

June 14, 2023



Fiscal Analysis of Canada's Support for Volkswagen's Electric Vehicle Battery Manufacturing Plant



OFFICE OF THE PARLIAMENTARY BUDGET OFFICER
BUREAU DU DIRECTEUR PARLEMENTAIRE DU BUDGET

The Parliamentary Budget Officer (PBO) supports Parliament by providing economic and financial analysis for the purposes of raising the quality of parliamentary debate and promoting greater budget transparency and accountability.

In response to interest from several Members of Parliament, this report provides a static cost estimate of the entirety of the Government of Canada's funding support for Volkswagen's electric vehicle battery manufacturing plant, as well as the economic and budgetary impacts of the plant's construction.

Lead analyst:

Jill Giswold, Senior Analyst

Contributors:

Chris Matier, Director General

Nora Nahornick, Senior Analyst

Caroline Nicol, Senior Analyst

Jason Stanton, Advisor-Analyst

Prepared under the direction of:

Jason Jacques, Director General

Yves Giroux, Parliamentary Budget Officer

Nathalie Desmarais, Marie-Eve Hamel Laberge, Martine Perreault and Rémy Vanherweghem assisted with the preparation of the report for publication.

For further information, please [contact the Office of the Parliamentary Budget Officer](#).

Yves Giroux

Parliamentary Budget Officer

Table of Contents

Highlights.....	1
Summary	2
Background.....	4
How much does it cost taxpayers?.....	7
What is the economic impact?	10
Notes.....	11

Highlights

The PBO estimates that the government will need to pay Volkswagen up to \$16.3 billion over the period of the agreement.

This report only examines the economic impact of the new facility's construction, which is marginal. We estimate that construction of the plant would increase real GDP by 0.01 per cent above its baseline projection by the end of 2027 and increase the level of employment by 1,400 jobs by that same time.

The net budgetary impact of the plant's construction is expected to be approximately equal to the government's \$0.7 billion contribution.

PBO continues to examine the government's support and will undertake an economic and fiscal analysis of the production support over the coming months.

Summary

The government recently announced funding support to Volkswagen for the company's electric vehicle battery manufacturing plant set to be built in southern Ontario. The federal support is two-part:

- An estimated \$13.2 billion in production support to match the U.S. *Inflation Reduction Act's* (IRA) Advanced Manufacturing Production Credit;¹ and
- A \$0.7 billion contribution through the Strategic Innovation Fund (SIF) for the construction of the plant.²

Parliamentarians expressed interest for the Parliamentary Budget Officer (PBO) to undertake analysis of the Government of Canada's electric vehicle battery manufacturing facility agreement with Volkswagen.

In response, this report provides an estimate of the government's funding support for the plant, as well as the economic and budgetary impacts of the plant's construction.

The PBO estimates that the government's financial commitment to Volkswagen will total around \$16.3 billion over the period of the agreement. This includes an estimated \$12.8 billion in production support, the \$0.7 billion contribution through the SIF, and an estimated \$2.8 billion in tax adjustments needed to achieve an after-tax equivalency to support offered under the U.S. IRA.

The construction of Volkswagen's plant is expected to marginally increase real GDP in Canada by 0.01 per cent above its baseline projection by 2027 and increase the level of employment by 1,400 jobs by that same time. We estimate the net budgetary impact of the plant's construction to be approximately equal to the government's \$0.7 billion contribution through the SIF.

PBO continues to examine the government's support and will undertake an economic and fiscal analysis of the production support over the coming months.

Background

As part of the enhanced targets under the Paris Agreement, the Government of Canada has committed to reduce greenhouse gas emissions by 40 to 45 per cent from 2005 levels by 2030.

In previous federal budgets, the government has outlined environmental measures to meet its Paris targets. A key component of this is the sale and use of zero-emission on-road vehicles.

According to Budget 2023, since 2015 the government introduced \$3.9 billion in incentives and measures related to the affordability and accessibility of zero-emission vehicles and their charging stations. Notable highlights include:

- A reduction in the corporate income tax rates for zero-emission technology manufacturers (Budget 2021, extended in Budget 2023);
- The intention to mandate that all new sales of light-duty vehicles be zero-emission vehicles by 2035 (Budget 2022);
- \$1.7 billion over five years, starting in 2022-23, to extend the Incentives for Zero-Emission Vehicles program until 2025 (Budget 2022);
- \$0.4 billion over five years, starting in 2022-23, to increase zero-emission vehicle charging stations in sub-urban and remote communities through the Zero-Emission Vehicle Infrastructure Program (Budget 2022); and
- A refundable tax credit equal to 30 per cent of the cost of investments in new machinery and equipment used to manufacture zero-emission vehicles (Budget 2023).

As part of the movement towards zero-emissions vehicles, the government recently announced \$13.9 billion in money for Volkswagen's electric vehicle battery manufacturing plant set to be built in southern Ontario. The federal support is two-part:

- An estimated \$13.2 billion in production support to match the U.S. *Inflation Reduction Act's* Advanced Manufacturing Production Credit (Box 1); and,
- A \$0.7 billion contribution through the Strategic Innovation Fund (SIF) for the construction of the plant.

The Government of Ontario announced an additional \$0.5 billion in direct support to Volkswagen.³

Box 1- *Inflation Reduction Act* – Advanced Manufacturing Production Credit

The Advanced Manufacturing Production Credit (AMPC) is one of several measures under the U.S. *Inflation Reduction Act* (IRA) aimed at increasing domestic production of clean energy technologies.

The AMPC is a per-unit tax credit applied to various eligible solar, wind, and battery components that are produced and sold by the manufacturer.

For battery cells, the credit is in the amount of USD\$35 per kilowatt-hour (kWh).

The tax credit is available in full until 2029, with an annual phase out by 25 percentage points beginning in 2030. After 2032, the credit will no longer be in place.

Following the government's announcement, parliamentarians expressed interest for the PBO to undertake analysis of the Government of Canada's electric vehicle battery manufacturing facility agreement with Volkswagen.

In response, the PBO sent information requests to the [Minister of Finance](#) and the [Minister of Innovation, Science and Industry](#) seeking details on the agreement.

This report provides a preliminary cost estimate of the entirety of the Government of Canada's funding commitments to Volkswagen's manufacturing plant. While we estimate the economic and budgetary impacts of the construction of the plant, work is ongoing regarding the industrial facilities' production.

How much does it cost taxpayers?

As noted earlier, the federal government's \$13.9 billion announcement includes:

- An estimated \$13.2 billion in production support to match the U.S. *Inflation Reduction Act's* (IRA) Advanced Manufacturing Production Credit (AMPC); and,
- A \$0.7 billion contribution through the Strategic Innovation Fund (SIF) for the construction of the plant.

To estimate the cost of the production support, the PBO assumed the electric vehicle battery manufacturing plant would reach full annual production capacity of approximately 90 gigawatt-hour (GWh) by completion.⁴ The credit of USD\$35 per kilowatt-hour (kWh) was applied to the estimated production over the horizon of the credit period and converted to Canadian dollars using a six-year average of forecasted exchange rates from the PBO's March 2023 baseline projection. PBO estimates the cost of the production support to be approximately \$12.8 billion (Figure 1).

PBO takes the \$0.7 billion contribution through SIF as given.

Based on PBO research, there is an additional cost that is excluded from these figures – more federal money to offset the taxes Volkswagen will need to pay on the federal production support. The U.S. AMPC is provided as a tax credit, hence there is no additional tax incurred. The Canadian government has not published details on the specific mechanism of its production support. However, the Canadian *Income Tax Act* stipulates that any amount of money received by a business from a government in the form of a contribution, grant, or subsidy is included in the consideration of income if that amount has not been deducted from the capital cost of

property acquired due to the support and is therefore subject to applicable corporate income taxes.⁵ With this in mind, the government would need to offer a tax adjustment to ensure an after-tax equivalency to the support offered under the IRA that it has publicly stated on numerous occasions.

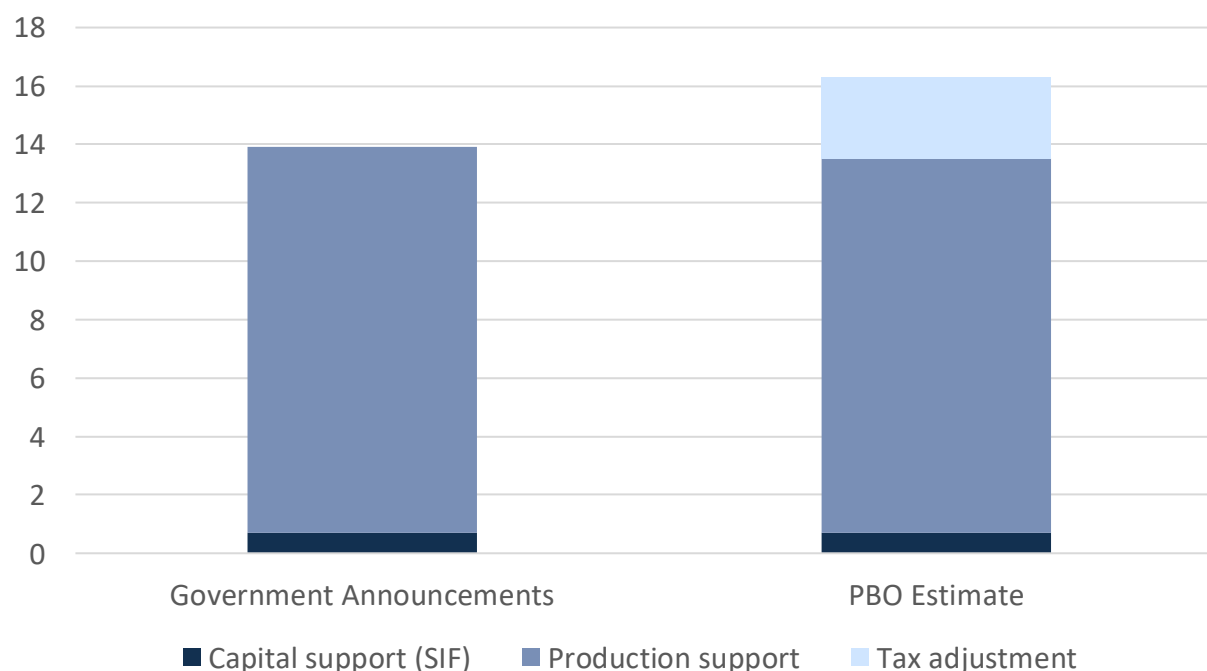
To account for the tax treatment, PBO calculated a tax adjustment based on an assumed effective corporate income tax rate. We estimate the tax adjustment required to keep Canada's offer in line with the U.S. IRA to be approximately \$2.8 billion.

Altogether, the PBO estimates that the federal government's financial obligation to Volkswagen will total around \$16.3 billion over the period of the agreement. This estimate is dependent on the exchange rate and actual output and sales volumes of Volkswagen's plant.

Figure 1

Federal support for Volkswagen's electric vehicle battery manufacturing plant

(\$ billions)



Fiscal Analysis of Canada's Support for Volkswagen's Electric Vehicle Battery Manufacturing Plant

Textual description:

Federal Support, \$ billions	Government Announcements	PBO Estimate
Capital support (SIF)	0.7	0.7
Production support	13.2	12.8
Tax adjustment	0	2.8
Total	13.9	16.3

Sources:

Department of Finance; Department of Innovation, Science and Economic Development; Office of the Parliamentary Budget Officer calculations.

What is the economic impact?

To estimate the economic impact of constructing Volkswagen's electric vehicle battery manufacturing plant in Canada (to be completed in 2027⁶), PBO simulated its macroeconomic model based on the assumption of approximately \$7 billion in incremental business investment (that is, investment in non-residential construction and investment in machinery and equipment). Further, PBO assumed that monetary policy would respond to the increase in economic activity and inflationary pressures.

Based on PBO's macroeconomic model and assumptions, we estimate that the construction of VW's battery manufacturing plant would increase real GDP in Canada by 0.01 per cent above its baseline⁷ projection by the end of 2027.⁸ The construction of the Volkswagen plant is estimated to increase the level of employment by 1,400 jobs by the end of 2027.⁹

In terms of the cumulative budgetary impact, we estimate that the increase in revenues associated with the incremental economic activity will effectively offset the increase in public debt charges resulting from higher interest rates and increased borrowing to finance the government's \$0.7 billion contribution to Volkswagen through the Strategic Innovation Fund. Consequently, the net budgetary impact of the construction of VW's battery manufacturing plant is approximately equal to the government's \$0.7 billion contribution.

PBO continues to examine the government's support and will undertake an economic and fiscal analysis of the production support over the coming months.¹⁰

Notes

¹ Prime Minister of Canada, [Volkswagen's new electric vehicle batter plant will create thousands of jobs.](#)

² [Hansard – 194 \(May 10, 2023\).](#)

³ Office of the Premier of Ontario, [Volkswagen's New Electric Vehicle Battery Plant Will Create Thousands of New Jobs.](#)

⁴ Volkswagen AG, [Volkswagen and PowerCo SE will build their largest cell factory to date in Canada.](#)

⁵ Department of Justice, [Income Tax Act.](#)

⁶ *Ibid*, Note 2.

⁷ Based on PBO's March 2023 Economic and Fiscal Outlook (adjusted to reflect the actual results of the National Accounts for the fourth quarter of 2022 and historical revisions).

⁸ Based on PBO's assumed profile of incremental business investment, the peak real GDP impact (of 0.03 per cent) would occur in mid-2025.

⁹ Based on PBO's assumed profile of incremental business investment, the peak employment impact (of 3,100 jobs) would occur at the start of 2026.

¹⁰ See assertions by the Minister of Industry, Science and Economic Development at the [press conference of April 21, 2023.](#)

RP-2223-008-S_e

T_RP_3.0.0

© Office of the Parliamentary Budget Officer, Ottawa, Canada, 2023