



SEPN

The Sustainability and
Education Policy Network

RESEARCH. CONNECT. MOBILIZE.



IMPACT REPORT

MESSAGE FROM THE DIRECTOR

When the Sustainability and Education Policy Network (SEPN) was conceived in 2010, our vision was to establish an international network of researchers, organizations, and policy makers working together in a research-based partnership to support the evolution of sustainability in education policy and practice.

Carrying out the network's ambitious research program and goals has required the ongoing dedication of over 40 passionate, hardworking individuals and organizations. Throughout the life of the SEPN project, the research team has collected over 1,600 policies and journal articles to explore how sustainability is being taken up by the education system. We have surveyed over 1,000 stakeholders in both K-12 and post-secondary education settings to examine on-the-ground experiences with sustainability uptake in the education system. We have conducted over 275 in-depth interviews and 60 focus groups with students, teachers, faculty, staff, and administrators in 22 K-12 schools, 11 school divisions, 7 ministries of education, and 6 post-secondary institutions to unpack the dynamics of educational policy development and enactment. As interest in our toolkit grows, SEPN projects are currently in development in Australia, Sweden, and other locations.



As we take stock of our research findings, it has become clear that the sustainability challenge is being taken up by many brilliant, determined people across education systems globally. The research team has identified many excellent policies being developed and implemented at all levels of the education system. We have found exemplary, innovative practices being spearheaded at the grassroots level by students, teachers, faculty, and staff. We have been inspired as education systems across the world respond to UN initiatives including the Sustainable Development Goals, Global Action Programme, and Action for Climate Empowerment.

SEPN's comprehensive examination of the types of educational strategies currently in place to improve sustainability uptake in education policy has two key findings. First, that sustainability is addressed in facilities and physical infrastructure upgrades in both the K-12 and post-secondary education systems, and second, relatively shallow engagement with whole institution sustainability approaches, which incorporate sustainability into governance, curriculum, research, and community engagement activities, in addition to operations.

As the need to develop solutions to our global sustainability challenges becomes increasingly urgent, it is apparent that more work needs to be done and that how we conceptualize sustainability needs to change. As we focus on technological solutions such as efficiency improvements and emissions targets, we must take care not to lose sight of the cultural aspects of our sustainability issues. We must shift the education system to transform and reorient educational paradigms to be better in line with sustainability values, and better prepare citizens for the transition to more sustainable societies.

We are excited to be among the outstanding community of scholars, students, teachers, administrators, and policy makers who are contributing to the development of sustainability solutions, both in Canada and internationally. I look forward to sharing more about our work in the future and I hope you enjoy reading about the work we have been doing since the project began.

A handwritten signature in black ink, appearing to read 'M. McKenzie', with a long, sweeping flourish extending to the right.

Dr. Marcia McKenzie
Director and Principal Investigator
Sustainability and Education Policy Network

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WHAT IS THE SUSTAINABILITY AND EDUCATION POLICY NETWORK?

Climate change, new environmental technologies, and energy and water sustainability are cultural and political challenges, not just technical or scientific issues. Solving our human-environment challenges requires integrated solutions that require Canadians to be informed about environmental issues and motivated to make change. However, little was known about how education systems are—and could be—making progress towards embedding sustainability. Existing research on sustainability policy and practice in education is scarce, uncoordinated, and regional.

The Sustainability Education and Policy Network (SEPN), an international network of researchers and organizations advancing sustainability in education policy and practice, emerged in response to these knowledge gaps. SEPN is a partnership between researchers and leading policy and educational organizations. SEPN is hosted at the Sustainability Education Research Institute (SERI), located at the University of Saskatchewan in Canada, and funded by \$2 million in Social Sciences and Humanities Research Council (SSHRC) funding and \$1 million in matching funds from partners and contributors.

In 2012, SEPN began the world's first large-scale, national-level research collaboration to collect and analyze comparable data across Canada's formal education system. This has allowed an examination and comparison of the range of sustainability policies and practices being developed, implemented, and experienced in Canadian primary, secondary, and post-secondary contexts. Since then, SEPN+ has expanded our focus to research in other countries internationally.

To inform and motivate citizens, education systems, from Kindergarten to Grade 12 and post-secondary education, must play a key role in creating a sustainable future.

Our Research Approach

SEPN's core focus is the policy-practice gap. The research team is working to determine which policies, practices, and innovations are most promising for enabling educational change for a more sustainable future. The network develops locally responsive, research-based analyses of sustainability in education policy and practice. We engage and collaborate with diverse stakeholders and decision makers. Our approach includes:

- An overarching methodological toolkit which includes a core set of methods, with adaptations determined based on local contexts
- Common data collection processes to enable comparative research
- The ability to inform monitoring of the Sustainable Development Goals (SDGs) and Global Action Programme (GAP) priorities by sharing project databases with UN and UNESCO evaluation processes
- Community development via dynamic, two-way policy maker-researcher collaboration
- A commitment to integrate Indigenous perspectives and considerations throughout the research
- Innovative postgraduate training to deeply integrate students, postdoctoral fellows, and emerging scholars into research activities

SEPN'S RESEARCH IS
COLLABORATIVE • INNOVATIVE • INTERNATIONAL • TRANSFORMATIVE

The SEPN Vision: More than Just Data

SEPN's collection of a vast amount of comparative, national-level data is innovative, unique, and holds great promise for advancing learning and action in relation to sustainability education. But this data is only useful if it informs education policy and practice. Meaningful engagement with diverse stakeholders in education, including community members, post-secondary students, teachers, administrators, and policy makers is foundational to SEPN's work. Research users and researchers working together provide the best chance for developing sustainability policy and practice that works.

SEPN's vision is to:

- Maximize two-way knowledge flows between researchers and non-academic partners
- Develop rigorous comparative, evidenced-based understandings of sustainability in education policy internationally, nationally, and regionally
- Mobilize research-based evidence to diverse stakeholders and decision makers
- Focus on people and relationships, with integrated partnerships among researchers, organizations, and policy partners
- Share a dual focus on contributing to research literature in a range of disciplinary fields while also having an applied impact on policy and practice throughout education systems

SEPN+ Research Alliance

Given mounting public support for mitigating the effects of climate change, education sectors in nations throughout the world will be increasingly expected to align policy to address sustainability challenges.

Following the United Nations Decade of Education for Sustainable Development (ESD, 2005-2014), UNESCO released a new Global Action Programme for Education for Sustainable Development (ESD), which sets out to reorient education towards a stronger set of contributions to sustainable development. The UN also recently launched a bold set of 17 Sustainable Development Goals (SDGs) which commit world leaders to "ending extreme poverty, fighting inequality and injustice, and fixing climate change," with the fourth SDG being focused on education. The UN's Conference of the Parties climate change meetings, which recently culminated in the creation of the Paris Accord, also includes a focus on the role of education in addressing climate change and sustainability. SEPN's research is timely as it can guide the uptake and implementation of sustainability policy mandates in formal education.

SEPN+ enables unique learning, tools, and approaches to be applied and refined internationally in order to contribute to global innovations in addressing sustainability in education.

SEPN's successes in Canada have garnered international interest from policy makers and researchers keen on extending the methodology to other national contexts. As a result, the SEPN+ research alliance was established in 2016. SEPN+ is a global consortium of researchers and policy makers undertaking research in and across national contexts to enable deeper responses to sustainability through education.

SEPN+ maintains a commitment to community development via dynamic, two-way policy maker/researcher collaboration. SEPN+ adapts the SEPN overarching methodological toolkit based on local contexts and a commitment to integrate Indigenous perspectives and considerations. Common data collection processes enable comparative research within and across national contexts and hold promise for informing monitoring of the SDGs and GAP priorities by sharing project databases with UN and UNESCO evaluation processes.

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Canadian Centre for Policy Alternatives
David Suzuki Foundation
Learning for a Sustainable Future
Sierra Youth Coalition

SEPN-Canada Contributors

Assembly of First Nations
Canadian Federation of Students
Canadian Network for Environmental Education and Communication
Global Youth Education Network
Métis National Council
Sustainability Solutions Group

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INFORMING EDUCATION SYSTEMS

To implement knowledge that arises from research, dialogue and collaborations are needed to bridge between researchers, policy makers, educators, and the broader community. Researchers must link their work with stakeholders in ways that elicit significant action. SEPN is premised on researchers linking with education policy makers and practitioners to provide research which can inform decision-making.

The Value for Policy Makers

Despite a continued drive from both policy makers and researchers to increase research uptake in policy, barriers to the use of research persist. Therefore, rather than solely focusing on how to make its research more useful, SEPN aims to understand what influences and constitutes policy, what barriers exist in developing policy, and how education policy decisions are made.

Existing research has tended to take a policy science approach focused on the practices needed to achieve policy goals, emphasizing increased efficiencies in facilities management or on increasing curricular or research sustainability content. Traditional sustainability policy analysis traces policy from development to implementation, viewing sustainability as a linear process with a pre-determined endpoint; however, this does not reflect the reality of policy making. Rather, SEPN believes that examining on-the-ground experiences with education policy related to sustainability can inform the development of effective policy and practice.

SEPN aims to provide concrete tools that can be readily used by policy makers. SEPN's research, and the network itself, can be used as a resource to:

- Inform the development of research-based sustainability policies, plans, and initiatives
- Support evidence-based decision-making, regionally, nationally, and internationally
- Act as a toolkit for monitoring and evaluating sustainability initiatives at many scales
- Facilitate discussions amongst educational stakeholders, policy makers, and researchers to foster integrated partnerships
- Improve public awareness about sustainability initiatives occurring in different schools, school divisions, ministries, and post-secondary institutions

The Value for Sustainability Actors

Sustainability uptake in the education system often comes from the ground, with initiatives being spearheaded by students, educators, staff, and administrators at all levels. Individuals involved and interested in sustainability can use SEPN's research findings to:

- Identify policy and practice initiatives to improve sustainability uptake in their schools and institutions
- Provide policy and decision makers with evidence to improve accountability towards sustainability goals



The Value for Researchers

The UN's Sustainable Development Goals (2015-2030), UNESCO's Global Action Programme on ESD (GAP, 2015), and the UN's 21st Conference of the Parties meetings (COP21) all include calls to address sustainability issues in education policy innovations in Canada and internationally. To date there has been minimal empirical research focused on understanding and enhancing such policy innovations. SEPN is the exception. Through SEPN+, the project methodology is being extended to other national contexts and includes:

- A methodological toolkit with a core set of methods which can be adapted to local contexts
- Common data collection processes to enable comparative research, regionally, nationally, and internationally
- The ability to act as a toolkit for monitoring and evaluation of sustainability uptake, including in relation to UN and UNESCO initiatives
- Community development via dynamic, two-way policy maker-researcher collaboration
- The integration of Indigenous perspectives and considerations throughout the research
- Innovative postgraduate training models

“Through the David Suzuki Foundation’s involvement with SEPN, we established a partnership to move forward learning strategies and best practices for teaching outdoors.”

- Rachelle Delaney, David Suzuki Foundation

SPOTLIGHT: KNOWLEDGE MOBILIZATION **KNOWLEDGE MOBILIZATION EVENTS: BRINGING RESEARCHERS, POLICY MAKERS,** **AND SUSTAINABILITY PROFESSIONALS TOGETHER**

SEPN specializes in events designed to foster collaboration and dialogue between researchers, policy makers, and sustainability professionals. These include biennial conferences in 2013 and 2016, as well as policy forums in 2016 and 2017.

These events serve as a knowledge mobilization forum for SEPN to facilitate the flow of knowledge and access to research-based networks among researchers and non-academic audiences. They provide opportunities for local and international researchers to meet and talk with policy makers about challenges and opportunities of research-policy relationships. The results are stronger relationships between policy makers and researchers through the identification of more effective ways for researchers to support policy decision-making.

In 2016, SEPN's event “Connecting Education and Environment” culminated in the development of policy maker engagement guidelines to facilitate future research that is useful for policy makers and able to support research-informed decisions in policy making. The guidelines also laid the groundwork for future memoranda of understanding between SEPN and policy makers toward increasing collaboration on policy research in sustainability education.

Connecting Education and Environment was funded by a \$25,000 Connection Grant from the Social Sciences and Humanities Research Council and \$37,000 in matching contributions from SEPN partners.

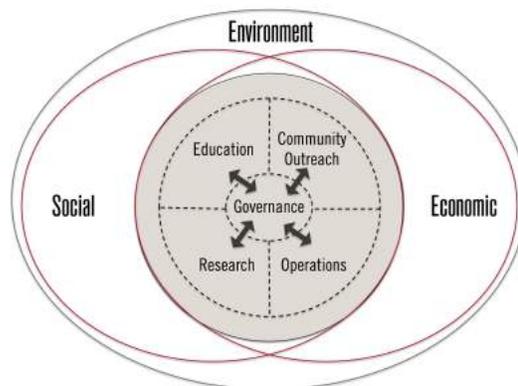
THE RESEARCH

SEPN began its research program in Canada in 2012. The research approach includes research syntheses, document analyses, surveys, site analyses case studies, and knowledge mobilization. Recently added projects in Australia, New Zealand, and Sweden have allowed the network to build in a focus on comparative international research as part of SEPN+.

Sustainability Engagement Areas

In conducting its research, SEPN has been examining how educational institutions are engaging with sustainability in five main areas:

1. Curriculum and teaching (education)
2. Research
3. Facilities and operations
4. Governance
5. Community engagement and outreach



Research Syntheses

SEPN's research syntheses include censuses which examine sustainability initiatives in K-12 and PSE contexts, as well as a focus on current events related to sustainability in formal education that are controversial or have a heavy media focus.

FOCUS AREAS

K-12 Sustainability Census	A Ministry-level census examined the inclusion of sustainability in curriculum frameworks as well as governance, curriculum, operations, research, and community engagement documents from all 13 provincial/ territorial ministries of education. A school-division census identified the presence of high-level sustainability initiatives (eco-certification, sustainability staff, sustainability policy) in all 374 Canadian school divisions (Beveridge, McKenzie, Aikens, & Strobbe, forthcoming; Beveridge, Beveridge, & McKenzie, 2014).	
PSE Sustainability Census	Examined uptake of four high-level sustainability initiatives (sustainability assessment, sustainability declaration, sustainability office(r), sustainability policy) in all 220 accredited Canadian PSE institutions (Beveridge, McKenzie, Vaughter, & Wright, 2015; Vaughter, Wright, & Herbert, 2015; Beveridge, McKenzie, & Beveridge, 2014).	
SPOTLIGHT	PSE Fossil Fuel Divestment	Ongoing review of the Canadian PSE fossil fuel divestment movement which tracks institutions with divestment campaigns, movement leadership, and current fossil fuel investments in institutions with campaigns (Maina, McKenzie, & Beveridge, 2015; Maina, forthcoming).
K-12 Environmental Certification Programs	Review of provincial- or national-level environmental certification programs in K-12 schools, including program characteristics and benefits (Beveridge & McKenzie, 2014).	
Systematic Review of K-12 Sustainability Education Policy Research	A systematic review of the scope of policy research in sustainability education in the K-12 system globally. Describes sustainability research conducted to date in detail and provides a platform for broadening policy sties in sustainability education (Aikens, McKenzie, & Vaughter, 2017, 2016; Aikens, McKenzie, Vaughter, Chopin, & Thompson, 2017).	

SPOTLIGHT: RESEARCH SYNTHESIS

INFORMING FOSSIL FUEL DIVESTMENT CAMPAIGNS IN CANADIAN POST-SECONDARY INSTITUTIONS

Fossil fuel divestment is the removal of investment assets including stocks, bonds, and investment funds from companies involved in extracting fossil fuels, in an attempt to reduce climate change by tackling its causes. Several groups advocate fossil fuel divestment, and educational institutions are the second largest sector divesting from the fossil fuel industry.

SEPN conducts ongoing research on the divestment movement in Canadian post-secondary institutions. Approximately \$3.4 trillion has been divested worldwide by 518 institutions as of December 2015. As of May 2016, there were 37 active divestment campaigns across 9 provinces in Canada. One university had agreed to a partial divestment (Concordia University) and another agreed to develop a strategy to shift the school's fossil fuel-related investments toward new technologies in clean and renewable energies (University of Ottawa).

“The higher education divestment movement is starting to have a real impact on college and university practices across North America and this in turn will impact the economy and ultimately the environment.”

- Naomi Maina, SEPN PhD Researcher

Following the release of the research brief “The State of Fossil Fuel Divestment in Canadian Post-Secondary Institutions” and an accompanying media release, SEPN became a leading source on Canadian PSE fossil fuel divestment for news media and faculty and students leading divestment campaigns. SEPN's research has been cited in two major news publications: National Observer and The Globe and Mail and in the Canadian Association of University Teachers' Bulletin. This research continues to be a key resource as the divestment movement continues to grow on post-secondary campuses in Canada.

A research brief and infographics summarizing the state of the fossil fuel divestment movement in Canadian post-secondary institutions are available for download at www.sepn.ca.



Document Analysis

This portion of the research involves compiling and analyzing existing documents and empirical data sets to examine policy dynamics in K-12 and PSE in relation to sustainability issues. SEPN's document analysis examines both non-sustainability-specific and sustainability-specific policies to better understand how ministries of education, school divisions, and post-secondary education contexts are engaging with sustainability.

FOCUS AREAS

K-12 Sustainability-Specific Policy Document Content Analysis	Content analysis of sustainability-specific policy documents from 13 provincial and territorial ministries of education. The content analysis identified sustainability-specific themes and language in sustainability policies and plans, including approaches to sustainability, definitional trajectories, policy mobility, and points of tension among approaches (Aikens & McKenzie, forthcoming).
PSE Sustainability-Specific Policy Document Content Analysis	Content analysis of sustainability-specific policy documents from a sample of 50 PSE institutions, which examined sustainability-specific themes and language in institutional sustainability policies and plans, including approaches to sustainability, definitional trajectories, policy mobility, and points of tension among approaches (Vaughter, McKenzie, Lidstone, & Wright, 2016; Vaughter, McKenzie, Lidstone, Wright, Beveridge, 2015).
K-12 Non-Sustainability-Specific Policy Document Content Analysis	A content analysis of high level policy documents including annual reports, curriculum foundational documents, and other high-level policy documents from all provincial/territorial Ministries of Education in Canada in which key themes and priorities were examined. The language used in policies, how those priorities link to broader government policy, and how other priorities are being articulated in relation to (or not) priorities of sustainability were analyzed.
PSE Strategic Planning Document Content Analysis	Content analysis of strategic plans and other high level policy documents from a sample of 50 PSE institutions. Policies were analyzed to identify key themes and priorities, links to broader government policy, and articulation of priorities in relation to sustainability (Bieler & McKenzie, 2017; Bieler, McKenzie, & Chopin, 2017).
Assessing Sustainability Policy and Planning in STARS-rated Campuses	An analysis of sustainability plans and policies in 21 Canadian higher education institutions which had undertaken a Sustainability Tracking, Assessment, and Rating System (STARS) assessment. STARS is a program of the Association for the Advancement of Sustainability in Higher Education (AASHE), a SEPN partner. The research examined conceptualizations of sustainability, sustainability goals, and sustainability policy and plan quality (Lidstone, Wright, & Sherren, 2014, 2015; Lidstone, 2015).
K-12 Climate Change Policy Analysis	Examined engagement with climate change in education policy across all 13 Canadian provinces and territories by exploring the comprehensiveness of climate change responses in education policy and educational strategies in climate policy (Bieler, Haluza-DeLay, Dale, & McKenzie, forthcoming; Bieler, Haluza-DeLay, Dale, McKenzie, & Chopin, 2017).
PSE Climate Change Policy Analysis	Explored how Canadian post-secondary institutions are engaging with climate change in policy across the whole institution domains of governance, curriculum, operations, research, and community outreach (Henderson, Bieler, & McKenzie, 2017; Henderson, Bieler, McKenzie, & Chopin, 2017).

SPOTLIGHT

SPOTLIGHT: DOCUMENT ANALYSIS

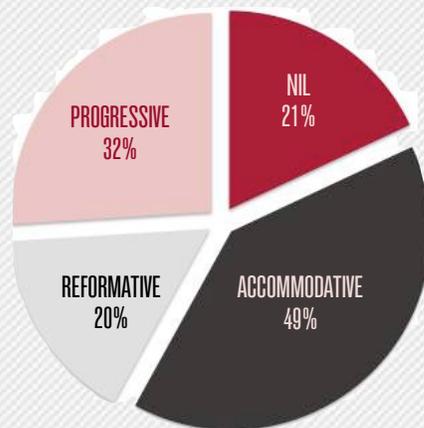
STRATEGIC PLANNING FOR SUSTAINABILITY IN CANADIAN HIGHER EDUCATION: INSTITUTIONAL SUSTAINABILITY RESPONSES

Strategic plans help higher education institutions (HEIs) envision and communicate their organizational goals and the actions needed to achieve those goals. To date, there was little empirical research on the connections between strategic planning and sustainability in higher education. To address this gap, SEPN examined the depth and breadth with which sustainability was included as a significant policy priority across five sustainability domains in 50 HEIs strategic plans: (1) **governance**, (2) **education**, (3) **campus operations**, (4) **research**, and (5) **community outreach**. Each strategic plan was classified according to type of institutional sustainability response, using an adapted version of Sterling's 2013 framework.

INSTITUTIONAL SUSTAINABILITY RESPONSE TYPES

- NIL** No engagement with sustainability in policy or practice
- ACCOMMODATIVE** Sustainability one of many policy priorities; 1-2 sustainability domains addressed in various depth
- REFORMATIVE** Some alignment of policy priorities with sustainability values in 3-5 domains, varying depth of discussion
- PROGRESSIVE** Sustainability in mission, goals, policy across 4-5 domains; no focus on alternative paradigms, land, etc.
- TRANSFORMATIVE** Rethinks educational paradigms in relation to land, place, ecology, community

Accommodative Responses: The most common institutional response type, accommodative responses were seen in 20 (49%) of 41 plans. Some HEIs made only brief references to one or two sustainability domains in their plans, while other institutions had in-depth discussions in relation to institutional sustainability goals with an accompanying sustainability policy, but concentrated on only one or two sustainability domains.



Reformative Responses: The least frequent response type, reformative responses were found in only eight (20%) strategic plans. These plans most commonly addressed sustainability in only three domains, but often related sustainability to core institutional values and/or sustainability goals in great depth. All reformative responses were seen in institutions which also had a sustainability policy.

Progressive Responses: Seen in 13 (32%) of the strategic plans analyzed, progressive responses typically took one of two forms. Eight plans in this category addressed four or five sustainability domains and included significant sustainability content in relation to the institution's core values and goals. The remaining five plans addressed all sustainability domains and engaged in meaningful discussions of sustainability in relation to values, goals, and sustainability plans. However, **progressive responses did not engage institutions in the types of transformative redesign processes that lead to systemic institutional change**. All progressive responders had a sustainability policy.

Transformative Responses: None of the plans exhibited transformative responses, such as reorienting educational purposes and paradigms to correspond with sustainability values, and consideration of Indigenous land and worldviews. A lack of engagement with community outreach—in particular acknowledgements of the histories of settlement, land, and territory in the regions which HEIs are located—was evident in all strategic plans, regardless of the type of response.

SEPN's findings point to the need for stronger engagement with sustainability at the strategic planning level in the Canadian higher education sector. Sustainability actors, particularly those in HEIs with accommodative responses, could be working across multiple spheres of policymaking and pushing for higher quality sustainability content in strategic plans.

Survey

SEPN's survey focuses on exploring experiences of sustainability uptake in K-12 and PSE education, including participant awareness of existing educational policies and practices focusing on sustainability education and views on barriers and facilitators of sustainability uptake. By examining the relationships between sustainability policies and sustainability practices, as well as the drivers and barriers that led to their development, SEPN is furthering our understanding of facilitators and barriers associated with enacting education policies related to sustainability.

SEPN collected data from 475 K-12 ministry of education staff, sustainability and facilities staff, directors/superintendents of education, administrators, and teachers from across Canada at the ministry, school division, and school levels. At the PSE level, 529 sustainability and facilities staff, administrators, professors, and post-secondary students in Canadian colleges, CÉGEPs, and universities submitted surveys. SEPN used a combination of convenience and purposive sampling for the project. Participants were recruited beginning in Fall 2014, primarily through over 50 educational organizations' listservs, newsletters, website postings, and social media, including SEPN's partner and contributor organizations.

FOCUS AREAS

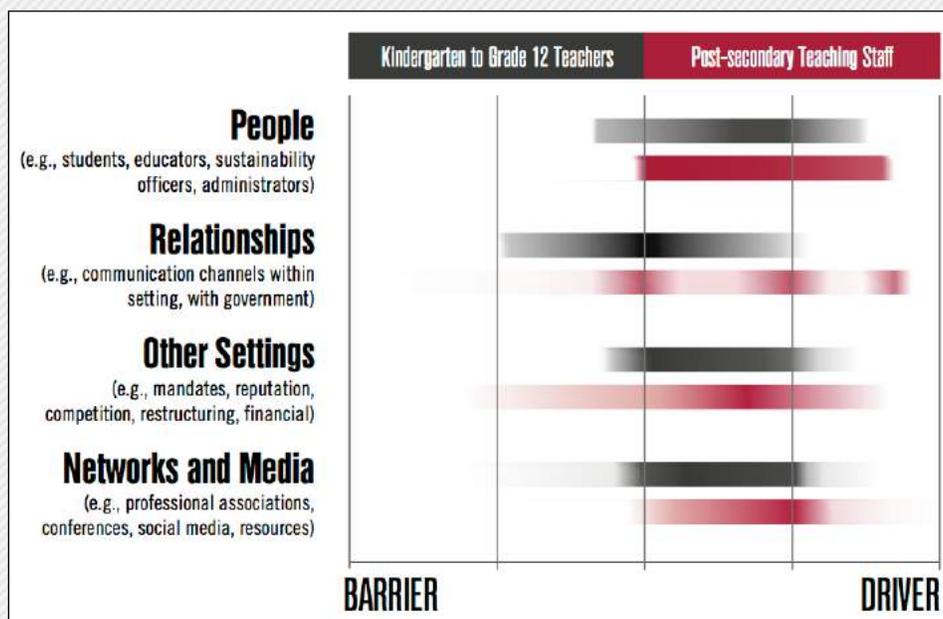
	K-12 Policy Development	An analysis of factors influencing the development of policies that address sustainability in K-12 settings. Ministry, school division, and school level teachers, staff, and administrators rated the extent to which people, networks, media, community factors, other policies, and eco-certification programs influenced sustainability in education policy development in their settings (Chopin, McKenzie, Haluza-DeLay, & MacDonald, forthcoming, 2017).
	PSE Policy Development	Exploration of factors influencing the development of policies that address sustainability in Canadian post-secondary institutions. Post-secondary students as well as teaching, facilities, sustainability, and administrative staff rated the extent to which people, networks, media, community factors, other policies, and sustainability declarations influence sustainability in education policy development in PSE institutions.
SPOTLIGHT	K-12 Drivers & Barriers	An examination of teacher, administrator, sustainability, and facilities staff perceptions of what drivers and barriers influence the development of sustainability practices in K-12 settings. The survey collected quantitative and qualitative data on the role of people, networks, community factors, policies, history, and resources in driving, or challenging, sustainability uptake.
	PSE Drivers & Barriers	Explored post-secondary student as well as teaching, administrative, sustainability, and facilities staff perceptions of what drivers and barriers influence the development of sustainability practices in PSE settings. Quantitative and qualitative data were analysed to examine the role of people, networks, community factors, policies, history, and resources in facilitating or challenging, sustainability uptake.
	Sustainability Practices	An analysis of sustainability practice uptake in K-12 and PSE educational settings across Canada in governance, curriculum, operations, research, and community outreach. Also examined the relationship between sustainability uptake in policy and practice.
	Policy Effects	Examined the influences of policies that address sustainability on governance, curriculum, operations, research, and community outreach in K-12 and PSE settings in Canada, including participant satisfaction with policy and areas for improving policy.

SPOTLIGHT: NATIONAL SURVEY

NETWORKS AS DRIVERS AND BARRIERS TO SUSTAINABILITY UPTAKE

SEPN's national survey collected data from 475 K-12 teaching, administrative, sustainability, and facilities staff across Canada at the ministry, school division, and school levels. A total of 529 professors, staff, administrators, and post-secondary students in Canadian colleges, CÉGEPs, and universities also completed surveys.

Part of the survey included a detailed examination of the **drivers and barriers** to sustainability uptake in education reveals interesting similarities and differences between the K-12 and PSE systems in Canada. The figure compares a **sub-sample of K-12 and PSE educators** and how they perceived the role of people and networks in facilitating or hindering sustainability uptake in their contexts. K-12 teachers' responses are grey and PSE teaching staff responses are red. When a variable was seen as a driver by participants, the distribution of responses is further to the right. The higher the number of participant responses, the darker the band.



When asked about the role of **people** and **relationships** in facilitating or challenging sustainability uptake, K-12 teachers ranked student and teacher involvement as strong drivers, suggesting students and teachers play strong roles in championing sustainability initiatives in schools. Similarly, PSE teaching staff ranked people within their institutions as among the strongest drivers of sustainability uptake.

Relationship factors were highly variable, with K-12 teachers ranking relationships as neither a driver, nor a barrier on average compared to PSE teachers who tended to rank relationships as drivers. When this part of the survey was broken down in detail, government communication channels were often seen as a barrier, whereas internal relationships amongst individuals within the workplace were frequently seen as drivers.

PSE teaching staff tended to rank factors related to **other settings** higher than K-12 teachers, suggesting sustainability practices in post-secondary institutions in Canada are somewhat more influenced by other institutions, reputation, government mandates, competition, restructuring pressures, and financial pressures relative to K-12 settings.

Finally, **networks** were seen by both K-12 and PSE teachers as moderate drivers of sustainability uptake in the education system.

SEPN's national survey provides policy actors working in K-12 and PSE settings with information on what types of activities tend to drive sustainability uptake in education systems—as well as the types of barriers they may encounter—which assists with creating more effective policy and practice responses to improve sustainability uptake in education.

Site Analyses

SEPN's site analyses examined sustainability uptake in policy and practice in the study sites, as well as the influences on sustainability uptake, the relationship of sustainability uptake to other priorities, and the relationships between practice and existing policy in sustainability uptake.

Data collection for SEPN-Canada's site analyses occurred in six provinces and territories between November 2015 and January 2017. Multiple methods were employed including interviews, focus groups, talking walls, photo documentation, and short sidewalk interviews. The methods were developed to be as comparative as possible while also taking into account site-specific differences. Sites were chosen to ensure regional representation, a range of sustainability uptake levels, and French language inclusion.

In total, case studies were conducted at 6 Ministries of Education, 10 school divisions, and 20 schools at the K-12 level, and 6 PSE institutions. At the K-12 level, SEPN collected data at one primary and one secondary school in each school division, and ensured schools were located in large and small/medium municipal centres, with a diversity of ethnicity and socioeconomic status. PSE site selection considered institution size, Association for the Advancement of Sustainability in Higher Education (AASHE) STARS ratings, and research intensity.



In total, this project resulted in the collection of over 250 interviews, 60 focus groups, and 1,000 photographs. A parallel study is being conducted in Australia.

FOCUS AREAS

Influences on Sustainability in Education Policy and Practice in K-12 Education	An examination of ministry staff; school division trustees, staff, superintendents; school principals, vice principals, and teachers; and other key informant perceptions of what factors drive policy development and sustainability uptake in K-12 education.
Influences on Sustainability in Education Policy and Practice in PSE	An analysis of influences on the development and enactment of sustainability in policy and practice in post-secondary education settings including the role of actors, networks, and other policies as well as land, culture, and political contexts.
Sustainability Uptake in K-12 Education	Examined sustainability uptake in both policy and practice across the whole institution domains of governance, teaching and curriculum, facilities and operations research, and community outreach. The relationships between policy and practice were also analyzed.
Sustainability Uptake in PSE	Explored perceptions of sustainability uptake in institutional policy and practice, as well as the relationship between policy and practice in post-secondary education settings. Participants included university administrators, faculty, sustainability staff and committee members, post-secondary students and student leaders, broader community members, and other key informants.
K-12 Interscalar Mobilities of Education Policy	This project traced the flow of policy framings and priorities amongst international, national, state, and sub-state levels within the Canadian K-12 system (Aikens & McKenzie, forthcoming; Aikens, McKenzie, & Chopin, 2017).

SPOTLIGHT: SITE ANALYSES

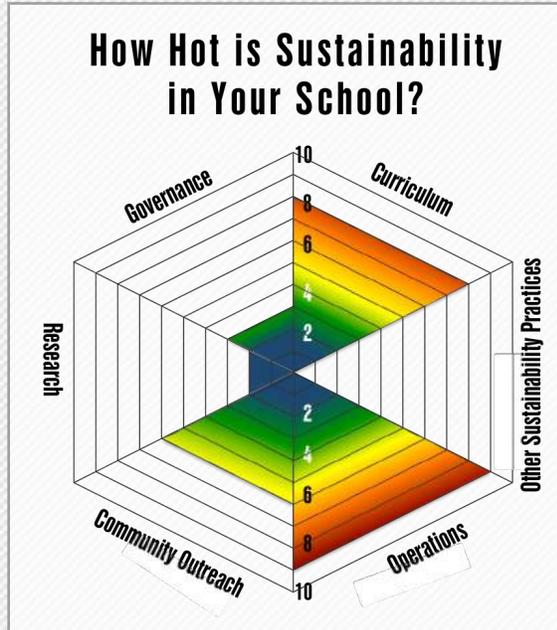
INNOVATION IN DATA COLLECTION: THE HEAT DIAGRAM

One of SEPN's exciting innovations in its site analyses data collection was the creation of an iPad app called the "heat diagram."

The heat diagram is a simple tool for visualising sustainability uptake in policy and practice in the five sustainability domains of governance, curriculum, research, operations, and community outreach.

SEPN is using the heat diagram data to examine and compare perceptions of sustainability uptake in a variety of ways, including across sites and participant types.

The heat diagram data, along with stories developed from the case study data, will be distributed to participating sites in tailored reports and on SEPN's website.



Sustainability in Indigenous Education Settings

SEPN maintains a commitment to integrating Indigenous perspectives and considerations throughout its research. For example, this is reflected in site selection and interview questions examining sustainability in relation to land, place, and Indigenous perspectives our site analyses research. SEPN also conducts research specifically examining sustainability in Indigenous education in both K-12 and PSE.

FOCUS AREAS

<p>Sustainability in K-12 Indigenous Education</p>	<p>Developed in consultation with former and current representatives from the Assembly of First Nations and Métis National Council, this research explored how K-12 Indigenous-administered education settings engage with sustainability education to understand how policy relates to sustainability practice. Interviews with Elders, teachers, and principals in four Saskatchewan, British Columbia, and New Brunswick schools allowed the identification of common themes (Bentham, Wilson, McKenzie, & Bradford, forthcoming).</p>
<p>Sustainability in PSE Indigenous Education</p>	<p>Mixed-method research using SEPN's national survey and interviews to examine sustainability practices and drivers in select Aboriginal PSE institutions and identify how capacity for engagement may be advanced through a national sustainability network. The relationship between sustainability and Indigenous knowledge comprises an important part of the research (Vizina, forthcoming).</p>

Knowledge Mobilization

Mobilizing research into action is important, complex, and there is a major need for more effective knowledge mobilization (KM) within and beyond education. Too often, research communication uses inaccessible language, is irrelevant to the needs and interests of users, and is considered an “add-on” rather than an integral part of the research process.

It is important to start with how research communication is conceptualized and let this inform what techniques and tools are used. Too often, research communication focuses on the technical challenge of, “What tools and techniques can we use?” and less on the conceptual of, “How are we thinking about research communication and use?” SEPN’s KM approach is informed by educational research on research use by policy makers, administrators, teachers, and other educational stakeholders.

Knowledge mobilization involves getting the right information to the right people in the right format at the right time.

SEPN conceptualizes KM as:

- A partnership between policy makers, practitioners, and researchers
- Integral to rather than separate from research
- Involving indirect, informal, and mediated connections with research users
- More about engagement and learning, than dissemination and transfer
- Supporting research use that is instrumental (technical solutions), conceptual (informing and enlightening), and strategic (persuasive tools to legitimate practices)
- Reflecting the concerns, interests, and needs of our audiences
- Highlighting key messages in clear, creative ways, collaboratively developed with research users
- Tailoring research outputs to audience needs
- Supporting uptake and use of research outputs

FOCUS AREAS

Results Mobilization	A comprehensive mobilization of SEPN’s research results to engage in conversations with educational stakeholders including PSE institutions, Ministries, school divisions, and NGOs about sustainability in education policy and practice.
Network Organizational Learning	Examines the network’s organizational strengths; maps existing and developing partnerships; and identifies information sharing, problem solving, and resource development dynamics.
Professional and Scholarly Publications	KM tools include books, journal articles, research briefs, infographics, videos, social media posts, and SEPN’s website (www.sepn.ca).

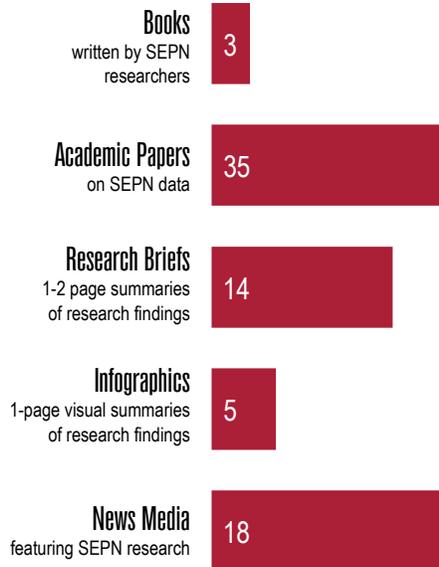
SPOTLIGHT: KNOWLEDGE MOBILIZATION RESEARCH TRAINING AT SEPN: THE KM LIAISON PROGRAM

SEPN’s students, postdoctoral fellows, and emerging scholars are prepared for entry into academic, policy, and non-profit work through deep integration into collaborative research activities. The KM Liaison program pairs students with partner organizations to enable two-way flow of information and develop collaborative opportunities. KM Liaisons are paired with interested SEPN organizations to discuss progress being made on SEPN’s projects, consider how knowledge being generated by SEPN can be used by network members, stay abreast of partner initiatives, and identify ways to mobilize research results with partner organizations. This work is especially important as SEPN moves from content analysis to knowledge mobilization.

Tools and Resources

SEPN uses a variety of tools to engage knowledge users to have an impact in scholarly and professional avenues. We continue to expand the number and variety of tools as the research progresses.

WRITTEN TOOLS



OTHER TOOLS



ONLINE TOOLS



SELECTED PUBLICATIONS

SEPN's KM efforts are designed to reach regional, national, and international audiences throughout the life of the network. For every scholarly article published, the network has committed to producing companion "popular publications" in the form of infographics and fact sheets for more general audiences. Visit SEPN's website, www.sepn.ca, for copies of our publications.

Scholarly Publications

- McKenzie, M. (2017). Affect theory and policy mobility: challenges and possibilities for critical policy research. *Critical Studies in Education, Special Issue on Mobility*, 58(2), 187-204. DOI: <http://dx.doi.org/10.1080/17508487.2017.1308875>.
- Henderson, J., McKenzie, M., & Bieler, A. (2017). Climate change and the sustainable campus: An analysis of Canadian post-secondary institutional policies. *Canadian Journal of Higher Education*, 47(1), 1–26. <http://journals.sfu.ca/cjhe/index.php/cjhe/article/viewFile/187451/pdf>.
- Bieler, A. & McKenzie, M. (2017). Strategic planning for sustainability in Canadian higher education. *Sustainability*, 9, 161. DOI: 10.3390/su9020161.
- Aikens, K., McKenzie, M., & Vaughter, P. (2016). Environmental and sustainability education policy research: A review of geographic and thematic trends over time. *Environmental Education Research*, 22(3), 333-359.
*Included in a Virtual Special Issue dedicated to Environmental and Sustainability Education Policy Research
- Vaughter, P., McKenzie, M., Lidstone, L., & Wright, T. (2016). Campus sustainability governance in Canada: A content analysis of post-secondary institutions' sustainability policies. *International Journal of Sustainability in Higher Education*, 17(1), 16-39.
- Vaughter, P., Wright, T., & Herbert, Y. (2015). 50 shades of green: An examination of sustainability policy on Canadian campuses. *Canadian Journal of Higher Education*, 45(4), 81-100.
- Beveridge, D., McKenzie, M., Vaughter, P., & Wright, T. (2015). Sustainability in Canadian post-secondary institutions: The interrelationships among sustainability initiatives and geographic and institutional characteristics. *International Journal of Sustainability in Higher Education*, 16(5), 611-638.
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*Included in a Virtual Special Issue dedicated to Environmental and Sustainability Education Policy Research
- Lidstone, L., Wright, T., & Sherren, K. (2015). Canadian STARS-rated campus sustainability plans: Priorities, plan creation and design. *Sustainability*, 7, 725-746.
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Books

- McKenzie, M. & Bieler, A. (2016). *Critical education and sociomaterial practice: Narration, place, and the social*. New York, NY: Peter Lang.
- McCoy, K., Tuck, E., & McKenzie, M. (2016). *Land education: Rethinking pedagogies of place from Indigenous, postcolonial, and decolonizing perspectives*. New York, NY: Routledge.
- Tuck, E. & McKenzie, M. (2015). *Place in research: Theories, methodologies, methods*. New York, NY: Routledge.

Research Briefs

- Chopin, N.S., McKenzie, M., Haluza-DeLay, R., & MacDonald, R. (2017). Influences on sustainability uptake in K-12 education policy development: A national survey of educators, administrators, and staff. Sustainability and Education Policy Network, University of Saskatchewan, Saskatoon, Canada.
- McKenzie, M., Aikens, K., & Chopin, N.S. (2017). Scale matters in policy flows: A comparative case study of sustainability in K-12 education. Sustainability and Education Policy Network, University of Saskatchewan, Saskatoon, Canada.
- Bieler, A., Haluza-DeLay, R., Dale, A., McKenzie, M., & Chopin, N.S. (2017). Policy coherence in climate change and education policy: A national overview. Sustainability and Education Policy Network, University of Saskatchewan, Saskatoon, Canada.
- Henderson, J., Bieler, A., McKenzie, M., Thompson, C., & Chopin, N.S. (2017). Climate change and the Canadian higher education system: An institutional policy analysis. Sustainability and Education Policy Network, University of Saskatchewan, Saskatoon, Canada.
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- Vaughter, P., McKenzie, M., Lidstone, L., Wright, T., & Beveridge, R.M. (2015). Campus sustainability governance in Canada: Spotlight on the content of post-secondary education sustainability policies. Sustainability and Education Policy Network, University of Saskatchewan, Saskatoon, Canada.
- Lidstone, L. & Beveridge, R.M. (2015). Canadian campuses: Assessing sustainability policy and planning in STARS-rated campuses. Sustainability and Education Policy Network, University of Saskatchewan, Saskatoon, Canada.
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- Beveridge, D., McKenzie, M., & Beveridge, R.M. (2014). Sustainability in Canadian post-secondary institutions: The leaders, the laggards and where they live. Sustainability and Education Policy Network, University of Saskatchewan, Saskatoon, Canada.
- Beveridge, D., McKenzie, M., & Beveridge, R.M. (2014). Sustainability in K-12 education: Closing the research gap on understanding national trends. Sustainability and Education Policy Network, University of Saskatchewan, Saskatoon, Canada.
- McKenzie, M., Bieler, A., McNeil, R., & Beveridge, R.M. (2014). Greenwashing in education: How neoliberalism and policy mobility may undermine environmental sustainability. Sustainability and Education Policy Network, University of Saskatchewan, Saskatoon, Canada.

Infographics

- Chopin, N.S., Henderson, J., Bieler, A., & McKenzie, M. (2017). Climate change and the Canadian higher education system: An institutional policy analysis. Sustainability and Education Policy Network, University of Saskatchewan, Saskatoon, Canada.
- Chopin, N.S., Bieler, A., & McKenzie, M. (2017). Strategic planning for sustainability in Canadian higher education. Sustainability and Education Policy Network, University of Saskatchewan, Saskatoon, Canada.
- Hargis, K. (2016). The state of fossil fuel divestment in Canadian post-secondary institutions. Sustainability and Education Policy Network, Saskatoon, Canada.
- Beveridge, R.M., Beveridge, D., & McKenzie, M. (2014). Infographics: Sustainability in Canadian post-secondary institutions: The leaders, the laggards and where they live. Sustainability and Education Policy Network, Saskatoon, Canada.
- Beveridge, R.M. & McKenzie, M. (2014). Infographics: Sustainability in K-12 education: Closing the research gap no understanding national trends. Sustainability and Education Policy Network, Saskatoon, Canada.

APPENDIX A: SELECTED RESEARCH BRIEFS

1. Scale Matters in Policy Flows: A Comparative Case Study of Sustainability in K-12 Education
2. Influences on Sustainability Uptake in K-12 Education Policy Development: A National Survey of Educators, Administrators, and Staff
3. Policy Coherence in Climate Change and Education Policy: A National Overview
4. Climate Change and the Canadian Higher Education System: An Institutional Policy Analysis
5. Sustainability in K-12 Education: Closing the Research Gap on Understanding National Trends
6. Environmental and Sustainability Education Policy Research in K-12: A Review of the Literature
7. Sustainability in Canadian Post-secondary Institutions: The Leaders, the Laggards and Where They Live
8. Campus Sustainability Governance in Canada: Spotlight on the Content of Post-secondary Education Sustainability Policies
9. Strategic Planning for Sustainability in Canadian Higher Education
10. The State of Fossil Fuel Divestment in Canadian Post-secondary Institutions
11. Greenwashing in Education: How Neoliberalism and Policy Mobility may Undermine Environmental Sustainability

SCALE MATTERS IN POLICY FLOWS

A COMPARATIVE CASE STUDY OF SUSTAINABILITY IN K-12 EDUCATION

The Challenge: In federated education settings such as Canada, schools operate under school, regional, provincial/territorial, national, and international policy directives. Relatively little attention has been paid to how policy flows in multiple directions across such scales, including how local priorities can work their way into policy at various levels. To address this gap, SEPN examined the complex dynamics of how policy flows amongst international, national, state, and sub-state levels.

Main Findings: SEPN found each level of policy is important in making it more likely there will be policy at subsequent 'lower' levels and that broader non-educational sustainability policy can play an important role in influencing sustainability uptake within the education system.

Take Action: SEPN's findings point to the importance of inclusion of sustainability in policy at sub-national scales, including in broader non-educational government policy. Policy actors working to improve sustainability uptake within the education system should aim to include sustainability at all levels of the education system using a whole institution approach, and should consider engaging with municipal and regional leadership outside of the education system to enhance sustainability uptake in education policy.

For full results see: McKenzie, M. & Aikens, K. (In Review). *The Interscalar Mobilities of Education Policy: A Comparative Case Study of Sustainability in K-12 Education*.

To cite this research brief: McKenzie, M., Aikens, K., & Chopin, N.S. (2017). *Scale Matters in Policy Flows: A Comparative Case Study of Sustainability in K-12 Education*. Sustainability and Education Policy Network, University of Saskatchewan, Saskatoon, Canada.

Tracing Policy Flows through a Comparative Case Study Approach

SEPN conducted a comparative case study in **6 provinces**, **10 school divisions (SDs)**, and **20 K-12 schools**, each with a range of characteristics. A total of **150 interviews**, **43 focus groups**, and **350 mini 'sidewalk interviews'** were collected with participants at the ministry, SD, and school levels. Policy documents were collected. SEPN used critical policy analysis to examine how **policy flows** including: (1) **vertically** across international, national, and sub-national levels; and (2) **horizontally**, for example via relationships between provinces.

International and National Flows: The Dominance of the Education for Sustainable Development Frame

SEPN documented shifts in dominant terminology related to **United Nations (UN)** initiatives, highlighting the significance of the UN in framing sustainability in education globally. Specifically, SEPN found shifts from 'environment' to 'sustainable development,' as well as to 'sustainability.' Recent shifts to 'climate change' and 'global competencies' were also found.

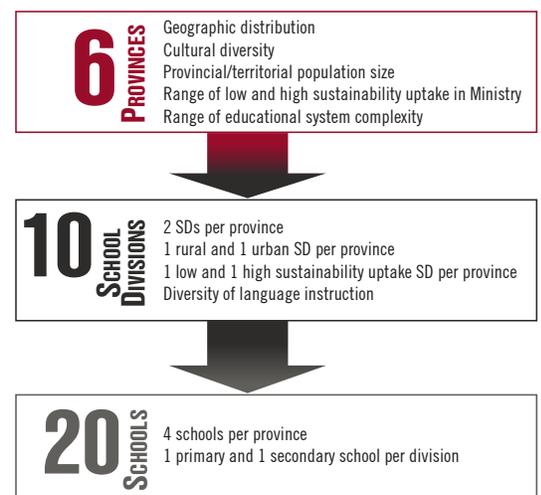
At the **national** level, SEPN's interview data suggested the Council of Ministers of Education of Canada (CMEC) had a strong focus on ESD during research, which led to ESD working groups within CMEC and many provinces. These relationships appear to have fostered considerable uptake of the ESD framing vertically among UNESCO, CMEC, and in the province of Manitoba in particular.

SEPN also found that while international mandates have had a large impact on the shape and scope of sustainability engagement in Canada, local priorities have played a role in shaping policy framings in some cases. SEPN found a lack of ESD framings in some provinces and territories, due to **resistance** in some cases (e.g., in Ontario, in which the term 'environmental education' predominated) and in others due to **isolation from policy flows or engagement with other priorities or framings** (i.e., in Nunavut where Indigenous land-based knowledge was key).

Non-Educational Policy at Provincial, Regional, and Municipal Levels Influences Sustainability Uptake in the Education System

All provinces and territories had ministry of education policies addressing sustainability and most (British Columbia, Manitoba, Ontario, Quebec, and Nunavut) had overarching governmental policies with sustainability-related legal requirements. **SEPN found broader provincial policy had a supportive or reciprocal relationship with policy at the ministry level:** 4 of the 6 provinces with broader environment-specific provincial acts had higher sustainability uptake at the provincial ministry of education level, as well as higher uptake SDs.

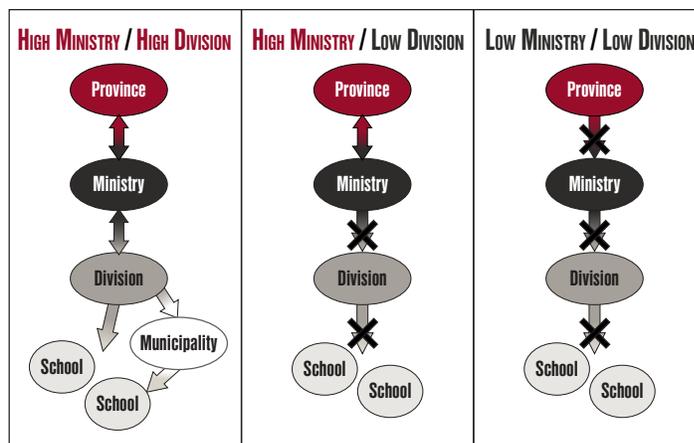
Municipal or regional policies outside of education also influenced policy at the SD level. In 2 of 3 urban SDs with sustainability policies, administrators referenced municipal or regional policies as influencing sustainability uptake (e.g., Vancouver's 'greenest city' municipal initiative impacted Vancouver School Board's sustainability commitments). In 3 rural regions, school staff, SD staff, and community members described a lack of municipal leadership as a barrier, suggesting local economic concerns often outweighed sustainability.



Provincial and Ministry Engagement with Sustainability has an Impact on School Division Engagement

In SDs and schools with sustainability policies, there also tended to be policy engagement at the ministry level. Of the 10 SDs studied, 4 had policies supporting sustainability integration into planning and operations—all 4 of those SDs were in medium or high uptake ministry of education contexts. In all but one case, SD documents acknowledged ministry or broader provincial policies.

SEPN found most ministries of education focused on curriculum and most SDs focused on operations; however, 3 ministries of education (Manitoba, British Columbia, Ontario) used a 'whole institution' framing, which includes incorporating sustainability in the domains of governance, research, curriculum, operations, and community engagement. SEPN observed **mutually reinforcing relationships** between ministry and SD policy with respect to whole-institution domains: if sustainability was included in a particular policy domain at both the ministry and SD levels, participants were more positive about policy in that domain, despite the domain having the same uptake level as other provinces.



SEPN also observed a **policy import stop** in some SDs where there was little sustainability engagement at the SD level despite considerable engagement at ministry of education and broader provincial levels. The data suggested **lack of motivation** to include new priorities and **lack of resources** were the primary barriers in these cases.

School Division Leadership Supports School Sustainability Uptake

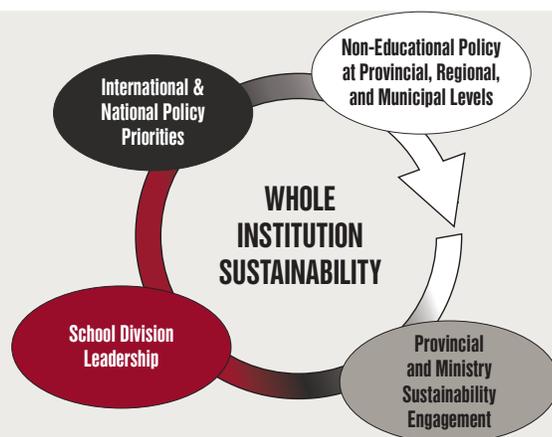
Five of the 20 schools in the study had formalized school plans and/or guideline documents that integrated sustainability into school priorities. In 3 cases where sustainability was articulated as a core focus for a school, administrators and staff pointed to **SD leadership** as playing a significant role in school level sustainability uptake.

Take Action

SEPN's findings suggest local level policy may develop in different ways from national and global policy mandates, sometimes flowing up to influence broader policy discourses or approaches.

Recommendation #1: Incorporate Sustainability in Education Policy at All Levels, Using a Whole Institution Approach

- ✘ **Challenge:** In the context of increasing centralization of educational administration at the SD level, this study suggests local level policy plays an important role in achieving or surpassing state-level policy aims. SEPN also found engagement with sustainability in education policy was often limited to curriculum or operations, with gaps in governance, research, and community engagement domains.
- ✔ **Action:** Policy actors should work to incorporate sustainability at all levels and in all domains within the education system in order to ensure sustainability uptake is maximized.



Recommendation #2: Engage with Non-educational Policy to Improve Sustainability Uptake in the Education System

- ✘ **Challenge:** SEPN's findings suggest overarching provincial sustainability-related legal requirements can bolster sustainability uptake in the education system (e.g., emissions reductions required as part of broader government climate change initiatives).
- ✔ **Action:** Policy actors working within the education system could better engage with municipal and regional leadership to incorporate sustainability in broader government policy as a way of pushing forward education-based sustainability initiatives. Municipal and regional leaders should consider enacting general sustainability-related policy as a means of increasing sustainability uptake within the education system.

PARTNER ORGANIZATIONS

Association for the Advancement of Sustainability in Higher Education
Canadian Centre for Policy Alternatives
David Suzuki Foundation
Learning for a Sustainable Future
Sierra Youth Coalition

CONTRIBUTING ORGANIZATIONS

Assembly of First Nations
Canadian Federation of Students
Global Youth Education Network
Métis National Council
Sustainability Solutions Group

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INFLUENCES ON SUSTAINABILITY UPTAKE IN K-12 EDUCATION POLICY DEVELOPMENT

A NATIONAL SURVEY OF EDUCATORS, ADMINISTRATORS, AND STAFF

The Challenge: Policy research in education has typically taken the form of qualitative small-scale, non-comparative case studies; however, large-scale quantitative data often provides better support for policy decision-making. SEPN’s national survey is the first cross-Canadian empirical quantitative exploration of influences on sustainability uptake in education policy development.

Main Findings: Participants perceived school divisions, existing school and school division policies, school administrators, and sustainability coordinators to be most influential in sustainability uptake in education policy development—versus ministries of education and provinces. Apathetic attitudes and resources were the main barriers to sustainability uptake in policy development.

Take Action: SEPN’s findings suggest ministries of education could be better engaging schools and school divisions during policy development. The results also point to common facilitators and barriers encountered during policy development, for which policy actors working to increase sustainability uptake in education policy could plan for during the policy development process.

For full results see: Chopin, N.S., McKenzie, M., Haluza-DeLay, R., & MacDonald, R. (Forthcoming). The influences on sustainability uptake in K-12 education policy development: A national survey of educators, administrators, and staff.

To cite this research brief: Chopin, N.S., McKenzie, M., Haluza-DeLay, R., & MacDonald, R. (2017). The influences on sustainability uptake in K-12 education policy development: A national survey of educators, administrators, and staff. Sustainability and Education Policy Network, University of Saskatchewan, Saskatoon, Canada.

Sustainability Uptake in K-12 Education Policy Development

SEPN’s online survey captured on-the-ground experiences with sustainability in education policy in the Canadian K-12 formal education system. This portion of the research examined the influences and roles of actors, other policies, community-specific factors, networks, media, and resources in the development of educational policies that incorporate sustainability.

SEPN used a combination of purposive and convenience sampling with quotas established for proportional representation by province. Recruitment for the convenience sample was via listservs, newsletters, website postings, social media, teacher federations, specialists’ associations, unions, and non-profit organizations, including SEPN’s partners.

A total of 206 participants, including 121 teachers, 18 school staff and administrators, 41 school division (SD) staff and administrators, 7 sustainability/facilities staff, 1 ministry of education staff, and 18 other staff answered the survey. Participants were required to be at least “somewhat” familiar with how policies that address sustainability were developed in their K-12 work setting.

Questionnaire and Analysis

The survey examined various influences on sustainability uptake in policy development in the Canadian K-12 education system via a series of matrix-format likert-style questions using a 4-point scale of “not at all,” “to some extent,” “to a moderate extent,” and “to a large extent.” SEPN calculated **Influence Index Scores (IIS)** using weighted averages for **individual survey questions**, as well as an average ISS for each **influence category** (i.e., policy actors, other policies, networks, media). Index scores ranged from 0 (non-influential) to 4 (very influential).

One check-all-that apply question examined the influence of **place-based factors**, for which SEPN calculated the percent response.

Finally, two qualitative questions asked about **drivers and barriers to policy development**, which were coded into themes and analyzed in relation to the quantitative data.

Influence Index Scores

SEPN found that **policy actors and other policies were viewed as having the most influence** on sustainability uptake in K-12 formal education policy development overall. Media and networks emerged as moderate influencers of sustainability uptake in policy development.

Overall, when looking at individual survey questions, the top five influencers of sustainability in education policy development were perceived by participants to be **school divisions (IIS = 3.11)**, **existing work setting policies (IIS = 3.03)**, **existing SD policies (IIS = 3.02)**, **school administrators (IIS = 2.94)**, and **sustainability coordinators (IIS = 2.89)**.

Influence Category	Individual Survey Questions Explored	Average IIS*
Policy Actors	School division, school administrator, sustainability coordinator, ministry of education, teachers, facilities staff, students, families, the public	2.62
Other Policies	Work setting, school division, municipal, provincial, other local, national, international	2.51
Media	Web-based resources, social media, print news, TV/film, scholarly publications, radio	2.33
Network	Local, conferences, professional associations, national, international	2.24

*Weighted to correct for geographic representation

Actors as Drivers and Barriers to Sustainability Policy Development

The **top-ranked policy actors** identified as being most influential on sustainability uptake in policy development were **SDs (IIS = 3.11), school administrators (IIS = 2.92), and sustainability coordinators (IIS = 2.89)**. In the qualitative data, the most frequently referenced drivers were teachers, students, and SDs—ministries of education were not frequently mentioned as drivers, nor were provincial or federal levels of government. **Actors were also the second-most referenced barrier in the qualitative data**, with participants referencing “apathy” and a “lack of leadership” at all levels of the education system.

Existing Policies and Mandates Influence Policy Development

When asked about the role of other policies in supporting sustainability uptake in education policy development, participants indicated **existing policies within their work setting (IIS = 3.03) and SD-level policies (IIS = 3.02)** were most influential—higher than provincial policies (IIS = 2.68). In the qualitative data, participants commonly referenced **competing priorities** as barriers. For example, one participant noted, “sustainability may not be seen as the priority issue.”

Community Influences are Important Drivers of Sustainability Uptake

Participants indicated **supportive social values (66%), community expectations (58%), and community programs (57%)** as being influential in policy development. The qualitative data referenced **public pressure** as well as **local support** from individuals within the education system and the surrounding community as drivers.

Resources as the Primary Barrier to Policy Development

Resource deficits emerged in the qualitative data as the most commonly and clearly identified barrier, with approximately half of comments referring to financial and human resources as barriers to sustainability uptake in policy development.



Take Action

SEPN's survey provides policy actors working to incorporate sustainability in education policy with information about the types of actors, policies, networks, and community factors that may drive or hinder sustainability uptake during the policy development process.

Recommendation #1: Ministries of Education Should Better Engage School Divisions and Schools in Policy Development

- ✘ **Challenge:** Ministries of education play a central role in education policy development and are the main resource allocator in Canada's K-12 system. However, SEPN's survey suggests individuals working at the school and SD levels perceive schools and SDs to be the primary driver of policy development in those contexts—indicating a potential disconnect from ministry of education policy processes.
- ✔ **Action:** Policy actors working within ministries of education should consider ways to meaningfully engage with policy actors at the school and school division levels when developing policy to ensure broad support for policies being developed.

Recommendation #2: Take Advantage of Common Drivers and Attend to Common Barriers during Policy Development

- ✘ **Challenge:** Policy making in education is a complex process, requiring policy actors to balance competing priorities all vying for limited resources. SEPN's survey identified common barriers and facilitators that impact sustainability uptake in policy development.
- ✔ **Action:** SEPN's findings suggest local support within schools, SDs, and communities can play a key role in driving sustainability uptake in education policy. The survey also found policy actors often encounter apathetic attitudes and resource deficits when developing policy. Policy actors should capitalize on common drivers, and plan for likely barriers developing and enacting new policies within the education system.

PARTNER ORGANIZATIONS

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Sierra Youth Coalition

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Canada

POLICY COHERENCE IN CLIMATE CHANGE AND EDUCATION POLICY: A NATIONAL OVERVIEW

The Challenge: Previously, there was no comparative research examining how the Canadian formal education sector is taking up the challenge of climate change, or what kinds of educational solutions are included in climate policies. SEPN examined the depth of engagement with climate change in education policy across all 13 provinces and territories in Canada by analyzing the content of 13 climate policies and 90 education policies.

Main Findings: SEPN found that while climate policies often reference the education sector's role in combating climate change, education policies have not taken up the challenge. Education policies demonstrate (1) shallow engagement with climate change, (2) an overwhelming focus on energy efficiency upgrades in schools, and (3) a lack of holistic responses to climate change.

Take Action: Ministries of education must further address climate change in educational policy. Policy responses to climate change should be comprehensive and holistic. Policymakers should refer to whole school approaches to encourage sustainability uptake in governance, curriculum, research, and community outreach, in addition to operations.

For full results see: Bieler, A., Haluza-DeLay, R., Dale, A., & McKenzie, M. (In Review). A national overview of climate change education policy: Policy coherence between subnational climate and education policies in Canada (K-12). *Journal Name*.

To cite this research brief: Bieler, A., Haluza-DeLay, R., Dale, A., McKenzie, M., & Chopin, N.S. (2017). Policy Coherence in Climate Change and Education Policy: A National Overview. Sustainability and Education Policy Network, University of Saskatchewan, Saskatoon, Canada.

Climate Change in Education Policy vs. Education in Climate Policy

SEPN collected (1) the most recent publicly available **climate policies** (typically Climate Action Plans) from all 13 provinces and territories and (2) 90 sustainability-specific **education policies** from all 13 ministries of education (including sustainability focused curriculum resources, curriculum frameworks, and subject curriculum frameworks).

By the Numbers: The Climate Education Engagement Scale (CEES)

SEPN developed the **Climate Education Engagement Scale (CEES)** to evaluate engagement with climate education in policy texts, which enabled both sets of policy documents to be directly compared. The CEES scoring criteria were:

- | | | | | | | | |
|----------|------------------------------|----------|---|----------|--|----------|--|
| 0 | No mention of climate change | 1 | Climate education mentioned, limited detail | 2 | General discussion of climate education, some detail | 3 | Specific climate education targets set |
|----------|------------------------------|----------|---|----------|--|----------|--|

Education in Climate Policy

- All 13 provincial and territorial jurisdictions included education as an important response to climate change but only 6 (or 46%) had specific climate education targets.
- The overall focus of educational strategies for climate change action was on improving school energy efficiency.

Climate Change in Education Policy

- References to climate change were shallow and scarce.
- Only 46% of the education policies mentioned climate change.
- Only 2 of 13 jurisdictions had specific objectives related to climate change. Both focused on improving school energy efficiency.
- The most detailed discussions of climate change were within sustainability-focused curriculum resources and subject-specific curriculum guides.
- The Northern Territories' climate plans included a strong focus on Indigenous knowledge.

CEES Scores

- Only British Columbia and Manitoba received CEES scores of 3/3 for both climate policies and education policies; this was due to the inclusion of energy efficiency objectives in both cases

	CLIMATE POLICY		EDUCATION POLICY	
	CEES	Policy Date	CEES	Policy Date
BC	3	2008	3	2007-2013
MB	3	2015	3	1996-2013
ON	3	2015	2	2005-2013
QC	3	2013	1	2001/n.d.
NL	3	2011	0	2001-2009
NU	3	2011	0	2007
PE	2	2008	1	2001-2009
AB	2	2015	0	1985-2014
NS	2	2009	0	1998-2001
NT	2	2008	0	n.d.
YU	2	2009	0	2009
SK	1	2010	1	2010
NB	1	2014	0	2001-2008

Thematic Analysis: How is Education being Taken Up in Provincial and Territorial Climate Policy?

SEPN conducted a thematic analysis of climate policies to see how they referred to the educational sector in relation to climate change. Climate policies (1) included both formal and non-formal educational strategies; (2) identified a wide range of potential audiences including students, consumers, and drivers; and (3) had a wide range of thematic foci including energy efficiency and job training. Most educational strategies in climate plans were adult-oriented although some of the strategies in the climate policies did relate to K-12 education.

SEPN identified seven education-related themes: (1) curriculum reform (8/13 policies); (2) the role of post-secondary education in conducting research, fostering innovation, and providing basic instruction (7 policies); (3) infrastructure upgrades to reduce emissions (6 policies); (4) the role of Technical and Vocational Education and Training as a form of education (6 policies); (5) consumer education regarding energy use (5 policies); (6) integration of Indigenous knowledge into climate education (5 policies); and (7) the role of driver education (4 policies).

Education-Related Theme	BC	AB	SK	MB	ON	QU	NB	PE	NS	NL	YU	NT	NU	All
Curriculum reform	✓			✓		✓		✓	✓		✓	✓	✓	8
Role of post-secondary	✓	✓	✓	✓	✓			✓					✓	7
Efficient school infrastructure	✓			✓	✓	✓				✓	✓			6
Technical / Vocational education	✓	✓		✓	✓	✓					✓			6
Consumer education	✓	✓	✓	✓			✓							5
Indigenous knowledge integration				✓	✓	✓						✓	✓	5
Driver education				✓	✓		✓	✓						4

Take Action

Both climate policies and educational policies at the provincial and territorial levels need to better engage with climate change education for Canadian students to be informed and adaptable in responding to climate change.

Recommendation #1: Ministries of education must improve climate change responses within educational policy

- ✗ **Challenge:** While climate policies often referenced the significance of the education sector in combating climate change, education policies have not taken up the challenge. SEPN found shallow engagement with climate change in education policy and, in particular, curriculum guidelines were lacking.
- ✓ **Action:** Policy makers within the education system must align their educational policies with targets and strategies laid out in climate policy.

Recommendation #2: Climate responses within the educational system should include whole school sustainability approaches

- ✗ **Challenge:** SEPN found an overwhelming focus on school energy efficiency in climate policies.
- ✓ **Action:** Responses to climate change need to go beyond emissions. Whole school sustainability approaches include sustainability within governance, curriculum, research, and community engagement, in addition to operations.

SHALLOW ENGAGEMENT WITH CLIMATE CHANGE IN POLICY

- ✗ Overwhelming focus on school energy efficiency
- ✗ Curriculum guidelines do not foster development of engaged, adaptable citizens



HOLISTICALLY ADDRESS CLIMATE CHANGE IN POLICY

- ✓ Adapt vulnerable school infrastructure to climate impacts
- ✓ Develop specific educator professional development initiatives
- ✓ Integrate climate science into STEM & arts and humanities learning outcomes
- ✓ Implement climate change pedagogy
- ✓ Incorporate intersections of climate change and disaster risk reduction education
- ✓ Develop focus on climate justice including Indigenous knowledge systems

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Policy and Practice Examples from Canadian Higher Education Institutions

Despite the considerable challenges of cultural inertia and political resistance, a number of institutions in Canada have developed more sophisticated policies that go beyond reducing carbon consumption and emissions and engage more holistically with climate change.

Domain	Sustainability Approaches	Policy Examples
Governance	<ul style="list-style-type: none"> • Sign sustainability declarations such as Talloires & Halifax Declarations • Develop planning bodies to assess emissions and consumption • Create Sustainability Policy and/or Climate Action Plan • Integrate sustainability in Strategic Plans 	Queen's University (2010) Sustainability Strategic Framework Red River College Royal Roads University
Curriculum	<ul style="list-style-type: none"> • Develop programs to modify staff and student energy consumption behaviours • Inventory climate change-related courses, programs, and research • Develop climate action courses and immersive experiences • Integrate climate change into existing curriculum 	University of Ottawa (2004) Action Plan for Reducing Greenhouse Gas Emissions Annual Progress Report University of Saskatchewan (2012) Climate Action Plan
Research	<ul style="list-style-type: none"> • Encourage research focused on natural sciences or technological solutions • Foster social sciences and humanities research to address social, cultural, and political solutions • Develop interdisciplinary research units 	University of Calgary (2010) Greenhouse Gas Emission Reduction Plan
Community Outreach	<ul style="list-style-type: none"> • Disseminate best practices and research findings to stakeholders • Partner with stakeholders outside of higher education institutions 	University of Saskatchewan (2012) Climate Action Plan
Operations	<ul style="list-style-type: none"> • Retrofit existing buildings with more efficient technologies & incorporate sustainable design in new construction (e.g., LEED) • Improve transportation systems • Identify GHG emission sources • Conduct feasibility studies & demonstration projects • Procure renewable and sustainable energy sources 	University of British Columbia (2006) Sustainability Plan Dalhousie University (2010) Climate Change Plan Simon Fraser University (2011) Carbon Neutral Action Report

Take Action

Climate change is a complex phenomenon that requires holistic responses if we are to overcome the significant challenges it presents. Higher education institutions seeking to address climate change in their policies should:

Recommendation #1: Create a Climate Change Policy

- ✗ **Challenge:** SEPN found that while a number of institutions across Canada were broadly addressing climate change at a policy level, there remains significant capacity for improvement.
- ✓ **Action:** As many institutions in the study did not have policies to respond to climate change, SEPN's research suggests many institutions will need to develop responses to climate change via Climate Action Plans, Sustainability Plans, and Strategic Plans.

Recommendation #2: Move Beyond Operations: Adopt a Whole Institution Sustainability Approach

- ✗ **Challenge:** The institutions in SEPN's sample that did have climate change plans exhibited underdeveloped responses and climate change responses were particularly lacking in research and curriculum focus.
- ✓ **Action:** Policy-makers, administrators, staff, and students working to improve climate action in their post-secondary institutions should integrate sustainability across all aspects of institutional activity—governance, curriculum, research, community outreach, and operations—so that sustainability becomes a core property of institutional activity.

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Canada



Sustainability in Canadian K-12 Education: Closing the Research Gap on Understanding National Trends

For full results see: “Beveridge, D., McKenzie, M., Aikens, K., & Strobbe, K. M. Sustainability in Canadian K-12 Education: Reviewing Policy Initiatives Across School Divisions and Provincial Ministries of Education. Forthcoming.

Educational institutions are a critical venue for teaching and motivating students to understand and act on sustainability issues. In Canada, provincial or territorial ministries of education, working with local school divisions, are responsible for the organization, delivery, and assessment of K-12 education. To date, there has been little study of the inclusion of sustainability in education across Canada at the ministry of education or school division levels. To address this gap, the Sustainability and Education Policy Network (SEPN) conducted a nation-wide census to examine sustainability uptake in the policies of all 13 provincial and territorial ministries of education and all 374 K-12 school divisions (which also includes school districts and boards) across Canada.

Ministry of Education Policies

Provincial and territorial ministries of education engage with sustainability issues through sustainability-specific policies and general curriculum frameworks across the domains of governance, curriculum, operations, research, and community outreach. In total seven provincial ministries had sustainability-specific high-level documents in one or more domains.

Governance: Four provinces had sustainability-specific overall governance documents. In Manitoba, British Columbia, and Québec, these were the result of a government-wide mandate to address sustainable development. In Manitoba, for example, all school divisions fall under *The Sustainable Development Act* and therefore must adhere to sustainability guidelines mandated by the provincial government, with the support of the Ministry of Education.

Curriculum: Five provinces had one or more sustainability-specific documents focused on curriculum. While not using the terms sustainability” or “environment,” the Northwest Territories and Nunavut each had curriculum guides based on traditional Inuit knowledge, which included strong themes of cultural and environmental sustainability.

Operations: Three provinces had sustainability-specific operations documents: British Columbia, Manitoba, and Ontario.

Research: Three provinces had sustainability-specific research reports: Manitoba, Ontario, and the Yukon. These were produced in partnership with working groups, committees, or institutes.

Community Outreach: Only Manitoba had sustainability-specific documents intended as community outreach. The documents were intended to provide parents with information about grade level themes and outcomes related to sustainable development.

Curriculum Frameworks

All provinces except British Columbia had overarching frameworks that guide learning throughout elementary and secondary education, which also include sustainability components. These frameworks are not ‘sustainability-specific’ in focus; rather, they provide information on the prioritization of sustainability in relation to broader graduation outcomes and competencies.

Sustainability in Ministry of Education Policy Documents and Curriculum Frameworks by Province

Province	Sustainability-Specific Policy Documents					Sustainability in Curriculum Frameworks
	Governance	Curriculum	Operations	Research	Outreach	
Alberta (AB)	X	X	X	X	X	✓
British Columbia (BC)	✓	✓	✓	X	X	X
Manitoba (MB)	✓	✓	✓	✓	✓	✓
Atlantic Provinces*	X	X	X	X	X	✓
Northwest Territories (NT)	X	✓	X	X	X	N/A
Nunavut (NU)	X	✓	X	X	X	✓
Ontario (ON)	✓	✓	✓	✓	X	N/A
Quebec (QC)	✓	X	X	X	X	✓
Saskatchewan (SK)	X	X	X	X	X	✓
Yukon (YT)	X	X	X	✓	X	N/A

*New Brunswick (NB), Newfoundland (NL), Nova Scotia (NS), and Prince Edward Island (PE)

School Division Policies

Operations Policies: 177 policies focused on operations, suggesting Canadian school divisions were utilizing a dominant approach to education as an instrument to realize environmental and sustainability objectives, rather than pedagogical aims. Almost a half of all operations policies focused on either waste (81 policies) or energy (77 policies). 22 policies focused on climate change.

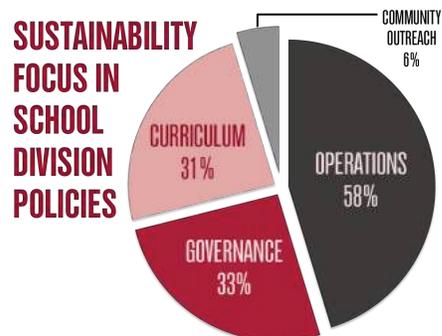
Terminology in Policy Titles: ‘Environment’ was the dominant language used in school division policy titles across the country. The exceptions were Manitoba, where ‘sustainable development’ was more commonly used, and Québec, where ‘développement durable’ (‘sustainable development’) was most common.

Temporal Trends: Sustainability-specific school division policy dates followed a distinct temporal trend, with few policy dates before 2006, a rapid increase until 2010, and a slow decline to the present. Only 79 policies were dated between 1978 and 2005. 187 policies were dated between 2006 and 2014.

Sustainability Initiatives

SEPN calculated average sustainability initiative (SI) scores for all school divisions in a province. Each school division received one point for having each of three sustainability initiatives (sustainability policy, eco-certification, and staff), with possible scores ranging from zero to three. Average provincial scores ranged from 1.7 in Nova Scotia to 0.0 in the Yukon and Nunavut.

Sustainability-Specific Policies: Of Canada’s 374 K-12 school divisions, 219 (59%) had policies with a focus on sustainability. Policy adoption varied across provinces, with Ontario having the highest (71 of 78, or 91% of school divisions), and Yukon and Nunavut having the lowest (no policies). Across school division policies, 177 (58%) were operations policies, 100 policies (33%) were related to governance, 94 (31%) related to curriculum, 17 (6%) related to community outreach, and none related to research.



Eco-Certification Programs: 160 (43%) of school divisions had undertaken a formal sustainability certification. The most common certification program was the Établissement vert Brundtland program, which was found in 66 school divisions in Québec (90% of the province’s school divisions). Three provinces have established their own eco-certification programs: Nova Scotia Green Schools, which was present in all of the province’s school divisions; Manitoba’s EcoGlobe program, which was used by schools in 19 (51%) of Manitoba’s school divisions; and Ontario EcoSchools, which was used by schools in 34 (44%) of Ontario’s school divisions.

Sustainability Staff: Only 25 (7%) of Canada’s 374 school divisions had sustainability staff. Larger school divisions were more likely to have sustainability staff. Having a sustainability staff member was weakly related to engaging in eco-certification programs and having a sustainability-specific policy.

Sustainability Initiatives in Canadian Provincial and Territorial School Divisions

	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	YT	NT	NU	ALL
Sustainability Policy	40	38	18	18	71	22	1	6	1	1	0	3	0	219
Eco-Certification Program	11	13	3	21	34	66	2	9	0	1	0	0	0	160
Sustainability Staff	7	2	1	1	12	2	0	0	0	0	0	0	0	25
SI Score	1.0	0.9	0.8	1.1	1.5	1.2	0.4	1.7	0.5	1.0	0.0	0.1	0.0	1.1
Total # of School Divisions	60	61	28	37	78	73	7	9	2	2	5	8	4	374

Where Next?

SEPN’s findings suggest that while there has been a steady increase in uptake of sustainability in K-12 education over the past decade, more can be done both at the ministry of education and school division levels to further mobilize knowledge and solutions that enable change for a more sustainable future. 🌱

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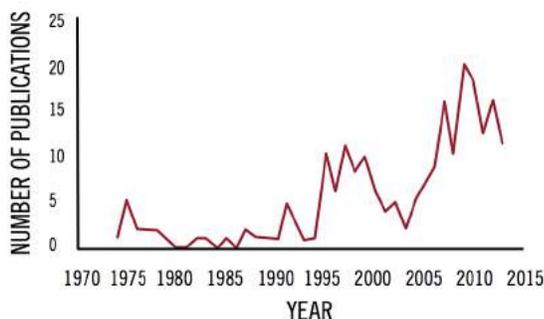
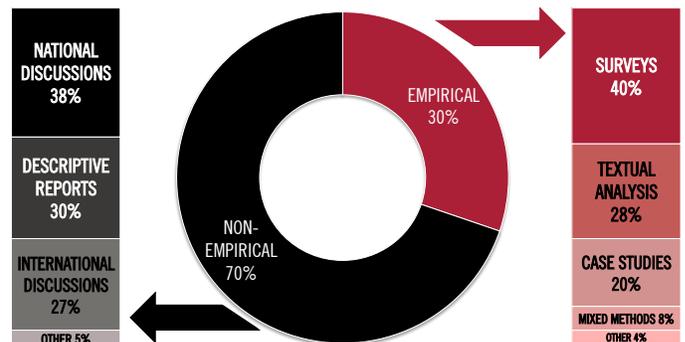
Environmental and Sustainability Education Policy Research in K-12 A Review of the Literature

For full results see: Aikens, K., McKenzie, M., & Vaughter, P. (2016). Environmental and Sustainability Education Policy Research: A Systematic Review of Methodological and Thematic Trends. *Environmental Education Research*, 22(3), 333-359. <http://dx.doi.org/10.1080/13504622.2015.1135418>.

This research brief summarizes a review conducted by the Sustainability and Education Policy Network (SEPN), which described the scope of policy research in sustainability education in the Kindergarten-Grade 12 system. SEPN's review describes sustainability education policy research conducted to date in detail and provides a platform for broadening policy studies in sustainability education. Recommendations for addressing gaps in the research literature are also provided.

Systematic Review: By The Numbers

- 215 peer-reviewed, English language research articles
- Published from 1974-2013
- 71 different countries
- Articles focused on K-12 education policy studies, self-defined as sustainability- or environment-related
- 150 (or 70%) non-empirical articles and 65 empirical articles
- Survey data was the focus of the majority of empirical articles, though textual analysis, case study, and mixed methods studies were also identified
- Most non-empirical articles focused on national-level discussions and most reports discussed national policy developments



Temporal Trends Across Four Decades of Policy Research

Three distinct 'spikes' emerged in policy research output:

- Mid-1970s: the field of environmental education emerges
- Late-1990s: the 1992 United Nations Conference on Environment and Development
- Mid-2000s: the United Nations Decade of Education for Sustainable Development

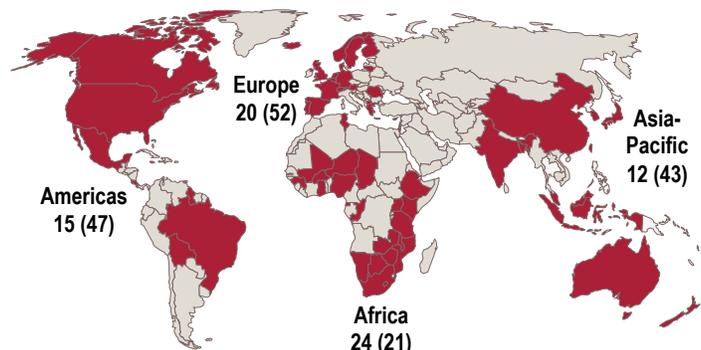
Geographic Trends

The most frequently researched countries were the United States, United Kingdom, Australia, and China/Hong Kong; these countries were the focus of over half of all publications in the review. Fewer studies were from Africa, South and Central America, Eastern Europe, and most of North and West Asia.

Emergent Themes

SEPN analysed the publications through an inductive, iterative thematic coding process. The review identified four main themes:

Policy Drivers: Sustainability imperatives such as environmental or socio-cultural degradation, environmental disasters, and climate change were identified in the literature as key drivers of policy development. While uptake of a climate change focus in education policy research was found to be slow, climate change recently emerged as an increasing driver for sustainability education policy, with 50% of all reviewed articles published since 2010 referring to climate change as a driver of policy. A desire to align with international policy imperatives such as the Tbilisi and Rio Declarations also acted as an impetus for sustainability education policy development according to the articles reviewed. Further, international organizations, such as United Nations affiliates and the World Bank, were cited as spurring sustainability uptake in education policy.



Competing Paradigms: SEPN's review found a research focus on variations and tensions in the terminology and understandings of sustainability mobilized in education policy. Several authors noted that the openness to interpretation of Education for Sustainable Development (ESD) may result in ESD prioritizing economies and failing to challenge business as usual. The review also identified research discussing the tensions between conceptions of environment and nature, with some authors noting contradictory themes of human domination of nature and the promotion of harmonious interrelationships with nature.

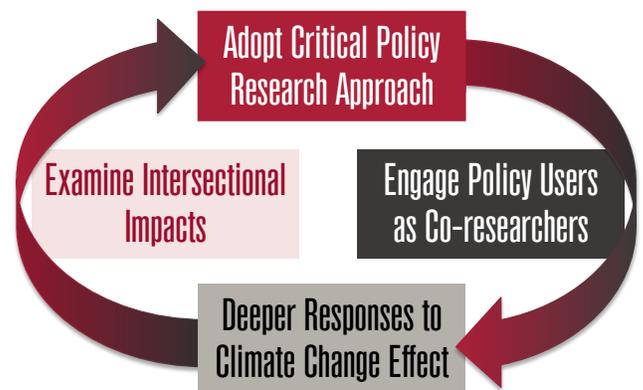
Teaching and Learning Directives: Empirical articles in the review overwhelmingly focused on curriculum, teaching, and pedagogy in relation to policy. Many of the articles reviewed focused on state-level policies designed to infuse sustainability into curriculum as interdisciplinary competencies. However, the findings were generally pessimistic on the success of cross-curricular integration of sustainability. Conceptions of pedagogy, or how sustainability ought to be taught, emerged as a focus in the 1990s. The literature often described sustainability as being in tension with other policy priorities, such as a focus on testing and performance, as well as pressure to compete internationally via student achievement.

Marginalizations: Some research focused on which perspectives and knowledge are centered or marginalized in policy, and by what mechanisms. Grounds for marginalization discussed in the literature included a focus on cultural tensions; North-South divisions; and the privileging of policy makers and researchers over practitioners and cultural groups in decision-making, international meetings, and in the development of state-level policies and resources. Several authors noted sustainability education can contribute to colonization, prioritizing western concepts over more holistic, situated, traditional forms of education.

Key Research Gaps and Directions for Moving Forward

SEPN's review identified several gaps and reinforced calls for future empirical research to engage more with sustainability education policy.

Critical Policy Theory and Methodology: A general inattention to broader developments in critical policy research remains apparent in the field. While the research reviewed initially focused primarily on surveys, more recent research has included case studies and multiple-methods. The empirical research reviewed typically focused on textual analysis or policy enactment and neglected the systematic examination of policy development and interactions within various aspects of the policy process. SEPN's review proposed the adoption of a critical policy research approach, which understands policy processes as complex, with multiple actors influencing the identification, championing, and resisting of problems and solutions.



Engaging Research Users: Research that effectively influences policy outcomes often involves policymakers and practitioners from the outset. SEPN's review identified a need for greater consideration within the literature to how policy research can inform policy. Critical policy research in the field could engage more with research fields that are more oriented toward policy development and solutions with generative political action; this would entail a shift from university-driven projects to projects that include policy "users" as co-researchers, as well as providing opportunities for mutual learning and multi-directional knowledge flows among co-researchers.

Intersectionality: Analyses of interactions between categories of marginalization in relation to policy (e.g., environment, race, gender, class, other forms of oppression) were largely absent from the reviewed articles. SEPN's review discusses new ways of re-imagining policy research including incorporating intersectional, Indigenous, and materialist methodologies; land- and place-based frameworks; and extending conceptualizations of the policy cycle to include considerations of political strategy and outcomes.

Climate Change: SEPN found relatively low engagement with climate change among the reviewed articles. It appears sustainability education policy research is only just beginning to respond to climate change. Education systems will increasingly need to develop policies that address climate change adaptation and the emotional implications of loss of place for students and communities. The challenges of climate change will require education policy research to become more engaged, political, practical, and imaginative.

Key Terms and Definitions

Empirical Research: studies using quantitative and/or qualitative research methods.

Non-Empirical Research: all articles in which research methods were not defined by the authors, including discussions of national and international policy discourse and descriptive reports of regional and national projects/programmes with little to no analysis.

Policy: broadly conceptualised to extend beyond considerations of policy texts, to influences on policy development as well as on the enactment or practice of policy.

Sustainability Education: in this context, an umbrella term for environmental education, education for sustainable development (ESD), education for sustainability, and other forms of education concerned at least in part with land and environment.

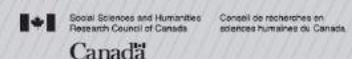
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Sustainability in Canadian Post-secondary Institutions: The Leaders, the Laggards and Where They Live

**Signing a sustainability declaration doesn't always mean commitment to sustainability.
A post-secondary institution's sustainability practices are strongly influenced by its provincial context.**

These are two key findings from a research study done by the Sustainability and Education Policy Network (SEPN) which assessed leadership on sustainability initiatives in Canadian post-secondary institutions. Engagement with sustainability is on the rise among post-secondary institutions, with many institutions developing policies and practices to further sustainability.

SEPN analyzed and scored all 220 accredited post-secondary institutions in Canada on their uptake of four high-level Sustainability Initiatives (SI):

1. Undertaking a sustainability assessment
 2. Signing a national or international environmental or sustainability declaration
 3. Having a sustainability office or officer
 4. Having sustainability policies
- An institution received one point for having a sustainability initiative in each category.

SI Leaders = SI score of 4.
Institutions with all four sustainability initiatives.

SI Laggards = SI Score of 0.
Institutions with no sustainability initiatives.



30/220 SI Leaders

Québec and British Columbia had the highest number of SI leaders (9 and 6 institutions respectively). Higher scoring institutions appeared more frequently in larger cities, although SI scores in Québec's larger centres were only marginally higher than its smaller centres.

63/220 SI Laggards

Saskatchewan and the territories had the lowest average SI scores.

SI Score Averages & Number of Institutions by Province

Province	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	YT	NT	NU	CA
Leaders	6	4	1	3	4	9	0	2	0	1	0	0	0	30
Laggards	6	6	9	5	18	6	2	5	1	2	1	1	1	63
SI score Avg	2.1	1.7	0.6	1.4	1.5	2.4	1.0	1.3	1.3	1.3	0.0	0.0	0.0	1.7
Total # of Institutions	27	21	15	9	59	59	7	13	3	4	1	1	1	220

(De) linking declarations

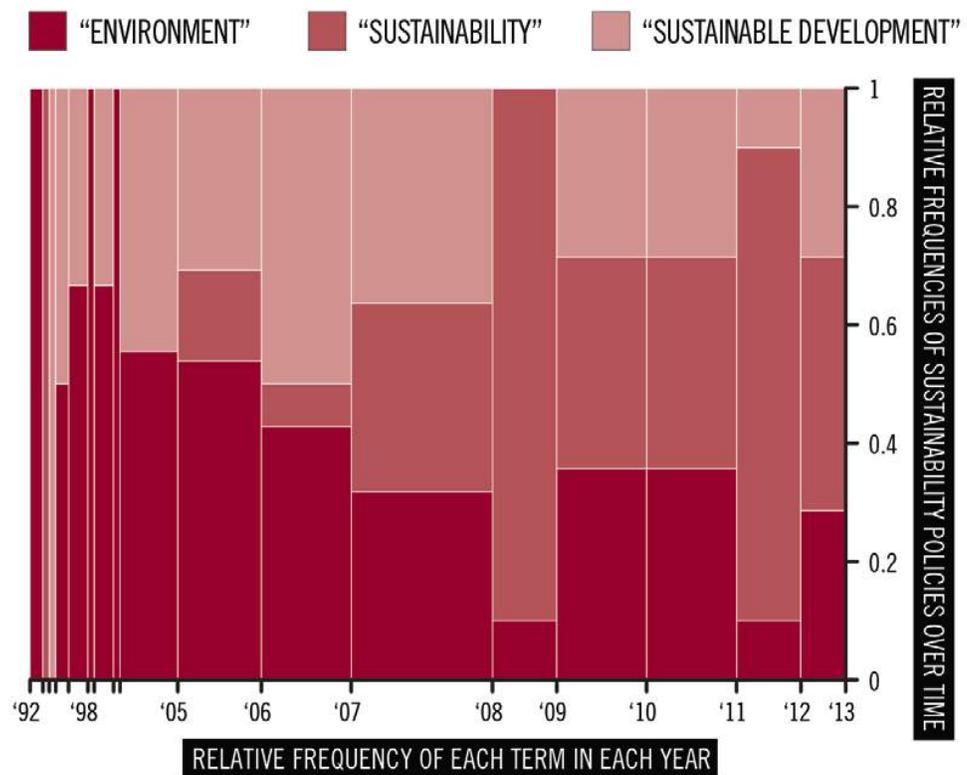
This research identifies strong linkages between the three sustainability initiatives of assessment, office(r), and policy, suggesting that the uptake of one might encourage the uptake of others. In contrast, there was a weak relationship between signing a declaration and undertaking other sustainability initiatives. Of the 99 institutions that signed a declaration since 1990, one third had not undertaken any other sustainability initiative. This suggests that institutions critically reflect on their purpose and intentions in signing a declaration, and if commitment to sustainability is a true objective, that they identify what additional sustainability initiatives will be taken after signing a declaration. As well, policy actors developing and championing sustainability declarations could consider what measures might be put in place to help signatories engage in other high-level sustainability initiatives after becoming declaration signatories. The existence of sustainability-specific policies was strongly related to province, with the majority of institutions in both Québec (85%) and British Columbia (67%) having sustainability policies. In contrast, only 14% institutions in New Brunswick and 13% in Saskatchewan had policies, and none of the three institutions in the territories had policies.

Do provincial political cultures influence sustainability in education?

This raises interesting questions about the role of provincial policies and cultures around sustainability. In particular, it was the higher engagement levels in BC and Québec’s smaller communities that resulted in those provinces having the highest average rates of sustainability initiatives. This means it is more than simply the characteristics of large urban centres that match up with sustainability issues, but that there also may be unique factors existing in smaller Québec and BC communities, or that they are part of a broader provincial culture that encourages sustainability initiatives. A potential example of the leadership role that provinces can play through provincial policy can be seen with Québec’s Cégep Vert program, which in turn played a significant role in influencing the uptake of sustainability initiatives at the institutional level. In the Québec education system, Cégeps are general and vocational colleges that offer two or three year programs bridging secondary school and university. Among all institution types (Universities, Colleges, and Cégeps), Cégeps had on average the highest sustainability initiative scores.

Shifting from ‘environment’ to ‘sustainability’

The study also identified a change in terminology used in policies over time, with the term ‘sustainable development’ decreasing slightly in use over time, with a more substantial drop in the number of policies using the terminology of ‘environment.’ Since 2005, there was a marked increase in the use of the term ‘sustainability’ in policy. Use of the term also increased as community population size increased, as well as being the term of choice in Ontario and the three Prairie provinces.



Making decisions on sustainability

Beyond the high-level leadership initiatives researched in this study, other important elements of sustainability uptake in post-secondary institutions can include active student sustainability groups, sustainability champions in specific units of institutions, and operational innovations. These were not analyzed in this study, but will be included in the next phase of research that will explore how sustainability is being advanced in education policy and practice through site analyses. SEPN has also developed an interactive mapping tool that enables viewers to move deeper into the research content via the SI scores of specific universities. Identifying these types of sustainability initiatives as well as the SI score rankings are important indicators for students and university leadership as they make decisions about enrollment, recruitment, and investment in further sustainability initiatives.

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Campus Sustainability Governance in Canada: Spotlight on the Content of Post-secondary Education Sustainability Policies

This research brief highlights analysis of the content of sustainability policies from a selection of 50 post-secondary institutions across Canada (colleges and universities). In the area of operations in particular, policies outline steps institutions are taking to further sustainability on their campuses. In contrast, the institutional domains of curriculum and research tend to lack implementation detail, such as plans and timelines, which can diminish the impact of the policies in furthering sustainability. Full results can be read in the academic paper: Vaughter, P., McKenzie, M., Lidstone, L., & Wright, T. (in press) "Campus Sustainability governance in Canada: A content analysis of post-secondary institutions' sustainability policies." *International Journal of Sustainability in Higher Education*.

Framing Sustainability

Definitions Move Away From 'Environment': Of the 59 sustainability policies and plans reviewed (hereafter referred to as 'policies'), 43 include definitions of sustainability or related terminology, with a clear preference for the three pillar definition (a focus on the natural environment, society, and economy), or the Brundtland definition (sustainable development that "meets the needs of the present without compromising the needs of future generations") versus environment-specific ones. This seemed reflect a broader movement away from the language of environment and towards the language of sustainable development and sustainability over the past several decades.

Emphasis on Importance to Humanity: 16 out of 40 institutions indicated that sustainability is a responsibility of their institution to the world at large. Only three institutions (and all of these francophone institutions from Québec) framed this responsibility as an imperative because natural environments and/or ecosystems have intrinsic value in and of themselves. The majority of the institutions in the sample took a more anthropocentric approach, indicating that the natural environment is necessary for humanity and did not frame humanity as part of the natural environment or nature as having value in and of itself.

Implementing Sustainability

In many institutions, the policy focus was on operationalization in the 'environmental' sphere, such as in relation to energy use, waste reduction, and other physical infrastructure issues which fall under operations. While policies often link these issues to cost-savings, the central focus is on environmental inputs and outputs rather than on the associated social or economic health of the institution or region. There was very little detail in the domains of education, research, and community outreach on how policies to further sustainability should be implemented.

Governance: Within the examined sustainability policies and plans, the majority of institutions (32 out of 40) tied furthering sustainability to their institutional mission, vision, traditions, and/or overarching purpose for existing. 14 institutions describe themselves as leaders in sustainability in their policies, either in their local community, within higher education, or more broadly. Eight policies linked sustainability to the traditional, historic, and/or cultural identify of the institution.

Education (curriculum): Six institutions specifically discuss the development of curricula on environment and/or sustainability in their sustainability policies. However, the mandates typical offer little detail in terms of guidelines or timelines. Twelve institutions discussed the role of co-curricular activities in sustainability, such as student organizations, residential organizations, and other bodies.

Sustainability in 50 Canadian Post-secondary Institutions

Of the 50 institutions:



40 had high-level sustainability documents



17 institutions and sustainability policies



5 had sustainability plans



18 institutions had both sustainability policies and plans

Research: Policies included few specifics as to what counts as ‘sustainability research’ or how such research will be identified and supported. There was a focus on increasing institutional leadership and reputation for sustainability research, yet few examples were given of specific research projects on sustainability. The sustainability-related strategic research priorities identified from the policies also tended to fall within more scientific or applied social science areas.

Community Outreach: Groups discussed in the sustainability policies included the ‘general public’ or the ‘campus community.’ City and provincial governments were frequently discussed as stakeholders in institutions’ sustainability policies, as was the business community. Aboriginal communities were referenced in the sustainability policies of three institutions. While students, staff, faculty, and administrators were all discussed as targets for sustainability outreach, students were occasionally framed as being ‘responsible’ for sustainability at an institution, while faculty and staff were given this obligation less frequently.

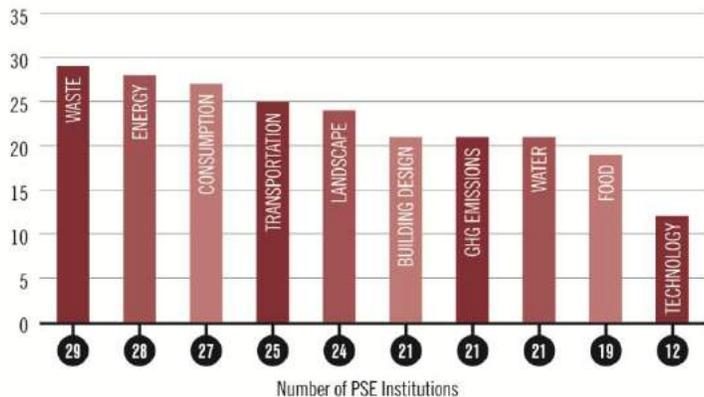
Campus operations and facilities: The majority of the content of sustainability policies was focused specifically on operations and facilities, outlining steps that institutions are taking to further sustainability on their campuses.

Waste: 28 of the 40 institutions with policies included a discussion of waste, in particular waste reduction.

Energy: 28 of the institutions addressed energy consumption either in terms of conserving energy (reducing usage/increasing efficiency) or converting to alternative energy (e.g., hydro, solar, wind). Those which approached this topic via conservation (25) generally focused on energy efficiency in campus building operations.

Transportation: 25 institutions referred to transportation in their sustainability policies, with a central focus on encouraging less carbon-intensive means of travel, such as providing incentives for car-pooling; initiating mass transit passes for students, staff, and faculty; and designing more biking and walking paths to and from campuses. Institutions tended to focus on increasing efficiency in transportation rather than decreasing total number of commuters. There was little focus on transportation emissions in relation to the lack of student housing on campuses and the resulting number of student commuters.

Operations Issues in Sustainability Policies



It is also useful to consider the flip side of sustainability and identify how some institutions’ activities may be furthering ‘*un*sustainability.’ For example, student and faculty groups at a number of institutions in Canada have recently called for policies on fossil fuel divestment in order to help address, rather than to contribute to, climate change.

Need for more details in what constitutes ‘sustainability research.’

Without greater attention, there is a worry that parallels the broader concerns around three pillar approaches to sustainability, that researchers or institutions may think they are ‘doing sustainability research’ if they address any one of economic, social, or environmental considerations. Based on our analysis, we suggest a need to further address the institutional domain of ‘research’ by adding more specifics and ‘teeth’ in what is considered ‘sustainability research’ in sustainability policies and assessments. This also links to community outreach, as research partnerships with community partners (business, Aboriginal communities, community organizations, etc.) may determine the most significant impacts institutions have in relation to the (environmental) sustainability of off-campus communities.

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Canada

Strategic Planning for Sustainability in Canadian Higher Education

For full results see: Bieler, A., & McKenzie, M. (2017). Strategic Planning for Sustainability in Canadian Higher Education, *Sustainability*, 9, 161. doi:10.3390/su9020161.

Strategic plans help higher education institutions (HEIs) envision and communicate their organizational goals and the actions needed to achieve those goals. In Canada, a decentralized education system provides HEIs with a great deal of autonomy in defining strategic directions, including in relation to sustainability. However, to date, there has been little empirical research on the connections between strategic planning and sustainability in higher education (SHE). To address this gap, the Sustainability and Education Policy Network (SEPN) examined the connections between strategic planning and sustainability uptake in the strategic plans of a sample of 50 Canadian HEIs. SEPN's research has implications for the role of institutional strategic plans in long term planning for SHE and will be of interest to policy makers and those working in sustainability in higher education.

Content Analysis of Strategic Plans

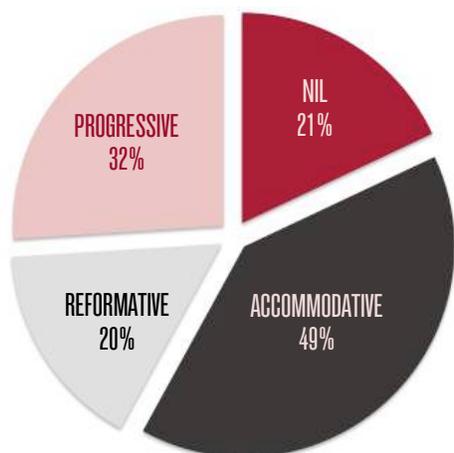
- SEPN conducted a content analysis of 50 HEI's strategic plans to examine the depth and breath with which sustainability was included as a significant policy priority, including across **five sustainability domains: (1) governance, (2) education, (3) campus operations, (4) research, and (5) community outreach.**
- Each HEI's strategic plan was classified according to type of **institutional sustainability response**, using an adapted version of Sterling's 2013 framework.

Findings

Type of Response: A total of nine strategic plans (21%) did not include any discussion of sustainability.

Accommodative responses were the most common institutional response, seen in 20 (49%) of 41 strategic plans, indicating limited engagement with sustainability in the sample. Some HEIs made only brief references to one or two sustainability domains in their plans (these institutions typically had no sustainability policy), while other institutions had in-depth discussions in relation to institutional sustainability goals and an accompanying sustainability policy but concentrated on only one or two sustainability domains.

Reformative responses were least frequent, found in only eight (20%) strategic plans. These plans most commonly addressed sustainability in only three domains, but often related sustainability to core institutional values and/or sustainability goals in great depth. All reformative responses were seen in institutions which also had a sustainability policy.

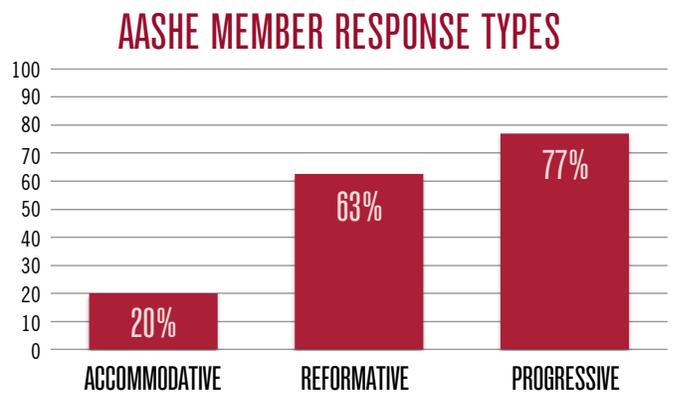


Progressive responses were seen in 13 (32%) of the strategic plans analyzed. Progressive responses typically took one of two forms. Eight plans in this category addressed four or five sustainability domains and included significant sustainability content in relation to the institution's core values and goals. The remaining five plans addressed all sustainability domains and engaged in meaningful discussions of sustainability in relation to values, goals, and sustainability plans. However, progressive responses did not engage institutions in the types of transformative redesign processes that lead to systemic institutional change. All progressive responders had a sustainability policy.

None of the plans exhibited **transformative responses**, such as reorienting educational purposes and paradigms to correspond with sustainability values, and consideration of Indigenous land and worldviews. A lack of engagement with **community outreach**—in particular acknowledgements of the histories of settlement, land, and territory in the regions which HEIs are located—was evident in all strategic plans, regardless of the type of response.

Sustainability Initiatives: Drawing on the results of SEPN's previous Canada-wide census of sustainability policy initiatives which categorized sustainability initiative (SI) leaders as having all four types of initiative (assessment, declaration, policy, office), and laggards as having none of these initiatives, SEPN examined the relationship between type of response and SI leadership. SEPN found SI leaders engaged more strongly with sustainability in strategic planning: only 7 of the 20 (or 35%) accommodative responders were SI leaders, whereas 4 of 8 (50%) reformative and 10 of 13 (77%) progressive responders were SI leaders.

AASHE Membership: Institutions affiliated with the Association for the Advancement of Sustainability in Higher Education (AASHE) were more likely to exhibit reformative or progressive sustainability responses in their strategic plans. Only 4 of 20 (20%) accommodative responders were AASHE members whereas 5 of the 8 (63%) reformative responders and 10 of the 13 (77%) progressive responders were AASHE members, suggesting institutional membership to AASHE may be a significant factor in progressive engagement with sustainability at the strategic planning level.



Strategic Planning for Sustainability in Higher Education: Key Findings

SEPN's findings point to the need for stronger engagement with sustainability at the strategic planning level in the Canadian higher education sector. The shift to transformative sustainability responses requires HEIs to re-conceptualize the purpose of higher education and re-think existing educational paradigms in relation to land, place, ecology, and community.

Institutional Accountability: SEPN found weak language related to sustainability and a lack of specific sustainability goals, particularly in accommodative and reformative plans. Policy makers and those working in sustainability at institutions in the accommodative and reformative stages of sustainability uptake may consider adopting more integrative, holistic, and concrete policy targets at the strategic planning level. Clearly articulated institutional sustainability goals and targets are more easily monitored by accountability mechanisms, which may improve sustainability uptake.

Overcoming Barriers: Institutions working to adopt more integrative sustainability innovations are likely to encounter resistance. Previous research suggests barriers to sustainability engagement in HEIs include: (1) complex and shifting governance structures, particularly as HEIs move increasingly towards corporate governance models, with increased centralization of decision-making and less democratic engagement; (2) the high degree of academic autonomy afforded to faculties and departments in Canadian HEIs, which means units may not engage with sustainability unless it fits into existing identities, teaching, and research objectives; and (3) faculty being deterred by perceptions that a sustainability focus equates to teaching a particular set of values.

- SHIFTING EDUCATIONAL PARADIGMS**
- ✓ Specific, concrete sustainability goals
 - ✓ AASHE assessment processes
 - ✓ Integrated, holistic targets
 - ✓ Improved monitoring capabilities
 - ✓ Re-conceptualizing purposes of education
 - ✓ Integration of Indigenous perspectives

Shifting Educational Paradigms: The need for stronger engagement with sustainability in strategic planning was particularly evident in the large number of institutions with no references to sustainability in their strategic plans, a predominance of accommodative responses, and a lack of transformative responses. Even strategic plans with substantial sustainability content in SEPN's research did not include the types of paradigm-shifting visions characteristic of transformative responses to SHE. Sustainability actors, particularly those in HEIs with accommodative responses, could be working across multiple spheres of policymaking and pushing for higher quality sustainability content in strategic plans. The shift to transformative sustainability responses requires HEIs to re-think existing educational paradigms and re-conceptualize the purpose of higher education and support the transition to more sustainable societies.

OVERCOMING BARRIERS

- ✗ Complex, corporatized governance structures
- ✗ High faculty and departmental autonomy
- ✗ Fit with identity, teaching, research priorities
- ✗ Politicization of sustainability values

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The State of Fossil Fuel Divestment in Canadian Post-secondary Institutions

Divestment from fossil fuels has recently become a hot topic, with \$3.4 trillion already divested globally by concerned educational institutions, governments, and faith-based organizations. Educational institutions are the fourth largest sector divesting from fossil fuels (Figure 1). This research brief is from the paper “The State of Fossil Fuel Divestment in Canadian Post-secondary Institutions” by Naomi Maina, PhD Researcher, and is one component of a broader SEPN study evaluating sustainability uptake in Canadian formal education. The full paper can be found at www.sepn.ca.

Post-secondary institutions have a significant amount of their endowment funds invested in fossil fuel companies, creating close and complex ties with the fossil fuel industry. The higher education divestment movement advocates that endowment funds be invested responsibly in areas that promote cleaner futures for current students and future generations.

In Canada, there are currently 37 active divestment groups in college campuses spread across nine provinces.

Province	Active Divestment Campaigns
Ontario	14
British Columbia	8
Nova Scotia	4
Québec	3
New Brunswick	2
Alberta	2
Manitoba	2
Newfoundland	1
Prince Edward Island	1

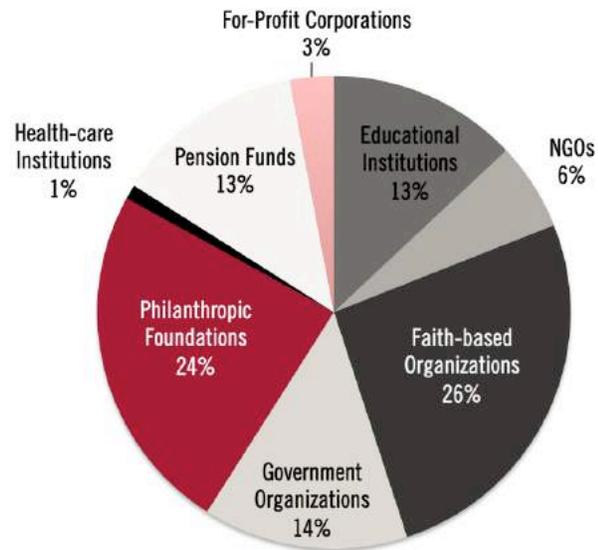


Figure 1. Measuring the global fossil fuel divestment movement (gofossilfree.org, nd)

Students Leading Divestment Campaigns in Canadian Post-secondary Institutions

In many of the 37 active divestment campaigns in Canadian institutions, leadership has primarily been by students, with support gained from other university and community affiliates. At Simon Fraser University for example, the student-led group Sustainable SFU initiated the divestment campaign ‘SFU350’ as one of their projects, and has acquired support from SFU Student Society, Graduate Student Society, the Alumni Association, and various departments on campus. In other institutions such as University of British Columbia, University of New Brunswick, and Lambton College of Applied Arts and Technology, individual students and alumni have come together to initiate campaigns. At Dalhousie University, McMaster University, and McGill University, campaigns began as joint efforts of students, alumni, faculty, and community members.

In April 2016, the University of Ottawa became the first Canadian university to commit to full divestment. However, the timeline for when the divestment will occur has not been defined, and the divestment group, fossil free Uottawa is continuing to push its institution to set a clear timeline. Also, in November 2014, exactly two years after the inception of the student-led divestment campaign, Concordia University became the first university in Canada to agree to partially divest \$5 million of its endowment from fossil fuels (“Concordia University becomes first,” 2014, n.p.). While this decision may be seen as an important win for the movement, the divestment group at Concordia University, Divest Concordia has termed this decision “a flat-out rejection” of calls to full divestment. Their argument is that if this decision is hailed as a win, other universities may follow suit, undermining the long-term commitment to distancing with fossil fuel companies through partial divestment (“Divest Concordia denounces,” 2014, n.p.).

The divestment campaign has also seen smaller victories. The Students’ Society of McGill University voted to divest their endowment funds, followed by the Dalhousie Student Union, which also agreed to divest their \$2.5 million. Student referendums to endorse divestment

have also passed at eleven universities (listed below), and these endorsements have increased credibility and momentum of the divestment movement to keep pushing the administration to rethink their investment policies. Other actions have included campus protests, signing of petitions, rallies, climate action workshops, open letters signed by students, faculty, alumni and community members calling for action.

Out of the 37 post-secondary institutions with divestment campaigns, two campuses have made a decision agreeing to full and/or partial divestment, 12 campuses have had successful votes from students in support of divestment, and five campuses have had successful votes from faculty members. Table 1 shows Canadian post-secondary institutions where divestment campaigns are underway, including the amount of money currently invested fossil fuels. (Note: Blank cells indicate that the information was not publicly available.)

There seems to be a disconnect between publicly declared sustainability initiatives on various campuses, and actual investment practices. While some campuses have positioned themselves as sustainability leaders, they are still heavily invested in fossil fuel companies (University of British Columbia, 2014).

Table of Canadian post-secondary education endowment funds, divestment votes, and decisions from board of governors.

Name of Institution	Total Endowment	Amount invested in fossil fuels	Student Vote	Faculty Vote	Board of Governors Decision
University of Toronto	1,500,000,000	32,400,000		✓	Rejected
University of British Columbia	1,100,000,000	120,000,000	✓	✓	Rejected
McGill University	1,400,000,000	84,000,000	✓		Rejected
Queen's University	658,000,000	29,000,000	✓		Rejected
McMaster University	655,000,000	47,000,000	✓		In process
University of Calgary	710,000,000	40,000,000			Rejected
Dalhousie University	465,000,000	20,300,000	✓		Rejected
Simon Fraser University	367,000,000		✓	✓	In process
University of Victoria	365,000,000	21,000,000	✓	✓	Rejected
University of Guelph	270,000,000	40,500,000	✓		In process
University of Ottawa	193,000,000				Agreed but no timeline
University of New Brunswick	198,000,000		✓		In process
Concordia University	136,000,000	10,000,000	✓		Partial divestment
Mount Allison University	140,000,000			✓	In process
University of Winnipeg	57,500,000	2,580,000	✓		In process
Trent University	41,000,000	34,000,000	✓		In process

Moving Canadian Post-secondary Institutions Towards Divestment

The fossil fuel divestment movement is framed as an ethical issue, invoking the social responsibility of post-secondary institutions and other organizations. Yet there is some reticence within the Canadian context to consider a future with reduced fossil fuels. The economy is heavily fueled by the fossil fuel industry, including many institutions of higher learning which receive significant funds from the fossil fuel industry. Developing campaign strategies that are sensitive to this unique context is critical to the success of the divestment and the larger climate action movement.

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Greenwashing in Education: How neoliberalism and policy mobility may undermine environmental sustainability.

Sustainability and neoliberalism are mobile concepts and processes that when twinned, undermine the way environmental sustainability is being developed and implemented in education policy and practice. This is the central point in the SEPN research paper: McKenzie, M., Bieler, A., & McNeil, R. (in press) "Education policy mobility: Reimagining sustainability in neoliberal times." *Environmental Education Research*.

Sustainability: in this context, engagement with issues of the natural environment in some capacity, including in relation to social, economic, culture, health, and other factors. While we are concerned with the various ways sustainability terminology is engaged, we have limited the scope to those cases which include some reference and consideration of environment.

Neoliberalism: political economic practices emphasizing individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade. (Harvey, 2005, p.2)

Sustainability as a vehicular idea

Sustainability is a 'vehicular idea.' It is a flexible and vague concept which can be absorbed and used in different, even opposing, contexts. Cynically, it can serve to propel or greenwash economic interests; optimistically, it can allow for coalition building.

Mobility in policy studies

Sustainability, as a vehicular idea, is mobile and is increasingly being taken up in different ways across various contexts. Mobility approaches in policy studies focus on the movement of objects, people, and ideas around the globe. Rather than having a clear centre point or origin, policy is a product of its surroundings, influenced by ideas that are both situated and mobile, producing variations developed in response to different policy contexts and relationships. Mobility approaches to policy development are critical of the policy transfer-diffusion approach which focuses on policies as discrete objects which can be 'transferred' in whole to other locations and networks. Rather, mobility approaches emphasize the movement of policies as bits and pieces, which are also transformed through that process of movement and translation.



From this perspective, policy actors respond simultaneously to multiple policymaking networks, and to the tensions and contradictions that come along with these policy domains. They are part of a growing cadre of cosmopolitan policy advocates, aided by new communication technologies, who shape and move policies that are responsive to specific policy networks, think tanks, and media landscapes, and exert political influence through networks and the creation of new networks. Policy mobility is a useful frame for understanding sustainability as a vehicular idea in relation to processes of neoliberalization.

Neoliberalization of sustainability in education policy

Neoliberalism is likewise a vehicular concept travelling globally, taking specific forms in different locales, rather than presenting one single form of "neoliberalism." It can be described and analyzed as a process in relation to particular sites and situations, rather than discussing "neoliberalism" in sweeping catch-all ways.

Over the last several decades, policy development and practice have been increasingly influenced by the penetration of neoliberal processes into public spaces and bodies. Neoliberalization reframes educational institutions as competitive and commodified entities, and applies private sector management practices in this public sector. Campuses, teaching, and research priorities become commodified and privatized, amplifying relations of competition and an overall growing emphasis on measurable outputs. Neoliberalization filters not only how education is conceptualized and shaped through policy, but also how sustainability in education is understood and addressed.

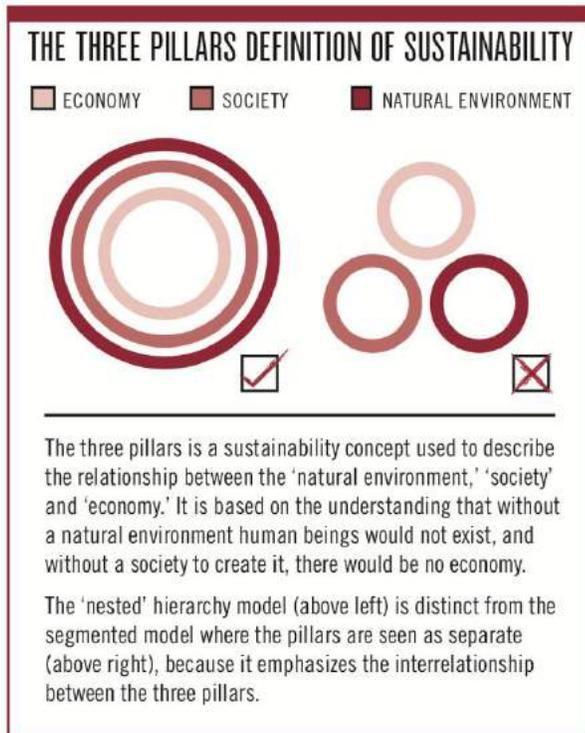
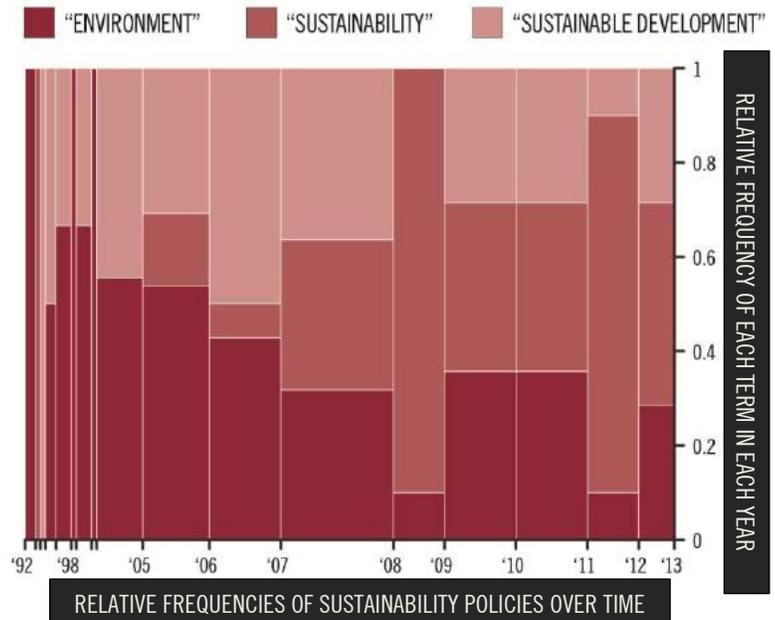
Sustainability in education is deeply susceptible to being framed in exclusively economic terms, which closes down possibilities that are more just and environmentally sustainable than what neoliberalism has to offer. Claims of a sustainability focus are increasingly a selling

point in attracting students, faculty, and funders. In the worst case scenario of institutional greenwashing, sustainability policies and related high level initiatives such as signing of declarations, act as ‘sustainability fixes’ giving the appearance of taking steps towards protecting the environment while a higher prioritization remains given to the institution’s economic considerations.

Researching sustainability in education policy of Canadian post-secondary institutions

SEPN’s initial analysis suggests that increasing numbers of post-secondary institutions in Canada are developing sustainability-related policies. How language is used to discuss sustainability in education policy, and how its meaning shifts over time, are indicators of how sustainability is a vehicular concept with increasing popularity, potentially brought on by its links to neoliberalism.

There have been shifts in language around environmental sustainability over the past several decades. In SEPN’s research study of Canada’s 220 post-secondary institutions, 69 out of 110 institutions with sustainability policies included definitions of their terminology, from higher uses of the term ‘environment’ to increasing uses of ‘sustainable development’ and now most recently,



‘sustainability,’ which is the current most frequently used term.

Almost a third of the policies included a definition of sustainability which included a focus on the natural environment, society, and economy, or what is often called a ‘three pillars’ definition of sustainability. However, within the policies reviewed, there was no mention of any hierarchy or prioritization of these three elements.

The vagueness of a sustainability definition without explicit prioritization runs the risk of enabling sustainability as a vehicular idea that functions as both a floating signifier through its ambiguity (anything can be ‘greenwashed’ while business continues as usual), as well as enabling sustainability to be ‘fixed’ in certain ways (i.e., giving priority to a particular pillar).

For this reason, it is important to look at how sustainability is understood in education policies, and whether priorities of neoliberalization are embedded within how sustainability is conceptualized and practiced. Segmenting the three pillars can thus insulate the economy pillar from those of social and environmental sustainability, enabling a form of neoliberal sustainability.

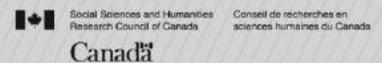
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APPENDIX B: SELECTED INFOGRAPHICS

1. Sustainability in K-12 Education: Closing the Research Gap on Understanding National Trends
2. Sustainability in Canadian Post-secondary Institutions: The Leaders, the Laggards and Where They Live
3. Strategic Planning for Sustainability in Canadian Higher Education
4. The State of Fossil Fuel Divestment in Canadian Post-secondary Institutions
5. Greenwashing in Education: How Neoliberalism and Policy Mobility may Undermine Environmental Sustainability

Educational institutions are a critical venue for teaching and motivating students to understand and act on sustainability issues, but there has been little study of the inclusion of sustainability in education across Canada at the ministry of education or school division levels. The Sustainability and Education Policy Network (SEPN) conducted a nation-wide census to address this gap.

13 PROVINCIAL AND TERRITORIAL MINISTRIES OF EDUCATION 374 SCHOOL DIVISIONS

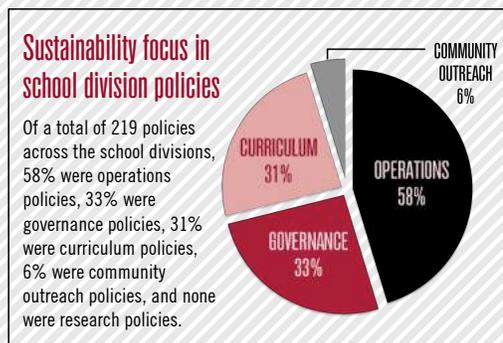
Ministry of Education Policies

The provincial and territorial ministries of education engage with sustainability issues through sustainability-specific policies and general curriculum frameworks

Province	Sustainability-Specific Policy Documents					Sustainability in Curriculum Framework
	Governance	Curriculum	Operations	Research	Community Outreach	
AB	X	X	X	X	X	✓
BC	✓	✓	✓	X	X	X
MB	✓	✓	✓	✓	✓	✓
NB/NL/NS/PE	X	X	X	X	X	✓
NT	X	✓	X	X	X	N/A
NU	X	✓	X	X	X	✓
ON	✓	✓	✓	✓	X	N/A
QC	✓	X	X	X	X	✓
SK	X	X	X	X	X	✓
YU	X	X	X	✓	X	N/A

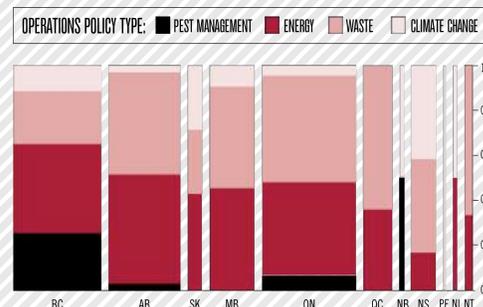
School Division Policies

Over half of Canada's school divisions had sustainability-specific policies.



The majority of sustainability-specific policies were operations policies

Almost half of all 177 operations policies focused on either waste (81 policies) or energy (77 policies).



31% OF SCHOOL DIVISIONS HAD UNDERTAKEN A SUSTAINABILITY CERTIFICATION

The most common eco-certification programs were EcoSchools and Etablissement vert Brundtland.

ONLY 7% OF CANADA'S 374 SCHOOL DIVISIONS HAD SUSTAINABILITY STAFF

"ENVIRONMENT" WAS THE DOMINANT TERM USED IN SCHOOL DIVISION POLICY TITLES ACROSS THE COUNTRY

Sustainability-specific policies increase after 2006

Sustainability-specific school division policy dates followed a distinct temporal trend, with few policy dates before 2006, a rapid increase until 2010, and a slow decline to the present. Only 77 policies were dated between 1978 and 2005. 187 policies were dated between 2006 and 2014.

Average Provincial Sustainability Initiative Scores

Average scores of school divisions in a province. Each school division gets 1 point for each of the three sustainability initiatives they have (eco-certification, staff, policy). SI scores have a possible range of 0-3 points.

NS	ON	QC	MB	BC	NL	AB	SK	PE	NB	NT	YT	NU	ALL
1.7	1.5	1.2	1.1	1.0	1.0	0.9	0.8	0.5	0.4	0.4	0.0	0.0	1.1

SEPN's findings suggest that while there has been a steady increase in uptake of sustainability in K-12 education over the past decade, more can be done both at the ministry of education and school division levels to further mobilize knowledge and solutions that enable change for a more sustainable future.

220 institutions were scored on their uptake of four high-level Sustainability Initiatives (SI)

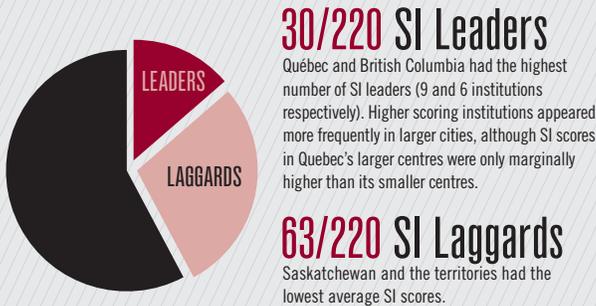
- 1 Undertaking a sustainability assessment
- 2 Signing a national or international environmental or sustainability declaration
- 3 Having a sustainability office or officer
- 4 Having institution-wide sustainability policies

SI LEADERS
SI score of 4

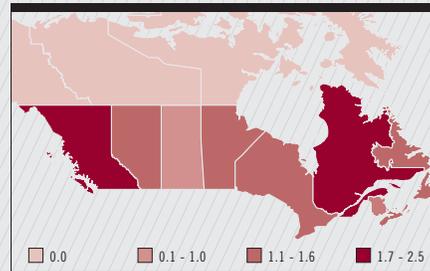
Institutions with all four sustainability initiatives

SI LAGGARDS
SI score of 0

Institutions with no sustainability initiatives



SUSTAINABILITY INITIATIVE SCORE (PROVINCIAL AVERAGE)



Provinces	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	YT	NT	NU	🇨🇦
Leaders	6	4	1	3	4	9	0	2	0	1	0	0	0	30
Laggards	6	6	9	5	18	6	2	5	1	2	1	1	1	63
SI Score Average	2.1	1.7	0.6	1.4	1.5	2.4	1.0	1.3	1.3	1.3	0.0	0.0	0.0	1.7

ASSESSMENT, OFFICE & POLICY

The study by SEPN identifies strong linkages between these three sustainability initiatives suggesting that the uptake of one might encourage the uptake of others. In contrast, there was a weak relationship between signing a declaration and undertaking other sustainability initiatives.

The existence of sustainability policies was strongly related to province:



★ Do provincial political cultures influence sustainability in education?

- higher engagement levels in BC and Quebec's smaller communities resulted in those provinces having the highest average rates of sustainability initiatives.
- Québec's Cégep Vert program is an example of the influence that provincial policies can have on sustainability uptake in education institutions.

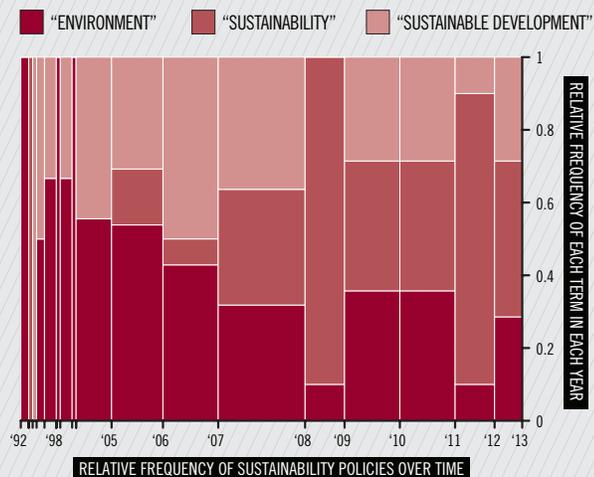
ENVIRONMENT

SUSTAINABILITY

The study by SEPN identified a shift in terminological preferences over time, with 'sustainable development' and 'environment' decreasing, and 'sustainability' increasing.

LET'S MAKE A DIFFERENCE.

Other important elements of sustainability uptake in post-secondary institutions can include active student sustainability groups, sustainability champions in specific units of institutions, and operational innovations. Identifying these types of sustainability initiatives as well as the SI score rankings are important indicators for students and university leadership as they make decisions about enrollment, recruitment, and investment in further sustainability initiatives.



50 higher education institutions' (HEIs) strategic plans were analyzed for engagement with sustainability and categorized by Sustainability Response Type

BREADTH OF ENGAGEMENT

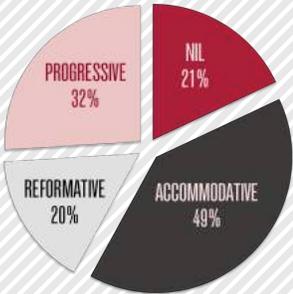
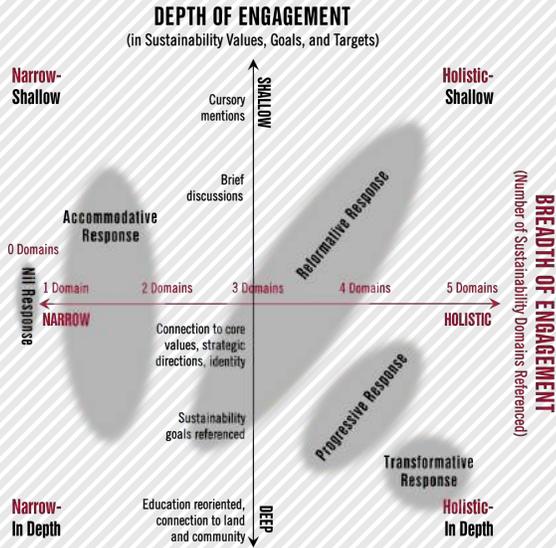
- 1 Governance 3 Research 5 Community Outreach
- 2 Education 4 Operations

DEPTH OF ENGAGEMENT

Meaningful discussion of sustainability in relation to core values, goals, and sustainability-specific policies

INSTITUTIONAL SUSTAINABILITY RESPONSE TYPES

- NIL** No engagement with sustainability in policy or practice
- ACCOMMODATIVE** Sustainability one of many priorities; 1-2 domains in variable depth
- REFORMATIVE** Policy priorities align with sustainability values in 3-5 domains, variable depth
- PROGRESSIVE** Sustainability in mission, goals, policy across 4-5 domains
- TRANSFORMATIVE** Rethinks educational paradigms to correspond with sustainability values



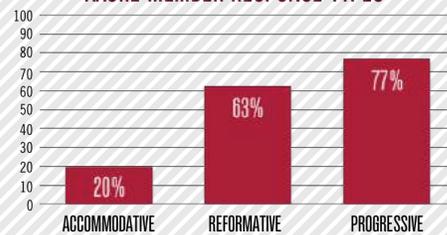
Accommodative and reformative responses were the most common response types. These strategic plans had weak language related to sustainability and lacked specific sustainability goals. No plans had **transformative responses** that reoriented educational purposes and paradigms to correspond with sustainability values. A lack of engagement with **community outreach** was evident in all strategic plans.

SUSTAINABILITY INITIATIVE SCORES

Drawing on SEPN's previous sustainability policy initiatives census, Sustainability Initiative (SI) Leaders (with all of sustainability assessment, declaration, policy, office) engaged more strongly with sustainability in strategic planning. Only 7 of 20 (or 35%) accommodative responders were SI Leaders whereas 4 of 8 (50%) reformative and 10 of 13 (77%) progressive responders were SI Leaders.

Institutions affiliated with the Association for the Advancement of Sustainability in Higher Education (AASHE) were more likely to exhibit reformative or progressive sustainability responses in their strategic plans. Only 4 of 20 (20%) accommodative responders were AASHE members whereas 5 of 8 (63%) reformative responders and 10 of 13 (77%) progressive responders were AASHE members. The results suggest AASHE membership may be a significant factor in progressive engagement with sustainability at the strategic planning level.

AASHE MEMBER RESPONSE TYPES



SHIFTING PARADIGMS

OVERCOMING BARRIERS

- ✗ Complex, corporatized governance structures
- ✗ High faculty and departmental autonomy
- ✗ Fit with identity, teaching, research priorities
- ✗ Politicization of sustainability values

SHIFTING EDUCATIONAL PARADIGMS

- ✓ Specific, concrete sustainability goals
- ✓ AASHE assessment processes
- ✓ Integrated, holistic targets
- ✓ Improved monitoring capabilities
- ✓ Re-conceptualizing purposes of education
- ✓ Integration of Indigenous perspectives

WHERE NEXT? Stronger engagement with sustainability is needed in strategic planning in Canadian HEIs. The shift to transformative sustainability responses requires HEIs to re-think existing educational paradigms and re-conceptualize the purpose of higher education to support the transition to more sustainable societies.

What is Fossil Fuel Divestment?

Post-secondary institutions have a significant amount of their endowment funds invested in the fossil fuel industry. Divestment is a movement asking institutions to move their money out of oil, coal and gas companies, in an attempt to reduce climate change.

Start

Divestment moves endowment money away from the top

200

most polluting fossil fuel industries

Why is Divestment Important?

The divestment movement advocates that endowment funds must be invested responsibly in areas that promote cleaner futures for **Current and Future Generations.**



The 2015 Paris agreement (United Nations Framework Convention on Climate Change) set a target to limit temperature increase to **1.5°** above pre-industrial levels.

Global emissions were

31%

above 1990 levels in 2010



8.8% of the operating budget of 835 surveyed U.S. colleges and universities came from their endowment funds in 2013

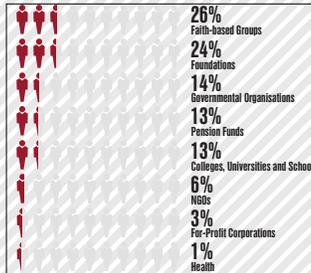


Divestment Campaigns across Canada

The divestment movement has been growing in Canada. **As of May 2016,** there were **37** active divestment campaigns across 9 provinces.

Approximately **\$3.4** trillion was divested worldwide by **526** as of December 2015

The movement has been led by:
Students, Faculty, Alumni, and Community Members



"If it is wrong to wreak the climate, then it is wrong to profit from that wreckage."
- Bill McKibben, 350.org

While some campuses have positioned themselves as sustainability leaders, they are still heavily invested in fossil fuels.

Name of Institution	Total Endowment	Amount Invested in Fossil Fuels	Student Vote	Faculty Vote	Board of Governors Decision
University of Toronto	1,500,000,000	32,400,000		✓	Rejected
University of British Columbia	1,100,000,000	120,000,000	✓	✓	Rejected
McGill University	1,400,000,000	84,000,000	✓		Rejected
Queen's University	658,000,000	29,000,000	✓		Rejected
McMaster University	655,000,000	47,000,000	✓		In process
University of Calgary	710,000,000	40,000,000			Rejected
Dalhousie University	465,000,000	20,300,000	✓		Rejected
Simon Fraser University	367,000,000		✓	✓	In process
University of Victoria	365,000,000	21,000,000	✓	✓	Rejected
University of Guelph	270,000,000	40,500,000	✓		In process
University of Ottawa	193,000,000				Agreed, no timeline
University of New Brunswick	198,000,000		✓		In process
Concordia University	136,000,000	10,000,000	✓		Partial divestment
Mount Allison University	140,000,000			✓	In process
University of Winnipeg	57,500,000	2,580,000	✓		In process
Trent University	41,000,000	34,000,000	✓		In process

Institutional Greenwashing: When sustainability policies and initiatives give the appearance of taking steps towards protecting the environment while a higher prioritization is given to the institution's economic considerations.

In November 2014, Concordia University became the first in Canada to **Partially** divest \$5 million of its endowment funds. In April 2016, the University of Ottawa decided to divest from fossil fuels, although the timeline of this divestment is not yet clear.

What's next

"When we return in the fall, we will channel our inner anthropogenic climate change, and turn up the heat on you every step of the way. Students will organize, mobilize and escalate until the University of Victoria divests."
- Divest UVic

With only two Canadian higher education institutions committing to some type of divestment, students, faculty, alumni, and community members are not giving up just yet. They are committed to escalating their calls to divestment until the administration agrees to divest.

Sustainability and neoliberalism are mobile concepts and processes that when twinned, undermine the way environmental sustainability is being developed and implemented in education policy and practice.

SUSTAINABILITY

In this context, any policy that takes up the natural environment in some capacity, including in relation to social, economic, culture, health, and other factors. While we are concerned with the various ways sustainability terminology is engaged, we have limited the scope to those cases which include some reference and consideration of environment.

NEOLIBERALISM

Political economic practices liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade.

SUSTAINABILITY IS A VEHICULAR IDEA.

It is a flexible and vague concept which can be absorbed and used in different contexts.



Mobility approaches in policy studies focus on the movement of **objects, people, and ideas** around the globe.



Policy is a product of its surroundings, influenced by ideas that are both situated and mobile, producing variations developed in response to different policy contexts and relationships.

Policy mobility is useful for understanding how 'sustainability' can become part of neoliberal processes.

NEOLIBERALIZATION OF SUSTAINABILITY IN EDUCATION POLICY:

Institutional greenwashing: when sustainability policies and related high level initiatives such as signing of declarations, act as 'sustainability fixes' giving the appearance of taking steps towards protecting the environment while a higher prioritization remains given to the institution's economic considerations.

RESEARCH SUSTAINABILITY IN THE EDUCATION POLICY OF POST-SECONDARY INSTITUTIONS:

THE THREE PILLARS DEFINITION OF SUSTAINABILITY

ECONOMY SOCIETY NATURAL ENVIRONMENT

The three pillars is a sustainability concept used to describe the relationship between the 'natural environment,' 'society' and 'economy.' It is based on the understanding that without a natural environment human beings would not exist, and without a society to create it, there would be no economy.

The 'nested' hierarchy model (above left) is distinct from the segmented model where the pillars are seen as separate (above right), because it emphasizes the interrelationship between the three pillars.

SEPN completed a case study of terms used in sustainability policy. Our initial analysis indicated a shift in terminology usage and meaning, from "environment" to "sustainability."

The vagueness of a sustainability definition without explicit prioritization of the natural environment runs the risk of enabling sustainability as a vehicular idea that can be 'greenwashed,' as well as enabling sustainability to be 'fixed' in certain ways (i.e., giving priority to the economy pillar).

It is important to look at how sustainability is understood in education policies, and whether priorities of neoliberalization are embedded within how sustainability is conceptualized and practiced. Segmenting the three pillars can insulate the economy pillar from those of social and environmental sustainability, enabling a form of neoliberal sustainability.

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