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Chapter 3

## **Community Engagement in University of British Columbia's Climate Action Plan**

Jessica Glor-Bell and Amelia Clarke

#### Abstract

Purpose - This study aims to:

Introduce the University of British Columbia (UBC) Climate Action Plan (CAP) and its formulation process.

Characterize the mechanisms needed for a campus community to shape and understand a CAP.

Identify lessons that could be relevant to other campuses.

*Design/Methodology/Approach* – This is achieved using grounded theory and case study methodology, specifically through key informant and informational interviews, review of secondary documents, and inductive data analysis.

Findings – This work:

Identifies six mechanisms that were offered by the UBC Campus Sustainability Office to the campus community to invite participation in shaping the UBC CAP. They are: 1) information, 2) student research, 3) consultation events, 4) advisors, 5) expert committees, and 6) partnerships,

Proposes and tests the "Spectrum of Public Participation" as a tool to characterize public consultation mechanisms and identify gaps, and

Identifies lessons that could be relevant to other campuses.

*Research Limitations/Implications* – This study is based on one university campus, thus the research design limits the theoretical generalizability. For other universities and colleges, this article offers lessons in how to fully engage their campus community in the content development of their own climate action plan.

*Originality/Value* – This paper identifies six mechanisms for engaging university community members in climate and sustainability planning. It also suggests the "Spectrum of Public Engagement" to assess gaps in stakeholder engagement processes.

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## Introduction

The Intergovernmental Panel on Climate Change's (IPCC) Fourth Assessment Report (2007) finds that a 50% to 80% reduction in greenhouse gas (GHG) emissions by 2050 is necessary in order to avoid dangerous climate change. However, the IPCC's Special Report on Emissions Scenarios projects the opposite trend: that global GHG emissions will increase by 25% to 90% CO<sub>2</sub> equivalent (eCO<sub>2</sub>) between 2000 and 2030 (Intergovernmental Panel on Climate Change 2000). Current emissions trends both in Canada and worldwide are increasing and the projected consequences are severe. In response, about 700 North American universities are committing to take action to become carbon neutral, and are developing Climate Action Plans (CAPs) (Eastern Research Group Inc. 2010; Hignite 2009; Wilson 2010). At least one European university, the University of Edinburgh, has the same intention (University of Edinburgh 2010). As a leading research institution, the University of British Columbia (UBC) took the opportunity to develop a CAP with the aim of achieving scientifically significant reductions in GHG emissions in the short and long term.

The UBC CAP sets out the most ambitious GHG reduction targets for a public institution of its size in North America (University of British Columbia 2010). The current article outlines the process by which the plan was catalyzed and developed and the mechanisms through which the UBC community had the opportunity to learn about the plan and contribute to its formulation. In doing so, the article contributes to knowledge about climate action planning at universities as well as about public engagement and student learning in such planning processes. It offers guidance for other universities and public institutions as they undertake the development of corporate GHG reduction plans. It equally addresses a gap in the existing campus sustainability literature regarding the process for developing ambitious targets that are not only accepted, but embraced by the student body, faculty and administration.

This work uses grounded theory and a case study methodology. Its purpose is to:

- Introduce the UBC CAP and its formulation process,
- Present six inductively delineated mechanisms for the campus community to engage in shaping the plan,
- Propose the "Spectrum of Public Participation" as a tool to characterize public consultation mechanisms and identify gaps,
- Identify lessons that could be relevant to other campuses.

First, the paper begins by introducing the theoretical elements used in the analysis of the CAP case study. This is followed briefly by the methodology. Next, the case is

outlined. It includes: the policy context in British Columbia and the history of leadership in campus sustainability at UBC; a description of the CAP itself; and the six ways in which the UBC community participated in the development of the plan. The paper then concludes with a discussion section which considers the mechanisms in relation to community engagement literature, and offers suggestions for sustainability practitioners at other campuses.

### **Theoretical Positioning**

This study is grounded in both campus sustainability and public engagement literature.

#### **Campus Climate Initiatives**

There are several branches of research on climate change mitigation and adaptation in institutions of higher learning. Key areas of study include student-focused social marketing to reduce energy consumption, green building design, energyefficient equipment, specifics for calculating GHG and energy savings, and options for purchasing or generating renewable energy (Kahler 2003; Marcell et al. 2004; Pearce 2006). There was also a special issue of the International Journal on Sustainability in Higher Education on climate change and universities (Walton 2009). In addition, the literature covers considerations for campuses purchasing GHG offsets (Sierra Youth Coalition 2008). The Campus Sustainability Assessment Framework (CSAF) (Beringer 2006; Cole and Wright 2005) includes sections related to climate change; and over 30 Canadian campuses are currently using this framework to assess and quantify sustainability (Helferty and Clarke 2009). In addition to the content-focused literature above, some studies have focused on processes for advancing campus sustainability (including climate change); for example, engaging multiple campus stakeholders in climate initiatives (Helferty et al. 2009) and policies related to campus environmental management systems (Clarke 2006). Even so, little has been published on the process and benefits of community engagement in climate action planning at universities.

There has also been considerable research published about UBC's sustainability efforts. The articles focus on curriculum (Sippos et al. 2008; Brunetti et al. 2003), culture (Moore 2005; Moore et al. 2005), and organizational learning (Gudz 2004). Students play a key role in most of the initiatives captured in the literature, but the role of youth engagement and student leadership is not consistently considered. Moreover, the CAP has received no coverage to date, although it does set some of the most ambitious GHG reduction targets among North American universities.

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#### **Public Engagement**

A common complaint among academics studying community engagement is the confusing use of key terms and the lack of common, and agreed upon, criteria, methods and tools to assess effectiveness of community engagement processes (Beierle and Clayford 2002; Dorcey and McDaniels 2001; Rosener 1982; Rowe and Frewer 2005). Rowe and Frewer (2005) seek to define common terminology within the field and choose public engagement as their preferred term for involving the community in planning and decision making. This work adopts their three categories of engagement: public communication, public consultation, and public participation. Rowe and Frewer (2005) differentiate these categories based on the flow of information between participants and sponsors (those commissioning the engagement exercise), where 'communication' and 'consultation' involve one-way information flows and 'public participation' involves two-directional information flow and mutual learning.

The International Association for Public Participation's (IAP2) Spectrum of Public Participation differentiates levels of participation based on the level of public impact on decision making. IAP2 clusters engagement mechanisms under five levels of participation (inform, consult, involve, collaborate, empower) (International Association for Public Participation 2007). According to IAP2, the sponsor: 1) 'informs' the public "with balanced and objective information to assist them in understanding the problem, alternatives and opportunities and/or solutions"; 2) 'consults' to "obtain public feedback on analysis, alternatives and/or decisions"; 3) 'involves' by working "directly with the public throughout the process to ensure that the public concerns and aspirations are consistently understood and considered"; 4) 'collaborates' by partnering "with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution"; and 5) 'empowers' by placing "final decision-making in the hands of the public" (International Association for Public Participation 2007:1).

When considering the avenues for campus community participation in the development of UBC's Climate Action Plan, this study combined the IAP2 (2007) spectrum with Rowe and Frewer's (2005) information flow analysis to consider both direction of information flow and level of public impact, recognizing that even when information flows in two directions, the final decision-making power may or may not be delegated to community representatives. This article proposes the "Spectrum of Public Engagement" as an analytical model, which may be helpful to other campus or public institutions seeking a participatory approach to planning.

From a student-led perspective, Helferty and Clarke (2009) considered the spectrum of involvement. They built upon Gauthier (2003) to offer the categories

of socialization, influence, and power. This article does not consider the perspective of the person being engaged, but rather the perspective on the entity which is engaging (the sponsor) and the mechanisms used by this sponsor.

## Methodology

This study uses a case study methodology (Yin 2003) and a grounded theory approach (Glaser 1998). Data were collected through both primary and secondary means and cover a period from 2006 to 2010. The Campus Sustainability Office provided a list of campus contacts with experience in sustainability planning, and from this starting point, further interview subjects were identified through a snowball method. Fifteen past and current UBC staff, faculty and students were interviewed as key informants. These unstructured interviews ranged in length from 40 minutes to two hours. In addition, four specific information requests were made of UBC staff related to their work activities; these ranged in length from 10 minutes to 25 minutes. Interviews were audio recorded and written notes were taken. Secondary documents were collected, including website content, review of current and past sustainability plans, plus notes and observations from CAP consultation events (town hall, round tables, visioning session).

Inductive data analysis began through coding of the interviews and documents for engagement mechanisms, for the history of sustainability planning at UBC, for information about the UBC context, and for information about the CAP process and content (specifically on how it evolved over time). The coded information regarding the engagement mechanisms was further analyzed, and six mechanisms for public engagement were determined. The six mechanisms were mapped onto the "Spectrum of Public Engagement".

#### Case Study - UBC Climate Action Plan

#### Context: British Columbia (BC) Provincial Mandate for Carbon Neutrality

Located on the Pacific coast of Canada, the western province of British Columbia (BC) has a population of 4.4 million people and a total area of 95 million hectares (234.8 million acres) (Province of British Columbia 2010). Under the Canadian Constitution, provincial powers include direct taxation for specific purposes, including natural resource management, hospitals, municipal institutions, and education (Parliament of Canada 2010). In November 2007, the BC Legislative Assembly passed the Greenhouse Gas Reduction Targets Act (the Act) (Province of British Columbia, 2007). The Act sets a 33% greenhouse gas (GHG) reduction target by 2010 against a 2007 baseline. This applies to the entire public sector (including schools, universities, colleges, health authorities, government ministries, and Crown corporations). The Act mandates the public sector to be carbon neutral starting in 2010 by first pursuing emission-reducing activities, then calculating emissions generated annually, and finally offsetting all GHG emissions annually through the Pacific Carbon Trust. The Pacific Carbon Trust currently charges \$25/tonne for carbon offsets and invests the money in emissions reduction activities in BC (Pacific Carbon Trust2010).

#### Brief Overview of UBC History of Sustainability Leadership

Located in Vancouver, BC, the University of British Columbia (UBC's main campus includes over 400 core buildings (plus over 50 tenants), 46,789 students, and 13,040 employees (full- and part-time) (UBC Planning and Institutional Research 2009a; UBC Planning and Institutional Research 2009b). Sustainability is part of UBC's vision statement and identified as one of the university's greatest strengths by its campus community members (University of British Columbia 2009). Some highlights of sustainable activities in operations include passing Policy #5: Sustainable Development (1997) (Gudz 2004); founding the Campus Sustainability Office (1998); and the launching of EcoTrek, a large-scale energy and water retrofit program (2000), the universal bus pass for students (2005), ReNEW, a building retrofit program to address deferred maintenance (2005), and the Residential Environmental Assessment Program (updated 2009).

The CAP planning process began in 2007, with mounting pressure from the student group UBC Common Energy asking UBC to move "beyond climateneutral", which they define as "do[ing] more to solve the climate crisis than we [are] do[ing] to cause it" (Common Energy 2008: 1). It ended in March 2010, when the President officially adopted the GHG reduction targets set in the plan (UBC Public Affairs 2010). The CAP has laid out detailed actions for the 2010 to 2015 time period. Student leadership has played a key role in the CAP, especially in its initial stages. In July 2007, the UBC Campus Sustainability Office (Sustainability Office) hired Liz Ferris as the Coordinator of Student Engagement (later the Coordinator of Climate Action). Ms. Ferris was a member and co-founder of UBC Common Energy. Ferris and UBC Common Energy approached the Campus Sustainability Office to work together to mobilize UBC towards substantial action on climate change.

A key milestone was achieved on March 13, 2008, when Stephen Toope, UBC's President, signed the University and College Presidents' Climate Change Statement of Action for Canada (The Research Universities' Council of BC 2008). This statement is similar to the American College & University Presidents' Climate Commitment in the United States, and it demonstrates Executive

support and commitment to reducing GHG emissions (Second Nature 2006; White 2009). Signatories to the statement of action commit to:

- Initiat[ing] the development of a comprehensive plan to reduce greenhouse gases by creating a planning body.
- Creat[ing] a planning body that includes students, staff, faculty, researchers, administrators and other partners to set emissions reduction targets in accordance with each institution's jurisdiction.
- Within one year of signing this document, complet[ing] a comprehensive inventory of all greenhouse gas emissions on each campus.
- Within two years of signing this document, set[ting] targets and develop[ing] an institutional climate action plan that engages each institution's research, education and operations in a comprehensive strategy that catalyzes solutions for climate change.
- While the comprehensive plan is being created, immediately implement[ing] selected tangible actions to reduce greenhouse gasemissions.
- Mak[ing] action plans, inventories and periodic progress reports publicly available for review and comment.
- Work[ing] cooperatively with governments, civil society, the business community and other institutions of higher learning to contribute to global climate change actions in recognition of our responsibility for equitable solutions" (UBC Public Affairs 2008: 1).

## Climate Action Plan (CAP) – Content

The CAP targets are to reduce UBC's GHGs by 33 % by 2015; 67 per cent by 2020; and eliminate 100% of GHGs by 2050 from a 2007 baseline (University of British Columbia 2010). See Box 1 for the CAP Table of Contents.

# Box 1: Climate Action Plan Table Of Contents (University of British Columbia 2010)

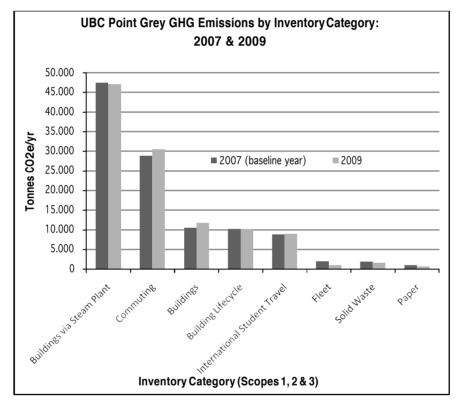
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Vision for Climate Action1
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Energy and Emissions Inventory7
Key Action Areas
Campus Development and Infrastructure
Energy Supply and Management
Fleets and Fuel Use
Travel and Procurement
Food
Transportation
Impact and Implementation
Resource Requirements
Cost of GHG Reduction
Management System
Next Steps and Implementing Actions
The following Technical Reports accompany the Climate Action Plan:
Technical Report #1 – Climate Action Plan Process
Technical Report #2 – Emissions Inventory Detail (ibid)
Technical Report #3 – Emissions Monitoring Requirements
Technical Report #4 – Targets Derivation

UBC's first campus-wide emissions inventory of 2006 emissions was based on the World Resource Institute's GHG Protocol Corporate Standard, which defines three scopes of emissions as:

- Scope 1: sources the university owns or controls,
- Scope 2: emissions generated to produce energy or electricity the university consumes,
- Scope 3: all emissions not directly controlled by the university (e.g. commuting, business travel, waste disposal, embodied energy in products, etc.) (World Resources Institute 2008).

UBC conducted its 2006 inventory before the provincial government parameters for measuring carbon neutrality were released. The Province requires that the university offset emissions in Scopes 1 and 2, plus 'paper' from Scope 3 (University of British Columbia 2010); however, the CAP includes emissions in all three scopes. See Figure 1 for the results of UBC's 2009 GHG inventory.





Adapted from (UBC Campus Sustainability Office 2009)

## Findings & Analysis - CAP Engagement Process

Hundreds of people were involved in the development of UBC's CAP. Based on an inductive analysis of the many ways students, staff, faculty and local community members were involved in the CAP planning process, this section proposes that public engagement can be clustered into six categories.

## Six Mechanisms for Public Engagement

Campus community engagement in the CAP did not have a specific strategy. Instead, it adopted an 'emergent process' where new ideas flowed in response to the process. Six mechanisms were utilized as part of the formulation process:

- 1. Information,
- 2. Research,
- 3. Consultation Events,
- 4. Advisors,
- 5. Expert Committees,
- 6. Partnerships.

Each category is described below and introduced from lowest to highest level of public impact on the plan content.

## Information

UBC community members could learn about the CAP in four ways: through inperson presentations, a discussion paper, the climate action website, and a symposium. In the early days of the CAP, word was spread primarily through inperson presentations. These presentations communicated the importance of climate action at UBC and the emerging directives coming from UBC's President and the Provincial Government. These meetings were not purely informational, unlike Rowe and Frewer's (2005) definition, as the ensuing discussions helped to informally shape the process and format of the CAP.

The discussion paper, "Leadership and the Climate Agenda" (University of British Columbia 2008), argued for climate action at UBC, presented the preliminary results of the 2006 GHG inventory, laid out a strategy for developing the CAP (though the final process was not identical), and was available for download on the Sustainability Office website. There were no formal ways by which to respond to the paper or discuss the content, so information flow was unidirectional and informational.

Launched in September 2008, the *climate action website* provided an explanation of the CAP structure, a central access point for documents, information and contacts at the Sustainability Office (*www.sustain.ubc.ca/climate.html*). This increased the accessibility and transparency of the planning process. Since the

official adoption of the CAP, a new website has been launched to introduce the final CAP and direct users to information on the plan, monitoring and implementation (http://climateaction.ubc.ca/climate-action-plan).

The UBC *Climate Action Symposium* (October 2, 2008) profiled UBC academic research and operational initiatives focused on climate. The symposium focused on UBC research and operational activities. At the Symposium, participants were updated on the CAP process, UBC's history of climate and sustainability action, and next steps through a plenary presentation. There were opportunities for networking and dialogue among participants during meals and breaks. Again, the programmed information flow was one-directional (from presenters to participants) but informal opportunities were available for dialogue and networking. The videos of keynote presentations and panelists' PowerPoint presentations were available on the climate action website.

#### Research

Student research was a key input in the development of the CAP, especially in the initial stages. Five student projects conducted CAP-specific research and are posted in the *Social, Economic and Ecological Development Studies (SEEDS)* library (Best and Ferris 2007; Zirnhelt 2008; Louie et al. 2008; Miles et al. 2008; Allyn et al. 2008). Though the impact of this research is reported anecdotally, there was no formal commitment to take that feedback into account, or report on whether this research had an impact. This renders student research consistent with Rowe and Frewer's (2005) definition of 'consult'. An *on-campus consultant* (a post-doctoral student) was paid to conduct the 2006 GHG inventory working with the newly formed Technical Advisory Committee to define the parameters. The results of this inventory were central to CAP development. This research was more consistent with Rowe and Frewer's definition of 'collaboration'.

As such, not all activity in the Research category fits into the same position on the Spectrum of Public Engagement, because the problem identification stage was collaborative for all activities, whereas the mechanism of public impact varied.

## **Consultation Events**

During the 2008 winter session, four consultation events were held on climaterelated themes: three *roundtable sessions* (on transportation, education, and food) and one *policy workshop* (on infrastructure). Each event was co-hosted by the Campus Sustainability Office and a partner group on campus (TREK Program Centre,

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Campus and Community Planning, UBC Common Energy, and as a group project for the Agricultural Sciences 450 course in the Faculty of Land and Food Systems). Participants included students, staff, faculty, decision-makers (Director & Associate Vice-President level) and local community members. The roundtables and workshop began with a short (20-30 minute) presentation on the CAP; participants then discussed specific questions in a World Café format. Comments were recorded by note takers, reported back at the end of the session, and then submitted to the sponsors. The roundtables both informed and consulted participants; however, the Sustainability Office did not close the consultation loop and inform participants on how their input was used. These sessions fit into Rowe and Frewer's (2005) definition of 'consulted', as the participants were asked to identify their priorities for climate action, barriers to action, and opportunities to reduce emissions.

During the winter session 2009, two *vision consultation workshops* were hosted by the Sustainability Office (supported by a professional planning firm) to invite campus community members to set the vision for the Climate Action Plan. These sessions were publicly advertised and open to the entire UBC community. The results were compiled and then announced at a feedback session. These sessions fit Rowe and Frewer's definition of 'involve', as the campus community shaped the vision, and its input was taken into account in the final CAP document.

Consultation events in the CAP process had predominantly one-directional information flow from participants to sponsor. Compared to the earlier sessions, the vision workshops more effectively closed the consultation loop by tracking and reporting back to participants on how their input shaped the final outcome. This may have been thanks to lessons learned from running the roundtables, or from the additional support of an outside planning firm.

#### **Informal Advisors**

A variety of faculty members, staff and students engaged as informal advisors to Sustainability Office staff working on the CAP, but made no official commitment to join a committee or contribute to regular meetings. However, their expertise was reported to have assisted in the development of the final plan.

## **Expert Committees**

The Sustainability Office created five *technical committees* to deliver specific reports and recommendations to the Sustainability Office. Their areas of focus were: 1) technical advisory (TAC); 2) energy management; 3) alternative energy; 4) utilities man-

agement; and 5) risk assessment. The committees were made up primarily of staff and faculty with relevant expertise, and some graduate students also participated.

The CAP was always supervised by an *oversight committee*. Initially (2007 – 2008), an ad hoc Climate Action Partnership Steering Committee advised on the preliminary development and first steps. This committee was composed of interested campus community members, including staff, faculty and students. In early 2008, the President's Advisory Council – Sustainability was created, and its Operations & Administration Working Group (OAWG) became the supervising body (Operations and Administration Working Group 2008). The OAWG membership included top decision-makers from all operational units at the university, plus representatives from the graduate and undergraduate student unions. These Directors are responsible for the primary emissions sources identified in the final CAP, and will be the ones to make decisions for (or against) implementation at the departmental/unit level.

## **Partnerships**

The Sustainability Office partnered formally with two student groups throughout the CAP process to pilot climate action:

- 1. Undergraduate students' union (Alma Mater Society [AMS]) on their Lighter Footprint Strategy in 2009/10; and
- 2. BC Campus Climate Network on their goBEYOND Project, to encourage students to reduce their GHG emissions (2008 present).

In these partnerships, the Sustainability Office offered financial support and some staff support.

### Discussion

#### Public Engagement in the UBC Climate Action Plan

These inductive findings were considered in relation to the literature, specifically Rowe and Frewer's (2005) information flow analysis and IAP2's (2007) Spectrum of Public Engagement, and the results can be seen in Figure 2.

Figure 2:	CAP Engagement N	Aechanisms applied to	Spectrum of Public	Engagement
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Types of Engagement	Communication	Consultation	Participation		
Information Flow (Rowe and Frewer, 2005)	Sponsor → Public	Sponsor ← Public	Sponsor $\leftarrow \rightarrow$ Public		
Participation Goal (IAP2, 2007)	Inform	Consult	Involve	Collaborate	Empower
Level of Public Impact (IAP2, 2007)	Increasing				
CAP Engagement Mechanisms	INFORMATION (Presentations, Discussion Paper, Symposium, Website)	RESEARCH (SEEDS) CONSULTATION EVENTS (Round Tables, Workshop)	CONSULTATION EVENTS (Vision Workshop)	ADVISORS, RESEARCH (on campus consultants)	EXPERT COMMITTEES (Technical Experts & Decision-makers) PARNERSHIPS (Operational Units, Students)

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As can be seen in Figure 2, the IAP2's (2007) five levels of participation map onto Rowe and Frewer's (2005) three categories of public engagement, including in relation to the information flow. The six mechanisms for engagement from the CAP process also fit into this Spectrum of Public Engagement, but are not a perfect fit. The 'public' at a university are the various stakeholders that partner on initiatives. In addition, the research mechanism was found to span both IAP2's 'consult' and 'collaborate' levels of participation, and both Rowe and Frewer's 'consultation' and 'participation' categories of engagement. All of the other mechanisms fit perfectly into one category.

In terms of the timeline of these activities, see Figure 3 for a visual representation.

As can be seen from Figure 3, the timeline did not correlate with increasing engagement. Instead, the research and advisors mechanisms were invoked early in the process, followed by the expert committees and partnerships, and then by the consultation events. Information was partially active early on, but was really launched about halfway through the process. Thus, there were mechanisms with medium impact and medium level of engagement right from the start, followed by high impact and high levels of engagement, which were then followed by mid- to low levels of impact and engagement. The same individuals were not all involved in each mechanism.

The same campus stakeholder groups, including faculty members, students, staff, and administrators, were engaged in all the mechanisms at UBC. So it was not a question of having students involved in the low engagement and low impact mechanisms, and the administrators at the higher levels. Instead, the target audiences varied, based on how embedded the people were in the future implementation. Those who would be directly responsible for the implementation were more engaged and had more impact. This was a critical feature of the success of this process.

The Spectrum of Public Participation, when combined with the six mechanisms, and a careful examination of which stakeholder groups are involved in each mechanism, could be used as a means to design a CAP engagement process. Alternatively, it could be used as a gap analysis to see which engagement mechanisms are missing, or where the bulk of the time and resources are being allocated. The impact of the engagement is not guaranteed by the mechanisms. The process must also be designed to incorporate the content and suggestions, and to provide feedback to those involved on how their ideas were taken into consideration (Rowe and Frewer 2005).

Mechanism	Туре	Summer 2007	Fall '07	Winter 2008	Summer '08	Fall '08	Winter 2009	Summer '09	Fall '09	Winter 2010
Information	Inform									
Research	Consult & Collaborate									
Consultation Events	Collaborate									
Advisors	Collaborate									
Expert Committees	Empower									
Partnerships	Empower									

Figure 3: Timeline of Public Engagement in UBC's Climate Action Plan (Summer 2007-Winter 2010)

LEGEND

active

partially active

not active

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## **Transferable Lessons for Other Campuses**

In terms of the lessons learned from this case, which may be applicable to other higher education institutions, these include:

- 1. Developing a Climate Action Plan is a great way to ensure a campus addresses its climate impacts.
- 2. Engaging stakeholders in the process will increase the likelihood of the student body, faculty and administration embracing the targets, thus enabling more effective implementation. Identifying the key climate stakeholders (those affected, those with decision-making power, and those with unique or specialized knowledge), and ensuring representatives are engaged. Giving specific attention to ensuring consultation events and engagement activities are accessible and engaging representatives from non-traditional stakeholders affected by climate change.
- 3. Deploying any of the six different engagement mechanisms, each of which involves a different level of engagement by participants and thus a different level of impact. A combination of different engagement mechanisms should be used at different points in the process.
- 4. Taking careful consideration to ensure various stakeholder groups (including students) are involved at all levels of engagement, while all having an opportunity to have an impact on the content. Particular attention should be paid to ensuring future implementers are involved in the development process.
- 5. Considering the importance of feedback loops, so that information is not just collected, but that participants also see it being incorporated. Suggested tools include an email list for regular updates to anyone who has ever engaged; a climate action website; and bi-annual update meetings of all committees and advisors. This also enables those who participate early on in the process to stay in- formed of the results of future engagement activities, and those who engage later to catch up on the results to date.
- 6. Piloting projects, which explore implementation and at the same time the formulation process, are a great way to engage the student body (which turns over quickly). They also provide an opportunity to leverage partnerships.
- 7. The role of student leadership and pressure, as well as the opportunities for student learning through the development and implementation of climate action plans, is not to be overlooked or underestimated. This became a key pillar of the final vision for the CAP (University of British Columbia2010).

## Conclusion

In conclusion, this article introduces the UBC CAP and its formulation process; presents six engagement mechanisms; and offers a means to identify potential gaps in a campus engagement process. In particular, using the Spectrum of Public Participation, the level of engagement and impact can be considered. When combined with the six engagement mechanisms and an analysis of the stakeholders in each one, the UBC CAP was found to offer a comprehensive engagement process. Although many of the approaches identified here are expected to offer transferable lessons for other types of campus planning exercises, including creating a sustainability strategy, there is still room for future focus on a more in-depth analysis on how to improve the quality of engagement in each one of these mechanisms and to demonstrate a causal link between public engagement and a strengthened commitment to plan implementation.

### Acknowledgements

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