Rate/Price Related Question

1) Is there a notable difference in HOEP that can be attributed to the ICI?

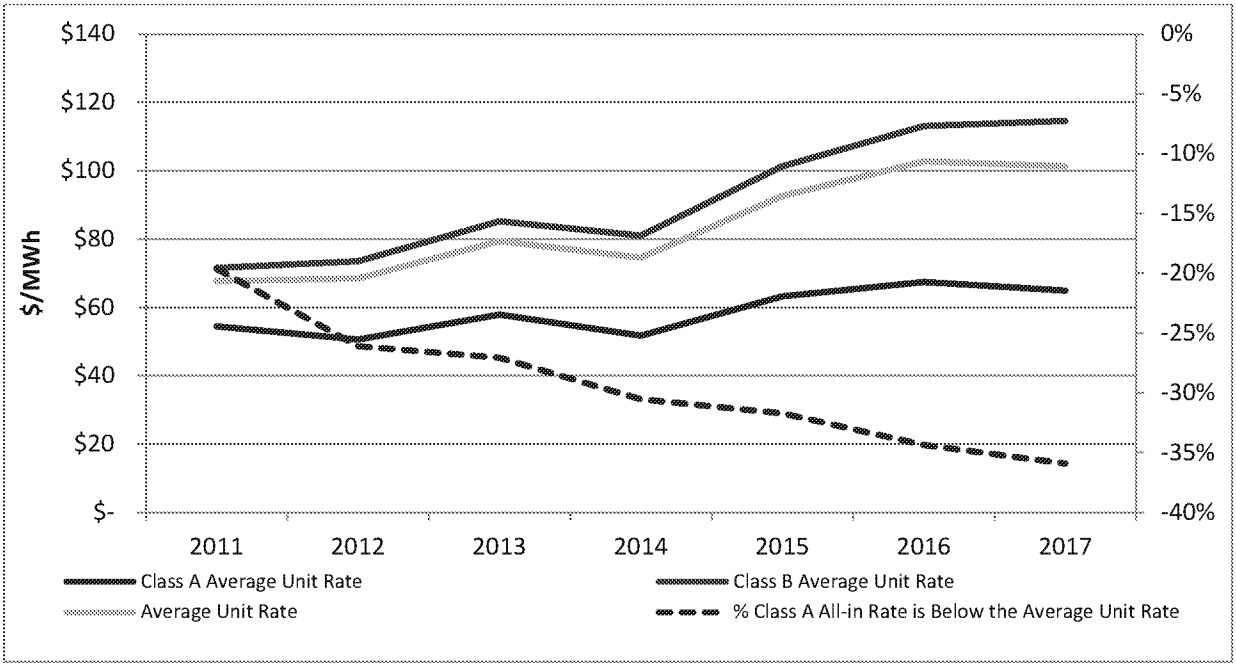
We won't know for certain if the ICI program is causing a notable difference in HOEP since we would need to know the load curve of customer's behavior with and without ICI. We could use the market participant data to see if we can simulate before and after ICI based on Andrew's analysis. The ICI will reduce the peaks but will increase load in other hours. Weather there is an offset in the peak hours made up of higher HOEPs in other hours is what you would want to see if you could measure. More discussion would need to done on this.

Hok to take the reduction in load identified by Andrew in the last 10 hours of peak and add this demand to see what the PQ pair would have been to assess the impact to HOEP.

2) What has the rate impact been on Class B customers? How does this compare with the Fair Hydro Plan?

Considering the cost of electricity generation is a combination of market prices and the GA cost component, an All-in Class A and Class B rate versus the average unit rate is a better measure of the rate implications to these customers. The commodity price for electricity for a Class A customer has been below the average unit rate by a range of -20% to -36%, as illustrated in the figure below.

Figure 1: Annual Average All-in Unit Rate for Class A, Class B and Average Unit Rate



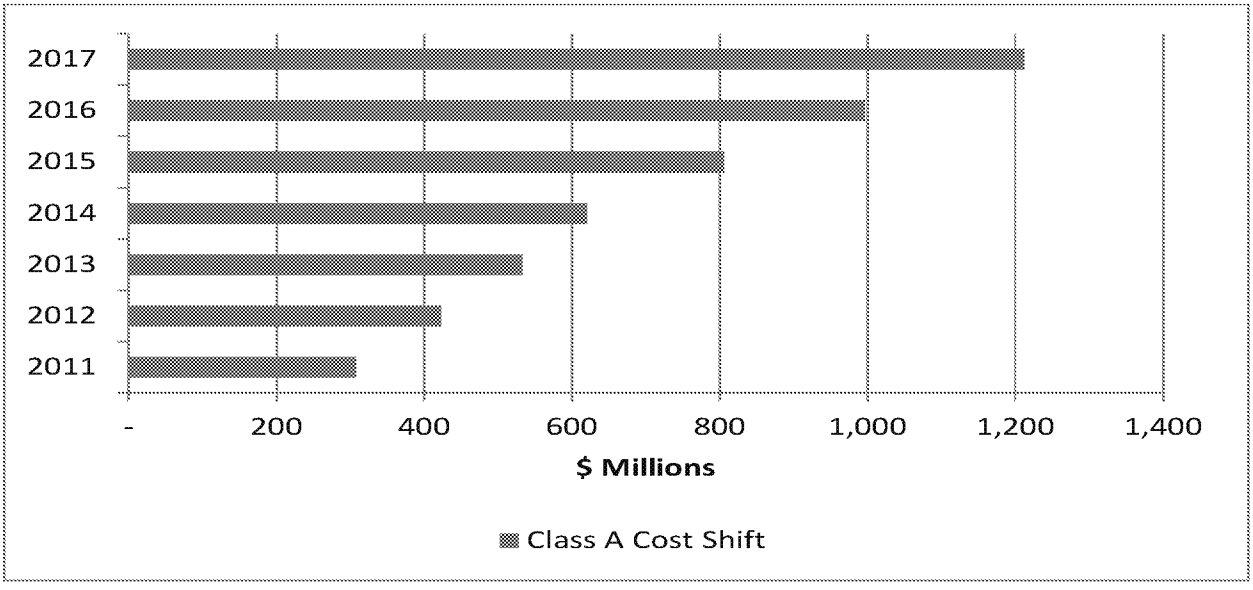
The Ontario Fair Hydro Plan (OFHP) announced by the government is a 25% bill reduction for the typical residential customer's bill. Although there is no typical industrial bill the average unit rate for large industrial is a rate that includes the all-in Class A rate, plus transmission and wholesale uplift costs. Taking these additional charges into consideration the Class A customer would have a lower rate in the range of x to x%. Consequently, Class A customers have experienced a credit that is in line with the Ontario Fair Hydro Plan since its inception.

3. As Many Generation contracts have elements of HOEP, what is the GA impact of lower HOEP that comes with a reduction in demand?

Reduced HOEP will result in more cost being recovered by GA. In effect, allowing for Class A customers a greater opportunity to reduce their share of the cost for electricity commodity. (Draft below)

4. Does the ICI cause cost-shifts among customers in general and customer classes in particular? If so what do these shifts look like?

Class B share of Class A cost due to the allocation is increasing as the GA costs increase from $300 M to 1.2 Billion by 2017.



5. Is the ICI program a cost-effective mechanism for reducing peak demand?

- Will produce a comparison of the cost per peak vs DR and other alternatives as per Conrad's analysis.

Section Below is a way to DRAFT responses more in a report type Deliverable

Total Cost of Generation

Of Ontario generation, the majority of supply is contracted or regulated with less than 2% being paid just the market clearing price. All regulated and contract generator are designed to cover their fixed and variable costs plus a rate of return. The 3 types of financial commitments are based on how best to incent generators to operate in a manner that is beneficial to electricity consumers

- Fixed Price
  - Fixed Price Power Purchase Agreements (PPA)
  - RES, FIT, RESOP, Bruce Power, HCI, NUGs
- Regulated Rates
  - OEB regulated rate for OPG Nuclear and Large Hydro
  - Revenue Requirement
  - HESA
  - Lennox
- Deemed Dispatch Contracts
  - predominately natural gas facilities
    - CES and CHP

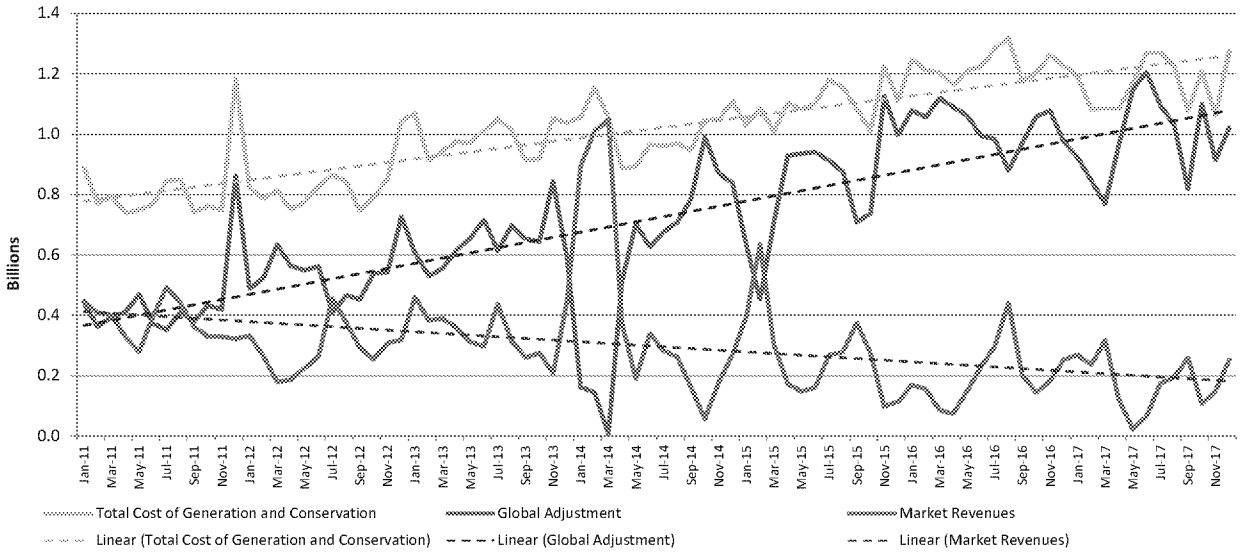
Ontario ratepayers cover the full cost the Ontario generators fixed and variable cost plus the rate of return.

Cost Recovery of Generation and Conservation (i.e., Cost of Electricity Commodity)

The total cost of generation and conservation has been trending upward, as illustrated in the figure below for the time period 2011 to 2017. The total cost for electricity commodity (generation and conservation program cost) has increased due to new generation capacity and the renewal of nuclear generation.

The generation and conservation cost is recovered from Market Revenues and the Global Adjustment. As indicated below, HOEP and GA are generally inversely related; given, that the GA is a mechanism that recovers the difference between contract and regulated rates plus conservation costs not recovered from the market rates.

Figure 2: Total Cost of Generation and Conservation (i.e, Electricity Commodity Cost), with GA and Market Revenue Recovery



The steeper slope in the GA trend line indicates the fact the GA and HOEP are not perfectly inversely related since the cost of generation is not static with the capacity, demand levels, and supply mix changing over time.

The market price of electricity (i.e., HOEP) is a market mechanism that determines an economic and efficient dispatch signal for generation resources as it's the market clearing price for electricity as the lowest-cost offer to supply electricity required to meet Market Demand. If load increases the higher price generator will be dispatched driving up the market clearing price since the higher price generator will be dispatched.

The ICI program would reduce the need for a higher price generators to be dispatched when Class A customer attempt to reduce their share of the GA allocation. Assuming they only reduce in consumption in the top 10 hour and not increase production in other hours, the overall effect on generation costs would a reduction in the variable energy cost for if there is sufficient capacity available to meet the peak without the ICI program. In the event, the ICI program is providing capacity value of avoiding new capacity to supply these peak periods if ICI was not there the cost savings to total generation costs would be greater.

When an ICI reduces the HOEP, they in effect increase the GA cost share to be recovered and benefit the Class A customers which are given a larger opportunity to avoid these costs.

In the event, the ICI customer load is merely shifting their load peak load requirements to other hours the variable generation cost savings would be incurred in other hours. Although they may not be with the same level higher price generator so some variable savings could still occur but it would be nominal to reflect the difference between the variable cost of the generator at peak vs. the variable cost of the generator on off peak. If the period of additional consumption from the peak is during surplus baseload conditions the total variable cost of the on peak generator would have been saved from the system.

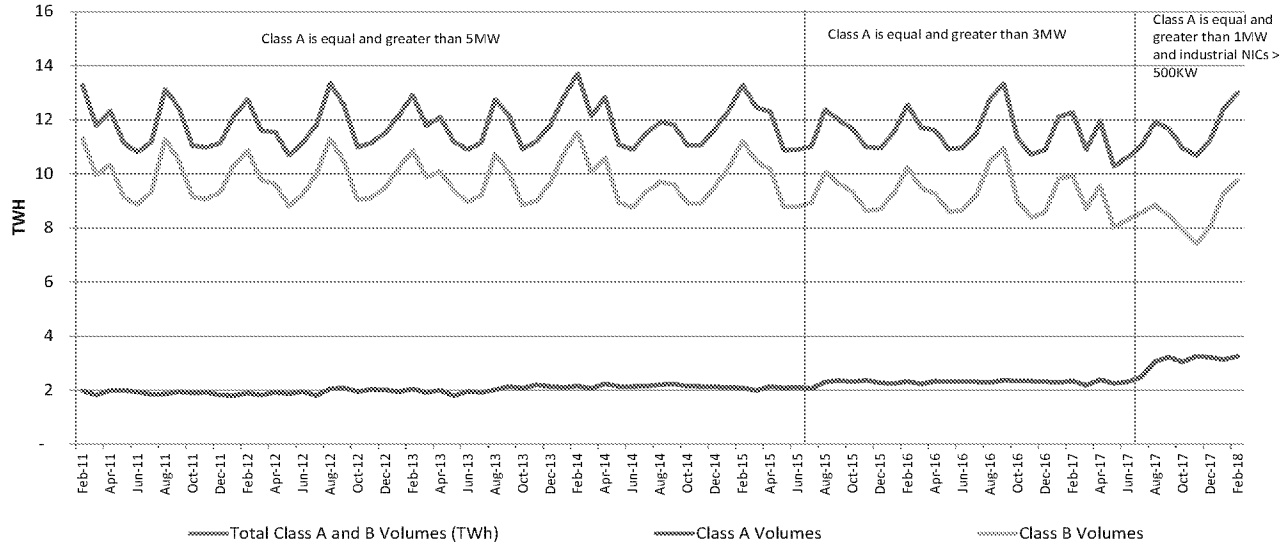
Conrad's quantifying the value of the ICI program.

Class A and Class B GA and All-In Rates

Prior to January 1, 2011, GA was allocated to all customers on a volumetric basic. Effective January 1, 2011, Class A customers equal and greater than 5 MW were allocate the cost of GA based on their usage of the 5 highest peak hours in the prior year (Base period). The remaining cost of the GA not recovered by Class A customers were allocated to Class B customers on a volumetric basis. On July 1, 2015, the Class A eligibility was expanded from 5MW to include consumers that were equal and greater than 3MW. Customers 3MW or greater were given the option to elect into the Class A GA allocation methodology or to remain in the Class B GA cost allocation. In the throng speech and x budget the government, changed the eligibility of Class A to all customers 1 MW or greater and available to customers equal or greater than 500KW with an industrial NICs code to be effective on July 1, 2017.

The figure below illustrates the monthly usage profiles of Class A and Class B customers. The Class A monthly usage profiles are fairly flat compared to the remaining Class B customers which are predominately low volume users such as residential customers, commercial and small industrials. The Class B customer usage profiles are more responsive to weather conditions thus illustrating a more profound seasonal profile.

Figure 3: Monthly Usage Profile for Class A and Class B



The usage levels for Class A customers has increased over time as the eligibility into Class A expanded. The graph below indicates the annual share volume consumed by Class A is about 27% as of July 2017 due to the expansion of the Class A eligibility to 500KW NICs customer and 1MW and greater, previously the load consumption was closer to 17% when only available to 5MW customers.

Figure 4: Cost of Global Adjustment by Class A and Class B

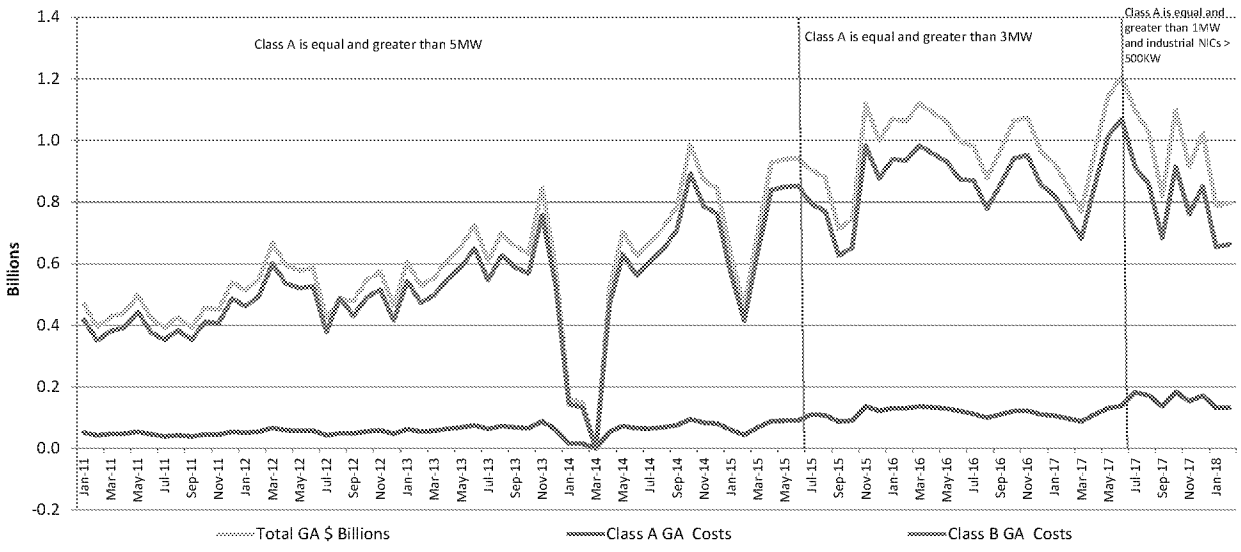
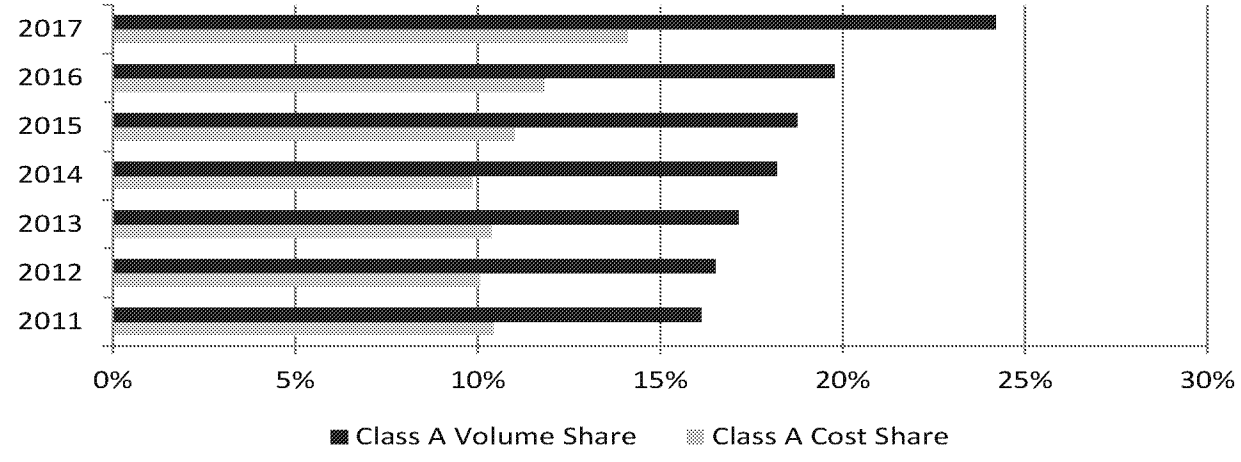
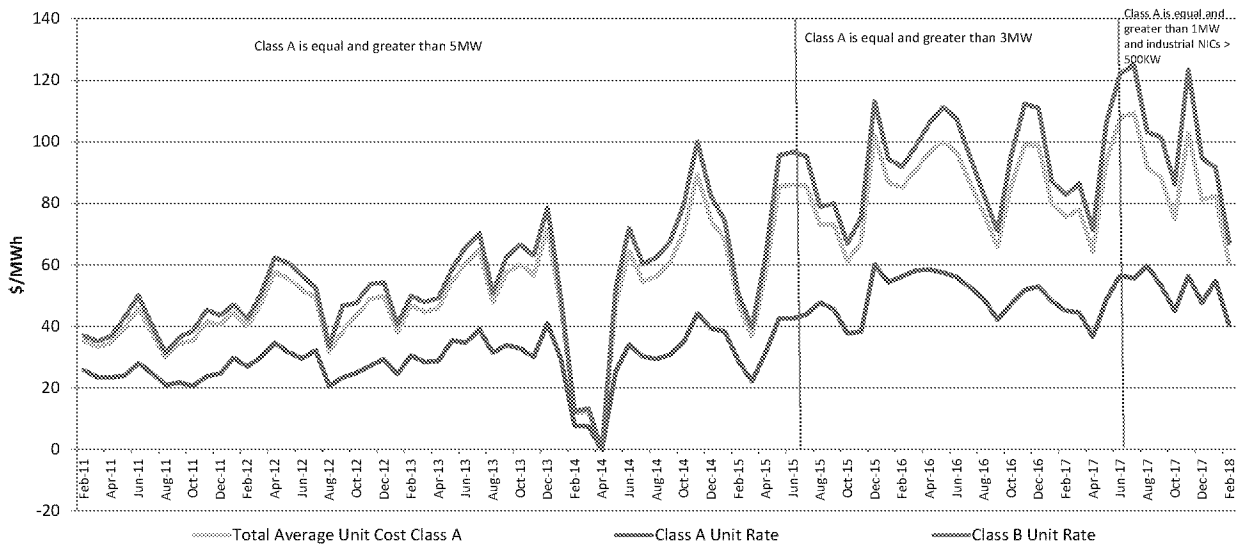


Figure 5: Class A Annual Average Volume and Cost Share



Since July 2017, the Class A volume consumption of 27% is associated with 17% of the GA cost allocated to Class A customers, resulting a lower unit GA rates relative to Class B and the simple average for GA.

Figure 6: Unit Rate of GA by Class



In general, the Class A GA rate is more than 30% lower than an average volumetric rate for GA (Average GA Unit Rate). In 2017 the Class A GA rate was 41% lower than the Average GA Unit Rate and X% lower than the Class B GA rate.

Figure 7: Average GA Unit Rate by Year

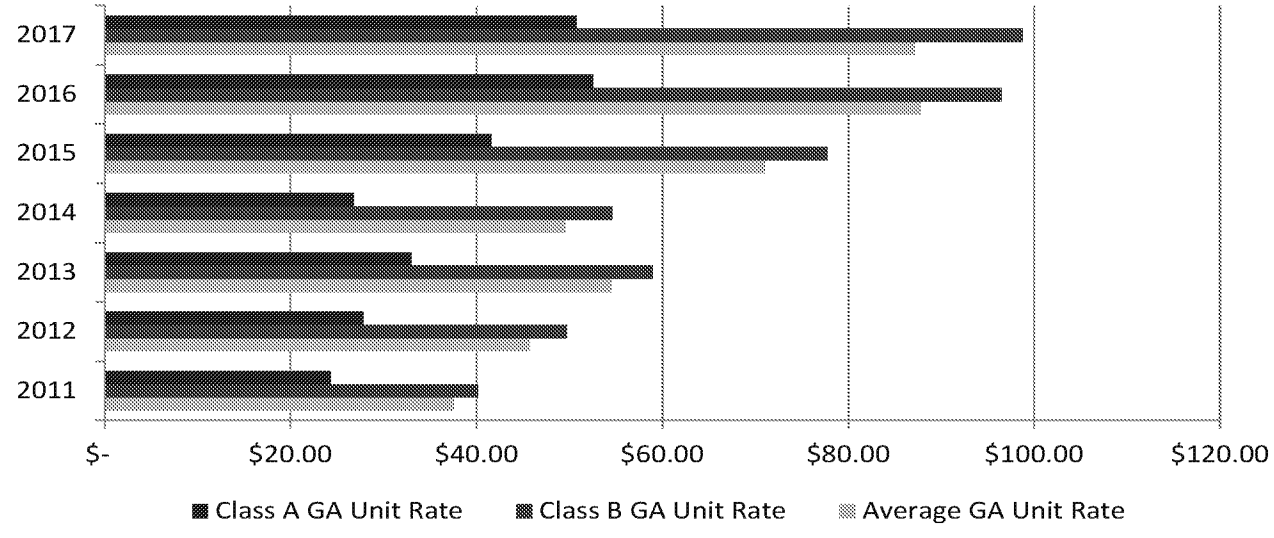


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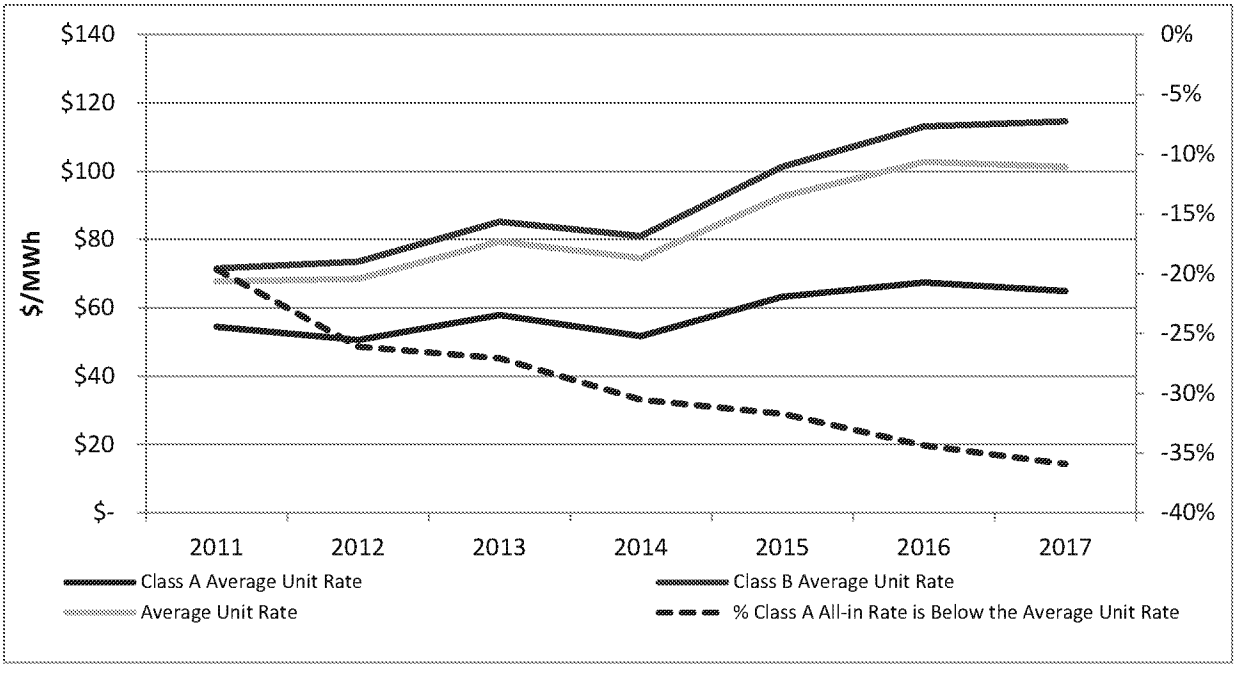
Figure 8: Annual Average All-In Unit Rate for Class A, Class B and Average Unit Rate



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