
Greenhouse Demand and Cost Analysis

February 2017

Context

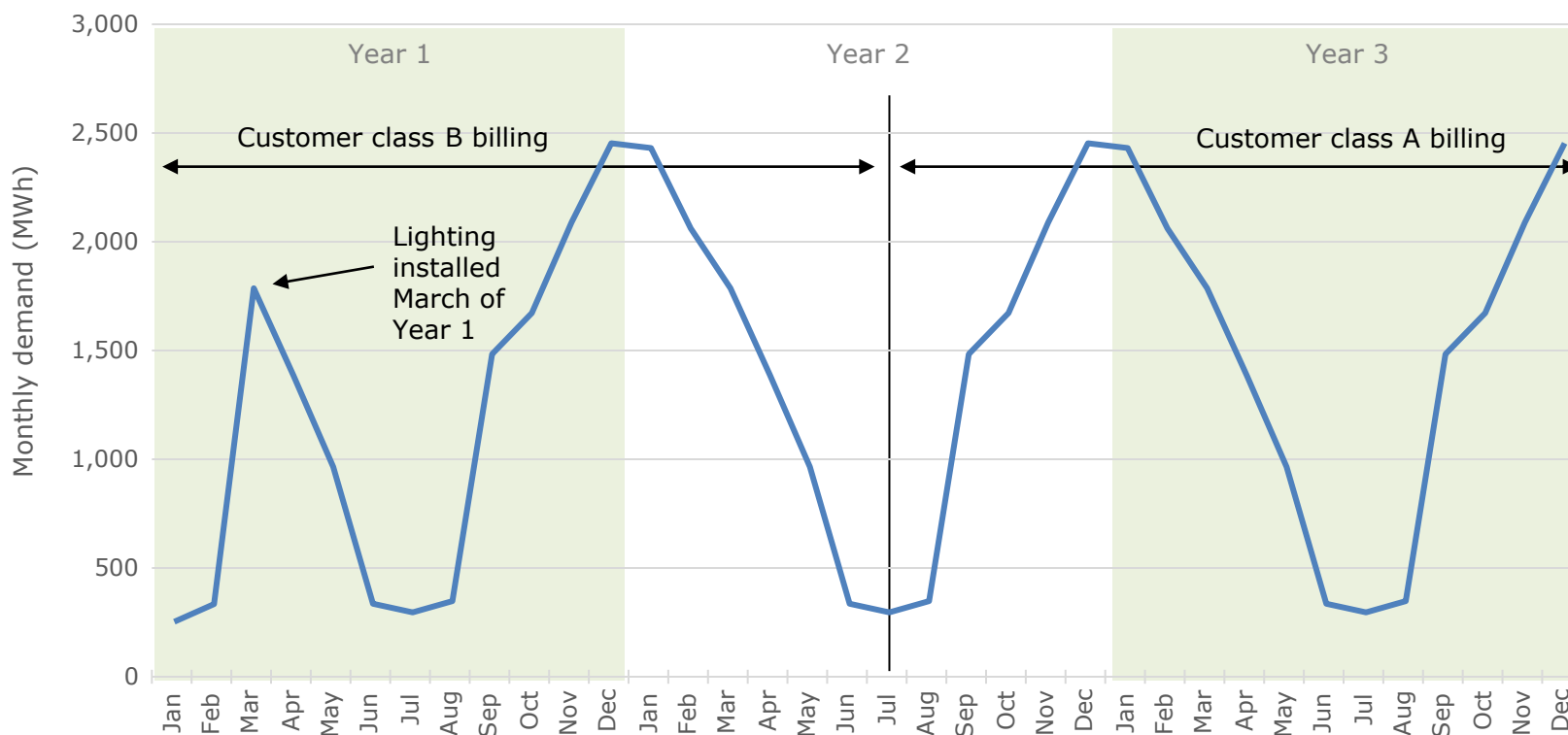
- Some Ontario greenhouses are considering installing lights to increase production over the winter months.
- In most cases, installation of lights will allow greenhouses to move from being Class B to Class A electricity consumers.
 - Being a Class A consumer will enable Ontario greenhouses to significantly reduce electricity costs through participation in the Industrial Conservation Initiative (ICI) program.
 - As a participant in the ICI program, Ontario greenhouses will be charged Global Adjustment (GA) on the basis of their contribution to system peak demand during the highest 5 system demand hours of the year.
 - Given that the greenhouses will typically only use lighting during off-peak periods, as a Class A customer under ICI they will not be subject to any GA costs on lighting consumption.
 - However, in order to qualify for the ICI program, the greenhouses must fulfill a one-year eligibility period as a Class B consumer before being billed as a Class A consumer.

Modelling Assumptions / Methodology

- Greenhouse electricity demand data was provided by a greenhouse for baseload and lighting consumption:
 - Combined baseload and lighting consumption > 4.5 MW (peak); and
 - Lighting installed in March of Year 1.
- Demand and cost modelled over a three-year period to reflect switch from Class B to Class A electricity consumer:
 - Customer is originally Class B on basis of baseload only consumption before lighting is installed;
 - Installation of lighting enables customer to become Class A and qualify for ICI program;
 - Transition from Class B to Class A requires evaluation period May Year 1 to April Year 2; and
 - Class A billing begins in July Year 2.
- Load shape is assumed as follows:
 - Lighting consumption divided in two and applied evenly to first and last hours of each day; and
 - Baseload consumption assumed constant throughout the day.
- Hourly Electricity Price (HOEP) and Global Adjustment (GA) price data used as per 2016 actuals, Class A consumer GA based calculation based on IESO Top 5 Peaks May 2015 to Apr 2016 (latest published information). **NOTE:** In this period all five peaks were hit in summer hours. If a peak occurs in winter hours (i.e., as occurred in 2014), greenhouses would face materially higher GA costs unless they were able to shut off lighting during the peak hours.

Demand

- Annual baseload demand of 3.4 GWh and lighting demand of 13.4 GWh.
- Lighting installed in March Year 1 and as per customer data does not operate during summer months of June, July and August.
- Class A customer billing starts July Year 2.



Commodity Cost (Illustrative)

- Customer cost falls significantly in Class A as lighting (70% of total customer demand) will not be billed for any GA assuming peaks remain in the summer.

	Baseload Demand	Lighting Demand	12 Mth Total Commodity Cost	Comments
Class B	Charged HOEP and monthly Class B GA		\$1,934,497	January Year 1 to June Year 2
Class A	Charged HOEP and Class A monthly GA as % of customer peak demand	Charged HOEP only	\$ 231,979	- No GA on lighting demand as zero load during Top 5 peak hours used to set Class A GA contribution. - July Year 2 onwards

Commodity Cost (Illustrative) (cont'd)

