

ACCELERATED CAPITAL COST ALLOWANCE ANALYSIS

Prepared by the Chemistry Industry Association of Canada
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➤ Executive Summary

The Chemistry Industry Association of Canada (CIAC) is advocating to Finance Canada that it permanently extend the 50 per cent accelerated capital cost allowance (ACCA) for equipment used for manufacturing and processing and adopt a temporary 100 per cent ACCA to be applied to value-add resources manufacturing for a minimum period of five years or a full business cycle. CIAC has contracted a short assessment (see Appendix) to calculate the “benefit/cost” of this measure, compared to the current 50 per cent ACCA which is in place for ten years (Budget 2015) and which applies more broadly to all Class 43 manufacturing and processing equipment. The analysis looks at Class 43, but assumes that only those projects where basic resources are upgraded into manufactured products would qualify. 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.

Separate work to calculate net present value for this measure for specific projects will be required to better assess the benefits to an investor.

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➤ 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 twenty largest volume, platform chemicals over the next forty 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 world's most pressing issues of clean air, clean water, clean energy, and safe, nutritious and abundant food.

A very recent example of the global industry's commitment to innovate for a sustainable future is its pride in being at the forefront of new chemistries that will deliver new refrigerants to help achieve the objectives of the recently concluded Kigali Accord. These new chemistries will reduce future global warming by 0.5C, making this the single largest impact on global warming to date. In more general terms, from improved building insulation and lighter plastics for automobiles, to the production of solar and wind energy equipment, these, and other innovative chemistry products and processes are essential in helping society meet its needs while reducing its carbon emissions.

Over the past five 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 250 chemistry projects with a book value exceeding \$225 billion are under development in the United States, with sixty percent of that investment representing foreign direct investment into the U.S. In turn, these investments have spurred 300 additional investments in the downstream plastics sector alone. These investments make the chemistry sector the fastest growing manufacturing sector in the U.S. According to the National Association of Manufacturers, chemistry accounted for over 50 per cent of all manufacturing investment in the U.S. in 2015.

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 \$25 billion in new investment in the past five years. The reality is that Canada has seen under \$3 billion, or just 1 per cent of the North American total.

As noted in the recent [CERI study](#)¹ 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

¹ <http://www.ceri.ca/publications/>

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investments, as indicated in the CERI study, is with project specific concessions from multiple levels of governments that approach 10-15 per cent of overall project costs.

In Budget 2015, Canada introduced a long-term ten-year ACCA. This measure merely 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. To level the playing field, [CIAC in its pre-budget submission](#)² to the federal government in August 2016, proposed a permanent extension of the ACCA for equipment used in manufacturing and processing. Further, given Canadian jurisdiction's reluctance to match the tax exemptions for new investments in U.S. locales, CIAC also proposed a temporary 100 per cent ACCA for resource upgrading and value-added manufacturing for a minimum period of five years or a full business cycle.

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.

Making the ACCA permanent will level the playing field between Canada and the U.S. on this tax system measure. A temporary 100 per cent ACCA for resource upgrading and value-added manufacturing for a minimum period of five years or a full business cycle would be a significant step forward in addressing the competitiveness edge that U.S. jurisdictions offer through direct incentives. It builds on the idea of value-added development of Canada's resources, a policy resolution (D-05) approved by the Liberal Party of Canada at its June 2016 conference in Winnipeg.

This paper assesses the "costs" 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.**

² http://www.ciac-acic.ca/library/uploads/CIAC_2017_Pre-Budget_Submission_VF.pdf

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➤ Methodology

Investments in resource upgrading adds value to resources, jobs in our local communities and 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. Taxes are paid on profits 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 (reference), a temporary ACCA was introduced for ten years at a rate of 50 per cent declining balance, with a half year rule applying. This rate applies to Class 43, usually regarded as the M&E used in the construction of a petrochemical plant (example only).

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. 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 NOVA Chemicals Polyethylene project (Joffre, Alberta).

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.

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

Finally, 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.

ACCELERATED CAPITAL COST ALLOWANCE

➤ Alberta 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 Alberta government has foregone \$69 M in tax revenue
- for 100 per cent immediate, the Alberta government has foregone \$120 M in tax revenue

After six years

- for 50 per cent declining balance, the Alberta government has foregone \$114 M in tax revenue
- for 100 per cent immediate, the Alberta government has foregone \$120 M 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 M in tax revenue (net basis)
- for 100 per cent immediate, the Alberta government has foregone \$48 M in tax revenue

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

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➤ Ontario 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 Ontario government has foregone \$58 M in tax revenue
- for 100 per cent immediate, the Ontario government has foregone \$100 M in tax revenue

After six years

- for 50 per cent declining balance, the Ontario government has foregone \$95 M in tax revenue
- for 100 per cent immediate, the Ontario government has foregone \$100 M 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 Ontario government has foregone \$35 M in tax revenue (net basis)
- for 100 per cent immediate, the Ontario government has foregone \$40 M in tax revenue

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

ACCELERATED CAPITAL COST ALLOWANCE

➤ 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 M in tax revenue
- for 100 per cent immediate, the federal government has foregone \$150 M in tax revenue

After six years

- for 50 per cent declining balance, the federal government has foregone \$142 M in tax revenue
- for 100 per cent immediate, the federal government has foregone \$150 M 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 federal government has foregone \$52 M in tax revenue (net basis)
- for 100 per cent immediate, the federal government has foregone \$60 M in tax revenue

For the Federal government, the breakeven point from a government perspective is eight 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.

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. This analysis is based on an investment of \$2 billion, with \$1 billion in value-add (eligible) machinery and equipment.

Who We Are

The Chemistry Industry Association of Canada (CIAC) is the voice of Canada's chemistry industry. We represent more than 50 chemistry companies and transportation partners across the country - from Canada's largest petrochemical, inorganic and specialty chemistry producers, to bio-based manufacturers and chemistry-related technology and R&D companies. CIAC is also recognized as a world leader in the sustainable stewardship of chemistry products through its acclaimed Responsible Care® initiative. For more information, go to: www.canadianchemistry.ca

ACCELERATED CAPITAL COST ALLOWANCE

Appendix 1 – Alberta Analysis³

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 AB taxes	Cum new AB taxes	New fed taxes	Cum new fed taxes	30% declining balance											
					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

³ 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

	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



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	

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	

ACCELERATED CAPITAL COST ALLOWANCE

Appendix 2 – Ontario Analysis⁴

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											
					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
New ON taxes	Cum new ON taxes	New fed taxes	Cum new fed taxes													
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

⁴ 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	

					100% immediate											
	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	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	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	