

American  
College &  
University  
Presidents  
Climate  
Commitment



EYP/

October 14, 2008

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# Agenda

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- Presidents Climate Commitment Summary
- Development and Implementation of a Climate Action Plan

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## / Purpose

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- The purpose of the Presidents Climate Commitment is to call to action the colleges and universities across America to aid in the reduction of Green House Gas (GHG) emissions by 80% by mid-century to avert negative impacts of global warming.

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## / Actions

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The Presidents Climate Commitment identifies 3 major actions that institutions must implement within a given time period to become carbon neutral.

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## / Actions

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1. Initiate the development of a comprehensive plan to achieve climate neutrality as soon as possible with the following specified actions:
  - First 2 months – Create institutional structure to develop and implement the plan.
  - Year 1 – Complete a comprehensive inventory of all GHG emissions.
  - Year 2 – Develop an institutional action plan for becoming climate neutral. Action plan to include:

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## / Actions

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- a. Target date to achieve climate neutrality (CN)
- b. Interim target goals and actions that will lead to CN
- c. Actions to implement CN and sustainability into curriculum
- d. Actions to expand research to achieve CN
- e. Mechanisms for tracking progress on goals and actions

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## / Actions

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2. Initiate 2 or more “tangible actions” while developing the comprehensive plan:
  - a. Establish a policy to build all new buildings to minimum LEED Silver rating
  - b. Adopt energy efficient appliance buying policy – Energy Star
  - c. Establish policy for offsetting GHG emissions from institutional air travel
  - d. Encourage use and provide public transportation
  - e. Purchase/produce a minimum 15% of energy from renewable sources
  - f. Establish policy supporting partnerships with sustainable companies

## / B. Actions

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### 1. Create “Institutional Structures”

Within 2 months of the implementation start date, establish a committee or structure to guide the development and implementation of the plan.

- Committee must include faculty, staff and students
- Committee should have authority to implement the commitment
- Committee should have a chairperson to act as the primary liaison

## / B. Actions

### Perform a Greenhouse Gas Emissions Inventory

Within one year of the implementation start date, complete a comprehensive greenhouse gas inventory of all GHG emissions.

- Methods for calculating GHG's must meet standards of GHG Protocol of the World Business Council for Sustainable Development
- The Clean Air cool Planets calculator is recommended
- Institutions must calculate and report on emissions over periods of one year, either calendar or academic, on the 6 GHG's covered under the Kyoto Protocol
- Suggests calculating emissions from years prior to signing commitment to develop a trajectory
- Sources of emissions to be reported include: *direct emissions* occurring from sources owned or controlled by the institution, *indirect emissions* generated in the production of electricity used by the institution and from commuting to and from the campus as well as air travel paid by the institution. Other sources should be included if significant, but

## / B. Actions

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### 3. Tangible Actions

- Within 2 months, Signatories agree to initiate 2 or more of 7 specified tangible actions to reduce GHG emissions while developing their climate action plan. Actions must be implemented within 2 years of start date.
  - Green Building Policy
  - Energy Star Procurement Policy
  - Air Travel Offsetting
  - Provision for Public Transportation
  - Green Power Production or Purchasing
  - Climate-Friendly Investing
  - Waste Minimization

## / B. Actions

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### 4. Climate Action Plan

Within 2 years of the implementation date, institutions agree to develop an action plan for becoming climate neutral and provide a specific target date with interim milestones for achieving climate neutrality as soon as possible. In setting target goals, institutions are encouraged to consider the need to reduce global emissions by 50-85% below 2000 levels by 2050.

- Climate neutrality is defined as having no net GHG emissions
- Climate neutrality is to be achieved by minimizing GHG emissions to the extent possible and carbon offsets or other measures for the remaining emissions
- Plan needs to explain how institution will achieve climate neutrality by the target date
- Plan needs to include actions to make climate neutrality and sustainability a part of the curriculum
- Plan must address actions to expand research and community outreach for GHG reduction in the community

## / C. Action Plan Format

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The institution's climate action plan should be in the form of a brief summary report that includes the following:

- **Introduction** – describes why the institution is taking the initiative and other background on the institution
- **Campus Emissions** – describes the institution's current emissions and a date for climate neutrality
- **Mitigation Strategy** – plan describing how the institution will achieve climate neutrality
- **Educational, Research, Community Outreach Efforts** – describes plans to make climate neutrality and sustainability a part of the curriculum as well as expand research and community outreach

## / D. Reporting Requirements

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Institutions agree to make action plans, inventory and progress reports publicly available.

Reporting Frequency – reporting frequency follows the institution's implementation start date

- Within 2 months, committed to submitting on the institutional structure and 2 tangible actions that will be implemented
- Within 1 year, committed to reporting results of GHG emissions
- Within 2 years, committed to submitting action plan and updated GHG emissions
- Within 3 years, report GHG emissions and progress implementing climate action plan
- Within 4 years, continue to report emissions data annually and narrative progress reports

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## / Actions

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- 3. Make action plans, inventory, and progress publicly available by providing them to the Association for the Advancement of Sustainability in Higher Education (AASHE) for posing and dissemination.

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## Climate Action “Drivers”

- Prospective Students – demographic driver
- Peer Ranking System (AASHE STARS)
- Current Student Body Activism
- Faculty and staff
- “Doing the Right Thing”

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## High Profile Non-Signatory Campuses

- Harvard University
- Yale University
- Princeton University
- Dartmouth College
- Stanford University
- Brown University
- Columbia University
- University of Chicago
- University of Texas
- University of Michigan
- Rutgers University
- Amherst College
- Williams College
- Swarthmore College
- Occidental College
- Vassar College
- Wellesley College
- Wesleyan College
- Kenyon College
- Colgate University
- Reed College
- Colorado College

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- **Sustainability Committee** (all campus stakeholders)
- **GHG Inventory** (Clean Air-Cool Planet)
- **Master Plan Review** (“Carbon Trajectory”)
- **Financial Analysis**
- **Implementation**

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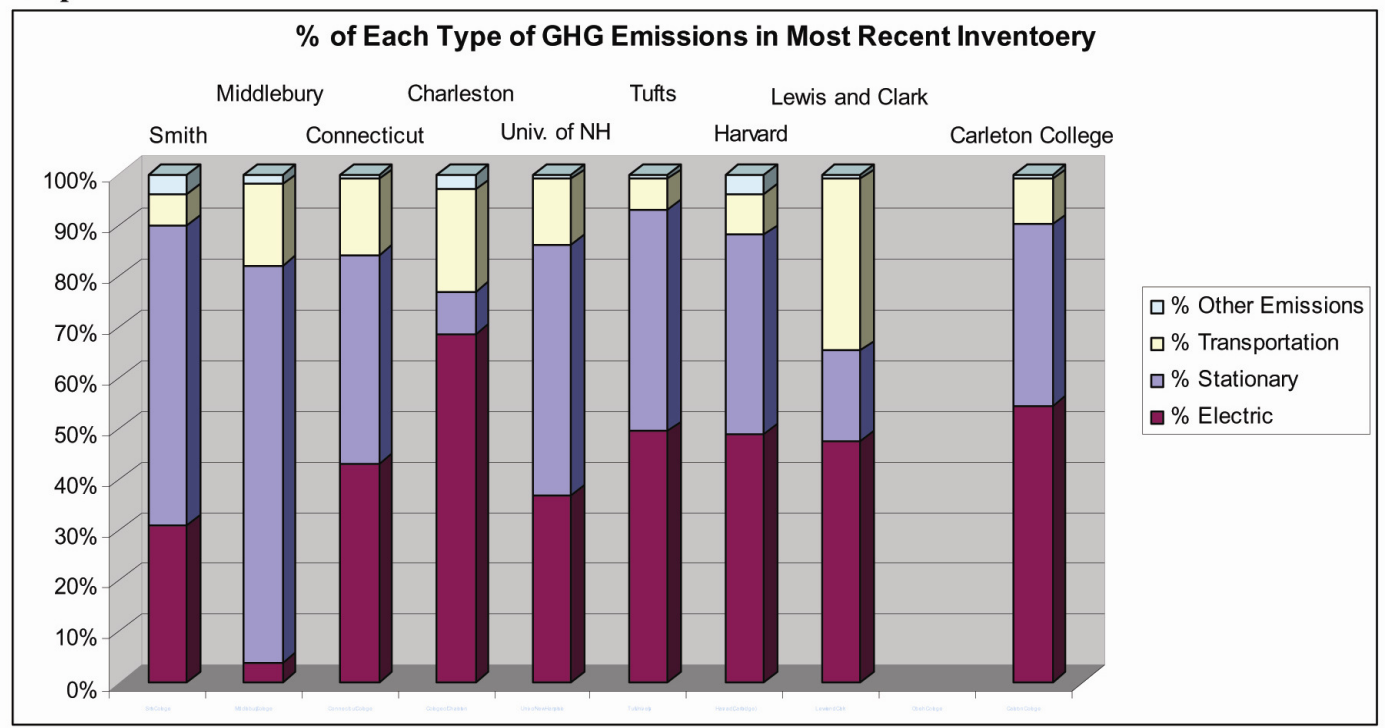
## Clean Air-Cool Planet Calculator

- Recommended by the PCC
- De facto standard
- Overall Campus Emissions
- Organized by Emissions Sources
- Organized by Emissions per Square Foot
- Organized by Emissions per Student



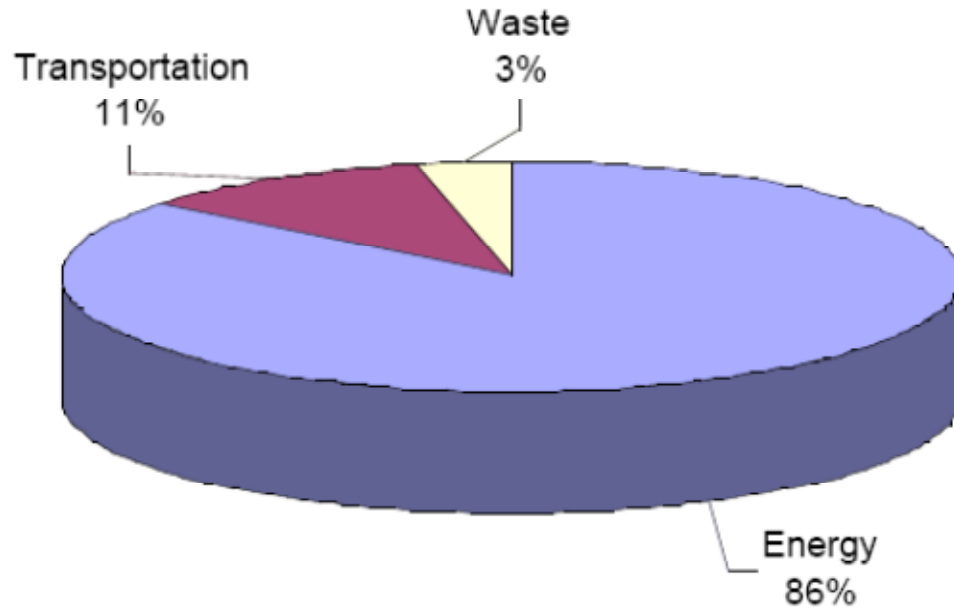
# Climate Action Plan

Graph 8:



# Climate Action Plan

Overall Greenhouse Gas Emissions Breakdown



Wellesley  
College

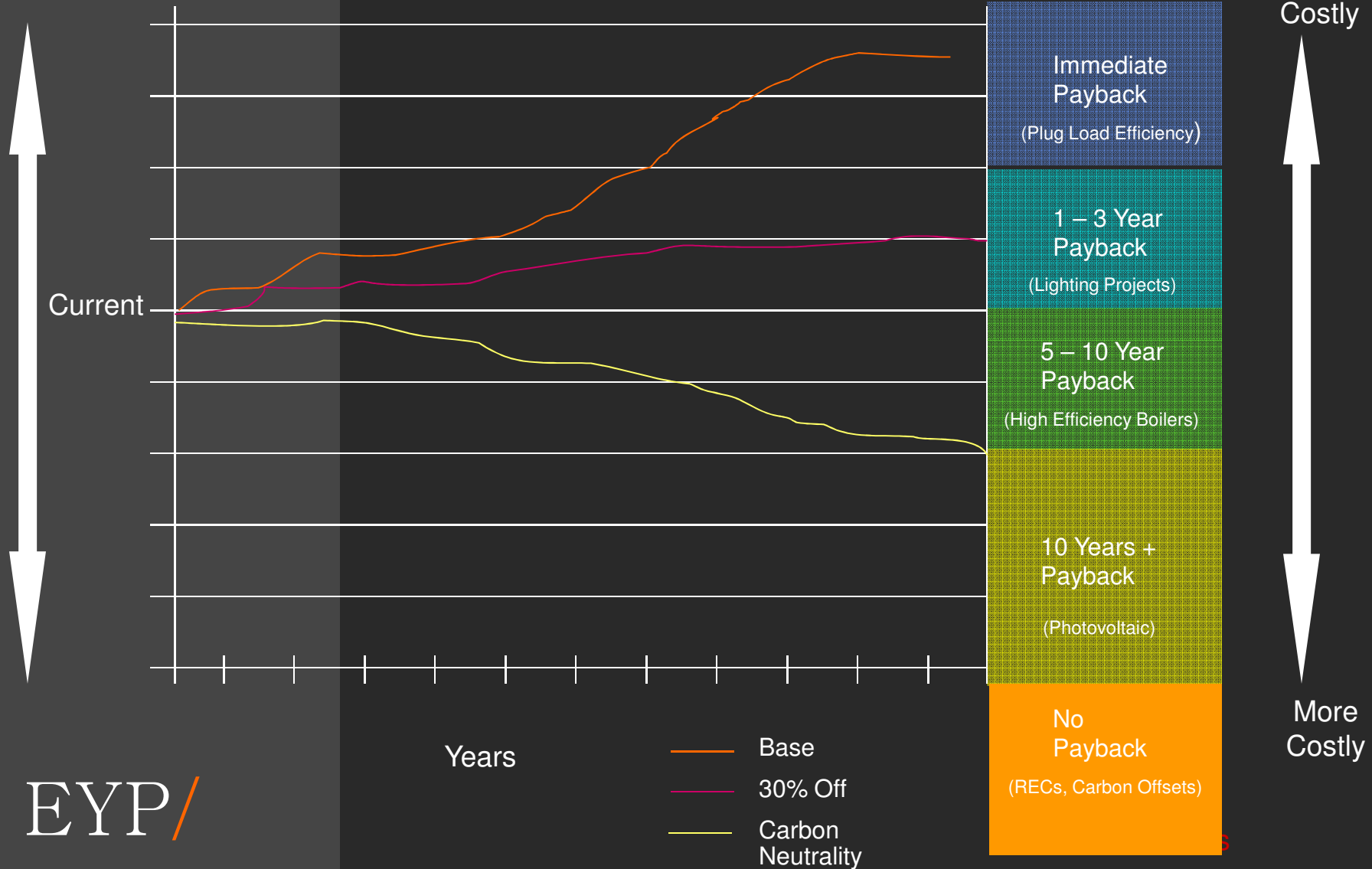
GHG Inventory

# Carbon Trajectory

Metric  
Tons of  
CO2

Millions  
of Dollars

Less  
Costly



Current

Years

- Base
- 30% Off
- Carbon Neutrality

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## Financial Drivers

✓ Lifecycle Costs

✓ Future Energy  
Prices

✓ Future Carbon  
Prices

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## Energy Consumption at Pomona College: Where would you invest funds to cut energy use and emissions?

Energy Intensity: TOP 10 RESIDENCE HALLS			
Residence Hall Bldgs.	Total sq ft	kwh used	
		2005-2006	kwh/sq ft
Mudd-Blaisdell	65,496	888,951	14
Oldenborg Center	71,000	918,937	13
Lyon Court Dormitory	24,238	181,398	7
Wig Hall	25,200	184,955	7
Norton Hall	9,000	63,174	7
Walker Hall	49,000	305,447	6
Smiley Hall	15,547	93,280	6
Harwood Court	63,100	339,434	5
Lawry Court Towers	18,200	71,883	4
Clark I, III, V	116,600	404,377	3

Energy Intensity: TOP 10 NON-RESIDENCE BUILDINGS/FACILITIES			
Non-Residence Hall Bldgs.	Total sq ft	kwh used	
		2005-2006	kwh/sq ft
Pendleton Pool	500	301,867	604
Haldeman Pool	3,500	470,821	135
Richard C. Seaver Biology Bldg.	13,672	1,499,138	110
Pauley Tennis Complex	1,243	91,760	74
Hahn Building	27,000	1,286,274	48
Seaver Building	60,319	2,526,974	45
Frary Dining Hall	23,000	867,563	38
IT (Multi-Use) Building	12,000	418,778	35
Frank Dining Hall	19,637	646,190	33
Replica House	885	26,294	30

SOURCE: A First Step Toward a Climate Neutral Pomona College: Greenhouse Gas Emissions Inventory and Recommendations for Mitigating Emissions, 2007

70-90% of campus emissions are building related

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## Lifecycle Costing

### Building Approach Energy Costs

#### Building Cost

75,000 SF  
x \$300/SF  
\$22,500,000  
X 3% (Eff. upgrades)  
\$23,175,000

$\Delta = \$675,000$

#### Operating Cost

75,000 SF  
X \$2.00/SF  
\$150,000  
X 35% (savings)  
\$97,500

$\Delta = \$52,500$

Simple Payback:  $\frac{\$675,000}{\$52,500} = 12.8$  years

If financed 30 yrs. at 4%, positive cash flow of >\$15,000/yr  
IRR over 30 years = 10% if 3%/yr energy escalation

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### “Hard” Energy Efficiency Programs

- Energy Audits
- Energy Analysis
- Commissioning/*Re*Commissioning
- Metering/Sub-metering
- Energy Management Systems
- Lighting Upgrades
- Chillers, Boilers, Motors, Variable Speed Drives, etc.
- Demand Controlled Ventilation

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## Central Plant

- Fuel Switching
  - Natural Gas
  - Liquid Biofuels
  - Biomass
- Cogeneration Capabilities
  
- Satellite/High Efficiency Boilers

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### “Soft” Energy Efficiency Programs

- “Plug Load” programs (computer power management)
- Energy efficient appliance purchasing policy
- Behavioral programs (dorm competitions, “turn it off” campaigns, etc.)
- Campus energy policies (temp. setbacks, level of services, etc.)

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## Renewable Energy:

Renewable Energy Credits (RECs)

Pros = Simplicity/Cons = Does not provide price certainty

Financial Position on Renewable Asset

Pros = Budget certainty/Cons = More complexity

## Carbon

### Offsets:

Pros = Can be a “bridge” to carbon neutrality goals

Cons = Credibility issues, cost to campus

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## Funding Sources

- Student fees
- Private Grants
- Endowment and Alumni
- Revolving Funds
- Utility and State Incentives
- Energy Efficiency Savings Projects
- Energy Efficiency Credits
- Carbon Credit Reductions

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Energy Projects  
are  
Moneymakers

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### Performance Contracting

- Little or no upfront capital costs
- ESCO provides planning, finance, design and implementation services
- ESCO guarantees savings and assumes risk
- Project costs paid through energy savings
- Comprehensive and rapid

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## Immediate Action Steps

1. Form Sustainability Committee
2. Complete GHG Inventory
3. Perform Energy Audit on all buildings
4. Prioritize Energy Efficiency projects
5. Adopt/Implement Computer Power Management policy
6. Adopt/Implement Energy Star appliance policy

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Presidents Climate Commitment Implementation Guide  
[http://www.presidentsclimatecommitment.org/pdf/ACUPCC\\_IG\\_Final.pdf](http://www.presidentsclimatecommitment.org/pdf/ACUPCC_IG_Final.pdf)

Association for the Advancement of Sustainability in Higher Education  
<http://www.aashe.org/index.php>

Clean Air-Cool Planet Carbon Calculator  
<http://www.cleanair-coolplanet.org/toolkit/content/view/43/124/>

State Incentives Database  
<http://dsireusa.org/>

National Wildlife Federation "Higher Education in a Warming World"  
<http://www.nwf.org/campusEcology/BusinessCase/HigherEducationInAWarmingWorld2-21-08.pdf>

The Apollo Alliance "New Energy for Campuses"  
[http://www.apolloalliance.org/downloads/resources\\_new\\_energy.pdf](http://www.apolloalliance.org/downloads/resources_new_energy.pdf)

Clinton Climate Initiative  
<http://www.clintonfoundation.org/what-we-do/clinton-climate-initiative>

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