MEGAPROJECTS OUTLOOK – CANADA

March 2018

Projects covered by this anlaysis include major private industrial investments (i.e.: resource extraction, pipelines, manufacturing sector) announced or under construction in Canada as of December 2017 and valued at $1 billion or more. Qualified projects have a specific location, a set value and timetable, and are at the construction or pre-construction stage.

FRAGILITY INDICATOR

This indicator represents the value of projects classified as fragile or projects for which public information suggests that the project as initially announced could be reduced, delayed by more than one year, or even abandoned.

Foreign investors running for the exit

Canadian investors remain more confident, but their capacity for action is more limited

Oil: The little engine that could
Several megaprojects have been completed and Canadian oil production surged in 2017. The pipeline bottleneck is being mitigated, particularly by the intensification of rail transportation.

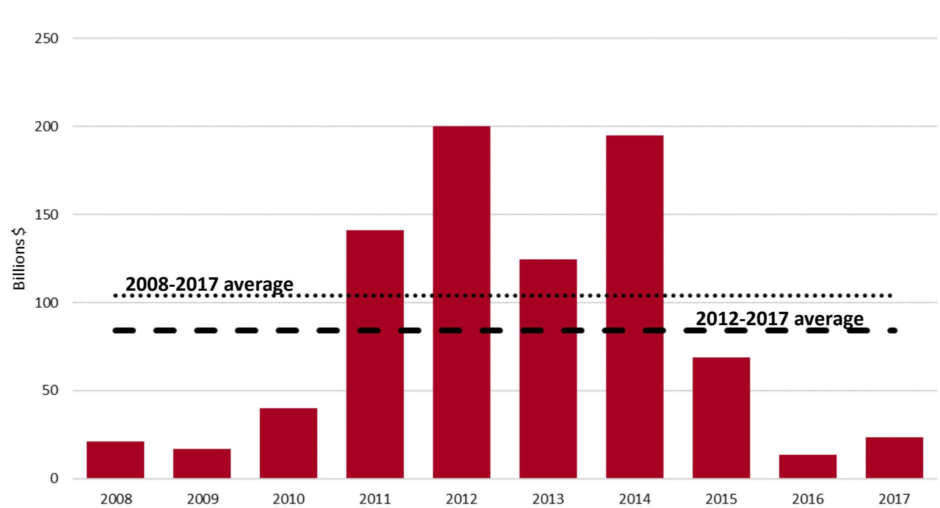
Natural gas: First Nations assert themselves as partners
Their participation is increasingly a condition of success for the LNG terminal projects that remain active on the West Coast.

Mining and metals: End of world class projects?
95% of the value of ongoing projects is on hold for all intents and purposes.

Back to 2008-2009 levels

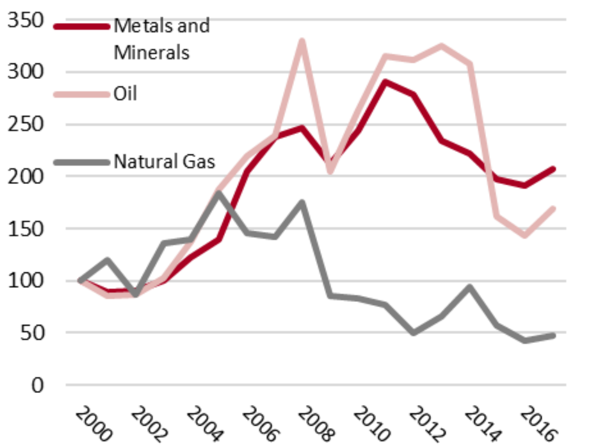
Despite the slight recovery in commodity prices in 2017, new projects are scarce and only $22 billion were announced in 2017, mainly (76%) in hydrocarbons. The project abandonment rate was more than 20% of the total value. In short, the level of investment for 2016–2017 looks eerily like that of recession years. This slump does not affect all investors in the same way and some are well positionned.

New Industrial Megaprojects Announcements – Canada – 2008-2017



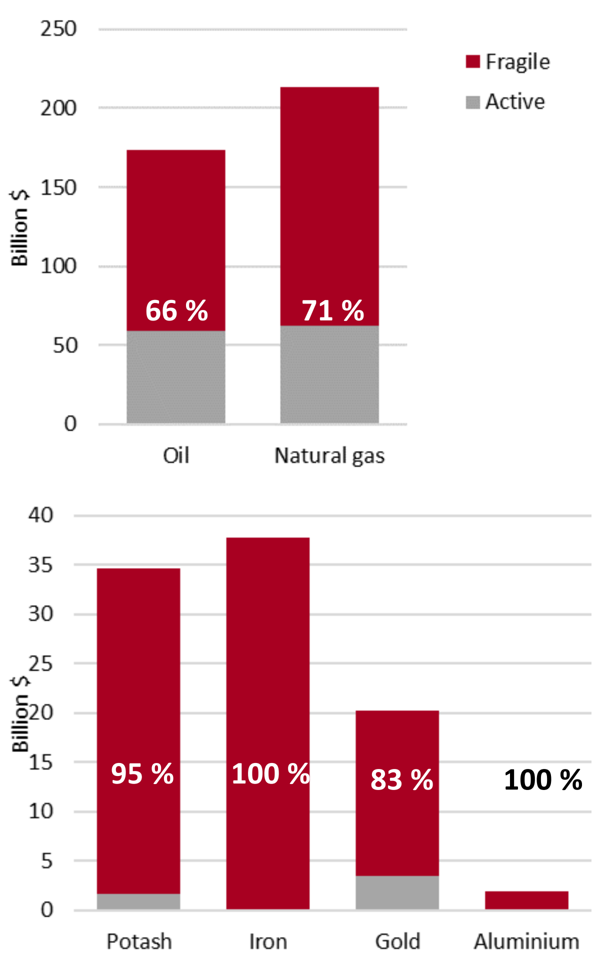
Source: E&B DATA, CAPEX-online, 2018.

Commodity Price Index - Base 100 = 2000 — 2000–2017



Sources : 1) Metals and minerals: Banque du Canada Bank of Canada - Commodity price index (BCPI) in US$. - Potash, aluminium, gold, nickel, iron, copper, silver, zinc, lead. 2) Oil : US Energy Information Administration – WTI oil price ($ US). 3) Natural Gas : Alberta Energy ($ CAN)

Fragility of Ongoing Projects – By Product – 2017



Source: E&B DATA, CAPEX-online, 2018.

Overall, foreign investors seem to be spooked, frustrated by the slow pace of building new export capacities and by the peculiarities of the Canadian business environment (e.g., federal and provincial jurisdictions, environmental review process, First Nations' growing clout). The value of foreign investors' projects has fallen by more than $180 billion since 2014. Canadian investors clearly have more know-how or, at any rate, patience to navigate these obstacles. Overall, $112 billion in Canadian projects is moving forward, compared to $33 billion for foreign investors.

OIL

Following the almost complete withdrawal of Total in 2016, Shell, Marathon Oil and ConocoPhillips sold their properties to Canadian companies in 2017. In addition, the projects of most other foreign investors (e.g. Devon Canada and Chinese oil companies) are basically on hold. The situation contrasts with that of major Canadian investors moving forward with their projects (e.g., Suncor, MEG Energy). Of the $48 billion in oil projects completed in 2017, almost 70% were completed by Canadian investors. Might foreign investors have rushed out too quickly?

Low oil prices and the discount associated with Western Canadian Select, as well as the paralysis of major pipeline projects, did not slow down production activity or even exports (volume up 9% and 10% respectively in 2017). Evidently, extraction remains profitable and the transportation problem can be circumvented (rail transport, partial upgrading of oil sands prior to pipeline transportation). Despite this increase in production, oil imports remain virtually unchanged. Even though oil refining capacity remains stagnant in Canada, other downward processing projects are moving forward, notably of olefins in Alberta (propylene) and Ontario (ethylene), with a value of more than $10 billion, 70% of which originates from Persian Gulf investors.

NATURAL GAS

The dismaying trend toward shelving LNG terminal projects on the West Coast continued in 2017, with the suspension or even abandonment of more than $75 billion worth of projects. While more than 15 projects had been announced in British Columbia, the BC government still hopes three projects will develop by 2020. Persistent price declines in export markets combined with environmental opposition make the expeditious construction of most projects doubtful, especially when whole new pipeline networks are needed on top of the LNG terminal construction. Conversely, projects that do remain active on the West Coast (e.g., Woodfibre LNG, Kwispaa LNG and Cedar LNG) are those for which gas supply networks and/or support from First Nations are already in place.

MINING

The commodity super cycle that was to last a generation will have lasted less than ten years and financial investors have lost their enthusiasm. All iron and aluminum projects are on hold as well as the vast majority of those in potash and gold, with some exceptions (e.g., Mosaic, Western Copper and Gold and NorthIsle Copper and Gold). Because the cost of energy is decidedly lower than anticipated at the onset of these projects, the profitability of completed projects remains attractive in terms of operating costs. Projects completed since 2013 (e.g., Detour Gold, Baffinland Iron Mines) are no doubt profitable, but those still not under construction in 2017 are likely to remain on the drawing board.

There's the paradox. The global economy grew in 2017 at a rate of 3.6%, the highest since 2011. Although Canadian growth was lower (3.0%), it was still respectable. In this context, the collapse of new project announcements in Canada seems surprising. One would be tempted to attribute it to an infrastructure gap that is reaching a critical point (export infrastructure or infrastructure in isolated areas). And yet, Canadian investors are moving forward with their plans. Clearly, international investors see better opportunities elsewhere.

TABLES AND NOTES

Ongoing Megaprojects - Status

Status	December 2017		December 2016	
	$M	%	$M	%
Active	144 692	27%	193 679	29%
Fragile	397 188	73%	485 754	71%
Total	**541 880**	**100%**	**679 433**	**100%**

Ongoing Megaprojects by Sector

Sector	December 2017			December 2016		
	Value ($M)	Breakdown of value	Fragility	Value ($M)	Breakdown of value	Fragility
Mining	115 659	21%	95%	115 375	17%	78%
Oil & Gas	408 961	75%	68%	552 148	81%	70%
Oil	173 975	32%	66%	242 978	36%	62%
Natural Gas	213 554	39%	71%	294 654	43%	76%
Other Oil & Ga:	21 431	4%	61%	14 515	2%	77%
Other	17 260	3%	49%	11 910	2%	62%
Total	**541 880**	**100%**	**73%**	**679 433**	**100%**	**71%**

New Megaprojects Announcements

Sector	Country of Origin			
	Canada ($M)	Other ($M)	Total ($M)	Breakdown of value
Oil & Gas	16 683	0	16 683	76%
Mining	1 340	1 000	2 340	11%
Others	1 000	2 000	3 000	14%
Total	**19 023**	**3 000**	**22 023**	**100%**

Ongoing Megaprojects by Region of Destination

Region	December 2017			December 2016		
	$M	%	Fragility	$M	%	Fragility
Western Canada	444 901	82%	71%	570 949	84%	75%
Central Canada	58 644	11%	80%	60 985	9%	76%
Atlantic Canada	25 429	5%	92%	37 425	6%	13%
Northern Canada	12 905	2%	84%	10 075	1%	79%
Total	**541 880**	**100%**	**73%**	**679 433**	**100%**	**71%**

Megaprojects - Status Updates

Development Stage of Megaprojects	Value ($M)
Previously ongoing (December 2016) - revised	685 391
New in 2017	22 023
Reactivated in 2017	0
Abandoned in 2017	115 000
Completed in 2017	50 535
Total ongoing	**541 880**

Note: Totals may not equal the sum of the components due to rounding.

Ongoing Megaprojects by Region of Origin

Region	December 2017			December 2016		
	Value ($M)	Breakdown of value	Fragility	Value ($M)	Breakdown of value	Fragility
Canada	370 878	68%	70%	397 076	58%	64%
United States	51 255	9%	55%	115 155	17%	72%
Asia-Pacific	76 447	14%	88%	98 302	14%	83%
Europe	38 800	7%	100%	53 400	8%	100%
Other	4 500	1%	78%	15 500	2%	94%
Total	**541 880**	**100%**	**73%**	**679 433**	**100%**	**71%**

MEGAPROJECTS
Megaprojects are projects with a total value of $1 billion or more. Selected projects have a specific location, a set value and timetable, and are at the construction or pre-construction stage.

DEVELOPMENT STAGES
New megaprojects are projects that were publicly announced in 2017. Reactivated projects were previously abandoned, but have been relaunched. Ongoing projects were already ongoing as of December 31, 2016. Abandoned megaprojects have been either announced as such or presumed abandoned in 2017. Completed megaprojects are those which have been completed since January 2017. Ongoing megaprojects include both new and already ongoing projects that have not yet been completed.
Adjustments to project values (e.g. cost overruns) as of December 2017 have been taken into account for ongoing projects (announced in previous years).

MEGAPROJECT SECTORS
The mining sector includes extraction activities (metallic and non-metallic minerals) and processing, such as iron-ore pelletizing and aluminum smelting. The oil and gas sector includes extraction, processing (i.e. upgrading, refining), and transportation activities for oil and natural gas, which includes pipelines and liquefied natural gas terminals. All other manufacturing sectors are included in "Other."

MEGAPROJECT STATUS
Active projects are under construction or in the process of obtaining government approval and financing, showing no sign of a slowdown. Projects are classified as fragile when available public information suggests that the project as initially announced could be reduced, delayed, or even abandoned for financial reasons (market conditions, access to financing) or regulatory concerns. They are also classified as fragile when the investor has not provided information about the project for an unusually long time period. Projects officially on hold are also included in this category.

FRAGILITY INDICATOR
This indicator represents the value of projects classified as fragile at the time of the analysis compared to the total value of projects.

REVISIONS
The March 2018 publication incorporates data revisions due to an improved imputation methodology for missing data.

REGION OF DESTINATION
Western Canada includes British Columbia, Alberta, Saskatchewan, and Manitoba. Northern Canada includes the Yukon, Northwest Territories, and Nunavut. Central Canada includes Ontario and Quebec. The Atlantic region includes Newfoundland and Labrador, New Brunswick, Nova Scotia, and Prince Edward Island.

REGION OF ORIGIN
The Asia-Pacific region includes 57 states—the 55 member states of the UN General Assembly, in addition to Australia and New Zealand. Europe includes all members of the European Union as of December 2016, in addition to Norway and Switzerland. The "Other" category includes South Africa, Brazil, and Russia.

OWNERSHIP
This study covers privately held projects, with the exception of projects announced in Canada by non-Canadian state-owned enterprises.

E&B (Economic and Business) DATA is an independent economic-analysis company specializing in the industrial sector, particularly in heavy industry. Its clients include private investors, industry associations, governments, and trade unions. Data come from CAPEX-online and are based on a continuous review of public announcements concerning private capital investment projects valued at $1 billion or more in Canada. To purchase or subscribe to CAPEX-online, please email us at info@ebdata.com.