

F-35 PROGRAM IN CANADA

ECONOMIC IMPACT REPORT

FEBRUARY 2020



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Executive Summary

Canada's participation in the F-35 Lightning II Program began in 1997, allowing Canadian industry to be a part of the international program to build the 5th Generation fighter for the US and allied nations. Even before Canada's decision to become a program partner in 2002, Canadian industry was already contributing to the Joint Strike Fighter (JSF) project.

As a partner on the F-35 Lightning II program, Canadian industry is actively contributing to the production of the F-35 aircraft and Canadian companies are part of its global supply chain. Each of the F-35s produced to date contains Canadian-made components. In turn, the F-35 is contributing to the Canadian aerospace industry, as well as many other sectors identified in this report, by developing capabilities and bringing new manufacturing and engineering technologies to the country. Currently, 100% of the F-35 work in Canada is an export.

OMX performed an economic impact of the F-35 program in Canada for Lockheed Martin in 2015 and 2017, and has been requested to update the study with the most current Canadian F-35 program industrial data. For this report, OMX utilized supplier and contract data from Lockheed Martin and Pratt & Whitney.

The following table summarizes the key impacts to Canada from the F-35 program, including the impacts to Gross Domestic Product (GDP) and jobs.

TYPE	AMOUNT	IMPACT ON GDP**	JOBS SUSTAINED/YEAR**
Current Production Impact (2007-2019)	\$2,415,976,538	\$2,110,232,641	1,418
Total Production Impact (2007-2046)	\$13,264,417,816	\$11,742,653,135	2,525
Total Sustainment Impact (2026-2058)	\$5,065,407,695	\$5,149,265,425	1,674

* Based on Statistics Canada 2015 National Input-Output Multipliers to reflect the impacts of the company's direct operations, the company's supply chain and associated consumer spending.

** Full-Time Equivalent (FTE) positions defined according to Statistics Canada as the total hours worked divided by average annual hours worked in full-time jobs. FTE based on average annual spending.

The Economic Impact of the F-35 Program in Canada

As a partner on the F-35 Lightning II program, Canadian industry is actively contributing to the production of the F-35 aircraft. The program is contributing to the Canadian aerospace industry, as well as other supporting sectors identified in this report, by developing capabilities and bringing new manufacturing and engineering technologies to the country. Currently, 100% of the F-35 work in Canada is an export.

The F-35 Program will sustain significant, long term economic impacts to Canada. These impacts are based on total expected spending between 2007 and 2058.

Total Economic Impact *

\$16.9 Billion

Gross Domestic Product

Jobs Sustained/Year by Production **

2,525

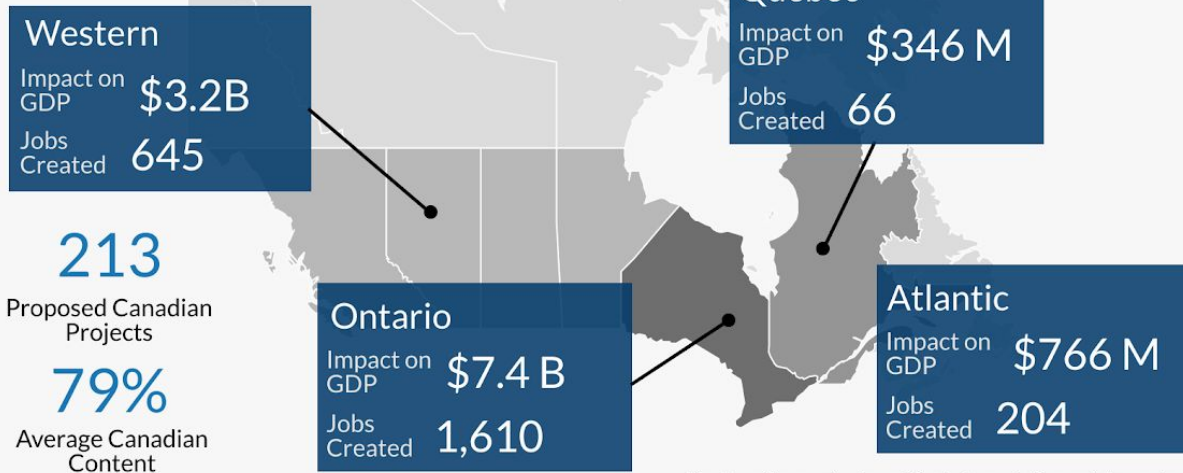
Between 2007 and 2046

Jobs Sustained/Year by Sustainment **

1,674

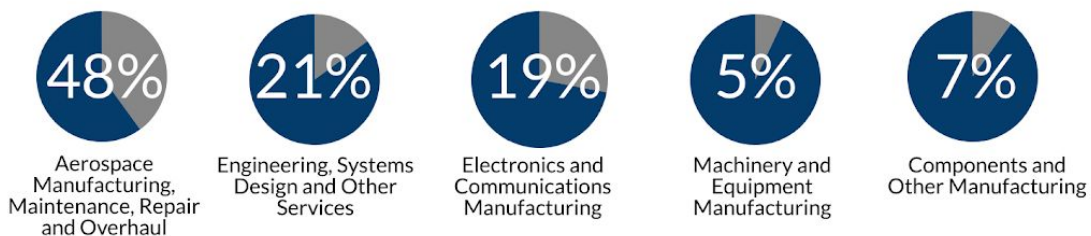
Between 2026 and 2058

The F-35 Program will impact companies from across Canada, based on the location of contracts awarded.



Regional impacts do not include sustainment impacts.

Sector Impacts



*Based on Statistics Canada 2015 input-output multipliers to reflect direct, indirect and induced impacts to the economy.

**Full time equivalent positions based on average annual spending.

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Methodology

OMX (theomx.com) is an independent, third-party digital platform utilized to measure, track and report economic impacts from procurement projects and companies by leveraging economic impact multipliers from Statistics Canada. While the OMX software platform is a dynamic tool that manages, tracks and visualizes economic impacts of specific programs for clients, OMX also has a specialized and separate arm of its business to focus solely on analyzing economic impacts as an independent third party (theomx.com/analyze). OMX has established a specific methodology for analytics projects, which includes utilizing supplier data provided by OMX's client. Working with economic impact multipliers from Statistics Canada, OMX analyzes supplier contract data and calculates the estimated impact of client activity on the Canadian economy in dollars and jobs.

This methodology was designed with feedback from economists, the Data Catalyst Group, and Statistics Canada. All initial data was provided to OMX by Lockheed Martin Aeronautics and its suppliers unless otherwise cited.¹ Statistics Canada 2015 Input-Output Multipliers were used to estimate the impacts on GDP and jobs.²

¹ Figures provided to OMX in USD were converted to CAD using the Bank of Canada annual exchange rate for 2019.

² The outputs calculated by OMX, in dollars and jobs, reflect direct, indirect and induced impacts to the Canadian economy.

Economic Impacts from the F-35 Program in Canada

This section includes a detailed analysis of the total economic impacts of the contracts awarded. This analysis includes total impacts to Canada as well as the regional and sectoral distribution of impacts.

Current Impacts from Program Activities

The below analysis details the total current economic impacts across Canada, including the total impacts to GDP and the jobs sustained by contracts awarded between 2007 and 2019.

\$2,415,976,538	\$2,110,232,641	1,418
CONTRACTS AWARDED	TOTAL IMPACT ON GDP*	JOBS SUSTAINED/YEAR IN ECONOMY**

* Based on Statistics Canada 2015 National Input-Output Multipliers to reflect the impacts of the company's direct operations, the company's supply chain and associated consumer spending as a result of contracts awarded.

** Full-Time Equivalent (FTE) positions defined according to Statistics Canada as the total hours worked divided by average annual hours worked in full-time jobs.

Total Production Impacts

The table below details the total economic impact to Canada across F-35 production, based on expected opportunity value as a result of the program between 2007 and 2046.

\$13,264,417,816	\$11,742,653,135	2,525
EXPECTED OPPORTUNITY VALUE	TOTAL IMPACT ON GDP*	JOBS SUSTAINED/YEAR IN ECONOMY**

* Based on Statistics Canada 2015 National Input-Output Multipliers to reflect the impacts of the company's direct operations, the company's supply chain and associated consumer spending as a result of contracts awarded.

** Full-Time Equivalent (FTE) positions defined according to Statistics Canada as the total hours worked divided by average annual hours worked in full-time jobs.

Total Sustainment Impacts

The table below details the total impacts from F-35 sustainment in Canada, based on expected spending in the country between 2026-2058.

\$5,065,407,695	\$5,149,265,425	1,674
EXPECTED OPPORTUNITY VALUE	TOTAL IMPACT ON GDP*	JOBS SUSTAINED/YEAR IN ECONOMY**

* Based on Statistics Canada 2015 National Input-Output Multipliers to reflect the impacts of the company's direct operations, the company's supply chain and associated consumer spending as a result of contracts awarded.

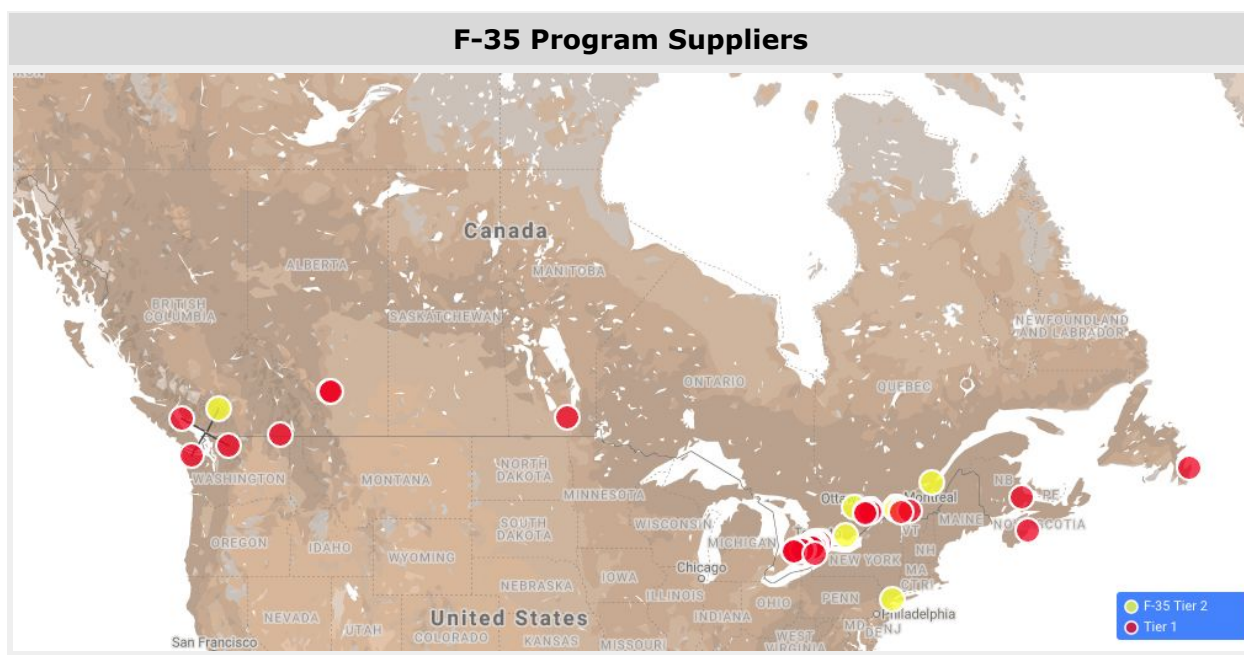
** Full-Time Equivalent (FTE) positions defined according to Statistics Canada as the total hours worked divided by average annual hours worked in full-time jobs.

Geographic Economic Impact

The F-35 program supports various suppliers across Canada. The following section details the impacts of the F-35 program across Canada.

Map

The map below details the location of companies awarded contracts as a result of the F-35 program. Click on the map or visit https://theomx.com/embedded_maps/cD-BaW25QpDBWgUH4yHczA for further company information including detailed company profiles.



Impacts Across Regions

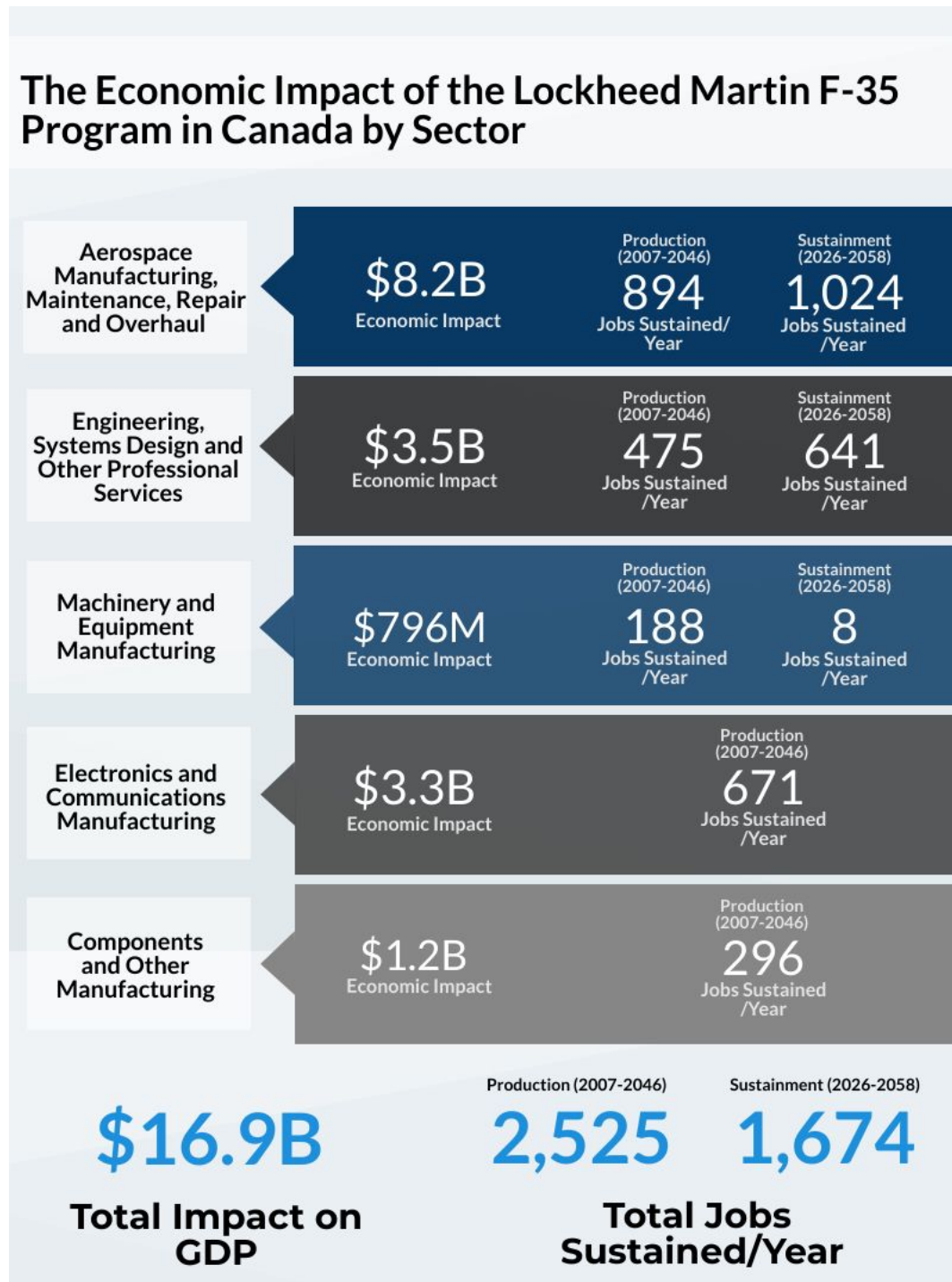
The regional outputs visualized in this section measure the economic impact across Canada of work done in each region. The below chart details the value of contracts awarded, impacts to GDP and jobs sustained across Canadian regions.³

PROVINCE	SPEND	IMPACT ON GDP	JOBS SUSTAINED
Western	\$4,153,986,831.92	\$3,216,863,028.11	645
Ontario	\$7,865,300,764.47	\$7,411,799,471.07	1,610
Quebec	\$464,336,151.65	\$345,891,559.79	66
Atlantic	\$778,815,946.37	\$766,096,747.75	204

³ Some values may differ from total impacts due to unconfirmed location. Regional impacts do not include sustainment impacts.

Impacts Across Sectors

The following provides breakdowns of the F-35 programs's spending across sectors, including impacts on GDP and jobs.

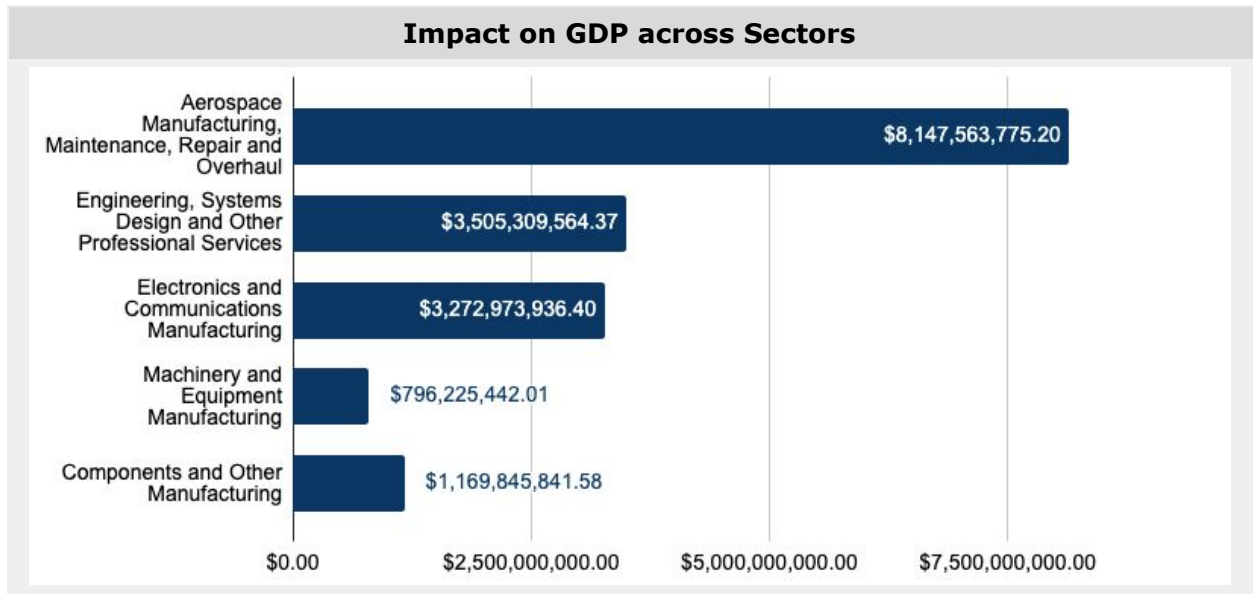


OMX F-35 Program in Canada Economic Impact Report

Statistics Canada 2015 Input-Output Multipliers
Full Time Equivalent (FTE) positions based on average annual spending
All figures in CAD

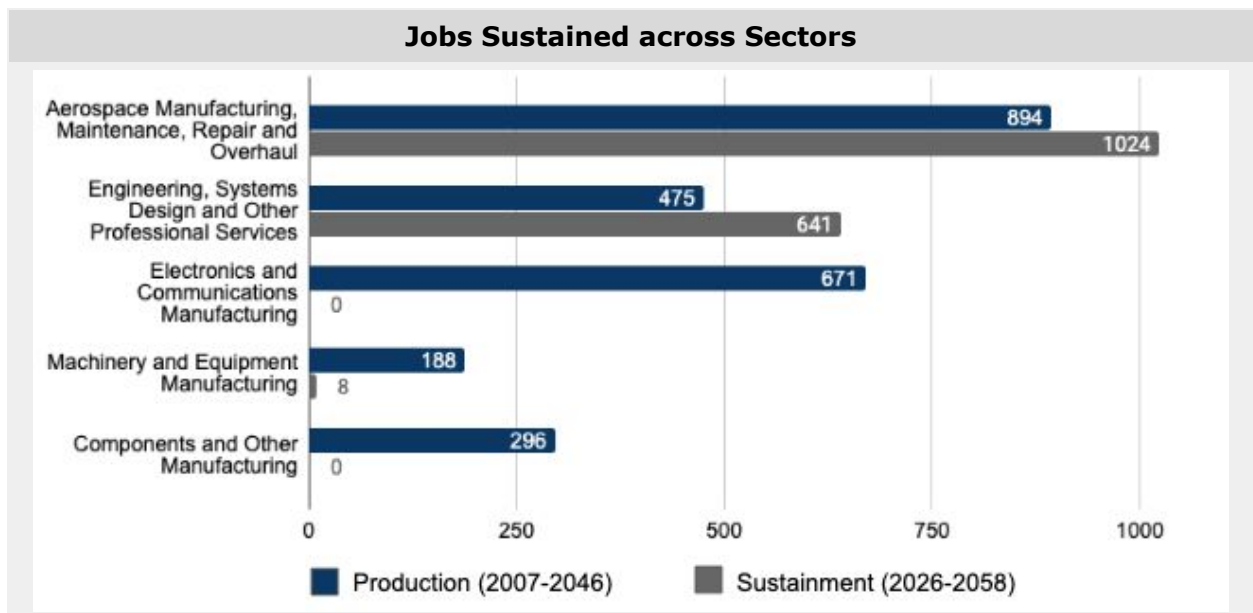
Impact to GDP

The graph below details the impact on GDP across sectors as a result of F-35 program contracts awarded.



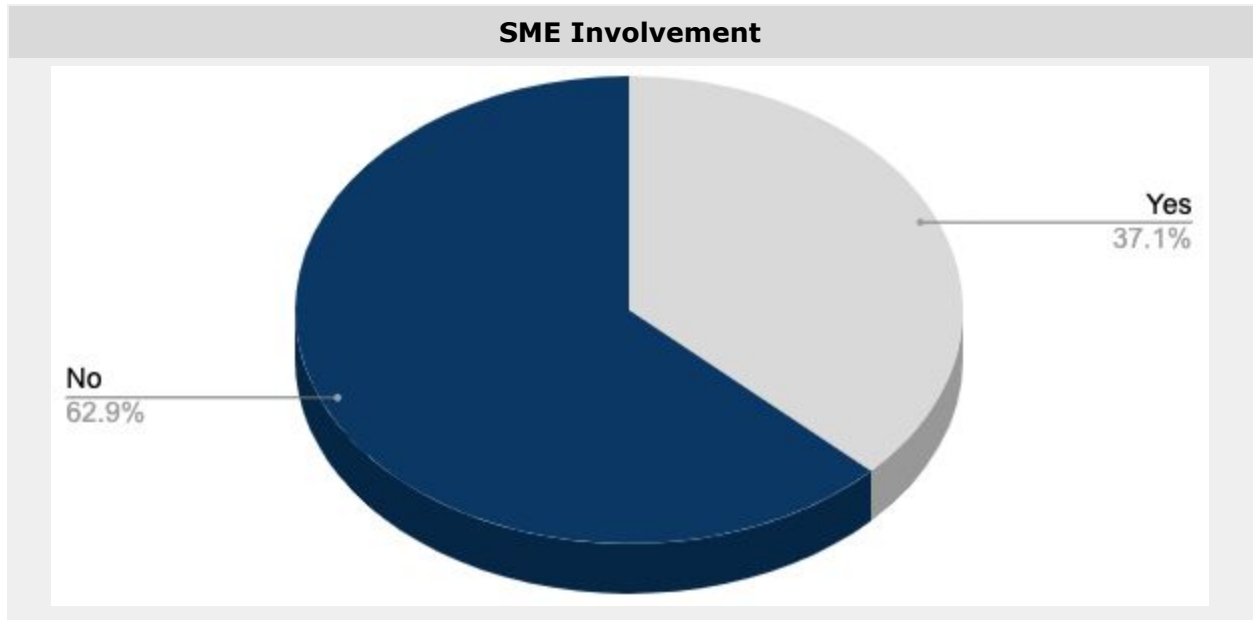
Jobs Sustained

The graph below details the jobs sustained across Canada as a result of F-35 program contracts.



Small and Medium Enterprise (SME) Involvement

The chart below illustrates the percentage of F-35 program suppliers that are SMEs, based on the number of companies with less than 250 employees. 37% of F-35 projects in Canada are with Canadian SMEs. This number is expected to increase as Lockheed Martin identifies further SMEs in future activities and throughout its supply chain.



Appendix I: Glossary

TERM	DEFINITION
Gross Domestic Product (GDP)	Gross Domestic Product (GDP) measures the value of final goods and services produced within an economy within a certain period.
Economic Output	Economic output is a measure of the total economic activity occurring within a given period and refers to the total value of all goods and services produced within an economy within that period.
Jobs	The annual FTE jobs sustained within the economy resulting from company operations, supply chain, and associated consumer spending.
Full Time Equivalent (FTE)	Full-Time Equivalent (FTE) positions defined as the total hours worked divided by average annual hours worked in full-time jobs.
Direct Effects	Impacts on economic output, employment and GDP from generating goods and services and their own value-added beyond the material inputs/purchases that they sourced from other industries. Referred to throughout this report as “the impacts of the company’s direct operations.”
Indirect Effects	Impacts on economic output, employment and GDP due to purchases and other firms/industries providing the goods needed for the production of goods and services (ie. steel, chemicals, machinery, other services, etc.) Referred to throughout this report as “the impacts from supply chain.”
Induced Effects	Economic impacts resulting from consumer spending induced by labour incomes derived from production under the aforementioned direct and indirect industrial activity. Referred to throughout this report as “the impacts from associated consumer spending.”

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