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PRELIMINARY Report on Presidents Climate Commitment

Executive Summary

The Presidents Climate Commitment requires an institution to quantify its greenhouse gas emissions and create an institutional action plan (IAP) to become climate neutral. Signing on to the PCC requires at least two interim steps towards climate neutrality.

Colorado College has the structures to implement at least two interim measures. CC can adopt an Energy Star purchasing policy, re-engage its Committee for Socially Responsible Investing and take credit for the downtown circulator (public transportation), as quick and achievable interim measures. Colorado College can commit to offsetting air travel GHG emissions, moving to 15% renewable energy for campus operations, and doing more for public transportation at some increased direct and indirect cost. A commitment to LEED Silver or equivalent for all new construction as an interim step has limited tangible impact. However, keeping building design programs focused on high-effectiveness buildings may reduce the costs associated with LEED design and construction.

The President can task the Campus Sustainability Council with developing the IAP. The CSC and/or Environmental Science can update the 2005 CCX Greenhouse Gas study and continue its development as an annual audit. Whether CC has the capacity to develop the institutional action plan depends on the degree to which the IAP will be a broadly held institutional strategy. Broad-based stakeholder creation and ownership of the IAP will be more time intensive and have longer-lasting results.

There are no legal agreements binding an institution to this action plan; only credibility is at risk. Failure to act at all may jeopardize good will of students, staff, faculty, alumni and donors who are deeply committed to climate neutrality. Creating climate neutrality as a collateral duty to existing personnel will take extra time.

If climate neutrality in a meaningful timeframe is an important strategic issue for Colorado College, it needs authorization, funding, and staff support.

Colorado College  
Facilities Services  
Environmental Health & Safety

PRELIMINARY Report on Presidents Climate Commitment

Introduction

The Association for the Advancement of Sustainability in Higher Education (AASHE) and Second Nature, a non-profit environmental sustainability organization, developed the American College & University Presidents Climate Commitment (PCC) in 2006. These organizations hope that higher education in America can take a leadership role in addressing climate change at the institutional level by committing to a course of climate neutrality in academics, support operations, and investments.

AASHE and Second Nature set June 2007 as a target date for 200 signatories, 193 institutions have made the commitment as April 25, 2007. By December of 2009, AASHE and Second Nature hope to have 1,000 higher education signatories. Colorado institutions that have committed include all three campuses of the University of Colorado system, Colorado State University, Community College of Denver, Ft. Lewis College, and Metropolitan State College. Peer institutions that have committed include Carleton College, Macalester College, Oberlin College, and Pomona College.

This report addresses the requirements of the PCC, what short-term changes to operations Colorado College would have to implement to meet these requirements, and identifies a few strategic changes Colorado College might consider during progress towards climate neutrality.

The Presidents Climate Commitment

At its heart, the PCC is simply an overt statement of a commitment to move towards climate neutrality. The PCC requires an institution to:

1. Initiate the development of a comprehensive plan to achieve climate neutrality as soon as possible.
2. Initiate two or more tangible actions to reduce greenhouse gases while the more comprehensive plan is being developed.
3. Make the action plan, inventory, and periodic progress reports publicly available by providing them to the Association for the Advancement of Sustainability in Higher Education (AASHE) for posting and dissemination.

Point one is a strategic (multi-year) project with multiple campus stakeholders. Point two is a tactical effort – essentially a holding action that demonstrates commitment to the strategy. Point three is an ongoing operational commitment. The PCC defines the phrase "initiate development" in point one. A signatory institution must:

- 1.1 Create institutional structures to guide the development and implementation of an institutional action plan for becoming climate neutral (within two months).
- 1.2 Complete a comprehensive inventory of all greenhouse gas emissions, including emissions from electricity, heating, commuting, and air travel (within one year)

Colorado College  
Facilities Services  
Environmental Health & Safety

PRELIMINARY Report on Presidents Climate Commitment

1.3 Update the inventory (annually)

1.4 Develop the institutional action plan (within two years)

The PCC defines "institutional action plan" (IAP). The IAP must include:

1.4.1 A target date for achieving climate neutrality.

1.4.2 Interim targets for goals and actions that will lead to climate neutrality.

1.4.3 Actions to make climate neutrality and sustainability a part of the curriculum and other educational experience for all students.

1.4.4 Actions to expand research or other efforts necessary to achieve climate neutrality.

1.4.5 Mechanisms for tracking progress on goals and actions.

The PCC defines "tangible actions" in Point 2. These actions are:

2.1 Build all new campus construction to at least the U.S. Green Building Council's LEED Silver standard or equivalent.

2.2 Purchase only ENERGY STAR certified products where such ratings exist.

2.3 Offsetting all greenhouse gas emissions generated by institutional air travel.

2.4 Encourage use of and provide access to public transportation for all faculty, staff, students and visitors.

2.5 Purchasing or producing at least 15% of institutional electricity consumption from renewable sources within one year.

2.6 Support climate and sustainability shareholder proposals at companies where our institution's endowment is invested through a committee or other action.

In effect, the PCC has two phases. The preliminary phase requires preparation and interim tangible actions. The fulfillment phase requires development and implementation of an institutional action plan.

Colorado College  
Facilities Services  
Environmental Health & Safety

PRELIMINARY Report on Presidents Climate Commitment

Achieving the Preliminary Phase of the Commitment at Colorado College

Signing the Presidents Climate Commitment and setting Colorado College on a course for climate neutrality need not be expensive or complicated. Processes and structures already exist for preliminary phase objectives, per the table below.

<b>PCC objective</b>	<b>Requirement</b>	<b>Existing Structures, Processes or Products</b>
1.1	Structure for plan development	Campus Sustainability Council, Green Roundtable, budget process
1.2	Greenhouse gas audit	Chicago Climate Exchange study (May 2005)
1.3	Annual renewal of audit	EV independent study
2.1	LEED silver or equivalent	Green Globes, Tutt/Cornerstone momentum & learning
2.2	ENERGY STAR	Director of Purchasing, Fac Svcs Design Guidelines
2.3	Air travel offset	Banner Account code search via EV independent study, representative survey via EV independent study
2.4	Public transportation	Downtown shuttle
2.5	15% renewable	Amendment 37, CSU at 4.3% already, CC green power credits, Tutt Science wind power credits
2.6	Sustainability in investments	Committee for Socially Responsible Investing

Generally, meeting these commitments requires simple re-tasking of existing efforts. A few of these objectives require increases in funding (item 2.5: 15% renewable, for instance). Some objectives, such as LEED Silver or equivalent, require substantial change to existing processes or additional funding.

Colorado College can elect to implement the initial phases using cost models ranging from austere to expensive. Under an austere initial phase implementation plan, most steps can occur without direct expense. However, increasing financial commitment to the project will improve outcomes through better facilitation of Institutional Action Plan development and faster implementation of climate neutrality projects. Examples appear below.

**Austere:**

<u>Activity</u>	<u>Annual Direct cost</u>
Sign PCC	\$0
Join AASHE	\$1,000
Implement Energy Star purchasing policy	\$0
Task Committee on Socially Responsible Investing	\$0
Task CSC with IAP development	\$0
Update 2005 CCX GHG inventory (EV independent study)	\$0
Preliminary phase total (2 years):	\$2,000

Colorado College  
Facilities Services  
Environmental Health & Safety

PRELIMINARY Report on Presidents Climate Commitment

**Low:**

<u>Activity</u>	<u>Annual Direct cost</u>
Sign PCC	\$0
Join AASHE	\$1,000
Implement Energy Star purchasing policy	\$0
Task Committee on Socially Responsible Investing	\$0
Task CSC with IAP development	\$0
Hire Sustainability Coordinator to facilitate IAP development	\$50,000 <sup>1</sup>
Update 2005 CCX GHG inventory (EV independent study/Sustainability Coordinator)	\$0
Preliminary phase total (2 years):	<u>\$102,000</u>

**Moderate:**

<u>Activity</u>	<u>Annual Direct cost</u>
Sign PCC	\$0
Join AASHE	\$1,000
Implement Energy Star purchasing policy	\$0
Task Committee on Socially Responsible Investing	\$0
Task CSC with IAP development	\$0
Hire Sustainability Coordinator to facilitate IAP development	\$50,000
Update 2005 CCX GHG inventory (EV independent study/Sustainability Coordinator)	\$0
Purchase bus passes (100 employees)	\$42,000
Offset 15% of electricity with wind power	\$50,000
Preliminary phase total (2 years)	<u>\$366,000</u>

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<sup>1</sup> According to Salary.com, the median salary for Environmental Manager in Colorado Springs is \$85,000 plus benefits. This cost estimate reflects a 0.5 FTE position, and includes fringe benefits.

PRELIMINARY Report on Presidents Climate Commitment

Achieving the Fulfillment Phase of the Commitment

**Buying Climate Neutrality**

According to the 2005 CCX Preliminary Report, Colorado College GHG emissions for 1998-2000 were 23,300 tons. Emissions for 2004 were 25,500 tons, representing an average increase of approximately 550 tons per year. Extrapolating this level of growth (which may be the result of computing equipment, weather, increase in physical plant, increase in intensity of use, or a combination of these and other factors), GHG emissions for 2009 will be 28,300 tons.

One climate neutrality option is complete climate offset without mitigation. The Chicago Climate Exchange (CCX) is a legally binding market for carbon emissions trading. At current pricing, climate offset through CCX costs \$1,000 per year and \$3.70 per offset ton per year. Estimated total cost for complete climate offset through market, at current prices, is \$105,000. If CFI pricing rises to meet futures prices on the European Climate Exchange (ECX), where a cap creates scarcity, the estimated total cost for climate offset through market is \$707,000.

Recent action by the United States Supreme Court (*Mass. vs. EPA*, for instance) and rhetoric from the US legislature indicates government action to create scarcity in carbon dioxide emissions may occur soon. If so, CFI prices on the CCX may rise to meet those of the ECX.

Similarly, Colorado College can simply buy wind power for all electricity and CFI for all other carbon emissions. Current pricing for wind power credits is approximately \$0.02 per kilowatt-hour, or approximately \$20 per ton. Using this approach, Colorado College can become climate neutral with a similar investment - \$707,000.

**Genuine Commitment to Climate Neutrality**

Successful creation of an institutional action plan for climate neutrality must be a sustained effort with many stakeholders – more than this report can represent. As such, any ideas expressed in this section are advisory and preliminary.

To fulfill the commitment, Colorado College will have to create new capacities, including:

- Mapping and measuring campus flows, including:
  - Traffic (people, vehicles)
  - Utilities (heat, electricity, water)
  - Waste
  - Weather (wind, sun, shade)
- Funding climate neutrality projects, including:
  - A revolving climate neutrality project fund (Harvard's Green Loan Fund as a model, e.g.)

Colorado College  
Facilities Services  
Environmental Health & Safety

PRELIMINARY Report on Presidents Climate Commitment

- Allowing climate neutrality program savings to fund other programs (parking fee offsets, EcoFund, energy savings projects, etc.)
- Applying CC endowments to climate neutrality projects with financial returns (diversified cash flows from private ventures, e.g.)

Supporting literature from Second Nature and AASHE includes examples of support operations, academic programs, and financial changes which an institution can implement. AASHE makes other institutions' action plans available as references.

The utility reserve creates the capacity for funding long-term or lower return-on-investment energy conservation projects. Colorado College will realize cost avoidance due to climate neutrality projects in the utility budget. Climate neutrality efforts require that the utility reserve has funding sufficient to protect institutional budgets against higher utilization, higher consumption, and higher rates. As of this writing, the energy reserve is overspent by approximately \$250,000. Wherever climate neutrality project funding occurs, regenerating that funding from cost avoidance will only occur when the energy reserve is intact.

Colorado College can use the premium price of wind power offsets or CCX CFIs as a benchmark for prioritization of climate neutrality projects. As such, \$20/ton can be a "clearing price" for electrical climate neutrality projects. That is, climate neutrality projects with a carbon dioxide avoidance cost of less than \$20/ton make sense. Above that cost, wind offsets are more economical. During the implementation phase of the IAP, Colorado College can rebalance its project priorities based on changes to wind power offset premiums and CFI prices.

Pace and breadth of climate neutrality action determines implementation cost. A low-cost approach delays completion. Relying on collateral duty to existing personnel and student effort creates transience that will delay completion. Colorado College can chart its own course to meeting the President's Climate Commitment. The PCC does not require climate neutrality by any specific date, instead leaving the date to the institution based on needs and capacity. Comparative costs of carbon dioxide avoidance to current prices for commercial offsets can be a guiding star for setting the climate neutral target.

The Presidents Climate Commitment requires the release of an Institutional Action Plan within two years of signing the pledge. To implement an institutional process with strong stakeholder involvement will require dedicated time and effort from a few key people. This report envisions that the Campus Sustainability Council will coordinate the effort. **However, achieving a high-quality outcome will require dedicated staff time; this is a new assignment.**

Colorado College  
Facilities Services  
Environmental Health & Safety

PRELIMINARY Report on Presidents Climate Commitment  
Ideas for Institutional Action Plan

Many sustainability efforts relate to climate neutrality, some more directly than others. Energy use is a primary and continuing facet of operations with direct impact on climate neutrality. Fuel consumption is a primary source of non-water greenhouse gases. Initial, one-time building construction and renovation choices have large and lasting impacts on climate. Purchasing and waste processes have modest climate impacts at Colorado College, considering the local and regional economy. Naturally, targeted education programs leave a legacy of climate neutrality in our students as they graduate.

Colorado College will have to adjust existing processes, or create new ones, to support some of these programs. The institution can take a variety of postures regarding climate neutrality, depending on the funds available and the intensity of effort the institution wishes to undertake. This report uses three terms to identify possible actions in response to the Presidents Climate Commitment<sup>2</sup>. They are:

- **No Brainers (NB):** Actions that Colorado College should implement, and those actions with a short payback period
- **No Regrets (NR):** Actions that Colorado College could implement with a modest commitment of funds and effort, and those actions with a moderate payback period
- **No Prisoners (NP):** Actions that Colorado College could undertake with serious commitment of funds and effort.

**Energy: Electricity**

Project	NB	NR	NP
Campus wide energy audit ASAP	X		
Compact fluorescents where there are incandescent lamps currently	X		
Functional metering – electricity	X		
Wind turbine feasibility study – continue	X		
Wind turbine implementation – donation of equipment	X		
Revise microfridge policies (empty and unplug over breaks)	X		
Solar array at Baca – all consumption	X		
Res hall competitions for electricity use	X		
Renewable energy for some campus consumption	X		
Set public computers to idle/sleep/shut down at preset times	X		
Set all computers to default to sleep/idle after a period of no use	X		
Energy Star purchase policy			
Wind turbine implementation – purchase the equipment		X	
Solar array at CC Cabin – non-heating consumption		X	
Replace CRTs with LCD/Plasma		X	
Renewable energy for majority of campus consumption		X	
Solar array at CC Cabin – net metering with all available land			X
Solar array at Baca – net metering with all available land			X
Renewable energy for all campus consumption			X

<sup>2</sup> These terms come from a 2002 Rocky Mountain Institute report on climate neutrality for Oberlin College. This report acknowledges and appreciates the wit and wisdom of their construction.

Colorado College  
Facilities Services  
Environmental Health & Safety

PRELIMINARY Report on Presidents Climate Commitment  
Ideas for Institutional Action Plan

**Energy: Fuel, Heating, and Transportation**

Project	NB	NR	NP
Campus wide energy audit ASAP	X		
Evaluate and repair radiator controls in res hall rooms	X		
Geothermal heating and cooling – look to D11 for guidance	X		
Increase availability of Freeriders Union CC bus trips to mountains, increase fee to offset cost increases?	X		
Buy more local food from farmers, Beneficial or similar outlets	X		
Buy commercial grade B20 for all campus diesel vehicles	X		
Provide easy retail access to carbon offsets for students (Bookstore or Worner Desk, optional res hall fee at room draw, etc)	X		
Require food and other material transporters to buy offsets or use biodiesel		X	
Reduce parking fees in exchange for Drive Neutral or Terra Passes		X	
Carbon offsets for all campus air/bus/van travel (presumes measurement capacity)		X	
Buy commercial grade B100 for all campus diesel vehicles		X	
Buy E85 for all campus gasoline vehicles		X	
Phase in flexfuel/biodiesel capacity for all campus vehicles		X	
Functional metering – heat		X	
Res hall competitions for total energy use		X	
Require Drive Neutral or Terra Passes for campus parking			X
CC Biodiesel plant – supply our own commercial grade B100			X
Biofuel plant at Baca – supply our own E100 from switchgrass or local potatoes (Big Cat Vodka)			X
Switch to flexfuel/biodiesel for all campus vehicles immediately			X
Hydrogen fuel for campus heat (solar collectors, Sterling engines, geothermal heat sinking, hydrogen combustion)			X
Solid biofuel for campus heating (see U of Iowa)			X

**Water & Landscape**

Project	NB	NR	NP
Replace fixtures with waterless or low-flow on maintenance basis	X		
Understand Colorado water law as it applies to campus water conservation	X		
Replace faucets and flush valves with motion sensors on maintenance basis	X		
Benchmark campus gardening for application of non-pot water, evaluate water reduction options	X		
Report on pesticide and chemical fertilizer use	X		
Evaluate pesticide and chemical fertilizer use	X		
Use some Earth Tub products at CC Farm	X		
CC Farm students run the Earth Tub	X		
Retrofit all plumbing fixtures to low/no-flow immediately		X	
Replace all faucets and flush valves with motion sensors immediately		X	
Renovate Olin into a Living Machine a la Oberlin (water recovery)			X

Colorado College  
Facilities Services  
Environmental Health & Safety

PRELIMINARY Report on Presidents Climate Commitment  
Ideas for Institutional Action Plan

**Construction**

Project	NB	NR	NP
LEED standards on all new buildings	X		
Green Globes (GG) rating on new buildings	X		
Energy Star Building on new buildings	X		
Maximize passive solar (with LEED/GG)	X		
Building component recoverability by design (with LEED/GG)	X		
Reflective roofs – heat island effect (with LEED/GG)	X		
Energy Star appliance policy	X		
Specify healthy building materials for all projects	X		
Apply LEED/GG standards to major campus buildings during renovations	X		
LEED Platinum through building design behavior change and use of LEED-capable architects/engineers		X	
Maximize passive solar (without LEED/GG)		X	
Building component recoverability by design (without LEED/GG)		X	
Reflective roofs – heat island effect (without LEED/GG)		X	
Renovate campus buildings to LEED/GG standards immediately or soon			X
Apply Rocky Mountain Institute building technology (grow bananas off the grid)			X

**Education & other miscellaneous**

Project	NB	NR	NP
Create campus climate neutral campaign AND KEEP IT GOING	X		
Evaluate/overhaul campus recycling education program	X		
New light switch cover plate stickers	X		
Install Green Boards (tips for climate neutral living) around campus	X		
Evaluate cleaners for health hazards	X		
Non-toxic purchase policy for maintenance materials	X		
Engage Committee on Socially Responsible Investing to push climate neutrality in portfolio and held companies	X		
Waste-Olympics competition for waste and energy (assuming capacity to measure)		X	
Add more Climate Neutral coursework		X	
Require Climate Neutral coursework for graduation			X
Create Climate Neutrality major			X

Colorado College  
Facilities Services  
Environmental Health & Safety

PRELIMINARY Report on Presidents Climate Commitment  
Speculative Implementation Roadmap

Reference	Detail	Who	Timeframe
0	Sign Presidents Climate Commitment	President	Apr 2007
1.1	Task CSC with developing IAP	President	Apr 2007
3	Join AASHE	Contact TBD	Apr 2007
2.5	Augment renewable energy purchasing (to 5%)	Facilities	Apr 2007
2.6	Reactivate Committee on Socially Responsible Investing, charge with sustainability per PCC	President & FEC	May 2007
2.2	Implement Energy Star purchase policy on FY2007-8 purchases	Purchasing	Jul 2007
1.2	Update May 2005 Greenhouse Gas audit (becomes 2007 GHG Audit)	CSC	Sep 2007
1.4	Initiate IAP planning process	CSC	Sep 2007
Pre-req	Budget to cover utility reserve shortfall	Budget	Oct 2007
2.5	Budget for 10% offset	Facilities	Oct 2007
2.1	Begin to develop LEED Silver or equivalent GG capacity	Facilities	Jan 2008
	Adjust budget process to include renewable funding source for sustainability	Budget	Jan 2008
1.4	Initiate IAP stakeholder process	CSC	Jan 2008
1.4	Release first draft of IAP	CSC	Apr 2008
	Create energy conservation pool	Facilities Budget	May 2008
2.3	Create capacity to measure air travel (becomes <i>Air Travel Audit</i> )	CSC	May 2008
2.5	Augment renewable energy purchasing to 10% (\$ cumulative)	Facilities	Jul 2008
1.4	Conclude stakeholder review of draft IAP	CSC	Sep 2008
1.2	Update 2007 GHG Audit (integrates <i>Air Travel Audit</i> , becomes 2008 GHG Audit)	CSC	Sep 2008

Colorado College  
Facilities Services  
Environmental Health & Safety

PRELIMINARY Report on Presidents Climate Commitment  
Speculative Implementation Roadmap

Reference	Detail	Who	Timeframe
1.4	Release second draft of IAP (includes stakeholder comments)	CSC	Oct 2008
1.4	Budget for early phases of IAP implementation ( <i>2<sup>nd</sup> Draft of IAP, 2008 GHG Audit</i> )	CSC	Oct 2008
2.5	Budget for 15% offset	Facilities	Oct 2008
1.4	Complete review of 2 <sup>nd</sup> draft of IAP	Sr Staff Trustees	Jan 2009
1.4	Release final draft of IAP (includes Sr Staff/Trustee comments)	CSC	Mar 2009
1.4	Authorize IAP	President	Apr 2009
2.3	Offset air travel	CSC	May 2009
2.5	Augment renewable energy purchases to 15%, (\$ cumulative)	Facilities	Jul 2009
1.4	Begin IAP implementation	CSC	Jul 2009
1.2	Update 2008 GHG Audit (becomes <i>2009 GHG Audit</i> )	CSC	Sep 2009
...	...	...	...