GONE TOO FAR: SOARING HYDRO BILLS OFFSET CONSERVATION EFFORTS AND HURT CONSERVERS MOST

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EXECUTIVE SUMMARY

Ontario ratepayers have been told that conservation will help them “reduce their electricity bills.” But the reality is that soaring hydro rates are more than offsetting any savings from conservation efforts by ratepayers and leading to faster-than-inflation bill increases. Ratepayers who were already conservers – either because their monthly consumption was below average or a greater percentage of their consumption was in off-peak hours – have suffered the largest percentage increases on their monthly bills.

Ratepayers who were already conservers have seen their monthly bill increased by 60% since 2006, or nearly 4 times the rate of inflation.

Average ratepayers who cut their overall monthly electricity consumption by 10% since 2006 and reduced their peak electricity consumption by 25% have still seen their monthly bill increase by nearly 40% over that time, or 2.5 times the rate of inflation.

While the province maintains that conservation efforts, supported by ratepayer-funded programs, will help reduce bills, conservers should not expect their total electricity bills to decline, as overall electricity increases are more than offsetting those efforts.

Ultimately, the province is putting the onus on ratepayers to conserve power to try and alleviate the impact of the massive rate increases, while continuing to push forward with the policies that are causing those rate increases in the first place.
PART 1: The Promise of Conservation

Ontario’s conservation push kicked off in 2004 when the provincial government set a target of reducing energy consumption in the province by 5% by 2007.¹ The province also established the Ontario Power Authority (OPA)² and a Chief Conservation Officer, which together would help establish a “culture of conservation” in Ontario.

The OPA, in particular, would oversee billions of dollars of conservation programs, while at the same time manage various electricity contracts signed with the province’s different generators. OPA contracts now account for nearly 66% of the province’s total generation capacity.³

Conservation spending overseen by the OPA amounted to $2 billion between 2006 and 2011,⁴ $612 million between 2011-2013,⁵ $483 million in 2014⁶ and is expected to total $2.6 billion between 2015 and 2020.⁷ In total, between 2006 and 2020, the province plans to spend $5.7 billion on conservation programs alone – not including other programs such as the smart meter rollout ($2 billion and counting⁸) and the costs associated with renewable energy procurement programs such as the Feed-in-Tariff (FIT).

The push for electricity conservation is based on the promise to ratepayers that it will be cheaper in the long run than having to build additional generation or expand the grid to handle periods of peak demand. Most notably, the province maintains that conservation will reduce electricity bills.

“As we plan for Ontario’s electricity needs for the next 20 years, conservation will be the first resource to be considered. It is the cleanest and most cost-effective energy resource, and it offers consumers a way to reduce their electricity bills,” the province said in its Long Term Energy Plan, “Achieving Balance”.⁹ [emphasis added]

PART 2: Soaring Hydro Bills

While ratepayers were told that conservation would lower their energy costs, hydro bills have continued to soar higher (see Figure 1).

Off-peak prices for electricity have increased 128% since 2006, rising from 3.5 cents per kilowatt hour (kWh) to 8 cents per kWh. Mid-peak prices increased by 62%, rising from

² In 2015 the OPA was merged with another agency, the Independent Electricity System Operator (IESO).
³ [http://www.ieso.ca/Pages/Power-Data/Supply.aspx](http://www.ieso.ca/Pages/Power-Data/Supply.aspx)
7.5 cents per kWk to 12.3 cents per kWh. Peak prices, which are now 53% higher than they were in 2006, have grown the least (in percentage terms), rising from 10.5 cents per kWh to 16.1 cents per kWh.\(^\text{10}\)

**Figure 1: Regulated Hydro Rates in Ontario**

![Bar chart showing regulated hydro rates in Ontario](http://www.ontarioenergyboard.ca/OEB/Consumers/Electricity/Electricity+Prices/Historical+Electricity+Prices)

<table>
<thead>
<tr>
<th></th>
<th>2006 rates (cents per kWh)</th>
<th>2015 rates had they tracked Ontario CPI (cents per kWh)</th>
<th>2015 current rates (cents per kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>off-peak</strong></td>
<td>3.5</td>
<td>4.05</td>
<td>8</td>
</tr>
<tr>
<td><strong>mid-peak</strong></td>
<td>7.5</td>
<td>8.69</td>
<td>12.2</td>
</tr>
<tr>
<td><strong>peak</strong></td>
<td>10.5</td>
<td>12.16</td>
<td>16.1</td>
</tr>
</tbody>
</table>

Other charges on hydro bills have also increased faster than inflation since 2006. Toronto Hydro’s residential ratepayers have seen a 50% increase in the fixed distribution charge. The variable distribution charge has remained at the same level. The two variable transmission levies charged to ratepayers – a network and connection charge – have increased by 41% and 24%, respectively, over that time.\(^\text{11}\)

In contrast, the price of natural gas (see Figure 2), which has become an increasingly attractive alternative to electricity for heating, generation and other industrial uses, has dropped by as much as 68% over that time.\(^\text{12}\) It should be noted that natural gas customers pay the commodity cost of natural gas, which the distributors pass through on

\(^{10}\) [http://www.ontarioenergyboard.ca/OEB/Consumers/Electricity/Electricity+Prices/Historical+Electricity+Prices](http://www.ontarioenergyboard.ca/OEB/Consumers/Electricity/Electricity+Prices/Historical+Electricity+Prices)

\(^{11}\) See the Electricity Distribution Rates Database at the OEB: [http://www.ontarioenergyboard.ca/OEB/Industry/Regulatory+Proceedings/Applications+Before+the+Board/Electricity+Distribution+Rates](http://www.ontarioenergyboard.ca/OEB/Industry/Regulatory+Proceedings/Applications+Before+the+Board/Electricity+Distribution+Rates)

\(^{12}\) [http://www.ontarioenergyboard.ca/OEB/Consumers/Natural+Gas/Natural+Gas+Rates/Natural+Gas+Rates+-+Historical](http://www.ontarioenergyboard.ca/OEB/Consumers/Natural+Gas/Natural+Gas+Rates/Natural+Gas+Rates+-+Historical)
monthly bills without adding additional charges and which is largely outside the control of the Ontario government.\textsuperscript{13}

**Figure 2: Regulated Natural Gas Rates in Ontario**

![Graph showing natural gas rates from April 2006 to April 2015 for Union Gas and Enbridge.]

**PART 3: Ratepayers Can’t Conserve Enough To Lower Their Electricity Bills**

Ratepayers who have taken conservation seriously, or were serious about conservation to begin with, continue to see faster-than-inflation increases in their hydro bills, according to our analysis.\textsuperscript{14}

Conservation-minded ratepayers – those that already used little power during peak periods and consumed less power over the entire month than the average ratepayer – experienced annual bill increases of 6.72%, or about 4 times the annual rate of inflation.

Ratepayers that were already low energy consumers – consuming about half of the average ratepayer per month and less during peak periods – experienced annual bill increases of 6.57%, or about 3.8 times the rate of inflation.

Ratepayers that cut back on both overall consumption and peak demand experienced an average annual increase on their bill of 4.3%, or 2.5 times the annual rate of inflation in Ontario.

\textsuperscript{13} The commodity price of natural gas is established through North American markets and is largely out of control of the provincial government or regulators. Gas distributors in the province purchase the gas on open markets and then pass through this cost to ratepayers without any mark-up.

\textsuperscript{14} Average annual inflation in Ontario was 1.75% between 2006 and 2014. CANSIM …
Ratepayers that reduced overall consumption by 10% experienced average annual bill increases of about 5%, or nearly 3 times the rate of inflation.

Ratepayers that shifted consumption out of peak hours, experienced average annual bill increases of 5.8%, or 3.3 times the annual rate of inflation.

Ratepayers that did nothing experienced average annual bill increases of 6.4%, or about 3.6 times the rate of inflation in the province.

PART 4: Statistics and Analysis

There are two different methods of conservation: shifting consumption out of peak billing periods (when demand is highest) and cutting back on overall consumption. We have analyzed the effects of each method on electricity bills.

To calculate residential rate increases, we used 2006 as our starting point and assume that the average ratepayer consumes 800 kWh a month – the same figure the Ontario Energy Board (OEB) and distributors use in their analysis for the average ratepayer.\(^\text{15}\)

For distribution and transmission costs, we used the rates residential Toronto Hydro customers pay. Toronto Hydro is the largest municipal distributor in the province\(^\text{16}\) – and trails only Hydro One in residential customers\(^\text{17}\) – and has kept its rate classes fairly static over that time. Hydro One, on the other hand, has altered its rate classes over that time and absorbed a number of smaller utilities, making any comparison more difficult.

There are also other charges included in residential rates, such as the smart meter charge, numerous variance accounts and the introduction of HST on hydro bills (prior to 2009 ratepayers only paid GST) that we have not included in this analysis. Many of these charges are fixed – meaning they remain the same even as consumption increases and so act as a disincentive to conserve. We also didn’t include the one-time rate relief of 10% that was given to all ratepayers in 2011 under the Ontario Clean Energy Benefit (OCEB). The program has, to date, cost taxpayers more than $4 billion\(^\text{18}\) and is set to expire at the end of 2015.\(^\text{19}\)

Table 1 details our findings. Our analysis compares seven different types of ratepayers.


\(^{16}\) [https://www.torontohydro.com/sites/corporate/AboutUs/Pages/AboutUs.aspx](https://www.torontohydro.com/sites/corporate/AboutUs/Pages/AboutUs.aspx)


Ratepayer 1 (base case)

In 2006, the ratepayer consumes 800 kWh per month, with 50% of that occurring in off-peak hours, 30% in mid-peak hours and 20% in peak hours. For an 800 kWh ratepayer, that translates to 400 kWh in off-peak, 240 kWh in mid-peak and 160 kWh in peak consumption per month. The ratepayer maintains the same consumption level and pattern in 2015.

Ratepayer 2 (recent peak conserver)

Between 2006 and 2015, the 800 kWh a month ratepayer shifts consumption according to the time of day, cutting peak usage to 15% of total consumption (a 25% reduction of peak electricity consumption) and mid-peak to 25% of total (a 16% reduction), consuming 480 kWh in off-peak hours, 200 kWh in mid-peak hours and 120 kWh in peak hours.

Ratepayer 3 (already a peak conserver)

In 2006, the 800 kWh a month ratepayer already consumes 25% less energy during peak hours – 120 kWh – but doesn’t decrease peak consumption any further in 2015. This ratepayer is already a peak conserver.

Ratepayer 4 (conserver of overall consumption)

The ratepayer cuts overall consumption by 10% from 800 kWh in 2006 to 720 kWh in 2015, with 360 kWh of consumption occurring in off peak hours (50% of total), 216 kWh (30% of total) in mid-peak hours and 144 kWh (20 % of total) in peak hours.

Ratepayer 5 (peak and overall conserver)

The ratepayer conserves on both fronts – cutting overall consumption and shifting consumption to off-peak periods – between 2006 and 2015. Compared to 2006, when she consumed 800 kWh a month, in 2015 she consumes 720 kWh a month, with 432 kWh, 180 kWh and 108 kWh coming in off-peak, mid-peak and peak hours, respectively.

Ratepayer 6 (already a peak and overall conserver)

The ratepayer was already a conserver on both fronts in 2006, using 720 kWh per month, with 15% of that occurring during peak hours. The ratepayer continues to use the same amount – having already invested in conservation – between 2006 and 2015.

Ratepayer 7 (low consumption peak conserver)

A low consumption ratepayer that only consumes 400 kWh per month in total, with just 15% of that occurring during peak hours.
<table>
<thead>
<tr>
<th>Ratepayer</th>
<th>Ratepayer’s Conservation Efforts</th>
<th>Total Bill 2006 $</th>
<th>Total Bill 2015 $</th>
<th>Total Bill increase $ from 2006 to 2015</th>
<th>Total Bill increase % from 2006 to 2015</th>
<th>Annual % increase from 2006 to 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratepayer 1</td>
<td>800 kWh per month and no change in peak usage from 2006 to 2015 (do nothing approach to conservation)</td>
<td>$81.71</td>
<td>$129.14</td>
<td>$47.43</td>
<td>58.05</td>
<td>6.45</td>
</tr>
<tr>
<td>Ratepayer 2</td>
<td>800 kWh per month consumer who shifts 25% of consumption off peak between 2006 and 2015 (from 160 kWh to 120 kWh)</td>
<td>$81.71</td>
<td>$124.18</td>
<td>$42.47</td>
<td>51.98</td>
<td>5.78</td>
</tr>
<tr>
<td>Ratepayer 3</td>
<td>800 kWh per month consumer, using 120 kWh peak usage (which is 25% less energy during peak periods than base case)</td>
<td>$77.31</td>
<td>$124.18</td>
<td>$46.87</td>
<td>60.63</td>
<td>6.74</td>
</tr>
<tr>
<td>Ratepayer 4</td>
<td>800 kWh per month consumer in 2006 but conserves to 720 kWh in 2015, and uses 160 kWh (20% of total consumption) during peak hours</td>
<td>$81.71</td>
<td>$118.09</td>
<td>$36.38</td>
<td>44.52</td>
<td>4.95</td>
</tr>
<tr>
<td>Ratepayer 5</td>
<td>800 kWh per month consumer in 2006 to 720 kWh in 2015 and also reduces peak consumption by 25% (from 160 to 108 kWh)</td>
<td>$81.71</td>
<td>$113.63</td>
<td>$31.92</td>
<td>39.06</td>
<td>4.34</td>
</tr>
<tr>
<td>Ratepayer 6</td>
<td>720 kWh per month consumer in 2006 and in 2015, of which 108 kWh is peak usage (no change, already a conserver)</td>
<td>$70.82</td>
<td>$113.63</td>
<td>$42.80</td>
<td>60.44</td>
<td>6.72</td>
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<tr>
<td>Ratepayer 7</td>
<td>400 kWh per month from 2006 to 2015, of which 60 kWh is peak usage (no change, already a conserver)</td>
<td>$44.87</td>
<td>$71.41</td>
<td>$7.58</td>
<td>59.14</td>
<td>6.57</td>
</tr>
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