Appendix F

Low-Carbon Procurement

Contents

This Appendix provides further detail on various aspects of low-carbon procurement addressed in Chapter 8 of the ECO's 2017 Annual Greenhouse Gas Progress Report. It addresses: (1) the Ontario government's current procurement procedure; (2) the relationship between low-carbon procurement and carbon price; and (3) the potential means of incorporating life cycle costs and a social cost of carbon into Ontario's low-carbon procurement system.

F1 The Procurement Procedure of the Ontario Government

Although the specific details may be complicated, the procurement process within the Ontario government is generally managed by the ministry[1] that will acquire the procured good, service, or constructed asset. For procurement by the Ontario Public Service (OPS), the ministries put together procurement submission documents which identify the business need and include detailed plans to address this need. In cooperation with the procurement submission and approval authorities, ministries undertake market research, assess risks, identify the technical requirements, solicit and evaluate bid submissions, award the contract, and manage the contract until its completion.[2]

For low-value procurements (e.g., below $25,000), procurement approvals take place within the ministries themselves (e.g., Ministry DOA – Delegation of Authority), whereas higher value procurements (e.g., above $2,000,000) require approval of the Treasury Board Secretariat or the Supply Chain Leadership Council (SCLC) at the Ministry of Government and Consumer Services.[3]

The OPS Procurement Directive describes the specific procedure which begins with determining if there is a compelling need for the acquisition, and whether internal resources can supply it. If an external supply is required, ministries must use the following listed sources/methods, in order;[4]

(1) mandatory central common services:
(2) vendor of record (VOR) arrangements:
(3) optional central common services:
(4) competitive procurement process.

Mandatory and optional central common services are those designated services that can be provided by one ministry to all other ministries,[5] analogous to sub-contracting certain types of procurement to the ministries with the greatest expertise. These defined relationships are supposed to streamline internal service delivery and produce savings and efficiencies.[6] Examples include advertising and computer services, which must be procured through the Ministry of Government and Consumer Services, and vehicles, which must be acquired through the Ministry of Transportation.[7]

Public procurement can be competitive or sourced through preferred suppliers, as defined in various VOR arrangements,[8] which authorize vendors to supply products to the government at specific negotiated prices. VOR arrangements are used to simplify procurement within or across ministries and minimize the costs of commonly purchased goods and services.[9] All suppliers of goods and services to the government must meet certain criteria to be designated as a VOR.

The Ontario Tenders Portal, an online bidding portal, is used for competitive procurement by OPS and BPS entities.[10] The main exceptions within the OPS are the Ministry of Transportation, which uses an online

procurement system called the Registry, Appraisal and Qualification System,[11] and Infrastructure Ontario, which uses the MERX system.[12] Although infrastructure can be procured by any OPS or BPS entity, the Ministry of Transportation focuses on the transportation sector, whereas Infrastructure Ontario, a crown agency, "acts as procurement and commercial lead for all major public infrastructure projects in the province," including major transportation projects.[13]

F2 Low-Carbon Procurement and Carbon Price

The effect of low-carbon procurement is similar to a carbon price in that it internalizes the market externality of the damage caused by GHG emissions. In other words, both options ensure that there is a cost associated with emitting GHGs. Unlike a carbon price, low-carbon procurement is strictly a demand-side policy intervention into the market. It directly changes what is bought, instead of the relative prices of available products.

Isn't the application of a carbon price sufficient to ensure that GHG emissions are taken into account in procurement decisions? It depends. Some economic sectors are unresponsive to carbon prices.[14] A low-carbon procurement policy could be more effective than a carbon price, especially for product types which do not respond well to carbon prices (e.g., where markets are uncompetitive; and where production is transferred to another jurisdiction to avoid paying a carbon tax or fee – a process known as 'carbon leakage').

From the perspective of a producer, the carbon price can be considered a 'stick' which raises the price of the product. In contrast, a purchaser's decision to select a low-carbon product can be considered either a 'carrot' or a 'stick.' The 'carrot' is an increase in the demand for the low-carbon product. The 'stick' is the decrease in the demand for the high-carbon product. Having both policies operating at the same time increases the likelihood that the desired environmental outcome will be secured.

F3 Life Cycle Costs

When you choose to buy one product over another, do you take into account only the purchase price? What if the cheapest product has a shorter expected lifespan, and will cost more to operate and maintain? Over the expected life of the product, the cheapest option may end up costing more than the higher priced alternatives. It is for this reason that the life cycle cost/total cost of ownership method should be used to inform purchasing decisions.

Life cycle costing (LCC) is an approach used to select the least cost alternative, based on initial and future costs.[15] An LCC generally includes the following elements;

1. the purchase price;
2. delivery and installation cost;
3. operating cost (including energy use and administrative costs such as licenses and insurance);
4. maintenance cost; and
5. the remaining value at the end of ownership or usefulness, and/or the cost of waste management.

A life cycle cost includes both the purchase price and the costs that will be incurred later on in the product life. When selecting the lowest cost procurement option, the use of LCC for cost evaluation may result in a different procurement decision, as shown in Table F1. The life cycle perspective examines if future savings offset the higher initial costs.

Table F1. The components of a life cycle costing and a hypothetical example of an alternative procurement decision resulting from the use of LCC.

	Product 1	Product 2
Purchase price	**$10,000**	**$15,000**
Installation cost	$2,000	$2,000
Operating cost	$10,000	$4,000
Maintenance cost	$7,000	$3,000
Waste management cost	$1,000	$1,000
Life cycle cost	**$30,000**	**$25,000**

The procurement directives specify that their 'value-for-money' approach takes into account life cycle costs, also known as the total cost of ownership. Nevertheless, the calculation of life cycle costs are deemed mandatory for only major physical assets,[17] and it is unclear to what extent a life cycle cost/total cost of ownership accounting method is applied in other procurement areas.

F4 Using the Social Cost of Carbon in Procurement: Preventing Double Counting in the Context of Cap and Trade

To prevent the double counting of carbon prices during procurement decision making, one could subtract from the social cost of carbon (SCC) the estimated effect of the cap and trade system on the price of a procured Ontario product. For those products imported from a jurisdiction without a carbon price, the full SCC could be used. SCC calculations for procurements could be greatly simplified if all product alternatives under review had environmental product declarations (EPDs), which include life cycle GHG emission accounts. In such cases, the SCC would simply be multiplied by the estimated emissions.

Table F2 provides an example of procurement decision making using a social cost of carbon and life cycle cost, while ensuring no double counting of GHG emission costs. For simplicity, it is assumed that all the life cycle GHG emissions associated with each product are taken into account in the EPD. In this example, Products 1 and 2 are manufactured in Ontario and subject to a carbon price (assumed to be $20/t CO_2 eq.), whereas Product 3 is from a jurisdiction without a carbon price. While Product 1 has the lowest GHG emissions, Product 3 has the lowest price (and the highest GHG emissions). When using both an SCC (assumed to be $40/t CO_2 eq.) and a life cycle costing method to aid in the product comparison, Product 2 would be selected within a low-carbon procurement system.

Table F2. Hypothetical example of procurement decision making using a social cost of carbon and life cycle cost.

From a jurisdiction without a carbon price

	Product 1	Product 2	Product 3	Source of data
Listed price	**$10,000**	**$15,000**	**$5,000**	**Vendor**
Life cycle cost	$30,000	$25,000	$25,000	Calculated
GHG emission	50 t CO_2 eq.	100 t CO_2 eq.	150 t CO_2 eq.	EPD or calculated using LCA
Carbon price ($20/t CO_2 eq.)	$1,000	$2,000	$0	Already in the life cycle cost
SCC ($40/t CO_2 eq.)	$2,000	$4,000	$6,000	Peer-reviewed estimate
Net SCC	$1,000	$2,000	$6,000	Calculated (SCC – Carbon price)
Life cycle cost + Net SCC	**$31,000**	**$27,000**	**$31,000**	

Lowest Price

Low-carbon procurement choice

Endnotes

1. Procurement can also be undertaken by public sector agencies.
2. "Draft Public Service Procurement Directive", online: Treasury Board Secretariat (TBS) <https://www.ontario.ca/page/ontario-public-service-procurement-directive>. 19 December 2017 update.
3. Treasury Board Secretariat/Management Board of Cabinet, *OPS Procurement Directive* (Toronto: TBS, 2014) at 28-30.
4. Treasury Board Secretariat/Management Board of Cabinet, *OPS Procurement Directive* (Toronto: TBS, 2014) at 16.
5. Treasury Board Secretariat/Management Board of Cabinet, *OPS Procurement Directive* (Toronto: TBS, 2014) at62.
6. Treasury Board Secretariat/Management Board of Cabinet, *OPS Procurement Directive* (Toronto: TBS, 2014) at17.
7. Treasury Board Secretariat/Management Board of Cabinet, *OPS Procurement Directive* (Toronto: TBS, 2014) at67-68.
8. Treasury Board Secretariat/Management Board of Cabinet, OPS Procurement Directive (Toronto: TBS, 2014) at66. The *OPS Procurement Directive* defines a VOR arrangement as "a procurement arrangement that authorizes one or more qualified vendors to provide goods or services for a defined time period on terms and conditions, including pricing, as set out in the particular VOR Agreement."
9. Treasury Board Secretariat/Management Board of Cabinet, *OPS Procurement Directive* (Toronto: TBS, 2014) at18.
10. "Ontario Tenders Portal", online: BravoSolution <https://ontariotenders.bravosolution.com/esop/nac-host/public/web/about.html>. [Accessed August 14, 2017]

    "Ontario Tenders Portal (OTP): eTendering Service System provided by BravoSolution. Frequently Asked Questions for Suppliers", online: BravoSolution <https://ontariotenders.bravosolution.com/esop/nac-host/public/attach/faq_for_vendors.pdf> 30 October 2015 update.
11. BravoSolution, Ontario Tenders Portal (OTP): eTendering Service System provided by BravoSolution. Frequently Asked Questions for Suppliers (BravoSolution, 2015) at 3.
12. "AFP Approach to Transparency", online: Infrastructure Ontario <http://www.infrastructureontario.com/AFP-Approach-to-Transparency/>. [Accessed August 14, 2017]
13. "Infrastructure Ontario", online: Infrastructure Ontario <http://www.infrastructureontario.com/en/>. [Accessed August 14, 2017]
14. Due to market failures and behavioural issues (Carbon Pricing Leadership Coalition. *Report of the High-Level Commission on Carbon Prices* (Carbon Pricing Leadership Coalition, 2017) at 47).
15. United Nations Environment Programme (UNEP), *Global review of sustainable public procurement* (UNEP, 2017) at 109.
16. Clean Energy Canada, *The Power of Procurement: How governments can drive clean growth, cut carbon and create jobs* (Vancouver: Clean Energy Canada, 2017) at 6.
17. Ministry of Transportation, OPS Green Fleet Strategy (Toronto: MOT, 2016 - August 8 2016 update) at 3. Treasury Board / Management Board of Cabinet, *TB/MBC Directive for Major Public Infrastructure Projects* (Toronto, TBS, 2015) at 6.
18. Treasury Board Secretariat, *Costing and pricing guideline* (Toronto: TBS, 2016) at 34.