

All calculations and forecast models are based on data available through IESO and the Government of Ontario. Conclusions, forecasts, and calculations are by AB Energy. AB Energy is a manufacturer and provider of gas-fired power plants for the generation of independent on-site energy in power and heat for industrial and manufacturing facilities.



Overview of the changes to Global Adjustment, as announced by the Provincial Government on Nov. 5, 2020.

Government of Ontario, News Release:

“Finance Minister Rod Phillips released *Ontario's Action Plan: Protect, Support, Recover* — the next phase of a comprehensive action plan to respond to the serious health and economic impacts of COVID-19”

<https://news.ontario.ca/en/release/59065/ontarios-action-plan-protect-support-recover>

specific segment pertaining to Global Adjustment:

“Starting on January 1, 2021, a portion estimated at approximately 85 per cent of these high-cost wind, solar and bioenergy contracts, entered into under the previous government, will be funded by the Province, not ratepayers. Removing these costs from electricity bills will result in medium size and larger industrial and commercial employers saving about 14 and 16 per cent respectively, on average, on their electricity bills.”

<https://budget.ontario.ca/2020/chapter-1c.html#section-1>

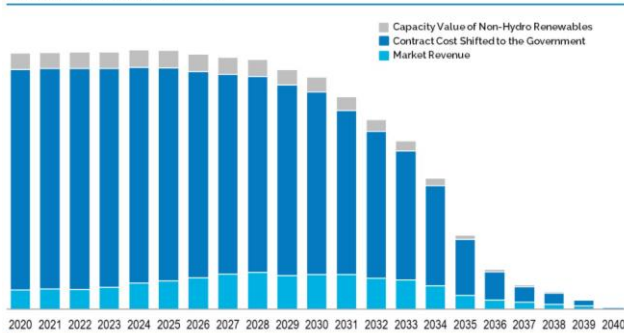
What does this mean?

Effectively, the government has moved the above portion of the Global Adjustment (GA) charges to the tax-payer base. These costs will now be borne by all provincial taxpayers, as opposed to being an energy charge specific to usage/consumption.

The portion of GA in question are the renewables – the solar, wind and biomass (bioenergy) contracts that were implemented starting in the early 2000s in an attempt to increase the renewable portion of energy and reduce GHG emissions in the provincial energy grid. These contracts guaranteed the implementers of these renewable projects high-value electricity sales rates (per MWh) to the province in addition to the actual market-generated HOEP levels, for over 20 years.

These contracts will start to expire in 2026, with the last of these contracts expiring in 2040.

Chart 1.11
Costs Shifted to the Province are Forecast to Decline under the Government's Plan



These contracts currently represent a combined total of 28.4% (2020), or 28.1% (2019) of the Global Adjustment costs.

In 2019, this was the equivalent of **\$3.648 billion** out of the \$12.984 billion total GA.

The portion removed, estimated to be 85%, represents the contract values of the rates in excess of HOEP. The capacity rates themselves within the contracts, will remain within Global Adjustment.

The province has a diverse energy mix, of which the renewables are one portion:

	2016	2017	2018	2019 Full Year		2020 Jan-Aug	
Conservation				350.68	2.70%	151.40	1.59%
Hydro				722.81	5.57%	584.20	6.13%
Nuclear (non-OPG)				2,751.50	21.19%	1,909.01	20.03%
Natural Gas				1,197.76	9.22%	859.95	9.02%
Other Programs - IEL and Storage				85.51	0.66%	60.94	0.64%
Financing Charges and Funds				(33.59)	-0.26%	(20.84)	-0.22%
Wind				1,793.59	13.81%	1,291.80	13.55%
Solar				1,662.29	12.80%	1,221.47	12.82%
Biomass, Landfill and Byproduct				231.29	1.78%	164.56	1.73%
Ontario Electricity Finance Corporation - Non-F				116.60	0.90%	64.10	0.67%
Ontario Power Generation - Regulated Nuclear				4,105.70	31.62%	3,243.70	34.04%
				12,984.14	100.00%	9,530.29	100.00%

Wind, Solar & Biomass

2019 = 28.39%

2020 (to Aug) = 28.1%

Removing the contract value of the renewable, or approx. 85%, is the equivalent of reducing the 2020 GA costs to ratepayers – both Class A and B – by **\$3.14 billion**.

The total provincial Global Adjustment costs have been seeing a steady rise, despite 2020 relief efforts in implementing caps and peak freezes, resulting in higher provincial demand peaks. At current levels, we are on track to see almost \$14 billion in 2020.

Month	2015 Total GA	2016 Total GA	2017 Total GA	2018 Total GA	2019 Total GA	2020 Total GA
January	\$ 628.13	\$ 1,070.58	\$ 927.67	\$ 786.80	\$ 956.20	\$ 1,107.76
February	\$ 458.73	\$ 1,063.66	\$ 850.10	\$ 796.30	\$ 908.10	\$ 1,136.50
March	\$ 706.89	\$ 1,120.08	\$ 770.01	\$ 962.80	\$ 857.60	\$ 1,168.40
April	\$ 928.63	\$ 1,090.71	\$ 965.71	\$ 937.80	\$ 1,118.70	\$ 1,282.70
May	\$ 939.11	\$ 1,060.77	\$ 1,144.51	\$ 1,001.10	\$ 1,133.30	\$ 1,223.26
June	\$ 943.11	\$ 995.36	\$ 1,208.82	\$ 1,151.00	\$ 1,261.30	\$ 1,278.47
July	\$ 903.97	\$ 981.99	\$ 1,096.13	\$ 911.80	\$ 1,149.60	\$ 1,217.74
August	\$ 879.24	\$ 878.62	\$ 1,029.39	\$ 876.40	\$ 1,327.70	\$ 1,115.50
September	\$ 713.40	\$ 967.67	\$ 821.12	\$ 847.30	\$ 1,082.90	\$ 1,049.50
October	\$ 742.59	\$ 1,062.33	\$ 1,099.20	\$ 1,135.30	\$ 1,209.60	\$ 1,209.60
November	\$ 1,119.27	\$ 1,076.15	\$ 914.87	\$ 936.40	\$ 979.00	\$ 979.00
December	\$ 999.60	\$ 965.45	\$ 1,023.30	\$ 853.20	\$ 1,000.20	\$ 1,000.20
Total	\$ 9,962.67	\$ 12,333.36	\$ 11,850.84	\$ 11,196.20	\$ 12,984.20	\$ 13,768.62

The earlier COVID-relief measures implemented by the Government in the form of a GA rate cap at \$115/MWh (and applied as an equal ratio to Class A customers) for the months of April, May and June, will likely have cost the province up to \$950 million.

In addition, HOEP rates were flat rated at 10.1 cents for March, April, and May and at 12.8 cents for June through October. The estimated shortfall in revenue for the province is likely to be approx. \$700 million.

The Government had already announced that the costs resulting from the GA rate cap would be deferred to 2021. The situation around the lost revenues from HOEP income is less clear.

Without either the change announced today, nor the deferred costs, 2021 GA would have followed the general trend and seen GA costs around \$13-\$15 billion.

⇒ **With the changes and deferred costs, 2021 GA will likely be around \$11 to \$12 billion**

What does that mean for Class A and B?

The simple answer is: **a lower cost of electricity.**

To differentiate between Class A and Class B costs, we look at the typical split in

- Energy consumption
- Cost equivalent

between the two Classes.

2019 cost of GA split

Class A 17.26%
Class B 82.74%

2019 prov. Demand (MWh) 135,101,455.00

Class A 28.13%
Class B 71.87%

Global Adjustment Costs and Consumption by Customer Class

Total global adjustment costs and consumption figures are divided between Class A and all remaining, or Class B, customers. Class A customers pay a rate based on their proportion of energy use during the five established coincident peaks. The remaining costs are recovered from all Class B. The breakdown between the two groups is shown below.

2020	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Class A Total (M\$)	196.4	201.5	207.1	227.2	229.2	226.6	202.0	105.0	174.0	
Class A Total (TWh)	3.469	3.323	3.349	2.764	2.920	3.076	3.303	3.414	3.293	
Class B (all remaining customers) Total (M\$)	911.4	935.1	961.3	1055.5	1064.4	1055.6	1014.9	929.7	874.7	
Class B (all remaining customers) Total (TWh)	6.900	6.246	6.049	7.017	7.243	6.174	10.264	9.002	7.213	

Source: IESO

Class B

Using 2019 Provincial demand and total GA costs as the basis and removing the portion of renewables, we would expect an average Class B GA rate around **9.2 cts/kWh** – essentially the average rate last seen in 2018.

Renewables Removed	2019 cost of GA split	
Class B GA portion	Class A	17.26%
\$ 9,004,692,673.48	Class B	82.74%

Class B Demand portion	2019 prov. Demand (MWh)	135,101,455.00
97,099,012.92	Class A	28.13%
	Class B	71.87%

\$ 9,004,692,673.48 Class B GA cost total

\$ 0.09274 Class B 2021 Forecast GA cost \$/kWh

Class A

For Class A, the answer is slightly more complicated. Since Class A GA rates are determined by the Peak Demand Factor, which is dependant on the 5 highest Provincial demand peaks, the actual GA rate can vary.

As a base, with the removal of the renewable portion and the deferred costs added back, the 2021 total GA costs are now expected to be **\$11-\$12 billion**

Without the changes, we would have seen around \$14 billion.

The next factor is determining where the 5-peak average will be. While the peaks are highly dependant on weather patterns and general variable consumption demands, they have been heavily influenced by mitigation efforts & energy savings. Until 2020, the peak average was declining steadily, due to a continued effort to reduce consumption levels and mitigate the stress on the provincial electricity grid:

GA Top 5 Peaks in MW							
	2015 GA Peaks	2016 GA Peak	2017 GA Peak	2018 GA Peaks	2019 GA Peaks	2020 Estimate	2020 actual GA peaks
Top 1	22,016	22,527	21,171	22,399	21,275	20,525.12	23,936
Top 2	21,900	22,637	21,039	22,377	21,147	20,401.63	23,558
Top 3	21,882	22,318	20,702	22,017	21,068	20,325.42	23,319
Top 4	21,394	22,189	20,238	21,644	21,006	20,265.60	23,271
Top 5	21,227	21,904	20,046	21,379	20,956	20,217.37	23,240
AVG	21,684	22,315	20,639	21,963	21,090	20,347	23,465

Instead of a 5-peak average of ~20,347 MW (following the previous years' trend), the peak freeze and increase in economic activity after the lockdown resulted in a **current 5-peak average of 23,465 MW**

Because of this, the 2020 Class A costs would be

$$>\$14 \text{ billion} / 23,465 \text{ MW} = \$600,000/\text{MW}$$

Without the peak freeze and the lower 5-peak average, the 2020 Class A GA costs for a facility/consumer would have been

$$>\$14 \text{ billion} / 20,347 \text{ MW} = \$688,000/\text{MW}$$

Scenario 1.

Demand Peaks remain high despite GA mitigation efforts as the overall electricity demand increases with a substantial increase in economic activity. The demand peaks are unlikely to be as high as 2020, as GA mitigation efforts will still offset. The Government had already cut programs in energy conservation, helping demand peaks stay high.

⇒ Forecast scenario sees 5-peak average around **22,100 MW**

⇒ \$11 billion GA cost (low end) / 22,100 MW = **\$498,000/MW**

⇒ \$12 billion GA cost (upper estimate) / 22,100 MW = **\$543,000/MW**

Scenario 2.

Demand Peaks fall back to pre 2019 expected levels of **<21,000 MW**

⇒ \$11 billion GA cost (low end) / 21,000 MW = **\$524,000/MW**

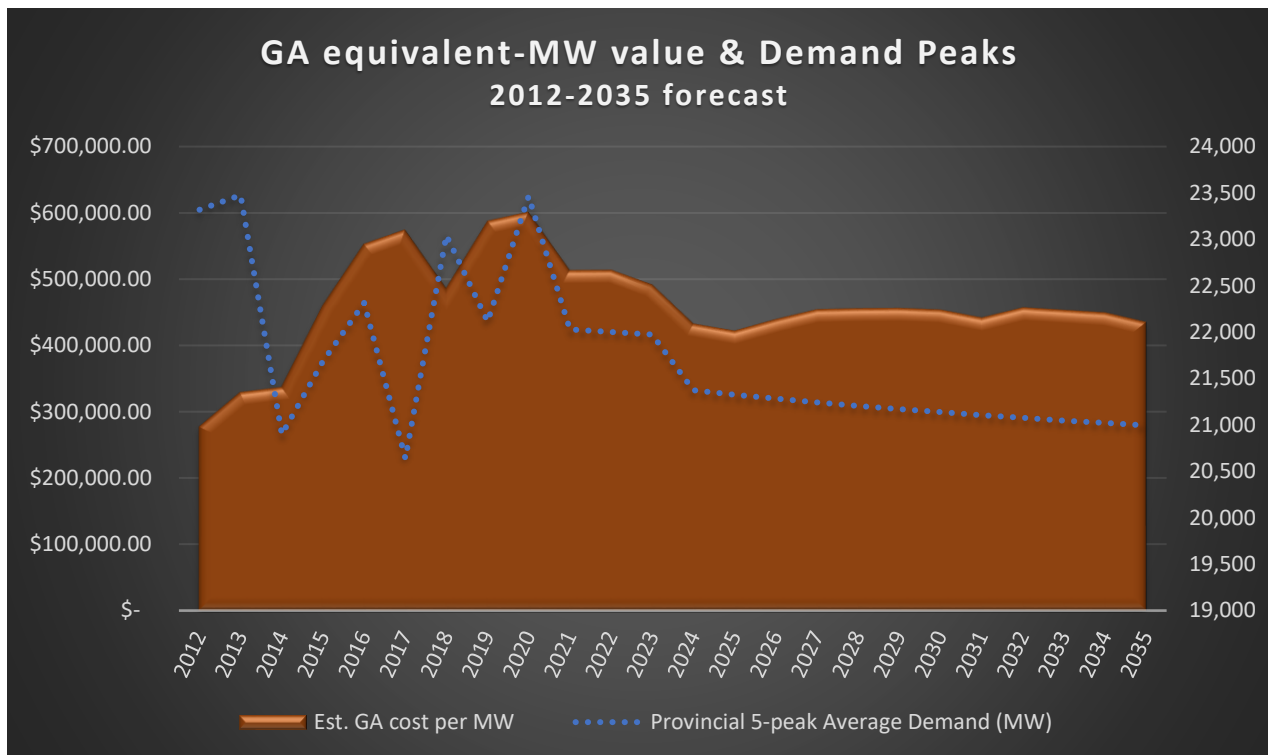
⇒ \$12 billion GA cost (upper estimate) / 21,000 MW = **\$571,000/MW**

Class A customer can expect 2021 GA rates to be between **\$498,000 to \$571,000 per MW**. The announcement today stated an expected savings for industrial and commercial customers of around 14 to 16%. This can be seen in the calculation above ($\$600,000 - 16\% = \$504,000$), applicable to 2021.

15 year “Forecast”

“Uncertainty is the only certainty there is” (John Allen Paulos). Despite this forecasting mantra, a new trend can be projected. With the renewable contract portion removed, overall GA costs drop, but still see a general trend upwards as nuclear refurbishment continues, new energy contracts come into place, and aging grid infrastructure is replaced. This could likely also be somewhat offset by future capacity auctions.

The peak demand is likely to continue to decrease with further mitigation and energy savings measures put in place in the future, although likely not at the same pace seen before 2020. Trend-lining both costs and demands, and without further covid-relief costs, an estimate or forecast for GA beyond 2022/2023 would now be between \$450,000 and \$500,000 per MW:



Will the ICI Program and Global Adjustment remain in this form?

The budget does provide some certainty towards the future applicability of the ICI Class A program, stating:

“This initiative is in addition to the benefits of other programs that are being maintained to provide electricity cost relief to eligible companies, such as the Northern Industrial Electricity Rate program and the Industrial Conservation Initiative (the latter program is also designed to provide electricity system benefits). Taken together, these measures provide greater stability and cost predictability for Ontario’s employers, supporting economic activity and job creation, while the Ontario Electricity Rebate continues to protect households, farms and small businesses, including main street restaurants and retail shops, as Ontario emerges from COVID-19 and continues down the path to economic recovery.”

This statement underlines the importance of the ICI program in providing overall electricity system benefits and outlines that this program is intended to be maintained, as it provides both economic relief and infrastructure (cost) benefits.

Why were the Renewable Contracts removed?

The provincial government stated in the budget

“In the 2020 Budget, the government is outlining a plan to reduce the burden on employers of high-cost contracts with non-hydro renewable energy producers, which will be wound down once and for all...

...These high-cost contracts were entered into by the previous government for energy that Ontario does not need at a price that employers cannot afford. In 2009, the previous government introduced the *Green Energy Act*, which led to high-priced contracts for electricity derived from wind, solar and bioenergy. By signing thousands of these high-priced 20-year contracts with renewable energy producers, the previous government set Ontario on a path of higher prices and lost jobs, culminating in the need for this government to act...

..In 2019, approximately 94 per cent of Ontario’s electricity supply was produced from zero carbon emitting sources, including 58 per cent from nuclear and 24 per cent from hydro. Investors are increasingly concerned about environmental, social and governance issues, and manufacturers in Ontario are using clean electricity while competing with businesses in Michigan, Ohio and Tennessee that are still significantly powered by coal-fired electricity generation.”

With renewable energies intended to assist the energy grid in reaching carbon neutrality, the government has argued that a large portion of low or zero carbon emissions can be achieved through existing nuclear and hydro generating facilities. The argument can be made that the balance of the province’s energy demand can be met by e.g. natural gas generators. These – when compared to coal-fired generation – are substantially lower in carbon emissions, therefore the Ontario electricity grid is already clean(er). Additional renewable energy sources such as wind, solar and biomass are deemed energy sources the provinces does not (necessarily) need, especially at the contract rates that were implemented, as they would only achieve a reduction in economic competitiveness without a significant decrease in overall carbon emissions.

Following this argument, renewable energies would be valuable in further reducing carbon emissions only if the costs were not borne by the province’s energy grid. Therefore, these costs should not have been included in the first place. Investment in renewable energies could therefore be seen as a social demand, as opposed to an economic necessity, and these costs could be carried outside of the energy grid, e.g. by the tax base demanding them. Shifting the contract values of the renewables to the taxpayer base follows this logic.

Can additional components also be removed, and GA further reduced?

	2016	2017	2018	2019 Full Year	2020 Jan-Aug
Conservation			350.68	2.70%	151.40 1.59%
Hydro			722.81	5.57%	584.20 6.13%
Nuclear (non-OPG)			2,751.50	21.19%	1,909.01 20.03%
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Ontario Power Generation - Regulated Nuclear			4,105.70	31.62%	3,243.70 34.04%
			12,984.14	100.00%	9,530.29 100.00%

There are few components left in GA that could be seen as inconsequential in meeting the province’s clean energy demands.

Certainly, changes to energy conservation could be made, although the funds for conservation programs were already [severely cut](#) in 2019. As such, Conservation is only 1.6% of total 2020 GA costs and represents ~\$200 million.

For Class A PDF calculations, the province’s peak demand plays an important role in determining the amount that a facility can offset by reducing grid demand during peak days. Generally, the higher the province’s peak demand, the lower the cost of Class A contributions towards GA payments. Less conservation and higher demand would provide higher Class A savings (although not for Class B).

2020 provided a glimpse at what **unmitigated** peak demands in the province could look like. The Class A peak freeze allowed ICI participants to not have to mitigate their demand peaks, with 2019 rates applying instead.

As such, demand peaks well over 23,000 MW were recorded.

With energy conservation and mitigation efforts in place, the trend for peak demand had actually been decreasing, and were expected to be ~2,000 MW lower.

It would be very difficult to justify the removal of any additional components of Global Adjustment. Upcoming and ongoing nuclear refurbishment, additional or increased supply from energy contracts with natural gas and hydro to compensate for the reduction in nuclear energy output, the addition of capacity auctions to reduce further energy costs and help with energy supply will play a role in altering the overall amount of each year's GA costs. This will also alter the mix of 'clean' energy but will likely result in minimal changes in the year-over-year increase in overall GA costs we have been seeing.

Removing what the Province perceived to be an unnecessary component in the Renewables that should not have been borne by the energy grid in the first place 'fixes' and reduces the total GA amount (without deferring or extending it to a future time as the previous refinancing efforts achieved), but it does not remove the necessity for GA. In addition, this reduction benefits both Class A and Class B ratepayers, although it will impact provincial taxes in a yet-to-be-defined manner.

Decreasing conservation efforts and increasing peak demands would slightly improve Class A savings, but would negatively impact Class B and likely overall electricity prices.

As the Province has stated the importance of maintaining the ICI program, and with the remaining GA components, and their costs, defined as part of the clean energy mix, there is not much room for further reductions that would benefit both Class A and Class B alike.

If there are any questions, or for a discussion on the impact of these changes to the feasibility of a Class A GA mitigation strategy, please contact:

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