

Carbon Tax or Cap and Trade? Evidence from the Province of Ontario's recent Cap and Trade Program

BY PHILIP R. WALSH

With an exponential growth in greenhouse gas (GHG) emissions from human activities on the planet, it has been argued that we are impacting climate change in a negative way. Therefore combating climate change and the impacts associated with it has become Goal 13 of the United Nations' Sustainable Development Goals. A number of countries have brought forward policies at various levels of government: federal, provincial, state that seek to limit GHG emissions. The introduction of carbon taxes or carbon cap and trade programs are representative of policies to encourage reductions in emissions by putting into place economic disincentives to using carbon-intensive fuels by industry and the general public.¹

Research literature has compared carbon-revenue programs such as a carbon tax or a cap and trade program with the result being the continual debate as to which program contributes more to reducing GHG emissions and climate change. Supporters of carbon taxes believe that by using a simple tax mechanism to increase the cost of carbon-intensive fuels that demand will dampen and that alternative renewable energy can be encouraged. Their reluctance to accept cap and trade programs is principally driven by concerns regarding manipulation within the trading scheme and the opaque nature that results in less of an obvious financial disincentive.² Those who support the use of cap and trade systems argue that the revenue generated can be directly designated towards expenditures supporting green initiatives as opposed to the use of a general carbon tax where receipts are funneled into general revenue accounts.³ It remains early days for this ongoing debate however as positions emerge and more jurisdictions consider their options the significance of findings from ongoing programs can help policy makers in large emitting nations that may still be considering which is the most suitable carbon-revenue program for them. Regardless as to what side of the debate researchers find themselves, the one generalizable finding is that a significant control factor is the jurisdictionally-specific choice of regulation.

In an attempt to combat climate change and its impacts through the reduction of greenhouse gas (GHG) emissions in the Province of Ontario, the Ontario government passed Ontario Regulation 144/16 under the Climate Change Mitigation and Low-carbon Economy Act, 2016, S.O. 2016, c. 7 that introduced a carbon cap and trade program to the province. The purpose of the program was to require emitters to offset their carbon emissions by purchasing allowances (carbon credits). For the 2017-2020 period, allowances were free of charge to certain industrial emitters in Ontario while other emitters, including natural gas

distributors were required to purchase carbon credits. However, on June 7th, 2018 a provincial election resulted in a change of government with the winning Progressive Conservative party having campaigned to repeal the legislation and regulation that allowed for the cap and trade program. True to their word, they passed legislation on July 25th, 2018 that ended the cap and trade program and related spending programs used to distribute the proceeds from the allowance auctions to date.

While the cap and trade program was in existence there were six auctions in total, four restricted to registered Ontario participants and two auctions conducted jointly with the State of California and the Province of Quebec. These latter two jurisdictions had entered into a joint cap and trade arrangement back in January of 2014. The Ontario results of the six auctions are shown in Table 1.

As can be seen in the table, the number of total allowances for sale in the first twelve months was approximately 100 million metric tonnes or two-thirds of the estimated 2015 annual CO₂ emissions for the province.⁴ Only once during that time (November 2017) was the number of acceptable bids less than that available. Most of the allowances purchased were by participants who were required to do so under the regulation and who were not eligible for free allowances. For each auction, a minimum reserve price was set and while the results for each auction show some maximum bid prices that are double or triple the reserve or settlement price, the mean and median bid price suggest that the level of competition for the available allowances was insufficient to drive the price of acceptable bids much beyond the reserve price. This is confirmed to some degree by the calculated Herfindahl-Hirschman Index (HHI). When Ontario joined in with California and Quebec that index was reduced to levels that might represent a more reasonable competitive environment however for Ontario-related bids an increase in the maximum bid price did result but the mean and median price remained subdued. Figure 1 highlights the trends provided in the data found in Table 1.

The number of available allowances made available by the Province appear to approximate the amount required by emitters who were mandatory participants and ineligible for free allowances, but who could recover the allowance expenses directly from customers (natural gas distributors and fuel suppliers).

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See footnotes at end of text.

Table 1 – Results of Cap and Trade Auctions in Ontario 2017-2018

	Ontario Auction				Ont-Calif-Que. Joint Auction- Ontario Only	Ont-Calif-Que. Joint Auction- Ontario Only
	March 17 2017	June 2 2017	Sept. 6 2017	Nov. 29 2017	Feb. 21 2018	May 15 2018
Total Allowances for Sale (Million metric tonnes)	25.30	25.30	25.30	25.30	23.74	23.74
Total Allowances Sold (Million metric tonnes)	25.30	25.30	25.30	20.90	23.74	23.74
Total Qualified Bids/Total Allowances Available	1.16	1.22	1.19	0.83	1.21	1.36
Proportion of Allowances purchased by Compliance Entities	99.1%	96.1%	96.4%	91.5%	92.1%	95.6%
Herfindahl- Hirschman Index	1705	1589	1361	1404	436	668
Reserve Price \$CAD	\$18.07	\$18.30	\$16.79	\$17.38	\$18.34	\$18.56
Settlement Price \$CAD	\$18.08	\$18.72	\$18.56	\$17.38	\$18.44	\$18.56
Maximum Price \$CAD	\$49.41	\$31.68	\$32.84	\$31.19	\$68.50	\$69.33
Minimum Price \$CAD	\$18.07	\$18.30	\$16.79	\$17.38	\$18.34	\$18.56
Mean Price \$CAD	\$23.66	\$22.02	\$21.19	\$20.74	\$20.07	\$19.81
Median Price \$CAD	\$19.00	\$18.73	\$18.50	\$19.60	\$18.73	\$18.73
Median Allowance Price \$CAD	\$20.25	\$20.13	\$20.21	\$19.98	\$18.84	\$18.97
Auction Exchange Rate	\$1.33	\$1.35	\$1.24	\$1.28	\$1.26	\$1.28
Auction Proceeds (Current) \$CAD MM	\$457.36	\$473.55	\$469.50	\$363.21	\$437.83	\$440.68
Cumulative Proceeds \$CAD MM	\$457.36	\$930.91	\$1,400.41	\$1,763.62	\$2,201.45	\$2,642.13

Environment Canada reported the 2016 GHG emissions for the Province of Ontario as 160 million metric tonnes of which approximately 146 million metric tonnes were associated with transportation fuel and the heating of buildings.⁵ Arguably nearly all of the allowances

purchased under the cap and trade program were likely by participants whose allowance expenses would have flowed directly to individual customers where the impact of the carbon cost would be muted i.e. a line item within their natural gas utility bill or a gasoline

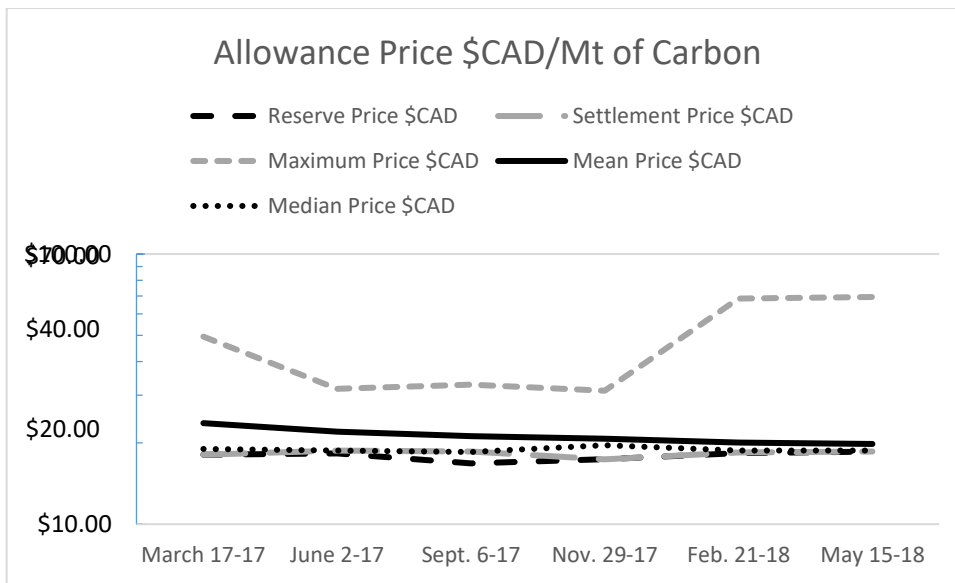


Figure 1 – Results of Ontario's Cap and Trade Program

pump price that fluctuated with the daily market prices for refined products.

The sudden cancellation of Ontario's cap and trade program has meant that the need for longer term data for rigorous statistical analysis is now moot and that the efficacy of such a program on reducing carbon emission remains unclear. What is apparent is that the then-government policy was to implement the program gradually and in doing so may have limited the impact that might have otherwise provided stimulation to consumers to reduce consumption of carbon-intensive products or services. Certainly a significant portion of the revenues (\$2 billion) generated by the cap and trade program were, according to the 2018 Ontario Budget, to be spent in 2018-19 on "approximately 57 programs that were reasonably likely to reduce or support the reduction of greenhouse gas emissions".⁶ However, it is up to the new government to determine to what extent these investments take place and therefore the effect they may have. When wondering as to whether a carbon tax mechanism would have been a better choice we can now turn our minds to the Canadian government's recent (April 1st, 2019) requirement for a \$20 per metric tonne carbon tax for Ontario residents. In a recent analysis, the Financial

Accountability Office of Ontario indicated that the federal government carbon tax program would return carbon tax receipts in the form of a carbon dividend to over 80% of Ontario households in order to off-set the cost of carbon pricing.⁷ Whether this will result in enough initial stimulation to reduce the consumption of carbon-intensive products or services remains to be seen. Furthermore, this chosen approach to recycling the carbon tax revenue will not have the same effect as the cancelled cap and trade program in terms of investments in "green technology, infrastructure

or direct support for businesses".⁸ As another federal election looms on the horizon (Fall 2019), and the fickleness of the electorate around the issue of the cost of carbon could result in a change of government, the "carbon tax versus cap and trade" debate in Ontario could continue for some time.

Footnotes

- ¹ Carl, Jeremy and David Fedor (2016). "Tracking global carbon revenues: A survey of carbon taxes versus cap-and-trade in the real world." *Energy Policy* 96: 50 -77.
- ² Weitzman, Martin L, (2017). "Voting on prices vs. voting on quantities in a World Climate Assembly." *Research in Economics* 71.2:199 – 211.
- ³ Carl and Fedor (2016)
- ⁴ Annual Greenhouse Gas Progress Report 2017 – Environmental Commissioner of Ontario
- ⁵ Environment Canada, National Inventory Report 1990-2016: Greenhouse Gas Sources and Sinks in Canada
- ⁶ Financial Accountability Office of Ontario, Cap and Trade: A Financial Review of the Decision to Cancel the Cap and Trade Program, Fall 2018 pg. 10
- ⁷ *ibid*
- ⁸ *ibid* pg. 21



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