

UBC's Vancouver Campus 2010-2015 Climate Action Plan

Evolving Energy - December 09, 2015

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UBC100

THE UNIVERSITY OF BRITISH COLUMBIA

University of British Columbia: Vancouver Campus

At a Glance

1000 acre campus

50,000 students

\$2 billion annual operating budget

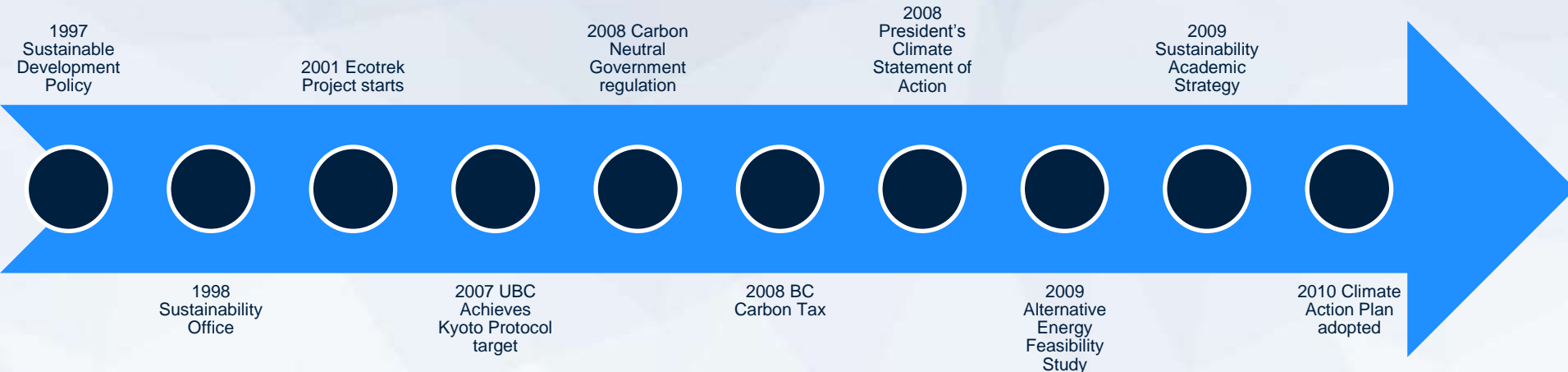
\$519 million per year in research
funding

10,000 student residents

10,000 neighbourhood residents

Climate Action at UBC

UBC Climate Action timeline



Climate Action Plan

Planning Process – Committees

Technical Advisory
Committee
(GHG inventory)

President's Advisory
Council on Sustainability
(high level priorities)

Sustainability Office
(Planning and
coordination)

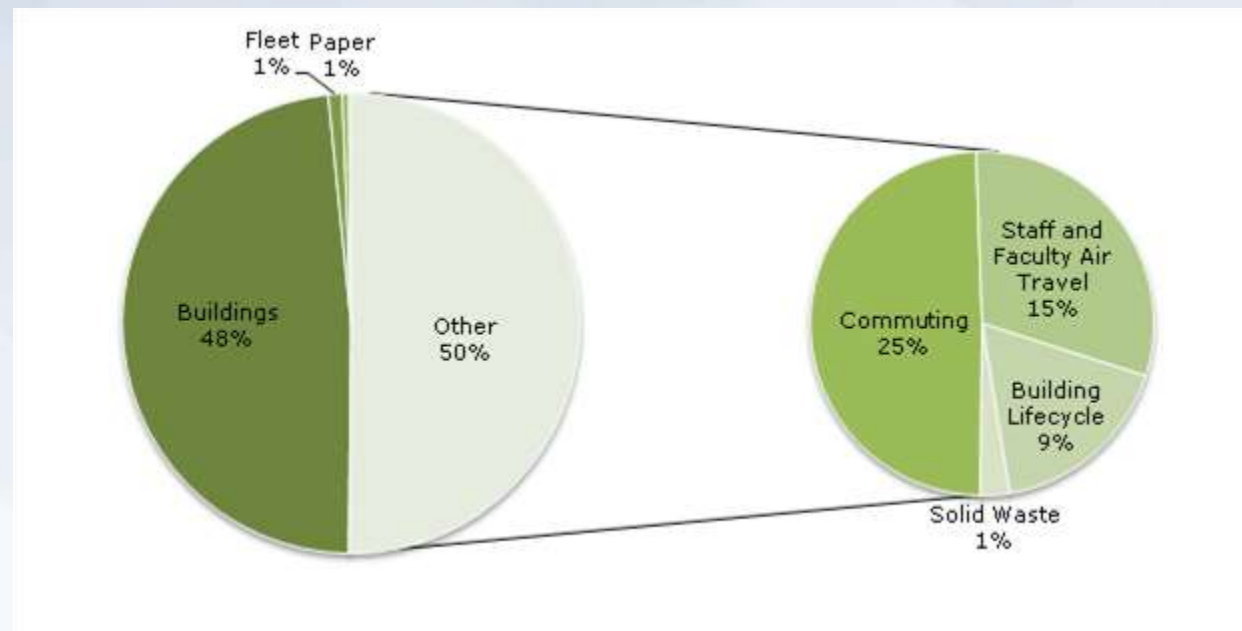
Working Groups

- Infrastructure & Development
- Energy Supply & Management
- Fleets
- Commuting
- Procurement & Travel
- Food

Climate Action Plan

GHG Inventory

- Corporate GHG emissions
~60,000 tonnes
- Scope 3 GHG Emissions ~
~60,000 tonnes



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Participatory Planning Process



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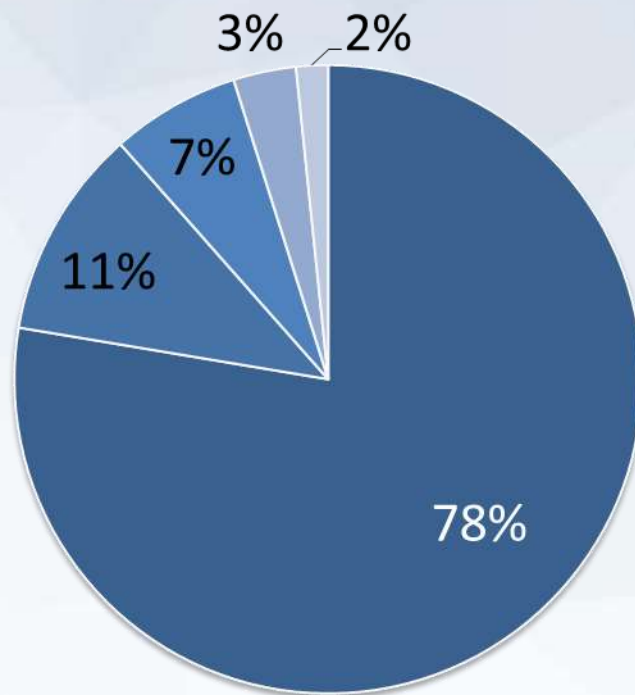
Vision

Confronting the challenge of climate change, the University of British Columbia will advance solutions on campus that eliminate emissions, will accelerate efforts to respond to the impacts of climate change, and will partner locally and globally to demonstrate leadership and accountability to future generations.



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2007 Corporate Emissions Inventory

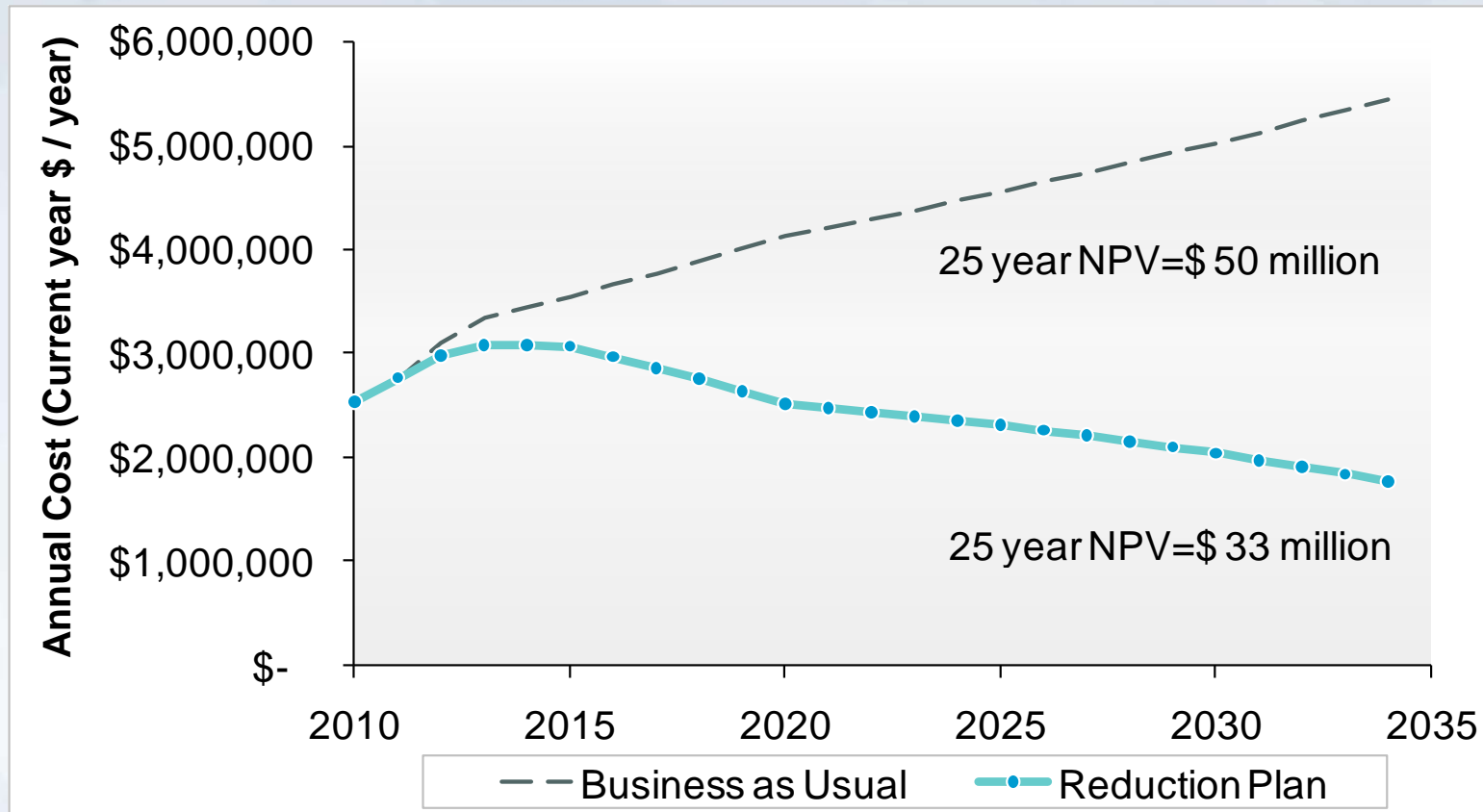


Total = 61,000 tCO₂e

- Steam
- Natural gas direct
- Electricity
- Fleet
- Paper

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Carbon Business Case



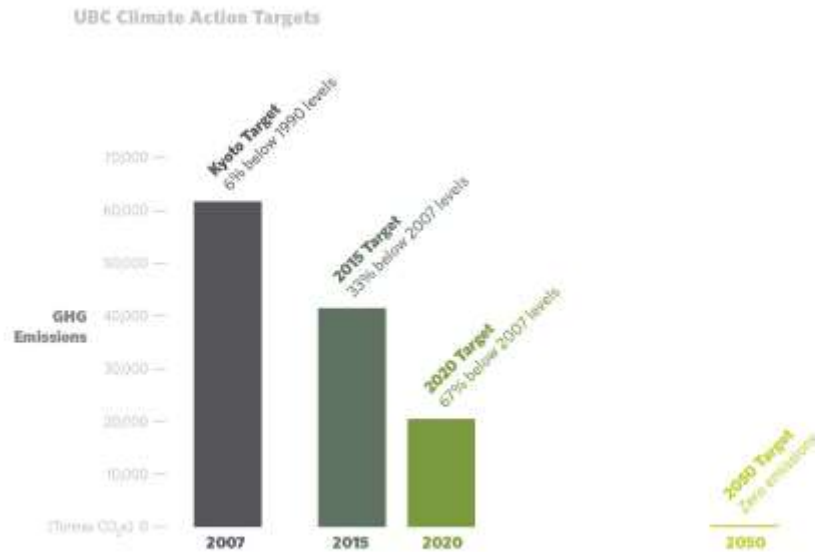
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Alternative Energy Feasibility Study

- Identified a number of viable low carbon energy sources (ocean heat, lona water treatment, biomass)
- Hot water district energy is the platform for integrating all large scale energy sources
- Building RCx/DSM recommended for all options

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Plan and Targets



Three key projects were approved to achieve the 33% reduction by 2015:

- Steam to Hot Water Conversion (22%)
- Building Optimization (10%)
- Bioenergy Research and Demonstration Facility (9%)

Climate Action Plan Projects

Building Re-Commissioning

building tune-up

Your building is enrolled in a "tune-up" program to make it run more smoothly and efficiently. Changes will occur behind the scenes over the course of 12 to 15 months.

This tune-up initiative will lead to a 10% reduction in campus energy consumption and GHG emissions by 2015.

If your workspace feels uncomfortable, please contact Trouble Calls at 604-822-3173 or submit a request online at sustain.ubc.ca/tuneup

Scan the barcode to monitor your building's energy use in real-time or visit <http://my.pulseenergy.com/ubc/dashboard>

a place of mind campus + community planning

UBC Energy Dashboard **OVERVIEW** LOCATIONS

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Portfolio Performance Summary

Chemistry East (C Block) ↓ 13% decrease over 1 week	Lower Mall Research Sta... ↓ 3.0% decrease over 1 week	West Mall Swing Space ↓ 3.0% decrease over 1 week
Life Sciences ↓ 2.4% decrease over 1 week	Reville Scarle ↓ 2.4% decrease over 1 week	Ruchan Tower ↓ 2.2% decrease over 1 week
Frank Forward ↓ 1.9% decrease over 1 week	Instructional Resource C... ↓ 1.5% decrease over 1 week	Earth & Ocean Sciences ↓ 1.4% decrease over 1 week
Georgia Cunningham ↓ 1.3% decrease over 1 week	* Campus * ↓ 1.2% decrease over 1 week	Osborne Centre Unit 2 ↓ 1.1% decrease over 1 week

UBC has launched a **Building Tune-Up** program in partnership with BC Hydro, tweaking systems in 73 buildings to use less electricity and steam, while maintaining – or even improving – your comfort.

Visit this dashboard provided by Pulse Energy at any time to monitor your building's monthly, weekly or daily energy performance – in real-time.

To learn more about what you can do to help save energy in your building, see the energy-saving tips in the top menu.

For details on UBC's **Building Tune-Up** program, please go to sustain.ubc.ca/tuneup

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Building Re-Commissioning Results

Building Name	Year Built	Floor Area (m ²)	Measured Savings	Measured Savings (\$/yr)	Simple payback (yrs)
Bio Sciences West	2011	8,021	35%	\$ 141,867	0.01
Bio Sciences South	2011	5,441	17%	\$ 44,905	0.02
Life Sciences Centre	2005	52,177	23%	\$ 424,982	0.06
Pharmaceutical Sciences	2012	36,138	17%	\$ 147,985	0.1
Earth Sciences Building	2012	17,755	12%	\$ 38,253	3.66
Centre for Comparative Medicine	2011	10,367	38%	\$ 150,964	4.64
Allard Hall Law	2011	14,909	21%	\$ 22,662	5.30
ICICSA	1993	10,097	31%	\$ 88,217	7.25

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Steam to Hot Water Conversion



- *Project CapEx \$85M*
- *Operational cost savings*
- *Avoided capital replacement costs savings*
- *30 year return on investment*
- *22% campus GHG emissions reduction*

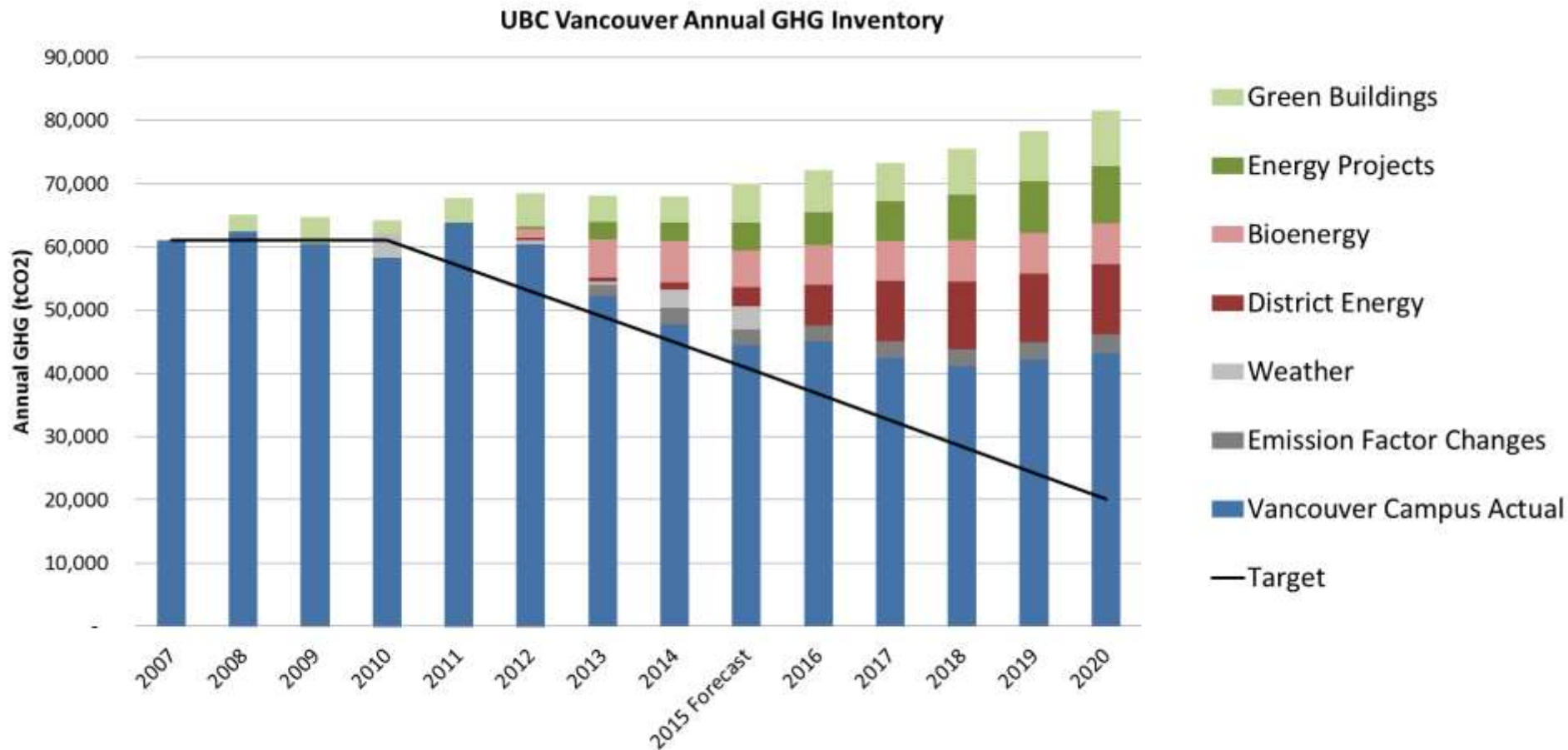
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Bioenergy Research and Demonstration Facility



- *Project CapEx \$27M*
- *30% from UBC and remaining from collaborators*
- *Commodity cost savings*
- *15 year return on UBC's investment*
- *9% campus GHG emissions reduction*

Climate Action Plan GHG reduction performance



Thankyou!



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