
**Eco-Fiscal Tools and
Municipal Finance:
Current Practices and
Opportunities**

Jean-Philippe Meloche and Fanny Tremblay-Racicot

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Institute on Municipal Finance and Governance
School of Cities
University of Toronto
55 St. George St., Suite 853
Toronto, Ontario, Canada M5S 0C9
e-mail: info.imfg@utoronto.ca
<http://imfg.org>

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Authors

Jean-Philippe Meloche is a faculty member at the School of Urban Planning and Landscape Architecture at the Université de Montréal and a Fellow at CIRANO (Centre Interuniversitaire de Recherche et Analyse des Organisations).

Fanny Tremblay-Racicot is a faculty member at the Graduate School of Public Administration/ École nationale d'administration publique and the director of CERGO (Centre de recherche sur la gouvernance).

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Abstract

Eco-fiscal tools are tax measures that target behaviour or the consumption of goods or services that contribute to environmental degradation. These taxes, fees, or charges correct market price signals to help internalize the social and environmental costs of individual choices, while providing financial resources to supply public goods and services. In Canada, an important part of the eco-fiscal debate focuses on carbon emissions (such as the carbon market and carbon taxes). Although central governments are backtracking on efforts to limit environmental degradation, municipalities are playing an increasingly important role in the eco-fiscal field. The tools they are using do not raise significant revenues, but they are helping to change behaviours. This paper explains the main arguments for the use of eco-fiscal tools and reviews the literature on their impact. It explores the range of eco-fiscal tools implemented by Canadian municipalities and proposes innovative tools that could be implemented in the future.

Keywords: Eco-fiscal tools, environmental taxes, local public finance, municipalities, Canada

JEL Codes: H23, H71, R51

1. Introduction

The use of eco-fiscal tools by governments to reduce the environmental impact of human activities is attracting increasing attention from academic researchers. The number of scientific publications about environmental taxation has accelerated in recent years, particularly in Canada (Bashir et al. 2021). Although the studies reviewed by Bashir et al. (2021) focus mainly on carbon emissions, interest in eco-fiscal measures focusing on mobility, biodiversity, waste management, and water management is growing, particularly among local governments (Schep, Monsma, and Kastelein 2022; Tremblay-Racicot, Prémont, and Leclair 2023; Viessant 2023; Zatti 2023).

Canada's Ecofiscal Commission (CEC)¹ defines eco-fiscal tools as tax measures that correct market price signals to encourage desirable economic activities (job creation, investment, and innovation) while reducing undesirable outcomes (greenhouse gas emissions or the pollution of soil, air, and water). Several terms are used to define these tools in the literature, such as environmental taxation, ecological taxation, or green taxation (Tremblay-Racicot, Prémont, and Leclair 2023). Eco-fiscal measures can also be defined more broadly as market-based environmental instruments (Zhou, Clarke, and Cairns 2022). These methods are distinctive because their tax base consists of some form of pollutant (such as carbon emissions or the quantity of wastewater or garbage) or by a product or service that degrades the environment (real estate development) or depletes natural resources (drinking water) (Caron-Godin, Robert-Angers, and Latulippe 2021).

The OECD, which publishes international data on environmental taxes (OECD 2023), uses a broader definition than those usually associated with eco-fiscal tools. It encompasses all forms of tax that may affect polluting activities, even those that do not target a particular form of pollutant. This broad definition encompasses taxes levied on energy consumption, natural resources, or motor vehicles, even when these taxes have no environmental justification and are not specifically labelled as eco-fiscal tools. OECD data are widely used in research on environmental taxes (Bashir et al. 2020; He et al. 2023; Liu et al. 2023; Sen and Vollebergh 2020). Unfortunately, these data do not include fees and charges, which can also promote desirable environmental choices (OECD 2023). Yet, as Tremblay-Racicot, Prémont, and Leclair (2023) and Slack (2016) point out, at the local level, eco-fiscal measures mainly take the form of fees and charges.

Tremblay-Racicot, Prémont, and Leclair (2023) define municipal eco-fiscal tools as any form of municipal levy (including taxes, fees, and regulatory charges) that has a direct or indirect impact on a behaviour or pollutant that degrades the environment or results in the loss of natural resources. Many Canadian municipalities use such tools to achieve their environmental objectives (Robert-Angers and Charbonneau 2024; Tremblay-Racicot, Prémont, and Leclair 2023; Zhou, Clarke, and Cairns 2022). These tools do not raise significant amounts of revenue, but they do communicate environmental objectives and can modify certain behaviours. Apart from a few studies focused on water pricing (CEC 2017; Kitchen 2017), stormwater management (Dávila Aquije 2016; Joshi and Alhassan 2025; O'Neill and Cairns 2016), waste management (CEC 2018; Lakhan 2015), and sustainable development (Slack 2016), very few papers have studied eco-fiscal tools across all fields to highlight elements with the best potential to produce co-benefits and to improve both municipal finances and the environment.

This report on municipal eco-fiscal practices in Canada explains the main arguments for using eco-fiscal tools and identifies their limitations. It reviews the state of knowledge on their impact,

1 The Ecofiscal Commission of Canada, an initiative of Canadian researchers and politicians to promote ecofiscal tools, was active from 2015 to 2019.

describes obstacles to their implementation, and provides an overview of the tools used by Canadian municipalities. Innovative tools that have not yet been implemented but that deserve consideration for future policies are also presented.

2. The conceptual framework of eco-fiscal tools

The conceptual basis of eco-fiscal tools can be traced to the seminal work of Arthur C. Pigou (1920). This section explains Pigou's tax model and discusses the potential effect of the double dividend on economic efficiency. We also position eco-fiscal tools within the spectrum of public policy instruments available to governments to intervene on the environment.

2.1 Pigou and environmental taxation

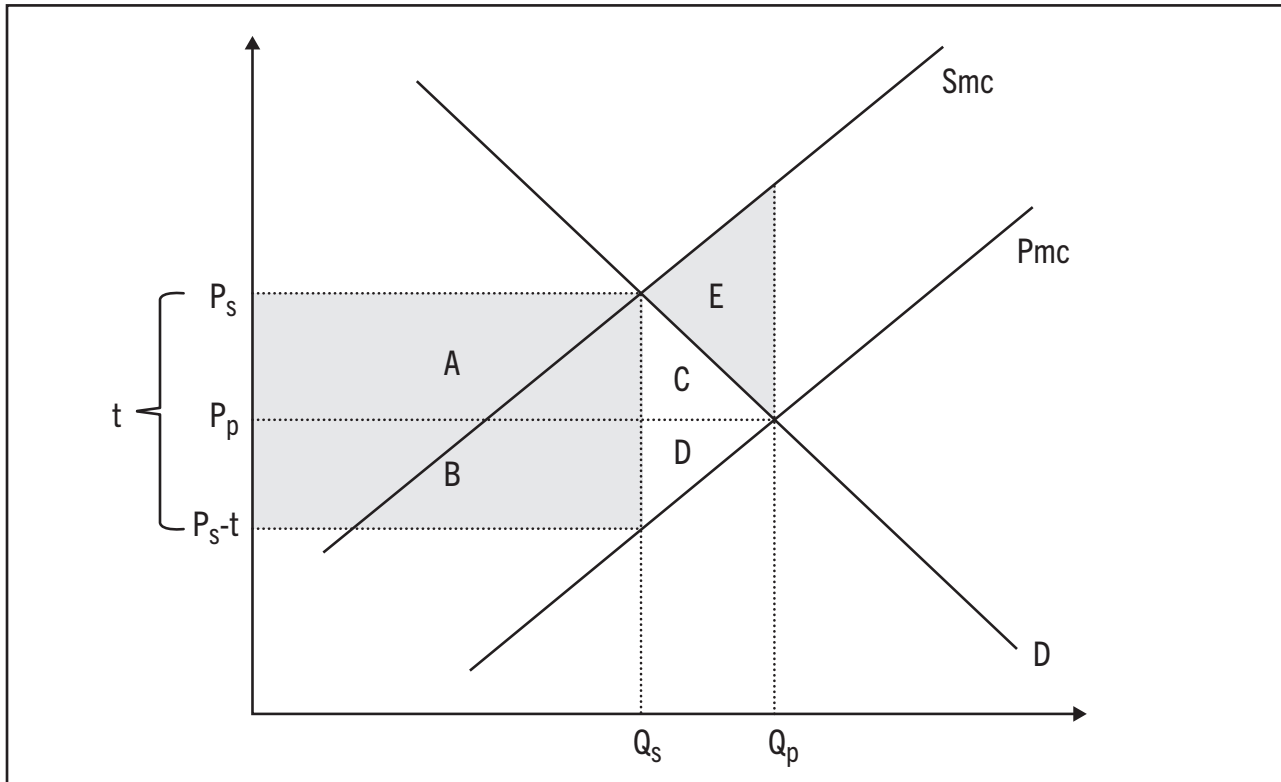
A tax has two fundamental components: a base and a rate. The base must be reliably measurable and set at a reasonable level of cost. It must also be explicitly linked to a specific taxpayer who is legally responsible for paying the tax. The tax base serves as a mechanism for redistributing the tax burden among taxpayers. Although there are no absolute rules for defining a tax base, governments generally try to find bases that are widely accepted, such as personal income, corporate profits, consumption, or property value (Rosen, Wen, and Snoddon 2016). The rate is set according to the government's policy objectives and mandate to finance local services.

Eco-fiscal tools, which are based on the "polluter pays" principle, are distinguished by the nature of their tax base, which consists of pollutants or polluting activities. To function properly, an eco-fiscal measure must apply to pollutants, consumption, or behaviours that are easily measurable and linked to an identifiable taxpayer. According to the principles developed by Pigou (1920), the set rate should reflect the costs associated with the damage caused by the pollutant (that is, the marginal social cost).

Any form of taxation generates distortions in the market, resulting in a loss of welfare (the so-called deadweight loss). For a given amount of tax, these distortions are greater when producers or consumers in the affected markets display high levels of price sensitivity (that is, price elasticity). For this reason, Frank Ramsey (1927), in a seminal paper, suggested limiting taxes to bases with the lowest price elasticities. The resulting principles suggest establishing taxes on broad bases and applying relatively low rates (Rosen, Wen, and Snoddon 2016).

However, some markets are affected by distortions that are not related to taxation, but rather to negative externalities, such as pollution. Pigou (1920) showed that imposing a tax on these markets can lead to the distortion caused by the pollutant being corrected, so that the levy has a much lower economic cost, even as low as zero. This is called the *double dividend*. Not only does the tax improve environmental quality, but it also raises revenue more efficiently than traditional taxes.

Figure 1 illustrates the static impact of a mismatch between private and social interests due to an externality in a market. This type of illustration can be found in most microeconomics textbooks to explain the mechanism of environmental taxes. This one is inspired by Boardman et al. (2006). The supply curve (P_{mc}) illustrates the private marginal costs borne by firms for each quantity of an item being produced, while the demand curve (D) shows the quantity of the item consumed as a function of prices. In the absence of constraints or incentives, companies will produce the items until their marginal profit is zero, which occurs when the quantity Q_p is sold at the equilibrium price P_p . This price corresponds to the market equilibrium resulting from free negotiation between firms and consumers, regardless of the damage caused by the externality to the rest of society.

Figure 1: Mismatch between private and social costs in the presence of an externality

Source: Authors, based on Boardman et al. (2006)

The social cost curve in Figure 1 (Smc) reflects the marginal social costs borne by society when costs are internalized. These social costs include both private costs borne by firms and external costs passed on to society (those whose environment is being polluted). The distance between these two curves corresponds to the value of the consequences not taken into account by the market (the value of the externality). Left to its own devices, the market tends to produce a higher quantity of the item produced than would be desirable from a collective point of view ($Q_p > Q_s$). At the Q_p level, the marginal social costs associated with the quantity produced are far greater than the marginal benefits to society. The welfare loss caused by overproduction is illustrated by the shaded area E in Figure 1.

To force the market to take the social costs into account, the government can apply the polluter-pays principle by imposing a tax of amount t on each unit produced to correct the price signal. Forced to increase sales prices by the amount of the tax, firms are then faced with lower demand, leading them to reduce the quantity offered to the point at which the demand line (D) crosses the social marginal cost line (Smc). Pollution will not be entirely eliminated, but it will be reduced to a threshold that respects the principle of economic efficiency (Q_s), in other words, to the point at which the social costs of the externality are fully internalized. At this point, economic efficiency is achieved, independent of the tax revenues generated.

The net collective benefit emerges from the redistribution of costs and benefits between firms and consumers. Faced with a higher price for a smaller quantity consumed, consumers will suffer a loss of surplus equivalent to zones A and C. Firms will also suffer a loss of surplus equivalent to zones B and D. Current and future members of society, however, obtain a reduction in the adverse effects they suffer, and thus an increase in their well-being equivalent to zone E. The government obtains tax revenues equivalent to zones A and B. This levy does not distort the market, since it brings about social equilibrium. This saves the deadweight loss associated with the tax levy (zones C and D).

2.2 Efficiency and double dividend

Following this reasoning, we can see how eco-fiscal tools have the potential to generate a double dividend. The double dividend stems from the fact that eco-fiscal measures not only generate revenue for governments (zones A and B in Figure 1) that are more efficient than standard taxes, because their deadweight loss (zones C and D) is non-existent, but also improve living conditions for the population (current and future) by reducing the excessive cost of externalities (zone E). Eco-fiscal tools therefore make it possible to correct the externality, while levying taxes that have a lower impact on economic efficiency than would have been necessary to raise the same amount of revenue in another market.

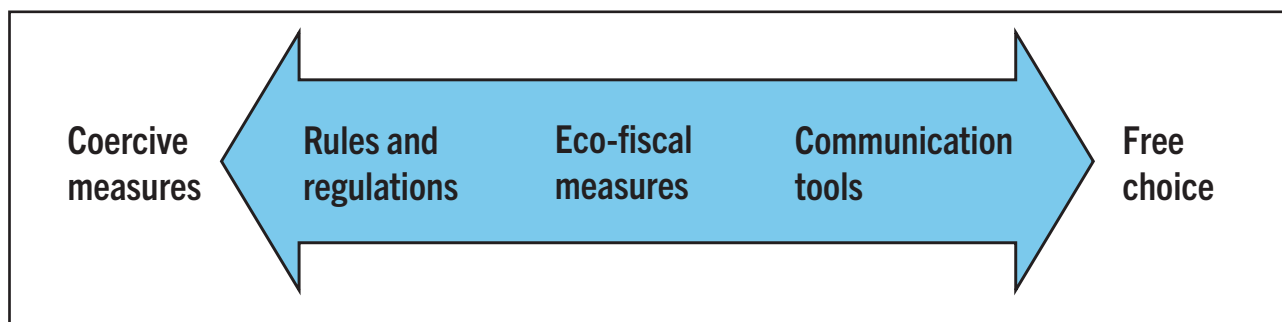
However, not all circumstances produce a double dividend. Figure 1 represents a static analysis, which assumes that changes in the analyzed market have no effect on other markets. In a dynamic model, the effects associated with an environmental tax can lead to negative consequences in complementary markets (for example, upstream effects on input resources or providers, or downstream effects on output markets or clients) or generate an income effect that reduces the quantity of labour supplied, which can eventually cause losses in social welfare that cancel out the gains from environmental benefits (Parry and Oates 2000). To be effective, therefore, environmental measures must affect many taxpayers, apply to bases with low or moderate price elasticity, and be offset by reductions in taxes with more elastic bases. A general carbon tax offset by a capital gains tax cut, for example, generates a double dividend effect (Glomm, Kawaguchi, and Sepulveda 2008; Karydas and Zhang 2019). Although most empirical studies on the question of the double dividend confirm its existence, there is no clear consensus on this issue (Bashir et al. 2021).

2.3 Eco-fiscal measures among environmental tools

Several policy instruments are available to improve environmental quality. Figure 2 positions eco-fiscal measures within the spectrum of environmental measures ranging from the most coercive to the most voluntary. Among the most coercive measures are laws and regulations prohibiting the use of certain products deemed harmful, or preventing the exploitation of certain resources or types of territory (such as wetlands or farmland). These measures are generally used when the situation is deemed critical, or when the costs of adaptation are relatively low.

At the other end of the spectrum, voluntary measures are influenced by information campaigns promoting good behaviour. Although these measures are inexpensive, their results depend on the goodwill of the population. Awareness-raising campaigns to encourage people to restrict their use of drinking water or to sort their residual waste for recycling are examples of voluntary measures.

Figure 2: The spectrum of environmental policy tools



Source: Authors, based on Leroux (2020) and Meloche et al. (2023).

At the centre of the spectrum are economic (market-based) measures, including eco-fiscal tools. These measures are not entirely voluntary, since they punish bad behaviour. Actors for whom the costs of adapting to environmental standards are too high will pay the environmental tax, while those facing lower adaptation costs will modify their behaviour to avoid the tax. This is voluntary adaptation under constraint.

According to Meloche (2022), behaviours that are too easy to change are not good targets for eco-fiscal measures. When such behaviours change, revenues disappear, making them unsuitable for financing government spending. Not only does a poorly targeted measure fail to generate a double dividend, but its implementation and running costs must be financed from other public sources. If behaviours can easily change, this also means that the cost of adaptation is low. In such a case, a regulatory measure is more appropriate, since it is easy and inexpensive for the people or firms concerned to comply with it.

The ideal target for an environmental tax is therefore a relatively inelastic damaging behaviour, one for which there are few readily available alternatives in the short term, but a behaviour which, if it is changed, will reduce the environmental impact while stimulating innovation in the medium and long term. Carbon emissions represent a good example. In today's economy, it is impossible not to emit carbon. Social transformations to reduce emissions are relatively costly and take time to implement. Eco-fiscal measures can accelerate the transition by making the status quo option less advantageous (Bashir et al. 2020; He et al. 2023; Liu et al. 2023; Sen and Vollebergh 2020).

3. Implementing eco-tax measures

Despite the theoretical benefits associated with eco-fiscal measures, their implementation remains timid and uncertain in many countries around the world, including Canada. At the time of writing, Canada has withdrawn its carbon tax, leading to the withdrawal of British Columbia's carbon tax, which had been implemented for more than 15 years (Hoekstra 2025; Katz-Rosene 2025). Québec, with its cap-and-trade system, is the only province to maintain an eco-fiscal mechanism for carbon emissions.

Against this backdrop, to what extent can municipalities take up the lead? The work of Tremblay-Racicot, Prémont, and Leclair (2023) shows some enthusiasm among municipalities for eco-fiscal measures, but it is not clear whether this enthusiasm will continue, given the recent wave of government disengagement from environmental issues. This section looks at the role of eco-fiscal measures in public finances and the role of municipalities in their implementation. It also looks at studies on the impact of eco-fiscal measures on the environment and obstacles to their application.

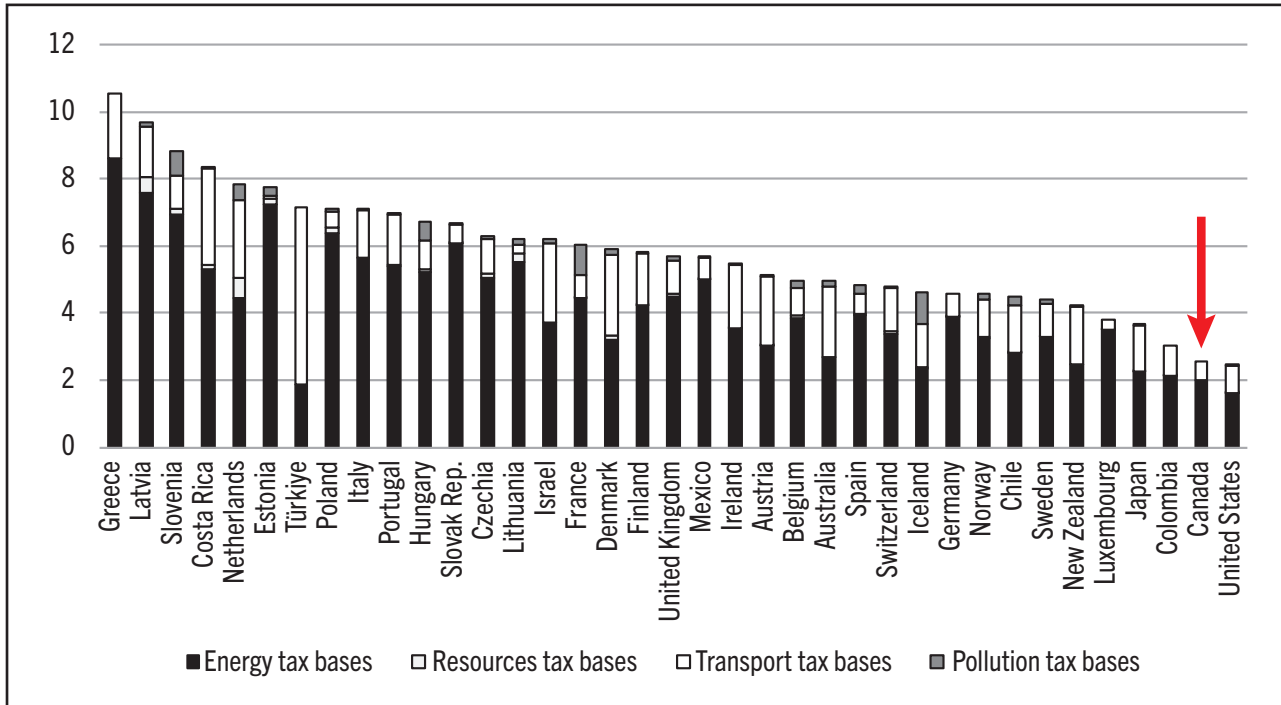
3.1 *The importance of eco-fiscal measures in public finances*

The OECD collects data on environmental tax revenues in a range of countries. These taxes fall into four broad categories: taxes on energy (carbon, natural gas, electricity, fuels, etc.); taxes on transport (vehicle taxes, congestion charges, etc.); taxes on pollutants (wastewater, garbage, toxic materials, noise, etc.); and taxes on natural resources (mining royalties, water fees, etc.) (OECD 2023).

Figure 3 shows the share of these taxes in terms of total tax revenues for OECD member countries in 2021. In Canada, the proportion of total tax revenues derived from these taxes is 2.6 percent. This is one of the lowest proportions of all OECD countries. In Greece, this proportion is more than 10 percent. In European countries such as France and the United Kingdom, the proportion of total tax

revenue from environmental taxes is 6.0 percent and 5.7 percent, respectively. The only country where the use of environment-related taxes is lower than in Canada is the United States (at 2.5 percent of total tax revenues). This is largely due to energy taxes, including fuel taxes, which are lower in Canada and the United States relative to other countries. There are also few vehicle- or transportation-specific taxes in Canada and the United States. The OECD's 2021 data include revenues from Canada's carbon taxes; since these taxes were abolished in 2025, we can conclude that Canada has probably not improved its position since 2021.

Figure 3: Environmentally related tax as a percentage of tax revenue, 2021



Source: OECD (n.d.). Data for 2021.

Canada does not necessarily report all tax revenues associated with the environment in the OECD data. Robert-Angers and Charbonneau (2024) calculated these revenues for Québec for 2024, adding fees and royalties that affect the environment, but are not included in the OECD calculation. They arrived at total revenues that are 53 percent higher than those reported to the OECD, for Québec alone. Taking this discrepancy into account, we can imagine that revenues from environmental taxes in Canada could represent a proportion closer to 4 percent of total tax revenues. This would enable Canada to move up a few places in Figure 2, while remaining one of the countries with the lowest use of eco-fiscal tools among OECD countries.

Because OECD data do not take into account certain revenues from fees and charges (OECD 2023), a tax on a polluting product is considered an environmental tax, but volume-based user charges for landfill waste may not be included. A water abstraction tax is also considered an environmental tax, but volume-based charges for drinking water or wastewater treatment are not. As Canada's Ecofiscal Commission (2017 and 2018) pointed out, these are nonetheless significant components in the arsenal of government eco-fiscal measures.

3.2 The role of municipalities in eco-fiscal measures

As Canada's provincial and federal governments retreat from environmental taxation, could municipalities take over? The issues associated with the sharing of environmental responsibilities between central and local governments have been explored by Oates (2002) through the principles

of environmental federalism. He argues that local communities can benefit by implementing environmental measures that exceed the standards of central governments.

According to Segerson (2020), several factors justify the implementation of eco-fiscal measures by local governments. First, the benefits of the measure may be essentially local in scope. This is particularly true of measures targeting traffic congestion, fine-particle emissions, canopy coverage, water pollution, or soil pollution. Even for issues with a broader, or even global, scope, such as carbon emissions, people living in a specific municipality may be more willing than the general population of the province or the country to reduce their emissions. Revenues from municipal eco-fiscal measures are also captured by municipalities rather than by other orders of government, creating an incentive for municipalities to implement them.

Provincial governments also have an interest in encouraging municipalities to implement new eco-fiscal measures. As Oates (2002) points out, decentralization opens the door to innovation through experimentation with various eco-fiscal measures at the local level. He calls this *laboratory federalism*. In this context, municipalities can learn by doing and others can judge whether measures that work can be applied elsewhere.

Studies on municipal eco-fiscal measures are scarce. We list a few for municipalities in Poland (Dziuba 2015), France (Viessant 2023), the Netherlands (Schep, Monsma, and Kastelein 2022), and Italy (Zatti 2023). Zatti's (2023) study of Italy focuses on regional rather than municipal measures, but we include it here since it still presents eco-fiscal tools implemented at the local level. Table 1 identifies the main measures considered in these studies as eco-fiscal tools. These measures are sometimes assessed as potential tools (Schep, Monsma, and Kastelein 2022) or implemented tools (Viessant 2023, Zatti 2023).

Municipal eco-fiscal measures in Europe are linked to national tax bases shown in Figure 3. We observe in Table 1 a significant use of energy taxes in France and Italy, and vehicle taxes in Poland, France, and Italy. The scope for municipal action appears more restricted in Poland and the Netherlands, reflecting the more limited autonomy of municipalities in these two countries regarding financing tools and the types of intervention they can engage in (Dziuba 2015; Schep, Monsma, and Kastelein 2022).

For Canada, we have identified four studies that focus on municipal eco-fiscal measures: Robert-Angers and Charbonneau (2024); Tremblay-Racicot, Prémont, and Leclair (2023); Zhou, Clarke and Cairns (2022); and Slack (2016). Although Slack's (2016) study does not focus specifically on eco-fiscal measures, but rather on the general environmental benefits of fees and charges, we consider these environmentally oriented pricing tools as eco-fiscal measures. The work of Zhou, Clarke, and Cairns (2022) encompasses all local market-based instruments. We have selected from these instruments those that correspond to our definition of eco-fiscal measures. Table 2 identifies the eco-fiscal measures identified in these studies. Although the studies by Robert-Angers and Charbonneau (2024) and Tremblay-Racicot, Prémont, and Leclair (2023) focus specifically on Québec, they also identify measures implemented in other Canadian provinces, such as taxes on vacant dwellings or stormwater taxes (not fully implemented in Québec).

Unlike in European countries, Canadian municipalities do not levy taxes on natural resources and only a few provinces allow municipalities to levy taxes on energy (Tremblay-Racicot, Couture, and Béliveau, 2025). Québec municipalities are authorized to levy taxes on vehicle registrations, a practice common in several European countries, but one that does not appear in the works cited for Canada² outside Québec.

2 The City of Toronto was permitted to levy a vehicle registration tax under the City of Toronto Act, but the province removed this option from the act in June 2025 (Notte 2025).

Table 1: Municipal eco-fiscal tools in selected European countries

Studies	Country	Tools
Dziuba (2015)	Poland	Property tax exemptions Motor vehicle tax
Viessant (2023)	France	Network tax Additional taxes on nuclear facilities Mining royalties Hydrocarbon exploitation tax Vehicle registration tax Annual tax on personal watercraft Ski lift taxes Waste taxes Sewer non-connection charge Local tax on outdoor advertising
Schep, Monsma, and Kastelein (2022)	Netherlands	Property tax exemptions Parking taxes Sewage levy Stormwater tax Waste collection levy
Zatti (2023)	Italy	Tax on vehicle ownership Surtax on natural gas Surtax on fuel excise duty Landfill tax Aircraft noise tax Water taking fees

As Viessant (2023) points out for France, most municipal fiscal tools with an environmental impact were not initially set up as eco-tax measures. These measures affect the environment because municipalities' areas of jurisdiction, notably land and local resource management, have an environmental impact. This is why Slack (2016) focuses on the environmental scope of local pricing, without mentioning that these are measures with eco-fiscal potential. This issue is addressed in the next section.

The fact that the eco-fiscal measures available to Canadian municipalities are varied reflects the high level of municipal autonomy in Canada and the diversity of tools available to them. It probably also reflects municipalities' interest in environmental issues and their openness to eco-fiscal measures.

Table 3 categorizes eco-fiscal measures according to their intended objectives. Measures in blue are used only in Québec, measures in red are used only by certain Canadian municipalities outside Québec, measures in black are used by municipalities in several parts of Canada, and measures in violet are currently under study in certain Québec municipalities. Property taxes, which can be mobilized in certain provinces to encourage densification, are not included in the table for the sake of brevity. They are discussed separately in the conclusion.

3.3 The relevance of eco-tax measures

It is surprising to see provincial and federal governments retreating from the use of eco-tax measures, given that the literature shows that these measures generally work well. Most of the literature we have reviewed concludes that eco-fiscal tools help to reduce environmental damage.

Table 2: Municipal eco-fiscal tools identified in the literature for Canada

Studies	Jurisdiction	Tools
Robert-Angers and Charbonneau (2024)	Québec	Local increase in fuel taxes Regulatory charges on single-use containers Regulatory charges on unused farmland Development charges Operation duties on quarries and sandpits Incentive-based pricing for waste collection Water pricing Densification incentives GHG offsets Parking taxes Taxes on oil heating systems Stormwater charges Vacancy tax*
Tremblay-Racicot, Prémont, and Leclair (2023)	Canada	Parking fees Parking taxes Land use taxes (densification) Vacancy tax* Development charges GHG offsets Stormwater charges Water pricing Regulatory charge on single-use containers Incentive-based pricing for waste collection
Zhou, Clarke, and Cairns (2022)	Canada	Congestion fees Parking fees Stormwater charges Water pricing Waste pricing Levies on pollutants (phosphorus, nitrogen, etc.) Density-based property taxes Land-value taxation Canopy-based (dis)incentives
Slack (2016)	Canada	Road user charges Parking fees Water pricing Incentive-based pricing for waste collection

*The vacancy tax in Québec is allowed for both residential and commercial properties, but has not been implemented for residential properties.

Most studies on the impacts of eco-fiscal measures are based on the OECD definition and OECD data (OECD 2023) and focus on carbon emissions (Bashir et al. 2021). Among these studies, Ahmad et al. (2024) conclude that environmental taxes promote sustainable mobility and help reduce carbon emissions in countries undergoing an energy transition. Ghazouani, Jebli, and Shazad (2021) and Obobisa and Ahakwa (2024) conclude that they are an effective tool for reducing carbon emissions in European countries. Several other studies reach the same conclusion for all OECD countries (Bashir et al. 2020; He et al. 2023; Liu et al. 2023; Sen and Vollebergh 2018). Doğan et al. (2022) came to a similar conclusion using data for G7 countries, as did Ullah et al. (2023) after studying seven countries with green economies. Kirikkaleli (2023), who studied Canada, showed that environmental taxes help reduce carbon emissions. In the literature review by Bashir et al. (2021), very few studies conclude that environmental taxes do not work. Most show a negative relationship with carbon emissions.

Table 3: Table of municipal eco-fiscal measures in Canadian cities

Objective Mechanism	Sustainable mobility	Urban planning and development	Air quality and reduction of GHG emissions	Drinking water and wastewater	Residual (non-recyclable or non-compostable) materials destined for landfill
Tax	Vehicle registration tax	Tax on parking spaces Floor-area ratio tax Vacant commercial property tax Tax on treeless front yard Vacant home tax	Tax on oil or dual-energy systems	-	-
Regulatory charges	Levy on major trip generators Transportation charges Charge for parcel delivery	Charge for recultivating unused farmland Charge to reduce canopy loss Revitalization levies Development charges	Charge to offset GHGs associated with real estate development	Storm sewer user charges Drinking water use and treatment charges	Levy on single-use or individual containers Levy on construction, renovation, and demolition waste
Pricing	Tax for public transit Variable pricing/parking stickers	-	-	Incentive pricing for drinking water and wastewater	Incentive pricing for the collection and treatment of residual materials

Several studies also show that pricing is one of the most effective tools for sustainably managing drinking water, especially in regions where the risk of supply disruption is high (Bruno and Jessoe 2021; García-Valiñas and Suárez-Fernández 2022; Renzetti 2017; Wheeler, Nauges, and Grafton 2025). Although household water consumption remains largely inelastic to price in the short term, consumers do respond to pricing in the long term. Moreover, pricing is an important communication tool to inform consumers about the costs of resource management (Renzetti 2017).

As for stormwater charges, the impact on the behaviour of those targeted by the levy is less clear. Some studies claim that it is an effective and relevant tool for funding stormwater infrastructure (Arik 2024; Joshi and Alhassan 2025). The addition of subsidies to facilitate the implementation of rainwater retention measures may help, but we have not identified any studies that measure the tax's impact on the extent of impermeable surfaces.

Studies on incentive-based measures to control waste are more conclusive. They show positive results for waste reduction (Matheson 2022). The studies reviewed by Bel and Gradus (2016) show that households increase their participation in selective collection of recyclables and reduce the amount of waste sent to landfill when they are subject to volume-based pricing. Panzone et al. (2021) show

that landfill taxes also help promote recycling and reduce landfill waste, even if they are not directly targeted at households.

In the field of mobility, eco-fiscal measures are numerous: fuel taxes, motor vehicle taxes, road pricing, taxes on parking spaces, etc. Studies on the price elasticity of fuel consumption show that motorists are not very price-sensitive in the short term, but are more so in the long term (Goodwin, Dargay, and Hanly 2004). The impact of fuel taxes on carbon emissions is generally acknowledged, but technological transformations associated with vehicle fuel efficiency can lead to rebound effects in the long term, so the impact of taxes on motor vehicle kilometres travelled remains limited (Dimitropoulos, Oueslat, and Sintek 2018). The same effect applies to vehicle registration taxes. They are effective in influencing changes in technological choices, but their effect on the total number of vehicles has not been measured (Cicccone and Soldani 2021).

According to Anas and Lindsay (2011), the best way to promote sustainable and efficient mobility is to implement road pricing in cities. In their view, these are the only tools that significantly reduce congestion. Eliasson (2021), in an overview of congestion pricing initiatives around the world, finds empirical evidence of improved traffic flow in all cases. However, the difficulty of implementing such tools remains an obstacle (Eliasson 2021).

Many researchers believe that implementing an appropriate parking pricing policy in dense urban areas can also reduce congestion and carbon emissions (Arnott, de Palma, and Lindsey 1991; Jakob and Menendez 2021; Shoup 2011). Parking pricing is generally less controversial than congestion charging (Jakob and Menendez 2021). As for the taxation of surfaces dedicated to parking, we have not identified any studies on their environmental impact. Externalities associated with these spaces, such as heat islands or storm sewer overflow problems, have been studied (Litman 2025), but the impact on parking supply has yet to be measured, although Tremblay-Racicot, Prémont, and Leclair (2023) did observe a reduction in the space dedicated to commercial parking in Montréal after the city introduced a parking tax.

3.4 Obstacles to implementing eco-tax

As Eliasson (2021) points out for congestion charges, the main difficulty with eco-tax measures lies in their implementation. All new forms of taxation, even if they fit into a logic of tax neutrality, in that the revenue from the new tax is fully offset by a reduction in other taxes, entail redistribution effects (Wang et al. 2016). In this regard, several studies show that low-income populations, especially those in more rural areas, are often the most affected by eco-fiscal measures (Alvarez 2019; Eliasson, Pyddoke, and Swärdh 2018). To gain public support, therefore, the introduction of eco-tax measures must be accompanied by compensatory measures (Domguia 2023) and backed by a good communication campaign (Benjamin et al. 2022). The Canadian government's carbon tax is revealing in this respect. Although compensation measures were put in place to offset equity effects, the government failed to convince the population of the benefits of the measure and eventually withdrew it (Benjamin et al. 2022; Katz-Rosene 2025).

Administrative costs can also be a major obstacle to the implementation of eco-tax measures (Bräuer et al. 2006; Brown et al. 2021). Eco-fiscal measures are obviously ineffective if their management costs outweigh the environmental gains. Benefit-cost analyses are generally required to determine whether such measures generate a net benefit (Fullerton, Leicester, and Smith 2008), since even when management costs are high, eco-tax measures may nonetheless generate a net benefit.

The London Congestion Charge is a case in point. When it went into operation in 2003, the toll's administrative costs were very high, representing roughly 50 percent of the revenues collected (Leape

2006). Higher tolls and the amortization of initial investments have reduced this ratio, but the toll is still very expensive in proportion to the revenue it generates. Even so, several studies show that it generates a positive net economic benefit for the London region (Tang 2021), because the benefits in reduced congestion (Santos and Fraser 2006), reduced pollution (Green, Heywood, and Paniagua 2020), and improved travel safety (Ding et al. 2021) outweigh the administrative costs of tolling.

4. Canadian municipalities and eco-fiscal tools

Recent studies by Robert-Angers and Charbonneau (2024), Tremblay-Racicot, Prémont, and Leclair (2023), and Zhou, Clarke, and Cairns (2022) identify a wide variety of eco-fiscal tools available to municipalities in Canada (see Tables 2 and 3), all associated with municipal functions. This section outlines the importance of these tools to municipal finance in Canada and describes, with examples, their potential role for key municipal functions.

4.1 The scope of environmental actions of Canadian municipalities

Figure 4 shows the sum of Canadian municipal spending by function, based on Statistics Canada's Municipal Government Expenditures for 2023. The functions are presented in order of budgetary importance, ranging from general administration spending (\$16.6 billion) to justice and other public safety spending (\$2 billion). These categories have been reconstituted from sub-sections of Statistics Canada data to represent the major functions of municipalities as they usually appear in their financial documents. According to these data, total spending by Canadian municipalities amounted to \$97 billion in 2023.

Figure 4: Canadian municipal spending by functions with environmental effects, 2023 (\$ million)



Source: Statistics Canada, Canadian Classification of Functions of Government, Table 10-10-0024-01.

The functions marked with an asterisk in Figure 4 are those that offer the greatest potential for action on specific environmental issues (such as greenhouse gas emissions or water contamination). The largest of these functions with regard to expenditure is transportation, which totals almost \$14 billion

in expenditures. This includes spending on roads, public transit, and parking facilities. Municipalities are key players in the implementation of sustainable mobility measures. Measures such as local fuel tax surcharges, local vehicle registration taxes, road infrastructure pricing, or parking fees and taxes fall into this category. However, these tools represent only a small part of the financing of these expenses.

The second largest area of municipal spending with a direct impact on the environment is urban planning, housing, and economic development. Spending on these activities totalled \$9.4 billion for all Canadian municipalities in 2023. Several eco-fiscal measures identified in Table 3 fall into this category. Some measures affect land use, such as regulatory charges on agricultural land speculation, quarry and sandpit duties, land use taxes, and canopy-based measures. Other measures target real estate development and housing, such as environmental measures associated with development charges, taxes on vacant dwellings, or taxes on oil heating systems. Although taxes on parking spaces and stormwater charges also affect land use, we treat them as measures associated with transportation and water management, respectively.

Water management is the third most important environmental function in terms of municipal spending. Spending by all Canadian municipalities on potable water and wastewater treatment, including stormwater management, amounted to \$9.3 billion in 2023. Much of this expenditure is already covered by volume-based pricing or stormwater charges (Kitchen 2017). Although eco-fiscal tools are widely employed in water management, these tools are seldom identified as such.

The fourth and final environmental municipal function identified in Figure 4 is waste management. This function generated \$3.8 billion in expenditures for all Canadian municipalities in 2023. Volume pricing for the collection of waste destined for landfill is practiced in a few Canadian municipalities, but remains uncommon (Lakhan 2015).

4.2 Tools available to municipalities

Tremblay-Racicot, Prémont, and Leclair (2023) classify the eco-fiscal tools available to Canadian municipalities into three categories: taxes, regulatory charges, and user fees. A tax is an economic levy without compensation. In Canada, the main tax power delegated to municipalities is the property tax. Some provinces also grant municipalities additional taxing powers that can have direct or indirect impacts on the environment. In Québec, for example, municipalities have the general power to levy any direct tax, provided they meet several criteria and exclusions, such as not interfering with taxation powers used by other orders of government. This general taxation power allows municipalities to target certain property characteristics, if the base is not measured by market value, such as the floor-area ratio, while providing greater flexibility for municipalities to provide exemptions to tailor the levy to environmental or other objectives. This power can be used to implement eco-fiscal measures.

A regulatory charge is a payment levied by a public authority associated with its regulatory regime. Unlike a tax, which is paid into the general public treasury, the charge must either: 1) finance a service, infrastructure or program from the person who benefit from it or who generate the need for it (like development charges, a type of regulatory charge); or 2) induce changes in the behaviour of the person paying it (like a charge on single-use containers). In both cases, the revenues collected must contribute to financing the regulatory regime to which it is attached. Often associated with a permit regime for which the price of the permit must correspond to the administrative costs of the activity for which a permit is required, the amount of the regulatory charge varies according to a variable associated with the objective of the regulatory regime. For example, the annual duties collected from sandpit owners to maintain the validity of their permits are calculated according to the quantity of sand taken from each pit. Because they differ legally from taxes, regulatory charges give municipalities

the right to collect financial levies that, while similar to indirect taxes, are not the same.³ The fact that they are not a tax protects regulatory charges from constitutional challenge on the grounds that they are akin to an indirect tax. Municipal regulatory charges are a relatively new instrument that enables municipalities to pursue environmental benefits and more sustainable urban development (Prémont and Tremblay-Racicot 2019).

The final category of levy is user fees. These fees are a price imposed on users of a public service. User fees are based on the user-pay principle and are used exclusively to finance the service that is subject to pricing. Because it varies according to consumption, user fees can also influence user behaviour and promote more sustainable resource management. This is why we include them here among the eco-fiscal measures.

The distinction between a tax, a regulatory charge, and a user fee is important from a legal point of view, but the conceptual frameworks that define these tools may have imprecise boundaries that give rise to overlaps. Permits, licences, fees, charges, royalties, duties, and even some taxes represent forms of payment that may be associated with compensation, but may, in other circumstances, have the same characteristics as a tax (without compensation). A flat rate for water for a vacant building has the same impact as a tax, since it is not linked to water consumption. Fuel taxes, which are in principle indirect taxes, are often associated with road financing. In this case, they have much the same economic impact as road pricing.

As Slack (2016) suggests, pricing that encompasses all service costs, including infrastructure, future provisions, and the cost of externalities, would in many cases result in a budget surplus. This surplus would be equivalent to the cost of externalities that are not accounted for in the municipal service cost structure (such as congestion costs or carbon emissions). The surplus portion of the fee would then take the same form as an environmental tax, as defined by Pigou (1920). This polluter-pays portion of the fee has no counterpart for consumers and is therefore equivalent to a tax.

4.3 Transportation

According to the data in Figure 4, transportation accounts for almost 15 percent of total municipal expenditure in 2023. The externalities associated with these activities are also considerable. They include not only congestion and air pollution (carbon emissions) but also impacts on public health, noise, and urban development (Litman 2009; Santos et al. 2010). Municipalities use several financial tools that affect mobility choices and the provision of transport infrastructure. Table 4 presents five tools used by Canadian municipalities, regional authorities responsible for public transit, or private companies that levy tolls, which have local effects.

To facilitate comparisons between measures, Table 4 shows each levy expressed in dollars per capita in the last column on the right. This amount indicates the relative financial importance of these measures. The financial impact of tolling the Highway 407 Express Toll Route in the Greater Toronto Area, for example, is particularly significant. Drivers pay \$1.7 billion annually to use this major infrastructure asset in the Greater Toronto Area. This is equivalent to \$240 per capita (based on the population of the Toronto CMA). Even though the costs are recovered by a private operator, these tolls have a greater influence on mobility behaviour in the Toronto area than the tax on non-residential parking areas in Québec City. This tax is equivalent to a levy of only \$4.54 per inhabitant for those living in the City.

3 A direct tax is a tax for which taxpayers send their contributions directly to the government (such as income or property taxes), while an indirect tax is levied by a third party that collects the money from taxpayers to send to the government. Merchants play this role in the case of consumption or fuel taxes.

Table 4: Examples of local eco-fiscal measures associated with transportation in Canada

Measures	Examples	Rate (2025)	Revenue (2025) (\$million)	Revenue (2025) (\$/capita)
Vehicle registration tax	Montréal (ARTM*)	\$150	\$328.9	\$82.23
	Québec City	\$60	\$18.8	\$31.60
Increase in fuel tax	Montréal (ARTM*)	\$0.03/L	\$89.8	\$22.45
	Gaspésie—Îles-de-la-Madeleine region (REGIM**)	\$0.01/L	\$1.3	\$14.55
Parking rates	Montréal	\$2.25/hr to \$4.25/hr	\$73.0	\$37.46
	Québec City	\$3.00/hr	\$13.9	\$23.38
Tax on parking areas	Montréal	\$2.50/m ² to \$55,60/m ²	\$35.7	\$18.32
	Québec City	\$0.51/m ² to \$2,83 /m ²	\$2.7	\$4.54
Road pricing	Toronto (407 ETR)***	\$0.36/km to \$0.85/km	\$1,705.2	\$240.14
	Montréal (A25)****	\$3.22 to \$4.02	\$70.0	\$15.17

* Autorité régionale de transport métropolitain.

** Régie intermunicipale de transport Gaspésie—Îles-de-la-Madeleine.

*** Private company under contract with the Ontario government, rates 2025 and revenues 2024.

**** Private company under contract with the Québec government, rates 2025 and revenues 2022.

Sources: ARTM, *Budget 2025*; Ville de Québec, *Budget 2025*; Ville de Montréal, *Budget 2025*; 407 ETR, *407 International Reports 2024 Results*, Larocque (2023). Websites of 407 ETR and A25 for 2025 rates.

These levies have different objectives and are used according to various enabling laws over which municipalities may have little power. For example, the possibility of increasing the fuel tax, granted to Montréal regional transportation authority (now ARTM) in 1996 by the Québec government, then to the regional county municipalities of Gaspésie—Îles-de-la-Madeleine in 2012, was denied to the Québec City metropolitan community in 2024. As for road pricing, this is imposed under partnership agreements with the private companies that build the highways. Municipalities with general taxing or regulatory charge powers could possibly use it on local roads, but this is not an option they have tended to favour.

Similarly, although many municipalities can impose a surtax on vehicle registration, they are reluctant to do so or they impose amounts that are not high enough to influence vehicle owner behaviour. By 2025, a significant number of Québec municipalities had increased or implemented this measure. As Table 4 shows, this represents substantial revenue for the Montréal metropolitan region and Québec City. It is the most important eco-fiscal measure affecting mobility in these two areas.

Parking management is twofold: parking fees (paid directly by motorists) and parking area taxes (paid by property owners). As the examples of Montréal and Québec City in Table 4 show, pricing remains the most important source of revenue among parking measures for both cities. However, the rates applicable to parking areas vary considerably from one city to the other. Rates are much higher in Montréal than in Québec City.

4.4 Development and housing

The planning, housing, and economic development category encompasses a range of municipal functions that mainly affect land management and real estate development. Among the eco-fiscal measures identified in Table 3 that fall into this category are regulatory charges on agricultural land speculation, duties on quarry and sandpit operations, the floor-area ratio tax, canopy-based disincentives, the tax on vacant dwellings, and taxes on oil heating systems. These measures and examples of their application are presented in Table 5.

Measures	Examples	Rates	Revenue (\$000)	Revenue \$/capita
Regulatory charges on unused farmland	Boisbriand, Québec (2022)	\$0.04/m ²	\$84.5	\$2.86
Duties on quarry and sandpit operations	Province of Québec (2021)	\$0.70/ton \$1.33/m ³	\$46,400	\$5.46
Floor-area ratio (FAR) taxes	Varenes, Québec (2021)	20% x (FAR differential) x (property tax)	\$215	\$9.94
Canopy-based disincentives	Victoriaville, Québec (2025)	25/m ² of lost canopy	\$200	\$4.02
Vacancy taxes	Vancouver, B.C. (2023)	3% of property value	\$45,500	\$65.00
Taxes on oil heating systems	Laval, Québec (2024)	\$100	\$800	\$1.75

Source: Creimer and Lemay (2025); Robert-Angers and Charbonneau (2024); Tremblay-Racicot, Prémont, and Leclair (2023).

Development charges are identified in Tables 2 and 3 as eco-fiscal measures. However, when we look at the way these charges are applied in Canada, that categorization appears questionable (Sancton 2021). It is possible that specific arrangements allow these charges to have eco-fiscal characteristics, for example, when they provide exemptions to energy-efficient buildings. However, it is beyond the scope of our research to examine these particularities. For this reason, we do not consider them as eco-fiscal measures.

The measures presented in Table 5 have a lower financial importance than those concerning transportation, water management, or waste management. The most significant measure is the tax on vacant dwellings in Vancouver. The relatively high rate of this tax generates revenues of about \$65.00 per inhabitant, which has a significant impact on changes in housing occupancy behaviour in Vancouver (Robert-Angers and Charbonneau 2024). Vancouver is a special case in this respect, however, with a particularly tight housing market. In Toronto, for instance, revenues from the vacant home tax were \$50.6 million in 2023, which represents less than \$17.00 per inhabitant.

The aim of these measures is not so much to raise new revenue as to achieve public policy objectives, such as the recultivation of uncultivated farmland, densification, building occupancy, or the implementation of nature-based climate solutions. Achieving these objectives can, in turn, bring direct or indirect benefits to the municipality, such as new listings on the assessment roll, better use of the building stock, or greater resilience in the face of climate hazards. These benefits are not quantified here, but are worth further study.

4.5 Water management

Municipal water management accounts for \$9.3 billion of annual spending in Canada (Figure 4). Most of this is spent on supplying households with drinking water, but the expenditures also cover resource protection and minimizing the impact of wastewater contaminants on the environment. Municipal spending on wastewater reclamation and treatment totalled \$4.3 billion in Canada in 2023, or 46 percent of all spending on water management (see Table 5). These expenses are used to treat wastewater – in other words, to internalize the external effects of pollution caused by water consumption. The pricing applied to this portion of expenditure is therefore equivalent to an eco-fiscal measure.

Pollution caused by wastewater discharge is not the only form of externality associated with water consumption. Other externalities are the risks of resource depletion (supply disruptions, droughts, etc.) or runoff causing flooding and overflows when wastewater is discharged into watercourses. To avoid these externalities, the two main eco-fiscal tools used by municipalities are progressive water pricing and stormwater charges based on the impermeable surface area of properties.

Table 6, which shows examples of the application of these two tools in Canada, indicates that water pricing is the most important environmental tax measure in terms of per-capita revenues identified in our study. In Calgary, water rates are expected to raise \$827 million in the 2025 budget, or \$551.20 per capita. The City of Calgary applies a single rate, while Ottawa and Gibson, B.C., apply progressive pricing. Since water management costs depend on a range of factors, including ease of access to the resource, types of consumers, and treatment standards, pricing rates vary considerably from one location to another, resulting in different per-capita revenues. Thus, even if Ottawa and Gibson apply more incentive-based pricing, this does not generate higher revenues per capita than in Calgary. The municipality of Gibson is identified by CEC (2017) as a best practice because it includes the cost of maintaining ecosystems in its pricing.

Measurement	Examples	Rates (annual)	Revenue 2025 (000\$)	Revenue 2025 \$/capita
Water pricing	Ottawa	Fixed: \$314.04 0-6 m ³ : \$1.82/m ³ >180 m ³ : \$4.47/m ³	\$395,713	\$360.46
	Calgary	Fixed: \$578.64 Flat: \$3.40/m ³	\$826,798	\$551.20
	Gibson, B.C.	Fixed \$470.88 0-23 m ³ : \$1.77/m ³ >45.8 m ³ : \$3.01/m ³	\$1,535	\$307.00
Stormwater charge	Mississauga	\$120.30/unit Eq. \$0.70/m ² building right-of-way	\$49,946	\$63.97
	Kitchener	\$259.68/unit Eq. \$1.56/m ² building right-of-way	\$30,000	\$102.66

Sources: City of Ottawa, *Budget 2025*; City of Calgary, *2023–2026 Service Plans and Budgets*; Town of Gibson, *2025 Budget, Attachment A*; City of Mississauga, *2025 Budget*; City of Kitchener, *2025 Budget*.

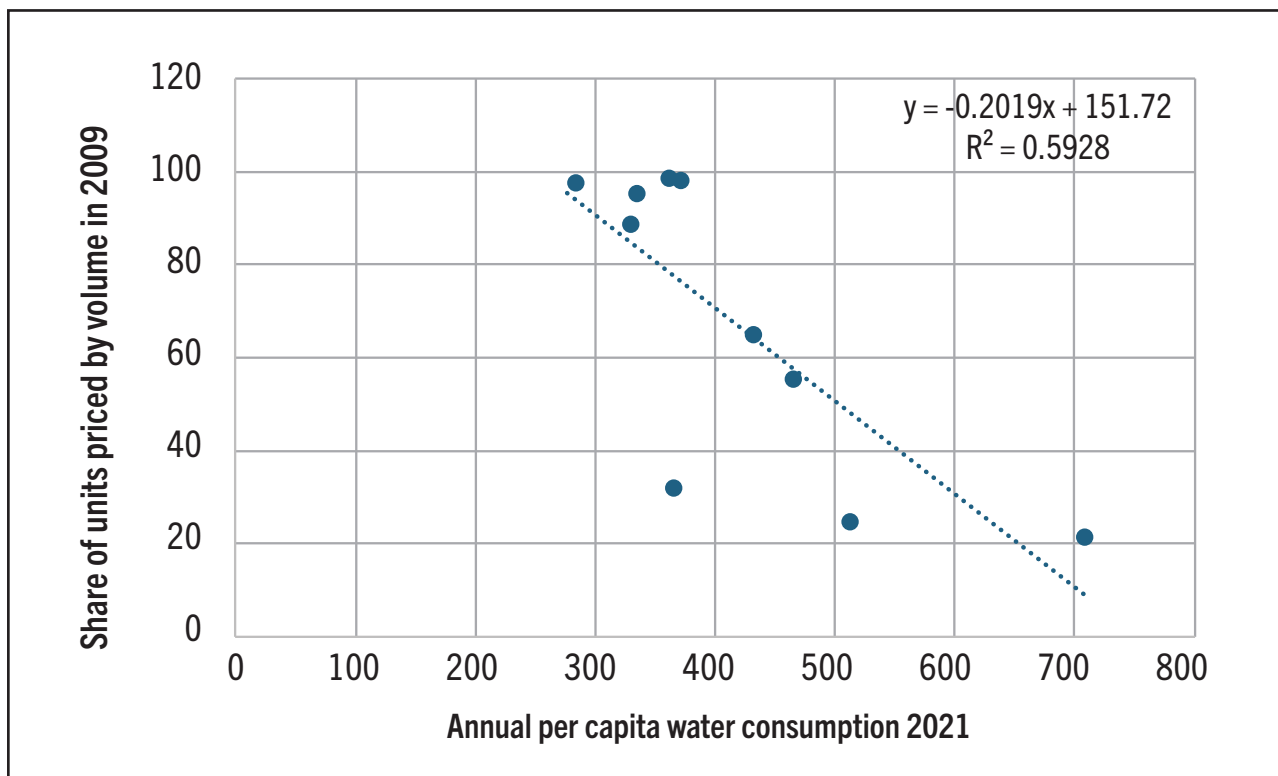
Although volume-based pricing is widely used in Canada, there are still areas in which consumption units, especially in residential buildings, are not subject to volume-based pricing. Data on the evolution

of pricing are, however, difficult to obtain. Environment Canada produced data for all Canadian provinces until 2009, but has not updated its database since then (Kitchen 2017).

At the time, the provinces of Newfoundland and Labrador, Prince Edward Island, and Québec lagged behind other Canadian provinces with regard to volume pricing (Environment Canada 2011). Could this delay have led to poorer resource management in these provinces? It's difficult to answer this question, but Figure 5 shows a correlation between the proportion of units priced by volume for water consumption in 2009 and per-capita water consumption in 2021, the most recent year for which consumption data are available (Statistics Canada 2023).

The stormwater charges applied by cities such as Mississauga and Kitchener are examples of eco-fiscal measures associated with water management that can lead to interesting co-benefits in terms of conservation. These measures, which aim to finance rainwater collection and treatment networks, are based on the surface of impermeable areas. These areas are not calculated with precision, but are deduced from geomatic data (Kitchener) or building rights-of-way (Mississauga). Properties are categorized to simplify the procedure. A unit corresponds to a property with a building that has an average right-of-way of 172 m² in Mississauga and 166.5 m² in Kitchener. As Table 6 shows, the rates applied in Kitchener are higher. In both cases, there is an incentive to preserve as much natural space as possible on properties. Although building rights-of-way are a highly inelastic base, it is possible that the measure will influence future building rights-of-way. Property owners can also benefit from subsidies if they implement measures to improve water catchment on their land.

Figure 5: Link between pricing and water consumption in Canadian provinces



Source: Statistics Canada. Table 38-10-0271-01 (Potable water use by sector and average daily use); Environment Canada, 2011 *Municipal Water Use Report*.

The pursuit of certain objectives, whether reducing drinking water consumption or wastewater discharge, is sometimes hampered by the restrictive application of the pricing power, under which the price charged must correspond to the cost of the service. This may prevent a municipality from

applying progressive pricing for drinking water consumption, or variable pricing based on the quantity and concentration of pollutants discharged. In such cases, the general power of imposing regulatory charges, which allows for the adoption of a fee aimed at modifying behaviour and the amount of which can therefore be determined at the municipality's discretion, could prove to be a more flexible tool than pricing.

4.6 Waste

Waste is, by definition, a pollutant, especially when it is sent to landfill. Pricing waste collection and treatment is therefore a form of eco-taxation, since it internalizes the costs of this pollution. This implies, however, that waste collection should be priced according to waste volume, and that all service costs should be accounted for, including the externalities associated with the treatment process (carbon emission impacts, soil pollution, water pollution, odours, etc.), which is rarely the case.

Volume-based pricing or pay-as-you-throw (PAYT) systems have been implemented in Canada for several years, but are still not widespread (Lakhan 2015; Recyc-Québec 2024). Table 7 presents examples of cities that have implemented waste collection pricing mechanisms based on the volume of containers or the number of times they are emptied.

Measurement	Examples	Rates (annual)	Revenue 2025 (\$000)	Revenue 2025 \$/capita
Incentive-based pricing for waste	Beaconsfield, Québec	120 L = \$195 \$1.85/add. collection 240 L = \$215 \$2.70/add. collection 12 coll. included	\$1,900	\$97.99
	Vancouver	Garbage: 120 L = \$142 240 L = \$190 Extra bag = \$2 Compost: 120 L = \$176 240 L = \$238 (once/2 weeks)	\$102,322	\$146.17
Regulatory charge on single-use containers	Prévost, Québec	\$0.10 to \$0.50, depending on item	\$29.20*	\$2.06

* Data for 2023.

Sources: City of Beaconsfield, *Budget 2025*; City of Vancouver, *2025 Budget*; Robert-Angers and Charbonneau (2024).

Beaconsfield's rate structure is particularly incentive-based. It includes a fixed portion of \$195 per year for a 120-litre bin, or \$215 for a 240-litre bin. These rates include 12 collections per year (waste is collected weekly, except for bulky items and construction, renovation, and demolition waste, which is collected monthly). All additional collections are charged at \$1.85 for a 120-litre bin and \$2.70 for a 240-litre bin.

In Vancouver, the annual fee for garbage collection is \$142 for a 120-litre bin and \$190 for a 240-litre bin. Additional bags require a sticker, which costs \$2.00. What is distinctive about Vancouver is that

the city also charges for the collection of compostables. The annual fee for this collection is \$176 for a 120-litre bin and \$190 for a 240-litre bin. There are no fees for the collection of recyclables in Vancouver. This collection is self-financed by Recycle BC. Collections are made every two weeks (26 collections per year). Bins are mandatory throughout Vancouver, but additional bags can be used. Volume pricing is a relatively important eco-fiscal measure for the municipalities that use it. Budgeted revenues for Beaconsfield and Vancouver for 2025 are \$97.99 and \$146.17 per capita respectively.

The town of Prévost is an original example of upstream waste taxation. It has introduced a regulatory charge that targets single-use or individual containers sold or distributed by merchants (such as non-reusable plastic water bottles), and is accompanied by regulations requiring merchants to offer certain products in bulk (such as windshield washer fluid). Compared with other cities, where merchants keep the sums collected from purchasers of single-use items such as plastic bags, in Prévost, it is the merchants who are subject to the levy; they must therefore complete a self-declaration form and remit the amounts to the city, minus management fees, on a quarterly basis. The sums expected from the measure are modest (barely \$2.06 per inhabitant), but the measure benefits from high visibility. The municipality is also committed to supporting retailers in their transition to bulk distribution and the use of reusable containers.

5. Conclusion

This report presents the range of eco-fiscal measures implemented by certain Canadian municipalities and other private and public organizations operating at the local level. Our study led to several observations:

- The potential to use municipal eco-fiscal tools is large, but the direct income generated from them is limited.
- Eco-fiscal tools should be seen not just as a way to diversify sources of revenue, but as a way to achieve certain environmental objectives.
- Although their potential is great, information on eco-fiscal measures remains anecdotal, apart from the use of pricing for water and waste.
- The use of general taxation powers for environmental purposes remains relatively uncommon outside Québec.
- Municipalities in Québec are the only ones in Canada to be able to impose regulatory charges aimed at changing behaviour.
- Measures currently being studied in Québec or operating as pilot projects need to be tested before they can be scaled up, which requires innovation and major administrative and political efforts.

Québec municipalities can now levy property tax rates according to different sectors or areas within the city (Tremblay-Racicot et al. 2025a), and also according to various sub-categories on the assessment roll, such as number of units or property use code. For example, these new provisions could allow municipalities to apply a lower property tax rate on buildings located in some areas of the municipality to encourage densification and revitalization (Tremblay-Racicot et al. 2025b). Municipalities could also apply a higher property tax rate on buildings or businesses that generate negative externalities. As these powers are relatively new, it is too early to know whether municipalities will use them as eco-fiscal measures or only as a way to increase revenue. As with the general power of taxation and regulatory

charges, these powers require resources and expertise that many municipalities do not have. For that reason, the establishment of a network of expertise in municipal taxation could help ensure that best practices are disseminated. It remains to be seen if eco-fiscal practices will be adopted and whether best practices will spread to all Canadian municipalities.

Two initiatives stand out from our analysis as practices that have great potential in terms of eco-taxation, but which are still not widely used. The first is road pricing. As shown by the example of Highway 407 ETR in the Greater Toronto Area, road pricing has great potential to generate funds for infrastructure financing and to internalize several externalities associated with travel (congestion, safety, carbon emissions, etc.). Even if they represent political challenges, these mechanisms should not be restricted to privately owned infrastructure (as is the case in Montréal and Toronto). The Montréal metropolitan community launched a study in 2023 on the feasibility of implementing a kilometre-based pricing system across its territory (Aviso 2023). The idea was not supported by the Québec government, but the study did raise the matter of the importance of implementing such a financing tool on a metropolitan scale. Meloche, Robert-Angers, and Godbout (2025) believe that a debate on distance-based road pricing is inevitable. Canadian roads are largely financed by motor vehicle registration and fuel taxes. However, fuel tax revenues will gradually decline over the next few years, creating a major imbalance in road funding mechanisms across the country (Meloche, Robert-Angers, and Godbout 2025). As a result, provincial governments may be forced to change their minds about road pricing.

It is difficult for municipalities to set up a distance-based pricing system on their own territory, as the costs of setting up such a system are relatively high (Meloche 2019). However, once the system is implemented, it is relatively easy to identify the revenues collected on local streets and send them back to the municipalities concerned. We can imagine that such a system would not only have significant benefits in terms of fostering greater sustainable mobility across the territory but would also enable Canadian municipalities to diversify their revenues and reduce their reliance on property taxes.

The second initiative with potential for future implementation is inspired by several taxes on land use (impermeable surfaces, parking lots, floor-area ratios, and canopy). These taxes focus on what Meloche et al. (2023) call the ecological footprint of land use. Any form of tax on this footprint has the potential to generate co-benefits by promoting the conservation and rehabilitation of natural spaces. Meloche et al. (2023) propose a tax on surfaces that are lightly vegetated, as well as on impermeable surfaces. Implementation would require that the methods currently used by Canadian cities to tax impermeable surfaces or parking lots be refined to better reflect the loss of natural spaces. This initiative would promote the development of a municipal eco-fiscal tool that would encompass several objectives and make it possible to internalize several externalities linked to land use.

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