

NATURAL RESOURCES: MAJOR PROJECTS PLANNED OR UNDER CONSTRUCTION – 2019 TO 2029



ENERGY AND MINES MINISTERS' CONFERENCE

CRANBROOK, BRITISH COLUMBIA

JULY 15-17, 2019

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INTRODUCTION: THE MAJOR PROJECTS INVENTORY

Canada is fortunate to have one of the largest, most diverse natural resource endowments in the world, one that positions the country favourably to meet global demand for energy, minerals, metals and forest products. Canada has been successful in translating this tremendous resource advantage into a pillar of the national, provincial and territorial economies. In 2018, the energy, minerals and metals, and forest sectors directly and indirectly accounted for 17 percent of Canada's nominal gross domestic product and provided over 1.7 million jobs.

Major natural resource projects are an important source of economic growth and job creation in all regions of Canada. Each year, to help monitor current and planned levels of investment in the energy, mining, and forest sectors, the Government of Canada collaborates with provinces and territories to update the Major Projects Inventory. Updates to the 2019 inventory were made between March and May of 2019 and reflect newly available public information on project developments over the 11 months since June 2018, based on databases and various company websites. The *Major Projects Inventory Report* summarizes the updated inventory and examines trends in projects since 2014, the earliest year for which comparable data are available.

To complement the public release of the report, project-level information has been shared through [Open Maps](#), a part of [Canada's Open Government](#) portal that provides one-stop access to the Government of Canada's geospatial information.

SCOPE AND METHODOLOGY

The Major Projects Inventory captures information on major natural resource projects in Canada that are either currently under construction or planned in the next 10 years. The inventory includes projects that increase, extend or improve natural resources production (e.g., new extraction and infrastructure projects, major processing facilities, and large expansion projects). Spending on exploration and general-purpose infrastructure projects (e.g., multi-purpose highways) is excluded.

To be included in the inventory, projects in the energy and mining sectors must meet a minimum capital worth threshold of \$50 million, whereas electricity projects and projects in the forest sector must meet a threshold of \$20 million. Also included in the inventory are clean energy and clean technology projects, which must meet a minimum capital worth threshold of \$10 million. Projects with capital worth falling below the thresholds, while recognized as important contributions to overall investment, are excluded due to limited data availability.

A variety of data sources are used to update the inventory, including databases maintained by Natural Resources Canada and other federal, provincial and territorial government departments, company releases, and publicly accessible websites. The inventory is based only on information that is in the public domain.

The inventory includes information on the value, timing and geographic location of projects. Projects included in the inventory are also categorized according to their stage of development. A project typically progresses through the following four stages:

- **Announced:** planned projects that have been publicly announced, but that have not submitted applications for regulatory approvals;
- **Under Review:** planned projects that have submitted applications for regulatory approvals, but that are still under review;

- **Approval Received:** planned projects that have received all major regulatory approvals (i.e., the approvals required to start construction), but for which construction has not yet begun; and
- **Under Construction:** projects for which construction is underway.

Figure 1. Project Stages Included in the 2019 Major Projects Inventory



In order to highlight some of the key trends, the *Major Projects Inventory Report* also identifies projects that have been added, completed, suspended, cancelled, or removed since the previous annual update:

- **Added projects:** projects that have been announced since the previous update or have come within the scope for inclusion based on newly available data;
- **Completed projects:** projects that have moved past the construction phase and into the production phase, or have otherwise been completed;
- **Suspended projects:** projects (planned or under construction) that have been delayed for a long period or officially suspended by the proponents;
- **Cancelled projects:** projects (planned or under construction) that have been officially cancelled by the proponents; and
- **Removed projects:** projects that are no longer within the inventory’s scope due to newly available information (e.g., because they no longer meet the capital worth threshold).

OVERVIEW OF NATIONAL TRENDS AND ANALYSIS FOR 2019

As of the May 2019 update, there are 455 projects with a combined capital value of \$635 billion already under construction or planned over the next ten years. Compared to the June 2018 update, the current inventory shows a sharp increase in the number and value of projects added to the inventory, and a decrease in the number and value of project completions. Specifically,

- 117 projects were added, representing a gain of \$103 billion in potential investment;
- 45 projects were completed and began production, representing \$25 billion of actual investment;
- 19 projects were suspended/cancelled, representing a loss of \$33 billion in potential investment; and
- 16 projects representing \$3 billion of investment were removed for data quality reasons.

The net effect of these changes is that between 2018 and 2019 the total number of projects increased by 37 (from 418 to 455), and the value of projects increased by \$50 billion (from \$585 billion to \$635 billion).

Total Projects and Changes from 2015 to 2019

Changes from previous year	2015	2016	2017*	2018	2019
Added	109 projects (\$160B)	85 projects (\$63B)	126 projects (\$58B)	99 projects (\$48B)	117 projects (\$103B)
Completed	88 projects (\$53B)	56 projects (\$25B)	50 projects (\$33B)	80 projects (\$76B)	45 projects (\$25B)
Suspended / Cancelled	51 projects (\$48B)	62 projects (\$78B)	13 projects (\$41B)	37 projects (\$77B)	19 projects (\$33B)
Removed	31 projects (\$28B)	33 projects (\$20B)	13 projects (\$10B)	35 projects (\$15B)	16 projects (\$3B)
Total Projects Included¹	487 projects (\$711B)	421 projects (\$691B)	471 projects (\$684B)	418 projects (\$585B)	455 projects (\$635B)

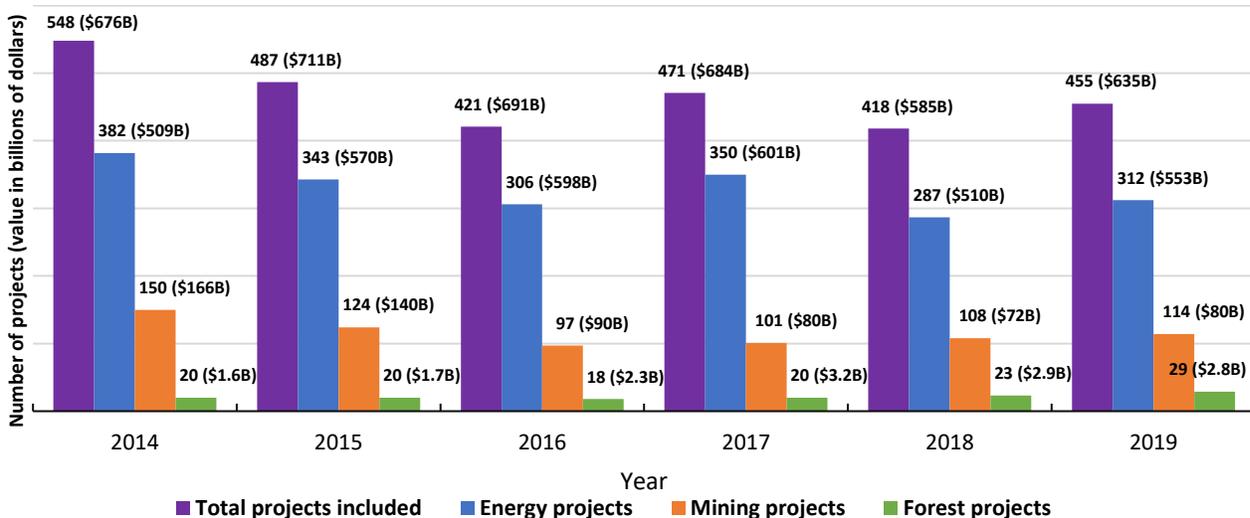
¹Totals may not add due to rounding.

Although estimates of potential capital investment for existing projects are not typically updated to reflect inflation, revisions to investment estimates for other reasons (e.g., cancellation of a project sub-component) may influence changes in total potential capital investment between years.

*Due to the \$10 million threshold for clean technology projects, an extra 23 projects valued at \$347 million were added in 2017.

As shown in Figure 2, the increase in the number and value of projects was driven primarily by the energy sector. In addition, the minerals and metals sector also contributed to the increase in the number and value of projects, whereas the forest sector remained relatively unchanged this year.

Figure 2. Total Projects Included from 2014 to 2019



A more detailed breakdown of changes since the June 2018 update shows that:

- All sectors contributed to the increase in the overall number and value of project additions, relative to previous years. Since the June 2018 update, 83 energy projects valued at \$91 billion, 20 mining projects valued at \$10 billion, and 14 forest projects valued at \$1 billion were added to the inventory.
- In 2019, project cancellations and suspensions were at an all-time low of \$33 billion as compared to \$77 billion in 2018. In total, 15 major energy projects with a combined potential capital investment of \$32 billion were cancelled or suspended over the past year. Among these were the suspension of two wind power projects in British Columbia valued at \$1 billion.

- This year, 45 projects were completed, compared to 80 in 2018. Since the June 2018 update, 31 energy projects valued at \$23 billion, 7 mining projects valued at \$2 billion, and 7 forest projects valued at \$0.3 billion were completed.¹ Completed projects are removed from project inventory totals as they have progressed from potential into productive assets that benefit Canadians through employment of operational workforces and contributions to government revenues.

Changes from 2018 by Sector

	Energy	Mining	Forest
2018 Inventory Totals	287 projects (\$510B)	108 projects (\$72B)	23 projects (\$2.9B)
Added	83 projects (\$91B)	20 projects (\$10B)	14 projects (\$1.0B)
Completed	31 projects (\$23B)	7 projects (\$2B)	7 projects (\$0.3B)
Suspended/Cancelled	15 projects (\$32B)	4 projects (\$1B)	0 projects (\$0.0B)
Removed	12 projects (\$1B)	3 projects (\$1B)	1 project (\$0.7B)
2019 Inventory Totals	312 projects (\$553B)	114 projects (\$80B)	29 projects (\$2.8B)

Note: Revisions to cost estimates of existing projects may influence changes in total potential capital investment between years.

- New projects continued to come forward in all sectors. In contrast to previous years, the total value of energy projects added to the inventory from one year to the next increased, reversing three consecutive years of decline. Continuing on the positive trend, the number and value of mining projects added to the inventory from one year to the next has now increased for four consecutive years. In May 2019 update, 30 mining projects with a combined capital worth of \$15 billion were added. In the May 2019 update, the forest sector added 14 projects, one of the largest increases in the past four years.

Added Projects by Sector and Year

	Energy	Mining	Forest
2015	76 projects (\$146B)	23 projects (\$13B)	10 projects (\$0.5B)
2016	73 projects (\$61B)	6 projects (\$1B)	6 projects (\$0.9B)
2017*	93 projects (\$52B)	18 projects (\$5B)	15 projects (1.9B)
2018*	57 projects (\$35B)	31 projects (\$13B)	11 projects (\$0.5B)
2019*	83 projects (\$91B)	20 projects (\$10B)	14 projects (\$1.0B)

*In 2017, as a result of the new \$10 million threshold for clean technology projects, 23 clean technology and clean energy projects valued above \$10 million, but below the potential capital investment thresholds used for non-clean tech projects, were added. These projects would have been excluded from the inventory in prior years. In 2017, these projects had a combined potential capital investment of \$347 million; all were in the energy sector. In 2019, 17 of these projects were added, worth a combined potential capital investment of \$525 million.

Totals may not add due to rounding.

New Feature: Ultimate Investing Country (UIC)

Major natural resource projects are an important source of economic growth and job creation in all regions of Canada. Canadians have been successful in translating their resource advantage into a pillar of the economy, relying on public and private investments from both Canadian and international companies. The ultimate investing country (UIC)² metric is one method of understanding the international nature of project financing in Canada's resource sectors.

¹ Examples of such projects include: a \$6 billion oil sands project in Alberta; a \$0.8 billion wind farm in British Columbia; a \$0.4 billion iron plant in Newfoundland and Labrador; and three oil pipelines worth a combined \$26 billion.

² [Statistics Canada](#) – Foreign direct investment in Canada by ultimate investing country

“The ultimate investor is identified by proceeding up the ownership chain of the immediate investor until an enterprise is reached that is not controlled by another enterprise. The location of the ultimate investor is referred to as the ultimate investing country (UIC).”²

As of May 2019, Canadian companies were the ultimate investors in 320 out of 455 projects in the project inventory, with a combined potential capital investment of \$426 billion already under construction or planned over the next ten years. In 2019, the value of projects owned by Canadian firms accounted for 67 percent of the total value of projects in the project inventory, up from 58 percent in 2015. The share of investments by firms with corporate ownership in the US has remained fairly stable since 2015, averaging \$72 billion a year, whereas the number of project investments by firms with corporate ownership in Australia has been steadily increasing over the same period. Since 2015, firms with corporate ownership in China have consistently been among the top four countries developing resource projects in Canada, worth an average annual value of projects in development of \$19 billion.

Top Ultimate Investing Countries (UIC) in Canada 2015-2019

Ultimate Investing Country	2015	2016	2017	2018	2019	2015-2019 Average
Canada	\$410B 337 projects	\$428B 294 projects	\$468B 320 projects	\$401B 282 projects	\$426B 320 projects	\$427B 311 projects
United States	\$80B 47 projects	\$61B 39 projects	\$69B 49 projects	\$77B 49 projects	\$74B 46 projects	\$72B 46 projects
Australia	\$26B 9 projects	\$26B 9 projects	\$23B 11 projects	\$15B 17 projects	\$19B 24 projects	\$22B 14 projects
China	\$25B 9 projects	\$18B 6 projects	\$17B 6 projects	\$12B 5 projects	\$22B 7 projects	\$19B 7 projects
United Kingdom	\$8B 10 projects	\$7B 7 projects	\$3B 10 projects	\$3B 8 projects	\$2B 9 projects	\$5B 9 projects
Other ¹	\$49B 33 projects	\$39B 25 projects	\$23B 28 projects	\$23B 22 projects	\$27B 26 projects	\$32B 27 projects
Multiple ²	\$103B 28 projects	\$88B 24 projects	\$74B 21 projects	\$48B 14 projects	\$61B 16 projects	\$75B 21 projects
No Data ³	\$12B 14 projects	\$24B 17 projects	\$7B 26 projects	\$6B 21 projects	\$5B 7 projects	\$11B 17 projects
Total Projects Included	\$711B 487 projects	\$691B 421 projects	\$684B 471 projects	\$585B 418 projects	\$635B 455 projects	\$661B 451 projects

¹ Other countries: Norway, France, Brazil, Bermuda, Luxembourg, Switzerland, South Korea, Indonesia, India, Japan, Poland, Netherlands, Spain, and Italy.

² Multiple: Multiple proponents from multiple countries invested in the same project so a single country of origin cannot be established.

³No Data: Company information not available

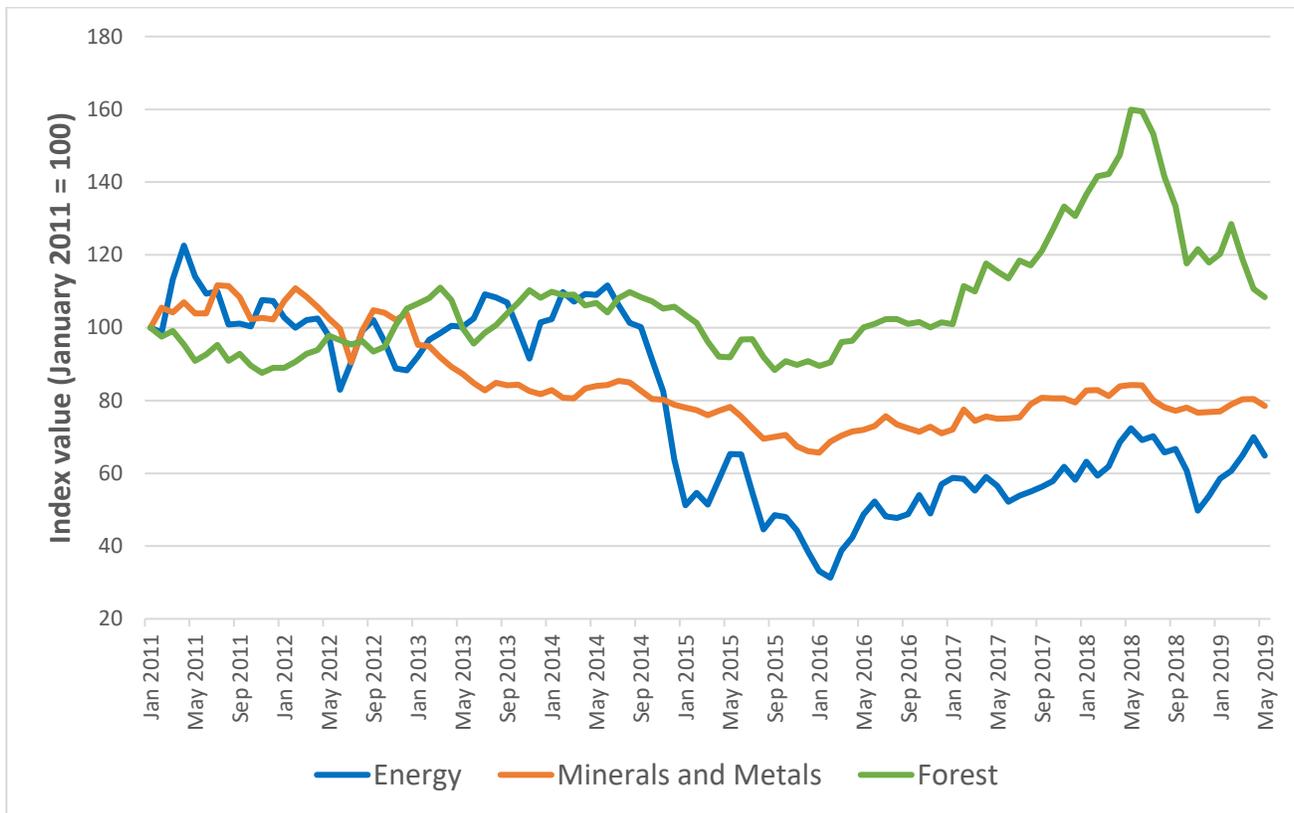
Totals may not add due to rounding.

Corporate structure as of May 2019.

ECONOMIC CONTEXT

Canadian natural resource producers act as price-takers in international markets and, as such, they are affected by price fluctuations associated with cycles in global supply and demand. Changes in the number, value and status of major resource projects over the years are often the result of a wide range of external economic factors.

Figure 3. Commodity Price Indices, 2011 to Present (Bank of Canada)



Note: The energy index reflects production and prices of Crude Oil [WTI, Brent, Western Canada Crude], Natural Gas, Coal. The metals and minerals index includes Potash, Aluminum, Gold, Nickel, Iron, Copper, Silver, Zinc and Lead. The forest index includes lumber, pulp and newsprint.

During the first few months of 2019, commodity prices rose in the energy, mining, and forest sectors. The Bank’s non-energy commodity price index grew about 3 percent from January to April because of “improved market sentiment” and, for the most part, near-term indicators of investment activity have risen in response. According to Statistics Canada’s *Capital and Repairs Expenditures Survey* released in February 2019, businesses’ intentions for capital spending in 2019 are up across most industries sectors relative to 2018 preliminary estimates. Mining, quarrying, and oil and gas extraction sector is expected to be the top sector for capital spending in 2019. In addition, capital spending in the oil and gas extraction subsector is expected to remain stable from 2018 to 2019.

These trends are consistent with forecasts made in the Bank of Canada’s *April 2019 Monetary Policy Report*. The Bank expects a “gradual expansion in business investment outside the oil and gas sector starting in the first half of 2019, with solid growth in the second half of the year and continuing through the projection horizon”.

The specific factors affecting investment decisions vary by sector. For example:

- Oil.** Global oil prices fluctuated over the past year, with production growth in the US counteracted by a loss of supply from Venezuela, OPEC+ production cuts and sanctions imposed on Iran by the US. Global prices dropped by over 40 percent in the fourth quarter. Canadian prices dropped even further as a structural oversupply emerged with new production coming on-line and ongoing delays in building new pipeline capacity (Enbridge Line 3 delayed to Q2 2020). This led to a market situation where distressed barrels (i.e. barrels without committed capacity on pipelines or rail) were selling at deeply discounted levels, at one point reaching a US\$50 per barrel discount to the WTI price. In December 2018, the Alberta government intervened by imposing a production curtailment order beginning in January 2019. This

provided an immediate boost to prices, and helped to balance Western Canadian oil markets. Also in December, OPEC and its partners announced a 1.2 million barrel per day production cut, which tightened the global supply outlook. From January to the end of May of 2019, the WTI oil price rose by over 30 percent, while the price of Western Canadian Select increased by over 50 percent.

Gas. Growth in demand for natural gas is being driven by the Asia-Pacific region where rising energy demand and concerns about poor air quality have led to efforts to displace coal as the primary energy source. In the shorter term, however, continued growth in production of shale gas in North America has kept prices low, with the Henry Hub price, the North American benchmark, at an average of \$3.9/GJ in 2018, and AECO, a Canadian benchmark in Alberta, at an average of \$1.44/GJ. Despite challenges, a low price environment has also been advantageous to the investment climate in Canada. For example, abundant natural gas required for LNG and feedstock for value-added activity – notably petrochemicals, is a key feature which can attract investment in our jurisdiction. Current low prices is setting the scene for an emerging global LNG shortfall that, without capacity additions, could materialize as early as 2025. Spot prices for LNG in Asia rebounded from lows a few years ago, but dropped over the past year from an average of US\$10 to \$7 per million Btu.

- **Minerals and metals.** Over the long term, many analysts believe that minerals and metals prices are likely to increase due to supply-side constraints arising from a lack of investment in exploration, new mines, and existing facilities. Demand is forecast to rise over the longer term due to the increasing adoption of clean technologies that reduce the global carbon footprint. By the middle of the next decade, growing sales of electric vehicles are expected to have a significant impact on the demand for many of Canada's most important minerals and metals – nickel, copper, cobalt – and create new demand for our lithium resources. For example, battery manufacturers around the world are seeking reliable sources of cobalt in politically stable jurisdictions such as Canada. Electric vehicle batteries require nickel, of which Canada is a leading source. Copper is critical for electric motors and charging infrastructure.
- **Forest.** The financial health of Canada's forest sector has improved in recent years thanks in part to a strong demand from the U.S and China. However, as of late 2018, prices for many products have declined and the softwood lumber trade dispute continues to affect the industry. While short-term forecasts indicate higher forest product prices are on the horizon, some provinces continue to face forest biomass supply challenges due to wildfires, pest disturbances, and domestic policies, such as the Species at Risk Act. Most recent investments continue to focus on maintenance or improving operational efficiency. Where significant new investments have been made, they have been geared toward emerging products and markets. These include extensions to wood pellet production capacity to meet increasing demand from Asia, and new capacity for mass timber production.
- **Clean technology.** The clean tech sector is growing more rapidly than the rest of the economy. The core clean technologies sub sector saw growth rates of more than 6.6 percent in 2017 over the previous year and export growth at 11 percent for the same period. Export-oriented clean technology projects are expected to keep pace with growth in the global clean technology market, which is expected to double in size from over US\$1 trillion today to US\$2.5 trillion by 2022. Recent drivers of major clean technology projects in Canada may include falling costs for renewables, particularly solar and wind. The federal government has made substantial investments in clean technology research, development and demonstration, most recently through initiatives such as the Clean Growth Program. Provincial governments are also funding or supporting clean technology projects through various means.

OVERVIEW OF SECTOR AND PROJECT ANALYSIS FOR 2019

Energy Projects

As of May 2019, there are 312 energy projects in the inventory with a combined capital value of \$553 billion. This compares with 287 projects valued at \$510 billion in 2018. In 2019, the increase in total value in the project inventory was due to the addition of 83 projects, valued at \$91 billion, and fewer project completions than in previous years. The announcement of \$9-billion in upgrader and petrochemical facilities in Alberta, an oil and gas project owned by SinoCan Global, was the largest new addition.

Energy projects span many sub-sectors, including those in the oil and gas industry (e.g., oil sands, offshore, LNG, export terminals, storage facilities, and pipelines) and in electricity generation and transmission (e.g., nuclear, renewables, and power lines). Oil and gas-related projects account for roughly 80 percent of the total value of energy projects in the inventory.

	2015	2016	2017	2018	2019
Total Energy Projects	\$570B 343 projects	\$598B 306 projects	\$601B 350 projects	\$510B 287 projects	\$553B 312 projects
Oil and Gas	\$456B 155 projects	\$485B 147 projects	\$478B 143 projects	\$393B 125 projects	\$434B 126 projects
Electricity	\$113B 184 projects	\$108B 155 projects	\$117B 197 projects	\$111B 152 projects	\$115B 173 projects
Other¹	\$1B 4 projects	\$5B 4 projects	\$5B 10 projects	\$6B 10 projects	\$4B 13 projects

¹ Other primarily includes biomass/biofuel production activities. Totals may not add due to rounding.

Ultimate Investing Country (UIC) – Energy Projects

As of May 2019, Canadian companies were the ultimate investors in 232 out of 312 projects in the energy sector, with a combined potential capital investment of \$375 billion for projects already under construction or planned over the next ten years. In 2019, the value of projects owned by Canadian firms accounted for 68 percent of the total value of energy projects in the inventory, up from 59 percent in 2015. The share of energy project investments by firms with corporate ownership in the US has remained fairly stable since 2015, averaging \$63 billion annually, whereas the number of energy project investments by firms with corporate ownership in Australia has been steadily increasing over the same period. Since 2015, firms with corporate ownership in China have consistently been among the top four countries developing energy projects in Canada, worth an annual average of \$13 billion. A significant trend in the energy sector is the value of projects owned by multiple proponents from multiple countries. In 2019, these joint ventures account for \$60 billion (11 percent of the total).

Ultimate Investing Country	2015	2016	2017	2018	2019	2015-2019 Average
Canada	\$337B 248 projects	\$380B 222 projects	\$418B 249 projects	\$355B 204 projects	\$375B 232 projects	\$373B 231 projects
United States	\$63B 34 projects	\$56B 30 projects	\$61B 32 projects	\$70B 30 projects	\$66B 28 projects	\$63B 31 projects
Australia	\$17B 2 projects	\$17B 2 projects	\$18B 4 projects	\$9B 7 projects	\$11B 12 projects	\$14B 5 projects
China	\$16B 3 projects	\$13B 2 projects	\$13B 2 projects	\$8B 2 projects	\$17B 4 projects	\$13B 3 projects
United Kingdom	\$2B 4 projects	\$2B 4 projects	\$2B 6 projects	\$2B 4 projects	\$1B 4 projects	\$2B 4 projects
Other ¹	\$30B 16 projects	\$22B 11 projects	\$10B 17 projects	\$14B 12 projects	\$18B 15 projects	\$19B 14 projects
Multiple ²	\$94B 23 projects	\$86B 20 projects	\$73B 18 projects	\$47B 12 projects	\$60B 14 projects	\$72B 17 projects
No Data ³	\$12B 13 projects	\$24B 15 projects	\$6B 22 projects	\$5B 16 projects	\$4B 3 projects	\$10B 14 projects
Total Projects Included	\$570B 343 projects	\$598B 306 projects	\$601B 350 projects	\$510B 287 projects	\$553B 312 projects	\$566B 319 projects

¹ Other countries: Bermuda, Norway, France, Luxembourg, Indonesia, India, Japan, Netherlands, Spain, South Korea, Thailand, Australia and Italy.

² Multiple: Multiple proponents from multiple countries invested in the same project so a single country of origin cannot be established.

³No Data: Company information not available

Totals may not add due to rounding.

Corporate structure as of May 2019.

Oil Sands

There are 50 oil sands-related projects (e.g., in situ, mining, upgrading and refining) in the inventory, representing \$130 billion in potential investment. This compares to 52 projects valued at \$138 billion in the 2018 inventory. Seven new oil sands-related projects with a combined capital worth of \$17 billion were added since the June 2018 update. At the same time, four existing oil sands-related projects, with a combined capital worth of \$9 billion, were cancelled or suspended. Most of the reduction in the total value of oil sands projects since 2018 was due to the completion of four oil sands-related projects with a combined capital cost of \$16 billion. These include the \$9.7 billion Phase 1 North West Bitumen Upgrader project operated by Canadian Natural Resources Ltd. and North West Upgrading Inc., the \$5.5 billion upgrading facility operated by Syncrude Canada, the \$1 billion upgrading facility operated by Canadian Natural Resources Ltd., and the \$180 million thermal production facility operated by BlackPearl Resources Inc. Finally, one project worth \$15 million was removed for data quality reasons.

	2015	2016	2017	2018	2019
Oil Sands Projects¹	\$165B 62 projects	\$148B 47 projects	\$168B 53 projects	\$138B 52 projects	\$130B 50 projects

¹ Excludes pipeline projects.

Natural Gas

There are 43 natural gas-related projects (e.g., natural gas pipelines, export facilities and gas-fired generators) in the inventory, representing \$193 billion in potential investment, including an investment decision on LNG Canada. This compares to 45 projects valued at \$158 billion in the 2018 inventory. Since the June 2018 update, seven new natural gas-related projects with a combined capital worth of \$44 billion were added to the inventory. Meanwhile, four natural gas-related projects with a combined capital cost of \$1.5 billion were completed and five were suspended or cancelled with a combined capital value of \$21 billion. The majority of the increase in the value of natural gas-related projects between the June 2018 and May 2019 updates was a result of newly available information on the status and capital worth of existing projects.

	2015	2016	2017	2018	2019
Natural Gas Projects	\$215B 65 projects	\$217B 68 projects	\$193B 59 projects	\$158B 45 projects	\$193B 43 projects

¹Totals may not add due to rounding. Although estimates of potential capital investment for existing projects are not typically updated to reflect inflation, revisions to investment estimates for other reasons (e.g., cancellation of a project sub-component) may influence changes in total potential capital investment between years.

Pipelines

There are 26 pipeline projects in the inventory, representing \$74 billion in potential investment. This compares to 24 pipeline projects valued at \$68 billion in the 2018 inventory. Since the June 2018 update, six new pipeline projects with a combined capital worth of \$6 billion were added to the inventory. Meanwhile, no pipeline projects were cancelled or suspended, and four existing projects with a combined capital cost of \$1 billion were completed.

	2015	2016	2017	2018	2019
Pipeline Projects	\$65B 41 projects	\$95B 41 projects	\$92B 33 projects	\$68B 24 projects	\$74B 26 projects

Mining Projects

There are 114 major mining-related projects (e.g., mine constructions, redevelopments, expansions and processing facilities) in the inventory, representing \$80 billion in potential investment. Metal mines (e.g., gold, copper, nickel, zinc) account for just under two thirds of the value of major mining-related projects. Non-metal mines (e.g., potash, diamonds) and coal mines account for most of the remainder.

As discussed above, the past year was a strong one for new mining investment: 20 new mining-related projects with a combined capital value of \$10 billion were added to the inventory, resulting in an increase in the total value and number of mining-related projects in the inventory. Projects in Saskatchewan account for 23 percent of the total value of all mining-related projects, British Columbia 21 percent, Quebec 17 percent, and Ontario for 15 percent. The remaining projects are spread across all provinces and territories, with the exception of Prince Edward Island.

	2015	2016	2017	2018	2019
Total Mining-related projects	\$140B 124 projects	\$90B 97 projects	\$80B 101 projects	\$72B 108 projects	\$80B 114 projects
Mines – Metals	\$91B 85 projects	\$49B 61 projects	\$48B 65 projects	\$48B 76 projects	\$51B 77 projects
Mines – Non-metals	\$29B 20 projects	\$24B 20 projects	\$26B 21 projects	\$20B 19 projects	\$19B 18 projects
Mines – Coal	\$7B 12 projects	\$5B 9 projects	\$3B 6 projects	\$4B 10 projects	\$8B 13 projects
Other¹	\$13B 7 projects	\$12B 7 projects	\$3B 9 projects	\$0.5B 3 projects	\$2B 6 projects

¹ Other primarily includes processing plants, smelters, refineries and export terminals.

Totals may not add due to rounding.

Ultimate Investing Country (UIC) – Mining Projects

As of May 2019, Canadian companies were the ultimate investors in 70 out of 114 mining-related projects already under construction or planned over the next ten years, with a combined potential capital investment of \$51 billion. In 2019, the value of mining projects owned by Canadian firms accounted for 64 percent of the total value of projects in the inventory, up from 51 percent in 2015. The share of mining project investments by firms with corporate ownership in the US has decreased since its 2015 high of \$16 billion, whereas the number of mining project investments by firms with corporate ownership in Australia has remained stable, averaging \$7 billion annually over the same period. Since 2015, firms with corporate ownership in China have consistently been among the top four countries developing mining-related projects in Canada worth an annual average of \$5 billion.

Ultimate Investing Country	2015	2016	2017	2018	2019	2015-2019 Average
Canada	\$72B 76 projects	\$47B 61 projects	\$49B 64 projects	\$46B 66 projects	\$51B 70 projects	\$53B 67 projects
United States	\$16B 12 projects	\$5B 8 projects	\$8B 13 projects	\$7B 15 projects	\$7B 14 projects	\$9B 12 projects
Australia	\$9B 7 projects	\$9B 7 projects	\$5B 7 projects	\$6B 10 projects	\$8B 12 projects	\$7B 9 projects
China	\$9B 6 projects	\$5B 4 projects	\$4B 4 projects	\$4B 3 projects	\$5B 3 projects	\$5B 4 projects
United Kingdom	\$6B 6 projects	\$5B 3 projects	\$1B 4 projects	\$1B 4 projects	\$1B 4 projects	\$3B 4 projects
Other ¹	\$19B 13 projects	\$17B 11 projects	\$13B 8 projects	\$8B 9 projects	\$8B 9 projects	\$13B 10 projects
Multiple ²	\$9B 4 projects	\$2B 3 projects	\$0B 1 projects	\$0.4B 1 project	\$1B 2 projects	\$2B 2 projects
No Data ³	No projects	No projects	No projects	No projects	No projects	No projects
Total Projects Included	\$140B 124 projects	\$90B 97 projects	\$80B 101 projects	\$72B 108 projects	\$80B 114 projects	\$92B 108 projects

¹ Other countries: Brazil, Luxembourg, Switzerland, India, France, and Poland.

² Multiple: Multiple proponents from multiple countries invested in the same project so a single country of origin cannot be established.

³No Data: Company information not available

Totals may not add due to rounding.

Corporate structure as of May 2019.

Forest Projects

The value of major forest-related projects (e.g., lumber, pulp and paper, biofuel production) has remained relatively stable for the past four years. Meanwhile, the number of forest projects in the inventory has been trending upward. As of the June 2019 update, there were 29 major forest projects across Canada, representing \$2.8 billion in potential investment. This compares to 20 forest projects valued at \$1.7 billion in the 2015 inventory.

Since last year's update, 14 new forest projects with a combined capital worth of \$1 billion were added to the inventory, while 7 projects with a combined capital cost of \$0.3 billion were completed. No major forest sector projects in last year's inventory were cancelled or suspended. Projects added to the inventory this year include: a \$575 million tissue plant in Quebec owned by Kruger; a \$97 million pellet plant in Quebec owned by Barette-Chapais; a \$70 million lumber mill in British Columbia owned by Coulson Manufacturing Ltd.; and a \$45 million pellet plant in British Columbia owned by Gitxsan Development Corp and Airex Energy.

Thirteen projects in Quebec account for 68 percent of forest-related project value. The remaining forest projects are spread across British Columbia, New Brunswick, Newfoundland and Labrador, Ontario, Saskatchewan, and Alberta.

Total	2015	2016	2017	2018	2019
Forest-related Projects	\$1.7B 20 projects	\$2.3B 18 projects	\$3.2B 20 projects	\$2.9B 23 projects	\$2.8B 29 projects

Ultimate Investing Country (UIC) – Forest Projects

As of May 2019, Canadian companies were the ultimate investors in 18 out of 29 projects under construction or planned over the next ten years in the forest sector, with a combined potential capital investment of \$1.3 billion. In 2019, the value of forest projects owned by Canadian firms accounted for 45 percent of the total value of forest projects in the inventory, down from 53 percent in 2015. The share of investments by firms with corporate ownership in the US has remained stable since 2015 averaging \$0.2 billion a year. Based on available data, investments in the forest sector are dominated by firms with Canadian and American corporate ownership.

Ultimate Investing Country	2015	2016	2017	2018	2019	2015-2019 Average
Canada	\$0.9B 13 projects	\$1.5B 11 projects	\$0.8B 7 projects	\$0.5B 12 projects	\$1.3B 18 projects	\$1.0B 10 projects
United States	\$0.1B 1 project	\$0.1B 1 project	\$0.3B 4 projects	\$0.3B 4 projects	\$0.2B 4 projects	\$0.2B 3 projects
Australia	No projects					
China	No projects					
United Kingdom	No projects	No projects	No projects	No projects	\$0.0B 1 project	No projects
Other ¹	\$0.6B 4 projects	\$0.5B 3 projects	\$0.5B 3 projects	\$0.4B 1 project	\$0.4B 2 projects	\$0.5B 3 projects
Multiple ²	\$0.0B 1 project	\$0.0B 1 project	\$0.7B 2 projects	\$0.7B 1 project	No projects	\$0.3B 1 project
No Data ³	\$0.1B 1 projects	\$0.1B 2 projects	\$0.9B 4 projects	\$0.9B 5 projects	\$0.9B 4 projects	\$0.6B 3 projects
Total Projects Included	\$1.7B 20 projects	\$2.3B 18 projects	\$3.2B 20 projects	\$2.9B 23 projects	\$2.8B 29 projects	\$2.6B 22 projects

¹ Other countries: Indonesia, and India.

² Multiple: Multiple proponents from multiple countries invested in the same project so a single country of origin cannot be established.

³No Data: Company information not available

Totals may not add due to rounding.

Corporate structure as of May 2019.

Clean Technology Projects

Clean technologies have a crucial role to play in Canada's transition to a low-carbon economy. In addition to reducing the environmental impact of resource development, clean technologies have the potential to strengthen the productivity and competitiveness of resource firms and allow them to enter new markets, including through the development of new and innovative products.⁴ Resource firms across Canada are making significant investments in clean technology solutions, and these investments are expected to continue as progress is made toward the targets of the Pan-Canadian Framework on Clean Growth and Climate Change.

Since 2017, the *Major Projects Inventory Report* has reported on major clean technology projects using a \$10 million capital worth threshold.

Clean technology projects included in the Major Projects Inventory are largely renewable electricity projects (e.g., hydro, wind, solar, biomass, tidal, and geothermal) and non-emitting energy projects (e.g., nuclear, biofuels, and carbon capture and storage) in the energy and forest sectors. While not necessarily captured here, several mining and oil and gas projects include significant clean technology components that will also help to reduce the overall environmental impact of resource development in Canada. It is also important to

⁴ According to [recent data](#) from Statistics Canada, the production of clean technologies, clean energy, and environmental goods and services accounted for 3.1 percent of Canada's gross domestic product and provided 282,000 Canadian jobs in 2017.

note that the inventory captures only clean technology investments made in the context of natural resources and does not include investments made in other sectors.

As of the May 2019 update, there are 145 clean technology projects in the inventory representing \$91 billion in potential investment. These projects are included as subsets of the energy and forest sector totals and are not additional to the overall natural resource project totals reported above. Hydro projects account for roughly half the number and value of clean technology projects (66 projects valued at \$49 billion). The remaining clean technology projects are primarily wind projects (29 projects valued at \$8.6 billion) and biomass/biofuels projects (32 projects valued at \$3 billion).

	2017	2018	2019
Total Clean Technology Projects	172 projects (\$107.5B)	135 projects (\$100.6B)	145 projects (\$90.8B)
Hydro	80 projects (\$49.7B)	64 projects (\$45.9B)	66 projects (\$49.0B)
Wind	42 projects (\$10.6B)	26 projects (\$8.8B)	29 projects (\$8.6B)
Biomass/Biofuels	31 projects (\$8.2B)	28 projects (\$6.2B)	32 projects (\$3.0B)
Solar	9 projects (\$0.6B)	6 projects (\$0.8B)	5 projects (\$0.7B)
Nuclear	4 projects (\$28.5B)	4 projects (\$28.3B)	5 projects (\$28.5B)
Carbon Capture and Storage	2 projects (\$9.1B)	2 projects (\$10.3B)	1 projects (\$0.6B)
Geothermal	2 projects (\$0.4B)	1 project (\$0.0B)	2 project (\$0.2B)
Tidal	1 projects (\$0.1B)	0 projects (\$0.0B)	1 projects (\$0.2B)
Other*	1 projects (\$0.2B)	4 projects (\$0.3B)	4 projects (\$0.4B)

*Other includes micro-grid projects, low-sulphur marine fuel plants, and biochemical production facilities.

Note: Although tracking of clean technology projects for reporting purposes only began in 2017, prior to 2017 clean technology projects were included within the energy and forest sectors.

Totals may not add due to rounding.

This year has seen an increase in the number of projects but a decrease in the value of clean technology projects in the inventory. Since the June 2018 update, 32 new clean technology projects with a combined capital value of \$6 billion were added to the inventory. Since June 2018, 16 projects with a combined capital cost of \$12 billion were completed and became operational (5 hydro projects, 5 biomass/biofuels projects, 4 solar projects, 1 wind project, and 1 carbon capture and storage project). The high number of lower-value projects added to the inventory, and the completion of larger-value projects explains the increase in number, but decrease in value, of projects this year. Nevertheless, both the number and value of clean technology projects remain significant; clean technology projects account for almost one third of all projects in the current inventory, and just under one-seventh of their total value.

While clean technology investments are taking place in all ten provinces, Ontario and British Columbia continue to lead, each having \$25-\$30 billion worth of major clean technology projects planned or under construction. Manitoba and Quebec each have \$10-\$15 billion worth of major clean technology projects planned or under construction. Two nuclear plant refurbishment projects account for most of the clean technology investment planned in Ontario (\$25.8 billion). Similarly, two hydro projects account for a significant portion of clean technology investment in British Columbia (\$14 billion). Since the June 2018 update, British Columbia added 25 new clean technology projects valued at over \$3.7 billion to the inventory.

Although all efforts have been made to capture major clean technology investments across Canada, these results are not necessarily fully representative of the level of clean technology investment activity in certain regions. For example, some significant investments may not have been captured due to the \$10 million threshold set for clean technology projects.

Ultimate Investing Country (UIC) – Clean Technology Projects

As of May 2019, the value of projects owned by firms with Canadian corporate ownership accounted for 92 percent of the total value of clean technology and clean energy projects, as compared to 67 percent for the broader project inventory. In 2019, Canadian companies were the ultimate investors in 109 out of 145 clean technology and clean energy projects, with a combined capital value of \$84 billion already under construction or planned over the next ten years. This year, investments by firms with corporate ownership in the US and France each had investments worth \$2 billion and \$1.2 billion respectively. A new addition to the 2019 inventory was a \$1.5 billion wind energy project in British Columbia developed by BridgePower out of South Korea.

Ultimate Investing Country	2017	2018	2019	2017-2019 Average
Canada	\$95.0B 114 projects	\$93.0B 94 projects	\$83.6B 109 projects	\$90.5B 106 projects
United States	\$3.5B 10 projects	\$1.7B 7 projects	\$2.0B 9 projects	\$2.4B 9 projects
Australia	\$0.1B 2 projects	\$0.5B 6 projects	\$0.6B 9 projects	\$0.4B 5 projects
France	\$1.8B 4 projects	\$1.9B 4 projects	\$1.2B 3 project	\$1.6B 4 project
South Korea	\$0.3B 2 projects	No projects	\$1.5B 1 project	\$0.6B 1 project
Other ¹	\$1.9B 11 projects	\$0.9B 4 projects	\$0.8B 6 projects	\$1.2B 7 projects
Multiple ²	\$2.3B 7 projects	\$1.6B 4 projects	\$0.2B 3 projects	\$1.4B 5 projects
No Data ³	\$2.4B 22 projects	\$1.4B 16 projects	\$0.9B 5 projects	\$1.6B 14 projects
Total Projects Included	\$107.3B 172 projects	\$101.0B 135 projects	\$90.8B 145 projects	\$99.7B 151 projects

¹ Other countries: China, Luxembourg, Indonesia, Japan, Spain, United Kingdom, and Italy.

² Multiple: Multiple proponents from multiple countries invested in the same project so a single country of origin cannot be established.

³No Data: Company information not available

Totals may not add due to rounding.

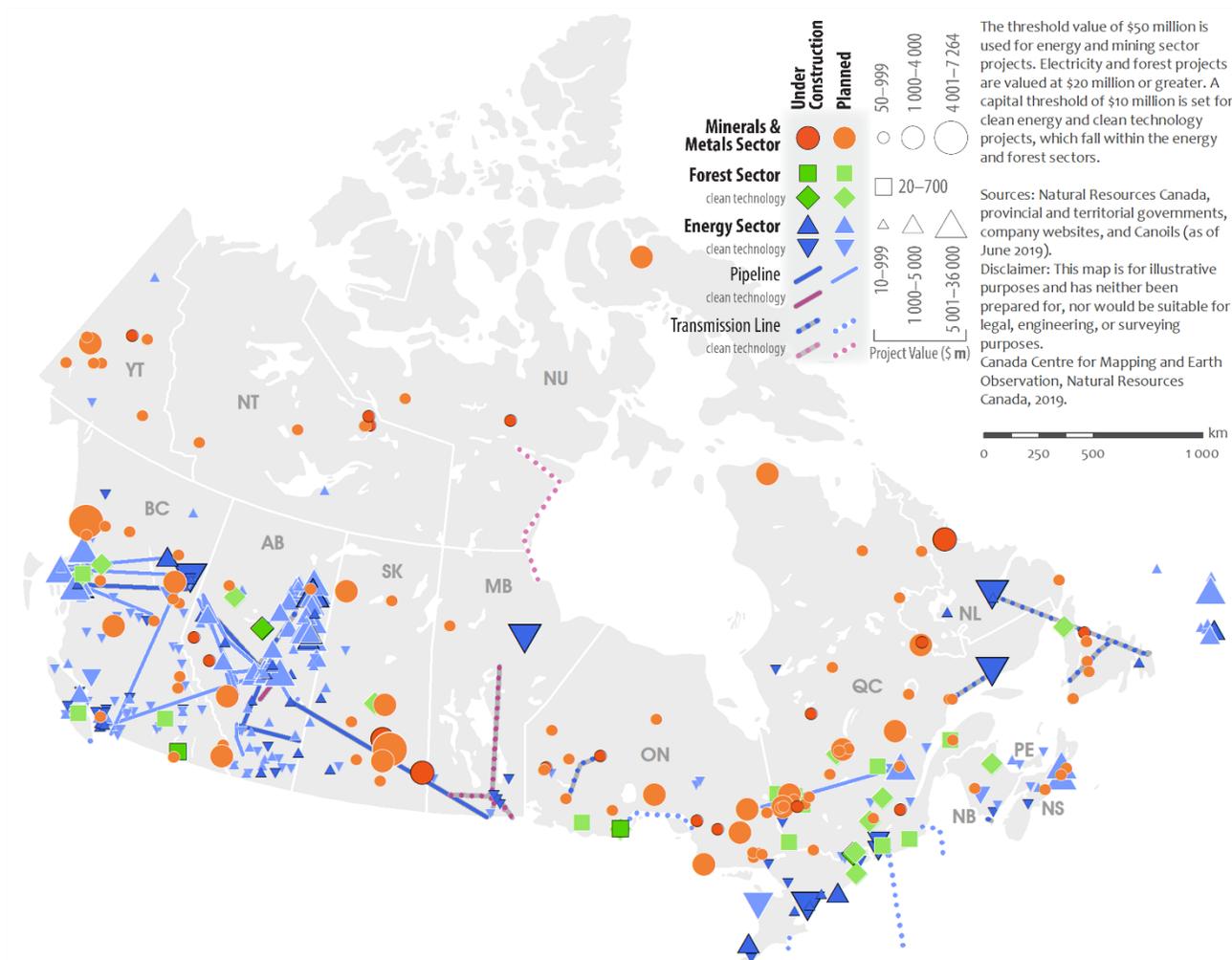
Corporate structure as of May 2019.

MAJOR NATURAL RESOURCE PROJECTS

Planned and Under Construction, 2019-2029



Canada



1 Highlights

- As of May 2019, there are 455 projects currently under construction or planned over the next 10 years, representing \$635 billion in potential capital investment.
- Energy projects accounted for 86.8 percent of the total value of major projects in the inventory, minerals and metals projects accounted for 12.7 percent, and forest projects accounted for 0.5%.
- 117 projects valued at \$103 billion were added to the inventory. In addition, 45 major projects valued at \$25 billion were completed and began production.
- However, 19 major projects worth a combined \$33 billion were cancelled or suspended. An additional 16 projects worth \$3 billion were removed from the inventory for various data quality reasons.
- These changes led to a net \$40 billion increase in the value of projects in the inventory, with most of the increase having occurred in the oil and gas sector.

2 Summary Table

Status	Energy		Minerals and Metals		Forest		Total	
	#	\$B	#	\$B	#	\$B	#	\$B
Planned	212	\$402	95	\$67	25	\$3	332	\$471
Announced	60	\$87	37	\$17	21	\$2	118	\$107
Under Review	75	\$163	39	\$33	1	\$0	115	\$196
Approval Received	54	\$111	18	\$17	0	\$0	72	\$128
Planned – Status Unknown	23	\$40	1	\$0	3	\$0	27	\$41
Under Construction	100	\$151	19	\$13	4	\$0	123	\$164
Total	312	\$553	114	\$80	29	\$3	455	\$635

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

3 Trends in Project Status 2015-2019

Status	2015		2016		2017		2018		2019	
	#	\$B								
Planned	342	\$534	272	\$505	319	\$510	297	\$465	332	\$471
Under Construction	145	\$178	149	\$186	152	\$174	121	\$120	123	\$164
Total	487	\$711	421	\$691	471	\$684	418	\$585	455	\$635

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

4 Projects by Province/Territory

Province	Energy		Minerals and Metals		Forest		Total	
	#	\$B	#	\$B	#	\$B	#	\$B
British Columbia	98	\$217	19	\$17	7	\$0.3	124	\$234.3
Alberta	117	\$186	6	\$4	2	\$0.1	125	\$189.9
Saskatchewan	7	\$2	10	\$18	1	\$0.3	18	\$20.6
Manitoba	14	\$10	1	\$0	0	\$0.0	15	\$10.5
Ontario	21	\$37	21	\$12	4	\$0.2	46	\$49.0
Quebec	19	\$24	26	\$14	13	\$2.0	58	\$40.0
New Brunswick	4	\$3	1	\$1	1	\$0.0	6	\$3.8
Nova Scotia	6	\$20	3	\$1	0	\$0.0	9	\$20.0
Prince Edward Island	3	\$0	0	\$0	0	\$0.0	3	\$0.1
Newfoundland and Labrador	15	\$25	10	\$5	1	\$0.0	26	\$30.0
Yukon	2	\$0	8	\$5	0	\$0.0	10	\$5.0
Northwest Territories	1	\$1	6	\$2	0	\$0.0	7	\$3.3
Nunavut	0	\$0	3	\$2	0	\$0.0	3	\$1.8
Multi-jurisdictional	5	\$28	0	\$0	0	\$0.0	5	\$27.7

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

MAJOR NATURAL RESOURCE PROJECTS

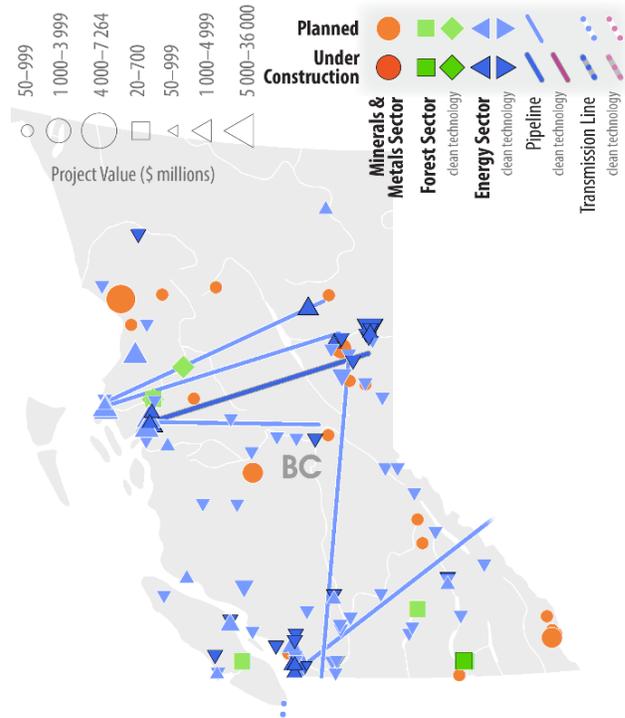
Planned and Under Construction, 2019-2029



British Columbia

1 Highlights

- A total of 124 projects are under construction or planned over the next 10 years in British Columbia, representing \$234 billion and 37 percent of total investment.
- Energy projects account for more than 90 percent of the value of major project investment in the province.
- In 2019, there were 64 clean technology projects included in the B.C. inventory, valued at \$24 billion.
- These included: 35 hydro projects valued at \$19 billion, 14 wind projects valued at \$5 billion, 13 biomass/biofuels projects valued at \$1 billion, and 2 geothermal projects valued at \$0.2 billion.



2 Summary Table

Status	Energy		Minerals and Metals		Forest		Total	
	#	\$B	#	\$B	#	\$B	#	\$B
Planned	68	\$159	19	\$17.1	6	\$0.2	93	\$176.5
Announced	16	\$33	3	\$1.2	0	\$0.0	25	\$34.2
Under Review	32	\$85	15	\$15.4	0	\$0.0	47	\$100.1
Approval Received	5	\$4	1	\$0.5	0	\$0.0	6	\$4.0
Planned – Status Unknown	15	\$38	0	\$0.0	0	\$0.0	15	\$38.0
Under Construction	30	\$58	0	\$0.0	1	\$0.0	31	\$58.0
Total	98	\$217	19	\$17.1	7	\$0.3	124	\$234.3

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

3 Trends in Project Status 2015-2019

Status	2015		2016		2017		2018		2019	
	#	\$B								
Planned	113	\$234	84	\$249	84	\$222	77	\$190	93	\$176
Under Construction	46	\$14	43	\$22	38	\$18	32	\$15	31	\$58
Total	159	\$248	127	\$271	122	\$240	109	\$206	124	\$234

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

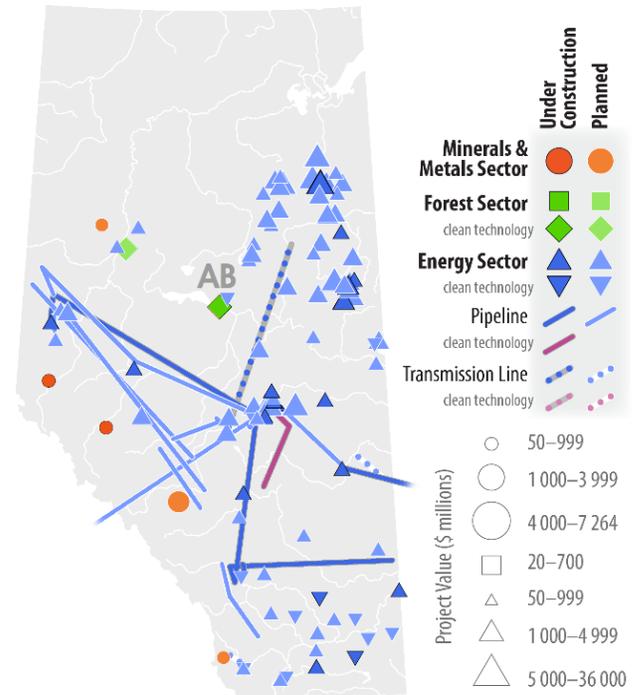
MAJOR NATURAL RESOURCE PROJECTS

Planned and Under Construction, 2019-2029



1 Highlights

- A total of 125 projects are currently under construction or planned over the next 10 years in Alberta, representing \$190 billion in investment.
- Energy projects account for more than 95 percent of the value of major project investment in the province. New energy projects have increased the total value of projects in the province from \$178 billion to \$190 billion in 2019.
- In 2019, there were 17 clean technology projects included in the Alberta inventory, valued at \$3.2 billion.
- These include a carbon capture and storage projects valued at \$0.6 billion, six wind projects valued at \$1.7 billion, five solar projects valued at \$0.7 billion, four biofuels projects valued at \$0.1 billion, and one low sulfur marine fuel facility valued at \$0.1 billion.



2 Summary Table

Status	Energy		Minerals and Metals		Forest		Total	
	#	\$B	#	\$B	#	\$B	#	\$B
Planned	90	\$164	4	\$3	1	\$0.0	95	\$166
Announced	37	\$39	2	\$1	0	\$0.0	40	\$40
Under Review	13	\$54	1	\$1	0	\$0.0	14	\$55
Approval Received	35	\$68	0	\$0	0	\$0.0	35	\$68
Planned – Status Unknown	5	\$2	1	\$0	0	\$0.0	6	\$2
Under Construction	27	\$23	2	\$1	1	\$0.0	30	\$24
Total	117	\$186	6	\$4	2	\$0.1	125	\$190

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

3 Trends in Project Status 2015-2019

Status	2015		2016		2017		2018		2019	
	#	\$B								
Planned	97	\$136	73	\$114	73	\$148	77	\$146	95	\$166
Under Construction	36	\$68	45	\$74	34	\$59	25	\$31	30	\$24
Total	133	\$204	118	\$187	107	\$207	102	\$178	125	\$190

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

MAJOR NATURAL RESOURCE PROJECTS

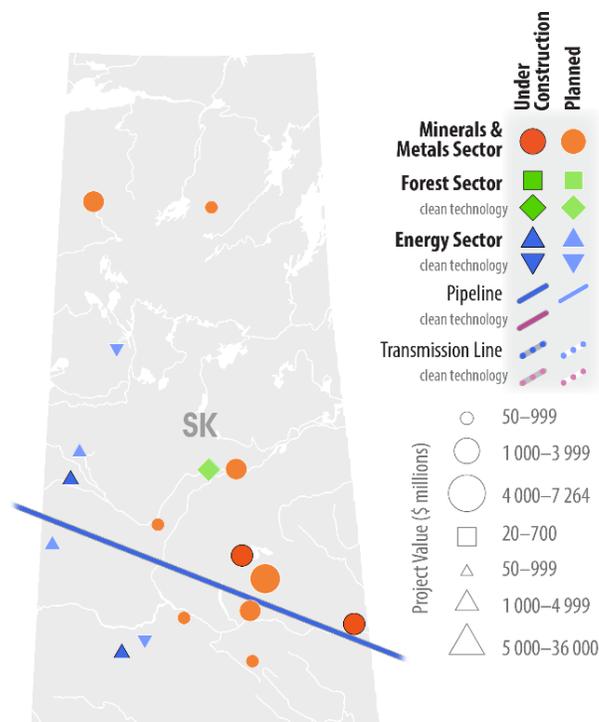
Planned and Under Construction, 2019-2029



Saskatchewan

1 Highlights

- A total of 18 projects are currently under construction or planned over the next 10 years in Saskatchewan, representing approximately \$21 billion in investment.
- Minerals and metals projects account for over 85 percent of the value of major project investment in the province.
- In 2019, there were three clean technology projects included in the Saskatchewan inventory, valued at \$0.7 billion.
- These included two biomass projects valued at \$0.4 billion and one wind project valued at \$0.3 billion.



2 Summary Table

Status	Energy		Minerals and Metals		Forest		Total	
	#	\$B	#	\$B	#	\$B	#	\$B
Planned	4	\$1	8	\$12	1	\$0.3	13	\$13.6
Announced	2	\$1	3	\$2	0	\$0.0	5	\$3.0
Under Review	0	\$0	2	\$4	0	\$0.0	2	\$4.0
Approval Received	2	\$0	3	\$6	0	\$0.0	5	\$6.0
Planned – Status Unknown	0	\$0	0	\$0	1	\$0.3	1	\$0.3
Under Construction	3	\$1	2	\$6	0	\$0.0	5	\$7.0
Total	7	\$2	10	\$18	1	\$0.3	18	\$20.6

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

3 Trends in Project Status 2015-2019

Status	2015		2016		2017		2018		2019	
	#	\$B								
Planned	11	\$13	9	\$9	14	\$13	14	\$13	13	\$14
Under Construction	7	\$14	5	\$11	7	\$14	4	\$8	5	\$7
Total	18	\$27	14	\$20	21	\$27	18	\$21	18	\$21

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

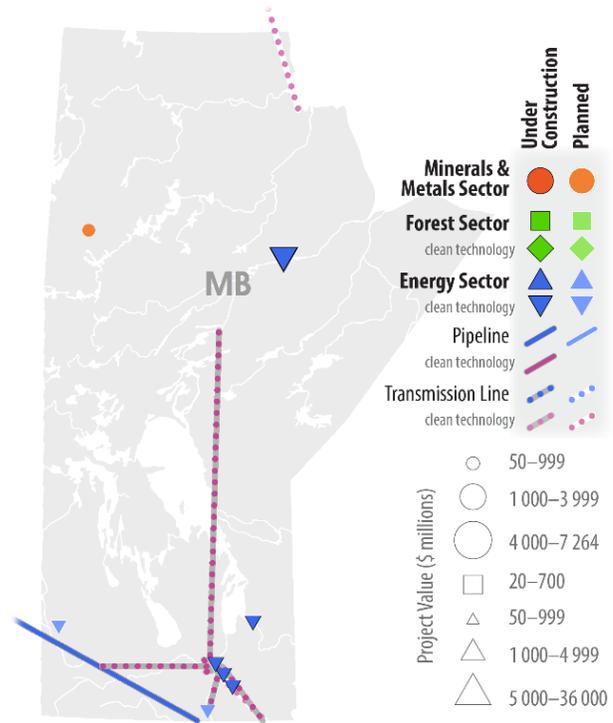
MAJOR NATURAL RESOURCE PROJECTS

Planned and Under Construction, 2019-2029



1 Highlights

- A total of 15 projects are currently under construction or planned over the next 10 years in Manitoba, representing approximately \$11 billion in investment.
- Energy projects account for over 95 percent of the value of major project investment in the province.
- In 2019, there were 14 clean technology projects included in the Manitoba inventory, valued at \$10 billion. All were hydroelectric generation and/or transmission projects.



2 Summary Table

Status	Energy		Minerals and Metals		Forest		Total	
	#	\$B	#	\$B	#	\$B	#	\$B
Planned	4	\$0.6	1	\$0.4	0	\$0.0	5	\$1.0
Announced	0	\$0.0	1	\$0.4	0	\$0.0	1	\$0.4
Under Review	2	\$0.5	0	\$0.0	0	\$0.0	2	\$0.5
Approval Received	2	\$0.1	0	\$0.0	0	\$0.0	2	\$0.1
Planned – Status Unknown	0	\$0.0	0	\$0.0	0	\$0.0	0	\$0.0
Under Construction	10	\$9.5	0	\$0.0	0	\$0.0	10	\$9.5
Total	14	\$10.1	1	\$0.4	0	\$0.0	15	\$10.5

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

3 Trends in Project Status 2015-2019

Status	2015		2016		2017		2018		2019	
	#	\$B	#	\$B	#	\$B	#	\$B	#	\$B
Planned	3	\$1	2	\$1	3	\$1	5	\$1	5	\$1
Under Construction	3	\$10	2	\$10	10	\$14	9	\$9	10	\$9
Total	6	\$11	4	\$11	13	\$15	14	\$10	15	\$11

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

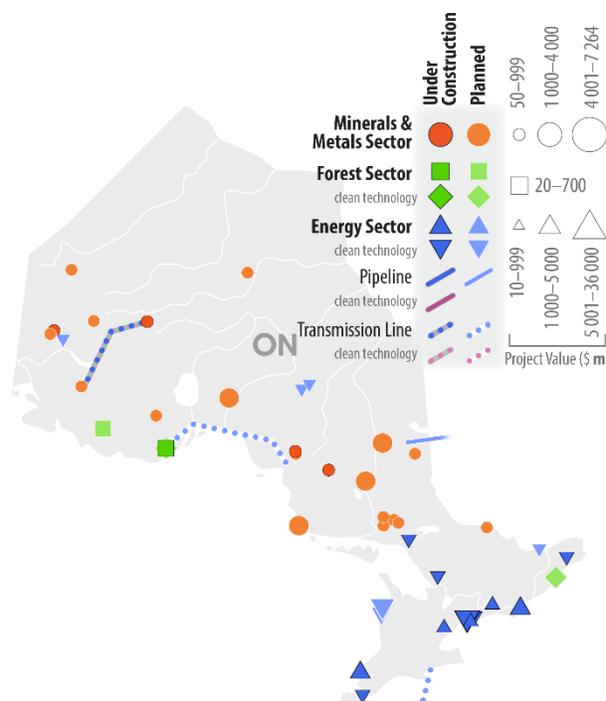
MAJOR NATURAL RESOURCE PROJECTS

Planned and Under Construction, 2019-2029



1 Highlights

- A total of 46 projects are currently under construction or planned over the next 10 years in Ontario, representing \$49 billion in investment.
- Energy projects account for 75 percent of the value of major project investment in the province.
- There were 15 clean technology projects included in the Ontario inventory, valued at \$30 billion.
- These included four nuclear projects valued at \$28 billion, three wind projects valued at \$1.1 billion, six hydro projects valued at \$0.1 billion, and two biomass projects valued at \$0.1 billion.



2 Summary Table

Status	Energy		Minerals and Metals		Forest		Total	
	#	\$B	#	\$B	#	\$B	#	\$B
Planned	9	\$17	17	\$11	3	\$0.2	29	\$28.2
Announced	0	\$0	9	\$5	1	\$0.0	10	\$4.6
Under Review	7	\$4	4	\$3	0	\$0.0	11	\$6.2
Approval Received	2	\$14	4	\$3	0	\$0.0	6	\$17.3
Planned – Status Unknown	0	\$0	0	\$0	2	\$0.1	2	\$0.1
Under Construction	12	\$20	4	\$1	1	\$0.0	17	\$20.8
Total	21	\$37	21	\$12	4	\$0.2	46	\$49.0

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

3 Trends in Project Status 2015-2019

Status	2015		2016		2017		2018		2019	
	#	\$B								
Planned	20	\$15	19	\$24	57	\$26	29	\$28	29	\$28
Under Construction	14	\$24	8	\$19	8	\$18	21	\$19	17	\$21
Total	34	\$39	27	\$43	65	\$44	50	\$48	46	\$49

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

MAJOR NATURAL RESOURCE PROJECTS

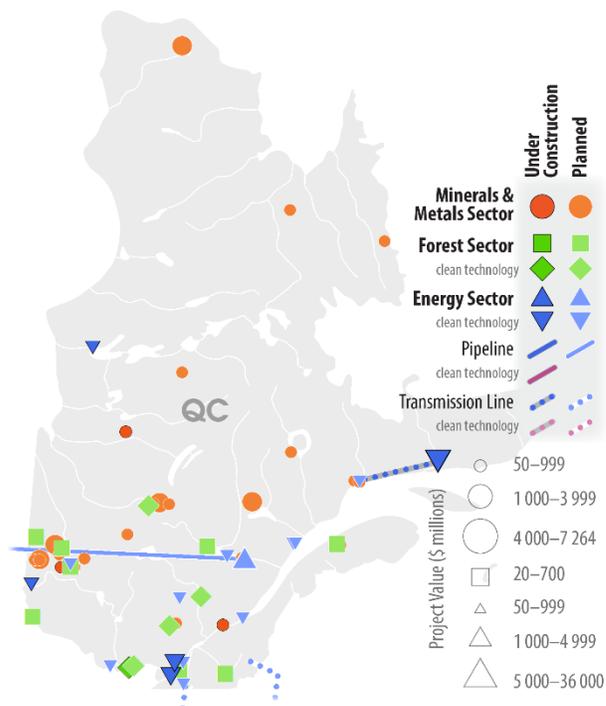
Planned and Under Construction, 2019-2029



Quebec

1 Highlights

- A total of 58 projects are currently under construction or planned over the next 10 years in Quebec, representing \$40 billion in investment.
- Energy projects account for 60 percent of the value of major project investment in Quebec, mining projects account for 35 percent, and forest projects account for 5 percent.
- In 2019, there were 20 clean technology projects included in the Quebec inventory, valued at \$13 billion.
- These included: eight hydro projects valued at \$10.4 billion, eight biomass projects valued at \$1.5 billion, three wind projects valued at \$0.8 billion, and a bioproduct mill valued at \$0.2 billion.



2 Summary Table

Status	Energy		Minerals and Metals		Forest		Total	
	#	\$B	#	\$B	#	\$B	#	\$B
Planned	13	\$12	23	\$13	12	\$2	48	\$27
Announced	2	\$3	12	\$6	12	\$2	26	\$11
Under Review	7	\$9	6	\$3	0	\$0	13	\$12
Approval Received	2	\$0	5	\$4	0	\$0	7	\$4
Planned – Status Unknown	2	\$0	0	\$0	0	\$0	2	\$0
Under Construction	6	\$12	3	\$1	1	\$0	10	\$13
Total	19	\$24	26	\$14	13	\$2	58	\$40

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

3 Trends in Project Status 2015-2019

Status	2015		2016		2017		2018		2019	
	#	\$B								
Planned	41	\$53	35	\$28	39	\$24	44	\$26	48	\$27
Under Construction	21	\$15	22	\$18	28	\$16	12	\$12	10	\$13
Total	62	\$67	57	\$46	67	\$40	56	\$38	58	\$40

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

MAJOR NATURAL RESOURCE PROJECTS

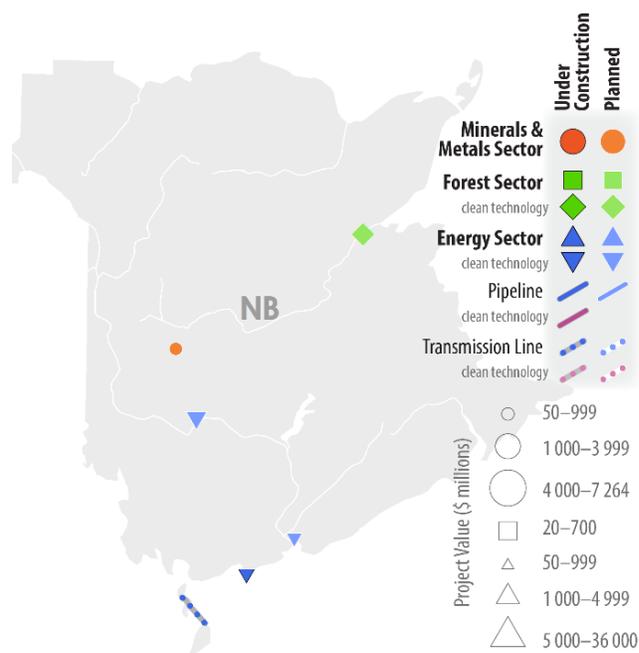
Planned and Under Construction, 2019-2029



New Brunswick

1 Highlights

- A total of 6 projects are currently under construction or planned over the next 10 years in New Brunswick, representing approximately \$4 billion in investment.
- Energy projects account for over 80 percent of the value of major project investment in the province, whereas mining projects account for most of the remainder.
- In 2019, there were four clean technology projects included in the New Brunswick inventory, valued at \$3.2 billion.
- These included a hydro dam upgrade valued at \$2.9 billion, a smart grids project valued at \$227 million, a nuclear project valued at \$48 million, and a biomass project valued at \$45 million.



2 Summary Table

Status	Energy		Minerals and Metals		Forest		Total	
	#	\$B	#	\$B	#	\$B	#	\$B
Planned	2	\$3.1	1	\$0.6	1	\$0.0	4	\$3.7
Announced	0	\$0.0	0	\$0.0	0	\$0.0	0	\$0.0
Under Review	2	\$3.1	1	\$0.6	1	\$0.0	4	\$3.7
Approval Received	0	\$0.0	0	\$0.0	0	\$0.0	0	\$0.0
Planned – Status Unknown	0	\$0.0	0	\$0.0	0	\$0.0	0	\$0.0
Under Construction	2	\$0.1	0	\$0.0	0	\$0.0	2	\$0.1
Total	4	\$3.2	1	\$0.6	1	\$0.0	6	\$3.8

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

3 Trends in Project Status 2015-2019

Status	2015		2016		2017		2018		2019	
	#	\$B								
Planned	7	\$4.0	6	\$1.0	5	\$1.2	8	\$1.2	4	\$3.7
Under Construction	2	\$0.2	2	\$0.6	2	\$0.4	0	\$0.0	2	\$0.1
Total	9	\$4.2	8	\$1.6	7	\$1.6	8	\$1.2	6	\$3.8

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

MAJOR NATURAL RESOURCE PROJECTS

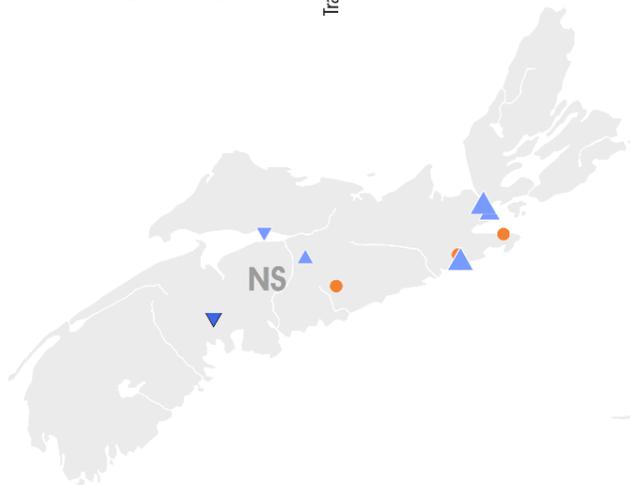
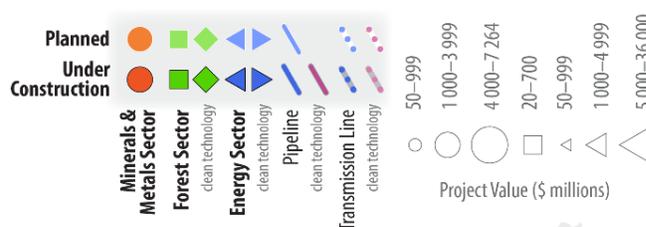
Planned and Under Construction, 2019-2029



Nova Scotia

1 Highlights

- A total of 9 projects are currently under construction or planned over the next 10 years in Nova Scotia, representing \$20 billion in investment.
- Energy projects account for over 95 percent of the value of major project investment in the province.
- In 2019, there were two clean technology projects included in the Nova Scotia inventory, valued at \$0.1 billion. One a biofuel/biomass project valued at \$16 million, the other a tidal project valued at \$117 million.



2 Summary Table

Status	Energy		Minerals and Metals		Forest		Total	
	#	\$B	#	\$B	#	\$B	#	\$B
Planned	5	\$19.5	3	\$0.5	0	\$0.0	8	\$20.0
Announced	0	\$0.0	1	\$0.3	0	\$0.0	1	\$0.3
Under Review	2	\$3.1	1	\$0.1	0	\$0.0	3	\$3.2
Approval Received	3	\$16.4	1	\$0.1	0	\$0.0	4	\$16.5
Planned – Status Unknown	0	\$0.0	0	\$0.0	0	\$0.0	0	\$0.0
Under Construction	1	\$0.0	0	\$0.0	0	\$0.0	1	\$0.0
Total	6	\$19.5	3	\$0.5	0	\$0.0	9	\$20.0

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

3 Trends in Project Status 2015-2019

Status	2015		2016		2017		2018		2019	
	#	\$B	#	\$B	#	\$B	#	\$B	#	\$B
Planned	14	\$24	10	\$20	8	\$20	8	\$20	8	\$20
Under Construction	4	\$2	6	\$2	6	\$3	2	\$1	1	\$0
Total	18	\$25	16	\$22	14	\$23	10	\$21	9	\$20

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

MAJOR NATURAL RESOURCE PROJECTS

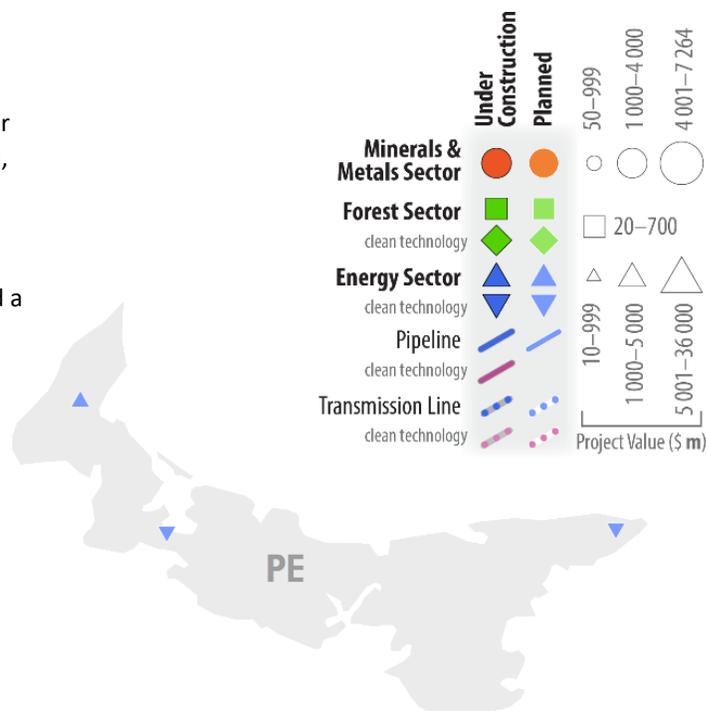
Planned and Under Construction, 2019-2029



Prince Edward Island

1 Highlights

- A total of 3 projects are currently under construction or planned over the next 10 years in Prince Edward Island, representing approximately \$0.1 billion in investment.
- All three were energy projects, two of them clean tech including a wind farm project valued at \$60 million and a micro-grid project valued at an estimated \$18 million.



2 Summary Table

Status	Energy		Minerals and Metals		Forest		Total	
	#	\$B	#	\$B	#	\$B	#	\$B
Planned	3	\$0.1	0	\$0.0	0	\$0.0	3	\$0.1
Announced	0	\$0.0	0	\$0.0	0	\$0.0	0	\$0.0
Under Review	3	\$0.1	0	\$0.0	0	\$0.0	3	\$0.1
Approval Received	0	\$0.0	0	\$0.0	0	\$0.0	0	\$0.0
Planned – Status Unknown	0	\$0.0	0	\$0.0	0	\$0.0	0	\$0.0
Under Construction	0	\$0.0	0	\$0.0	0	\$0.0	0	\$0.0
Total	3	\$0.1	0	\$0.0	0	\$0.0	3	\$0.1

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

3 Trends in Project Status 2015-2019

Status	2015		2016		2017		2018		2019	
	#	\$B								
Planned	1	\$0.1	0	\$0.0	1	\$0.1	2	\$0.1	3	\$0.1
Under Construction	0	\$0.0	1	\$0.1	1	\$0.1	0	\$0.0	0	\$0.0
Total	1	\$0.1	1	\$0.1	2	\$0.2	2	\$0.1	3	\$0.1

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

MAJOR NATURAL RESOURCE PROJECTS

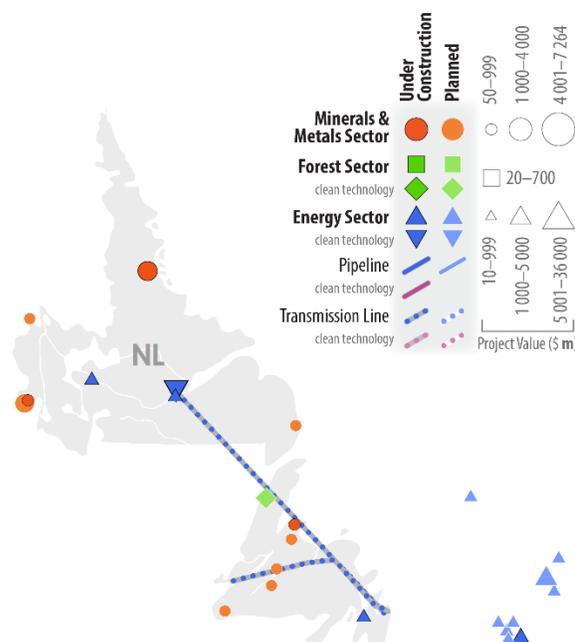
Planned and Under Construction, 2019-2029



Newfoundland and Labrador

1 Highlights

- A total of 26 projects are currently under construction or planned over the next 10 years in Newfoundland and Labrador, representing \$30 billion in investment.
- Energy projects accounted for over 80 percent of the value of major projects in the province.
- In 2019, there were two clean technology project included in the Newfoundland and Labrador inventory, a hydroelectric project valued at \$10.1 billion⁵ and a wood pellet plant worth \$20 million.



2 Summary Table

Status	Energy*		Minerals and Metals		Forest		Total	
	#	\$B	#	\$B	#	\$B	#	\$B
Planned	8	\$11	7	\$2	1	\$0	16	\$14
Announced	1	\$7	2	\$0	1	\$0	4	\$7
Under Review	6	\$4	3	\$1	0	\$0	9	\$5
Approval Received	1	\$0	2	\$1	0	\$0	3	\$2
Planned – Status Unknown	0	\$0	0	\$0	0	\$0	0	\$0
Under Construction	7	\$14	3	\$3	0	\$0	10	\$16
Total	15	\$25	10	\$5	1	\$0	26	\$30

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

3 Trends in Project Status 2015-2019

Status	2015		2016		2017		2018		2019	
	#	\$B								
Planned	11	\$13	10	\$10	12	\$10	15	\$12	16	\$14
Under Construction	10	\$30	11	\$27	14	\$29	10	\$16	10	\$16
Total	21	\$44	21	\$37	26	\$39	25	\$28	26	\$30

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

⁵ Value Includes Hydroelectric Generating Station as well as Transmission Links

MAJOR NATURAL RESOURCE PROJECTS

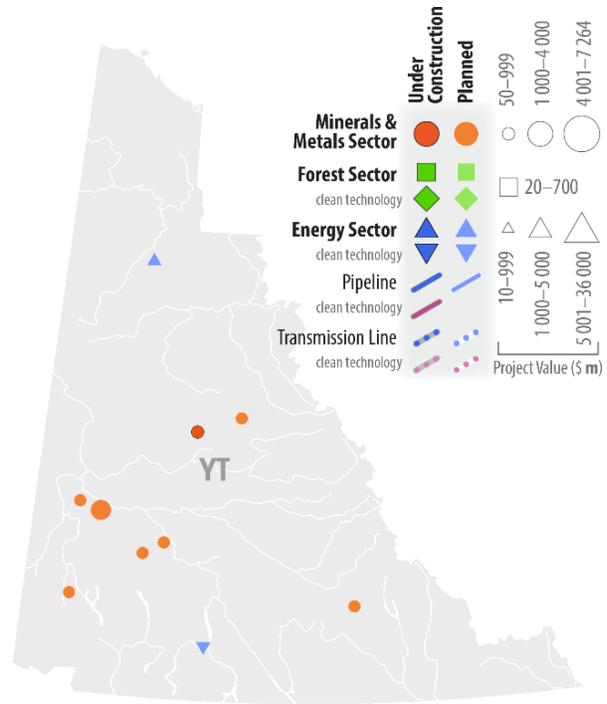
Planned and Under Construction, 2019-2029



Yukon

1 Highlights

- A total of 10 projects are currently under construction or planned over the next 10 years in the Yukon, representing \$5 billion in investment.
- Mining projects account for over 95 percent of the value of major projects investment in the territory.
- As of the June 2019 update, there was one clean technology project in the territory, a \$20 million wind power project in Whitehorse.



2 Summary Table

Status	Energy		Minerals and Metals		Forest		Total	
	#	\$B	#	\$B	#	\$B	#	\$B
Planned	2	\$0.1	7	\$4.4	0	\$0.0	9	\$4.5
Announced	1	\$0.0	4	\$1.2	0	\$0.0	5	\$1.2
Under Review	0	\$0.0	3	\$3.2	0	\$0.0	3	\$3.2
Approval Received	0	\$0.0	0	\$0.0	0	\$0.0	0	\$0.0
Planned – Status Unknown	1	\$0.1	0	\$0.0	0	\$0.0	1	\$0.1
Under Construction	0	\$0.0	1	\$0.5	0	\$0.0	1	\$0.5
Total	2	\$0.1	8	\$4.9	0	\$0.0	10	\$5.0

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

3 Trends in Project Status 2015-2019

Status	2015		2016		2017		2018		2019	
	#	\$B	#	\$B	#	\$B	#	\$B	#	\$B
Planned	9	\$7.0	9	\$7.0	8	\$4.5	8	\$4.6	9	\$4.5
Under Construction	0	\$0.0	0	\$0.0	0	\$0.0	1	\$0.3	1	\$0.5
Total	9	\$7.0	9	\$7.0	8	\$4.5	9	\$4.9	10	\$5.0

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

MAJOR NATURAL RESOURCE PROJECTS

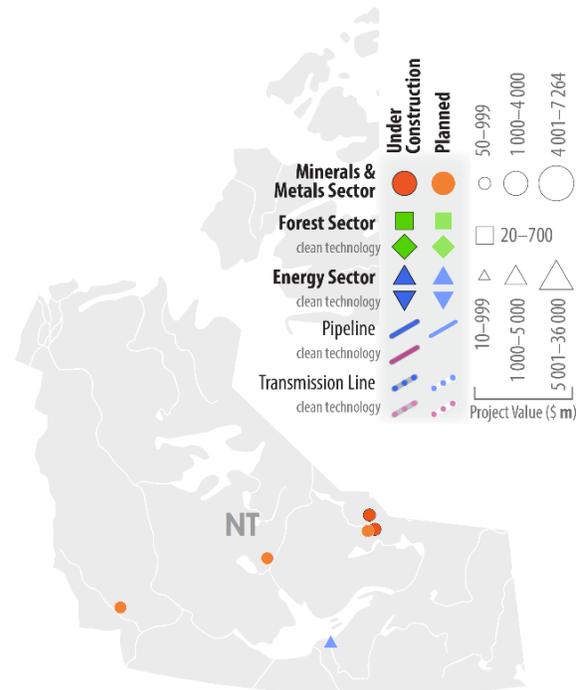
Planned and Under Construction, 2019-2029



Northwest Territories

1 Highlights

- A total of 7 projects are currently under construction or planned over the next 10 years in the Northwest Territories, representing approximately \$3.3 billion in investment.
- Mining projects account for over 70 percent of the value of major projects investment in the territory.
- As of the May 2019 update, there were no major clean technology projects in the territory.



2 Summary Table

Status	Energy		Minerals and Metals		Forest		Total	
	#	\$B	#	\$B	#	\$B	#	\$B
Planned	1	\$0.9	3	\$1.7	0	\$0.0	4	\$2.7
Announced	0	\$0.0	0	\$0.0	0	\$0.0	0	\$0.0
Under Review	0	\$0.0	1	\$0.3	0	\$0.0	1	\$0.3
Approval Received	1	\$0.9	2	\$1.4	0	\$0.0	3	\$2.4
Planned – Status Unknown	0	\$0.0	0	\$0.0	0	\$0.0	0	\$0.0
Under Construction	0	\$0.0	3	\$0.6	0	\$0.0	3	\$0.6
Total	1	\$0.9	6	\$2.3	0	\$0.0	7	\$3.3

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

3 Trends in Project Status 2015-2019

Status	2015		2016		2017		2018		2019	
	#	\$B								
Planned	6	\$4.0	4	\$2.0	5	\$4.0	5	\$4.5	4	\$2.7
Under Construction	1	\$1.0	2	\$1.0	1	\$0.4	3	\$0.6	3	\$0.6
Total	7	\$5.0	6	\$3.0	6	\$4.5	8	\$5.2	7	\$3.3

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

MAJOR NATURAL RESOURCE PROJECTS

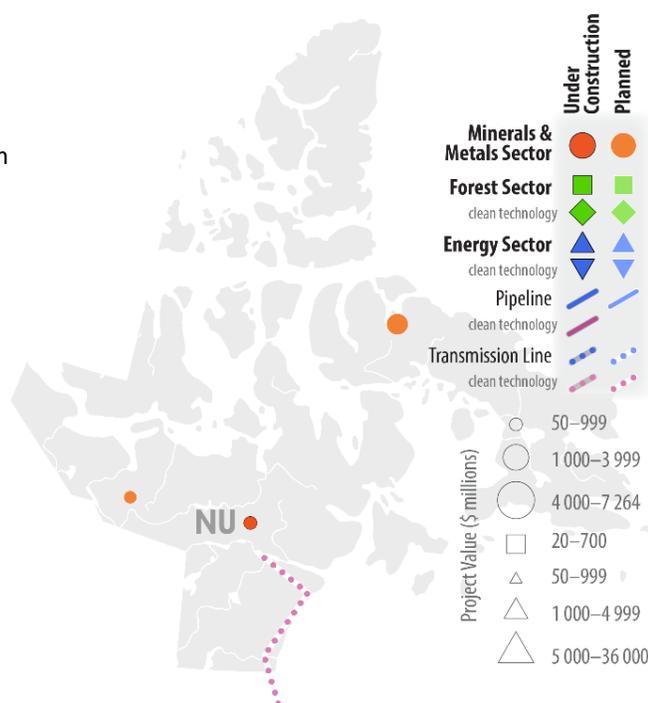
Planned and Under Construction, 2019-2029



Nunavut

1 Highlights

- A total of 3 projects are currently under construction in or planned over the next 10 years in Nunavut, representing approximately \$2 billion in investment.
- Two of the projects were gold mining projects valued at \$1 billion, the other, an iron ore project valued at \$1 billion.
- In 2019, there were no major clean technology projects in the territory.



2 Summary Table

Status	Energy		Minerals and Metals		Forest		Total	
	#	\$B	#	\$B	#	\$B	#	\$B
Planned	0	\$0.0	2	\$1.4	0	\$0.0	2	\$1.4
Announced	0	\$0.0	0	\$0.0	0	\$0.0	0	\$0.0
Under Review	0	\$0.0	2	\$1.4	0	\$0.0	2	\$1.4
Approval Received	0	\$0.0	0	\$0.0	0	\$0.0	0	\$0.0
Planned – Status Unknown	0	\$0.0	0	\$0.0	0	\$0.0	0	\$0.0
Under Construction	0	\$0.0	1	\$0.4	0	\$0.0	1	\$0.4
Total	0	\$0.0	3	\$1.8	0	\$0.0	3	\$1.8

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.

3 Trends in Project Status 2015-2019

Status	2015		2016		2017		2018		2019	
	#	\$B								
Planned	4	\$4.0	3	\$2.0	2	\$0.8	2	\$0.8	2	\$1.4
Under Construction	0	\$0.0	0	\$0.0	1	\$1.2	1	\$1.2	1	\$0.4
Total	4	\$4.0	3	\$2.0	3	\$2.0	3	\$2.0	3	\$1.8

Source: Major Projects Inventory, as of May 2019.

Note: Totals may not add up due to rounding.