

An alternative to Nova Scotia's carbon-pricing system

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Executive Summary

As Prime Minister Trudeau's decision to remove the carbon tax from [heating \(or fuel\) oil](#) in late October 2023 demonstrated, there needs to be an alternative to Nova Scotia's current carbon-pricing system.

This system (designed by the federal government) consists of a carbon tax (a [fuel charge](#)) and a quarterly [Climate Action Incentive Payment](#) or CAIP.

All households receive the same CAIP (the amount is based on the number of occupants) regardless of the energy they use for heating and transportation. Consequently, households using electric heat-pumps pay far less carbon tax than comparable-sized households using oil furnaces. Similarly, drivers of electric vehicles pay far less carbon tax than those driving gasoline-powered vehicles.

However, in some cases, the CAIP is less than the carbon tax paid by [households](#) using oil heat and driving gasoline vehicles. These [households](#), many of which are low- and moderate-income, can therefore face unnecessary financial hardship.

Instead of Nova Scotia's existing carbon-pricing system, this report describes a progressive carbon-pricing system that still collects the carbon tax but modifies the CAIP.

Rather than a common CAIP paid to all households with the same number of occupants, the alternative CAIP has households with incomes below a maximum amount (a multiple of the [Low-Income Cut-Off](#) or LICO) receive the full value of the CAIP. Households with incomes above this level receive a partial CAIP that declines as their income increases, eventually reaching zero. The structure of the alternative CAIP is shown in Figure 1.

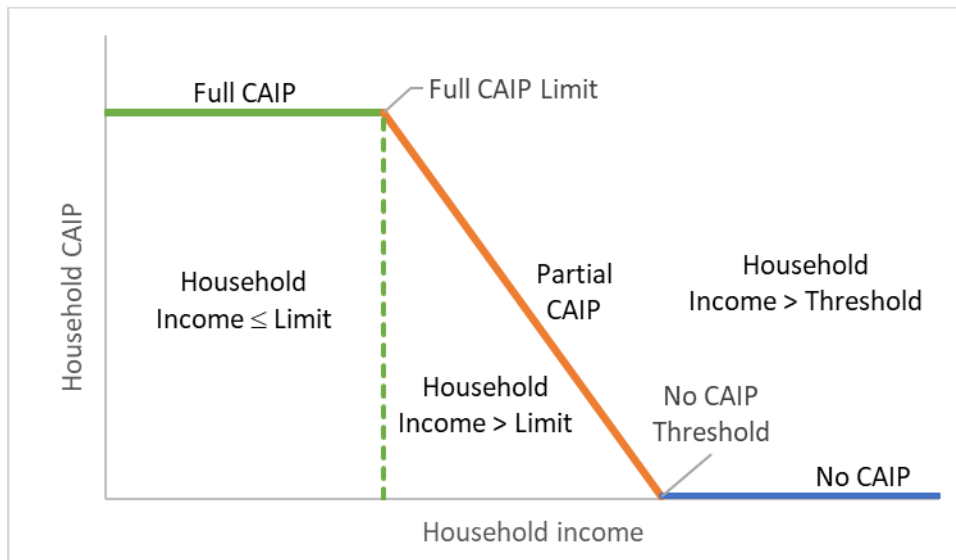


Figure 1: Structure of the alternative carbon-pricing system

The alternative carbon-pricing system means that low- and moderate-income Nova Scotians continue receiving the CAIP, while higher-income households receive less. The funds not returned to higher-income households can be used to help Nova Scotians who need assistance with their energy bills and support the purchase of low-emissions technology by those unable to afford it.

The alternative carbon-pricing system is in keeping with [Environment and Climate Change Canada's](#) statement that carbon pricing is "... about recognizing the cost of pollution and accounting for those costs in daily decisions".

Revision: The section *Impact of the example CAIP*, originally did not distinguish between urban and rural households and their different CAIP values. This oversight has been corrected and the revised values are presented in this section.

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Introduction

Nova Scotians, like Canadians in seven other provinces and two of the territories, are subject to the [federal carbon-pricing system](#).

The system consists of two parts. First, a tax on [carbon-intensive energy](#) sources such as gasoline, diesel, home heating oil, natural gas and propane, and electricity. And second, a cheque, the Climate Action Incentive Payment or [CAIP](#), paid every three months to households (that is, individuals and families) who have filed their previous year's federal income tax. The value of the CAIP is based on the number of people in the household, their province, and where they live in the province.

The carbon tax raises the cost of energy, while the CAIP is intended to offset the cost. Ideally, the CAIP equals the total cost of the tax, and the result is zero.

Which raises the question, if the result is zero, why have a carbon-pricing system?

The answer, according to [Environment and Climate Change Canada](#), is "... carbon pricing is about recognizing the cost of pollution and accounting for those costs in daily decisions".

However, the cost of the carbon tax is not always offset by the CAIP. By the federal [Department of Finance](#)'s own estimates, "8 out of 10 households [are] getting more money back than they pay".

For a household to get back more than it pays, can mean living in a well-insulated house heated with a low-energy heating system (such as a heat pump) or using a low-emissions vehicle (such as a hybrid or electric vehicle), or both.

Low- and moderate-income households requiring emissions-intensive energy sources for heating (such as heating oil) and driving an older, gasoline-powered vehicle must take the carbon price into account if they want to get back more money than they pay.

The original design of the federal carbon-pricing system for Nova Scotia meant that families living in older homes using oil heating paid a considerably higher carbon tax than families living in R2000 homes heated with electric heat pumps. In some cases, the carbon tax would have required families living in older homes to [pay several hundred dollars more](#) than their CAIP.

Prime Minister Trudeau's solution to the CAIP shortfall for oil-heated homes in Nova Scotia and other provinces (primarily those in [Atlantic Canada](#)) was to remove or "carve out" the [carbon tax on home heating fuel](#) for the next three years.

Since households in Atlantic Canada stood to gain the most from the prime minister's decision, governments in [Alberta](#) and [Saskatchewan](#) demanded the same treatment for households in their provinces.

Despite refusing to make any other changes to the federal carbon-pricing system, the prime minister's decision to make the heating oil carve out has played into the hands of those wanting to "axe the tax".

Fortunately, there is at least one alternative to the design of the present carbon-pricing system that can help low- and moderate-income Canadians and still let Canadians recognize the cost of pollution and account for the costs in their daily decisions.

The problem with the existing carbon-pricing system

The federal government's fuel pricing system consists of two parts:

The carbon tax, a [fuel charge](#), which is applied to all carbon-intensive energy sources. This year it is \$65/tonne.

The [Climate Action Incentive Payment](#), or CAIP, which is intended to equal or exceed the total carbon taxes a household would pay on emissions from space and water heating, electricity, and personal transportation. It is paid quarterly and intended to cover carbon taxes for the upcoming three months.

The incentive payment varies by province, family size, and where people live. A rural household currently receives 10-per-cent more than an urban household.

The carbon pricing system works best when most households have similar energy demands using the same energy sources, such as natural gas for heating and gasoline for transportation. When this is the case, the CAIP covers the carbon tax on most households.

However, the carbon-pricing system breaks down in a jurisdiction where there are several different energy sources with significantly different emissions intensities being used for home space and water heating. For example, in [Nova Scotia](#), about 55% of households use electricity and 33% use heating oil, whereas in [Alberta](#) and [Saskatchewan](#), over 85% of the households use natural gas and about 13% use electricity.

Although about 45% of Nova Scotia's electricity was generated from coal and petcoke in [2022](#), the federal government's [Output-Based Pricing System](#) (OBPS) means that electrically heated homes pay a considerably [lower carbon tax than homes using heating oil](#).

Low- and moderate-income Nova Scotian households are the predominant users of [heating oil in the province](#). These households can face financial hardships if their carbon tax exceeds their CAIP.

Moreover, households with incomes that prevent them from taking advantage of [free heat pump programs](#) or benefitting from [subsidies on electric vehicles](#) are caught in a bind.

The Climate Action Incentive Payment

The existing carbon-pricing system does not distinguish between levels of income and the types of energy used by the household for heating and transportation. The only distinctions made are the number of people living in the household and its location (the CAIP for households in [designated rural areas](#) is 10% greater than for a corresponding household in an urban area).

We see this in Table 1, where all households, depending on the number of residents, regardless of income, receive the same CAIP. For example, a household with two adults and a child would receive \$868 for an urban household or \$955 for a rural household.

Table 1: 2023-24 CAIP payments for households in [Nova Scotia](#) (Prorated to four quarterly payments)

	Number of people in household ¹				
	One person	Two persons	Three persons	Four persons	Five persons
2023-24 urban CAIP	\$496	\$744	\$868	\$992	\$1,116
2023-24 rural CAIP (10% supplement)	\$546	\$818	\$955	\$1,091	\$1,228

A simple modification to the CAIP would result in low- and moderate-income households receiving the full CAIP and higher-income households receiving a smaller CAIP.

The proposed alternative

Any alternative CAIP must be based on a method that is understandable and uses known values.

In the proposed alternative, the value is obtained from the Low-Income Cut-Off or LICO published by [Statistics Canada](#). LICO is the income threshold below which a family is expected to devote at least 20% more of its income on the necessities of food, shelter, and clothing than an average family of the same size living in a similarly sized community.

Low-Income Cut-Off (LICO)

Canada's LICO is not specific to a province or territory, it is assumed to be applicable to all communities across the country. However, LICO varies by size of community and the number of people in a household. The most recent LICO (for 2021) for households in communities with populations between 100,000 and 499,999 are listed in Table 2.

Table 2: [Before-tax Low-Income Cut-Off](#) for differing sized households for communities with populations between 100,000 and 499,999

Number of people in household	LICO
1 person	\$23,696
2 persons	\$29,498
3 persons	\$36,265
4 persons	\$44,031
5 persons	\$49,938
6 persons	\$56,323
7 persons	\$62,707

¹ The number of people in a household is defined as follows ('A' – adult; 'C' – child):

Household composition	One person	Two persons	Three persons	Four persons	Five persons
Individual	1A	-	-	-	-
Couple family	-	2A	2A+1C	2A+2C	2A+3C
Lone-parent family	-	1A+1C	1A+2C	1A+3C	1A+4C

LICO is used by governments and other organizations to determine who qualifies for various assistance programs. Nova Scotia’s free heat pump program (HomeWarming.ca) uses the LICO values shown in Table 2 plus a percentage (see Table 3).

Table 3: Household size and maximum allowable household income to qualify for Nova Scotia’s [heat pump program](#)

Number of people in household	Maximum household income	Maximum LICO value for household size	Percent over LICO
1 person	\$27,800	\$23,696	17%
2 to 4 people	\$52,600	\$44,031	19%
5 or more people	\$72,900	\$62,707	16%

For example, the maximum allowable household income for a four-person household to qualify for the heat program is \$52,600, or 19% above the four-person LICO of \$44,031.

The alternative CAIP

Nova Scotia’s heat pump program is an either-or situation: Either the household qualifies because its income is below the cutoff, or it does not qualify because its income is above the cutoff.

Unlike the province’s all-or-nothing support for heat pumps, the alternative CAIP proposed here has households with incomes below a certain limit receive the full CAIP (this is the Full CAIP Limit). Households above this point receive a partial CAIP that declines as their income increases (the point at which the CAIP is zero is the No CAIP Threshold). The Full CAIP Limit is determined from the LICO and depends on the number of people in the household. The rate at which the CAIP declines is set by the jurisdiction; for example, a one-dollar decrease in the CAIP for every \$100 above the Full CAIP Limit.

The structure of the alternative CAIP is shown in Figure 1.

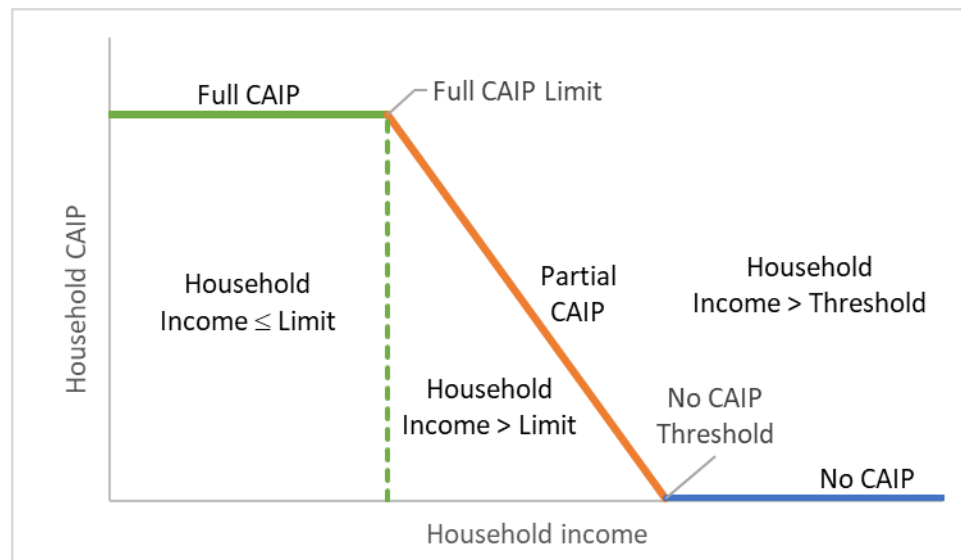


Figure 1: Structure of the alternative carbon-pricing system

CAIP limits and thresholds

The CAIP limits and thresholds are determined by the LICO for a specific household size. The full value of the CAIP is paid to the household as long as their income is less than the Full CAIP Limit (a multiple of the LICO). When the Full CAIP Limit is reached, the CAIP amount begins to decline (i.e., it is the Partial CAIP) until it reaches zero (the No CAIP Threshold). The rate of decline is determined by the jurisdiction. For example, a rapid decline would be a decrease of one dollar of CAIP for every dollar over the Full CAIP Limit; whereas a slow decline would be a decrease of one dollar of CAIP for every \$50 over the Full CAIP Limit.

In Table 4, we see an example of three different Full CAIP Limits determined by the value of the LICO multiplied by 1, 1.5, or 2 (that is, a zero percent increase, a 50% increase, and a 100% increase). For example, a three-person household has a LICO of \$36,265, the Full CAIP Limit for this household would be \$36,265, \$54,398, or \$72,530 for LICO multiples of 1, 1.5, and 2.

In this example, the CAIP reduces at a rate of one dollar for every \$50 of income earned over the Full CAIP Limit. For example, a household earning \$500 over the Full CAIP limit would see their CAIP decline by \$10. The No CAIP Threshold is \$79,665, \$97,798, and \$115,930 for LICO multiples of 1, 1.5, and 2 for the three-person household.

Table 4: Examples of Nova Scotia's alternative CAIP values for different sized households

Household size	LICO	LICO × 1		LICO × 1.5		LICO × 2	
		Full CAIP Limit	No CAIP Threshold	Full CAIP Limit	No CAIP Threshold	Full CAIP Limit	No CAIP Threshold
One person	\$23,696	\$23,696	\$48,496	\$35,544	\$60,344	\$47,392	\$72,192
Two persons	\$29,498	\$29,498	\$66,698	\$44,247	\$81,447	\$58,996	\$96,196
Three persons	\$36,265	\$36,265	\$79,665	\$54,398	\$97,798	\$72,530	\$115,930
Four persons	\$44,031	\$44,031	\$93,631	\$66,047	\$115,647	\$88,062	\$137,662
Five persons	\$49,938	\$49,938	\$105,738	\$74,907	\$130,707	\$99,876	\$155,676

Applying the alternative CAIP to Nova Scotia

The alternative CAIP consists of three parts. The CAIP itself, currently set by the federal government, although there is no reason it couldn't be set by the province; the Full CAIP Limit; and the No CAIP Threshold.

In the following examples, the Full CAIP Limit is the value of LICO × 2 and the reduction rate is \$1 in every \$50.

The following figure is a graphical representation of the alternative CAIP for LICO × 2 shown in Table 4. For example, a three-person family, would have a Full CAIP Limit of \$72,530 (double the three-person household LICO of \$36,265). This means that the family could have an income up to \$72,530 before the CAIP is reduced. The no CAIP threshold for the family is \$115,930.

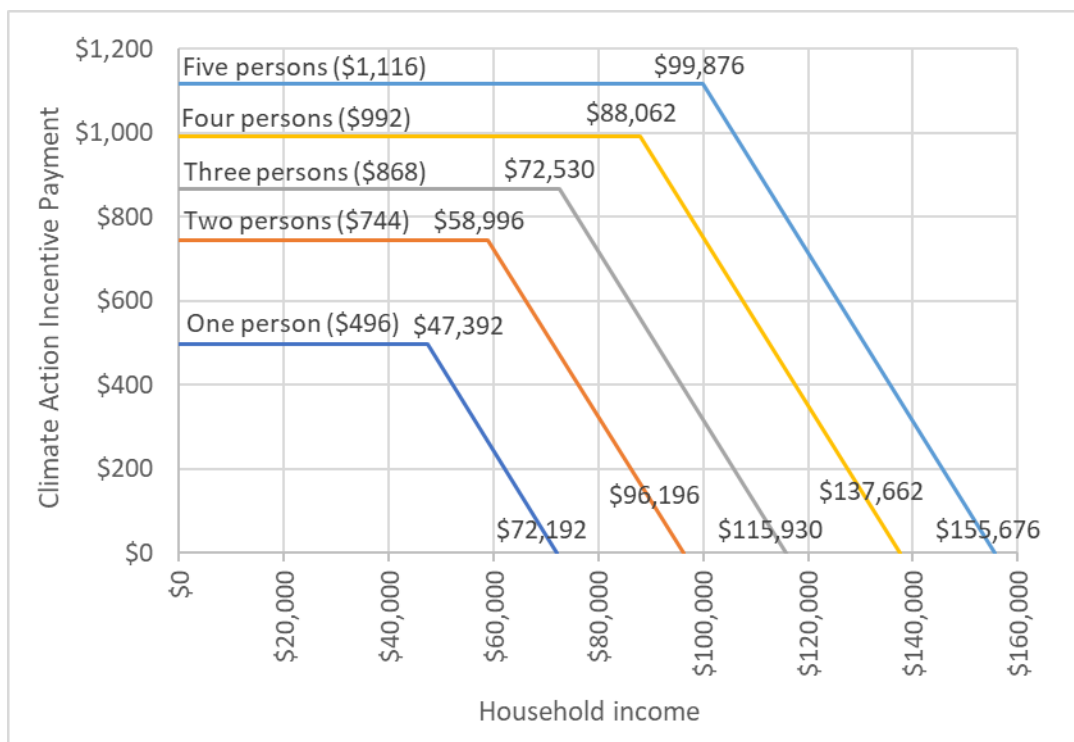


Figure 2: Alternative CAIP showing urban household sizes, the household CAIPs (in parenthesis), Full CAIP Limit, and No CAIP Threshold

Households with incomes between the Full CAIP Limit and the No CAIP Threshold receive a partial CAIP. Calculating the partial CAIP is a three-step process for both urban and rural households (this example uses urban household values):

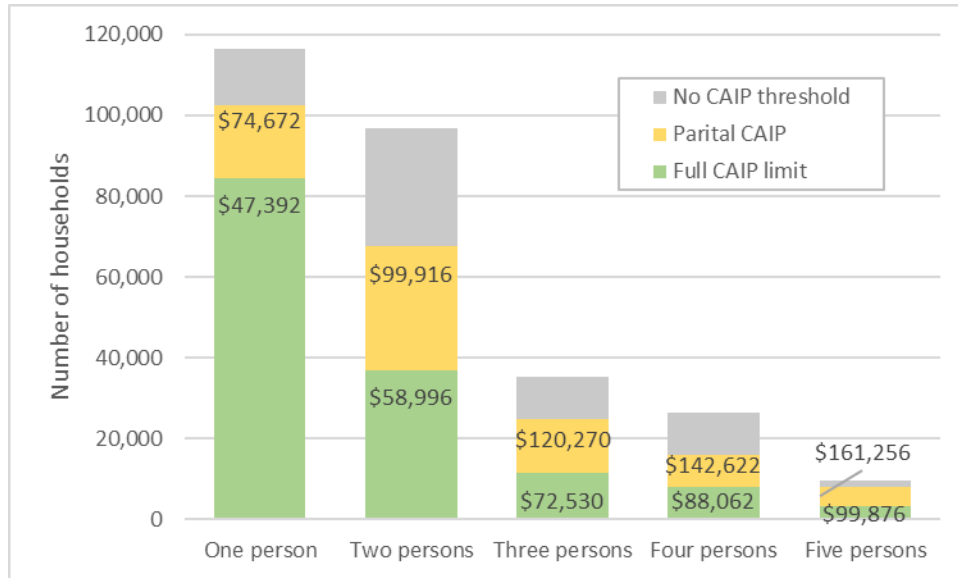
1. The difference between the household’s income and the Full CAIP Limit must be determined. The difference for a three-person household with an income of, for example, \$96,000 and the full CAIP limit (\$72,530) is \$23,470.
2. The difference is divided by \$50 to give the reduction in the CAIP. In the three-person household example, the CAIP reduction is \$469 (\$23,470 divided by 50).
3. The partial CAIP paid to the family is determined by subtracting the CAIP reduction from the full CAIP. In this example, the household receives \$399 (the household CAIP value of \$868 minus the reduction of \$469).

Impact of the example CAIP

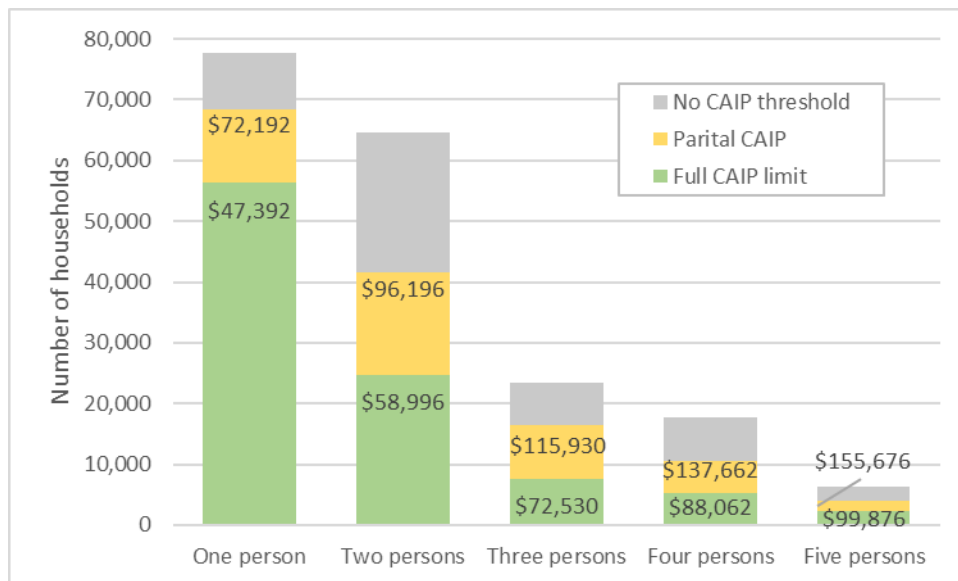
The example shown here is for a Full CAIP Limit of the LICO × 2 with a reduction rate of \$1 in every \$50 earned over the Full CAIP Limit. Other limits and reduction rates could be used. The example assumes that each household in the province has the specified number of occupants and only one person in the household receives the CAIP.

Currently, all Nova Scotian households with at least one member paying income tax receives the full CAIP based on the number of members in the household. In this example, it is assumed that all Nova Scotia households, both urban and rural, pay income tax, and 40% of households are urban and 60% are rural. This results in about 51% of all households receiving the full CAIP, 25% receive a partial CAIP, and 24% receive no CAIP (their incomes are above the No CAIP Threshold).

Figure 3 shows the number of urban and rural households receiving full and partial CAIPs, and no CAIP. The Full CAIP Limit is the same for the same size of urban and rural household (twice the LICO value), but the No CAIP Threshold is different both for the size of household and the CAIP, which is 10% higher for rural households.



Rural households by size and income limits for Full-CAIP limit and No-CAIP threshold (Total number of households is 284,550)



Urban households by size and income limits for Full-CAIP limit and No-CAIP threshold (Total number of households is 189,700)

Figure 3: Total number of rural (top) and urban (bottom) households by household size and their maximum income limits for full-CAIP limit and no-CAIP threshold (Statistics Canada)

The carbon tax is unchanged and is still applied to all purchases of carbon-intensive energy sources. The same revenues are collected.

However, in this example, the disposition of the carbon tax changes: 240,435 household receive the full CAIP; 119,740 receive the partial CAIP; and 114,075 do not receive the CAIP.

At present, assuming all urban and rural households receive their full CAIP, it costs about \$350 million.

If the alternative CAIP is used, it would cost about \$210 million.

In this example, the difference between the current and alternative system is about \$140 million. These funds could be used to assist low- and moderate-income household reduce their carbon tax by, for example, helping offset the cost of winter heating for households in need, expanding the free heat pump program, and supporting existing residential building upgrade programs.

Other carbon tax systems in Canada

There are two provinces with federally approved carbon-pricing systems other than the federal carbon-pricing system: Québec and British Columbia.

Québec

Québec is part of the [Western Climate Initiative](#)'s Cap-and-Trade system which includes California. Companies that are major emitters in the system have emissions caps and are expected to pay for emissions above their cap. This is done in an [auction](#) held every three months. The cost of a company's emissions is passed on to the consumers when products are purchased.

Unlike the federal system, this means the price of, for example, a litre of gasoline, is not fixed for a year at 14.31 cents per litre (as it is in Nova Scotia and other provinces and territories under the federal system), but can vary. The range of possible carbon prices for commonly used fuels in Québec in 2023 are listed in Table 5 (minimum and maximum values determined from auction lower and upper carbon price limits):

Table 5: Minimum and maximum possible carbon prices (cents per litre or cents per m³) for [2023](#)

Fuel	Minimum	Maximum
Gasoline	6.6	24.2
Diesel fuels	8.3	30.5
Light oil	7.6	27.9
Propane	4.3	15.7
Natural gas	5.2	19.2

The average carbon tax on gasoline in Québec was about 9.23 cents per litre in 2023.

While this is about 5 cents per litre less than Nova Scotia's carbon tax on gasoline, it is important to remember that [Québec does not have a carbon-tax rebate](#) as we do in Nova Scotia.

British Columbia

British Columbia has a federally approved carbon pricing system: a carbon tax on carbon-emitting energy sources (\$65/tonne this fiscal year) and a quarterly rebated, the [Climate Action Tax Credit](#) (CATC).

CATC is similar to the CAIP in that it is based on household size, the larger the household, the larger the CATC.

CATC is similar to the alternative CAIP proposed for Nova Scotia, in that the CATC is determined by the household's income. Like the alternative CAIP, when the income reaches the full CATC limit, it starts to decline to the No-CATC threshold, at which point the household does not receive the CATC.

The CATC value and income limits for 2023-24 are summarized in Table 6.

Table 6: BC's [CATC](#) rebates and income limits

Number of people in household	Maximum CATC value	Income limits	
		Full CATC limit	No CATC threshold
Single	\$447.00	\$39,115	\$61,465
Two	\$670.50	\$50,170	\$83,695
Three	\$782.00	\$50,170	\$89,270
Four	\$893.50	\$50,170	\$94,845
Five	\$1,005.00	\$50,170	\$100,420

There are a number of significant differences between the example alternative CAIP for Nova Scotia example shown above and BC's CATC:

- Nova Scotia's alternative CAIP is more generous than BC's CATC. For example, a three-person household has a full CAIP of \$868, whereas BC's CATC is \$782.
- The proposed alternative CAIP has higher income levels for those receiving the full CAIP than does BC's CATC. In Nova Scotia, the Full CAIP Limit is a multiple of the LICO, whereas in BC, the Full CATC Limit is \$39,155 for single-person households, and \$50,170 for all other households, regardless of the number of occupants.
- The income at which no rebate is paid is also higher in the alternative CAIP than in BC's CATC program. For example, in a four-person household, the alternative full-CAIP limit is \$88,062 and its no-CAIP threshold is \$137,662, while BC's CATC, the full-CATC limit is \$50,170 and the no-CATC threshold is \$94,845.

The future of Nova Scotia's carbon-pricing system

As the prime minister's decision to remove the carbon tax from heating oil showed, Nova Scotia needs an alternative to its current carbon-pricing system.

At present, all households receive the same CAIP (based on the number of occupants) regardless of the energy they use for heating and transportation. Households using electric heat pumps pay far less carbon tax than comparable-sized ones using oil furnaces. Similarly, drivers of electric vehicles pay far less carbon tax than those driving gasoline-powered vehicles.

In some cases, the CAIP is less than the carbon tax paid by [households](#) using oil heat and driving gasoline vehicles. Many of these are low- and moderate-income [households](#).

This report has described a progressive carbon-pricing system that meets the objectives of the federal system by retaining the carbon-tax, helping Nova Scotians who need assistance with their energy costs, and encouraging the purchase of low-emissions technology by those unable to afford it.

This is in keeping with [Environment and Climate Change Canada](#)'s statement that carbon pricing is "about recognizing the cost of pollution and accounting for those costs in daily decisions".

In 2022, the premier wanted a [Made-in-Nova-Scotia](#) carbon pricing system; it was [rejected by the federal government](#).

Since the federal government has accepted British Columbia's carbon pricing system, they would have a hard time rejecting the alternative to Nova Scotia's carbon-pricing system described in this report.

Plus, it is made in Nova Scotia.

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