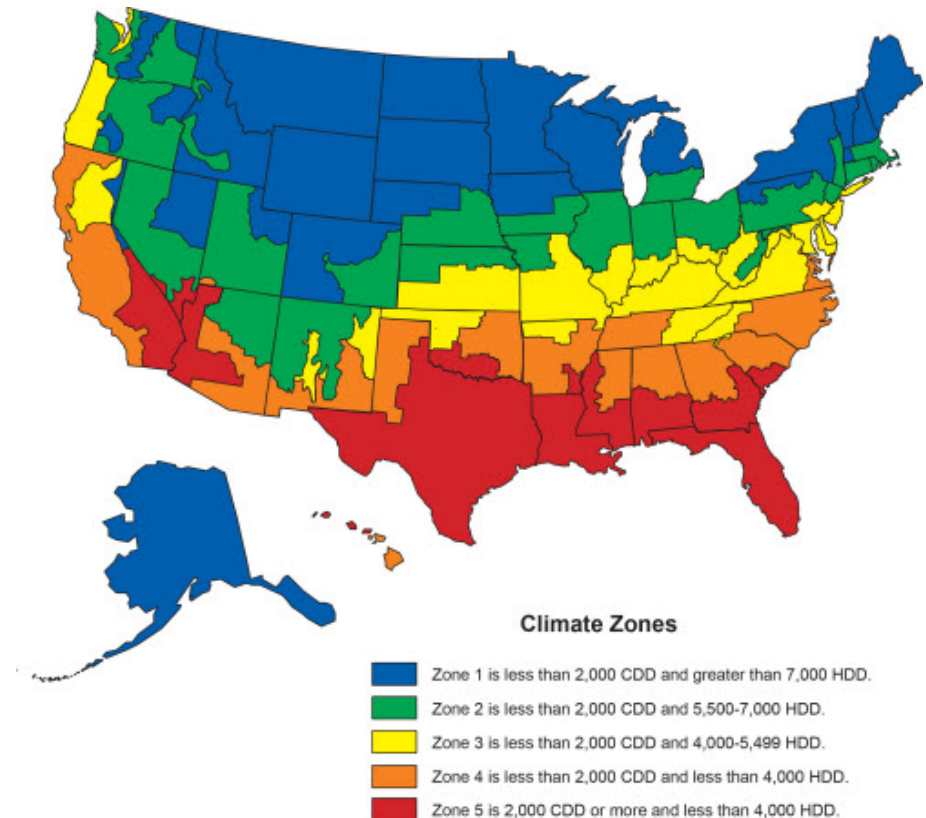


Stresses efficient use of space.

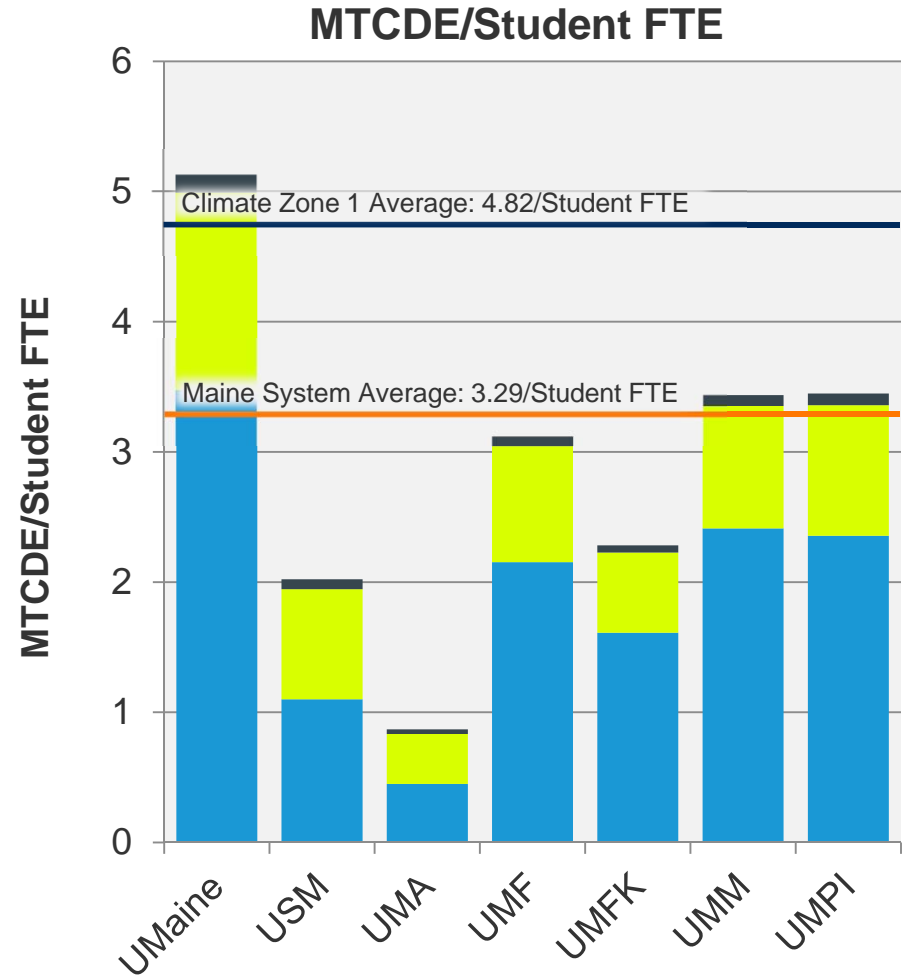
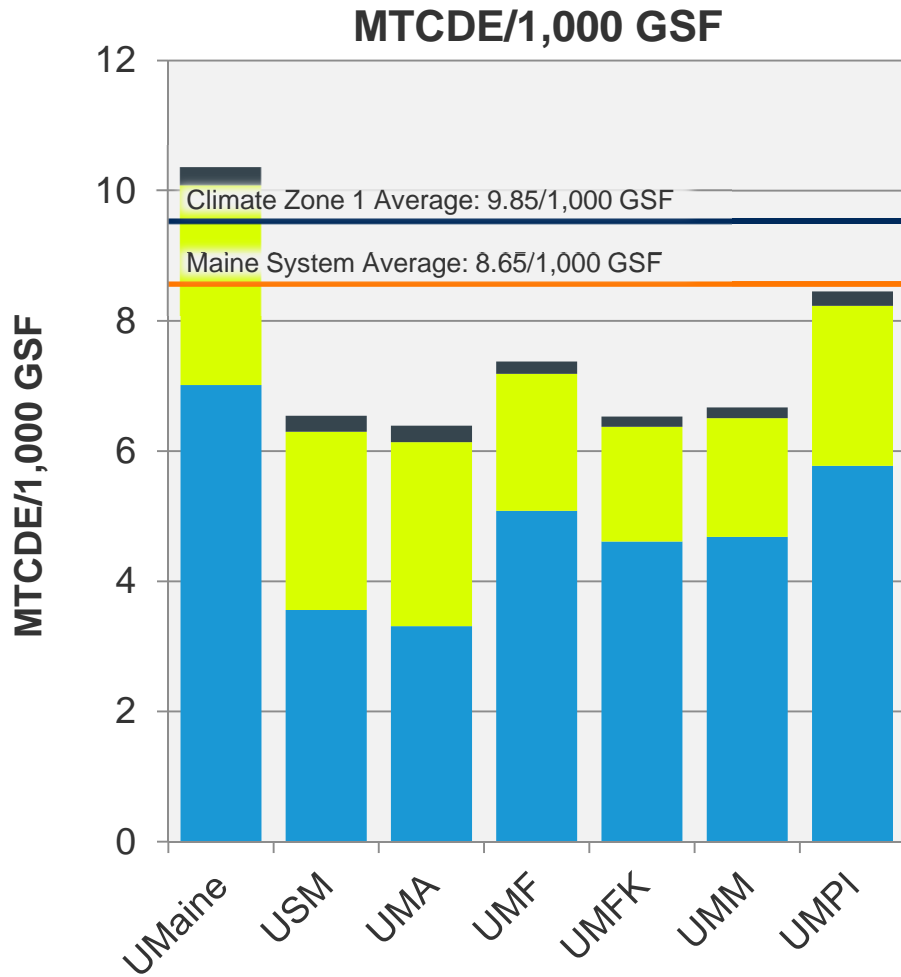
$$\frac{\text{Gross GHG Emissions}}{\text{Total Student FTE}}$$

Climate Zone 1 peers

| Institution | Location |
|----------------------------------|------------------|
| Carleton College | Northfield, MN |
| Champlain College | Burlington, VT |
| Hamilton College | Hamilton, NY |
| Hamline University | St. Paul, MN |
| Le Moyne College | Syracuse, NY |
| Michigan State University | East Lansing, MI |
| Montana State University | Bozeman, MT |
| Rensselaer Polytechnic Institute | Troy, NY |
| Siena College | Loudonville, NY |
| University of Denver | Denver, CO |
| University of Vermont | Burlington, VT |



Maine System FY2013 utility emissions



MTCDE = Metric Tons of Carbon Dioxide Equivalent

■ Scope 1 ■ Scope 2 ■ Scope 3

Maine System Emissions by Institution

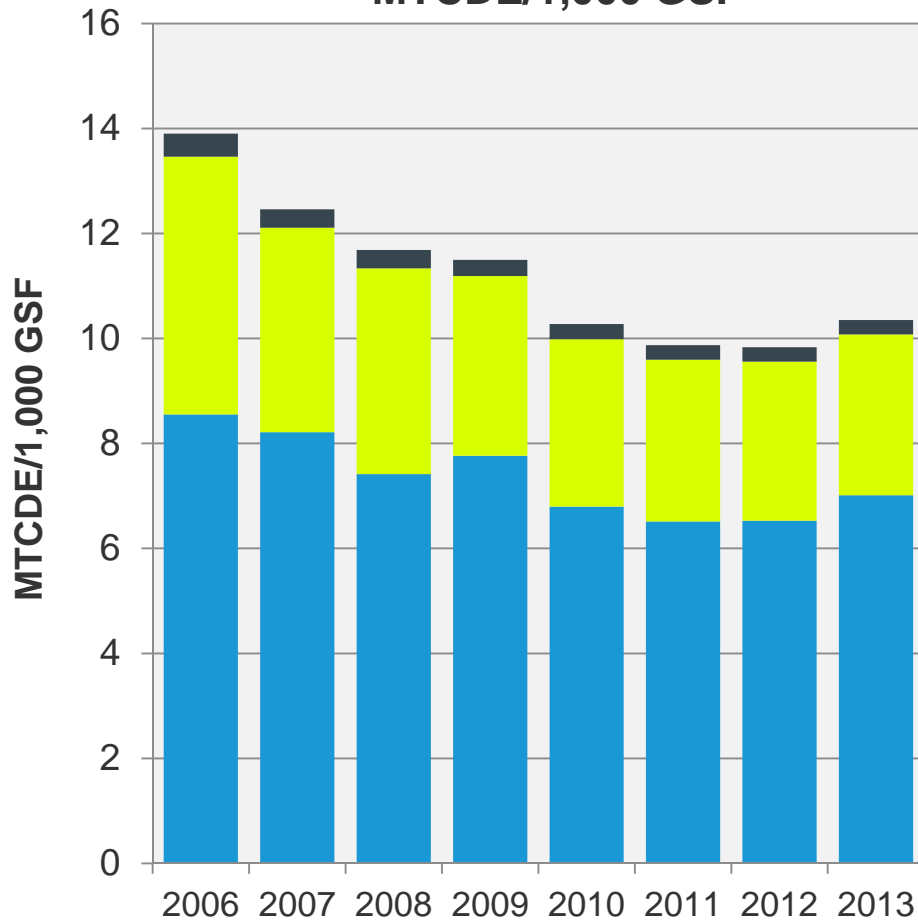
FY2006 - FY2013

The University of Maine

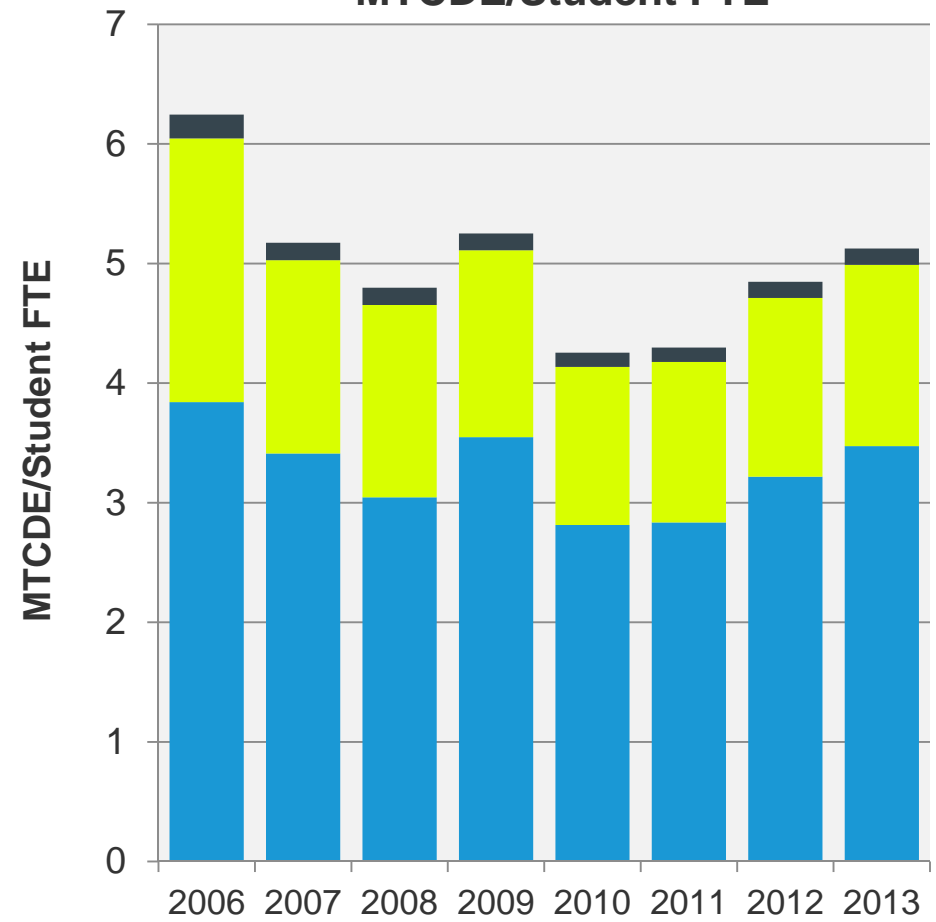


FY2006 – FY2013 emissions at The University of Maine (MTCDE)

MTCDE/1,000 GSF



MTCDE/Student FTE



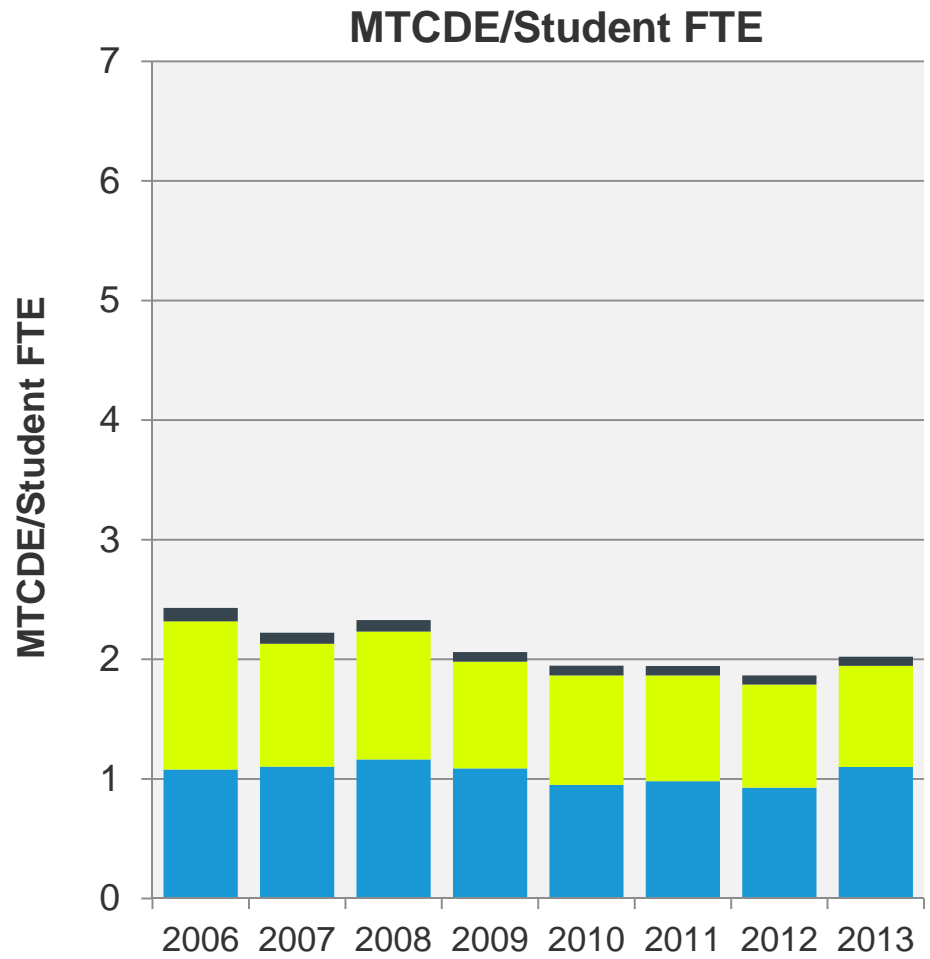
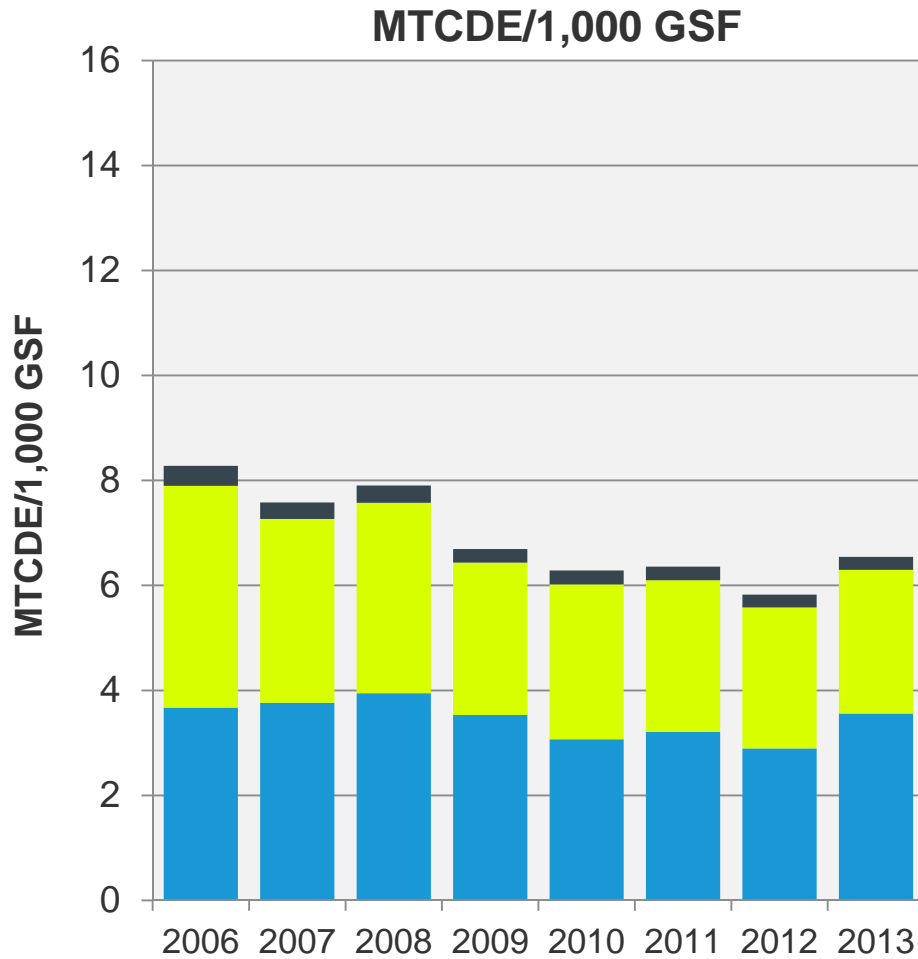
MTCDE = Metric Tons of Carbon Dioxide Equivalent

■ Scope 1 ■ Scope 2 ■ Scope 3

University of Southern Maine



FY2006 – FY2013 emissions at University of Southern Maine (MTCDE)



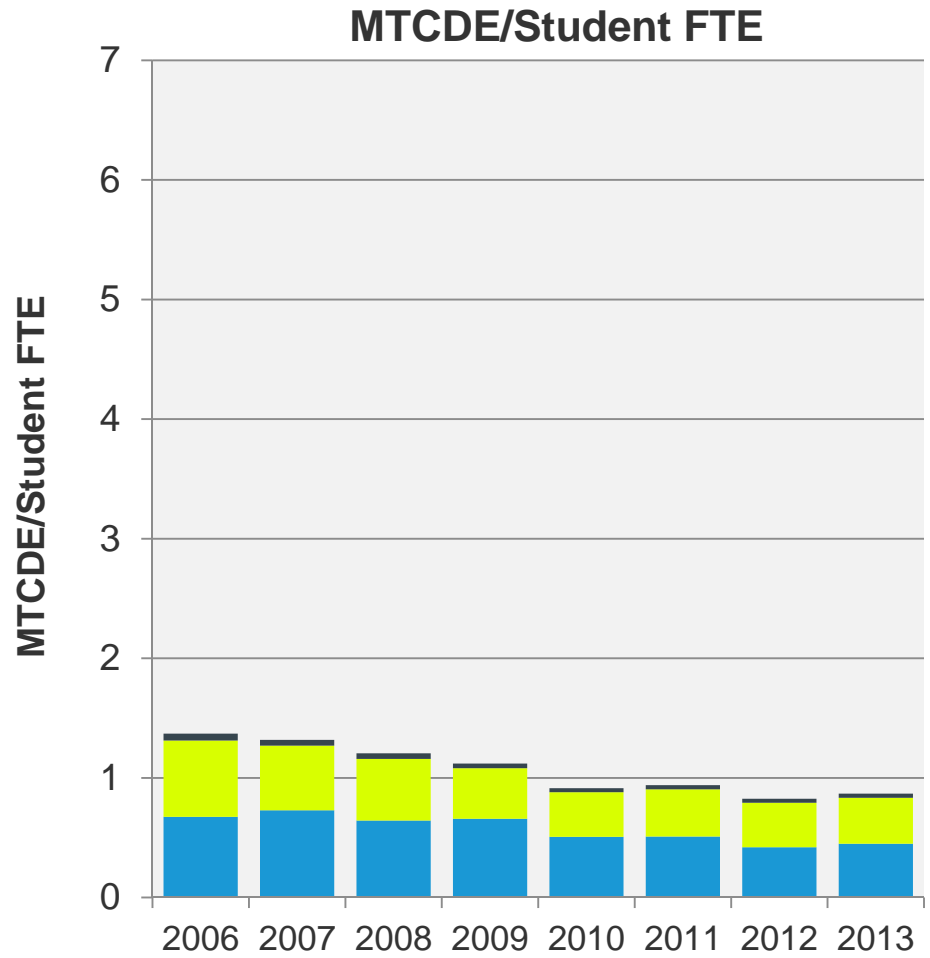
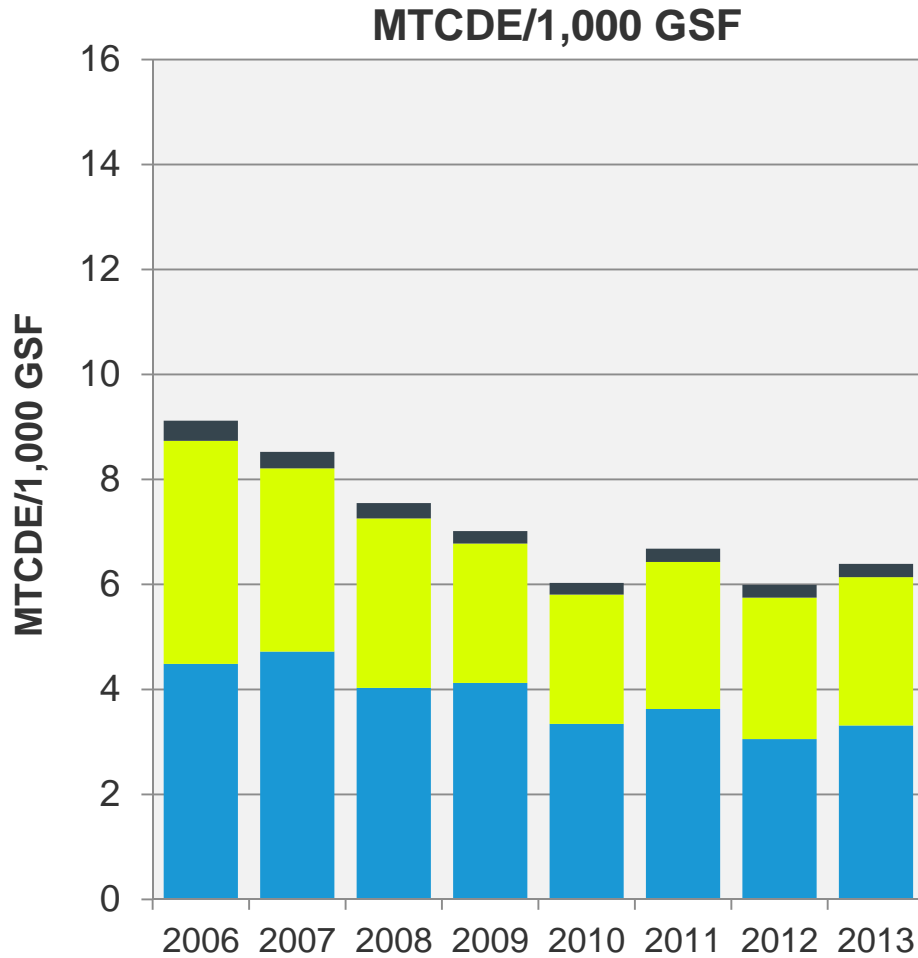
MTCDE = Metric Tons of Carbon Dioxide Equivalent

■ Scope 1 ■ Scope 2 ■ Scope 3

University of Maine at Augusta



FY2006 – FY2013 emissions at University of Maine at Augusta (MTCDE)



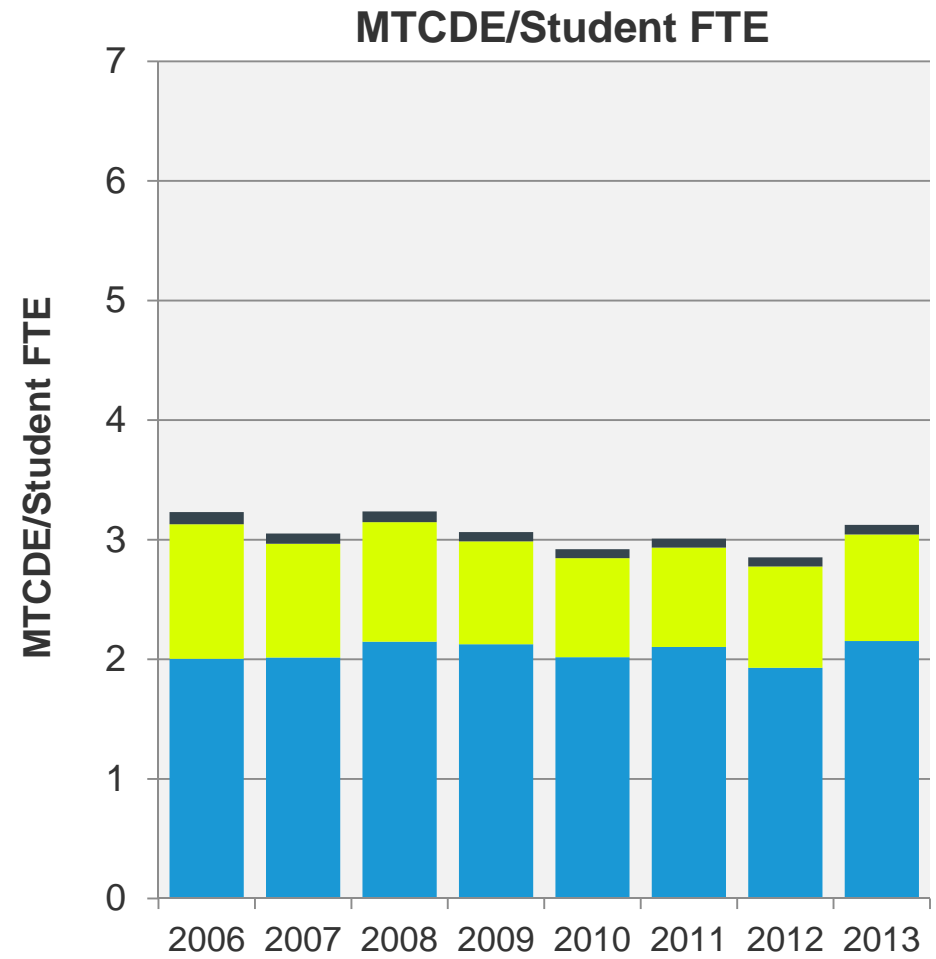
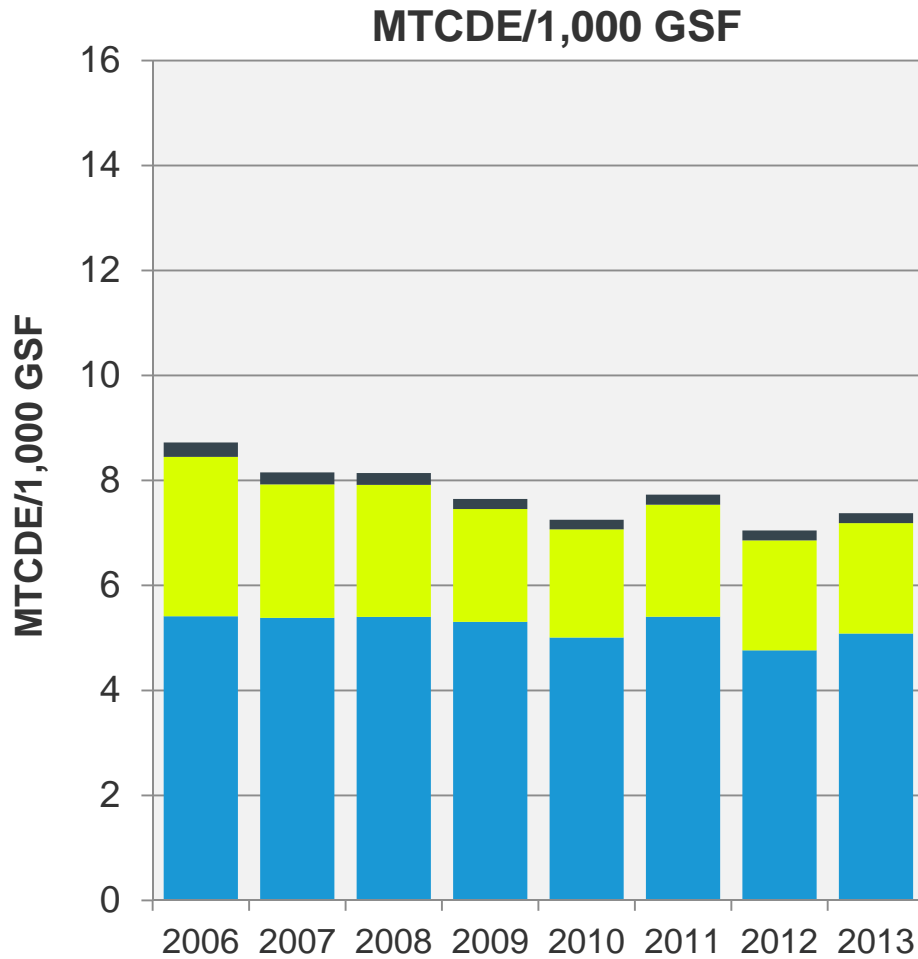
MTCDE = Metric Tons of Carbon Dioxide Equivalent

■ Scope 1 ■ Scope 2 ■ Scope 3

University of Maine at Farmington



FY2006 – FY2013 emissions at University of Maine at Farmington (MTCDE)

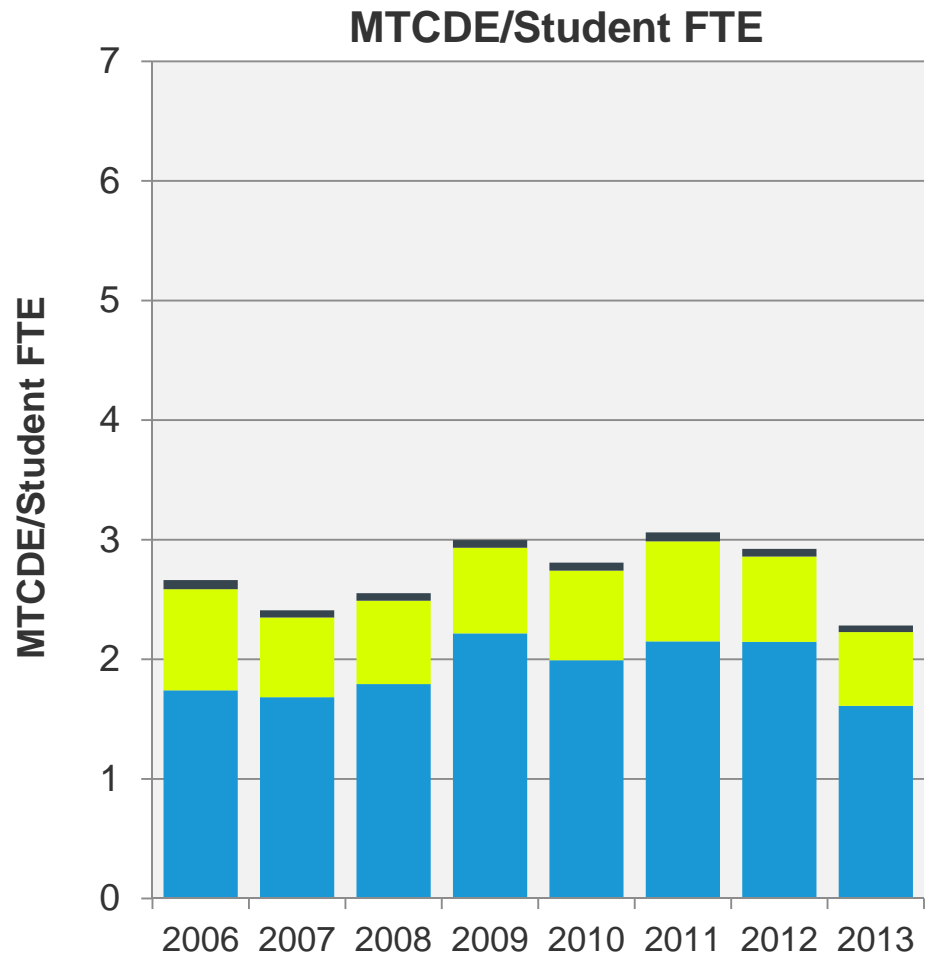
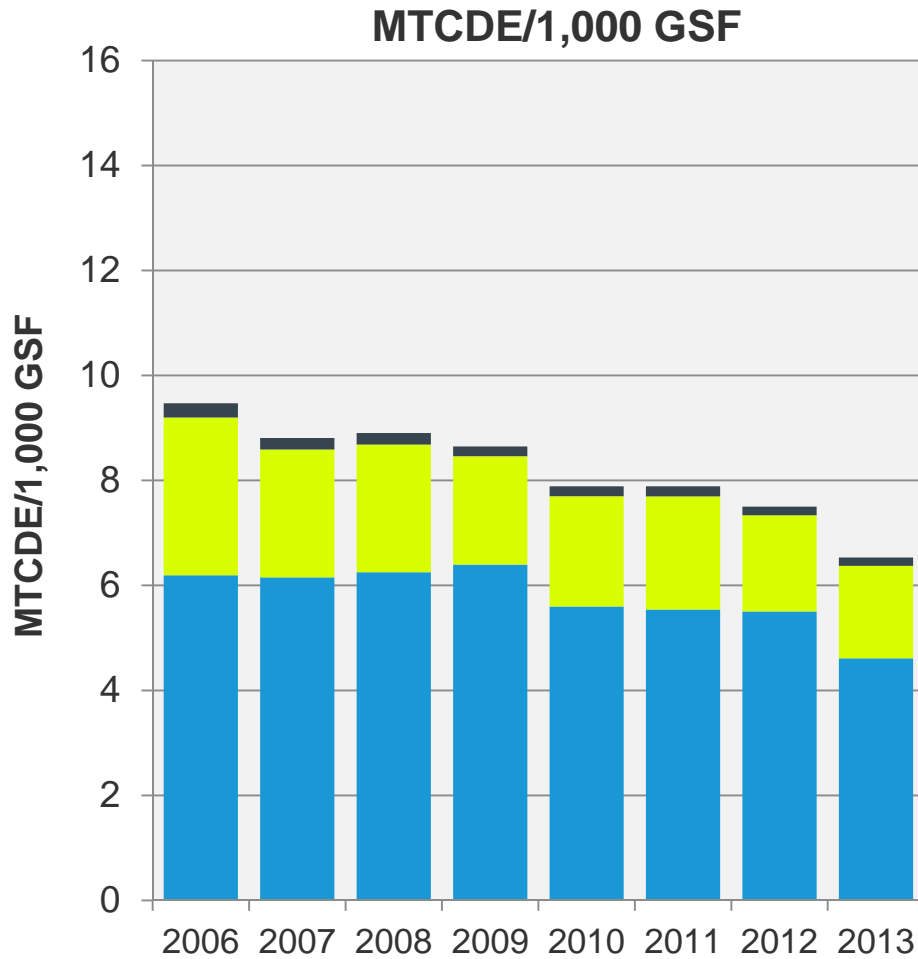


MTCDE = Metric Tons of Carbon Dioxide Equivalent

■ Scope 1 ■ Scope 2 ■ Scope 3

University of Maine at Fort Kent

FY2006 – FY2013 emissions at University of Maine at Fort Kent (MTCDE)



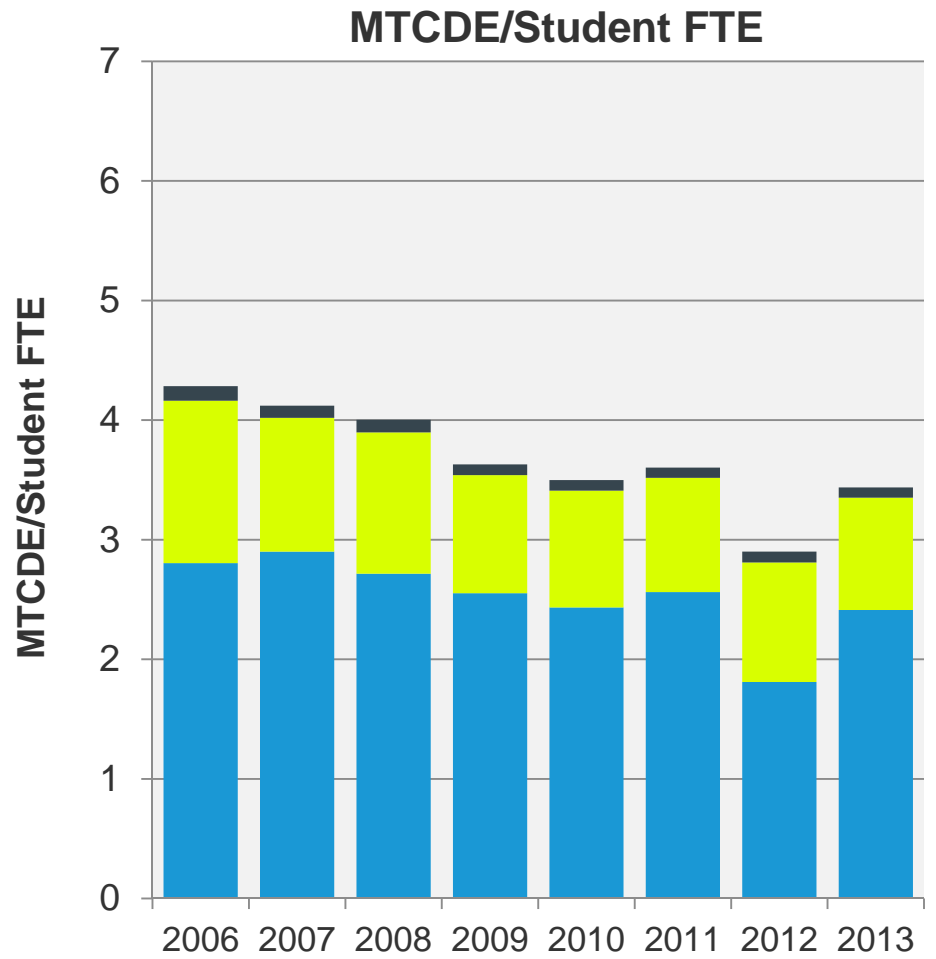
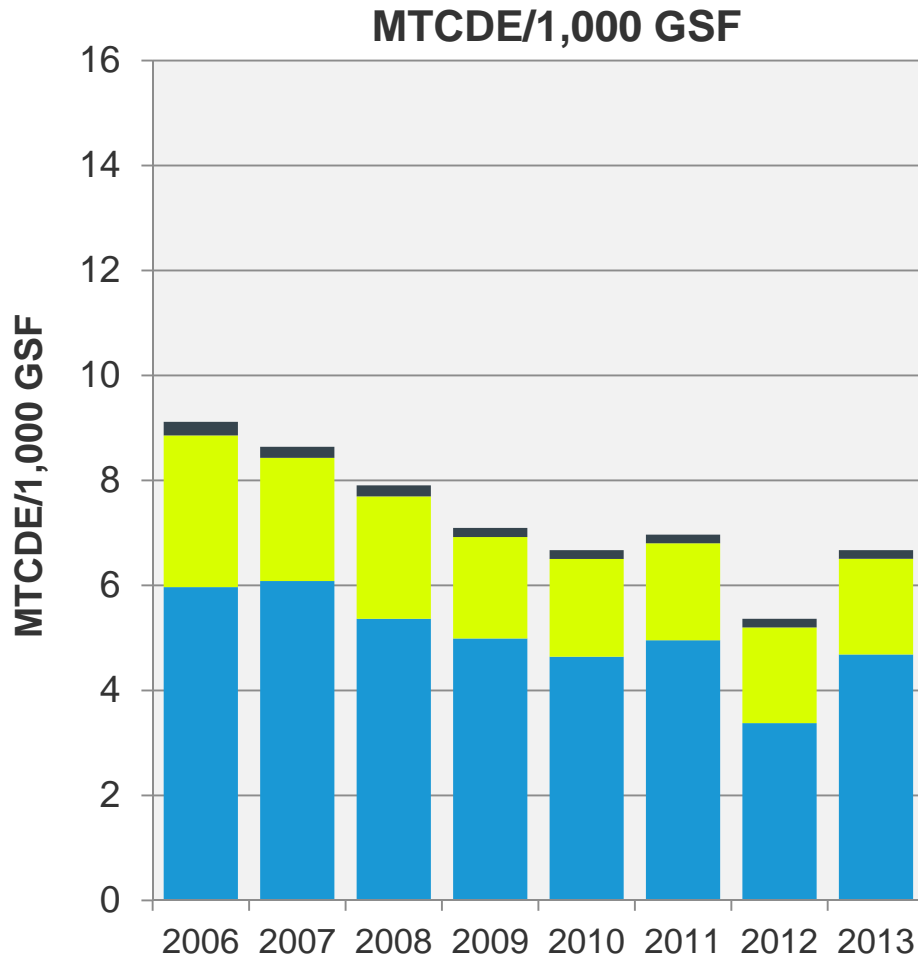
MTCDE = Metric Tons of Carbon Dioxide Equivalent

■ Scope 1 ■ Scope 2 ■ Scope 3

University of Maine at Machias



FY2006 – FY2013 emissions at University of Maine at Machias (MTCDE)



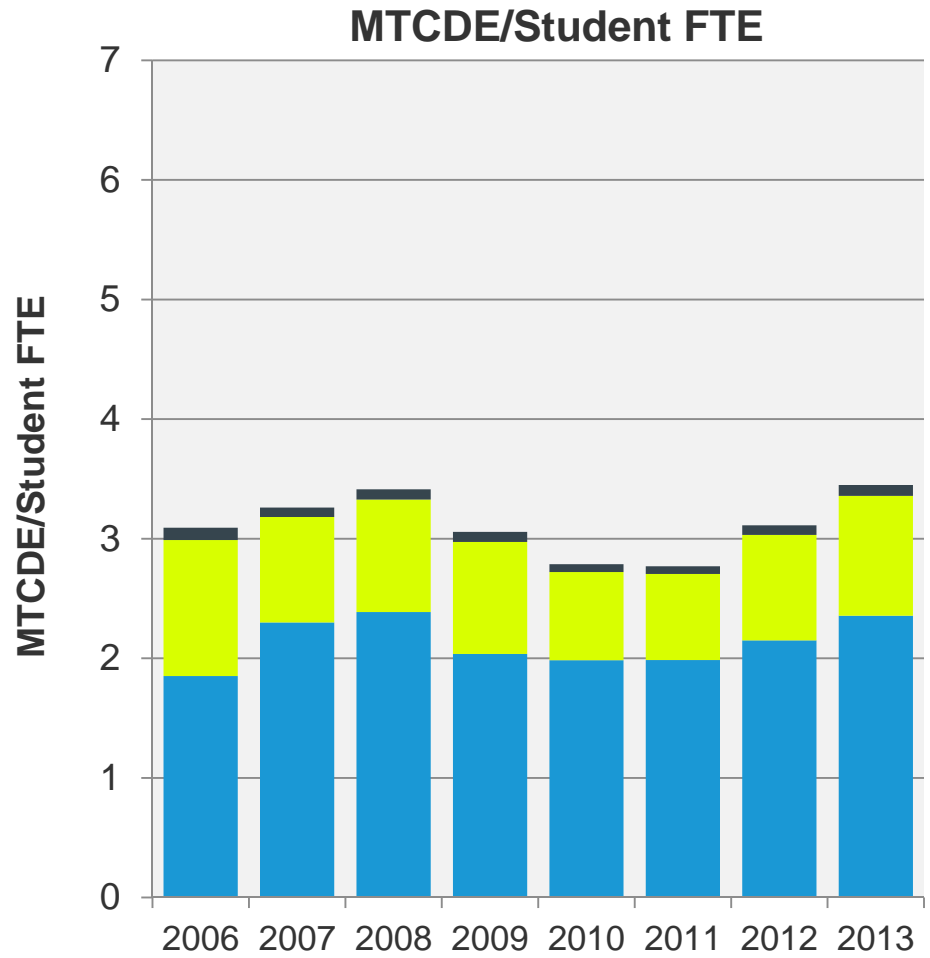
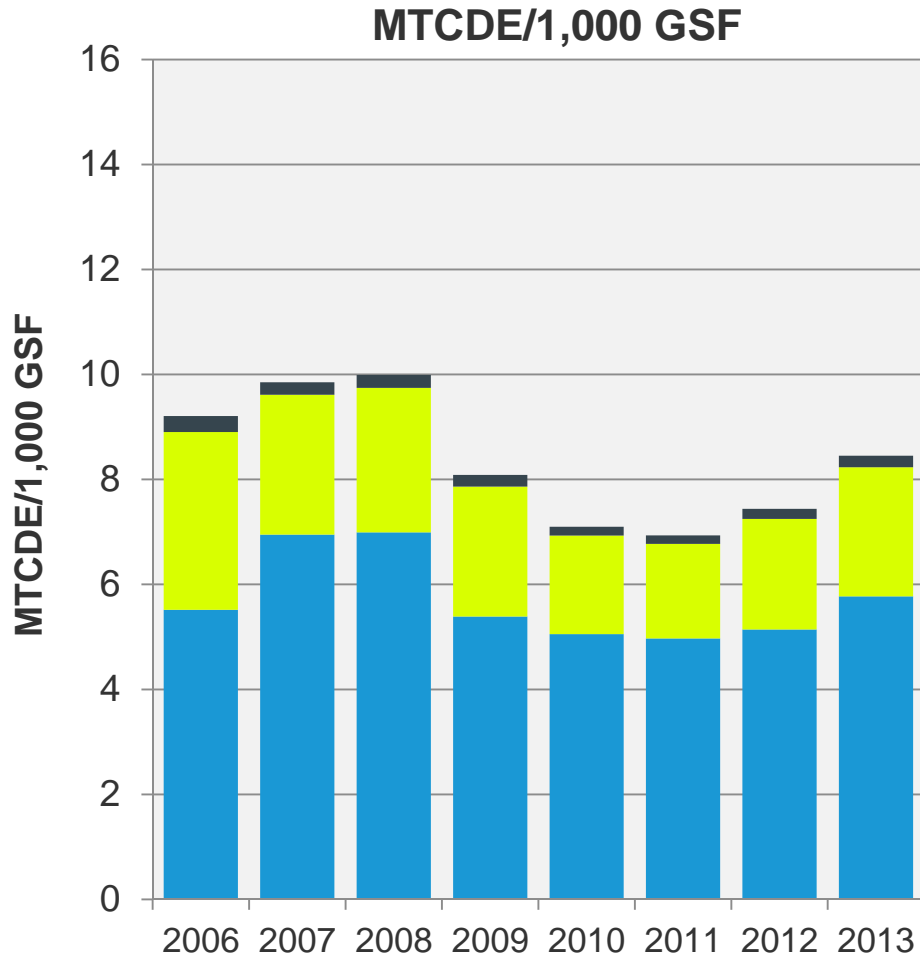
MTCDE = Metric Tons of Carbon Dioxide Equivalent

■ Scope 1 ■ Scope 2 ■ Scope 3

University of Maine at Presque Isle



FY2006 – FY2013 emissions at University of Maine at Presque Isle (MTCDE)



MTCDE = Metric Tons of Carbon Dioxide Equivalent

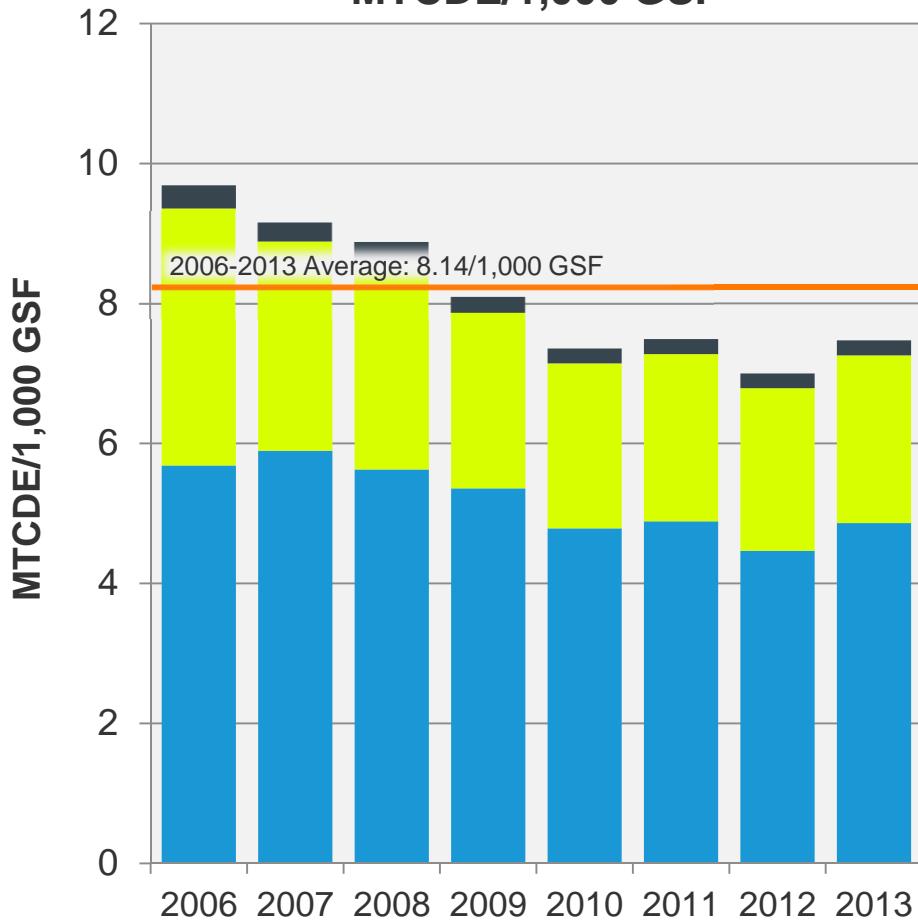
■ Scope 1 ■ Scope 2 ■ Scope 3

Maine System Total Utility Emissions

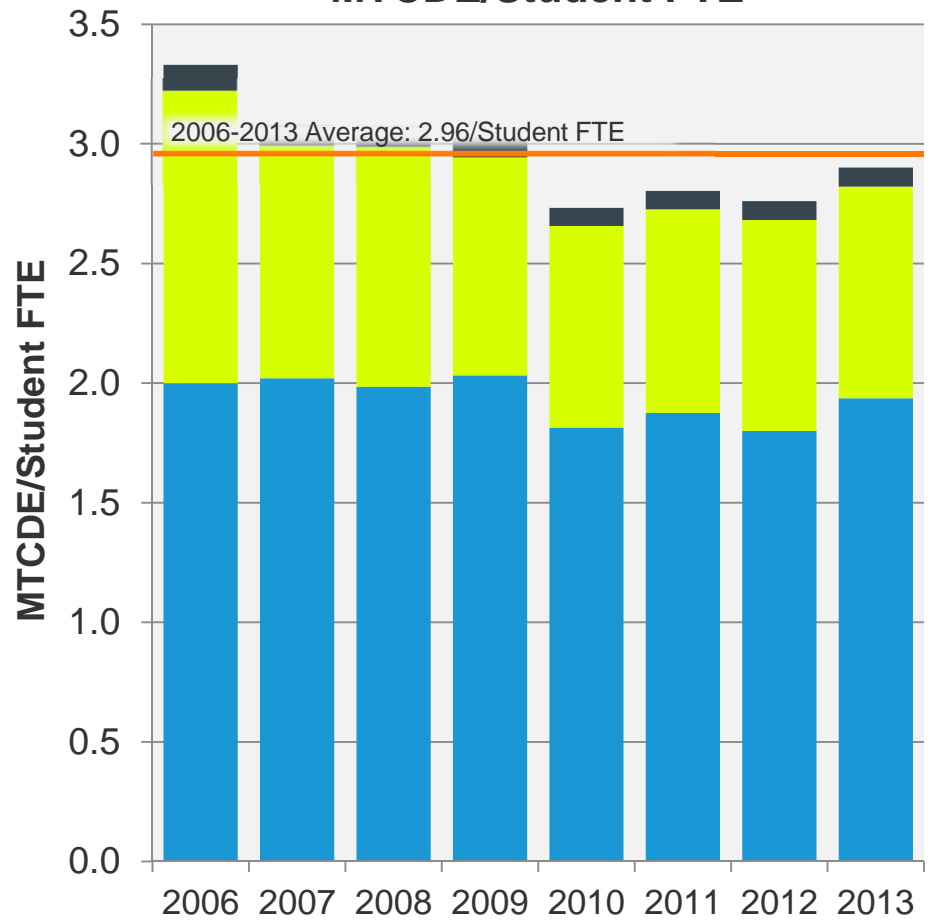
FY2006 - FY2013

Maine System emissions summary

MTCDE/1,000 GSF



MTCDE/Student FTE

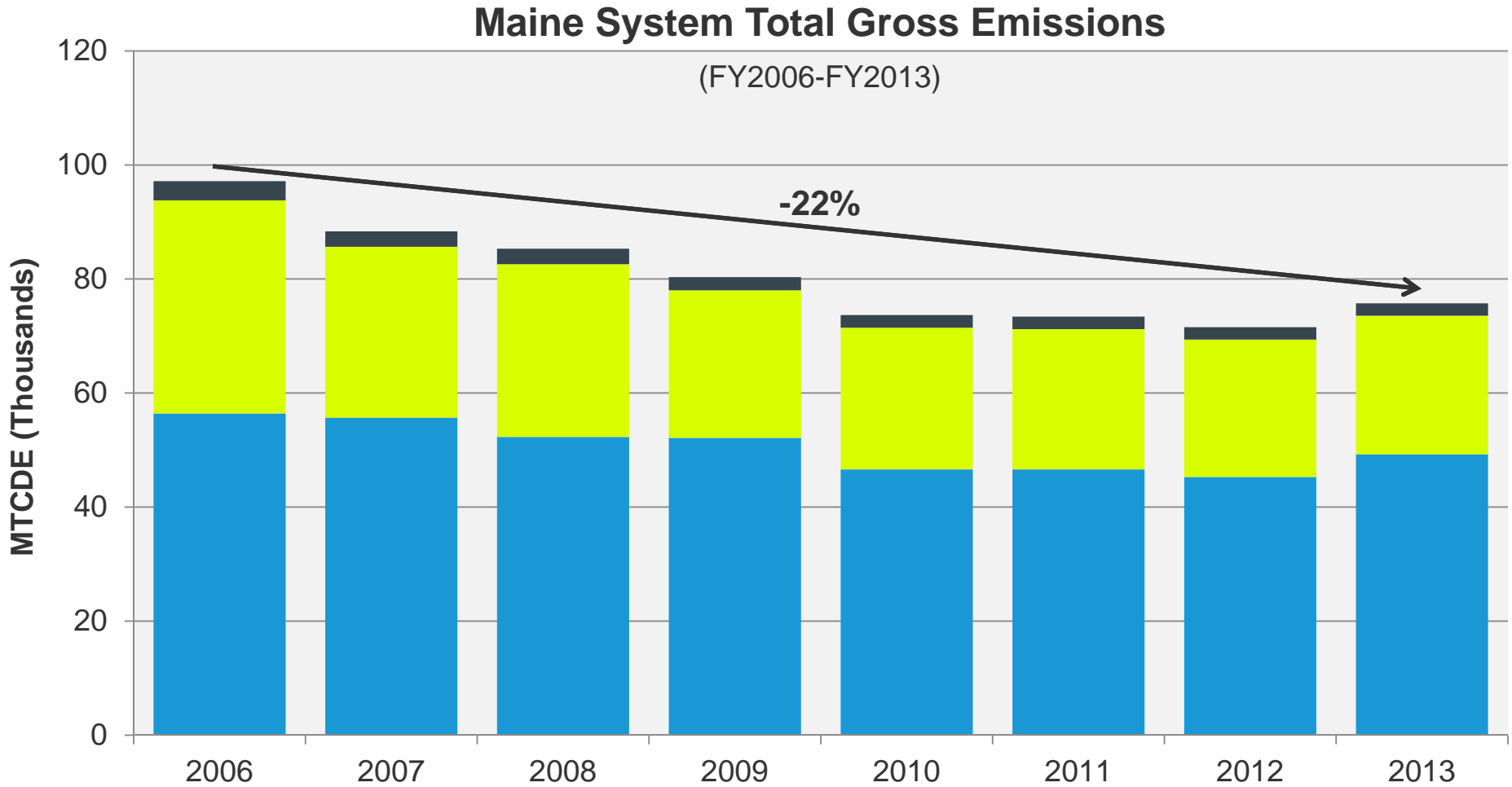


MTCDE = Metric Tons of Carbon Dioxide Equivalent

■ Scope 1 ■ Scope 2 ■ Scope 3

Total gross utility emissions FY2006 - FY2013

Total gross emissions have decreased 22% since FY2006



MTCDE = Metric Tons of Carbon Dioxide Equivalent

■ Scope 1 ■ Scope 2 ■ Scope 3

Total GHG emissions by institution

% change is from FY2006 to FY2013

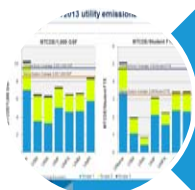
| FY2013 Gross emissions by institution (MTCDE) | | | | |
|--|----------------|----------------|----------------|---------------------------|
| Institution Name | Scope 1 | Scope 2 | Scope 3 | % change FY06-FY13 |
| The University of Maine | 31,403 | 13,705 | 1,233 | -22% |
| University of Southern Maine | 7,557 | 5,812 | 523 | -22% |
| University of Maine at Augusta | 1,288 | 1,099 | 99 | -34% |
| University of Maine at Farmington | 4,082 | 1,689 | 152 | -15% |
| University of Maine at Fort Kent | 1,225 | 480 | 43 | -27% |
| University of Maine at Machias | 1,378 | 536 | 48 | -27% |
| University of Maine at Presque Isle | 2,294 | 977 | 88 | -13% |
| Total Maine System FY2013 | 49,257 | 24,297 | 2,187 | |

MTCDE = Metric Tons of Carbon Dioxide Equivalent

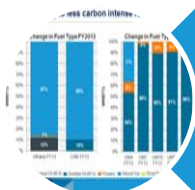
Concluding comments



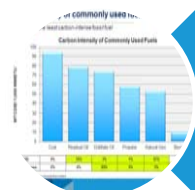
Overall, University of Maine System emissions are down 22% since FY2006.



The increase in emissions from FY2012 to FY2013 is due to the increase in fossil consumption, driven by additional heating degrees for the year.



Many institutions are switching to less carbon intense fossil fuels by using more natural gas and propane and decreasing the use of oil on campus.



In addition, four of the seven institutions are using fuel alternatives – geothermal and biomass – which significantly reduces the amount of emissions.