

A map of Canada is shown in a dark teal color. Overlaid on the map is a network diagram consisting of white dots connected by thin white lines. The dots are distributed across the country, with a higher concentration in the western and central regions. The lines connect various dots, creating a complex web of connections.

The Power of Procurement

Cutting the federal government's carbon emissions

January 2018

The Government of Canada has made tackling climate change a policy priority, most prominently through its Pan-Canadian Framework on Clean Growth and Climate Change. Under that framework, the Government of Canada—together with provincial and territorial governments—has committed to “modernize procurement practices, adopt clean energy and technologies, and prioritize opportunities to help Canadian businesses grow, demonstrate new technologies and create jobs.”¹ While seemingly a tall order, it’s an important step toward Canada’s goal of building a resilient economy based on clean growth.

Recognizing the opportunity to lead by example, the federal government has committed to reducing its own emissions to 40% below 2005 levels by 2030 or sooner. In support of this goal, it has created a Centre for Greening of Government at the Treasury Board that will track emissions, coordinate efforts across its operations, and drive results.²

With federal officials working hard to develop policy options, it was clear to Clean Energy Canada that there was an opportunity to help inform, and hopefully influence, these efforts.

We believed that a set of policy recommendations backed by a coalition of stakeholders from various sectors would carry more weight than any contribution we could make on our own.

We therefore convened a representative group of stakeholders and experts on the issue of procurement at an in-person meeting in Toronto in September of 2017. In advance of that meeting, Clean Energy Canada:

- performed a review of relevant literature on procurement,
- interviewed nearly all participants to understand their perspective and test for areas of convergence,
- produced a discussion paper listing policy options for discussion, and
- worked to shape an effective agenda and facilitation for the roundtable.

Nick Xenos, the executive director of the Centre for Greening Government, opened the roundtable. He stressed the government’s commitment to the established targets, highlighted the actions it had taken to date, and emphasized the importance of groups coming together to work on solutions to complex problems.

The September roundtable was a success, with participants expressing an interest in continuing to work on a package of policy recommendations for formal submission to the federal government. Following the roundtable, Clean Energy Canada staff worked with roundtable participants, often one-on-one, to produce a set of consensus policy recommendations.

The policy package has already been favourably received by officials involved in the development of Canada’s approach to procurement, but we see it as just a first step. We will be working with the signatories, as well as a wider group of stakeholders, over the months to come to advance the policy recommendations proposed here.

Our thanks to Julian Griggs for his facilitation expertise, and to the Smart Prosperity Institute for its contribution in hosting the event.

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Signatories

ADVANCED ENERGY CENTRE
MaRS Cleantech | Ontario, Canada



Individual Signatories:

Nuno Duarte, Vice President, Professional Services, Brookfield Global Integrated Solutions

Gordon Hicks, Chief Executive Officer, Brookfield Global Integrated Solutions

Introduction

The experts have weighed in: procurement is a hugely important tool. Not only can it help the Government of Canada meet its goal of reducing greenhouse gas (GHG) emissions in government operations, it can also support the government in achieving other objectives presented in the pan-Canadian framework, namely spurring innovation and building a robust economy based on clean growth.

The reality is that governments are major actors in the economy, not simply because of the policy decisions they make but because of the huge number and value of goods and services they buy. Among OECD nations, public procurement expenditures represent 13% of their combined GDP.³ Canada is no exception; the procurement of goods and services accounts for close to 33% of government expenditures, or slightly more than 13% of Canada's GDP.⁴

Because of their economic heft, governments can use procurement to stimulate or lead markets where government demand is significant. By including GHG reductions and other green criteria into its procurement practices, Canada will join the ranks of at least 56 other national governments and many local governments that have acknowledged the power of procurement in meeting their environmental goals.⁵

Procurement is a means for Canada to get results.

This document frames some of the most important policy choices governments can make when designing Canada's approach to public procurement. While we recognize that this discussion was focused on the government meeting its commitment to reduce GHG emissions in its own operations, we strongly support the application of these recommendations to procurement spending on a broader scale. This could include infrastructure investments provided by the Government of Canada, such as the Canada Infrastructure Bank.

We hope the policy recommendations listed below are useful as Canada designs a strategic approach to government procurement. We welcome any questions or comments you may have, and we look forward to working with the federal government in the months ahead.

Experts Consulted:

Adam Auer, Cement Association of Canada
Celine Bak, Analytica Advisors
Aaron Barter, Waterfront Toronto
Liesbeth Casier, International Institute for Sustainable Development
Ashley Challinor, Ontario Chamber of Commerce
Ron Dizi, Advanced Energy Centre
Nuno Duarte, Brookfield Global Integrated Solutions
Stewart Elgie, Smart Prosperity Institute
Aaron Freeman, Pivot Strategic
Peter Halsall, Canadian Urban Institute
Gordon Hicks, Brookfield Global Integrated Solutions
Glen Hodgson, Conference Board of Canada
Jane Kearns, MaRS Discovery District
Joanna Kyriazis, Zizzo Strategy
Robert Larocque, Forest Products Association of Canada
Bryan Purcell, The Atmospheric Fund
Akua Schatz, Canada Green Building Council
Benjamin Shinewald, Building Owners and Managers Association Canada
Andre Vallillee, Metcalf Foundation
Peter Whitred, Canada Green Building Council

“Procurement is the *how* of reducing emissions. The only way you'll do things differently is by buying things differently.”

—Ron Dizi, Advanced Energy Centre

Defining the Right Outcomes

When designing an effective procurement policy, it is essential to set goals. By defining the desired outcomes for your procurement policy and corresponding tenders, the government creates a clear, defined and transparent set of parameters for the private market to respond to. This is what is known in procurement literature as outcomes-based procurement, which was announced in the 2017 federal budget as “solutions-based procurement.”

Outcomes-based procurement awards contracts based on a proponents’ ability to meet or exceed a defined program result—in effect, the solution to the problem being tackled—in a meaningful and measurable way. The opposite approach would be awarding a contract for a proponent to deliver tasks defined on a project list. By not pre-determining the pathway to the desired result, governments create opportunity for innovators to respond to tenders, allowing new technologies and services to be deployed. The role of the government, as the customer, is to clearly define the problem and set the parameters that need to be followed, such as value or keeping GHG emissions as low as possible.

Because outcomes-based procurement is principally focused on finding the best solution to a clearly defined problem, and not dictating what the best solution might be, this approach is ideal for a country with diverse regional considerations and climate zones, such as Canada. The outcomes remain the same, but how they are achieved is flexible to regional diversity and needs.

In this instance, the defined problem is a need to reduce GHG emissions associated with the operations of the federal government to 40% below 2005 levels by 2030 or sooner, as laid out in the pan-Canadian framework and echoed in the Federal Sustainable Development Strategy. These policy-shaping documents also outline the broader values for the government in the low-carbon transition—a growing, diverse, innovative economy as well as job creation and equality.

The buying choices the government makes today will play a role in what the low-carbon transition looks like and will have impacts both on the economy and GHG reductions—not just against Canada’s 2030 targets, but against 2050 goals and beyond.

It’s imperative, therefore, that the government reflects its values through procurement policy and focuses on the following outcomes:

“The main objective for public organizations in procuring innovations is to ensure better value for money. Procurement should draw on innovativeness of suppliers. End users, suppliers, and procurement units should all benefit from the innovation. In developing criteria for evaluating tenders, more attention should be paid to lifecycle costs and user experience, rather than focusing on cost alone.”

—Organisation for Economic Co-operation and Development

OUTCOME ONE: VALUE FOR MONEY

Procurement policy must ensure that the government receives value for money for all contracts. Currently, value for money is a major factor in the way governments run procurements, and that shouldn’t be abandoned. Value for money plays a significant role—paired with the recommendations presented in this document—in helping the government determine what it should purchase.

Presently, value for money is assessed on initial costs, or volume per dollars spent: the greater the volume for the least amount of dollars spent, the better the deal. For example, the most desktop computers acquired for the least amount

of money, or the most kilometers of road built for the least dollars invested. There is a need to update this approach.

The concept of value should be rigorously defined and clear, to avoid creating a situation where every government decision or vendor proposal could be considered “economic.” In determining the concept of value, the government should consider the following:

- Climate change and the increasing frequency of extreme weather events creates negative impacts on infrastructure. Direct impacts from increasing numbers of freeze-thaw cycles, flooding and the intensity of storms can wreak havoc and cause costly damage to buildings, roads, bridges, and more. Even if the infrastructure does not fail, climate change can have indirect impacts on infrastructure, such as shifting our energy peak use, causing water shortages, and provoking sewer failures. As the pan-Canadian framework wisely notes, “The cost of inaction is greater than the cost of action: climate change could cost Canada \$21-\$43 billion per year by 2050, according to 2011 estimates from the National Round Table on the Environment and the Economy.”
- Reducing GHG emissions across government operations requires a change in policy and purchasing. That is, buying goods and services that result in a reduction of carbon emissions. In a traditional volume-to-dollar assessment, the purchase of cleaner technologies may erroneously appear to cost more, because a value calculation does not account for the savings the government receives over time, such as increased efficiency, reduced energy use, and reduced GHG emissions. A rubric for metrics on these attributes should be developed to guarantee the government is receiving true value for money.

Procurement policy sets the standard by which all government purchases must abide—with the Government of Canada indicating a preference for low-carbon approaches. That means when the government makes an investment, such as constructing a building or bridge or purchasing new computer servers, procurement policy will set a preference for low-carbon goods and services. A high-carbon option would result in increased costs for the government to bring that investment into compliance with government policy.

Evaluating true value for money over the life of a project is an opportunity for the government to make better decisions in how it spends its money. It is, in short, an opportunity to spend less.



The world's first electric ferry: a case study in low-carbon procurement outcomes

When Norway's Ministry of Transport determined there was a need for a new car ferry that could link two villages in Sognefjord, it moved forward with a specific goal in mind. Any new ferry, it declared, would have to be at least 15% more energy-efficient than existing diesel-fuelled ferries operating in the country. Four groups ended up submitting a bid for the 10-year concession contract, but it was a consortium led by Norwegian ferry operator Norled that won the business. Norled, along with Siemens and shipyard partner Fjellstrand, proposed an electric car-ferry named *Ampere* that promised to reduce per-passenger energy use by 37% and eliminate smog-causing nitrogen oxides. Overall GHG emissions, because of the electricity mix in Scandinavia, would fall 89%. Currently in operation, *Ampere* has set a new standard for ferry travel in Norway. The country's goal-driven procurement and the real-world demonstration that resulted has helped launch a market for low-carbon ferries. More importantly, this was done by setting a clear outcome, not by stipulating a specific technology.

OUTCOME TWO: ECONOMIC DEVELOPMENT

The government has an essential role to play in transitioning Canada to a low-carbon economy, and that role includes helping our economy grow and prosper.

Regardless of their market orientation, small- and medium-sized enterprises (SMEs) in the clean technology sector are an example of economic development that could be supported through procurement.

Canada's clean technology industry is comprised of more than 850 technology companies, operating in every region of Canada and dominated by companies classified as SMEs.⁶

SMEs often struggle to participate successfully in public procurement. Public procurement procedures are generally more accessible to large incumbent companies with well-established market presences. These big companies can point to five or more recent projects and have the resources—both human and financial—to take a risk and put in a bid, regardless of whether a win is guaranteed. In contrast, SMEs may think they do not have the legal and administrative capacity, and they may lack the multiple reference projects required to engage in procurement contracts.⁷

Supporting SMEs is good for Canada's economy. According to the Statistics Canada Labour Force Survey, small businesses play a proportionally large role in net job creation. Between 2005 and 2015, small businesses created 87.7% of net new jobs, whereas medium and large businesses created just 7.7% and 4.6% over that same period, respectively.⁸

Due to their size, SMEs tend to be better situated in local markets rather than global ones, so including them in procurement allows governments to support domestic jobs, investment and innovation.

The government should include a role for these clean technology SMEs in providing solutions to government, including the areas of mitigation and adaptation, an emerging field of opportunity.

OUTCOME THREE: SPURRING CLEAN TECHNOLOGY INNOVATION

The global market for low-carbon goods and services is worth over \$5.8 trillion, and it's projected to grow 3% per year. In other words, Canada has an opportunity to leverage its strengths in clean technology.⁹ Procurement can help the government support its goal to spur clean technology innovation and help Canada remain economically competitive.

The federal government has acknowledged this and taken a leadership role through the announcement of the \$100 million Innovative Solutions Canada program, modelled after the successful U.S. Small Business Innovation Research program (SBIR). The Government of Canada will use its procurement power to support the growth of Canadian innovators and entrepreneurs by inviting them to respond to challenges it puts forward.

For further reading on spurring clean technology innovation beyond government procurement, refer to the policy brief published by the Smart Prosperity Institute, *Accelerating Clean Innovation in Canada*.¹⁰



Buildings: a unique opportunity

Two things to consider when designing the outcome for a building:

- 1) A building's lifespan can be anywhere from 40 to 60 years or greater, and because of that lifespan, you need to consider both the short- and long-term outcomes for that structure. For example, selecting technology solutions in the short-term can have impacts or even limit the available solutions in the long-term. Also, avoid making financial investments in clean technology solutions in the short-term when the building is slated to be torn down the following year.
- 2) Because of their long life, buildings are an opportunity to showcase the durability of new, clean building materials (e.g. low-carbon concrete). These materials can then be deployed in other types of infrastructure where their benefits, including a longer lifespan and GHG reductions, can be magnified.

OUTCOME FOUR: SUSTAINABILITY IN BUILDINGS

Buildings represent a unique challenge in procurement policy. It's a challenge worth tackling, as 89% of the government's emissions come from energy required for buildings (including office space, laboratories and warehouses) compared to 11% from its fleet vehicles.

While the outcomes of GHG reductions, value for money, economic development, and spurring innovation should be applied to buildings, these structures are unique and require additional actions to improve their performance. Therefore, the broader outcome of sustainability, specifically the inclusion of environmental benefits, must be included for buildings.

Consider this: Procuring a solution for an office building may result in a new heating and cooling system, but what if in an effort to use less energy (and reduce GHGs), the building becomes uncomfortable—too cold in the winter and too hot in the summer. That could mean a negative impact on employee health and happiness. In the most extreme case, it could result in an increase in sick days or even increased medical expenses.

Buildings are shelters for people and their activities, whether that's work in an office building, factory, laboratory, or military base, or providing care in a hospital or education in a school. In the case of buildings, it is important to include, measure, and determine procurement criteria based on environmental benefits as well as the number of GHGs reduced.

Policies to Support Outcomes-Based Procurement

The stage is now set for change. The policies and actions described in this section lay the groundwork for government action required to institute a more strategic approach to procurement.

While these recommendations should be acted on immediately, it is also important to remember that this is part of a long-term effort for Canada. Purchasing decisions made today will also impact our ability to meet our 2050 targets and beyond. Time is running short to meet Canada's 2030 climate target. There are several policies that would help the government reduce GHG emissions and build a clean growth economy through procurement.

1) MAKE ACTIONS MANDATORY AND COMPREHENSIVE

Like other OECD countries, Canada has a Green Procurement policy.¹¹ In place since 2006, the policy requires environmental performance to be considered as part of the government's procurement decision-making within the context of achieving value for money.¹² But the existing policy has not resulted in a culture of green procurement within all federal departments. For the government to meet its own GHG reduction targets, this needs to change. Government departments need to be provided with an impetus to act. To do this, the government should set goals for each government department, and meeting them should be considered mandatory. The federal government may wish to consider some type of positive reinforcement or reward for exceptional actors.

2) MAKE PROCUREMENT SUBJECT TO A CARBON PRICE

Through the pan-Canadian framework, the federal government has worked with provinces and territories to establish a minimum carbon price. The government must therefore also include the calculations and costs of a carbon price in its procurement policy. There are a variety of ways for the government to calculate an appropriate price for carbon pollution: applying the social cost of carbon (a modelled price based on emission reductions needed) or the application of the minimum carbon price per year to 2022 (as outlined in the pan-Canadian framework). The government should consult with departments to determine the best course, considering the long-term nature of infrastructure procurement.

Regardless of the pricing mechanism and level chosen, the approach should be transparent. That is, it should be communicated to the public and government stakeholders, with the government regularly reporting on the volume of GHGs reduced. The approach to carbon pricing in public procurement should be reviewed every three to five years as part of the government's scheduled procurement policy review, to ensure its effectiveness and increasing stringency over time.

3) CREATE AN OPEN DATABASE

Data is the driver of all evidence-based decision-making in policy, and therefore the government must increase the amount of data it collects and shares.

In addition to an inventory of all government-owned and -operated buildings, the performance of each building, including emissions and energy use, should be reported on, made publicly available, and done so in real-time (or as close as possible). This data is valuable, not only in terms of tracking performance but for companies seeking to provide solutions to underperforming buildings.

The greatest opportunity for the federal government in collecting data is its dissemination. The federal government can be a leader in publishing data, including building data by leveraging established platforms such as *Portfolio Manager*. The government can use that data and leadership to support participation from other provinces and territories and leverage participation from large building owners.

Sharing data sets and modelling among ministries may also prove useful in aiding the government in reaching its goal. In the case of buildings, for example, data outlining how health-care costs could be avoided by choosing a more environmentally sustainable option for a public building will help educate decision-makers in choosing the "least cost option".

4) ADOPT AND INTEGRATE LIFE-CYCLE ASSESSMENT INTO GOVERNMENT PROCUREMENT

To achieve true value for money, and to reduce the environmental impact of government procurement, Canada needs to incorporate life-cycle assessment (LCA) into procurement policies and programs. Life-cycle costing analysis enables a full cost and benefit account across the life of a product or asset; and LCA provides a measure of the environmental impacts directly attributable to the functioning of a product, asset or system throughout its life. Metrics can include emissions and other environmental, economic and innovation attributes.

To support LCA, the government must develop a life-cycle inventory of goods and services. The government should begin this process by consulting with industry stakeholders and life-cycle inventory and assessment experts to begin developing data sets for materials, industry sectors, and project types that are most ready, such as transportation. This data should be open and shared with the private sector to help spur the development of and innovation in LCA tools.

Canada may look to Sweden or the Netherlands as an example, or within its own borders—specifically, Quebec's International Reference Centre for the Life Cycle of Products, Processes and Services.

5) LINK OUTCOMES TO FINANCIAL PRACTICES

Instituting a more strategic approach to government procurement may require an evaluation of government accounting practices, specifically regarding how long-term cost-savings are showcased in economic statements and budgets. The government should be transparent and receive credit for the cost-savings achieved.

Unilever, a transnational consumer goods company representing more than 400 brands, is a prime example of how financial reporting can evolve to reflect the values of a company. Not only is the Unilever Sustainable Living Plan¹³ central to its business model, the company provides integrated reports to shareholders with both financial and sustainability management information.

6) CREATE A CENTRAL GOVERNMENT RESOURCE CENTRE AND SHARE BEST PRACTICES

Procurement is a major function of the government and an activity performed by multiple government ministries. The government should therefore have a central resource centre to support procurement practices. This centre should have these main functions:

- a. Aggregate and share best practices across the federal government and with provinces, territories, and municipalities. For example, in buildings this might include setting a minimum baseline performance in accordance with the National Energy Code,¹⁴ LEED, the Canada Green Building Council's Zero Carbon Building Standard¹⁵, or the Building Owners and Managers Association of Canada's BOMA BEST Sustainable Buildings or BOMA BEST Sustainable Workplaces standards.¹⁶
- b. Create templates for government tenders that help procurement officers integrate strategic approaches to procurement. Also, provide integrated project delivery across ministries in the instance where a procurement tender involves more than one government department.
- c. Provide expertise in innovation:
 - i. with resources and staff that have experience in innovation and innovative technology, and who can share that expertise across government operations, and
 - ii. through a fund that is designed to aid government ministries in the purchase of newer, more cutting-edge technologies, with an insurance mechanism provided to support ministries that procure new technologies.
- d. Build new procurement best practices with metrics for success.
 - i. Support the shift in processes and practices, where procurement evolves from a transactional relationship to a more strategic role, where the government acts as a steward of new solutions that deliver desired outcomes at a competitive price. This includes adopting hallmarks of the private sector—taking some risks and sharing the positive and negative learnings from that process.

- ii. As part of a long-term strategy, new training should be provided to government staff to help develop skills around new models of program delivery and outcomes-based thinking. The U.K. Commissioning Academy would be an excellent model for Canada to follow.
- iii. Create staff performance metrics that reflect outcomes-based procurement policy. In addition, staff should be rewarded for using best-practice approaches to GHG reductions and supporting innovative technologies.
- iv. Build procurement teams, where government staff responsible for issuing and evaluating tenders are supported by government staff with expertise in areas such as technology, innovation, and economic analysis.

7) BUILD AND MAINTAIN GOVERNMENT LEADERSHIP

In addition to procurement for its own physical infrastructure and operational needs, the federal government plays a role in provincial, territorial, and municipal procurement when it provides a share of the funding required for transportation, energy, social services, education, and other projects via its infrastructure programs. The federal government alone will spend \$180 billion on infrastructure over the next 12 years.¹⁷

As these infrastructure programs ramp up, the Government of Canada should demonstrate leadership and deepen its impact by partnering with provinces, territories, and municipalities, requiring they include a goal to reduce emissions and support clean technology solutions in these infrastructure investment programs.

While a full analysis of this is beyond the scope of this report, infrastructure agreements with other levels of government should also incorporate some of the key recommendations in this report, including life-cycle assessment and the application of a carbon price. The federal government could make these requirements for such agreements and, further, provide additional funding or a premium to projects that include them.

In addition, the government should share the impacts of its procurement approach with the public. Sharing progress and results will build confidence and public support.

Sweden and the Netherlands: international leaders in government procurement

The Government of Sweden requires life-cycle carbon accounting on all transportation infrastructure construction projects over 50 million SEK (\$7.5 million CAD). In practice, the government begins by providing the initial life-cycle carbon estimate for a project at its request for proposal stage. The design and construction team for the project is then required to recalculate and report on updated life-cycle carbon estimates at various stages of design and construction. If the final calculation comes below the government's initial estimate, a monetary incentive is provided to the team. Sweden provides an open version of its climate accounting tool, Klimatkalkyl, that includes more than 90 construction solutions in the transportation sector.

The Rijkswaterstaat—part of the Dutch Ministry of Infrastructure and the Environment, responsible for the design, construction, management, and maintenance of the main infrastructure facilities in the Netherlands—has developed DuboCalc, a sustainable construction calculator designed to calculate and compare the sustainability and environmental costs of procurement. DuboCalc calculates all the effects of material and energy from cradle to grave, or from extraction to the demolition and recycling phase, which is then used throughout the tendering and construction process. The method is based on the methodology of Life Cycle Analysis according to the international standard, ISO 14040:2006.

The tool is publicly available by applying for registration directly on the DuboCalc website.

Looking Forward

For governments looking to cut carbon pollution and foster clean economic growth, procurement is a powerful tool.

By leveraging procurement to help lead markets, the federal government can support job creation in areas such as construction and clean technology, alongside the industries and services those companies use, like mining, agriculture, and finance. Procurement helps create demand for Canadian innovations by pulling new technologies into the marketplace, and it can help create increased export potential as other countries witness new technologies and materials applied in a real-world setting.

The recommendations provided in this document are among the most important policy choices the federal government will make when designing Canada's approach to public procurement. While our discussion was focused on the government meeting its commitment to reduce GHG emissions in its own operations, we strongly support the application of these recommendations to infrastructure spending on a broader scale, including through investments provided by the federal government to provinces, territories, and municipalities.

We applaud the Government of Canada for its commitment to change its approach to procurement, and we look forward to contributing further ideas to the design of specific policies and programs as they take shape.

Endnotes

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3. Organisation for Economic Co-operation and Development. The Role of Public Procurement in Low-carbon Innovation. OECD, 2016
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8. Innovation, Science and Economic Development Canada, Small Business Branch. Key Small Business Statistics: June 2016. Government of Canada, 2016
9. Government of Canada. Pan-Canadian Framework on Clean Growth and Climate Change, 2016
10. Found at: <http://institute.smartprosperity.ca/sites/default/files/acceleratingcleaninnovationincanada.pdf>
11. The use of the word “green” or “sustainable” in procurement can have different meanings depending on the interpretation preferred by the jurisdiction. In Canada, green procurement is associated with environmental considerations that are outlined based on products or services. For more information, please see: <https://www.tpsgc-pwgsc.gc.ca/app-acq/ae-gp/paer-cgpp-eng.html>
12. Public Services and Procurement Canada. Policy on Green Procurement. Government of Canada, 2006
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15. Found at: <https://www.cagbc.org/zerocarbon>
16. Found at: <http://bomacanada.ca/bomabest/>
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