

# SF State's Greenhouse Gas Inventory

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SAN FRANCISCO  
STATE UNIVERSITY

# Beginning Steps

- President Robert Corrigan signed the PCC in May of 2007 making SF State a Charter Signatory
- Facilities Dept was given the task of completing our inventory
- Used the Chancellor Office's inventory as a basis for our inventory
- Decided to use Clean Air Cool Planet's Calculator
- Inventoried the years of 1990-2006
- Covered the three scopes outlined by the WRI

# Completing the GHG Inventory: Campus Sustainability Class

- Carlos Davidson developed the class and it was taught for the first time last Spring Semester 2008
- 20 students registered across six different disciplines
- Carlos began developing the class by using AASHE resources website.

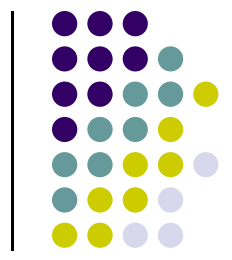
[http://www.aashe.org/resources/campus\\_sustainability\\_courses.php](http://www.aashe.org/resources/campus_sustainability_courses.php)

# Structure of the Campus Sustainability Class

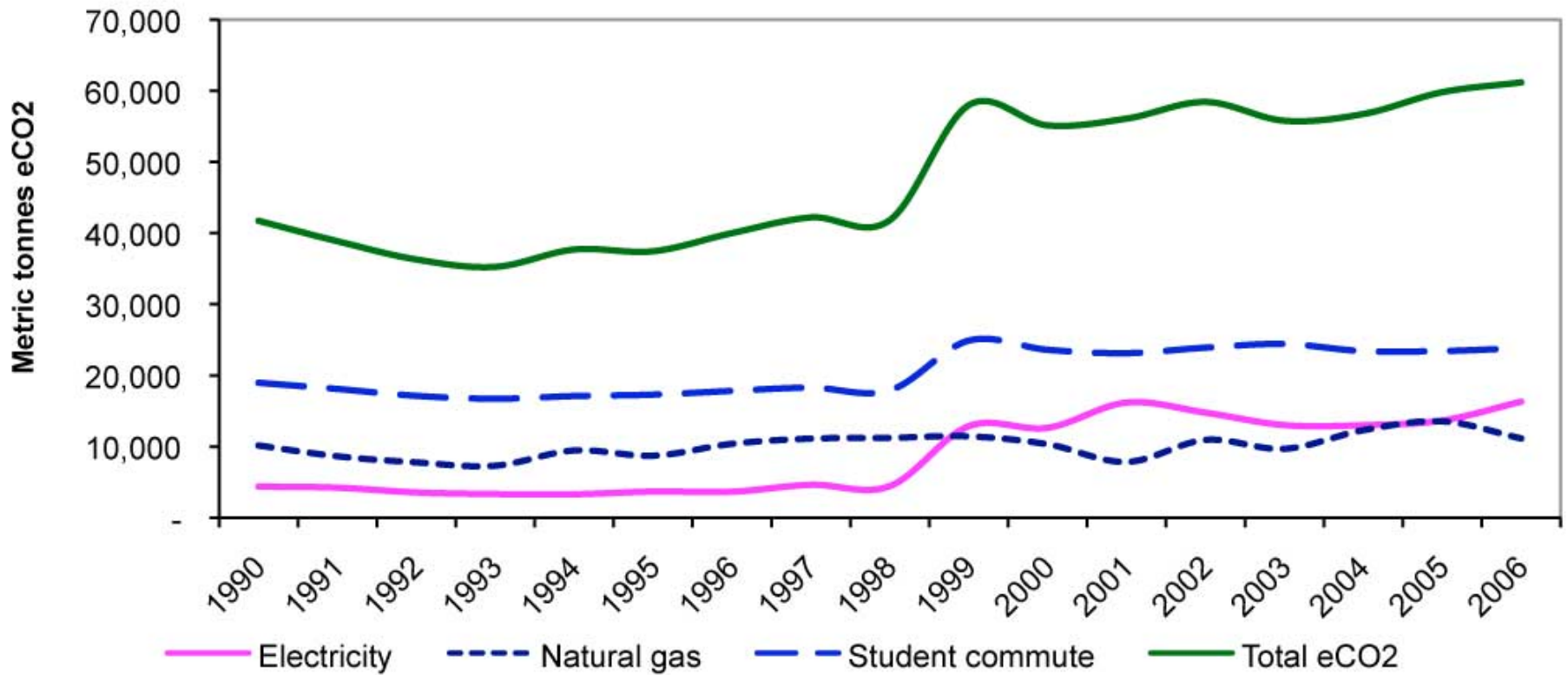
- Learn the inventory process
- Gather information needed to complete the Clean Air Cool Planet Calculator (about a four month long process)
- Create campus carbon reducing sustainability projects

# SF State's GHG Inventory Outline

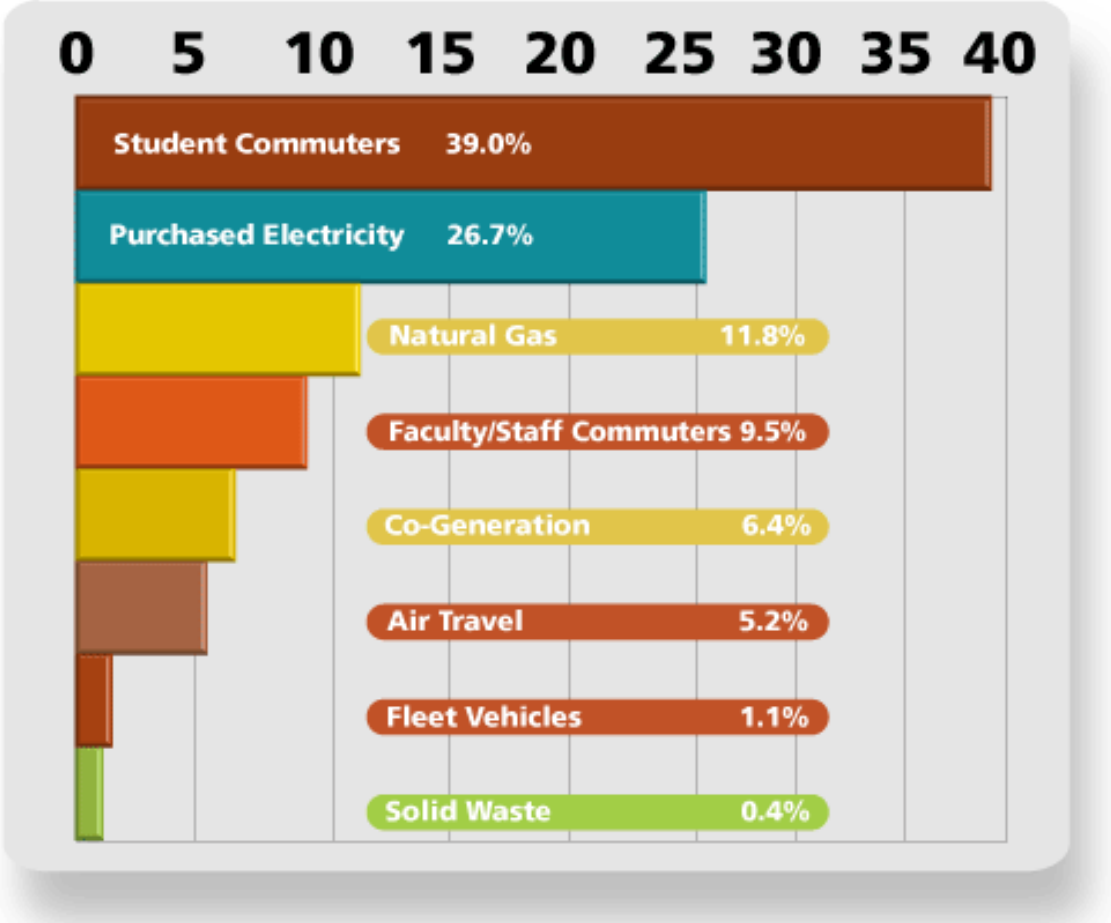
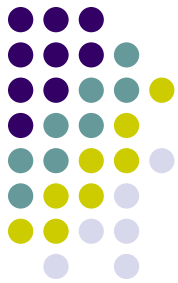
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### Total and major sector GHG emissions 1990-2006



# 2006 Total Emissions in Metric Tonnes Per Sector



## Methodology



### Purchased Utilities

#### **Electricity**

While purchased utilities (including natural gas) account for 45% of campus overall emissions, electricity usage alone accounts for 26.7% of the campus' total emissions. In 2006, SF State used over 30 million kilowatt hours (kWh), emitting 16,307 MTCDE.

Greenhouse gas emissions from electrical use are determined by how the electricity was generated. The mix of fuel sources for electricity identifies the percentage generated using coal, large hydro-electric, nuclear, and renewable energy sources. Pacific Gas & Electric (PG&E) supplied electricity from 1990 to 1998 when the UC/CSU system switched to direct access. The Chancellor's Office inventory supplied the total kWhs purchased from PG&E (1990 to 1998) and Arizona Public Service (APS) (1998 to 2006). California wide average power mix values were utilized by the Chancellor's Office, but in the SF State inventory the specific power mix data for PG&E and APS were used. SF State researched PG&E's custom fuel mix in the Environmental Protection Agency's (EPA) eGRID database and APS supplied SF State with its fuel mix for 2006.

# Key Findings & Recommendations



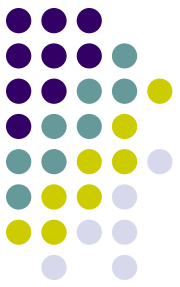
## Key Findings

- Purchased electricity use increased 18 percent from 1990 to 2006. Due to the switch in utility providers from PGE to APS emissions from purchased electricity increased by 272 percent. PG&E uses less than 1% coal compared to the almost 40% coal in the APS power mix.

## Recommendations

- The CSU RFP new utility provider is factoring in GHG emissions into selection criteria.
- Implement Energy Star purchasing Policy
- Install Renewable Energy Sources on campus
- Implement an Energy Awareness Program
- Continue EE lighting and heating controls.

## 1990- 2006 Change in SF State 2006 Greenhouse Gas Emissions by Sector

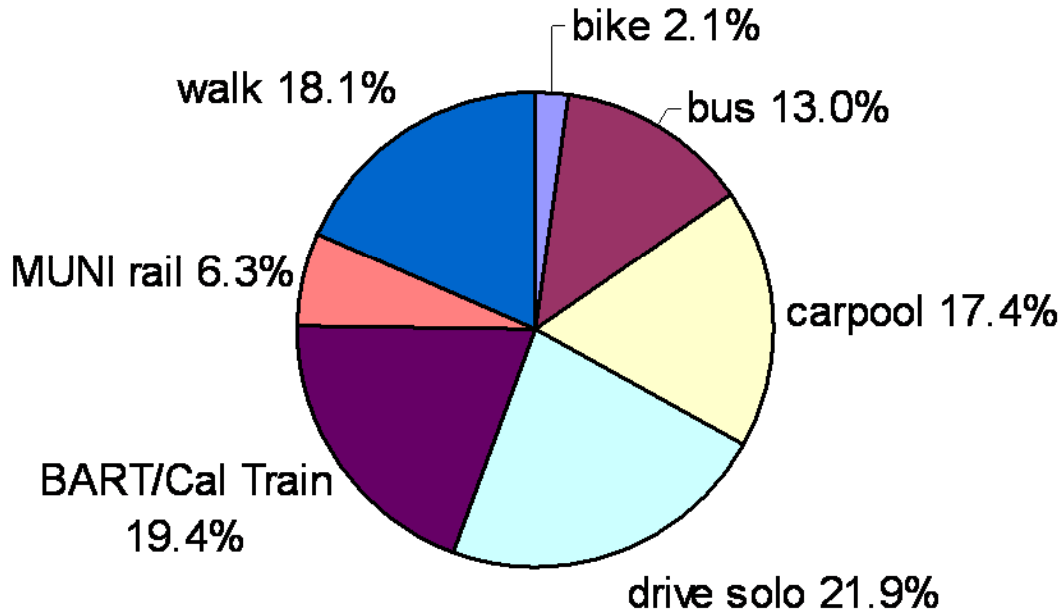


Source	1990 eCO2 metric tonnes	2006 eCO2 metric tonnes	Percent change
Purchased Electricity	4,380	16,307	272%
Natural gas - Non Co-Gen	8,306	7,228	-13%
Natural gas - Co-Generator	1,840	3,915	113%
University Fleet	614	645	5%
Student Commuters	18,969	23,832	26%
Faculty/Staff Commuters	4,323	5,818	35%
Air Travel	3,039	3,175	4%
Solid Waste	260	264	2%
<b>Total</b>	<b>41,730</b>	<b>61,184</b>	<b>47%</b>
Composting offset	(37)	(63)	73%
<b>Net Emissions</b>	<b>41,693</b>	<b>61,121</b>	<b>47%</b>

Note: eCO2 is carbon dioxide equivalents



## Transportation Mode - Students (2006)



# Carbon Focused Projects from the Campus Sustainability Class

- The Green Fund
  - Surveyed students on projects most interested in funding, modeled after UCSB TGIF, outlined campaigning timeline and requirements.
- Reduced Fare MUNI Pass
  - Modeled after USF's successful MUNI Class Pass program
  - Project challenges: creating a program specific to SF State which is near MUNI, BART, and CalTrain which are all different systems.

# Challenges

- Deadlines
- Choosing the protocol
- First inventory vs. the second inventory

# Thank You!

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[Sustainability.sfsu.edu](http://Sustainability.sfsu.edu)

[Recycling.sfsu.edu](http://Recycling.sfsu.edu)

[http://bss.sfsu.edu/cdavidson/envs\\_570\\_campus\\_sustainability.htm](http://bss.sfsu.edu/cdavidson/envs_570_campus_sustainability.htm)