Appendix O.1

KPMG Atlantic Gold Corporation Economic Impact Assessment of the Beaver Dam Mining Project – November 2020
Completed for the Updated 2021 Beaver Dam Mine EIS

KPMG

ATLANTIC GOLD CORPORATION

Economic Impact Assessment of the Beaver Dam Mining Project

Final Report

November 2020

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Executive Summary

Atlantic Gold has retained the services of KPMG to evaluate the economic benefits stemming from its Beaver Dam mining project in Nova Scotia and, more precisely, from its construction and operation activities. The Beaver Dam project is a gold mine with a projected production over the life of mine (LOM) of 199,358[1] ounces. Mine operations are expected to start after a one (1) year construction period and would stay in operation for five (5) years.

The initial or capital investment (CAPEX) currently being considered by Atlantic Gold is estimated at $27.7M and average annual operating costs (OPEX) at $83.0M. Based on the most recent NI 43-101 Technical Report (March 2019) and information provided by Atlantic Gold [2], KPMG calculated the direct and indirect economic impacts of construction and operating activities using the Statistics Canada Input-Output (I-O) model. This model is the benchmark model for analyzing economic benefits in the Canadian economy. The table below summarizes the economic impact on Canada and Nova Scotia stemming from construction and operating spend of Atlantic Gold for the Beaver Dam project.

The construction phase would generate $18.3M in value added for Nova Scotia economy, support 137 jobs and generate $1.3M and $0.5M in provincial and municipal government revenues, respectively. Operating activities would generate $31.2M in value added annually, support 311 jobs in the province and provide $4.8M and $1.2M in provincial and municipal government revenues.

Impacts on the Canadian economy as a whole would be higher as some of the subcontractors working on site, as well as some suppliers, would come from other Canadian provinces. For construction and operation activities, the impacts on the Canadian economy would be 15% and 63%, respectively, higher than provincial impacts (based on value added).

Table 1: Summary of the Economic Impact (direct and indirect) on Canada and Nova Scotia Stemming from Construction and Operation Activities for the Beaver Dam mining project
For one year of construction and for a typical operating year, in millions of dollars

	Canada		Nova Scotia	
In millions of dollars	Construction (1 year)	Operation (Per year)	Construction (1 year)	Operation (Per year)
Value added	21.1	51.0	18.3	31.2
Government revenues	1.3 *(federal only)*	3.4 *(federal only)*	1.3 *(provincial only)* 0.5 *(municipal only)*	4.8 *(provincial only)* 1.2 *(municipal only)*
In person-year (FTE equivalent)				
Jobs created	157	421	137	311

[1] Based on the forecast recovered quantity considering a conversion factor and an average LOM recovery rate forecast estimated at 90% based on information provided by Atlantic Gold.

[2] KPMG did not audit nor validate the figures provided by Atlantic Gold.

It should be noted that this report does not explore dynamic economic impacts on the Nova Scotia economy, such as:

– Additional investments in Nova Scotia resulting from the increased activity stimulated by the project;

– Reinforcement of Nova Scotia's mining sector;

– Spillover effects resulting from the expertise of professional firms and contractors from other provinces;

– Improvement of living conditions in certain communities, as salaries in the mining sector are significantly higher than regional average;

– Reduction of worker migration to other provinces.

1. Introduction

1.1 Mandate overview

Atlantic Gold has retained the services of KPMG to evaluate the economic benefits stemming from the development of the **Beaver Dam** mining project and, more precisely, from construction and operating activities related to the project.

Atlantic Gold is currently focused on the development of its portfolio of advanced gold development properties located in Nova Scotia. The company currently holds four gold development projects in the province (Touquoy, Beaver Dam, Cochrane Hill and Fifteen Mile Stream). This report focuses on the Beaver Dam project only.

This evaluation was carried out based on the information available as of January 2020. The information primarily came from the technical report carried out by Ausenco technical services and published in March 2019[3]. Additional data and information were provided by Atlantic Gold where more detail was required for the purposes of the analysis.

1.1.1 Objectives

The objective of the mandate is to evaluate the economic contribution of the investments and overall activities related to the Beaver Dam mining project. The economic impact is based on the total capital expenditures (CAPEX) and the operational expenditures (OPEX) over the life of mine (LOM). The economic impacts are measured in terms of:

– jobs directly sustained by Atlantic Gold in Nova Scotia and Canada;
– jobs indirectly sustained in Nova Scotia and Canada by all of Atlantic Gold's expenditures;
– value added or wealth created in Nova Scotia and Canada (from capital and operation expenditures);
– taxes paid directly or indirectly (property taxes, income taxes, corporate taxes, taxes on products and royalties), at the municipal, provincial and federal levels.

1.2 Methodological Framework

1.2.1 Static Economic Impacts

This study presents the static economic impacts, which are the multiplying effects of the initial spending that Atlantic Gold plans to spend on the project in Nova Scotia. In short, these impacts measure the cascading effects that are produced by an injection of cash in a given territory. The more integrated the economy, or the more initial spending engages sectors of activity already in the region, the greater the economic benefits.

The cascading economic benefits are divided into two main groups – the direct and indirect effects of intended spending:

– The **direct effects** are the revenues directly attributable to the spending involved in the project. These revenues are generated by the principals authorizing the expansion project (meaning Atlantic Gold and its general contractors). These are the salaries paid to Atlantic Gold's or prime contractors staff and other revenues generated (profits, amortization);
– The **indirect effects** are the income effects stemming from a demand for goods and services generated by the project activities in other industrial sectors. We are referring here to the impacts on the suppliers selling their goods and services to the principals investing in the project. For example, these include professional and engineering services, specialized

[3] Moose River Consolidated Project, Nova Scotia, Canada, NI 43-101 Technical Report on Moose River Consolidated (Report Effective Date: March, 2019)

technical services (surveying, drilling, etc.), mechanical, energy, machinery and equipment services and the like. Indirect impacts therefore also include salaries paid to employees of the various suppliers as well as other revenues generated by these suppliers (profits, amortization).

The direct and indirect economic impacts were calculated using Statistics Canada Input-Output (I-O) model. This model is designed to simulate the activity of a project, a company or an industry (based on the number of jobs, production value, expenditures or sales) and measure its direct and indirect effects on the national and provincial economies.

This study does not include an assessment of the dynamic impacts of Beaver Dam project operations or its investments. Dynamic economic impacts occur when a project contributes, in addition to its effect of spending on the territory's economy, to increase the overall economic performance of firms, a region or an industrial sector. This improvement in performance can take various forms, such as improving worker productivity, developing new skills, reducing production costs or increasing exports. The scope of these impacts is generally much broader than the project under study, and the benefits generated can be felt in many companies, including customers and suppliers.

This report does not include the benefits stemming from exploration activities. Spending and economic impacts related to exploration activities are covered in the full report that will present Atlantic Gold's overall activities in Nova Scotia.

1.3 Basic Assumptions Underlying This Evaluation

The evaluation of the economic benefits stemming from the Beaver Dam mining project is based on numerous assumptions, the most important ones being as follows:

- The analysis is based on the project costs that were provided to KPMG by Atlantic Gold. The information mainly comes from the technical report published in March 2019, but some figures were refined based on further information sent by Atlantic Gold to KPMG. KPMG did not audit nor validate the figures provided by Atlantic Gold. Benefits could vary upwards or downwards depending on whether the final project costs are eventually higher or lower;
- The analysis is based on the project cost distribution between broad spending components provided by Atlantic Gold. The benefits could vary if the distribution among the components were to change;
- The analysis is based on 2016 Input-Output (I-O) model from Statistics Canada, which is, as of January 2020, the most recent model available and representative structure of the Nova Scotia and Canadian economies. All results are denominated in 2019 Canadian dollars. Where possible, adjustments were performed to update certain parameters of the model[4]. The benefits could vary if the average structure of the Canadian economy changed. Furthermore, the input-output model is based on the assumption of fixed technological coefficients. It does not take into account economies of scale, constraint capacities, technological change, externalities, or price changes. This makes impact analysis less accurate for long-term and large impacts as firms adjust their production technology and the IO technological coefficients become outdated. Assuming that firms adjust their production technology over time to become more efficient implies that the impact of a change in final demand will tend to be overestimated;
- The benefits include contingency impacts. Such impacts could vary as contingency margins are increased or decreased;
- KPMG preferred to be careful about any additional assumptions that could be made such that the results remain conservative.

[4] In particular, employment numbers were adjusted to take into account wage increases over the 2016-2019 period. When possible, fiscal data was also updated to take into account changes in fiscal policy. While the analysis is based on the 2016 tax structure for taxes on products and production (tax rate, available credit, contribution rate, etc.), 2017 personal effective income tax rates were used to estimate both direct and indirect personal revenue income taxes generated.

1.4 Document Structure

This document is divided into three main blocks:

– The first section provides an outline of the **project's scope**;

– The third section displays the economic benefits stemming from the **construction** activities;

– The fourth section assesses the economic benefits stemming from **operations**.

2. Project Scope

This second section presents the main characteristics of the Beaver Dam mining project, including an overview of the mine's production schedule and of overall spending throughout the life of mine (LOM).

2.1 Project Overview

The Beaver Dam property is located 85 km northeast of Halifax, in Halifax County. According to the Feasibility Study, the mine will be in operation after one (1) year of site preparation (construction). It is expected that the mine will be in operation for five (5) years and will produce a total of 199,358 ounces of gold over the LOM at an average grade of 1.5 grams per tonne and an average recovery grade of 90%. A total of 6,890 kilo tonnes of ore will be mined during the life of the mine at Beaver Dam

The Beaver Dam is not a standalone project and it will be carried out in conjunction with the Touquoy mine. It is expected that part of the resources (manpower and machinery) used at Touquoy would be moves to Beaver Dam as well additional equipment and manpower to achieve the expected increased production rate. Ore will be crushed to optimal size for transport to the Touquoy Mine for processing.

2.2 Spending and Investment Needs throughout LOM

A project like the one considered by **Atlantic Gold is subject to important investments and spending whether for the stages of construction or for the operation of the mine. Atlantic Gold plans to spend $525.6 million in Nova Scotia over a 5-years period including the construction.**

Table 2: Distribution of Spending: Beaver Dam Project
Over the entire life of the project

Spending category	In M$	As a % of the total
1. Construction (1 year)	27.7	5.3%
2. Operation (5 years)	489.6	93.1%
3. Sustaining capital (5 years)	8.3	1.6%
Total	**525.6**	**100.0%**

Source: Atlantic Gold, 2018. KPMG analysis

The **construction phase** includes the expenditure required to start up a business to a standard where it is ready for initial production. This phase would start with mine site development activities including forest clearing, soil preparation and road constructions. Following this step, Atlantic Gold would go forward with the construction of the site's infrastructure. As ore will be transported to Touquoy for processing, building infrastructure at Beaver Dam will be limited. Building infrastructure will consist of a small workshop and warehouse facility. Other infrastructure aspects that will need to be provided in support of mining operations include on-site communications, potable water, fire protection, security, sewage and waste, fuel and the raw water supply. Contractor's costs are also considered.

The **operation phase** of the mine would extend for five (5) years, according to documents provided by Atlantic Gold. Life of mine unit operation costs were estimated at $40.84/t milled[5]. These include material costs and payroll for all mine activities, including, for example, drilling, extraction, conveying and transportation of ore. The operating phase also includes the costs of the ore processing plant (e.g. chemicals, electricity, consumables, fuel), tailings management and water management (e.g. environmental services, waste management residues) and the general administration of operations (e.g. management of site administration, human resources, technical services, electronic equipment, office supplies). In addition, all capital investments required to maintain infrastructure or spending related to the preservation of the environment (i.e. wetland restauration) occurring during the operation phase will be considered as operation costs. **The operating costs at Beaver Dam are significantly higher than other sites due to a lower throughput as a result of increased ore hardness, and also because transport represents a significant part of the costs.**

[5] Average annual cost include stockpile rehandle and processing.

3. Economic Benefits Stemming from Construction Activities

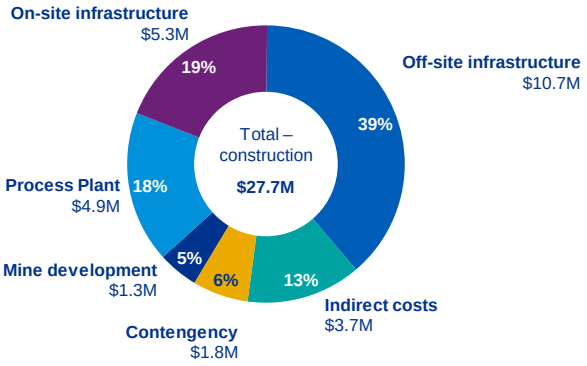
This third section presents the direct and indirect economic benefits of the investment expenditures of the Beaver Dam Project. The nature and scope of the expenditures are first analyzed, then the resulting economic benefits for the province of Nova Scotia and for Canada are presented.

3.1 Construction Activities

3.1.1 Broad Spending Components

According to the data provided by Atlantic Gold, total costs for the construction of the Beaver Dam mine are estimated at $27.7M and contingency. As ore would be transported to Touquoy for processing, building infrastructure at Beaver Dam will be limited. Building infrastructure will consist of a small workshop and warehouse facility. The power demand at this site is insufficient to justify providing permanent grid supply. Therefore, two powered generators will provide the required 600 V electrical power for Beaver Dam surface consumers.

Figure 1: Breakdown of Beaver Dam Mining Project Construction Spending by Broad Component
Construction phase



Note : Due to rounding, the sum of items may not add up to the total. .
Source :Data from Atlantic Gold, KPMG analysis.

Overall, these costs consist of four (4) broad components:

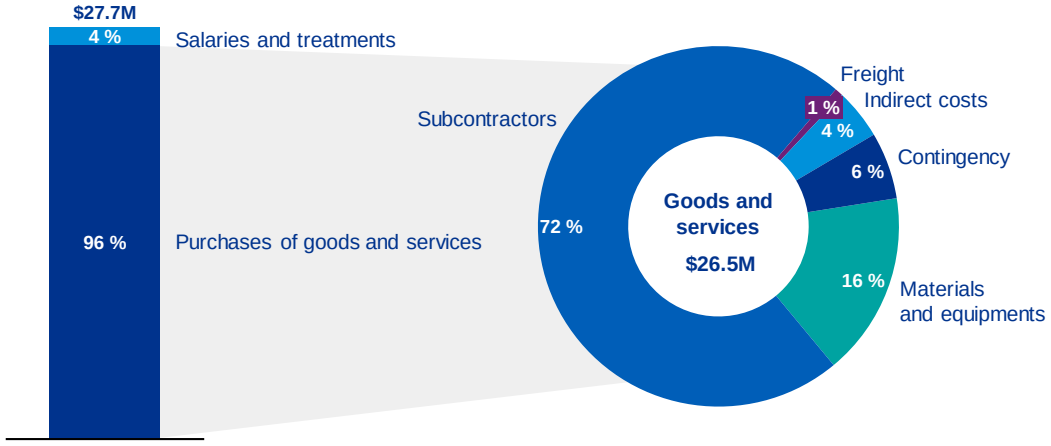
- Off-site infrastructure like roads (39% of total spending);
- On-site infrastructure such as warehouse, workshop, potable water supply, fire protection, security, etc. (19% of the total spending);
- Construction and commissioning of the processing plant, correspond mainly to improvements at Touquoy's site (18% of the total spending);
- Construction of the mine including site preparation (5% of total spending);

Are also included:

- Indirect costs which include all costs associated with implementation of the plant and incurred by the owner, engineer or consultants in the design, procurement, construction, and commissioning of the project (13% of the total spending);
- Contingency is a cost element to accommodate unknown items that are expected to occur within the defined scope of the project, but which cannot be properly defined at the current stage of the project (6% of the total spending).

The construction phase is characterized by a large volume of purchases of goods and services, notably to subcontractors (72%) as well as towards the purchase of materials and specialized equipment (17%). The following figure shows the breakdown by type of expenditure.

Figure 2: Distribution of Beaver Dam Project Construction Expenses by Category of Goods and Services
In millions of dollars and breakdown in %



Source: Data from Atlantic Gold, KPMG analysis.

3.2 Economic Impacts of Construction Activities

The economic spinoffs of the projected investments stemming from the construction of the Beaver Dam mine are estimated at $18.3 million in Nova Scotia. This total corresponds to the value added of the project in Nova Scotia, or, in other words, the true wealth creation effect on the Nova Scotia economy. Pre-tax wages represent 75% of this added value, or $13.7M. The investment activities would support 137 jobs (in person-years) over the entire duration of the work. These would consist of 108 direct jobs, to which would be added 29 indirect jobs among Nova Scotia suppliers.

The following table shows the distribution of direct and indirect effects on value added and employment. It is important to emphasize that those benefits are not recurring yearly and reflect the impact of one-off expenditures during the construction work.

Table 3 : Economic Impact on Nova Scotia Stemming from the Construction – Beaver Dam Mining Project
For one year, in millions of dollars and in person-years

Nova Scotia	Direct Effects	Indirect Effects	Total
In millions of dollars			
Total value added, of which	15.1	3.2	18.3
Salaries and wages before income taxes	11.6	2.1	13.7
Other revenues before income taxes	3.5	1.1	4.6
In person-year (FTE equivalent)			
Jobs in person-years	108	29	137

Note: Due to rounding, the sum of items may not add up to the total.
1. The direct economic impacts from subcontractor activity were considered to be part of the direct impacts of construction (this is consistent with best practice).
Source: Simulations of Statistics Canada based on data from Atlantic Gold, KPMG analysis

For Canada as a whole, the impact arising from the construction activities of Beaver Dam mining project in terms of wealth is estimated at $21.1M and would support 157 additional jobs (including Atlantic Gold suppliers). These are full-time equivalent jobs over the duration of the construction phase (1 year).

Table 4 : Economic Impact on Canada Stemming from the Construction – Beaver Dam Mining Project
For one year, in millions of dollars and in person-years

Canada	Direct Effects	Indirect Effects	Total
In millions of dollars			
Total value added, of which	15.1	6.0	21.1
Salaries and wages before income taxes	11.6	3.9	15.5
Other revenues before income taxes	3.5	2.1	5.6
In person-year (FTE equivalent)			
Jobs in person-years	108	49	157

Note: Due to rounding, the sum of items may not add up to the total.
1. The direct economic impacts from subcontractor activity were considered to be part of the direct impacts of construction (this is consistent with best practice)
Source: Simulations of Statistics Canada based on data from Atlantic Gold, KPMG analysis

The development of the mine would also have a significant impact on government revenues, whether through taxes on personal incomes, taxes on products and taxes on production. Total expected tax revenues stemming from the construction phase amount to $1.3M for the Nova Scotia Government, $1.4M for the Federal Government and $0.5M for municipal governments.

Table 5: Direct and Indirect Municipal, Provincial (Nova Scotia) and Federal Government Revenues Stemming from the Construction – Beaver Dam Mining Project
For one year, in millions of dollars

Detail tax revenues	Personal income tax[1]	Taxes on products[2]	Taxes on production[2]	Total
Municipal	--	0.0	0.5	0.5
Nova Scotia (Provincial)	0.8	0.4	0.1	1.3
Canada (Federal)	1.2	0.2	0.0	1.4

Note: Due to rounding, the sum of items may not add up to the total.
1.Personal income taxes have been estimates based on 2017 effective tax rate in Nova Scotia and Canada (from Statistics Canada).
2.Direct and indirect taxes, based on Statistics Canada Input-Output model.
Source: Statistics Canada, Atlantic Gold, KPMG analysis

4. Economic Benefits Stemming from Operations

This last section presents the economic benefits stemming from mining and processing activities at Beaver Dam, for both Nova Scotia and Canada.

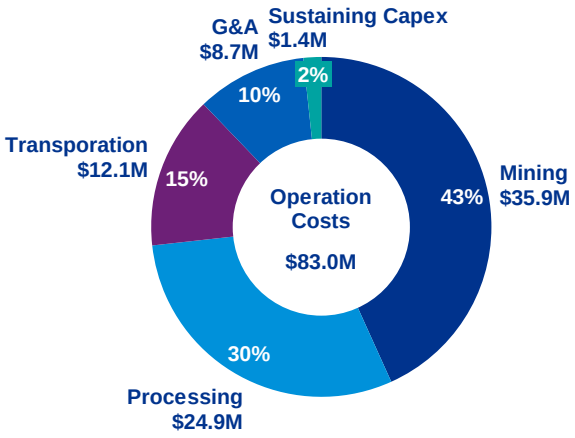
4.1 Beaver Dam Operating Expenditures

4.1.1 Broad Spending Components

Operating expenditures represent an important part of the Beaver Dam's contribution to the economy. Over its lifetime – which is assumed to be of five (5) years – OPEX are estimated at $539.4M, which is equivalent to an average yearly spending of $89.9M. The operating costs at Beaver Dam are significantly higher than other sites due to a lower throughput as a result of increased ore hardness, and also because transport represents a significant part of the costs.

The breakdown of the yearly average operating costs for the Beaver Dam mine is illustrated in figure 5 and falls into six (6) broad components:

Figure 3: Breakdown of Average Annual Mine Operating Expenditures by Broad Component
In millions and %

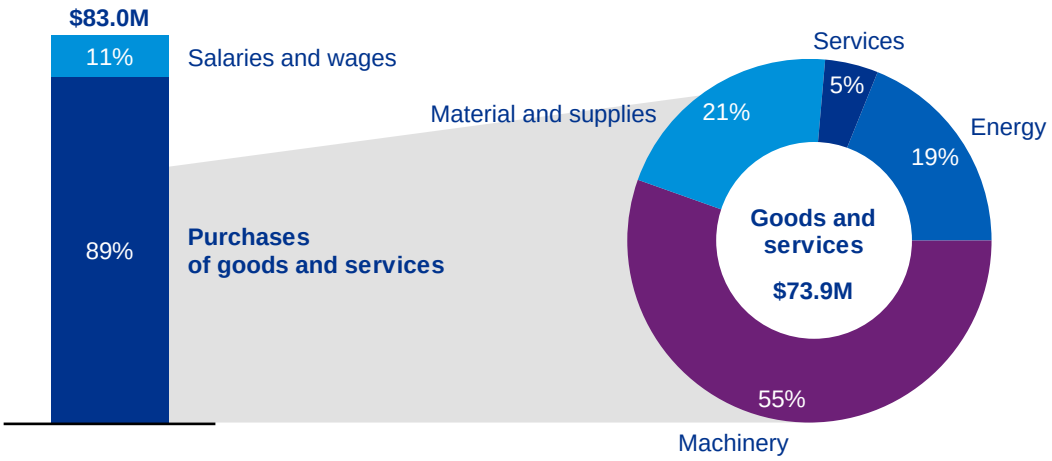


Source : Atlantic Gold, KPMG analysis.

– Mining cost including labour, materials, specialized equipment, etc. (43% of total spending);
– Processing cost such as labour, chemicals, electricity, fuel, etc. (30% of total spending);
– General and administration (electronic equipment, office supplies, etc.) (10% of total spending).
– Transportation (15% of total spending).
– Sustaining Capex including materials and spare parts, owner costs and environmental services (2% of total spending).

As illustrated in figure 5, for the purposes of the economic impact analysis, sustaining CAPEX has been included in operating expenditures in order to reflect their specific nature. Sustaining capital costs include the costs for raising the tailings dam (as required over the life of the mine), plant and infrastructure spending and reclamation costs.

Figure 4: Distribution of Mine Operating Expenses by Category of Goods and Services



Source : Atlantic Gold, KPMG analysis.

4.2 Economic Benefits of Operations

Operating expenses would contribute to increase value added in Nova Scotia by $31.2M per year on average, or $187.2M over the entire operating phase (5 years). Pre-tax wages would represent 77% of this added value, or $24.3M per year. The planned activities would support the equivalent of 311 full-time equivalent workers per year. These jobs would consist of 150 direct jobs, plus 161 indirect jobs with Atlantic Gold's leading suppliers. The following table shows the distribution of direct and indirect benefits to value added and employment.

Table 6: Economic Impacts in Nova Scotia Stemming from Operations – Beaver Dam Mining Project
Typical year, in millions of dollars and in person-years

Nova Scotia Province	Direct Effects	Indirect Effects	Total
In millions of dollars			
Total value added, of which	8.8	22.4	31.2
Salaries and wages before income taxes	8.8	15.5	24.3
Other revenues before income taxes	0.0	6.9	6.9
In person-year (FTE equivalent)			
Jobs in person-years	150	161	311

Note: Due to rounding, the sum of items may not add up to the total.
Source: Simulations of Statistics Canada based on data from Atlantic Gold, KPMG analysis

The following table presents the economic benefits arising across Canada from the projected OPEX. Average yearly value added for Canada amounts to $51.0M and operations would support 421 jobs across the country.

Table 7: Economic Impacts on Canada Stemming from Operations – Beaver Dam Mining Project
Typical year, in millions of dollars and in person-years

Canada	Direct Effects	Indirect Effects	Total
In millions of dollars			
Total value added, of which	8.8	42.2	51.0
Salaries and wages before income taxes	27.9	17.3	45.2
Other revenues before income taxes	0.0	9.4	9.4
In person-year (FTE equivalent)			
Jobs in person-years	305	271	421

Note: Due to rounding, the sum of items may not add up to the total.
Source: Simulations of Statistics Canada based on data from Atlantic Gold, KPMG analysis

The operation of the mine would generate additional government revenues in terms of labour income taxes, indirect taxes, corporate taxes and mining royalties. Total tax revenues for the Nova Scotia, Canadian and municipal governments would reach nearly $9.4M a year. These represent conservative estimates as, for example, corporate income taxes paid by suppliers cannot be estimated.

Table 8: Municipal, Provincial and Federal Direct and Indirect Tax Revenues Stemming from Operations – Beaver Dam Mining Project
Typical year, in millions of dollars

Detail tax revenues	Royalties[1]	Personal income tax[2]	Taxes on products[3]	Taxes on production[3]	Total[4]
Municipal	--	--	0.0	1.2	1.2
Nova Scotia (provincial)	0.6	1.4	2.7	0.1	4.8
Canada (federal)	--	1.8	1.6	0.0	3.4

Note: Due to rounding, the sum of items may not add up to the total.
1. Royalties are estimated by using a gold price of $ 1,859/oz and a royalty's rate of 1%.
2. Personal income taxes have been estimates based on 2017 effective tax rate in Nova Scotia and Canada (from Statistics Canada).
3. Direct and indirect taxes, based on Statistics Canada Input-Output model.
4. These figures do not take into account corporate taxes that could be paid by Atlantic Gold.
Source: Statistics Canada, Atlantic Gold, KPMG analysis

5. Conclusion

The Beaver Dam mining project that Atlantic Gold is currently developing in Nova Scotia would benefit the province's economy. The project under review represents more than $525.6 million of spending over a six (6) years period, including $27.4M in capital expenditures and $497.9M in operating expenditures ($83.0M in yearly OPEX).

As previously shown, the initial investment leading to the construction of the mine would generate $18.3M in value added in Nova Scotia, support 137 full-time equivalent jobs and generate $3.1M in revenues for the three levels of government, while the operating and recurrent spending would generate $31.2M in value added annually, support 311 jobs and provide $4.8M per year in government revenues.

Impacts on the Canadian economy as a whole would be higher as some of the subcontractors working on site would come from other Canadian provinces. For construction and operation activities, the impacts on the Canadian economy would be 15% and 63%, respectively, higher than provincial impacts (based on value added).

Table 9: Summary of the Economic Impact (direct and indirect) on Canada and Nova Scotia Stemming from Construction and Operation Activities for the Beaver Dam Mining Project
For one year of construction and for a typical operating year, in millions of dollars

	Canada		Nova Scotia	
In millions of dollars	Construction (1 year)	Operation (Per year)	Construction (1 year)	Operation (Per year)
Value added	21.1	51.0	18.3	31.2
Government revenues	1.3 *(federal only)*	3.4 *(federal only)*	1.3 *(provincial only)* 0.5 *(municipal only)*	4.8 *(provincial only)* 1.2 *(municipal only)*
In person-year (FTE equivalent)				
Jobs created	157	421	137	311

This report did not explore dynamic economic impacts on the Nova Scotia economy. Dynamic impacts could stem from:

– Additional investments in Nova Scotia resulting from the increased activity stimulated by the project;

– Reinforcement of Nova Scotia's mining sector;

– Spillover effects resulting from the expertise of professional firms and contractors from other provinces;

– Improvement of living conditions in certain communities as salaries in the mining sector are significantly higher than regional average;

– Reduction of worker migration to other provinces.

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