MY, WHAT BIG FEET WE HAVE!

November 19, 2008

Overview

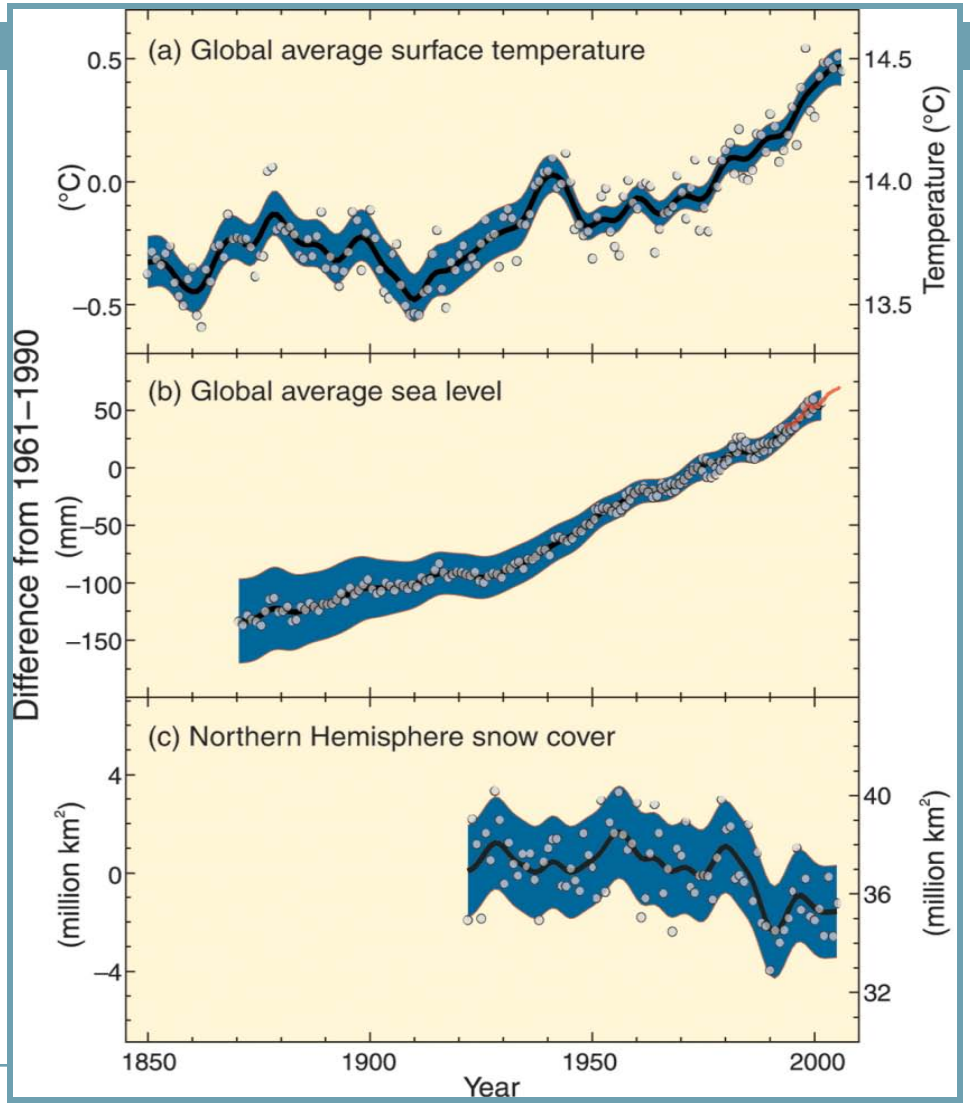
- What is a carbon foot print?
- Why are we measuring ours?
- Measurement Process
- Initial results
- What does it all mean?
- What's next?
- How can I help?

What is a carbon foot print?

- Smith's contribution to global climate change
  - A.K.A greenhouse gas inventory
- A measurement of all greenhouse gasses emitted over a single year
  - All heat-trapping gasses e.g. CO2, CH4, NOx, HFCs
  - Calculated in metric ton equivalent to CO2 (MTeCO2)

Why are we measuring ours?

- Climate change is real
  - UN Intergovernmental Panel on Climate Change "2007 Consensus Report"
  - www.ipcc.ch
- Measurement provides a basis for institutional action



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Why are we measuring ours?

- American College and University Presidents Climate Commitment
  - "…effort to address global warming by garnering institutional commitments to neutralize greenhouse gas emissions"
  - Smith signed in November 2007
  - Commitment is to carbon neutrality
    - Set own timeline
  - GHG inventory due January 2009
  - Footprint must be updated every other year
- Useful metric for efficiency/sustainability

GHG Measurement

- Measurement is an ongoing process
  - First completed for FY 2004 by Elizabeth Thomas '05
  - Updated by student team for FY 2007
- Used the Clean Air Cool Planet (CA-CP) Campus Carbon Calculator
  - CA-CP is an organization dedicated to finding and promoting solutions to global warming
  - Partners with campuses to help reduce carbon emissions
  - Many "climate commitment" schools using CA-CP

CA-CP Calculator

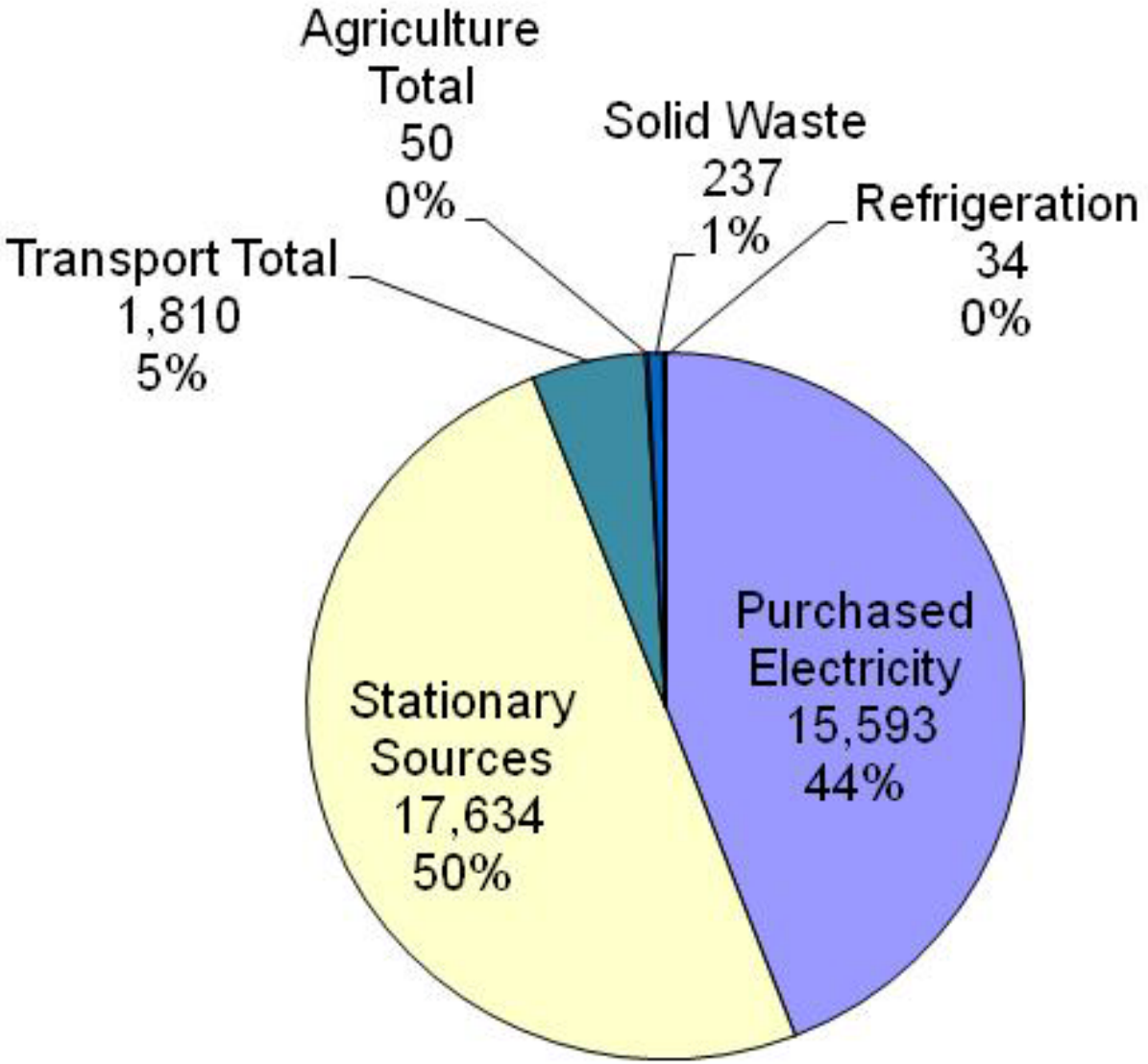
Transportation											
University Fleet					Air Travel		Commuters				
Gasoline Fleet	Diesel Fleet	Natural Gas Fleet	Electric Fleet	Other Fleet	Faculty / Staff Business	Student Programs	Faculty / Staff Gasoline	Students Gasoline	Faculty / Staff Diesel	Students Diesel	Faculty / Electri
							DO NOT ENTER DATA IN THESE COLUMNS; USE "INPUT_COMMUTE				
Gallons	Gallons	MMBtu	kWh	MMBtu	Miles	Miles	Gallons	Gallons	Gallons	Gallons	kWh
18,000	10,442				650,829		127,122	-	498	-	
18,000	10,442				650,829		102,575	-	416	-	
18,000	10,442				650,829		108,111	-	437	-	
18,000	10,442				650,829		109,116	-	434	-	
18,000	10,442				650,829		107,669	-	479	-	
18,000	10,442				650,829		104,617	-	471	-	
18,000	10,442				650,829		107,227	-	487	-	
18,000	10,442				650,829		108,032	-	498	-	
18,000	10,442				650,829		109,225	-	493	-	
18,000	10,442				650,829		111,437	-	488	-	
18,000	10,442				650,829		110,620	-	507	-	
18,000	10,442				650,829		109,418	-	452	-	
18,000	10,442				650,829		114,444	-	450	-	
18,000	10,442				650,829		112,516	-	442	-	
18,000	10,442				752,954		100,545	-	412	-	
18,000	10,442				650,829		111,115	-	740	-	
18,000	10,442				650,829		111,973	-	746	-	
18,000	10,442				687,988		112,117	-	747	-	
18,000	10,442				511,546		112,117	-	747	-	
							-	-	-	-	

GHG Measurement Process

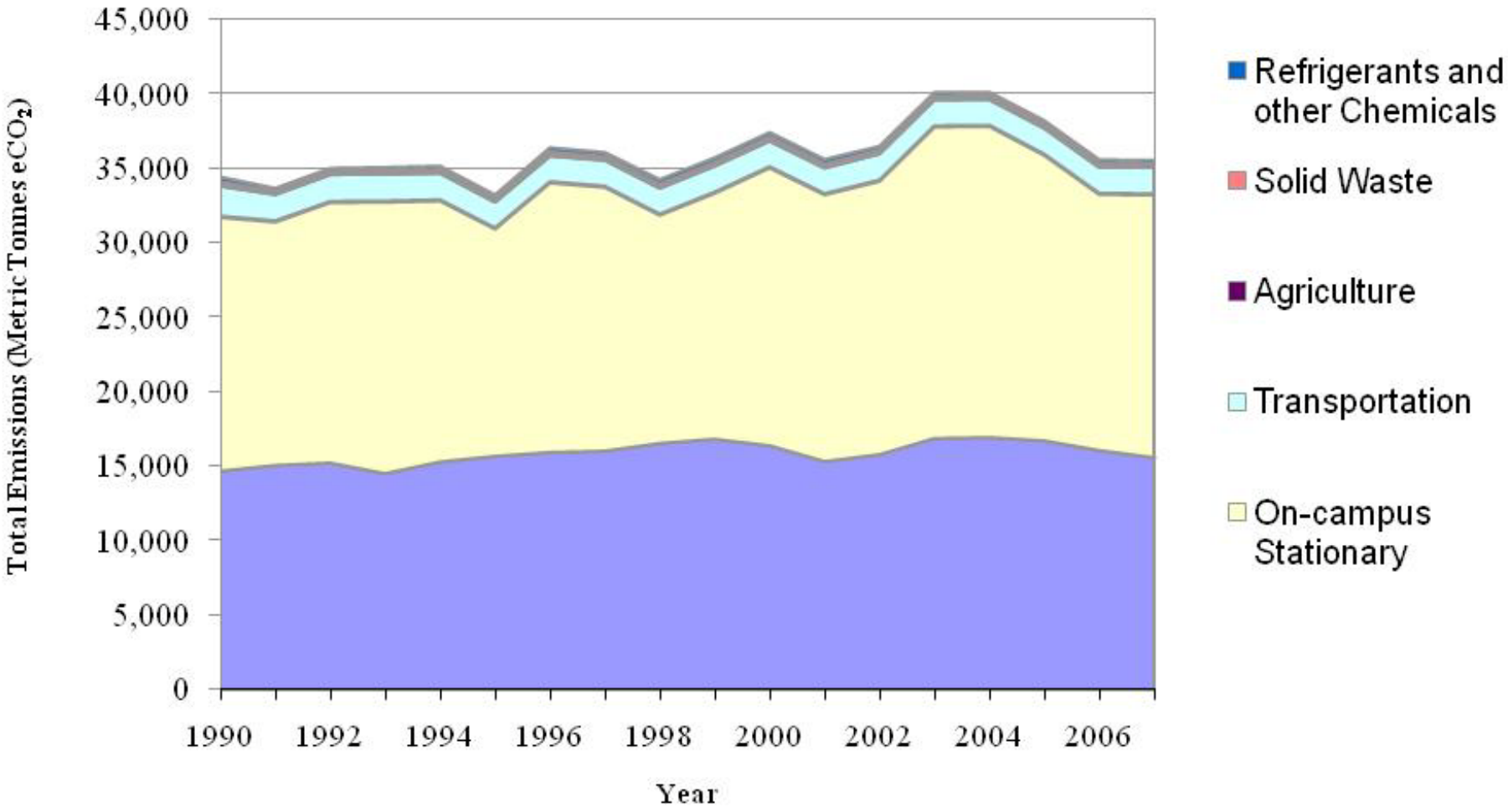
- Collected data indicative of quantities of emissions of heat trapping gases
- Three categories or "scopes"
- Scope 1 – Stationary sources
  - Combustion of fossil fuels from sources owned or controlled by the college
  - Boilers, hot water heaters, fuel for vehicles, losses from refrigeration, farm animals
- Scope 2 – Purchased electricity
  - emissions generated by the production of electricity consumed by the college
- Scope 3 – Everything else
  - Commuting, air travel paid for by the college, waste disposal…
  - These reflect boundaries consistent with ACUPCC guidance
    - Feasibility to calculate
    - Where the college can most easily make a direct impact

Preliminary Results

- **2007 Total ~ 35,030 MTeCO2**
- 623,000 boxes
- 1,700/ day
  - Would cover Elm St. from the gate to Paradise Rd
  - EVERY DAY, ALL YEAR
- Air travel TBD could 2x transportation



Total eCO2 Emissions 1990-2007



Measurement Process

- Measurement is an imperfect process
  - Data have not traditionally been cataloged in a single location
  - Data not kept in a format where it is readily accessible e.g. airline travel
  - Many assumptions necessary e.g. commuting
- Rewards
  - Working with lots of different parts of Smith College
    - Knowledge exists outside the classroom!
  - Team was multi-disciplinary in membership and approach

What does it all mean?

- Smith College is responsible for emission of heat trapping gasses
- It is more important to focus on reduction, than the total quantity
- Buildings (heat, electricity, cooling) are the primary contributor
  - Transportation will become a grater portion of emissions as we lower building impact

What's next?

- Develop our ability to capture data for future updates
  - Database to capture key data
  - Minor changes to accounting procedures
  - Building metering
- Develop a Climate Action Plan
  - Charts the path to carbon neutrality
  1. Efficiency
  2. Renewable power sources and fuels
  3. Carbon off-sets
- Dude, Where's My Windmill
  - Monday, November 24, 4pm. CC 103-104

Ways You Can Help

- In your office (or home)
  - Use CFL's – 23w replaces 100w!
  - Think before you print – print 2x sided
    - Use recycled paper – 30% post consumer
  - Set your computer to sleep (not just the monitor!)
  - If it's too hot in your office in winter, please call Facilities Management x2400 (Don't open the window)
    - Don't set papers, sweaters etc. on radiators or vents
  - Carpool, bus, bike, walk to work
  - Turn it off, or don't turn it on in the first place
  - Use power strips
  - Watch out for Vampires and Phantoms!
- Join the "Green Team"
  - Every other Wednesday in the Campus Center,
  - Next meeting 12/3 @ Noon

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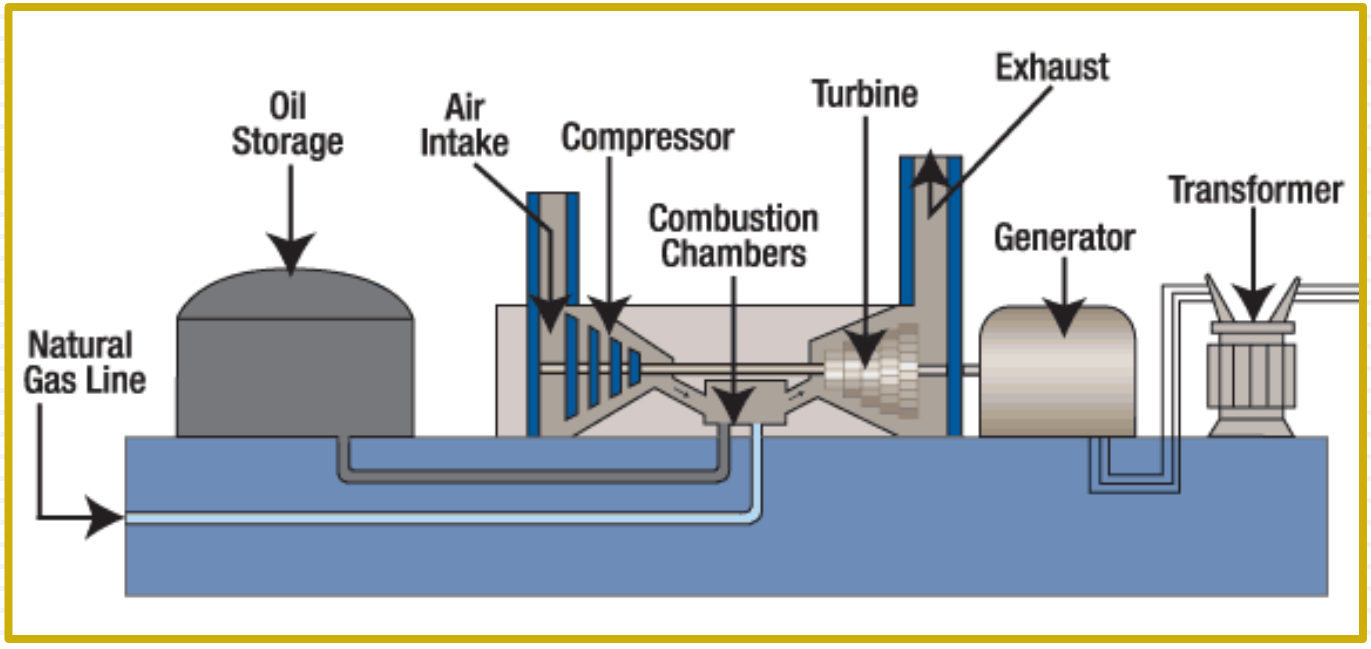
Questions


Oil Storage
Air Intake
Compressor
Turbine
Exhaust
Transformer
Combustion Chambers
Generator
Natural Gas Line