

PROGRESS REPORT ON GREEN HOUSE GAS EMISSIONS RELEASED

A recent article in the Vancouver Sun reported on a recent multi-year comparison on the change in Greenhouse Gas (GHG) emissions by province.¹ The National Energy Board's July 5th comparison², was based on an Environment Canada report which compared GHG emissions for 1990, 2005 and 2015.³

The report provides an update on provincial progress toward the 30% absolute reduction in GHG emissions from the 2005 levels to 2030, as agreed during the 2015 Paris conference.⁴ The report assumes that the national reduction target applies equally to each province.

THE SIMPLE COMPARISON

The report showed that from 2005 to 2015 total emissions declined in six provinces, with New Brunswick and Nova Scotia recording declines of about 30%. Ontario (down 19%) and Prince Edward Island (down 14%), also reported significant declines in GHG megatonnes during the 10 years.

BC recorded a modest decline of about 5%, prompting Merran Smith, of the Vancouver-based Clean Energy Canada, to blame the provincial government for taking no action to address climate change since 2010. "It is absolutely shocking," she said, "that Nova Scotia, New Brunswick and the Yukon are meeting their targets and BC is far behind."⁵

Is this a fair criticism? Does it make sense to compare absolute values, without looking at factors that influenced the change in total GHG emissions during the 10-year period?

The authors of the report acknowledged that emission levels will vary by province due to various factors, including changes in population and economic activity. Economies based on resource extraction will tend to have higher emission levels than economies that are more service-based. Provinces that rely on fossil fuels for electricity generation will tend to have more emissions than those where renewable (or nuclear) power is more important.

GREATER CONTEXT

The report noted some caveats respecting the rate of change in the absolute numbers, and they could have also warned that the rate of economic growth (or contraction)

¹ <http://vancouversun.com/business/energy/b-c-lags-other-provinces-in-reaching-greenhouse-gas-reduction-targets>

² <https://www.neb-one.gc.ca/nrg/ntgrtd/mrkt/snpst/2017/07-01prvncsmssnstrgts-eng.html>

³ <https://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=18F3BB9C-1>

⁴ <https://www.theglobeandmail.com/news/world/paris-climate-deal-primer/article27539363/>

⁵ <http://vancouversun.com/business/energy/b-c-lags-other-provinces-in-reaching-greenhouse-gas-reduction-targets>

would also affect the change in the reported emissions. If a province records economic (and population) growth at twice the average level, does this require that should reduce emissions at a rate double the rest? If a province suffers an economic (and population) contraction, and emissions decline, is it relieved from the obligation to switch to a cleaner source of energy?

Table 1 compares the percentage increase in population and nominal GDP by province for the 2005 to 2015 period, as well as the change in absolute GHG emissions.

Table 1 RANKED PERCENT CHANGE IN GHG, POPULATION AND GDP, 2005 to 2015

----- GHG -----		----- Population -----		----- GDP -----	
New Brun.	(30.5)	Alberta	25.8	Sask.	76.9
Nova Sco.	(30.2)	Sask.	14.0	Manitoba	52.9
Ontario	(18.7)	B. C.	11.8	P.E.I.	45.3
P.E.I.	(14.3)	Ontario	10.1	Alberta	44.7
Quebec	(9.9)	Manitoba	10.0	B. C.	43.0
B. C.	(4.7)	Quebec	9.6	Ontario	37.1
Manitoba	1.0	P.E.I.	6.2	Quebec	36.0
NFLB/L	2.0	NFLD/L	2.8	NFLD/L	35.2
Sask.	7.9	New Brun.	0.8	New Brun.	29.3
Alberta	17.7	Nova Sco.	0.6	Nova Sco.	25.2

The comparative ranking clearly shows that those provinces with large increases in population and real GDP had relatively poor performance in the reduction in GHG emissions. Conversely, while New Brunswick and Nova Scotia recorded large increases in GHG emissions they had relatively low increases in population and GDP growth.

Table 2 shows the GHG emissions per person in each province in 2005 and 2015. The primary source of electricity generation, which is one factor included in the GHG totals, is also shown.

Table 2 MEGATONNES OF GHG EMISSIONS PER PERSON

	2005	2015	% Diff.	Major Electricity Source
B. C.	15.2	13.0	(14.5)	Hydro
Alberta	70.1	65.6	(6.4)	Coal, Natural Gas
Sask.	70.0	66.2	(5.2)	Coal, Natural Gas
Manitoba	17.5	16.0	(8.6)	Hydro
Ontario	16.3	12.0	(26.4)	Nuclear, Hydro
Quebec	11.7	9.7	(17.1)	Hydro
New Brun	27.1	18.7	(31.0)	Coal, Hydro (Quebec)

Nova Sco.	24.7	17.2	(33.4)	Coal, Natural Gas
P.E.I.	13.8	12.3	(19.1)	From New Brunswick
NFLD/L	19.6	19.5	(0.5)	Oil, Hydro
Canada	22.9	20.1	(12.3)	Hydro (60%)Nuclear (16%)

Source: http://www.stats.gov.nl.ca/statistics/population/PDF/Annual_Pop_Prov.PDF

This per capita analysis shows that BC still lags the gains recorded by five provinces, but it is much closer to Quebec's level. Both provinces rely on clean renewable Hydroelectric power. The 10-year improvement for BC is above the Canadian average and is better than the high growth larger provinces (Saskatchewan, Manitoba and Alberta).

Table 3 shows the improved efficiency in nominal GDP per megatonnes of GHG emissions from 2005 to 2015.

Table 3 PERCENT CHANGE IN GDP and MEGATONNES PER GDP 2005-2015

	GDP %Δ	Gain/(Loss)	Major Electricity Source
B. C.	43.0	50	Hydro
Alberta	44.7	23	Coal, Natural Gas
Sask.	76.9	64	Coal, Natural Gas
Manitoba	52.9	51	Hydro
Ontario	37.1	69	Nuclear, Hydro
Quebec	36.0	51	Hydro
New Brun	29.3	126	Coal, Hydro (Quebec)
Nova Sco.	25.2	79	Coal,
P.E.I.	45.3	70	From New Brunswick
NFLD/L	35.2	33	Oil, Hydro
Canada	40.2	43	Hydro (60%) Nuclear (16%)

Source: <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/econ15-eng.htm>

Among the larger provinces, the 50% efficiency gain recorded for BC was the same as Manitoba (which had a larger GDP gain), and a much better efficiency gain than Alberta (which recorded a similar gain in GDP). In this analysis, Saskatchewan had the best performance.

In summary, the National Energy Board report would have been more useful had it provided greater context as to the primary reasons for the changes in the GHG emissions.

An economic impact analysis would have also been useful; for example, what has the change from coal-based to natural gas or hydroelectricity-based generation been to electricity bills for residents of the Maritime provinces? What effect has the \$30 per ton carbon tax had on the rate of economic growth in BC?

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