

# ACCELERATED CAPITAL COST ALLOWANCE ANALYSIS

Prepared by the Chemistry Industry Association of Canada  
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# ACCELERATED CAPITAL COST ALLOWANCE

## ➤ Executive Summary

The purpose of this paper is to quantify and put into perspective the benefits and costs of accelerated capital cost allowance (ACCA). There are a number of key assumptions (see Methodology) used in the analysis and further work is warranted to explore the differences in eligible coverage between the U.S. and Canada. The goal is to make a case for a least-cost option for incenting investments and compare them to current U.S. measures in place since late 2017.

The Chemistry Industry Association of Canada (CIAC) is advocating to Finance Canada that it adopt a temporary 100 per cent ACCA to be applied to value-add resources manufacturing for a minimum period of seven years or a full business cycle. CIAC has contracted this short assessment (see Appendix) to calculate the “benefit/cost” of this measure for both government and chemistry firms, compared to the current 50 per cent ACCA which was put in place for ten years (Budget 2015) and which applies to all Class 43 manufacturing and processing equipment. The example used is an investment of \$2 billion, with \$1 billion consisting of eligible Class 43 machinery and equipment.

This study shows a benefit/cost of \$51 million for Alberta, \$42 million for Ontario and \$63 million for the Federal Government for 100 per cent ACCA when compared to the current 50 per cent declining balance ACCA **over the first three years**. Because of the increased taxes paid in subsequent years for the 100 per cent case, the benefits/costs after six years are down to \$6 million for Alberta, \$5 million for Ontario and \$8 million for the Federal Government case. By year eight, federal and provincial taxes collected are the same under all three systems. Note that during this period of tax revenue deferral, capital is being invested and jobs are created, generating direct benefits to local, provincial, and the Canadian economy.

For a firm looking to invest in Alberta, the study shows a 7.7 per cent increase in the NPV and a 0.7 per cent increase in the IRR over the life of the project, compared to a 50 per cent declining balance. From a cash-flow perspective, the ACCA reduces the upfront cash outflow required for the investment by 13 per cent over the current 50 per cent declining balance. In Ontario, the study shows a 6.9 per cent increase in the NPV and a 0.7 per cent increase in the IRR over the life of the project compared to a 50 per cent declining balance. From a cash-flow perspective, the ACCA reduces the upfront cash outflow required for the investment by 15 per cent over the current 50 per cent declining balance. This is a material impact on the financing costs of a major investment, when considering companies already operating profitably and paying taxes in Canada. For companies not operating in Canada and considering direct foreign investment, this option would not have the illustrated immediate impact.

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# ACCELERATED CAPITAL COST ALLOWANCE

## ➤ Background

Chemical manufacturing is experiencing a period of substantial growth in North America. Year after year, growth in chemicals production has outpaced GDP growth in North America, and throughout the entire world. Analysts continue to predict rapid growth, with a near tripling of the 20 largest volume, platform chemicals over the next 40 years. Chemical demand is closely linked with population growth, societal development and the needs and aspirations of a modern, growing middle class. The industry is the key enabler for solutions to the pressing issues of clean air, clean water, clean energy, and safe, nutritious and abundant food.

Over the past seven years, the availability of low cost, low carbon natural gas liquids have put North American producers amongst the lowest cost chemical producers in the world. This, combined with the anticipated growth in demand has led to unprecedented capital investment in the sector. Today, more than 325 chemistry projects with a book value exceeding \$258 billion are under development in the U.S., with 60 percent of that investment representing foreign direct investment into the U.S. These investments make chemistry the fastest growing manufacturing sector in the U.S. These new investments bring with them the latest technologies, most competitive facilities, and best environmental performance.

While Canada has seen some investments from this recent wave, we are lagging well-behind our historical 10 per cent comparative share. Canada's chemistry industry should have seen an additional \$18 billion in new investment in the past five years. The reality is that Canada has seen only a small share of investment at just over two per cent.

As noted in the recent [Canadian Energy Research Institute \(CERI\) study](#) on competitiveness analysis of the Canadian petrochemical sector, there is a high degree of equity at the plant gate in project costs and other economic factors between Canada and the U.S. Where the U.S. is clearly winning in securing new investments, as indicated in the CERI study, is with project specific concessions from multiple levels of governments. These approach nearly 10-15 per cent of overall project costs. This paper highlights this as one of the biggest "incentives" for locating in the U.S. today, a consequence of the recent U.S. Tax Cuts and Jobs Act (TCJA) and specifically in the area of ACCA.

In Budget 2015, Canada introduced a long-term, ten-year ACCA. This measure, while very helpful to competitiveness at that point, only matched existing and permanent treatments in the U.S. While it closed an important gap on a time-limited basis, it offers no overall advantage to Canada. And since then, with the U.S. TCJA, has moved the goal posts; effective November of 2017 it introduced a 100per cent ACCA for five years, ramping back to its statutory rate over the next five years. In order to level the playing field, [CIAC in its pre-budget submission](#) to the Federal Government in August 2018, proposed an immediate 100 per cent ACCA for one full business cycle of seven years for equipment used in manufacturing and processing. While the coverage of eligible costs in the U.S. case still significantly exceeds what is available in Canada,

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this will help to level the playing field while more in-depth work is undertaken to compare and match coverage.

ACCA has been a feature of the Canadian tax system for decades, mostly in support of new investment and value-added processing in the mining sector. In 1996, the then Liberal government, introduced a 100 per cent ACCA for oil sands mining and in-situ projects. This measure was in place until 2007 and still applies to projects started prior to 2007. From 2007-2014, an ACCA was introduced to encourage investment in machinery and equipment (M&E) used in manufacturing and processing. The tax measure provided a 50 per cent straight line depreciation rate and was set to expire in 2015. This measure, as previously noted, was extended for a further ten-year period with Budget 2015.

A temporary 100 per cent ACCA for resource upgrading and value-added manufacturing for a minimum period of seven years or a full business cycle would be a significant step forward in addressing the competitiveness edge that U.S. jurisdictions enjoy. It builds on the government's stated desire to make economic competitiveness "job number 1" following the business tax overhaul in the U.S.

This paper has two purposes: It aims to assesses the "costs" from a government revenue perspective as well as the "benefits" for a firm. Companies decide whether or not to make a capital investment of a 100 per cent ACCA by comparing an example project to the current temporary ACCA (50 per cent declining balance) and the statutory CCA (30 per cent declining balance). This analysis is specifically provided for consideration of Class 43 M&E **when used to upgrade natural resources.**

There are a number of areas impacting investor considerations for Canada. Two major areas are corporate tax rates and ACCA. This paper only looks at ACCA but notes that companies considering Canada for direct foreign investment that do not have assets already profitably operating in Canada, cannot take full advantage of ACCA. For those investments, other measures must be assessed.

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## ➤ Methodology

Investments in resource upgrading add value to resources, create jobs in our local communities and bring diversification to our economy. This analysis examines and assesses the benefits of using an accelerated depreciation rate for investments to improve cash flow for the investor, while minimizing the fiscal cost to government. For corporate tax purposes, taxes are paid on profits earned and deductions are available against taxes paid. In Canada, the depreciation rate for investments in qualifying equipment for manufacturing and processing equipment (Class 43) is 30 per cent per year, applied against a declining balance. A first-year rule is applied, where the deduction (30 per cent) is only available at half that rate with the full rate applying in subsequent years. In federal [Budget 2015](#), a temporary ACCA was introduced for ten years at a rate of 50 per cent declining balance, with a half-year rule applying.<sup>1</sup>

For purposes of the analysis of the impact of 100 per cent ACCA, several assumptions are made. First, the analysis looks at a specific investment and makes assumptions around what is eligible for the ACCA. In a major investment in a petrochemical plant, roughly half of a project is construction costs, land preparations, engineering and approvals – related costs which are not eligible for Class 43. To simplify the analysis, a \$2 billion project is used with \$1 billion estimated as eligible M&E for purposes of applying the 100 per cent ACCA rate.<sup>2</sup>

The expenditures in class 43 M&E are assumed to be made as follows: year one – 25 per cent; year two – 50 per cent; year three – 25 per cent. It is also assumed that the plant is in full production beginning in year four and generating profits from production of \$200 million for purposes of calculating taxes paid.

CIAC has consulted members conducting similar investments around the world in establishing these assumptions. Further, we have assumed the ACCA provides incrementality to achieve an investment which otherwise would go to another country. The recent performance of the chemical sector in locating almost 98 per cent of North American investments in the U.S. over the past five years is solid evidence for that assumption.

For purposes of this analysis, the assumption is that the project can write off income from other sources to use the ACCA benefits at the point the investments are being made. This is done to maximize the benefit to the investor and to maximize the fiscal cost to government for purposes of the example used. Then in the example, comparisons are made to the deductions (savings from the point of view of the company, expenses from the point of view

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<sup>1</sup> This rate applies to Class 43, usually regarded as the M&E used in the construction of a petrochemical plant (example only).

<sup>2</sup> This is an estimate, but to validate the approach Finance officials are in possession of real data and can examine cases such as the current Inter-Pipeline Propane De-Hydrogenation Facility (Redwater, Alberta).

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of the governments) which would be available using the current (temporary) 50 per cent ACCA and the statutory 30 per cent for Class 43.

For this analysis, the 100 per cent ACCA is calculated without applying the half-year rule – it is assumed the actual investments can be deducted the year the investments are made.

In calculating the effects of the 100 per cent ACCA on a firm's decision making, two capital asset budgeting tools have been applied. The **Net Present Value (NPV)** calculation allows us to measure the difference between the costs (cash outflows) and benefits (cash inflows) of an investment over the life of the asset. When comparing investments those with a higher NPV are more valuable for a firm to undertake. For the purposes of this analysis, a discount rate of 10 per cent, an asset life of 25 years and profit for the Canadian operations of \$200 million annually have been used for the NPV calculations.

The **Internal Rate of Return (IRR)** uses the same set of metrics as the NPV, but instead solves for the discount rate instead of the difference in costs/benefits, allowing for the determination of the growth rate a firm would expect the investment to earn over its lifetime.

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## ➤ Alberta Summary

### Government

Comparing the two cases of 50 per cent declining balance and 100 per cent immediate deductibility, these are the two outcomes:

After three years

- for 50 per cent declining balance, the Alberta government has foregone \$69 million in tax revenue.
- for 100 per cent immediate, the Alberta government has foregone \$120 million in tax revenue.

After six years

- for 50 per cent declining balance, the Alberta government has foregone \$114 million in tax revenue.
- for 100 per cent immediate, the Alberta government has foregone \$120 million in tax revenue.

If we add in the incremental tax collected (based on assumption of \$200 incremental taxable profits starting in year four), then after six years:

- for 50 per cent declining balance, the Alberta government has foregone \$42 million in tax revenue (net basis).
- for 100 per cent immediate, the Alberta government has foregone \$48 million in tax revenue.

For Alberta, the break-even point from a government perspective is eight years. Thereafter, the net tax position goes positive.

In a scenario where the entire investment (\$1 billion) is spent and depreciated in year one and the investment is generating profits in year two, the impact to government is \$120 million in tax revenue. The break-even point in this scenario is six years, thereafter the net tax position is positive.

### Firm

For a firm, the 100 per cent ACCA impacts cash flow significantly in the first three years, lowering the funding needed (whether cash or debt) to finance the investment.

Over the life of the investment:

- for 50 per cent declining balance, the firm's total cash outflow is **-\$844** million and the NPV is \$363 million.

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- for 100 per cent immediate, the firm's total cash outflow is **-\$731** million and the NPV is \$391 million.

The 100 per cent ACCA improves the NPV of the investment by 7.7 per cent and increases the internal rate of return by 0.7 per cent annually over the life of the investment. From a cash-flow perspective, the ACCA reduces the upfront cash outflow required for the investment by 13 per cent over the current 50 per cent declining balance, this is a material impact on the financing costs of a major investment.

## ➤ Ontario Summary

### Government

Comparing the two cases of 50 per cent declining balance and 100 per cent immediate deductibility, these are the two outcomes:

After three years

- for 50 per cent declining balance, the Ontario government has foregone \$58 million in tax revenue.
- for 100 per cent immediate, the Ontario government has foregone \$100 million in tax revenue.

After six years

- for 50 per cent declining balance, the Ontario government has foregone \$95 million in tax revenue.
- for 100 per cent immediate, the Ontario government has foregone \$100 million in tax revenue.

If we add in the incremental tax collected (based on assumption of \$200 million incremental taxable profits starting in year four), then after six years:

- for 50 per cent declining balance, the Ontario government has foregone \$35 million in tax revenue (net basis).
- for 100 per cent immediate, the Ontario government has foregone \$40 million in tax revenue.

For Ontario, the break-even point from a government perspective is eight years. Thereafter, the net tax position goes positive.

In a scenario where the entire investment (\$1 billion) is spent and depreciated in year one and the investment is generating profits in year two, the impact to government is \$100 million in tax revenue. However, the break-even point in this scenario is six years, thereafter the net tax position is positive.

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## Firm

For a firm, the 100 per cent ACCA impacts cash flow significantly in the first three years and does not extend the financing period beyond this, lowering the funding needed to finance the investment.

Over the life of the investment:

- for 50 per cent declining balance, the firm's total cash outflow is **-\$855** million and the NPV of the investment is \$376 million.
- for 100 per cent immediate, the firm's total cash outflow is **-\$751** million and the NPV of the investment is \$401.7 million.

In this example, the 100 per cent ACCA improves the NPV of the investment by 6.9 per cent and increases the internal rate of return by 0.7 per cent annually over the life of the investment. From a cash-flow perspective, the ACCA reduces the upfront cash outflow required for the investment by 15 per cent over the current 50 per cent declining balance, this is a material impact on the financing costs of a major investment.

## ➤ Federal Summary

Comparing the two cases of 50 per cent declining balance and 100 per cent immediate deductibility, these are the two outcomes:

After three years

- for 50 per cent declining balance, the Federal Government has foregone \$87 million in tax revenue.
- for 100 per cent immediate, the Federal Government has foregone \$150 million in tax revenue.

After six years

- for 50 per cent declining balance, the Federal Government has foregone \$142 million in tax revenue.
- for 100 per cent immediate, the Federal Government has foregone \$150 million in tax revenue.

If we add in the incremental tax collected (based on assumption of \$200 million incremental taxable profits starting in year four), then after six years:

- for 50 per cent declining balance, the Federal Government has foregone \$52 million in tax revenue (net basis).
- for 100 per cent immediate, the Federal Government has foregone \$60 million in tax revenue.

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For the Federal Government, the break-even point from a government perspective is eight years. Thereafter, the net tax position goes positive.

For a firm looking to invest in Alberta:

- The 100 per cent ACCA improves the NPV of the investment by 7.7 per cent and increases the internal rate of return by 0.7 per cent annually over the life of the investment. From a cash-flow perspective, the ACCA reduces the upfront cash outflow required for the investment by 13 per cent over the current 50 per cent declining balance, this is a material impact on the financing costs of a major investment.

For a firm looking to invest in Ontario:

- The 100 per cent ACCA improves the NPV of the investment by 6.9 per cent and increases the internal rate of return by 0.7 per cent annually over the life of the investment. From a cash-flow perspective, the ACCA reduces the upfront cash outflow required for the investment by 15 per cent over the current 50 per cent declining balance, this is a material impact on the financing costs of a major investment.

In a scenario where the entire investment (\$1 billion) is spent and depreciated in year one with a 100 per cent ACCA and the investment is generating profits in year two, the impact to government is \$150 million in tax revenue in year one. For the Federal Government, the break-even point from the government's perspective is six years. Thereafter, the net tax position goes positive.

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## ➤ Conclusion

Canada's chemistry sector stands poised to attract a significantly increased share of foreign direct investment. Canada has the resources, market access and talent to make this happen. We will not get there, however, without keeping up with our competitors and making significant improvements to the overall investment environment in Canada as seen by global investors.

While adjustments to ACCA as discussed in this analysis represent a cost to taxpayers through both levels of government, the cost is a deferral of tax revenue when desired investments are made in Canada. During this period of tax revenue deferral, capital is being invested and jobs are created, generating direct benefits to local, provincial, and the Canadian economy. These investments will raise the total productive capacity of Canada's economy. They will enable us to produce more value-added chemistry products, whose demand globally is growing faster than global GDP levels.

This study assumed an investment of \$2 billion, with \$1 billion in value-add (eligible) machinery and equipment that would be built over three years and generating revenue in year four. This study shows a "benefit/cost" of \$51 million for Alberta, \$42 million for Ontario and \$63 million for the Federal Government for 100 per cent ACCA when compared to the current 50 per cent declining balance ACCA over the first three years. Because of the increased taxes paid in subsequent years for the 100 per cent case, the benefits/costs after six years are down to \$6 million for Alberta, \$5 million for Ontario and \$8 million for the Federal Government case. By year eight, federal and provincial taxes collected are the same under both systems.

In a scenario where the entire \$1 billion investment is made and depreciated in year one, with revenue generation occurring in year two, the study shows an immediate cost of \$120 million for Alberta, \$100 million for Ontario and \$150 million for the Federal Government. By year six, federal and provincial taxes collected have reached a breakeven point and thereafter the net tax position is positive for governments.

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For a firm looking to invest in Alberta, the study shows a 7.7 per cent increase in the NPV and a 0.7 per cent increase in the IRR over the life of the project, compared to a 50 per cent declining balance. From a cash-flow perspective, the ACCA reduces the upfront cash outflow required for the investment by 13 per cent over the current 50 per cent declining balance. This is a material impact on the financing costs of a major investment.

In Ontario, the study shows a 6.9 per cent increase in the NPV and a 0.7 per cent increase in the IRR over the life of the project compared to a 50 per cent declining balance. These are material differences in financing costs for major investments. From a cash-flow perspective, the ACCA reduces the upfront cash outflow required for the investment by 15 per cent over the current 50 per cent declining balance. This is a material impact on the financing costs of a major

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investment.

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## Appendix 1 – Alberta Analysis<sup>3</sup>

### Assumptions

Total investment eligible for CCA, \$M	1000
Annual revenue from new capacity, \$M	1000
Annual profits from new capacity, \$M	200
Production at full capacity in year 4	

					30% declining balance											
	New AB taxes	Cum new AB taxes	New fed taxes	Cum new fed taxes	Annual investment	Amount available for depreciation	CCA claim	AB tax reduction	Cumulative AB tax reduction	Net AB tax collected	Cum AB tax collected	Federal tax reduction	Cumulative fed tax reduction	Net fed tax collected	Cum fed tax collected	Residual balance available for CCA
Year 1					250	125	38	5	5	-5	-5	6	6	-6	-6	213
Year 2					500	463	139	17	21	-17	-21	21	26	-21	-26	574
Year 3					250	699	210	25	46	-25	-46	31	58	-31	-58	614
Year 4	24	24	30	30		614	184	22	68	2	-44	28	86	2	-56	430
Year 5	24	48	30	60		430	129	15	84	9	-36	19	105	11	-45	301
Year 6	24	72	30	90		301	90	11	95	13	-23	14	118	16	-28	211
Year 7	24	96	30	120		211	63	8	102	16	-6	9	128	21	-8	147
Year 8	24	120	30	150		147	44	5	108	19	12	7	135	23	15	103
Year 9	24	144	30	180		103	31	4	111	20	33	5	139	25	41	72
Year 10	24	168	30	210		72	22	3	114	21	54	3	142	27	68	51
Year 11	24	192	30	240		51	15	2	116	22	76	2	145	28	95	35
Year 12	24	216	30	270		35	11	1	117	23	99	2	146	28	124	25
Year 13	24	240	30	300		25	7	1	118	23	122	1	147	29	153	17
Year 14	24	264	30	330		17	5	1	119	23	145	1	148	29	182	12
Year 15	24	288	30	360		12	4	0	119	24	169	1	149	29	211	9

<sup>3</sup> Analysis prepared by John Margeson, Consultant for CIAC

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## Assumptions

Total investment eligible for CCA, \$M	1000
Annual revenue from new capacity, \$M	1000
Annual profits from new capacity, \$M	200
Production at full capacity in year 4	

## 50% declining balance

	New AB taxes	Cum new AB taxes	New fed taxes	Cum new fed taxes	Annual investment	Amount available for depreciation	CCA claim	AB tax reduction	Cumulative AB tax reduction	Net AB tax collected	Cum AB tax collected	Federal tax reduction	Cumulative fed tax reduction	Net fed tax collected	Cum fed tax collected	Residual balance available for CCA
Year 1					250	125	63	8	8	-8	-8	9	9	-9	-9	188
Year 2					500	438	219	26	34	-26	-34	33	42	-33	-42	469
Year 3					250	594	297	36	69	-36	-69	45	87	-45	-87	422
Year 4	24	24	30	30		422	211	25	95	-1	-71	32	118	-2	-88	211
Year 5	24	48	30	60		211	105	13	107	11	-59	16	134	14	-74	105
Year 6	24	72	30	90		105	53	6	114	18	-42	8	142	22	-52	53
Year 7	24	96	30	120		53	26	3	117	21	-21	4	146	26	-26	26
Year 8	24	120	30	150		26	13	2	118	22	2	2	148	28	2	13
Year 9	24	144	30	180		13	7	1	119	23	25	1	149	29	31	7
Year 10	24	168	30	210		7	3	0	120	24	48	0	150	30	60	3
Year 11	24	192	30	240		3	2	0	120	24	72	0	150	30	90	2
Year 12	24	216	30	270		2	1	0	120	24	96	0	150	30	120	1
Year 13	24	240	30	300		1	0	0	120	24	120	0	150	30	150	0
Year 14	24	264	30	330		0	0	0	120	24	144	0	150	30	180	0
Year 15	24	288	30	360		0	0	0	120	24	168	0	150	30	210	0

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## Assumptions

Total investment eligible for CCA, \$M	1000
Annual revenue from new capacity, \$M	1000
Annual profits from new capacity, \$M	200
Production at full capacity in year 4	

### 100% immediate

	New AB taxes	Cum new AB taxes	New fed taxes	Cum new fed taxes	Annual investment	Amount available for depreciation	CCA claim	AB tax reduction	Cumulative AB tax reduction	Net AB tax collected	Cum AB tax collected	Federal tax reduction	Cumulative fed tax reduction	Net fed tax collected	Cum fed tax collected	Residual balance available for CCA
Year 1					250	250	250	30	30	-30	-30	38	38	-38	-38	0
Year 2					500	500	500	60	90	-60	-90	75	113	-75	-113	0
Year 3					250	250	250	30	120	-30	-120	38	150	-38	-150	0
Year 4	24	24	30	30					120	24	-96		150	30	-120	
Year 5	24	48	30	60					120	24	-72		150	30	-90	
Year 6	24	72	30	90					120	24	-48		150	30	-60	
Year 7	24	96	30	120					120	24	-24		150	30	-30	
Year 8	24	120	30	150					120	24	0		150	30	0	
Year 9	24	144	30	180					120	24	24		150	30	30	
Year 10	24	168	30	210					120	24	48		150	30	60	
Year 11	24	192	30	240					120	24	72		150	30	90	
Year 12	24	216	30	270					120	24	96		150	30	120	
Year 13	24	240	30	300					120	24	120		150	30	150	
Year 14	24	264	30	330					120	24	144		150	30	180	
Year 15	24	288	30	360					120	24	168		150	30	210	

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## NPV Calculation

### Assumptions

Total investment eligible for CCA, \$M	1000
Annual revenue from new capacity, \$M	1000
Annual profits from new capacity, \$M	200
Production at full capacity in year 4	
Discount rate - 0.1	

Year	30% declining bal		50% declining bal		100% immediate	
	Cash flow	PV	Cash flow	PV	Cash flow	PV
1	-240	-218.1	-233	-211.9	-183	-165.9
2	-463	-382.3	-441	-364.4	-365	-301.7
3	-193	-145.3	-170	-127.6	-183	-137.1
4	196	133.7	203	138.6	146	99.7
5	181	112.3	174	108.3	146	90.7
6	170	96.2	160	90.5	146	82.4
7	163	83.7	153	78.6	146	74.9
8	158	73.7	150	69.8	146	68.1
9	154	65.5	148	62.7	146	61.9
10	152	58.5	147	56.6	146	56.3
11	150	52.6	146	51.3	146	51.2
12	149	47.4	146	46.6	146	46.5
13	148	42.9	146	42.3	146	42.3
14	147	38.8	146	38.5	146	38.4
15	147	35.2	146	35.0	146	35.0
16	147	31.9	146	31.8	146	31.8
17	146	29.0	146	28.9	146	28.9
18	146	26.3	146	26.3	146	26.3
19	146	23.9	146	23.9	146	23.9

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20	146	21.7	146	21.7	146	21.7
21	146	19.7	146	19.7	146	19.7
22	146	17.9	146	17.9	146	17.9
23	146	16.3	146	16.3	146	16.3
24	146	14.8	146	14.8	146	14.8
25	146	13.5	146	13.5	146	13.5
26	146	12.3	146	12.3	146	12.3
27	146	11.1	146	11.1	146	11.1
28	146	10.1	146	10.1	146	10.1
<b>NPV</b>		<b>343.5</b>		<b>363.0</b>		<b>391.0</b>

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## IRR Calculation

### Assumptions

Total investment eligible for CCA, \$M	1000
Annual revenue from new capacity, \$M	1000
Annual profits from new capacity, \$M	200
Production at full capacity in year 4	

Year	30% declining bal			50% declining bal			100% immediate					
	Estimate	<u>0.13</u>	<u>0.12</u>	<u>0.121</u>	<u>0.13</u>	<u>0.12</u>	<u>0.125</u>	<u>0.126</u>	<u>0.13</u>	<u>0.131</u>	<u>0.132</u>	<u>0.131</u>
1												
2												
3												
4	120.1	124.4	124.0	124.5	129.0	126.7	126.3	89.5	89.2	88.9	89.2	
5	98.1	102.6	102.1	94.7	99.0	96.8	96.4	79.2	78.9	78.5	78.9	
6	81.8	86.3	85.9	77.0	81.2	79.0	78.6	70.1	69.8	69.4	69.8	
7	69.3	73.8	73.3	65.1	69.3	67.1	66.7	62.1	61.7	61.3	61.7	
8	59.4	63.8	63.3	56.3	60.4	58.3	57.9	54.9	54.5	54.1	54.5	
9	51.4	55.7	55.2	49.2	53.3	51.2	50.8	48.6	48.2	47.8	48.2	
10	44.7	48.9	48.5	43.3	47.3	45.2	44.8	43.0	42.6	42.3	42.6	
11	39.1	43.1	42.7	38.2	42.1	40.1	39.7	38.1	37.7	37.3	37.7	
12	34.3	38.2	37.8	33.7	37.5	35.6	35.2	33.7	33.3	33.0	33.3	
13	30.2	33.9	33.5	29.8	33.5	31.6	31.2	29.8	29.5	29.1	29.5	
14	26.6	30.2	29.8	26.4	29.9	28.1	27.7	26.4	26.1	25.7	26.1	
15	23.5	26.9	26.5	23.3	26.7	25.0	24.6	23.3	23.0	22.7	23.0	
16	20.8	23.9	23.6	20.7	23.8	22.2	21.9	20.7	20.4	20.1	20.4	
17	18.3	21.3	21.0	18.3	21.3	19.7	19.4	18.3	18.0	17.7	18.0	
18	16.2	19.0	18.7	16.2	19.0	17.5	17.2	16.2	15.9	15.7	15.9	
19	14.3	17.0	16.7	14.3	17.0	15.6	15.3	14.3	14.1	13.8	14.1	

# ACCELERATED CAPITAL COST ALLOWANCE

20	12.7	15.2	14.9	12.7	15.1	13.8	13.6	12.7	12.4	12.2	12.4
21	11.2	13.5	13.3	11.2	13.5	12.3	12.1	11.2	11.0	10.8	11.0
22	9.9	12.1	11.8	9.9	12.1	10.9	10.7	9.9	9.7	9.5	9.7
23	8.8	10.8	10.6	8.8	10.8	9.7	9.5	8.8	8.6	8.4	8.6
24	7.8	9.6	9.4	7.8	9.6	8.6	8.5	7.8	7.6	7.4	7.6
25	6.9	8.6	8.4	6.9	8.6	7.7	7.5	6.9	6.7	6.6	6.7
26	6.1	7.7	7.5	6.1	7.7	6.8	6.7	6.1	5.9	5.8	5.9
27	5.4	6.8	6.7	5.4	6.8	6.1	5.9	5.4	5.3	5.1	5.3
28	4.8	6.1	6.0	4.8	6.1	5.4	5.3	4.8	4.6	4.5	4.6
	821.9	<b>899.4</b>	891.1	804.3	880.4	<b>841.2</b>	833.6	741.7	734.9	<b>728.1</b>	734.9
		Target			Target				Target		
		896			844				730		

# ACCELERATED CAPITAL COST ALLOWANCE

## Appendix 2 – Ontario Analysis<sup>4</sup>

### Assumptions

Total investment eligible for CCA, \$M	1000
Annual revenue from new capacity, \$M	1000
Annual profits from new capacity, \$M	200
Production at full capacity in year 4	

Year	New ON taxes	Cum new ON taxes	New fed taxes	Cum new fed taxes	30% declining balance											
					Annual investment	Amount available for depreciation	CCA claim	ON tax reduction	Cumulative ON tax reduction	Net ON tax collected	Cum ON tax collected	Federal tax reduction	Cumulative fed tax reduction	Net fed tax collected	Cum fed tax collected	Residual balance available for CCA
Year 1					250	125	38	4	4	-4	-4	6	6	-6	-6	213
Year 2					500	463	139	14	18	-14	-18	21	26	-21	-26	574
Year 3					250	699	210	21	39	-21	-39	31	58	-31	-58	614
Year 4	20	20	30	30		614	184	18	57	2	-37	28	86	2	-56	430
Year 5	20	40	30	60		430	129	13	70	7	-30	19	105	11	-45	301
Year 6	20	60	30	90		301	90	9	79	11	-19	14	118	16	-28	211
Year 7	20	80	30	120		211	63	6	85	14	-5	9	128	21	-8	147
Year 8	20	100	30	150		147	44	4	90	16	10	7	135	23	15	103
Year 9	20	120	30	180		103	31	3	93	17	27	5	139	25	41	72
Year 10	20	140	30	210		72	22	2	95	18	45	3	142	27	68	51
Year 11	20	160	30	240		51	15	2	96	18	64	2	145	28	95	35
Year 12	20	180	30	270		35	11	1	98	19	82	2	146	28	124	25
Year 13	20	200	30	300		25	7	1	98	19	102	1	147	29	153	17
Year 14	20	220	30	330		17	5	1	99	19	121	1	148	29	182	12
Year 15	20	240	30	360		12	4	0	99	20	141	1	149	29	211	9

<sup>4</sup> Analysis prepared by John Margeson, Consultant for CIAC

# ACCELERATED CAPITAL COST ALLOWANCE

## Assumptions

Total investment eligible for CCA, \$M	1000
Annual revenue from new capacity, \$M	1000
Annual profits from new capacity, \$M	200
Production at full capacity in year 4	

					50% declining balance											
					Annual investment	Amount available for depreciation	CCA claim	ON tax reduction	Cumulative ON tax reduction	Net ON tax collected	Cum ON tax collected	Federal tax reduction	Cumulative fed tax reduction	Net fed tax collected	Cum fed tax collected	Residual balance available for CCA
Year	New ON taxes	Cum new ON taxes	New fed taxes	Cum new fed taxes												
Year 1					250	125	63	6	6	-6	-6	9	9	-9	-9	188
Year 2					500	438	219	22	28	-22	-28	33	42	-33	-42	469
Year 3					250	594	297	30	58	-30	-58	45	87	-45	-87	422
Year 4	20	20	30	30		422	211	21	79	-1	-59	32	118	-2	-88	211
Year 5	20	40	30	60		211	105	11	89	9	-49	16	134	14	-74	105
Year 6	20	60	30	90		105	53	5	95	15	-35	8	142	22	-52	53
Year 7	20	80	30	120		53	26	3	97	17	-17	4	146	26	-26	26
Year 8	20	100	30	150		26	13	1	99	19	1	2	148	28	2	13
Year 9	20	120	30	180		13	7	1	99	19	21	1	149	29	31	7
Year 10	20	140	30	210		7	3	0	100	20	40	0	150	30	60	3
Year 11	20	160	30	240		3	2	0	100	20	60	0	150	30	90	2
Year 12	20	180	30	270		2	1	0	100	20	80	0	150	30	120	1
Year 13	20	200	30	300		1	0	0	100	20	100	0	150	30	150	0
Year 14	20	220	30	330		0	0	0	100	20	120	0	150	30	180	0
Year 15	20	240	30	360		0	0	0	100	20	140	0	150	30	210	0

# ACCELERATED CAPITAL COST ALLOWANCE

## Assumptions

Total investment eligible for CCA, \$M	1000
Annual revenue from new capacity, \$M	1000
Annual profits from new capacity, \$M	200
Production at full capacity in year 4	

	New ON taxes	Cum new ON taxes	New fed taxes	Cum new fed taxes	Annual investment	Amount available for depreciation	CCA claim	ON tax reduction	Cumulative ON tax reduction	100% immediate		Federal tax reduction	Cumulative fed tax reduction	Net fed tax collected	Cum fed tax collected	Residual balance available for CCA
										Net ON tax collected	Cum ON tax collected					
Year 1					250	250	250	25	25	-25	-25	38	38	-38	-38	0
Year 2					500	500	500	50	75	-50	-75	75	113	-75	-113	0
Year 3					250	250	250	25	100	-25	-100	38	150	-38	-150	0
Year 4	20	20	30	30					100	20	-80		150	30	-120	
Year 5	20	40	30	60					100	20	-60		150	30	-90	
Year 6	20	60	30	90					100	20	-40		150	30	-60	
Year 7	20	80	30	120					100	20	-20		150	30	-30	
Year 8	20	100	30	150					100	20	0		150	30	0	
Year 9	20	120	30	180					100	20	20		150	30	30	
Year 10	20	140	30	210					100	20	40		150	30	60	
Year 11	20	160	30	240					100	20	60		150	30	90	
Year 12	20	180	30	270					100	20	80		150	30	120	
Year 13	20	200	30	300					100	20	100		150	30	150	
Year 14	20	220	30	330					100	20	120		150	30	180	
Year 15	20	240	30	360					100	20	140		150	30	210	

# ACCELERATED CAPITAL COST ALLOWANCE

## NPV calculation

### Assumptions

Total investment eligible for CCA, \$M	1000
Annual revenue from new capacity, \$M	1000
Annual profits from new capacity, \$M	200
Production at full capacity in year 4	
Discount rate - 0.1	

Year	30% declining bal		50% declining bal		100% immediate	
	Cash flow	PV	Cash flow	PV	Cash flow	PV
1	-241	-218.8	-234	-213.1	-188	-170.5
2	-465	-384.6	-445	-368.0	-375	-309.9
3	-198	-148.5	-176	-132.1	-188	-140.9
4	196	133.9	203	138.5	150	102.5
5	182	113.2	176	109.5	150	93.1
6	173	97.4	163	92.1	150	84.7
7	166	85.1	157	80.4	150	77.0
8	161	75.1	153	71.5	150	70.0
9	158	66.9	152	64.3	150	63.6
10	155	59.9	151	58.1	150	57.8
11	154	53.9	150	52.7	150	52.6
12	153	48.6	150	47.9	150	47.8
13	152	44.0	150	43.5	150	43.4
14	151	39.8	150	39.5	150	39.5
15	151	36.1	150	35.9	150	35.9
16	151	32.8	150	32.6	150	32.6
17	150	29.8	150	29.7	150	29.7
18	150	27.0	150	27.0	150	27.0
19	150	24.6	150	24.5	150	24.5
20	150	22.3	150	22.3	150	22.3

# ACCELERATED CAPITAL COST ALLOWANCE

21	150	20.3	150	20.3	150	20.3
22	150	18.4	150	18.4	150	18.4
23	150	16.8	150	16.8	150	16.8
24	150	15.2	150	15.2	150	15.2
25	150	13.8	150	13.8	150	13.8
26	150	12.6	150	12.6	150	12.6
27	150	11.4	150	11.4	150	11.4
28	150	10.4	150	10.4	150	10.4
	<b>NPV</b>	<b>357.7</b>		<b>375.8</b>		<b>401.7</b>

# ACCELERATED CAPITAL COST ALLOWANCE

## IRR calculation

### Assumptions

Total investment eligible for CCA, \$M	1000
Annual revenue from new capacity, \$M	1000
Annual profits from new capacity, \$M	200
Production at full capacity in year 4	

### 30% declining bal

### 50% declining bal

### 100% immediate

Estimate

<u>0.13</u>	<u>0.12</u>	<u>0.121</u>	<u>0.122</u>	<u>0.13</u>	<u>0.125</u>	<u>0.124</u>	<u>0.13</u>	<u>0.131</u>	<u>0.132</u>
120.2	124.6	124.2	123.7	124.3	126.6	127.0	92.0	91.7	91.3
98.9	103.4	102.9	102.5	95.7	97.9	98.3	81.4	81.1	80.7
82.9	87.4	87.0	86.5	78.4	80.5	80.9	72.0	71.7	71.3
70.5	75.0	74.5	74.1	66.6	68.7	69.1	63.8	63.4	63.0
60.6	65.0	64.6	64.1	57.7	59.7	60.2	56.4	56.0	55.6
52.5	56.9	56.4	56.0	50.5	52.5	53.0	49.9	49.5	49.1
45.8	50.0	49.6	49.2	44.4	46.4	46.9	44.2	43.8	43.4
40.1	44.2	43.8	43.4	39.2	41.2	41.6	39.1	38.7	38.4
35.2	39.2	38.8	38.4	34.7	36.5	36.9	34.6	34.2	33.9
31.0	34.8	34.4	34.0	30.6	32.5	32.8	30.6	30.3	29.9
27.3	31.0	30.6	30.2	27.1	28.8	29.2	27.1	26.8	26.4
24.1	27.6	27.2	26.8	24.0	25.6	26.0	24.0	23.7	23.4
21.3	24.6	24.2	23.9	21.2	22.8	23.1	21.2	20.9	20.6
18.8	21.9	21.6	21.3	18.8	20.3	20.6	18.8	18.5	18.2
16.7	19.5	19.2	18.9	16.6	18.0	18.3	16.6	16.4	16.1
14.7	17.4	17.1	16.9	14.7	16.0	16.3	14.7	14.5	14.2

# ACCELERATED CAPITAL COST ALLOWANCE

13.0	15.6	15.3	15.0	13.0	14.2	14.5	13.0	12.8	12.6
11.5	13.9	13.6	13.4	11.5	12.6	12.9	11.5	11.3	11.1
10.2	12.4	12.2	11.9	10.2	11.2	11.5	10.2	10.0	9.8
9.0	11.1	10.8	10.6	9.0	10.0	10.2	9.0	8.8	8.7
8.0	9.9	9.7	9.5	8.0	8.9	9.1	8.0	7.8	7.7
7.1	8.8	8.6	8.4	7.1	7.9	8.1	7.1	6.9	6.8
6.3	7.9	7.7	7.5	6.3	7.0	7.2	6.3	6.1	6.0
5.5	7.0	6.9	6.7	5.5	6.2	6.4	5.5	5.4	5.3
4.9	6.3	6.1	6.0	4.9	5.5	5.7	4.9	4.8	4.7

836.2	915.4	<b>907.1</b>	898.8	820.0	<b>857.7</b>	865.5	762.0	755.0	<b>748.1</b>
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Target  
904

Target  
855

Target  
750