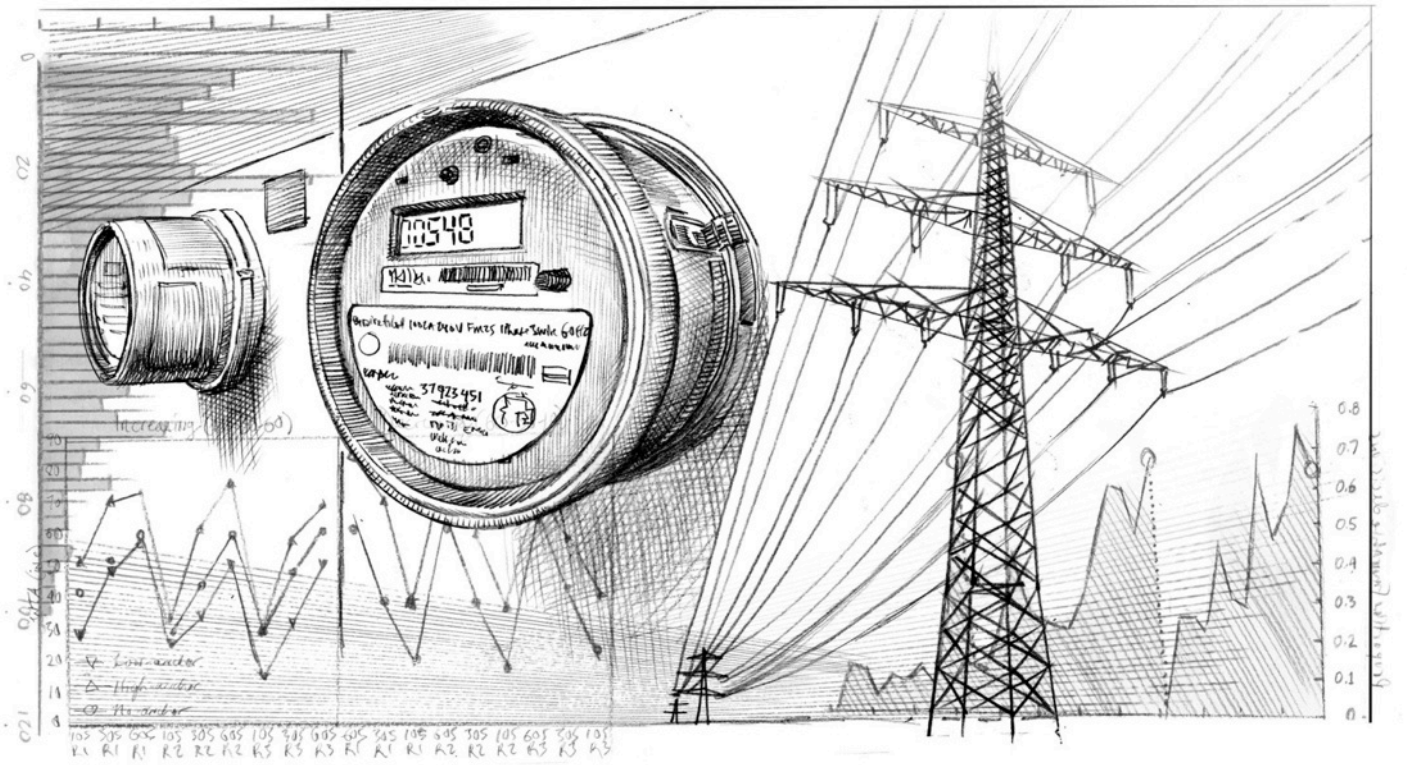
BEWORKS



Appendix

Behavioural Economics Review

Analyzing and Nudging
Energy Conservation and Demand Shifting
Through Time of Use Compliance

Prepared for the Ontario Energy Board

December 2014

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Appendix A – Electricity Consumer Survey

A. Electricity Consumer Survey

Both online surveys were administered between August 29 and September 9, 2014. Participants for this study were obtained from a panel of Ontarians that had opted-in to participate in online surveys. As reward for their participation, participants received either AIR MILES reward miles or points towards a retail gift card. Fifty-five percent of the Ontario residents who completed the *Electricity Consumer Survey* were awarded AIR MILES reward miles and the remaining 45% received valued opinion points of equal value towards a gift card. All of the respondents representing small to medium business in Ontario received AIR MILES reward miles in return for completing the survey.

In addition, a shortened version of the survey was administered on the streets of Toronto between September 8, 2014 and September 12, 2014. Participants were approached and asked to complete a short survey for a chance to win a $25 Amazon Gift Card.

Ontario Residents

Participants

To be included in the analysis participants were required to live in Ontario, be over the age of 18, and live in a household that has paid an electricity bill within the past year. 735 participants met this criteria, but 69 participants were excluded from analysis because their total survey duration exceeded 3 standard deviations from the median (41 minutes) or less than 1 standard deviation from the median (6.6 minutes). This cut-off was based on the expected minimum time requirements to complete the survey and accounted for variability in reading speed and comprehension. Responses from 666 participants were analyzed.

For the on-the-street survey, 67 participants met the same criteria as the online survey participants. Table 1 highlights the demographics of both groups.

Appendix A – Electricity Consumer Survey

Table 1: Demographics of Ontario Residents who completed the *Electricity Consumer Survey* (Online and On-the-Street)

	Online Survey N = 666	On-the-Street N = 67
Gender		
Female	54%	41%
Age		
18 – 24:	3%	26%
25 – 34:	12%	23%
35 – 44:	17%	17%
45 – 54:	27%	25%
55 – 64:	25%	8%
65+	15%	2%
Highest level of Education		
Less than High School	2%	
High School / GED	14%	
Some College	14%	
2- year College Degree	16%	
4-year College Degree	38%	
Post-Graduate Degree	16%	
Household Income		
<$60k:	27%	11%
$60k - $120K:	44%	50%
$120k - $180k:	21%	13%
$180k +	8%	4%
Do not want to disclose		23%
Current Residence		
Apartment / Condo	17%	42%
Attached House	16%	12%
Detached House	64%	46%
Other	3%	0%
Square Footage		
< 500 sq. foot	2%	4%
500 – 1000 sq. foot	14%	39%
1000 – 2000 sq. foot	50%	38%
2000 – 5000 sq. foot	26%	9%
5000+	1%	2%
Unsure	7%	9%
Estimated Home Age		
< 10 years old	34%	
11 – 30 years old	37%	
31 – 50 years old	18%	
50+ years old	11%	
Average number of people in household		
People over the age of 15	M = 2.4, SD = 1.1	
People under the age of 15	M = 1.4, SD = 0.9	

Appendix A – Electricity Consumer Survey

Own/Rent	83% Own	
Are you the primary account holder?	85% Yes	56% Yes
Contribute to the Households cost?	74% Yes	
Bill Frequency		
Monthly	64%	44%
Bi-monthly	29%	41%
Quarterly	4%	5%
Annually	0.4%	0%
Unsure	2%	10%
How does your household typically receive the electricity bill?		
Paper statements by mail	69%	55%
Electronic statements by email	30%	45%
Unsure	0.4%	
How does your household pay the monthly electricity bills?		
Pre-authorized Payments	27%	10%
Online Banking	58%	8%
Bank Branch	8%	7%
Mail	3%	3%
Other	3%	2%
Unsure	1%	3%
Read Electricity Bill	85% Yes	64% Yes

kWh and $Total Amount Due for last Read Date (Online Participants Only)

Participants who took the online survey were asked for their kWh usage (kWh) and the total amount due ($Total) for their last billing period. For those participants that did not have their last bill available, we asked them to estimate the two amounts. Eighty-one participants were excluded because they either entered a 0 or an undecipherable answer for either amounts (kWh or $). To determine if there was any differences between those who had their bill and those who estimated their bill amount, we did a post-hoc comparison of the kWh and $Total between the two groups. We did not find a difference between the two groups (kWh: $t(417) = -0.17$, $p > 0.10$; $Total: $t(547) = -0.04$, $p > 0.10$).

However, looking at the standard deviation, we did find much greater variability between those who had their bill when providing their kWh and those who had to estimate their kWh. This was not the case when we compared across $Total. This suggested that participants were much more uncertain when it came to estimating their kWh usage.

Additionally, as kWh usage would vary by home type and frequency of the bill read date, we also compared across participants who lived in detached homes and received their bill monthly or bi-monthly. These groups had the largest n size for comparison. Participant who received their bill monthly and lived

in a detached home significantly underestimated their kWh usage, t(171) = 2.53, p =0.01). However this was not the case for those who received their bill bi-monthly, t(50) = -0.59, p >0.10)

Table 2: kWh of last read date for Ontario Residents who completed the Electricity Consumer Survey online. Table is split based on whether the participant had their last bill or not, and the frequency of when they received the bill.

N = 585	Had Bill (n = 302)			Estimated (n = 283)		
in kWh	n	**M**	sd	n	**M**	sd
All	302	**1244**	3748	283	**1329**	7233
Monthly & Detached Home Bi-monthly & Detached Home	125 62	**1035** **1275**	2138 825	108 50	**508** **1961**	874 8213

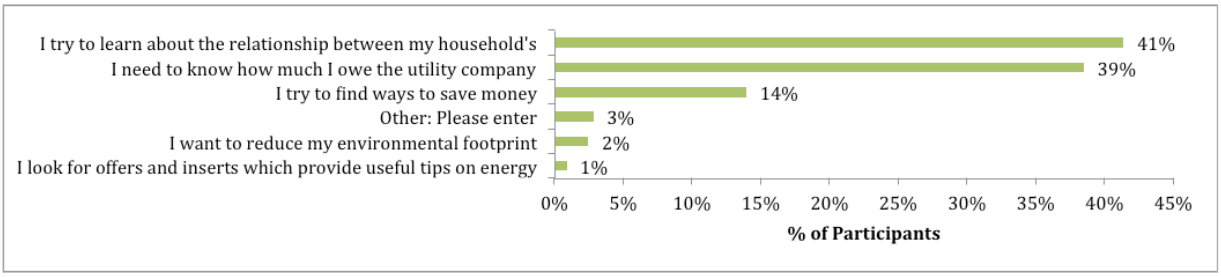
Table 3: Total Amount Due of last read date for Ontario Residents who completed the Electricity Consumer Survey online. Table is split based on whether the participant had their last bill or not, and the frequency of when they received the bill.

N = 585	Had Bill (n = 302)			Estimated (n = 283)		
in $	**n**	**M**	**sd**	**n**	**M**	**sd**
All	302	**161**	115	283	**162**	139
Monthly & Detached Home Bi-monthly & Detached Home	126 63	**163** **216**	118 116	108 50	**162** **209**	107 157

Reason for reading or not reading the electricity bill

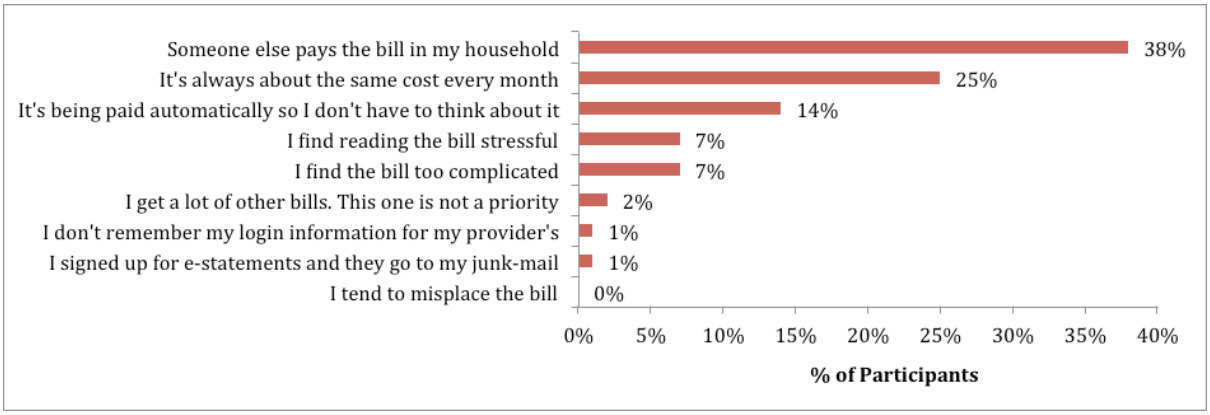
To determine why Ontarians did or did not read the bill, participants in the online survey who read the bill were asked to state their primary reason for reading the bill, and those who did not read the bill were asked to state their primary reason for not reading the bill.

Figure 1: Primary reason for why people do read their electricity bills (n = 566)



Appendix A – Electricity Consumer Survey

Figure 2: Primary reason for why people do not read their electricity bills (n = 100)



A stepwise regression analysis was performed to determine what factors predicted reading the electricity bill. A stepwise regression is a semi-automated process of building a model by successively adding or removing variables based on the t-statistics of their estimated coefficients. The analysis was performed using R package 'stats' (version 3.0.3)[1] and followed a backward elimination procedure. The model starts with all the variables in the model and variables are subtracted one at a time based on their t-statistic. After each variable is subtracted, an ANOVA compares the new model to the previous model to determine if they are significantly different. For this analysis, we removed all participants who had missing data or chose the unsure option for any of the independent variables (n =524). The 19 independent variables and their categories appear in Table 4 and the best predictive model based on this methodology appears in Table 5.

[1] R Core Team (2014). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL, http://www.R-project.org/.

Appendix A – Electricity Consumer Survey

Table 4: Independent variables for stepwise regression analysis

Participant Demographics		Home Environment		Electricity Bill Behavior	
▪ Gender	▪ Male or Female	▪ Home Type	▪ Condo/ Apartment, Detached, Attached House)	▪ Primary Account Holder	▪ Yes or No
▪ Income	▪ Household income (23 codes treated numerically 1:<20,000; 2: $20,000 - $29,000….$230,000+)	▪ Square Footage	▪ Reported square footage of residence(5 codes treated numerically 1:<500; 2: 500 – 1000…5: 5000+)	▪ Bill Frequency	▪ monthly, bi-monthly, quarterly, annually
▪ Age	▪ Current age (7 codes treated numerically 1:<18; 2:18 – 24; 3: 25-34…7:65+)	▪ Home age	▪ Age in years (numerical)	▪ Bill Channel	▪ Method of receiving electricity bill (Mail or Online)
▪ Education	▪ Highest level of education(8 codes treated numerically 1:Less than high school; 2:Highschool/GED; 3: Some College…8: Professional degree (JD,MD))	▪ Rent	▪ Rent or Own	▪ Payment of Electricity Bill	▪ Automatic payment; Online banking; visit / talk to bank; Mail
▪ Arrival Time	▪ Typical time participant claimed to arrive home from work (treated numerically)	▪ Adults	▪ Household members over the age of 16		
▪ Survey Duration	▪ Length of time to complete the survey (numerical)	▪ Children	▪ Household members under the age of 16	▪ Read Electricity Bill	▪ Yes or No
		▪ kWh	▪ Reported kWh in last electricity bill		
		▪ Bill Amount	▪ Reported $Bill amount in last electricity bill		

Appendix A – Electricity Consumer Survey

Table 5: Independent variables that had significant effect on reading the electricity bill

	Estimate	Std.Error	t-value	Pr(>|t|)	
(Intercept)	2.014694	0.052803	38.155	<0.0001	***
Female	-0.064936	0.028417	-2.285	0.0227	*
Income	-0.005215	0.002978	-1.751	0.0805	.
Not the Primary Account Holder	-0.194855	0.040634	-4.795	2.13E-06	***
Bill Frequency	-0.042533	0.022879	-1.859	0.0636	.
Receive bill by email	-0.07131	0.03089	-2.308	0.0214	*
Pay bill through online banking	0.074541	0.032144	2.319	0.0208	*
Pay bill at the bank	0.066335	0.057184	1.16	0.2466	
Pay bil through maill	0.055284	0.08367	0.661	0.5091	

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.3204 on 515 degrees of freedom
Multiple R-squared: 0.08327, Adjusted R-squared: 0.06903
F-statistic: 5.848 on 8 and 515 DF, p-value: 3.625e-07

Awareness and Comprehension

Measuring Awareness and Comprehension

Twelve questions were designed to measure awareness and comprehension of TOU pricing, see Table 6.

- Questions from the Unit and TOU knowledge sections (7 questions) were used to form an awareness score. In these questions, participants were asked to recall basic features of the TOU model, such as TOU pricing and timing schedules. Awareness was scored out of 9, as participants could score up to 3 points on question 4.
- Questions from the Unit and TOU application section (5 questions) were used to form a comprehension score. In these questions, participants were asked to apply their understanding of electricity usage and TOU pricing to identify factors that will impact their total bill amount. Comprehension was scored out of 7, as participants could score up to 3 points on question 9.
- The on-the-street survey was a shortened version of the online survey. The purpose of the survey was to provide an additional data point for awareness of TOU pricing. The need for this stemmed from a high level of awareness of TOU pricing by the online panel, for unrepresentative reasons described in the next section. The questions used in the on-the-street survey were the same as the questions used in the online survey, but participants were only asked questions from section 1, 2, 3, 5, 7, and 9. Of the 67 participants who completed the survey, only 53 participants completed all the questions pertaining to awareness.

Appendix A – Electricity Consumer Survey

Table 6: Twelve questions for measuring awareness and comprehension of TOU pricing in the Electricity Consumer Survey (highlighted in green are the correct responses)

Awareness Score (7 Questions)

1. Please select the pricing model that you think best describes how electricity is currently priced in Ontario.

- ○ ***Electricity is priced based on Time-Of-Use (TOU)*** **There is a different charge for electricity depending on the time**
- ○ *Electricity is based on a Flat-Rate-Plan (FRP)***.** The same rate applies all year round, no matter when you use it.
- ○ *Electricity is based on a Fixed-Variable-Charge (FVC)***.** There is a fixed daily charge plus a variable charge that fluctuates depending on the cost of electricity each day.
- ○ Other: Please enter below ____

2. Days are split into different Time-Of-Use periods. The cost of electricity varies between these time periods. What do you think the daily Time-of-Use periods are called in Ontario?

- ○ Three different TOU periods: Low-Rate, Mid-Rate, High-Rate
- ○ **Three different TOU periods: Off-Peak, Mid-Peak, On-Peak**
- ○ Three different TOU periods: Low-Load, Mid-Load, High-Load
- ○ Two different TOU periods: Off-Peak, On-Peak
- ○ Two different TOU periods: Low-Rate, High-Rate
- ○ Two different TOU periods: Low-Load, High-Load
- ○ Unsure

3. There are three Time-Of-Use periods in Ontario and they are called Off-peak, Mid-peak and On-Peak. Electricity is most expensive during which of these TOU periods?

- ○ **On-Peak**
- ○ Off-Peak
- ○ Mid-Peak
- ○ Unsure

4. Please select the option(s) that best describes Ontario's Time-Of-Use pricing model. (Please select all that apply)

- ○ **There is a different charge for electricity depending on the time of day**
- ○ **There is a different charge for electricity depending on the day of the week**
- ○ **There is a different charge for electricity depending on the season**
- ○ There is a different charge for electricity depending on the weather
- ○ None of the above
- ○ Unsure

5. Electricity consumption is measured in which unit on your monthly electricity bill?

- ○ Kilowatts (kW)
- ○ **Kilowatt Hours (kWh)**
- ○ Watt Hours (Wh)
- ○ Joules (J)
- ○ Ampere (A)
- ○ Gallons (G)
- ○ Unsure

Appendix A – Electricity Consumer Survey

6. The three Time-Of-Use periods in Ontario are Off-peak, Mid-peak and On-Peak (presented from left to right below). What do you think are the timings of each period during a weekday in the summer (Monday-Friday)? Please select one of the four options.

	Off-Peak	Mid-Peak	On-Peak
○	12AM – 5PM	9PM – 12AM	5PM – 9PM
○	6PM – 7AM	7AM – 9AM 4PM – 6PM	9AM – 4PM
○	9PM – 9AM	12PM – 4PM	9AM – 12PM 4PM – 9PM
○	7 PM – 7AM	7 PM – 11 AM 5PM – 7 PM	7 PM – 11 AM 5PM – 7 PM
○	Unsure		

7. Which of the following four options do you think is the correct electricity rate for the three periods?

	Off-Peak	Mid-Peak	On-Peak
○	7.5 cents per kWh	11.2 cents per kWh	13.5 cents per kWh
○	27.3 cents per kWh	29.5 cents per kWh	31.6 cents per kWh
○	9.9 cents per kWh	15.5 cents per kWh	25.4 cents per kWh
○	0.9 cents per kWh	3.5 cents per kWh	5.2 cents per kWh
○	Unsure		

Appendix A – Electricity Consumer Survey

Comprehension Score (5 Questions)

8. Please select the correct definition of a kilowatt hour:

- ○ The amount of electricity equivalent to 1 kW of power expended for 1 hour
- ○ The rate of electricity consumed per hour
- ○ The time it takes to consume 1 kW of power
- ○ It depends on the energy efficiency of the appliance
- ○ Unsure

9. Select the top 3 household items that you believe consume the most electricity?

- ○ Heating and Cooling unit
- ○ Fridge
- ○ Water heater
- ○ Lighting
- ○ Washing machine/ Dryer
- ○ Dishwasher
- ○ TV
- ○ Microwave
- ○ Oven
- ○ Computers / Laptops
- ○ Cable box

10. What do you think is the most effective way to reduce your electricity bill in the summertime?

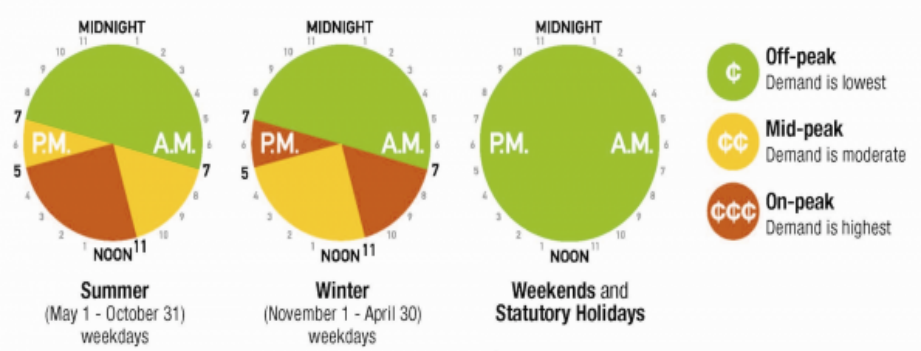
- ○ Raise the temperature on your A/C unit by 2 degrees Celsius between the hours of 1pm and 7pm during hot months
- ○ Minimize your use of appliances that generate heat (oven, hair dryer, dishwasher)
- ○ Close the blinds or curtains on the sunny side of your home
- ○ Turn off and unplug "silent energy users" such as computers, game consoles, scanners, phone chargers, and DVD players, which draw electricity even when not in use

11. Last June, a person living in Toronto washed a load of laundry at 2pm on Tuesday. This person then washed the exact same load of laundry at 6am on Friday. The cost of doing laundry is:

- ○ The same on both days
- ○ More expensive on Tuesday than Friday
- ○ More expensive on Friday than Tuesday
- ○ Unsure

12. It's January and your neighbour wants to reduce their monthly electricity bill.
Please select the most effective way(s) for them to save on their bill: ***Select all that apply***

- ○ Run the dishwasher at 11pm instead of 7pm on a weekday
- ○ Do laundry on Sundays instead of Saturday
- ○ Run the dishwasher at 4pm instead of 6pm on a weekday
- ○ None of the above
- ○ Unsure



Appendix A – Electricity Consumer Survey

Analysis

The average score for all participants was 61%, (M = 9.8, SD = 2.7). Participants performed better on questions pertaining to awareness of program features (out of 9) (M = 6.1 (68%), SD=2.0) compared to the questions pertaining to comprehension of the program (out of 7) (M = 3.7 (53%), SD= 1.4). Participants who completed the on-the-street survey only answered questions pertaining to awareness and did significantly worse than the online panel (M= 3.55 (44%), SD= 1.9), $t(60)=5.80$, $p<0.0001$. Please refer to Table 7 to see how each of the panels scored across the awareness and comprehension measures.

A multivariable stepwise regression analysis was performed on the online sample to isolate the factors that predict the TOU score. The analysis follows the same procedure outlined in the section Reading the Bill and the same 19 independent variables are used, Table 8. The outcome measure was the TOU score (out of 16). Once again, only participants who did not have missing data or did not choose the unsure option for any of the independent variables were included (n =524). The score of this sample (M = 9.95 (62%), SD = 2.6) was not significantly different from the population of participants that completed the survey (M = 9.8 (61%), SD = 2.7), $t(1126) = 0.70$, $p>0.10$. Table 8 shows the variables that had significant effect on the TOU Score.

Table 7: Percentage of correct answers for each Awareness and Comprehension question

Measure	Question	Online Panel (% Correct) (n = 666)		On-the-Street (% Correct) (n = 53)	
Awareness	1	85%		69%	
	2	73%		60%	
	3	96%			
	4	0 Correct 1 Correct 2 Correct 3 Correct	16% 37% 24% 23%	0 Correct 1 Correct 2 Correct 3 Correct	13% 66% 8% 13%
	5	74%		42%	
	6	69%		37%	
	7	60%		30%	
Comprehension	8	44%			
	9	0 Correct 1 Correct 2 Correct 3 Correct	6% 27% 56% 12%		
	10	48%			
	11	80%			
	12	27%			

Appendix A – Electricity Consumer Survey

Table 8: Independent variables that had significant effect on TOU Score (out of 16)

	Estimate	Std.Error	t-value	Pr(>|t|)	
(Intercept)	8.38	1.16	7.21	<0.0001	***
Income	-0.14	0.08	-1.77	0.08	.
Age	-0.23	0.20	-1.19	0.24	
Education	0.21	0.08	2.62	0.01	**
Home Type - Attached House	0.54	0.42	1.26	0.21	
Home Type - Detached House	1.12	0.39	2.90	<0.0001	**
Square Foot	0.46	0.20	2.33	0.02	*
Rent	-0.71	0.36	-1.97	0.05	*
Home Age	0.01	0.00	2.21	0.03	*
Adults	-0.21	0.12	-1.77	0.08	.
Home Billing Amount	0.00	0.00	-1.57	0.12	
Bill Frequency	-0.44	0.18	-2.43	0.02	*
Read the Bill	0.50	0.33	1.51	0.13	
Income * Age	0.04	0.02	1.88	0.06	.

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 2.488 on 510 degrees of freedom
Multiple R-squared: 0.1389, Adjusted R-squared: 0.1169
F-statistic: 6.326 on 13 and 510 DF, p-value: 3.929e-11

Below we examined the factors that had a relatively large effect on the TOU Score:

Education

Education was found to have a positive effect on comprehension scores. As a participant's education level increased from high school to post graduate, their average TOU score increased by 1% (0.21/16). Breaking up the TOU Score on Awareness and Comprehension, it seems that education did not predict Awareness ($\beta = 0$, $t(522) = -0.097$, $p > 0.10$), but those with higher education had a better grasp of the factors and behaviours that increase electricity usage and costs, leading to higher Comprehension Scores ($\beta = 0.20$, $t(522) = 5.10$, $p < 0.001$).

Home Type and Homeowners

A one-way ANOVA was used to test for TOU score differences among three different resident types (Condo/Apartment, Semi-detached Home, Detached Home). Comprehension scores differed significantly across the three residence types, ($F[2,521] = 15.31$, $p<0.001$). Post hoc pair wise comparisons using an LSD test (multiple comparisons corrected using the Hochberg's method) of the three groups indicate that participants who lived in detached homes [n = 352, *M* = 10.36 (65%), SD = 2.47] scored significantly higher than participants who lived in attached homes [n = 81, *M* = 9.58 (60%), SD = 2.67] and participants who lived in apartment/condo [n = 91, *M* = 8.74 (54%), SD = 2.88]. One plausible explanation for this finding is that Ontarians living in detached homes have higher electricity bills, and consequently may be more sensitive to factors that may reduce costs. Another explanation might be that participants living in detached home were more likely to be homeowners (94%) compared to those who lived in attached homes (82%) and apartment/condos (51%). A one-way ANOVA was used to test for differences in the comprehension score between homeowners and participants who rent. Homeowners [n = 445, *M* = 10.18

(64%), SD = 2.56] were found to score significantly higher than participants who paid rent [n = 79, *M* = 8.68 (54%), SD = 2.79]. Homeowners likely have greater control over their electricity usage (e.g., selecting appliances) making them more sensitive to factors that can change costs.

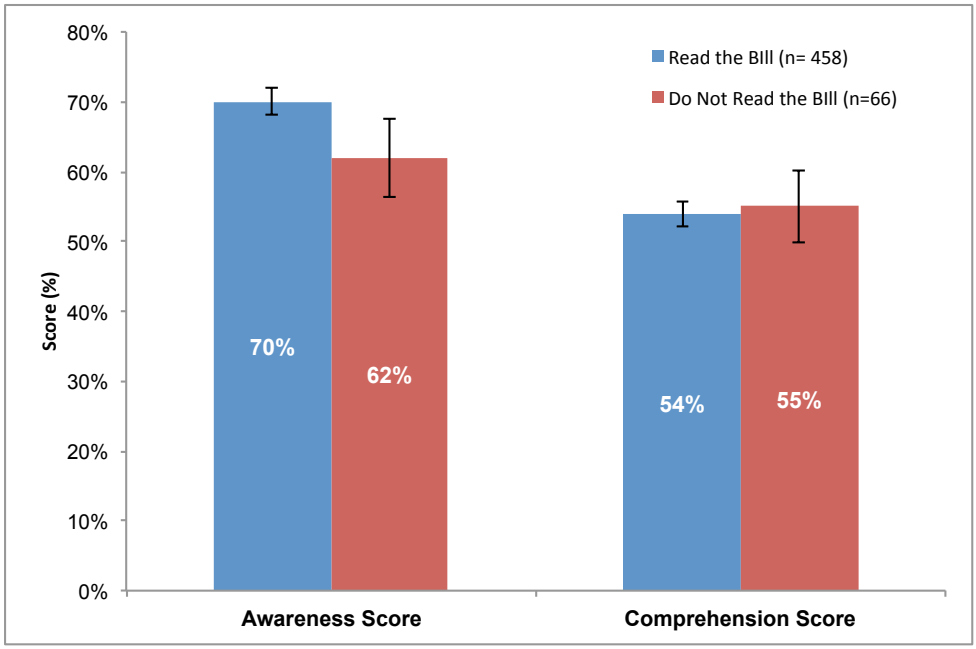
Bill Frequency

Bill Frequency was found to have a negative relationship with TOU. Post hoc pair wise comparisons using an LSD test (multiple comparisons corrected using the Hochberg's method) of the three groups indicate that participants who said that they received their bill bi-monthly [n= 164, *M* = 10.01 (63%), SD = 2.50] scored the same as those who receive their bill monthly [n=331,*M* = 10.08 (62%), SD =2.62], p>0.05. However, those who received their bill on a quarterly basis scored significantly lower [n= 26, M = 8.57 (54%), SD = 3.18] than the other two groups, p<0.05.

Reading the Bill

Participants who claimed to read their bill [n= 458, M = 10.04 (63%), SD = 2.93] performed marginally better than those who claimed to not read their bill [n= 66, M = 9.38 (59%), SD = 2.60] F(1,522)= 3.63, p = 0.05). Breaking up the TOU score into its component scores (Awareness and Comprehension), participants who read the bill did significantly better on the Awareness Questions [F(1.522) = 7.89,p<0.01], but not on Comprehension [one-way ANOVA: F(1.52) = 0.08,p=0.78].

Figure 3: Comparing Awareness and Comprehension Scores between those who read the electricity bill and those who did not (n = 524).



Participant Beliefs of their Energy Consumption

In addition to assessing Ontarian's awareness and comprehension of TOU pricing, participant's beliefs about the features of Ontario's TOU pricing model and its impact on changing behaviour were assessed.

Appendix A – Electricity Consumer Survey

Understanding kilowatt hours (kWh)

One aspect of TOU pricing that Ontarians had difficulty defining is a kilowatt hour (kWh). Participants were equally likely to select the correct response "The amount of electricity equivalent to 1 kW of power expended for 1 hour" (44%) as the incorrect rate response "The rate of electricity consumed per hour" (42%). Erroneously assuming that kWh is kW/h (as a rate) can be problematic as Ontarians may believe that running low wattage items for long hours may not significantly impact their electricity bill.

After participants were asked to identify the correct definition of a kWh, they were asked how confident they were in their response and how likely 10 randomly selected Ontarians would be able to correctly identify the definition.

Figure 4: The confidence level of participants in identifying the correct definition of a kWh (n = 666)

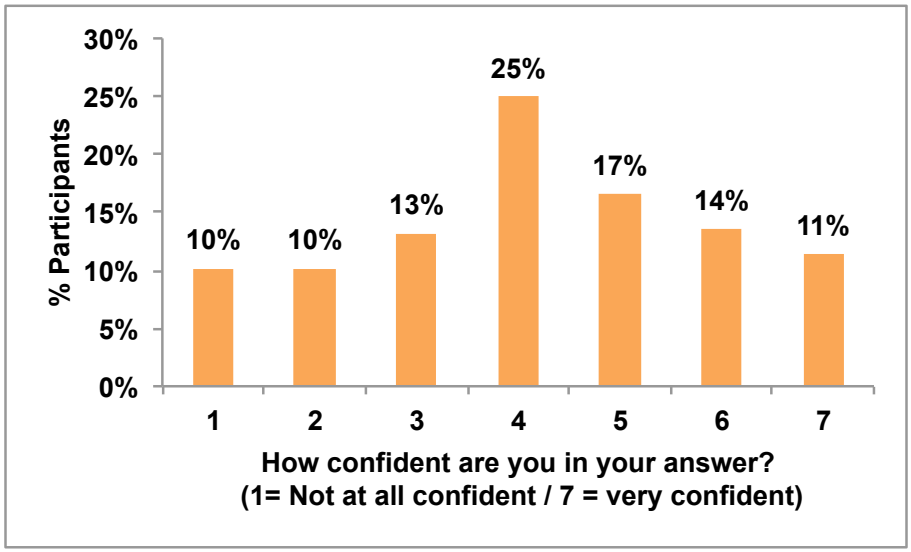
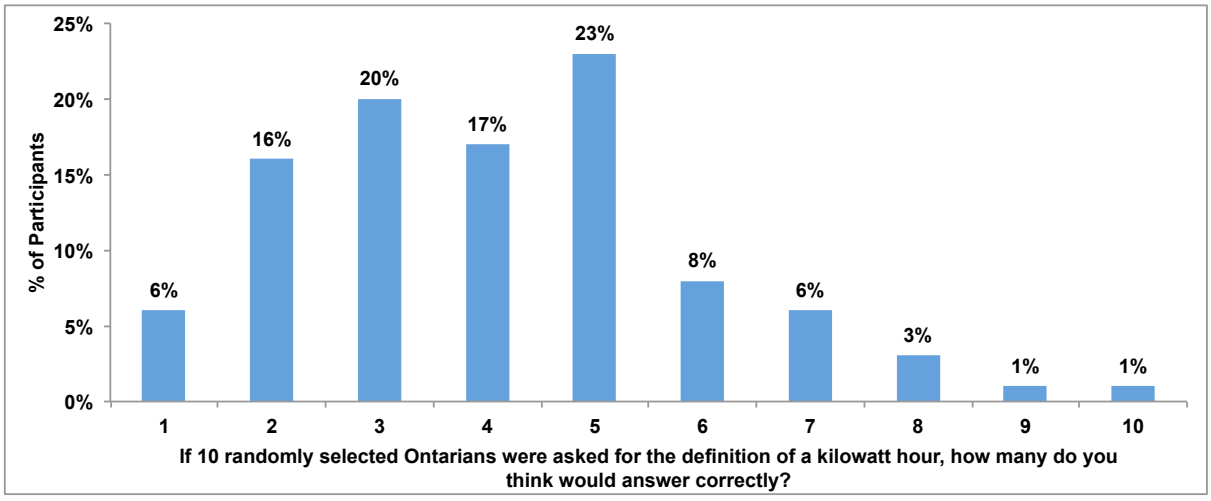


Figure 5: The number of Ontarians (if 10 were randomly selected) that would be correctly able to define a kWh (n= 666)

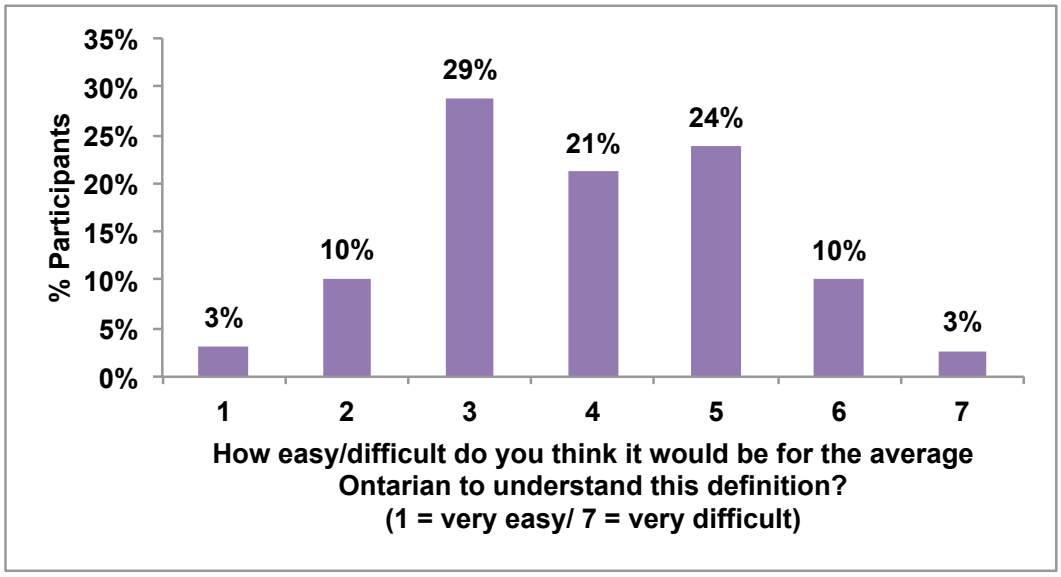


Appendix A – Electricity Consumer Survey

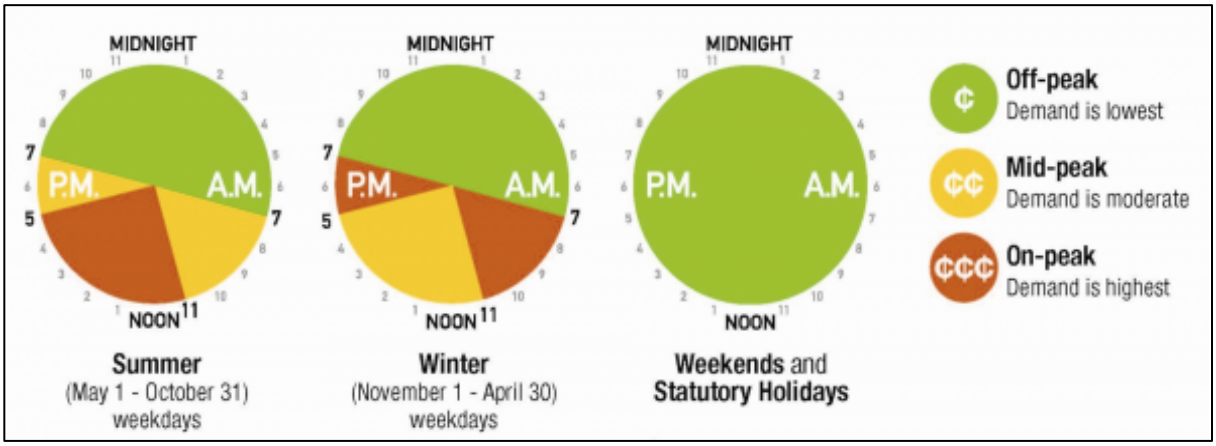
Looking only at those who got the got the question correct, 47% reported a high lack of confidence in their response and the majority believed (80%) that less than 5 out of 10 randomly selected Ontarians would be able to answer the questions correctly (i.e. participants believed that very few Ontarians have a good grasp of a kWh).

Additionally, after answering the above two questions, participants were provided with the definition of a kWh, and asked how difficult they found the question.

Figure 6: The level of difficult that participants believed that other Ontarians would have in understanding the definition of a kWh (n = 666)



Understanding the Time-of-Use Infographic



To determine how easy Ontarians found the TOU illustrations, participants in the online survey and on-the-street survey were asked to how easy it was for them and for the average Canadian to understand the TOU illustration (above).

Appendix A – Electricity Consumer Survey

Figure 7a: Online Survey - The level of understanding the information on the TOU Illustration (n = 666)

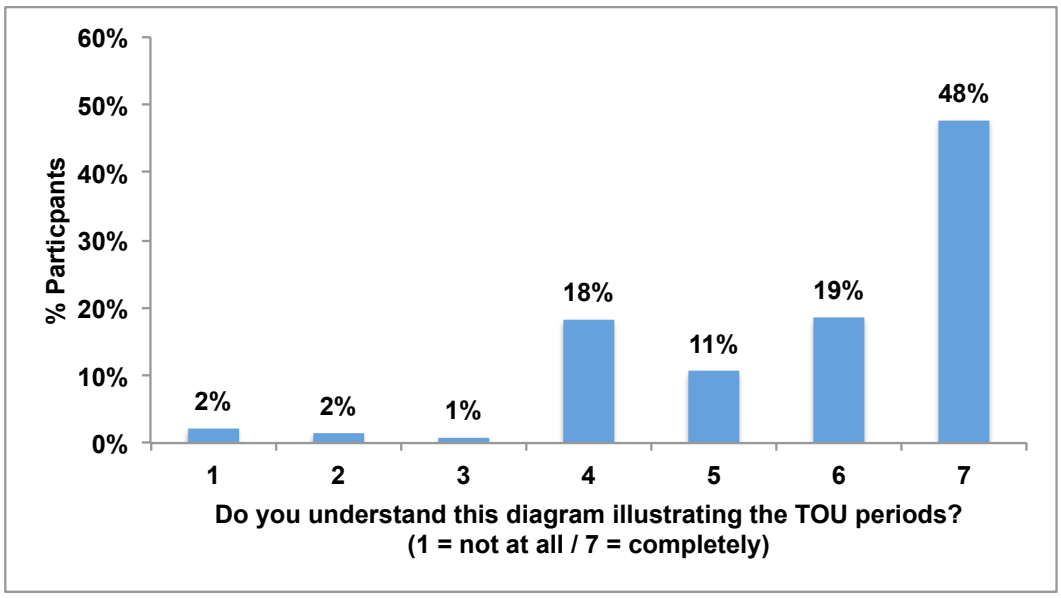
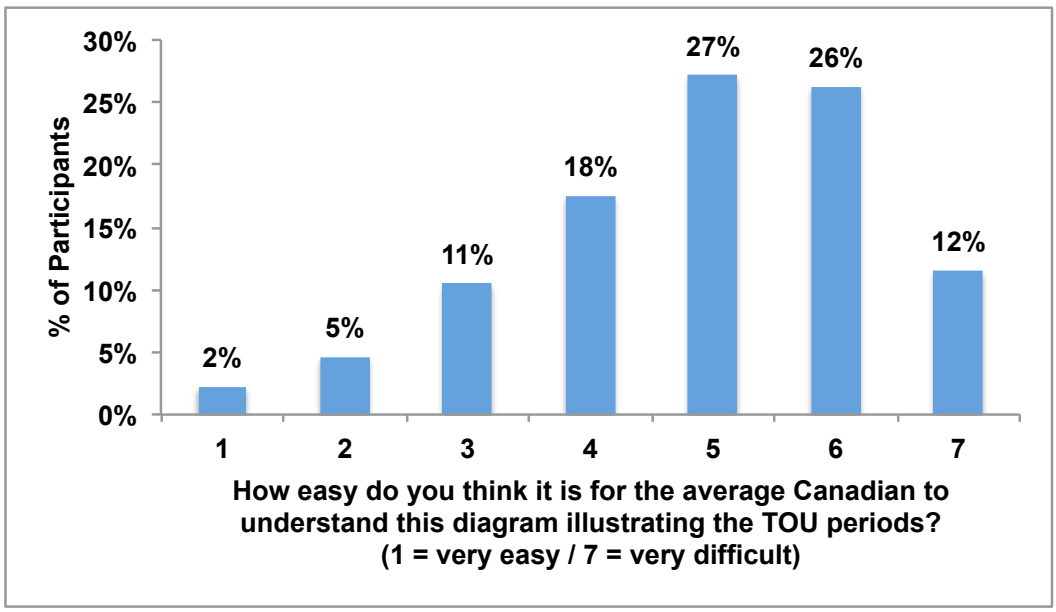


Figure 7b: Online Survey – Participant beliefs on how easy others would understand the diagram illustrating the TOU periods (n = 666)



Appendix A – Electricity Consumer Survey

Figure 8a: On-the-street Survey - The level of understanding the information on the TOU Illustration (n = 67)

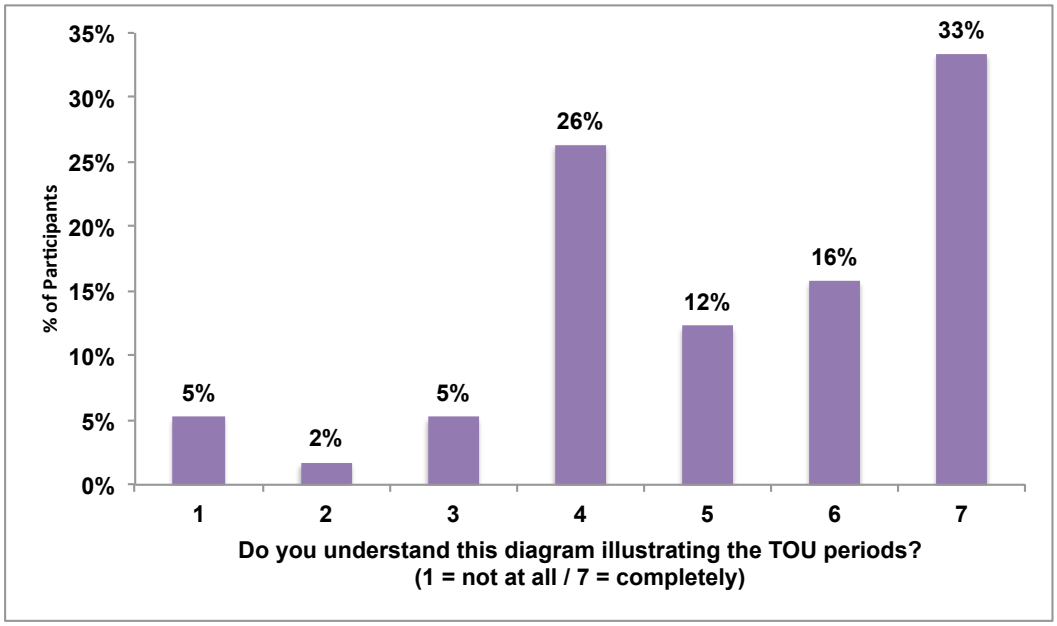
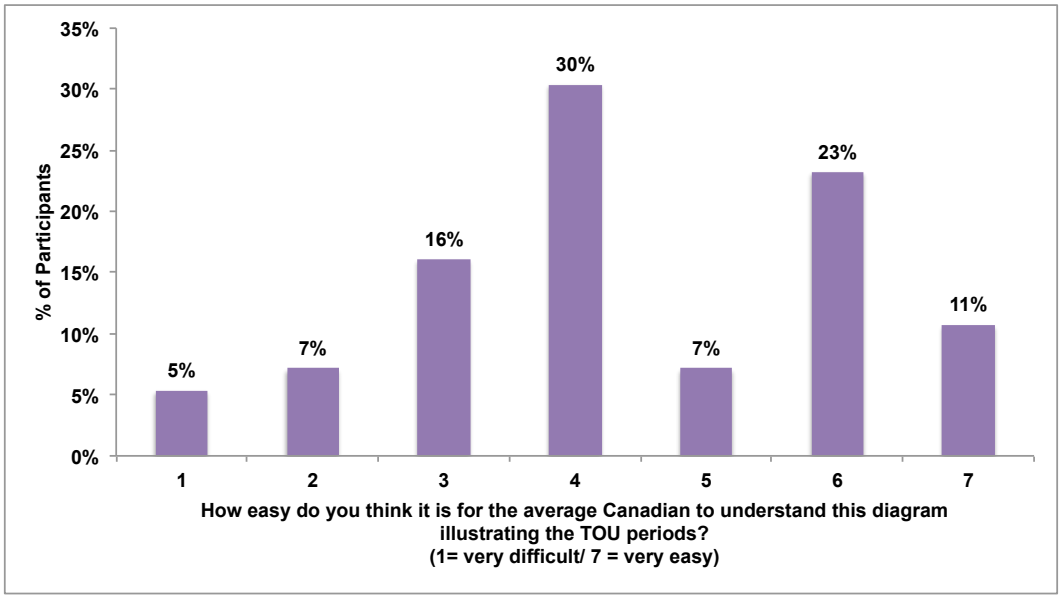


Figure 8b: On-the-street Survey – Participant beliefs on how easy others would understand the diagram illustrating the TOU periods (n = 67)

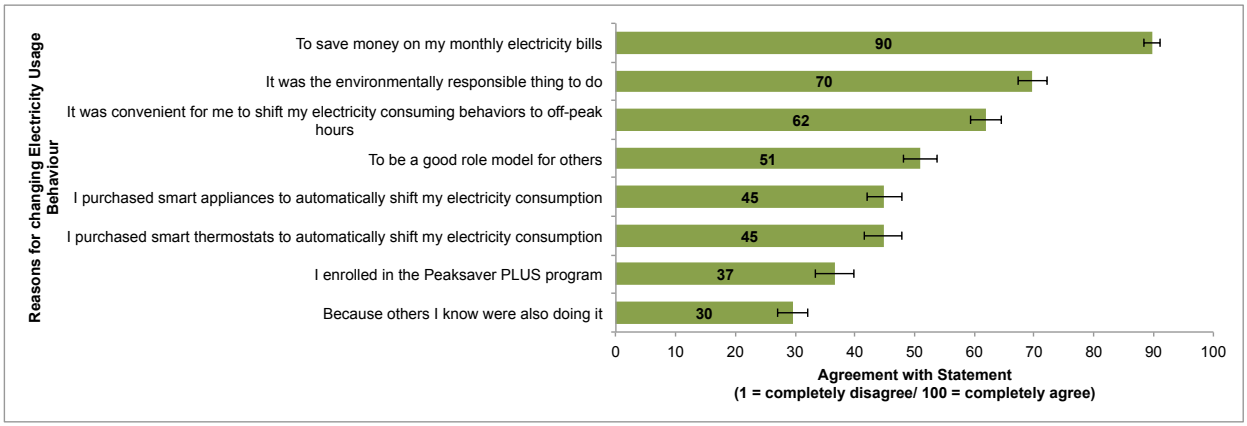


Appendix A – Electricity Consumer Survey

Shifting behaviour from on-peak to off-peak

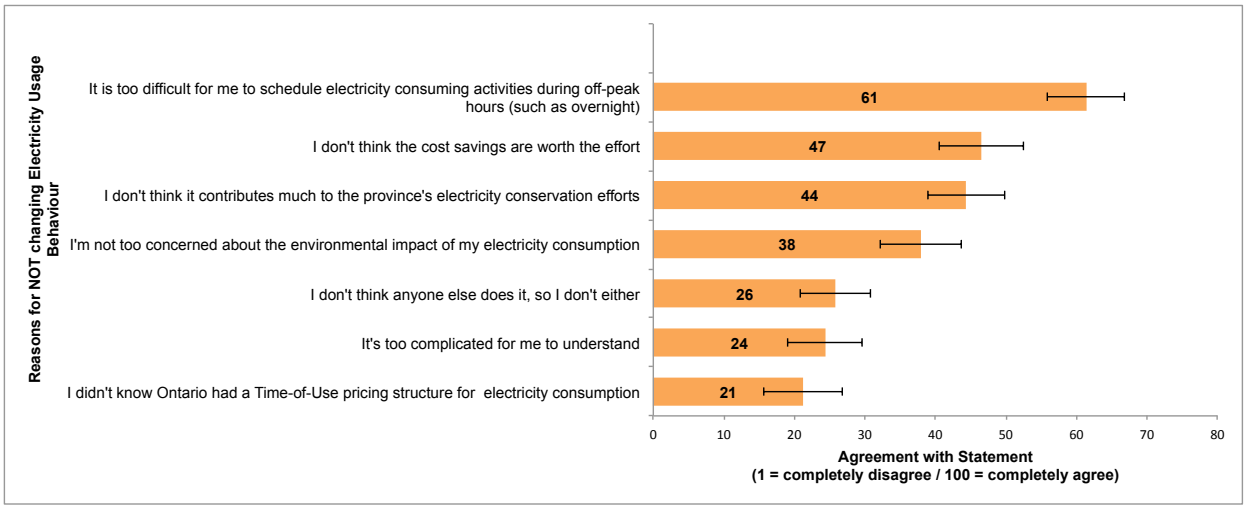
To determine whether Ontarians believed that TOU pricing has impacted their behaviour, participants were asked whether TOU pricing has affected how they consume energy. 82% of participants believed that it has affected how they consume energy. To determine the reasons for why they believed it has changed their behaviour, we asked these participants to rate their agreement level (out of 100) with 8 reasons for shifting behaviour, see Figure 7. A one-way ANOVA was used to test the differences in agreement level across the different statements [$F(7,4095)= 193.5$, $p<0.001$]. Post hoc pair wise comparisons using an LSD test (multiple comparisons corrected using the Hochberg's method) of the 8 statements found the mean agreement level across all groups was significantly different.

Figure 9: Level of agreement with reasons for why TOU has shifted behaviours (n = 550)



To determine the reasons for why TOU has not shifed behaviour, participants who stated that TOU pricing had not affected how they consume energy answered a similar question, except in this case participants were asked to rate their agreement level (out of 100) for *not shifting* behaviour. Similarly, a one-way ANOVA and post-hoc pair wise comparisons using an LSD test was used to detect difference in agreement level across the 9 statements [$F(7,749)= 23.79$, $p<0.0001$].

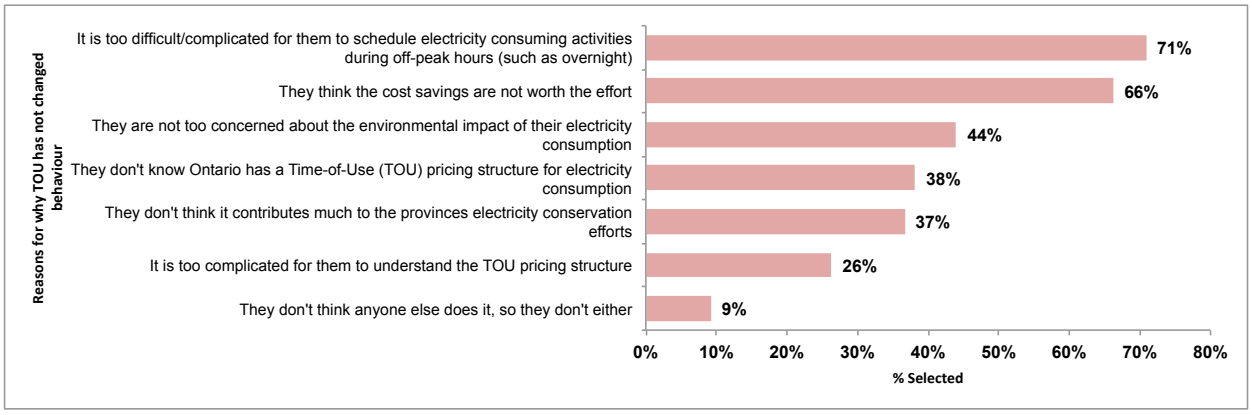
Figure 10: Level of agreement with reasons for why TOU has NOT shifted behaviours (n = 116)



Appendix A – Electricity Consumer Survey

Finally, we asked all participants what they believed the top three reasons for why someone in Ontario might not shift his or her electricity usage to off-peak hours.

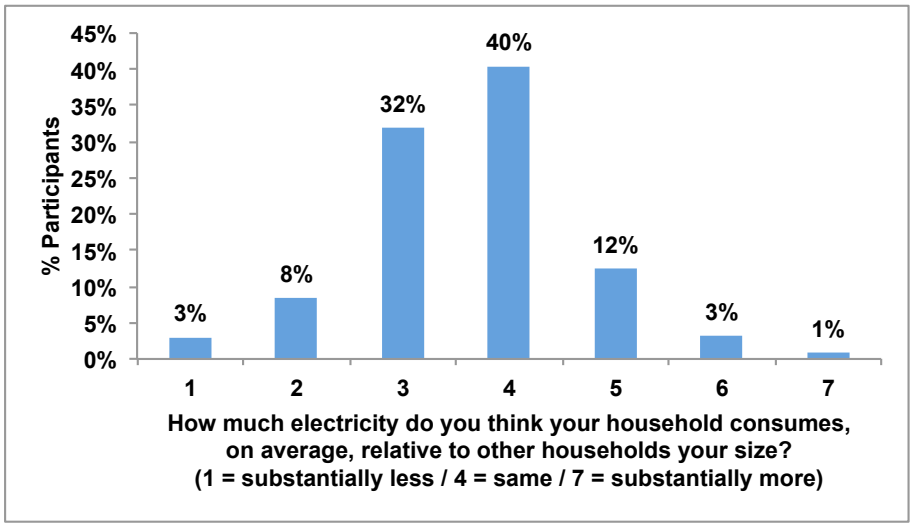
Figure 11: Participant choices for the top 3 reasons why someone in Ontario may not shift their electricity usage to off-peak hours (n = 666)



Beliefs of Household usage

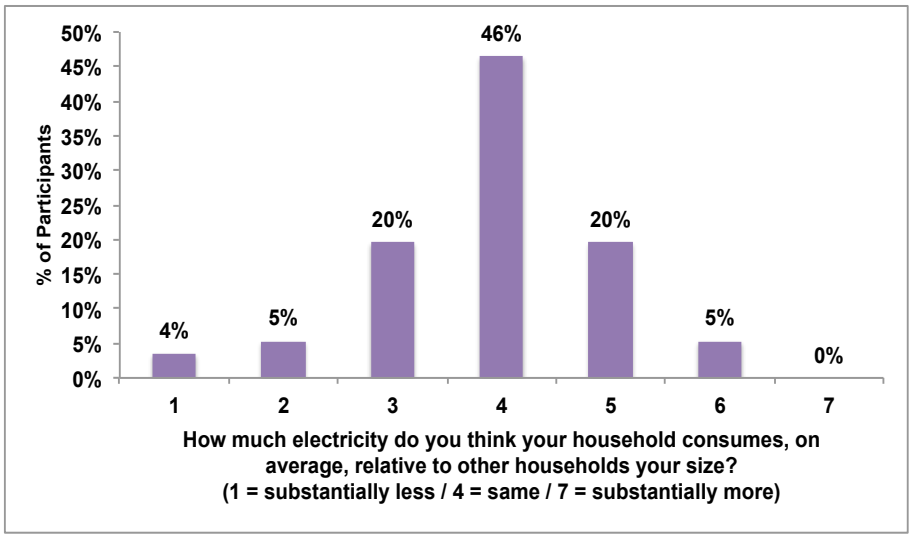
Participants were asked to compare their own households' electricity consumption to other households of the same size. On a scale of 7, with 0 being substantially less and 7 substantially more, 83% of participant in the online survey and 75% of participants in the on-the-street survey felt that their electricity consumption was about the same or less than other household their size. The same question was asked to participants in the on-the-street survey.

Figure 12a: Online Survey - Participant beliefs of their household consumption compared to other households the same size (n = 666)



Appendix A – Electricity Consumer Survey

Figure 12b: On-the-street Survey - Participant beliefs of their household consumption compared to other households the same size (n = 67)



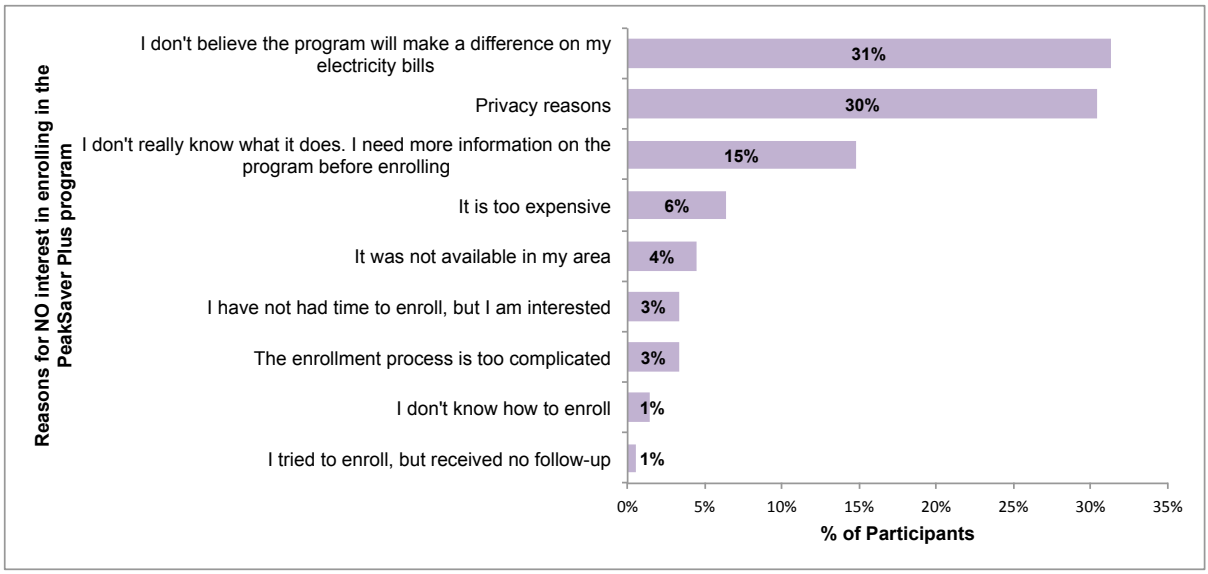
PeaksaverPLUS Program

To determine the awareness level of the PeaksaverPLUS program amongst residents of Ontario, participants were asked if they had heard of the program. Fifty-nine percent of participants responded "yes". Of these participants, 30% had enrolled in the program. Comparatively, far fewer participants (26%) who had filled out the survey on the street had heard of the PeaksaverPLUS and only 9% said they had enrolled.

Participants in the online survey who had not heard of the PeaksaverPLUS program were provided with a description of the program and asked if they would join. Of these, 34% said they would participate, and the remaining were asked to select a reason for why they would not participate in the program. We also allowed people to select an "other" option. Participants who picked this option often cited their lack of interest in enrolling in the program was due to not having a central A/C.

Appendix A – Electricity Consumer Survey

Figure 13: Participants choices for why they would not enroll in the PeaksaverPLUS program (n = 358)



Small to Medium Business Survey

Comparable to that of the *Electricity Consumer Survey*, the purpose of this study was to obtain a better understanding of how Time-of-Use (TOU) pricing influences the energy-use behaviours and beliefs of small to medium sized businesses.

Participants

341 participants, who either owned or were being employed by a small to medium sized business, were randomly recruited from Research Now's business panel to participate in an online survey. The final sample size included in the analysis was 68 following the removal of non-representative participants. The qualifying sample indicated 1) that they had received an electricity bill in the past year, and 2) that their company employed less than 100 people. Participants varied across demographic measures, such as business location, its primary business focus (e.g. construction vs. retailer), office type, and property square footage. Table 9 highlights the demographics of this group.

Appendix A – Electricity Consumer Survey

Table 9: Demographics of Ontario Small to Medium Sized Business Owners who completed the Online OEB Business Survey

Demographics	**N = 68**	
Gender	40% Female	
Age	**18 – 24:** **25 – 34:** **35 – 44:** **45 – 54:** **55 – 64:** **65+**	2% 7% 12% 34% 38% 7%
Highest level of Education	**Less than High School** **High School / GED** **Some College** **2- year College Degree** **4-year College Degree** **Post-Graduate Degree**	0% 6% 11% 22% 37% 25%
Square Footage	**< 500 sq. foot** **500 – 1000 sq. foot** **1000 – 2000 sq. foot** **2000 – 5000 sq. foot** **5000+** **Unsure**	9% 20% 26% 23% 12% 9%
Number of Employees	**1 – 4** **5 – 19** **20 – 49** **50 – 99**	32% 28% 16% 24%
Own/Rent	62% Own	

TOU Awareness and Comprehension: 50% of the sample achieved a score equal to or less than 50%

The comprehension results were insightful, ultimately supporting the notion that energy users in Ontario do not quite understand how TOU pricing works. Identical to the residential survey, participants in this group encountered 12 awareness and comprehension questions. With a maximum score of 16, the average score for the participants was 8.13 (SD = 2.23), where 50% of the sample achieved a score equal to or less than 50%. Participants tended to perform better on Comprehension related questions (M = 3.75 [out of 7]; SD = 1.20) versus Awareness related questions (M = 4.38 [out of 9]; SD = 1.86). Regarding the Awareness related questions, the task of indicating the three correct labels of the TOU periods appeared to be the most challenging, with 97% of the sample getting this question wrong. Concerning the Comprehension-related questions, participants appeared to struggle with differentiating between the seasonal changes of the TOU periods, where when prompted to indicate how to save energy in the winter, only 27% of the sample were able to get the question right. Table 10 shows the variables that influenced participant's TOU Score.

Appendix A – Electricity Consumer Survey

Table 10: Percentage of correct answers for each question

Measure	Question	Online Panel (% Correct) (n = 69)	
Awareness	1	81%	
	2	3%	
	3	94%	
	4	0 Correct 1 Correct 2 Correct 3 Correct	16% 57% 13% 13%
	5	85%	
	6	57%	
	7	59%	
Comprehension	8	44%	
	9	0 Correct 1 Correct 2 Correct 3 Correct	0% 17% 81% 2%
	10	52%	
	11	69%	
	12	27%	

Shifting behaviour from on-peak to off-peak: Participants want to save money, but cannot run their business during off-peak hours.

Regarding conservation behaviours, participants were asked to indicate on a scale from 0 (*"Completely Disagree")* to 100 ("*Completely Agree")* on how much they agreed/disagreed with reasons for why they shifted their business' consumption behaviour from on-peak to off-peak hours. Some of the more noteworthy indications will be discussed. With an average score of 84 (SD = 16.7), 74% of the sample provided a score of at least 80%, indicating that a primary driver for them to shift periods was "To save money on monthly electricity bills". However, with an average score of 50 (SD = 31.0), participants expressed that it was only somewhat convenient for them to shift their business' electricity consuming behaviours. Furthermore, with an average score of 73 (SD = 28.2), participants also indicated that "It is too difficult for me to schedule my business' electricity consumer activities during off-peak hours". Please refer to Figure 14 for reasons why participants indicated that they had shifted their consumption behaviour from on-peak to off-peak hours and please refer to Figure 15 for reasons why participants indicated that they were not willing to shift their consumption behaviour.

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Figure 14: Level of agreement with reasons for why TOU has shifted behaviours (n = 34)

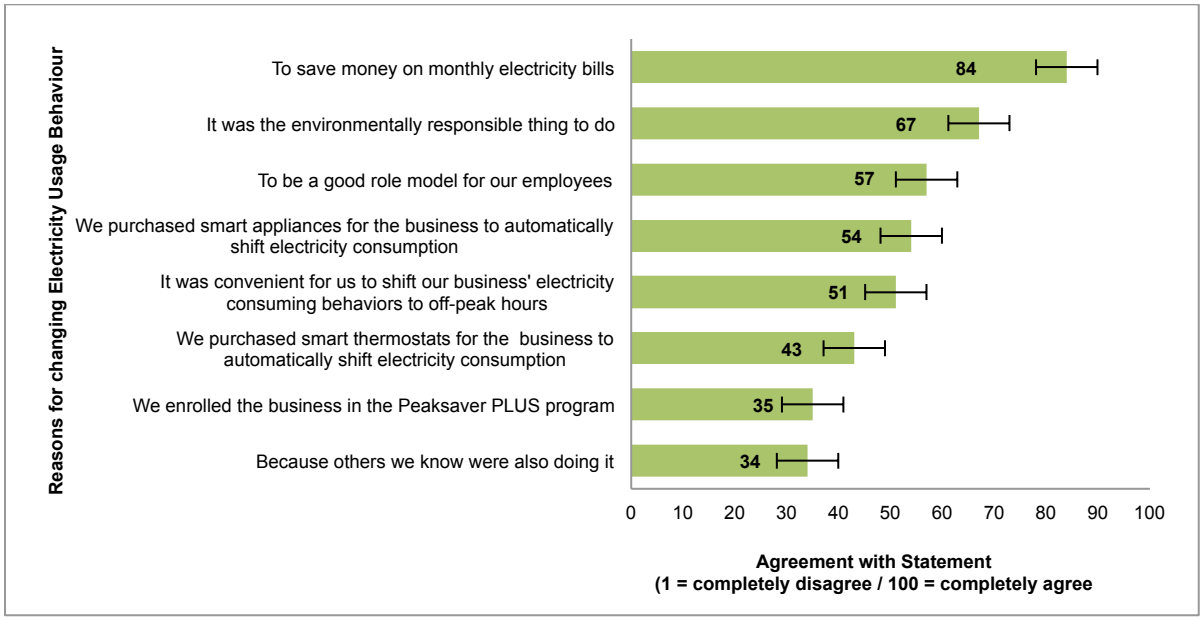
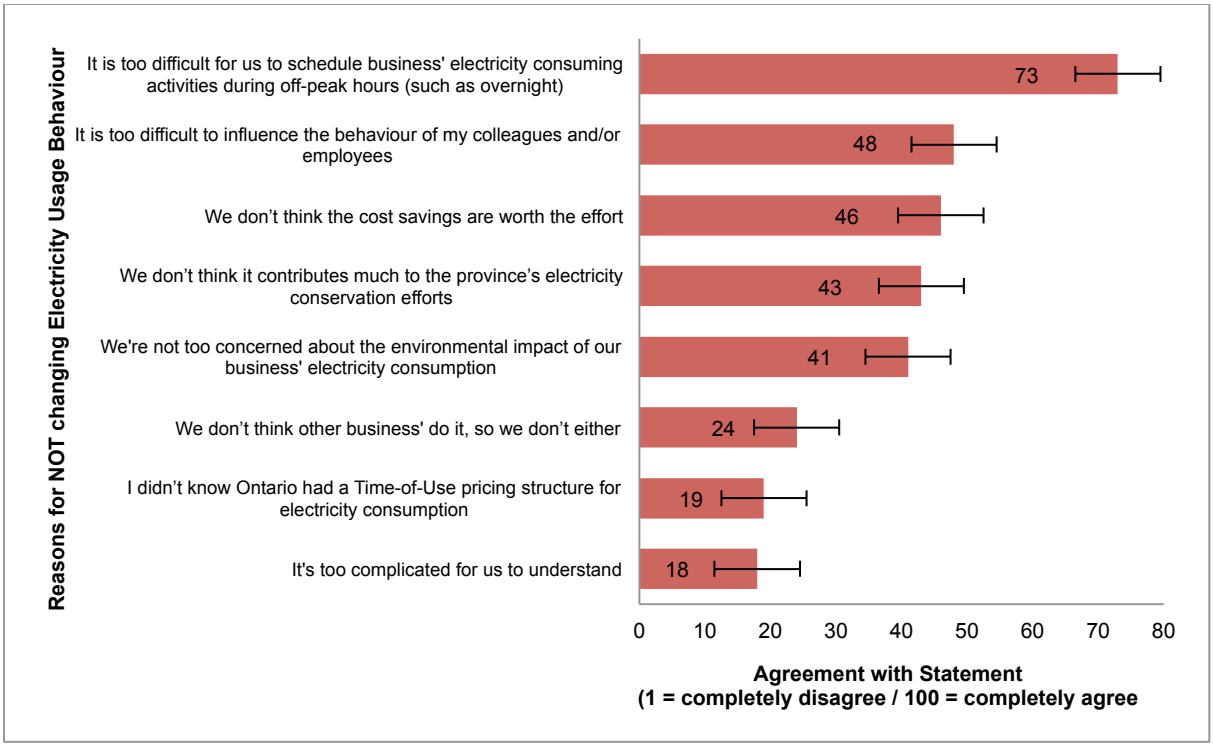


Figure 15: Level of agreement with reasons for why TOU has NOT shifted behaviours (n = 33)

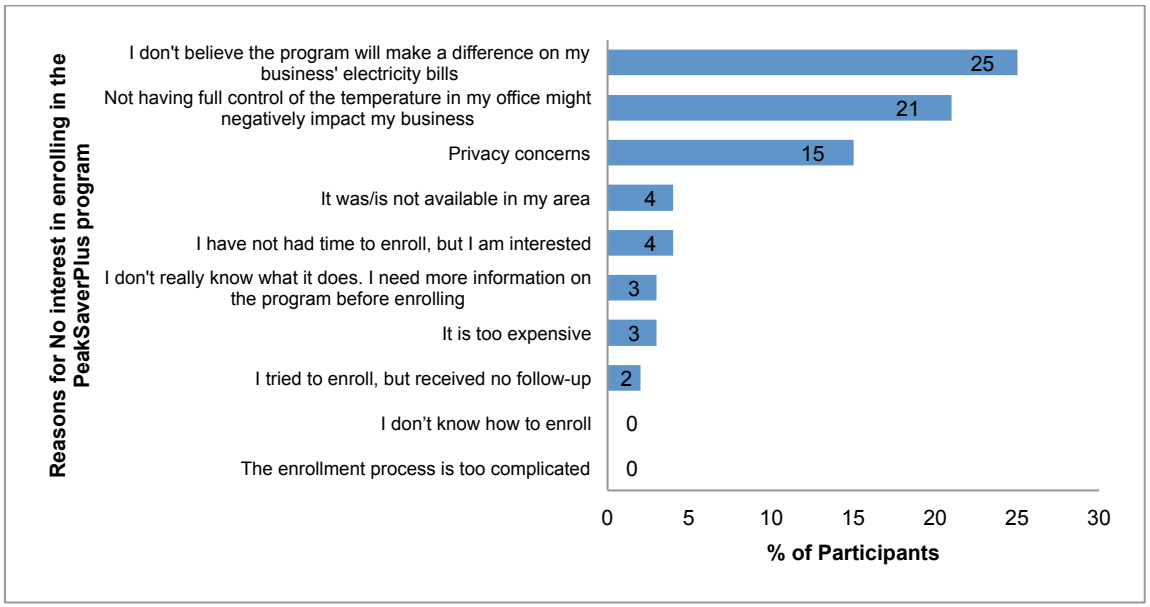


Appendix A – Electricity Consumer Survey

PeaksaverPLUS: Participants do not believe that this program will make a difference

Overall, the majority (67%) expressed that they would not be interested in participating in this program. Participants that detailed disinterest were prompted to provide some rationale for their choice. The leading responses for not participating in the program were either that they did not believe that the program would reduce their electricity bills and/or that not having control over their temperature would negatively impact their business. Please refer to Figure 16 for reasons why participants indicated that they were not willing to enroll in the PeaksaverPLUS program.

Figure 16: Participants choices for why they would not enroll in the PeaksaverPLUS program (n = 46)



Appendix B – Bill Click Tracking Study

B. Bill Click Tracking Study

The survey was administered between September 15 and September 22, 2014. Similar to the *Electricity Consumer Survey*, participants for this study were obtained from a panel of Ontarians that had opted-in to participate in online surveys. To be included in the *Bill Click Tracking Study*, participants were required to live Ontario, be over the age of 18, and live in a household that has received an electricity bill within the past year. Additionally, participants who completed the *Electricity Consumer Survey* were not eligible for this survey. As reward for their participation, participants received either AIR MILES reward miles or points towards a retail gift card.

Experiment Design

This experiment employed a 2 (Layout: Toronto Hydro vs. Hydro One) x 2 (TOU model: Real vs. Decoy) between subject factorial design. The layout of both bill types (here after referred to as Toronto Hydro and Hydro One) looked exactly the same as the bill layout used by Toronto Hydro and Hydro One during the month of August, 2014, except all branding information (e.g., logos, name of the electricity provider, links to the electricity provider's website) was either removed or replaced with generic terms. For example, on Toronto Hydro bills, the electricity provider's website was changed from www.torontohydro.com to www.electricitycompany.com. The real and decoy bills for both the Toronto Hydro and Hydro One bills had the exact same layout except the rates for the different periods were increased by approximate 10%, from (Real: off-peak: $0.075/kWh; mid-peak: $0.112/kWh; on-peak: $0.135/kWh) to (Decoy: off-peak: $0.082/kWh; mid-peak: $0.123/kWh; on-peak: $0.149/kWh) and TOU Time Schedules were changed from:

	Real		Decoy	
	Summer **Weekdays**	**Winter Weekdays**	**Summer Weekdays**	**Winter Weekdays**
Off-Peak	7 pm – 7 am	7 pm – 7 am	5 pm – 5 am	5 pm – 5 am
Mid-Peak	7 – 11 am, 5 – 7 pm	11am – 5 pm	5 – 9 am, 3 – 5 pm	9am – 3 pm
On-Peak	11am – 5 pm	7 – 11 am, 5 – 7 pm	9am – 3 pm	5 – 9 am, 3 – 5 pm

Click-tracking

For all bills, participants were shown the front page of one of four variations of an electricity bill and asked to click on the areas they would look at / read if it were their own bill. There was no limit to the number of clicks that a participant could make, and each region they clicked was recorded. Below the front page of the bill, participants were provided with three options: (1) Click to see the back page of the electricity bill, (2) I normally only look at/ read the front of the electricity bill, continue with the survey, and (3) I normally do not read the electricity bill, continue with the survey. Only participants who selected the first option (1) saw the back page of the bill, otherwise they proceeded to the survey questions. In addition to recording where participants clicked, the amount of time spent reviewing the bill was also recorded.

Appendix B – Bill Click Tracking Study

Participants

239 participants completed the survey, 120 participants saw either the Real Toronto Hydro Bill (n = 59) or Decoy Toronto Hydro Bill (n = 61), and 119 saw the either the real Hydro One Bill (n = 57) or Decoy Hydro One Bill (n = 62). 5 participants from the Toronto Hydro conditions were excluded from analysis because their total survey duration was longer than 3 standard deviations from the median (21 minutes) and shorter than 1 standard deviation from the median (3 minutes). Likewise, 2 participants from the Hydro One conditions were excluded from analysis because their total survey duration was longer than 3 standard deviations from the median (24 minutes) and shorter than 1 standard deviation from the median (3 minutes). This cut-off was based on the expected minimum time requirements to complete the survey and the variability in reading speed and comprehension. Finally, participants who failed to click on any region of the bills or took longer than 5 minutes to review either the front or back page were excluded from analysis, leaving the following number of participants per condition

Table 11: Sample sizes per condition in the Bill Click Tracking Study

		Factor: Bill Type		
		Toronto Hydro Layout	Hydro One Layout	**Total**
Factor: Real vs. Decoy	Real Bill	41	38	79
	Decoy Bill	53	43	96
	Total	94	81	**175**

Table 12: Demographics of Ontario Residents who completed the OEB Click-Tracking Experiment

Factor	Toronto Hydro (Real)	Toronto Hydro (Decoy)	Hydro One (Real)	Hydro One (Decoy)
n	41	53	38	43
Gender				
% Females	49%	55%	50%	49%
Income				
< $60K	27%	25%	24%	28%
$60k – $120K	22%	24%	32%	26%
$120k – $180K	34%	30%	16%	23%
$180k+	17%	21%	29%	23%
Age				
18 to 24 years	2%	8%	0%	5%
25 to 34 years	2%	8%	3%	7%
35 to 44 years	17%	26%	5%	19%
45 to 54 years	29%	21%	32%	23%
55 to 64 years	17%	19%	47%	37%

Appendix B – Bill Click Tracking Study

65 years and over	32%	19%	13%	9%
Education				
Less than High School	0%	8%	0%	0%
High School / GED	4%	11%	16%	12%
Some College	20%	17%	18%	12%
2-year College Degree	12%	13%	13%	16%
4-year College Degree	34%	25%	18%	37%
Masters Degree	17%	13%	29%	7%
Doctoral Degree	10%	4%	3%	9%
Professional Degree (JD, MD)	2%	9%	3%	7%
Current Residence				
Apartment / Condo	12%	13%	2%	12%
Attached House	10%	15%	18%	12%
Detached House	73%	72%	79%	72%
Other	5%			5%
Receive Electricity Bill				
Paper statements by mail	63%	56%	66%	52%
Electronic statements by email	29%	36%	34%	45%
Toronto Hydro Customer (%)	12%	18%	9%	15%
Hydro One Customer (%)	16%	23%	27%	21%
Do you read the Bill? (%)	87%	76%	89%	83%

Appendix B – Bill Click Tracking Study

Measuring Recall

To measure Recall, participants were asked 8 questions that required participants to recall important information from the bill. Half of these questions assessed a participant's ability to recall information on TOU pricing and timing presented in the bill, e.g., timing and rate schedules for the three periods – on-peak, off-peak, and mid-peak. The number of questions correctly answered formed a participant's "TOU Recall Score" (out of 4). The other half of the Recall questions assessed a participants ability to recall kWh usage measures presented within the bill, such as the average daily usage and whether or not there was a change in overall energy consumption this period compared to the last. For the Toronto Hydro bills, this information is found on the two visual consumption graphs presented on the front page, and for the Hydro One bills, this information is presented in tabular form on the front page of the bill. The number of questions correctly answered forms a participant's "Usage Recall Score" (out of 4). The combined total of both scores (TOU Recall Score + Usage Recall Score) is referred to here as the "Overall Recall Score" out of 8.

Table 13: Eight questions for measuring Recall (the correct responses are highlighted in green, and instances where answers between the real and decoy bill differ are noted)

TOU Recall Score (4 Questions)

Q1. On the electricity bill you just saw, how was electricity priced?

- ○ *Electricity is priced based on Time-Of-Use (TOU)* **There is a different charge for electricity depending on the time**
- ○ *Electricity is based on a Flat-Rate-Plan (FRP).* The same rate applies all year round, no matter when you use it
- ○ *Electricity is based on a Fixed-Variable-Charge (FVC).* There is a fixed daily charge plus a variable charge that fluctuates depending on the cost of electricity each day
- ○ Other: Please enter below ____
- ○ Unsure. The information was not provided on the bill

On the bill you just saw, electricity was priced based on Time-of-Use (TOU). Customers pay different rates for electricity depending on when they use it. There are Off-Peak periods when electricity is at its cheapest, On-Peak periods, when electricity is most expensive, and Mid-Peak periods when the cost of electricity falls somewhere in-between.

Q2. On the bill you just saw, what were the timings of each TOU period during a weekday

○	Off-Peak 7PM – 7AM	Mid-Peak 7AM – 11AM 7PM – 7PM	Off-Peak 11AM – 5PM	**Correct – Real Condition**
○	Off-Peak 5PM – 5AM	Mid-Peak 5AM – 9AM 3PM – 5PM	Off-Peak 3AM – 3PM	**Correct – Decoy Condition**
○	Off-Peak 12PM – 5AM	Mid-Peak 9AM – 12AM	Off-Peak 5AM – 9PM	
○	Off-Peak 9PM – 9AM	Mid-Peak 12PM – 4AM	Off-Peak 9AM – 12PM 4PM – 9PM	

- ○ Unsure
- ○ The information was not provided on the bill

Appendix B – Bill Click Tracking Study

Q3. On the bill you just saw, what was the electricity rate for each of the three TOU periods?

○	Off-Peak 7.5 cents per kWh	Mid-Peak 11.2 cents per kWh	Off-Peak 13.5 cents per kWh	**Correct – Real Condition**
○	Off-Peak 8.2 cents per kWh	Mid-Peak 12.3 cents per kWh	Off-Peak 14.9 cents per kWh	**Correct – Decoy Condition**
○	Off-Peak 0.9 cents per kWh	Mid-Peak 3.5 cents per kWh	Off-Peak 5.2 cents per kWh	
○	Off-Peak 27.3 cents per kWh	Mid-Peak 29.5 cents per kWh	Off-Peak 31.6 cents per kWh	

○ Unsure
○ The information was not provided on the bill

Q4. On the bill you just saw, what was the current total amount owing?
○ Under $10
○ $10 - $39
○ $40 - $69
○ $70 - $99
○ $100 - $129
○ $130 - $159
○ **$160 - $199**
○ $200 - $229
○ $230 - $259
○ $260 - $299
○ $300+
○ Unsure
○ The information was not provided on the bill

Usage Recall Score (4 Questions)

Q5. On the bill you just saw, the average daily electricity consumption for this past month fell somewhere between:
○ 1 - 9 kWh
○ 10 - 29 kWh
○ **30 - 49 kWh**
○ 50 - 99kWh
○ 100 - 149kWh
○ 200 - 299 kWh
○ 300 - 499 kWh
○ 500 - 699 kWh
○ 700 - 999 kWh
○ 1,000 - 1,199 kWh
○ 1,200+ kWh
○ Unsure
○ The information was not provided on the bill

Q6. According to the bill you just saw, was more electricity consumed this month compared to the pervious month?
○ **Yes, more electricity was consumed this month compared to the previous month**
○ No, less electricity was consumed this month compared to the previous month
○ The same amount of electricity was consumed both months
○ Unsure
○ The information was not provided on the bill

Q7. According to the bill you just saw, this month you consumed the most electricity during:
○ **Off-peak hours**
○ On-peak hours
○ Mid-peak hours
○ Unsure
○ The information was not provided on the bill

Q8. According to the bill you just saw, _____ electricity was consumed during off-peak periods this month compared to last month?
○ **More electricity was consumed during off-peak hours this month compared to last month**
○ Less electricity was consumed during off-peak hours this month compared to last month
○ Unsure
○ The information was not provided on the bill

Appendix B – Bill Click Tracking Study

Table 14 shows the TOU Score across the 4 conditions, split by question. Cronbach's alphas for the 4 TOU Recall questions and 4 Usage Recall items was 0.41 and 0.48, respectively. This meant that reliability was low for both scores. Comparing across the recall questions, only recall of TOU time schedules was significantly different across condition. Post hoc pair wise comparisons using an LSD test (multiple comparisons corrected using the Hochberg's method) showed that for both bill layouts, the real bill outperformed the decoy bill (Toronto Hydro Real > Toronto Hydro Decoy, $p<0.05$; Hydro One Real > Hydro One Decoy, $p<0.05$).

Table 14: Percentage of correct responses for Recall Questions across all 4 conditions

			TOU Recall Score				Usage Recall Score			
Treatment	n	Average Recall Score (out of 8)	TOU (Q1)	TOU Times (Q2)	TOU Price (Q3)	Price (Q4)	kWh (Q5)	Comp Usage 1 (Q6)	Comp Usage 2 (Q7)	Comp Usage 3 (Q8)
Toronto Hydro (Real)	41	27%	71%	32%	17%	64%	2%	15%	5%	10%
Toronto Hydro (Decoy)	53	24%	62%	6%	6%	72%	2%	15%	15%	17%
Hydro One (Real)	38	28%	52%	45%	18%	61%	13%	10%	13%	9%
Hydro One (Decoy)	43	30%	77%	7%	14%	79%	9%	28%	14%	14%
F-value		26.25	2.00	11.21	1.37	1.37	2.19	0.82	2.60	0.33
p-value		<0.001	0.12	<0.001*	0.25	0.25	0.10	0.36	0.10	0.54

*One-way ANOVA was performed across each group to determine if there were any significant differences between conditions. Significant differences are highlighted in Orange

Interacting with the Bill

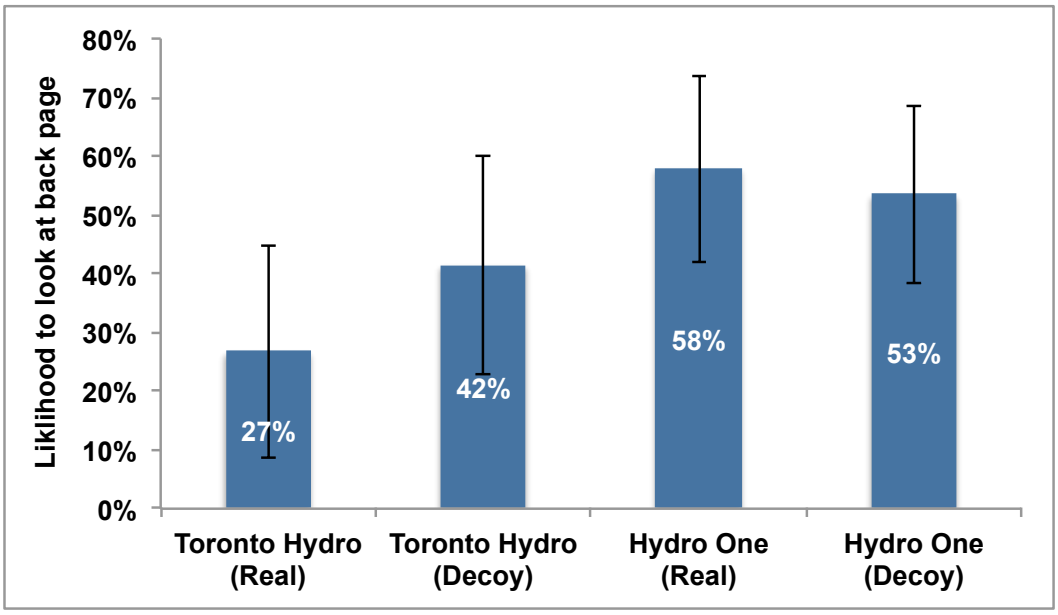
Participants were shown the front page of one of four variations of an electricity bill and asked to click on the areas they would look at / read if it were their own bill. There was no limit to the number of clicks that they could make, however as mentioned in the design section above, participants who took longer than 5 minutes for the front or back page were removed. They were also asked if they would like to see the back of the bill. Participants who answered "yes" completed the same clicking task on the reverse page.

Looking at the Back of the Bill

Figure 13 highlights the likelihood to look at the back page across all 4 conditions. A one-way ANOVA was used to test whether the likelihood to look at the back page differed across the 4 conditions. A moderate significant difference was found across the 4 conditions [$F(3,171) = 2.28$, $p = 0.08$). Post hoc pair wise comparisons using an LSD test (multiple comparisons corrected using the Hochberg's method) showed that those in the Toronto Hydro (Real) condition were significantly less likely to see the back than those who the Hydro One (Real) and Hydro One (Decoy) bills.

Appendix B – Bill Click Tracking Study

Figure 17: Likelihood to see the back of the electricity bill across all 4 conditions

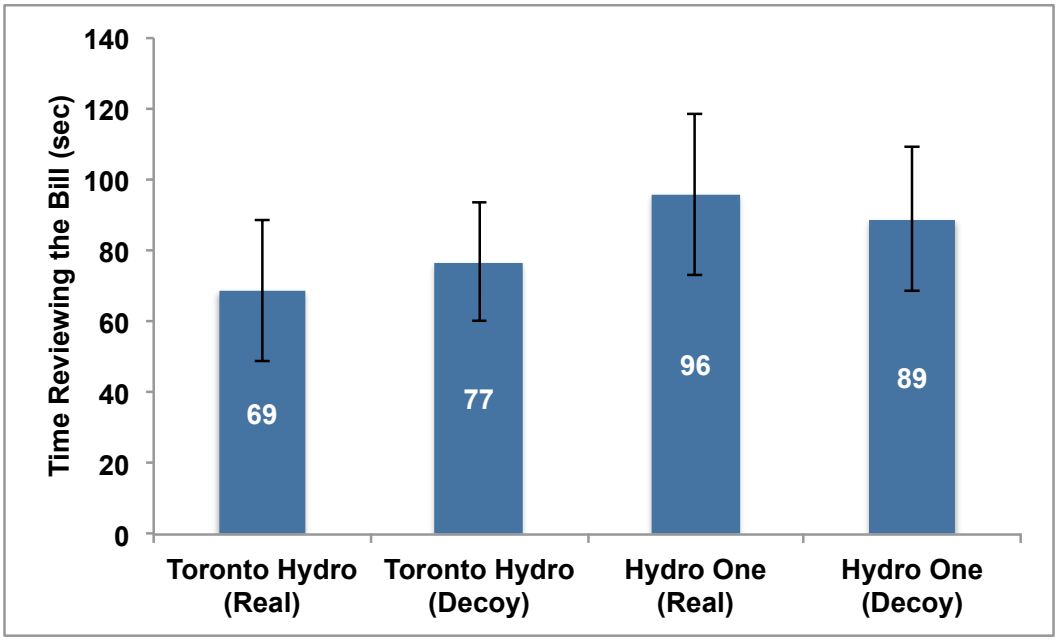


*Error bars represent the 95% confidence interval of the mean

Time Spent Viewing the Page

Figure 14 shows the total amount time spent viewing the bill for the 4 conditions. The total time did not significantly differ across the 4 conditions [F(3,171) = 1.36, p>0.10].

Figure 18: The average amount of time (in sec) spent reviewing the bill across the 4 conditions



Appendix B – Bill Click Tracking Study

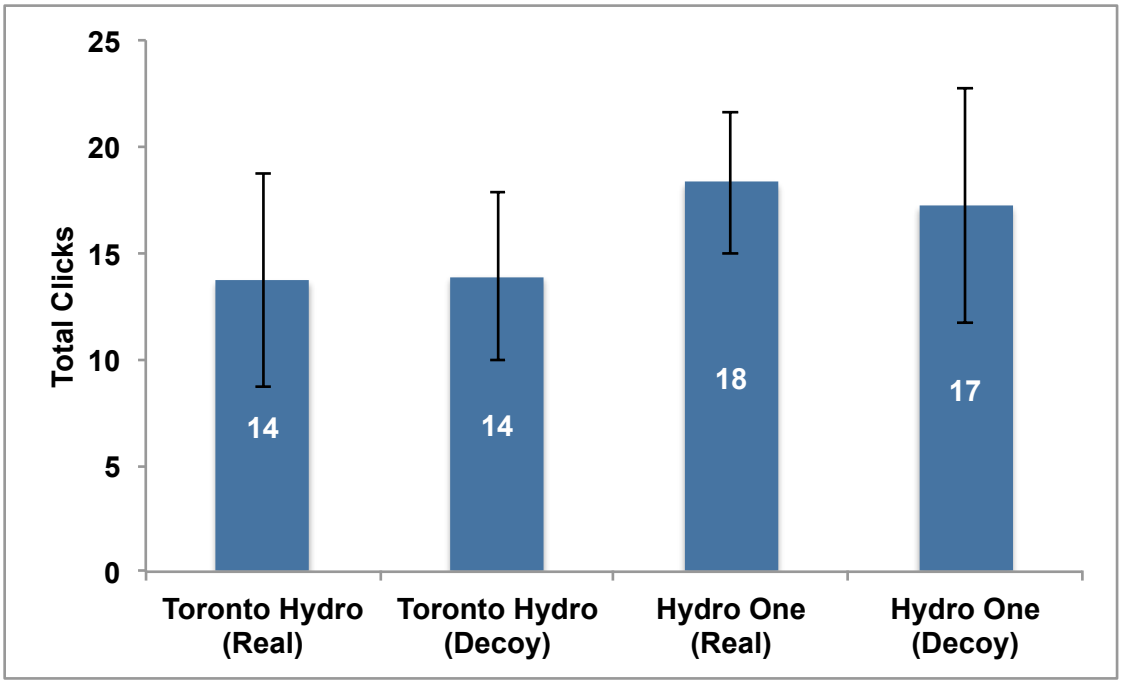
Did total amount of time spent reviewing the bill predict Recall Score?

A simple linear regression analysis was conducted to determine if total amount of time spent (independent variable) predicted the Recall Score (dependent variable). As the distribution of Total Recall Score and Total Clicks was highly positively skewed (i.e. did not meet the assumption of normality), we added 1 and $\log_{10}$ transformed each value for both the independent and dependent variable. Total Clicks significantly predicted Overall Recall Scores, b = 0.41, t(173) = 3.27, p = .001. This means that a 10% increase in the total time spent reviewing the bill increases Recall Score by 9.3%. Total Clicks also explained a significant proportion of variance in Recall Score, R^2 = .05, F(1, 173) = 0.05, p =.001.

Clicks

Figure 15 shows the total number of clicks across the 4 conditions. The total number of clicks did not significantly differ across the 4 conditions [F(3,171) = 0.84, p>0.10].

Figure 19: The average number of clicks across the 4 conditions



*Error bars represent the 95% confidence interval of the mean

Did total clicks predict recall score?

A simple linear regression analysis was conducted to determine if total clicks (independent variable) predicted the Recall Score (dependent variable). As the distribution of Total Recall Score and Total Clicks was highly positively skewed (i.e. did not meet the assumption of normality), we added 1 and $\log_{10}$ transformed each value for both the independent and dependent variable. Total Clicks significantly predicted Recall Scores, b = 0.02, t(173) = 3.50, p < .001. This means that a 10% increase in Total Clicks increases Recall Score by 3.2%. Total Clicks also explained a significant proportion of variance in Recall Score, R^2 = .08, F(1, 173) = 16.06, p < .001.

Appendix B – Bill Click Tracking Study

What factors predict total clicks?

To determine the factors that predict the total number of clicks, a multiple regression was performed utilizing total clicks as the outcome measure. As Total Clicks was highly positive skewed, we added 1 and $\log_{10}$ transformed each value. Predictors included Age, Gender, Income, Education, Condition (Toronto Hydro or Hydro One), method of receiving the bill (mail, email, other, unsure), whether the participant reads the bill, and rated thoroughness of reading the fill (7 pt likert scale). Gender, stated thoroughness of reading the bill, and whether the participant paid their bill through online banking were found have a significant effect on total number of clicks. For example, females had on average 1.26 (10^0.10) more clicks than males.

Table 15: Multiple regression analysis of Total Clicks

	Estimate	Std.Error	t value	Pr(>|t|)	
(Intercept)	0.79	0.20	3.92	0.00	***
Age	-0.01	0.02	-0.59	0.55	
Female	0.10	0.06	1.76	0.08	.
Income	0.00	0.00	0.67	0.51	
Education	0.01	0.02	0.79	0.43	
Condition	0.02	0.06	0.37	0.71	
Bill Channel - Email	-0.07	0.06	-1.14	0.26	
Bill Channel - Other	-0.23	0.15	-1.54	0.13	
Bill Channel - Unsure	-0.58	0.38	-1.51	0.13	
Read Bill	-0.14	0.09	-1.47	0.14	
Thoroughness of Reading Bill	0.07	0.02	3.53	<0.001	***
Payment - Online Banking	-0.16	0.07	-2.26	0.03	*
Payment - Bank Branch	0.01	0.12	0.10	0.92	
Payment - Mail	-0.02	0.20	-0.13	0.90	
Payment - Other	0.08	0.13	0.63	0.53	
Payment Unsure	-0.19	0.23	-0.81	0.42	

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.3682 on 152 degrees of freedom
(7 observations deleted due to missingness)
Multiple R-squared: 0.2447, Adjusted R-squared: 0.1701
F-statistic: 3.282 on 15 and 152 DF, p-value: 9.467e-05

Where did people look on the bills?

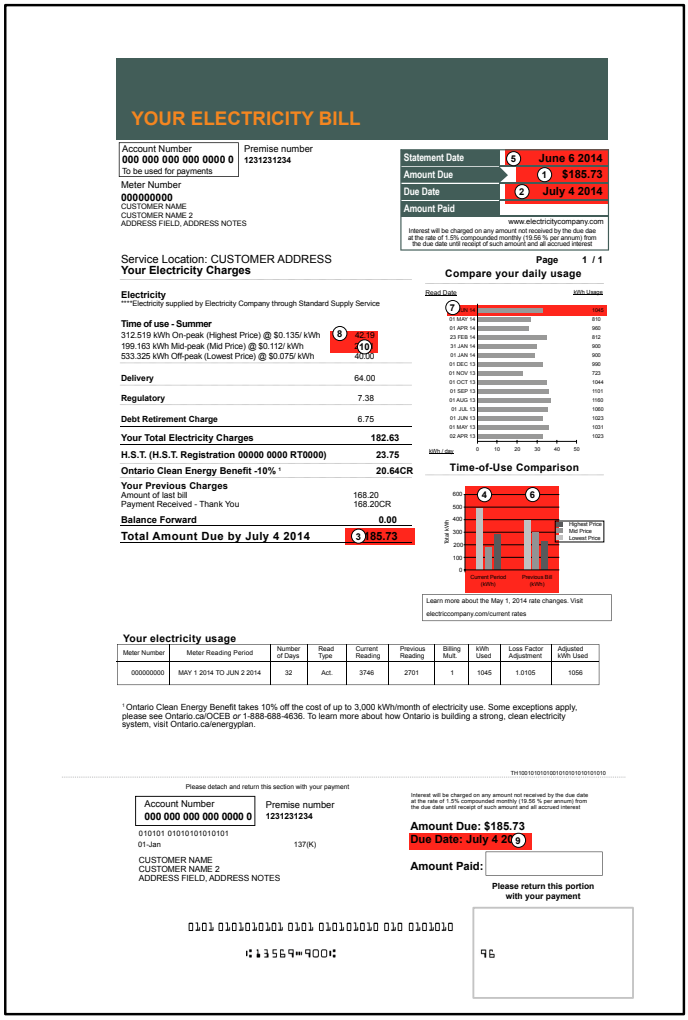
As the Real bills and Decoy bills for both bills were the exact same, except for differences in the TOU prices for each period and start and end times for the three TOU Periods (on-peak, mid-peak, off-peak), we collapsed the real and decoy bills to increase the power of the analysis of where participants looked in the bill. Figure 16 and 17 highlight the top 10 regions selected by participants for each bill: Toronto Hydro and Hydro One.

Appendix B – Bill Click Tracking Study

Figure 20: Bill 1 - Top 10 regions that people selected as regions they would normally look at/ read

Rank	% of Participants that Viewed this Area (n = 94)
1	78%
2	61%
3	44%
4	33%
5	31%
6	30%
7	29%
8	27%
9	27%
10	26%

FRONT



YOUR ELECTRICITY BILL

Account Number
000 000 000 000 0000 0
To be used for payments

Premise number
1231231234

Meter Number
000000000
CUSTOMER NAME
CUSTOMER NAME 2
ADDRESS FIELD, ADDRESS NOTES

Statement Date — 5 June 6 2014
Amount Due — 1 $185.73
Due Date — 2 July 4 2014
Amount Paid

www.electricitycompany.com

Interest will be charged on any amount not received by the due date at the rate of 1.5% compounded monthly (19.56 % per annum) from the due date until receipt of such amount and all accrued interest

Service Location: CUSTOMER ADDRESS
Page 1 / 1

Your Electricity Charges

Electricity
*****Electricity supplied by Electricity Company through Standard Supply Service

Time of use - Summer
312.519 kWh On-peak (Highest Price) @ $0.135/ kWh — 8 42.19
199.163 kWh Mid-peak (Mid Price) @ $0.112/ kWh — 10 22.31
533.325 kWh Off-peak (Lowest Price) @ $0.075/ kWh 40.00

Delivery	64.00
Regulatory	7.38
Debt Retirement Charge	6.75
Your Total Electricity Charges	182.63
H.S.T. (H.S.T. Registration 00000 0000 RT0000)	23.75
Ontario Clean Energy Benefit -10% [1]	20.64CR
Your Previous Charges	
Amount of last bill	168.20
Payment Received - Thank You	168.20CR
Balance Forward	0.00
Total Amount Due by July 4 2014	3 185.73

Compare your daily usage

Read Date — kWh Usage

7 Jun 14 1045
01 MAY 14 810
01 APR 14 960
23 FEB 14 812
31 JAN 14 900
01 JAN 14 900
01 DEC 13 990
01 NOV 13 723
01 OCT 13 1044
01 SEP 13 1101
01 AUG 13 1060
01 JUL 13 1060
01 JUN 13 1023
01 MAY 13 1031
02 APR 13 1023

kWh / day — 0 10 20 30 40 50

Time-of-Use Comparison

4 6

Total kWh — 600 500 400 300 200 100 0
Highest Price
Mid Price
Lowest Price
Current Period (kWh)
Previous Bill (kWh)

Learn more about the May 1, 2014 rate changes. Visit electriccompany.com/current rates

Your electricity usage

Meter Number	Meter Reading Period	Number of Days	Read Type	Current Reading	Previous Reading	Billing Mult.	kWh Used	Loss Factor Adjustment	Adjusted kWh Used
000000000	MAY 1 2014 TO JUN 2 2014	32	Act.	3746	2701	1	1045	1.0105	1056

[1] Ontario Clean Energy Benefit takes 10% off the cost of up to 3,000 kWh/month of electricity use. Some exceptions apply, please see Ontario.ca/OCEB or 1-888-688-4636. To learn more about how Ontario is building a strong, clean electricity system, visit Ontario.ca/energyplan.

TH1001010101001010101010101010

Please detach and return this section with your payment

Account Number
000 000 000 000 0000 0

Premise number
1231231234

010101 01010101010101
01-Jan 137(K)

CUSTOMER NAME
CUSTOMER NAME 2
ADDRESS FIELD, ADDRESS NOTES

Interest will be charged on any amount not received by the due date at the rate of 1.5% compounded monthly (19.56 % per annum) from the due date until receipt of such amount and all accrued interest

Amount Due: $185.73
Due Date: July 4 20 9

Amount Paid:

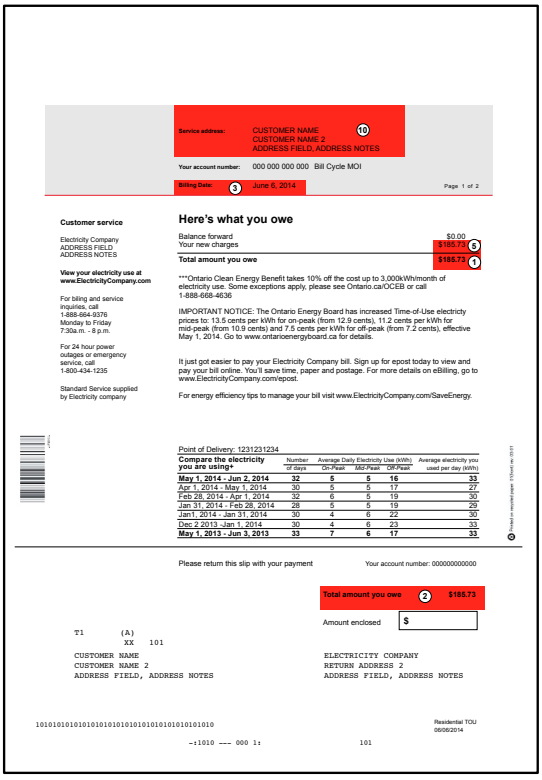
Please return this portion with your payment

Appendix B – Bill Click Tracking Study

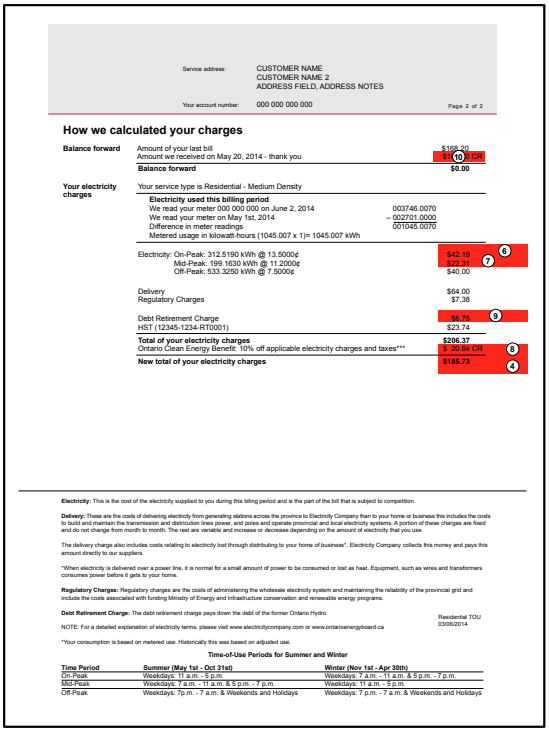
Figure 21: Bill 2 - Top 10 regions that people selected as regions they would normally look at/ read

Rank	% of Participants that Viewed this Area (n = 81)
1	72%
2	44%
3	36%
4	36%
5	35%
6	32%
7	31%
8	31%
9	30%
10	28%

FRONT



BACK



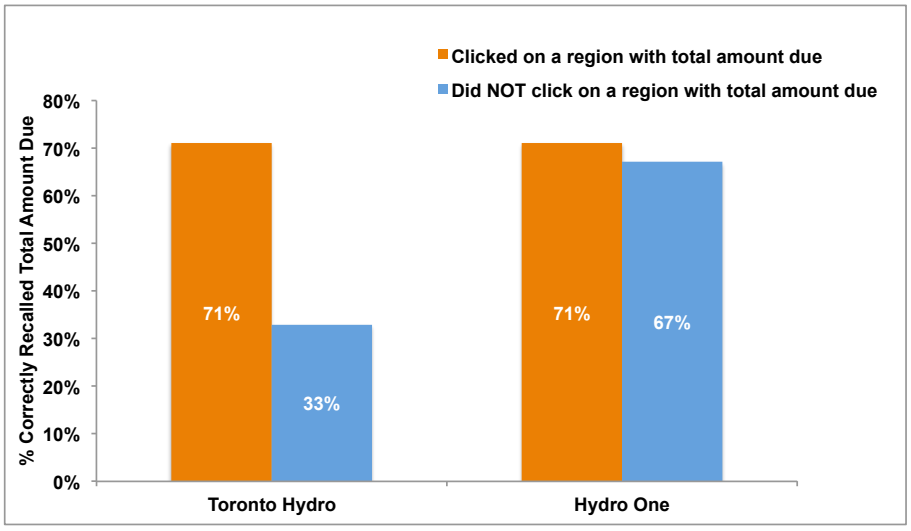
Appendix B – Bill Click Tracking Study

Did clicking on a region improve recall of information in that region?

Total Amount Due

Participants who clicked any of the regions on the bill that displayed the total amount due in the Toronto Hydro Bill conditions had higher recall of the price [n = 85, M =0.71, SD = 0.45] than those who did NOT [n = 9, M = 0.33, SD = 0.5], (F(1,92) = 5.75, p =0.02. A similar trend was noted in the Hydro One conditions, however the difference was n.s. [clicked on a pricing region: [n = 72, M = 0.71, SD = 0.46], did NOT click on a pricing region [n = 9, M = 0.67, SD = 0.50], F(1,79)=0.065, p>0.10.

Figure 22: Comparing recall of Total Amount Due between those who clicked on a region with the total amount due and those who did not across both bill layouts, Toronto Hydro Bill (n= 94) and Hydro One Bill (n = 81)

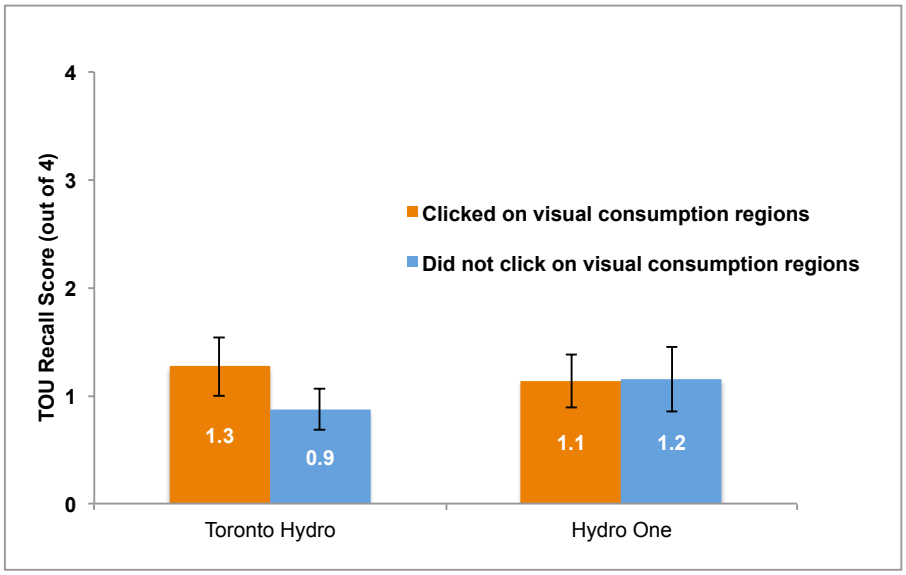


Did clicking on the visual consumption information improve Usage Score?

An analysis was conducted to determine if clicking on the areas that provide information about consumption improved recall of usage information. Participants in the Toronto Hydro Bill who clicked on either of the two graphs that highlighted usage information performed significantly better on the Usage Recall Score (out of 4) than participants who did NOT click on any of these regions (F(1,92) = 5.84, p = 0.02). Comparatively, participants in the Hydro One Bill who clicked on any region of the Table that highlighted usage information did not perform any better on the usage score than those who did not click on any of these regions, F(1,79) = 0.004, p = 0.94).

Appendix B – Bill Click Tracking Study

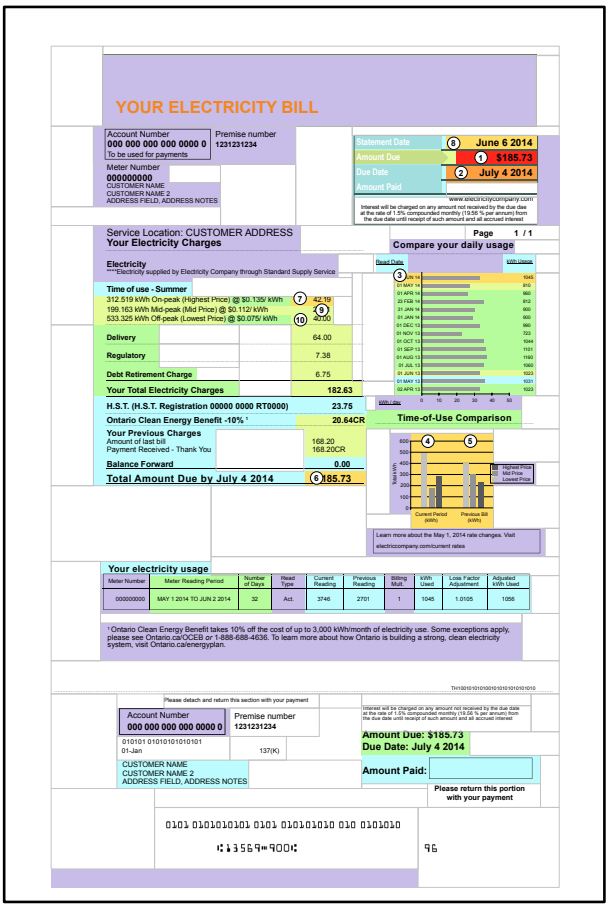
Figure 23: Comparing recall of Usage information between those who clicked on a visual consumption region and those who did not across both bill layouts, Toronto Hydro Bill (n= 94) and Hydro One Bill (n = 81)

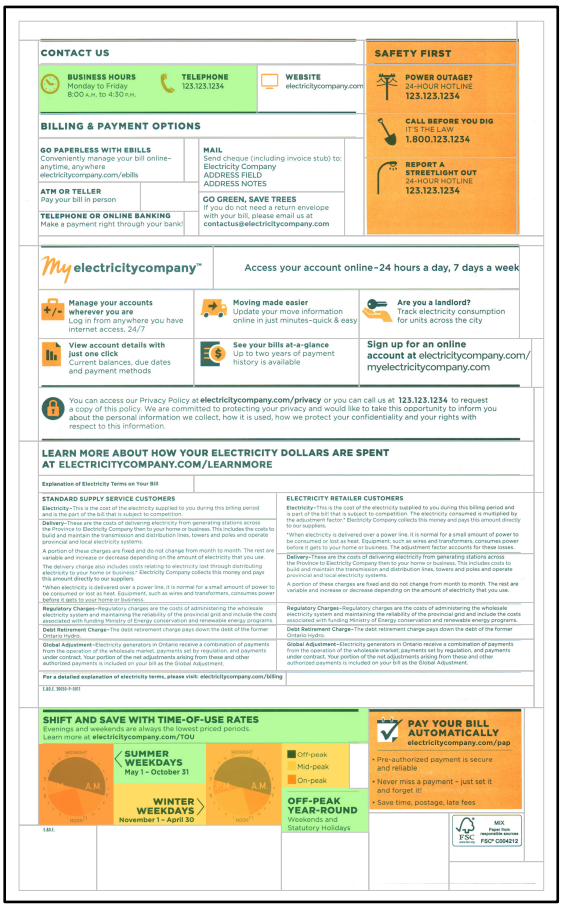


Appendix B – Bill Click Tracking Study

Figure 24: Real Toronto Hydro Bill - Regions that people selected as information they read in the bill

FRONT **BACK**





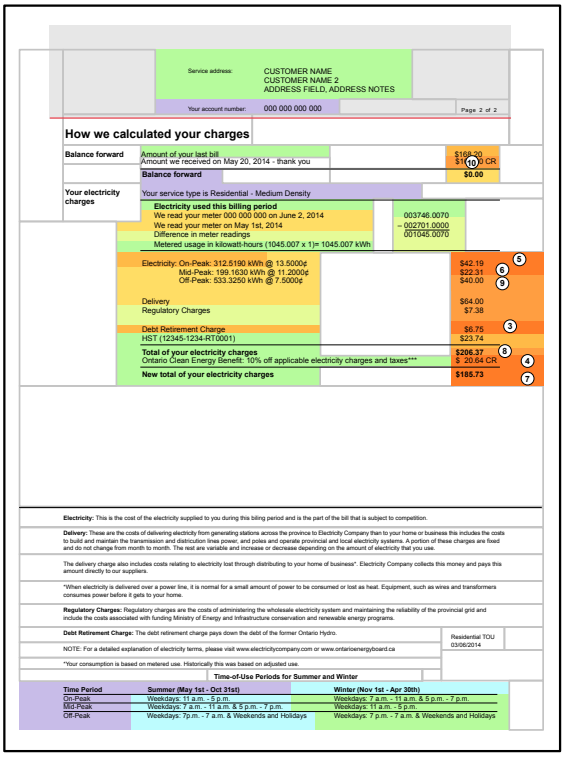
Colors represent the % of people that clicked the region (n = 41)

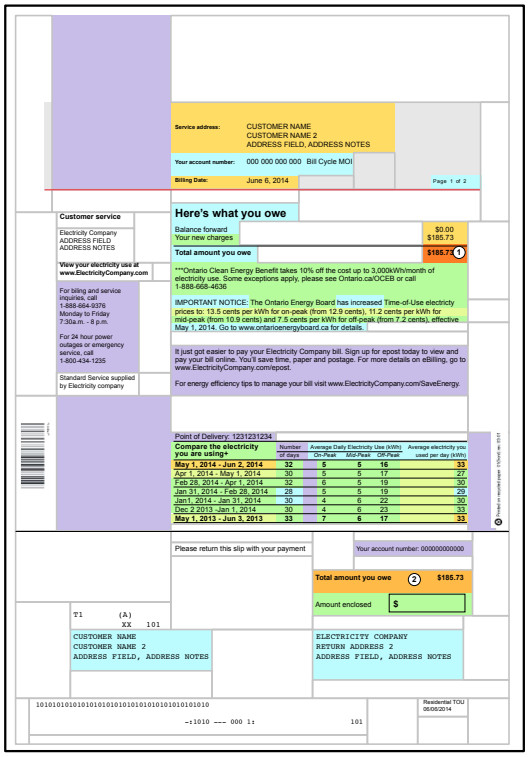
LEGEND	
% Selected	
>60%	
50% - 60%	
40% - 50%	
30% - 40%	
20% - 30%	
15% - 20%	
10% - 15%	
5% - 10%	
<5%	

Appendix B – Bill Click Tracking Study

Figure 25: Real Hydro One Bill - Regions that people selected as information they read in the bill

FRONT **BACK**





Colors represent the % o people that clicked the region (n = 38)

LEGEND	
% Selected	
>60%	
50% - 60%	
40% - 50%	
30% - 40%	
20% - 30%	
15% - 20%	
10% - 15%	
5% - 10%	
<5%	

Appendix C – Nudge Panel Experiments

C. Nudge Panel Experiments

The surveys for the *Nudge Panel Experiments* were administered between October 7 and November 18, 2014. Over 8,000 participants were recruited from Amazon's Mechanical Turk (MTurk) to participate in experiments 1 through 9. Participants for the final *Nudge Panel Experiment* (i.e. PeaksaverPLUS) were composed of the same Ontario participants from the *Bill Statement Experiment* (see section 3.0 in the Appendix for a more detailed description of this participant pool).

Over 500,000 individuals from 190 countries make up the MTurk workforce, where workers show comparable cognitive biases as traditional participants; ultimately making this participant pool an ideal source to test our bill nudges. Qualifying participants had to be over the age of 18 and needed to have received an electricity bill within the past year. Across all experiments, participants were randomly assigned to conditions and were compensated anywhere between 50 to 85 cents for their participation.

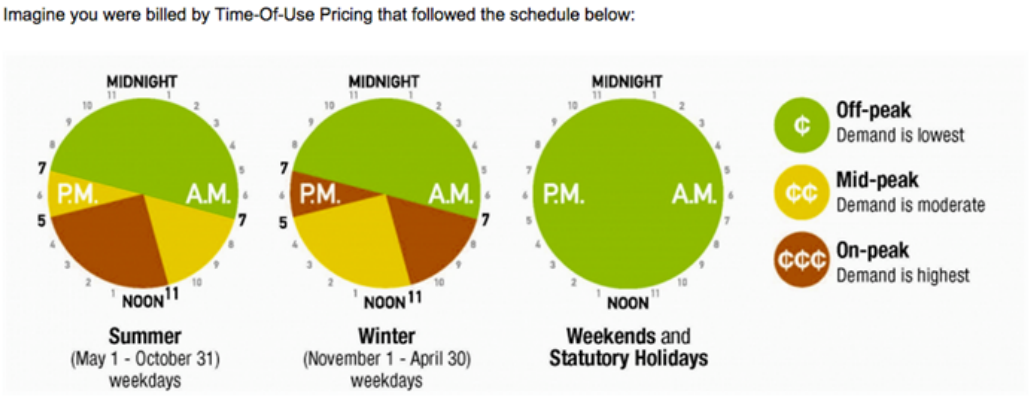
An analysis of variance (ANOVA) was used to test for differences among the conditions. For dependent variables where there was a significant difference across the means, a post hoc least significant difference test (correctedusing the Tukey's HSD method) was used to identify significant differences across the conditions. Means and p-values from the nudge panel experiments are embedded in the text on pages 48 to 98 (Part 2.1 – 2.10). Presented for each of the nudge panel experiments (on pages 43 to 80 of the appendix) are 1) cell sizes, 2) condition visuals, 3) sample demographics, and 4) the dependent variables and corresponding cell means. The presentation of the nudge panel material will follow the same order as detailed below:

1. Unit of Price
2. Naming Schema
3. TOU Visual
4. Price Clarity
5. Longitudinal Consumption Visual
6. TOU Period Consumption Visual
7. Consumption Benchmarks
8. TOU Pledge
9. Pricing Extremes
10. PeaksaverPLUS offer

Appendix C – Nudge Panel Experiments

Shift: Motivation to Change Behaviour

For nudge panel experiments 2 – 8 (Naming Schema to Pledges), we wanted to test whether the manipulations would influence the time of day that they would use a heavy appliance (e.g. a dishwasher); in other words, whether the manipulation would shift them to off-peak times of day. Participants were presented with the following figure, which probed them on when they would use different appliances (i.e. a dishwasher, a washing machine, and a dryer). Participants were scored based on the times of day they indicated they would use an appliance. For off-peak hours, participants would receive 3 points; for mid-peak hours, participants would receive 2 points; and for on-peak hours, participants would receive 1 point. The sum of the points was then divided by the total number of times of day selected, multiplied by the max number of points a participant could receive for a single selection (i.e. 3). An aggregate mean score was calculated; accounting for the usage score across all 3 appliances. Below provides an example of the calculation for a single appliance:



Given this pricing schedule, when **would** you typically run a washing machine in the summer?

Please check all options that are applicable

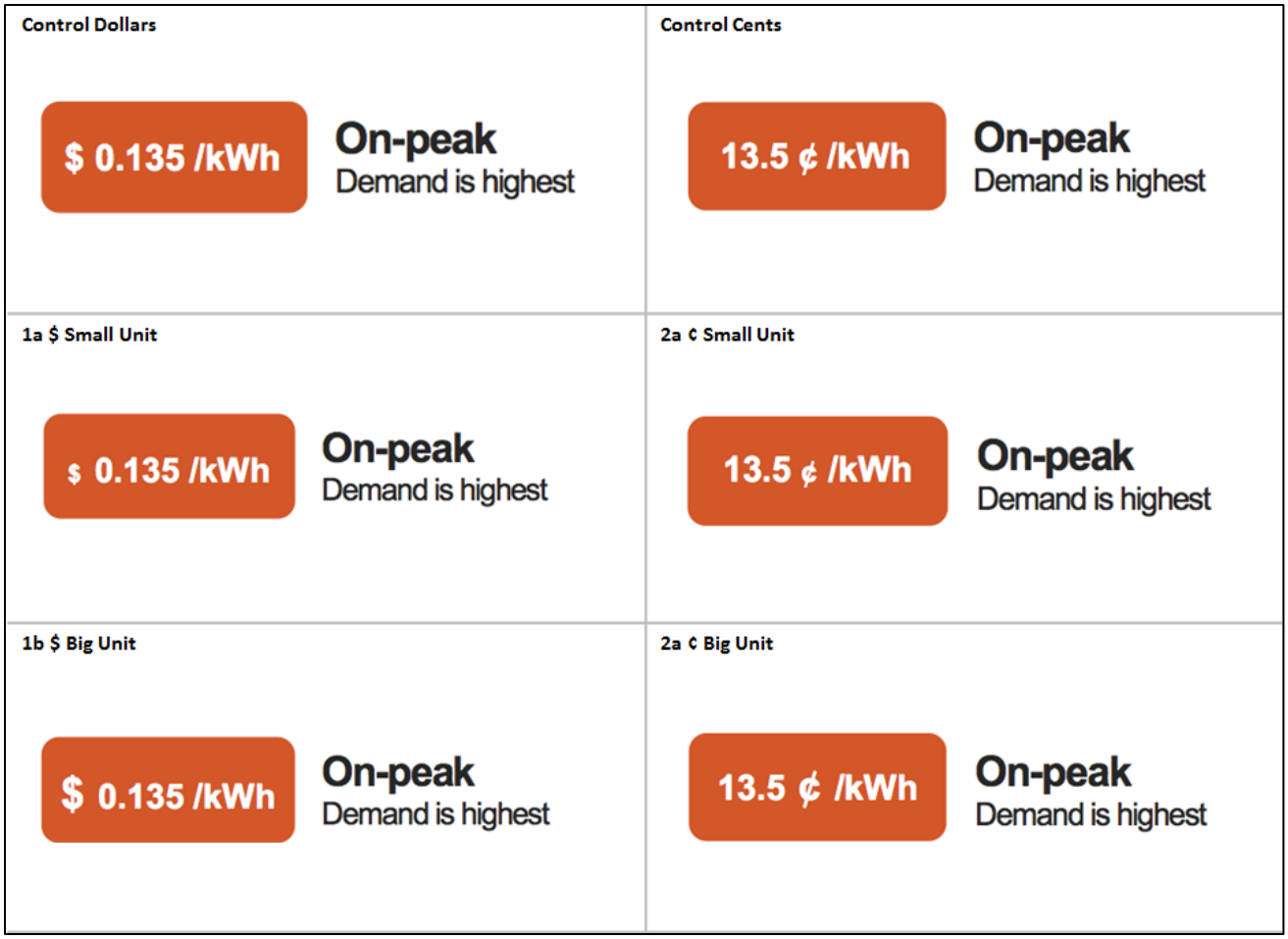
	Early Morning (5am - 7am)	Morning (7am - 11am)	Lunch Time (11am-1pm)	Afternoon (1pm - 5pm)	Early Evening (5pm - 7pm)	Evening (7pm - 9pm)	Night (9pm - midnight)	Late Night (midnight - 5am)	Never on Weekdays
Weekdays (Mon -Fri)	X	X	☐	☐	X	☐	☐	☐	☐

	Any Time	Never on Weekends
Weekends (Sat, Sun)	X	☐

$$\text{Usage Score: } \frac{(2 \times 3) + (1 \times 2) + (1X1)}{(4 \times 3)} = 0.75$$

Appendix C – Nudge Panel Experiments

Figure 26: Unit of Price - Conditions (Ex: on-peak only)



Appendix C – Nudge Panel Experiments

Table 16: Unit of Price- Cell Sizes

		Factor: Unit of price		
		$	¢	**Total**
Factor: Relative size of unit	Unit Small	87	89	176
	Unit Big	83	94	177
	Unit Standard (Control)	87	90	177
Total		257	273	**530**

Appendix C – Nudge Panel Experiments

Table 17: Unit of Price- Sample Demographics

Sample Size	**530**	
Gender	52% Female	
Age	18 – 24: 25 – 34: 35 – 44: 45 – 54: 55 – 64: 65+:	22% 45% 19% 8% 6% 1%
Highest level of Education	Less than High School High School / GED Some College 2- year College Degree 4-year College Degree Post-Graduate Degree	1% 10% 30% 12% 34% 13%
Household Income	<$60k: $60k - $120K: $120k - $180k: $180k +	65% 30% 4% 1%
Current Residence	Apartment / Condo Attached House Detached House Other	34% 16% 48% 2%
Own/Rent	48% Own	
State with Dynamic Pricing?	17 (46% of these are TOU pricing)	

Appendix C – Nudge Panel Experiments

Table 18: Unit of Price- Cell means (main effect of Dollars ($) vs Cents (¢))

	Dependent Variables	r (effect size)	Dollars ($)	Cents (¢)
Understanding	How easy is it for you to understand this information?	0.03	**5.77** *1.34*	**5.85** *1.34*
	How easy do you think it is for the average American to understand this information?	0.04	**5.07** *1.46*	**4.95** *1.48*
Recall_Unit	Which unit were the Time-of-Use rates displayed in throughout this survey?	0.10	**0.71** *0.45*	**0.61** *0.49*
Recall TOU Prices	Magnitude of difference in cents (On-peak): Using the slider, please recall the rate for each period	0.35	**32.50**	**13.50*****
	Magnitude of difference in cents (Mid-peak): Using the slider, please recall the rate for each period	0.34	**23.20**	**10.20*****
	Magnitude of difference in cents (Off-peak): Using the slider, please recall the rate for each period	0.24	**16.50**	**7.50*****
Motivation	I feel the cost savings would be worth the effort of shifting my electricity consuming activities	0.07	**5.41** *1.34*	**5.60** *1.35*
	I have consumed too much On-Peak electricity this period	0.04	**4.96** *1.40*	**4.84** *1.49*
	I feel motivated to shift my electricity usage to Off-Peak hours	0.03	**5.42** *1.46*	**5.50** *1.40*
Fluency/Layout	Electricity costs are presented clearly	0.08	**5.54** *1.32*	**5.76*** *1.27*
	The electricity company should continue to layout their bills this way	0.07	**5.08** *1.54*	**5.32*** *1.46*
	There is too much information on the bill	0.10	**5.01** *1.65*	**5.31*** *1.45*
Opinion	I think that electricity priced at these rates is affordable	0.02	**4.24** *1.47*	**4.30** *1.42*

0.00	Top **(bolded)** number represents the Mean
0.00	Bottom *(italicized)* number represents the Standard Deviation

Measures Used per Question

Understanding	*Scale: (1 = "Very Difficult" to 7 = "Very Easy")*
Recall_Unit	*Multiple Choice*
Recall TOU Prices	*Slider bar: (0 [¢ / $] per kWh to 100 [¢ / $] per kWh)*
Motivation, Fluency/Layout, & Opinion	*Scale: (1 = "Strongly Agree" to 7 = "Strongly Disagree")*

Blue highlight denotes a significant difference between conditions (cents versus dollars)

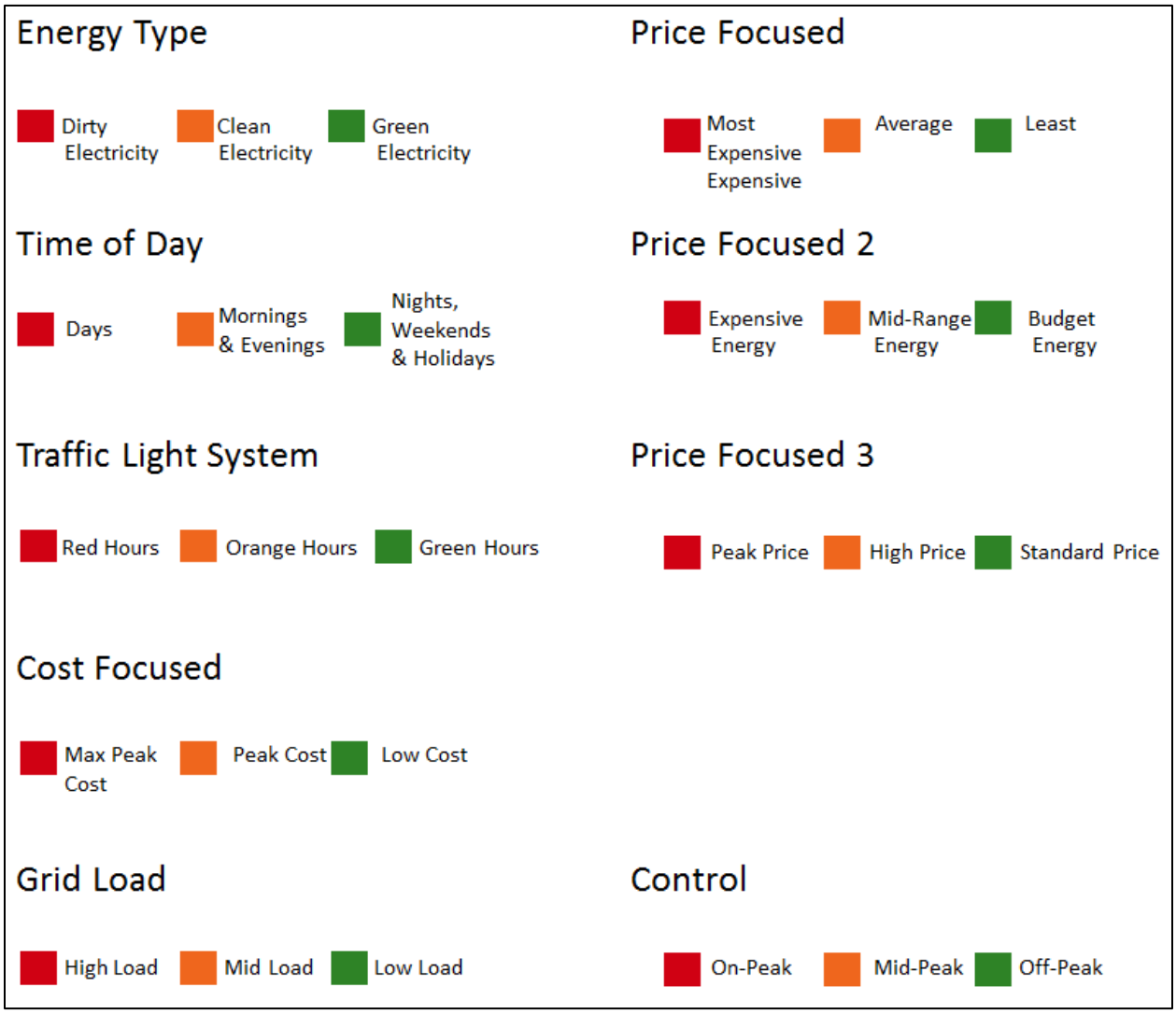
p < .06

****p < .05***

*****p < .001***

Appendix C – Nudge Panel Experiments

Figure 27: Naming Schema- Conditions



Appendix C – Nudge Panel Experiments

Table 19: Naming Schema- Cell Sizes

Condition		Total
Control		94
Energy Type		93
Time of Day		96
Traffic Light System		87
Cost Focused		95
Grid Load		96
Price Focused	1	96
	2	92
	3	93
Total		**842**

Appendix C – Nudge Panel Experiments

Table 20: Naming Schema- Sample Demographics

Sample Size	**842**	
Gender	53% Female	
Age	18 – 24: 25 – 34: 35 – 44: 45 – 54: 55 – 64: 65+:	21% 39% 19% 11% 7% 3%
Highest level of Education	Less than High School High School / GED Some College 2- year College Degree 4-year College Degree Post-Graduate Degree	1% 11% 30% 12% 34% 12%
Household Income	<$60k: $60k - $120K: $120k - $180k: $180k +	63% 30% 6% 1%
Current Residence	Apartment / Condo Attached House Detached House Other	31% 17% 50% 2%
Own/Rent	52% Own	
State with Dynamic Pricing?	14% (50% of these are TOU pricing)	

Appendix C – Nudge Panel Experiments

Table 21: Naming- Cell Means

	Dependent Variables	*r* (effect size)	Control	Energy Type	Time of Day	Traffic Light	Cost Focused	Grid Load	Priced Focused	Price Focused_2	Price Focused_3
Label Effectiveness	How effective are the labels in the legend at describing each of the Time-of-Use periods?	0.21	**5.71** *1.31*	**5.65** *1.32*	**5.63** *1.22*	**5.71** *1.25*	**4.80** *1.60*	**5.72** *1.19*	**5.75** *1.37*	**5.58** *1.33*	**5.75** *1.32*
Reduce Consumption	Based on this information, how likely are you to reduce your Peak Price Electricity usage next month?	0.12	**5.63** *1.10*	**5.63** *1.21*	**5.60** *1.28*	**5.48** *1.36*	**5.40** *1.28*	**5.66** *1.17*	**5.89** *1.25*	**5.45** *1.38*	**5.58** *1.17*
Recall	Please recall the names of the three Time-Of-Use periods used in the question that you answered previously in this survey:	0.48	**0.17** *0.38*	**0** *0.00*	**0.27** *0.44*	**0.45** *0.50*	**0.01** *0.10*	**0.51** *0.50*	**0.56** *0.50*	**0.58** *0.50*	**0.60** *0.49*
Shift	Motivation to Change Behaviour	0.10	**0.88** *0.08*	**0.89** *0.08*	**0.90** *0.07*	**0.86** *0.09*	**0.89** *0.10*	**0.85** *0.10*	**0.92** *0.10*	**0.90** *0.09*	**0.90** *0.08*

0.00 *0.00*	Top **(bolded)** number represents the Mean Bottom *(italicized)* number represents the Standard Deviation

Measures Used per Question

Label Effectiveness	*Scale: (1 = "Very Ineffective" to 7 = "Very Effective")*
Reduce Consumption	*Scale: (1 = "Very Unlikely" to 7 = "Very Likely")*
Recall	*Multiple Choice*
Shift	*Universal DV question assessing likelihood of using appliances during various hours of the day*

Blue highlight denotes a significant difference from the control

p < .06
****p < .05***
*****p < .001***

Appendix C – Nudge Panel Experiments

Figure 28: TOU Visual- Conditions

Appendix C – Nudge Panel Experiments

Table 22: TOU Visual- Cell Sizes

Condition		Total
Circular	**Control**	90
	Up-Side-Down Control	91
	Off Peak	94
	On Peak	96
	Simple	98
	Total	**496**
Linear	Full	102
	Simple Full	99
	Coloured Green	104
	Coloured Red	84
	Price	93
	Short	94
	Total	**576**
Total		**1060**

Appendix C – Nudge Panel Experiments

Table 23: TOU Visual- Sample Demographics

Sample Size	**1061**	
Gender	53% Female	
Age	18 – 24: 25 – 34: 35 – 44: 45 – 54: 55 – 64: 65+:	21% 39% 19% 11% 7% 3%
Highest level of Education	Less than High School High School / GED Some College 2- year College Degree 4-year College Degree Post-Graduate Degree	1% 11% 30% 12% 34% 12%
Household Income	<$60k: $60k - $120K: $120k - $180k: $180k +	63% 30% 6% 1%
Current Residence	Apartment / Condo Attached House Detached House Other	31% 17% 50% 2%
Own/Rent	52% Own	
State with Dynamic Pricing?	14% (50% of these are TOU pricing)	

Appendix C – Nudge Panel Experiments

Table 24: TOU Visual – Cell Means

	Dependent Variables	*r* (*effect size*)	Circular					Linear					
			Control	Upside-Down Control	On Peak	Off Peak	Simple	Full	Simple Full	On-peak	Off-peak	Price	Short
Understanding	Do you understand this image illustrating the Time-of-Use periods?	0.21	**6.60** *0.98*	**6.59** *0.92*	**6.24** *1.46*	**5.84** *1.63*	**6.46** *1.20*	**6.02** *0.98*	**6.52** *1.03*	**6.67** *0.95*	**6.45** *1.25*	**6.42** *1.10*	**6.60** *1.04*
	How easy do you think it is for the average American to understand this diagram illustrating the TOU periods?	0.16	**5.18** *1.29*	**4.84** *1.20*	**4.78** *1.46*	**4.85** *1.55*	**5.16** *1.24*	**5.41** *1.25*	**5.09** *1.33*	**5.45*** *1.33*	**5.22** *1.31*	**5.17** *1.17*	**5.34** *1.26*
Comprehension	Using the visual below, please select the start times and end times for each Time-of-Use period during a Summer Weekday: *(Average indicates % of perfect scores for the 3 periods)*	0.12	**0.80** *0.24*	**0.81** *0.24*	**0.79** *0.24*	**0.82** *0.21*	**0.82** *0.27*	**0.83** *0.24*	**0.81** *0.27*	**0.82** *0.27*	**0.86*** *0.20*	**0.78** *0.30*	**0.74** *0.27*
	Last June, a person washed a load of laundry at 2pm on Tuesday. This person then washed the exact same load of laundry at 6am on Friday. The cost of doing laundry is:	0.09	**0.84** *0.37*	**0.89** *0.31*	**0.81** *0.39*	**0.89** *0.31*	**0.86** *0.35*	**0.89** *0.31*	**0.91** *0.29*	**0.86** *0.35*	**0.84** *0.37*	**0.82** *0.39*	**0.86** *0.35*
	It's January and your neighbour wants to reduce their monthly electricity bill. Please select the most effective way(s) for them to save on their bill:	0.09	**0.49** *0.50*	**0.51** *0.50*	**0.47** *0.50*	**0.52** *0.50*	**0.46** *0.50*	**0.38** *0.49*	**0.49** *0.50*	**0.46** *0.50*	**0.49** *0.50*	**0.45** *0.50*	**0.56** *0.50*
Recall	According to thee Time-of-Use image you saw earlier in this survey, the most expensive time to consume electricity on a summer weekday is between the hours of:	0.17	**0.49** *0.50*	**0.53** *0.50*	**0.68**** *0.47*	**0.67**** *0.47*	**0.67**** *0.47*	**0.68**** *0.47*	**0.76**** *0.43*	**0.68**** *0.47*	**0.68**** *0.47*	**0.65**** *0.48*	**0.80***** *0.41*
Shift	Motivation to Change Behaviour	0.18	**0.89** *0.08*	**0.90** *0.08*	**0.91** *0.06*	**0.90** *0.08*	**0.90** *0.11*	**0.89** *0.06*	**0.90** *0.06*	**0.88** *0.10*	**0.90** *0.06*	**0.88** *0.11*	**0.85** *0.11*

0.00
0.00

Top **(bolded)** number represents the Mean
Bottom *(italicized)* number represents the Standard Deviation

Measures Used per Question

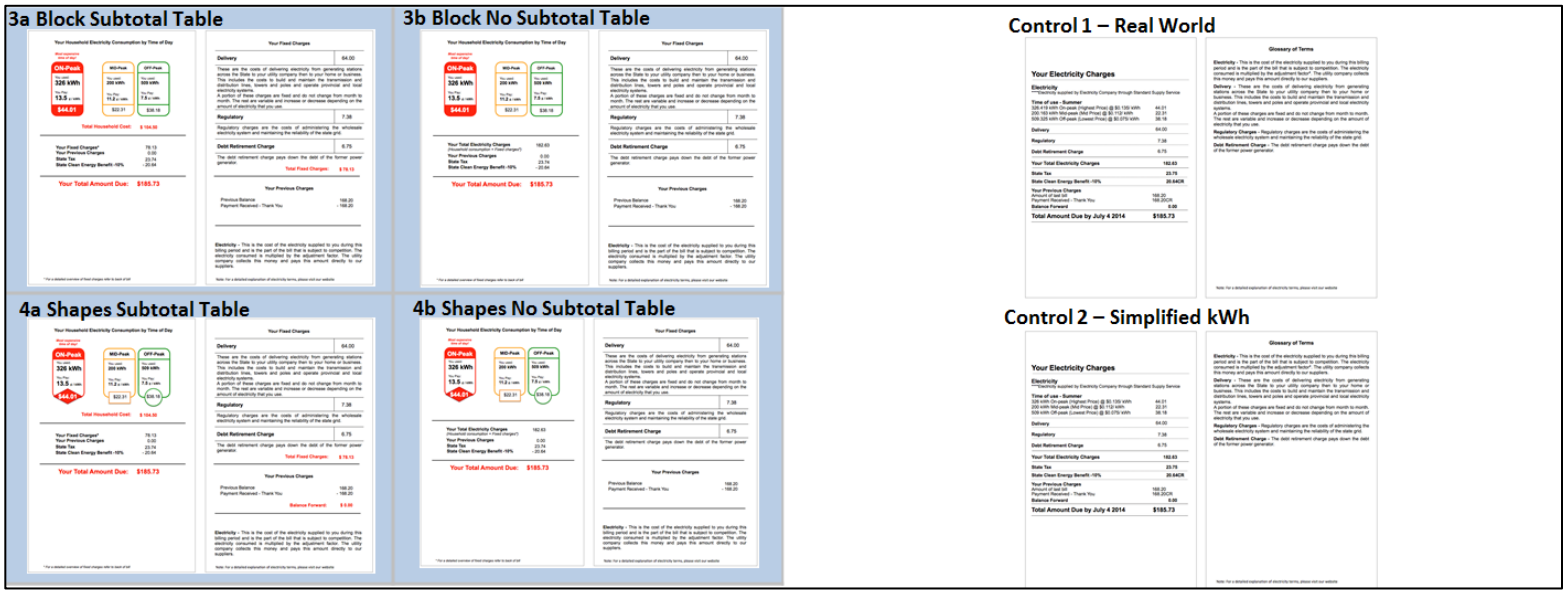
Understanding	*Scale: (1 = "Not at all" to 7 = "Completely")*
Comprehension	*Multiple Choice*
Recall	*Multiple Choice*
Shift	*Universal DV question assessing likelihood of using appliances during various hours of the day*

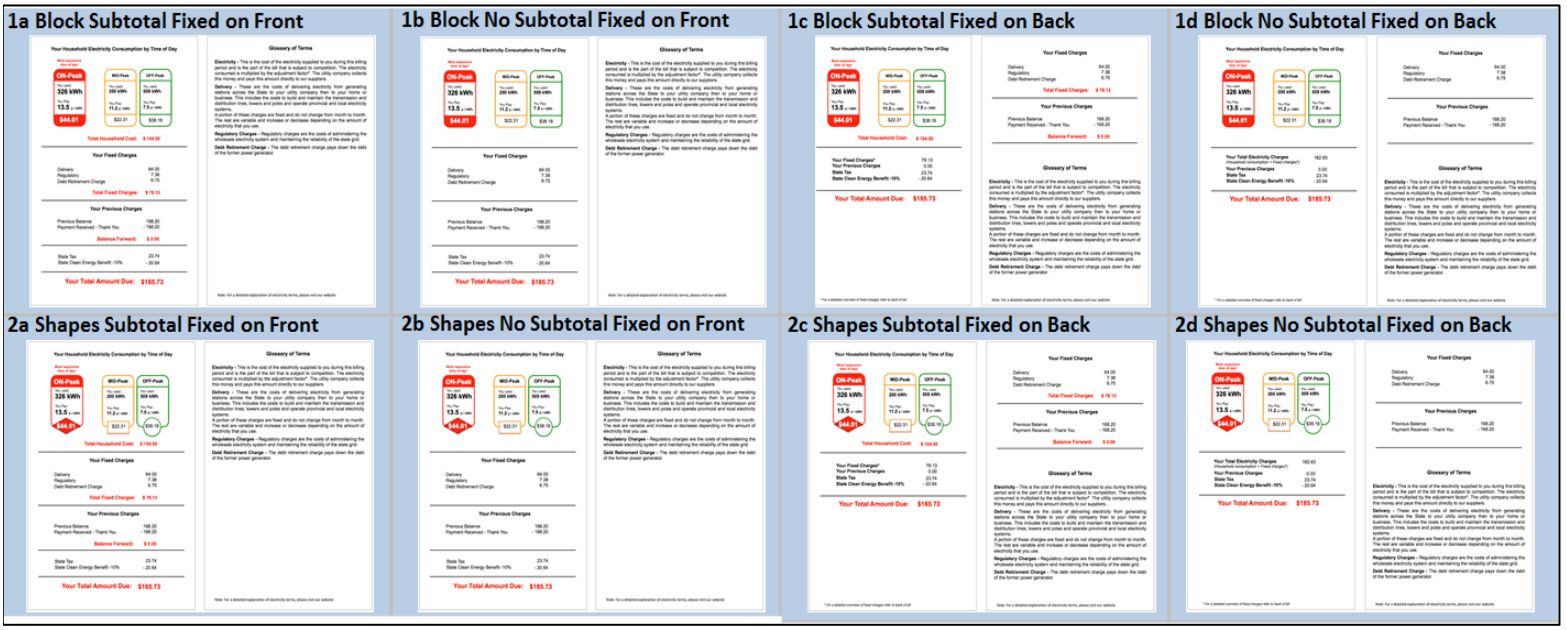
Blue highlight denotes a significant difference from the control

*** p < .06***
**** p < .05***
***** p < .001***

Appendix C – Nudge Panel Experiments

Figure 29: Price Clarity- Conditions





Appendix C – Nudge Panel Experiments

Table 25: Price Clarity- Cell Sizes

			Control		Total
			Standard	Simplified	
			47	42	89
			Factor: Design		Total
			Block	Shapes	
Factor: Fixed Prices	Front	Subtotals shown	45	36	81
		No subtotals	49	46	95
	Back	Subtotals shown	45	47	92
		No subtotals	39	39	78
Table		Subtotals shown	49	44	93
		No subtotals	45	46	91
Total			272	258	**619**

Appendix C – Nudge Panel Experiments

Table 26: Price Clarity- Sample Demographics

Sample Size		**619**
Gender		57% Female
Age	18 – 24: 25 – 34: 35 – 44: 45 – 54: 55 – 64: 65+:	19% 42% 18% 12% 7% 2%
Highest level of Education	Less than High School High School / GED Some College 2- year College Degree 4-year College Degree Post-Graduate Degree	1% 10% 27% 15% 34% 13%
Household Income	<$60k: $60k - $120K: $120k - $180k: $180k +	65% 29% 5% 1%
Current Residence	Apartment / Condo Attached House Detached House Other	34% 13% 49% 4%
Own/Rent	45% Own	
State with Dynamic Pricing?	16% (33% of these are TOU pricing)	

Appendix C – Nudge Panel Experiments

Table 27: Price Clarity- Cell Means

Dependent Variables		*r* (effect size)	Control	Control (Simplified kWh)	Block Layout						Shapes Layout					
					Sub-Total Breakdown			No Sub-Total Breakdown			Sub-Total Breakdown			No Sub-Total Breakdown		
					Fixed on Front	Fixed on Back	Table	Fixed on Front	Fixed on Back	Table	Fixed on Front	Fixed on Back	Table	Fixed on Front	Fixed on Back	Table
Understanding	How easy is it for you to understand this information?	0.15	**5.34** *1.37*	**5.79** *1.30*	**5.93** *1.03*	**5.24** *1.57*	**5.53** *1.50*	**5.59** *1.55*	**5.77** *1.25*	**5.65** *1.3*	**5.33** *1.6*	**5.40** *1.42*	**5.25** *1.5*	**5.33** *1.7*	**5.67** *1.44*	**5.74** *1.32*
	How easy do you think it is for the average American to understand this information?	0.16	**4.21** *1.41*	**4.83** *1.54*	**5.00** *1.33*	**4.58** *1.56*	**4.73** *1.58*	**4.61** *1.67*	**5.00** *1.47*	**4.73** *1.60*	**4.81** *1.67*	**4.81** *1.48*	**4.45** *1.66*	**4.41** *1.71*	**5.13** *1.45*	**4.85** *1.51*
Motivation (Composite, α = .98)	**1)** I feel like the cost savings would be worth the effort of shifting my electricity consuming activities (ex. laundry) to Off-Peak times of day; **2)** I feel motivated to conserve On-Peak electricity; **4)** I have consumed too much On-Peak electricity this period; **5)** I feel motivated to share my bill with others in my household, **6)** I feel motivated to shift my electricity usage to Off-Peak hours	0.13	**5.43** *0.97*	**5.42** *0.94*	**5.59** *0.91*	**5.43** *1.05*	**5.36** *1.02*	**5.49** *0.71*	**5.48** *1.11*	**5.79*** *0.81*	**5.42** *1.06*	**5.29** *0.90*	**5.39** *1.02*	**5.58** *0.90*	**5.36** *0.94*	**5.60** *0.97*
Fairness (Composite, α = .89)	**1)** The way electricity is priced is fair; **2)** I feel that the charges on my bill that are unrelated to Time-of-Use (ex. delivery, regulatory, debt retirement charge) are too high	0.15	**5.23** *1.31*	**5.33** *1.16*	**5.53** *0.80*	**5.32** *0.92*	**5.54** *0.95*	**5.21** *0.92*	**5.14** *1.21*	**5.59** *0.89*	**5.54** *1.15*	**5.3** *0.84*	**5.43** *0.99*	**5.14** *1.09*	**5.09** *1.22*	**5.39** *0.88*
Information Overload (Reverse Coded)	There is too much information on the bill	0.13	**5.15** *1.55*	**5.17** *1.85*	**5.27** *1.27*	**5.18** *1.60*	**5.33** *1.36*	**5.22** *1.60*	**5.54** *1.60*	**5.52** *1.35*	**4.83** *1.95*	**5.19** *1.57*	**4.86** *1.73*	**5.48** *1.26*	**5.38** *1.48*	**5.52** *1.09*
Comprehension (Score out of 5)	**1)** In the bill you just saw, what was the price of each of the three Time-of-Use periods?; **2)** On the bill you just saw, what was the current total amount owing?; **3)** According to the bill you just saw, you consumed the most amount (kWh) of electricity during:; **4)** According to the bill you just saw, you were charged ($) the most for electricity consumed during which period?; **5)** According to the bill you just saw, approximately how much electricity did you consume during On-Peak hours?	0.22	**2.34** *1.27*	**2.36** *1.21*	**2.56** *1.25*	**2.91** *1.41*	**2.90** *1.14*	**3.31**** *1.25*	**2.46** *1.02*	**3.29**** *1.52*	**2.72** *1.21*	**2.83** *1.46*	**2.70** *1.52*	**2.91** *1.49*	**2.85** *1.44*	**3.09*** *1.26*
Engagement	I would like to see the back of the bill	0.14	**0.68** *0.47*	**0.81** *0.40*	**0.69** *0.47*	**0.80** *0.40*	**0.73** *0.45*	**0.82** *0.39*	**0.67** *0.48*	**0.87** *0.34*	**0.83** *0.38*	**0.74** *0.44*	**0.82** *0.39*	**0.76** *0.43*	**0.79** *0.41*	**0.85** *0.36*
Recall	According to the bill you saw earlier, what was your total dollar charge for On-Peak electricity?	0.11	**0.51** *0.51*	**0.55** *0.50*	**0.49** *0.51*	**0.56** *0.50*	**0.53** *0.50*	**0.57** *0.51*	**0.51** *0.51*	**0.58** *0.50*	**0.50** *0.50*	**0.49** *0.50*	**0.52** *0.51*	**0.54** *0.51*	**0.56** *0.50*	**0.63** *0.49*
Shift	Motivation to Change Behaviour	0.14	**0.88** *0.10*	**0.88** *0.10*	**0.89** *0.09*	**0.9** *0.09*	**0.88** *0.09*	**0.90** *0.07*	**0.86** *0.14*	**0.90** *0.09*	**0.87** *0.15*	**0.88** *0.11*	**0.87** *0.13*	**0.88** *0.09*	**0.86** *0.15*	**0.85** *0.13*

0.00
0.00
Top **(bolded)** number represents the Mean
Bottom *(italicized)* number represents the Standard Deviation

Measures Used per Question

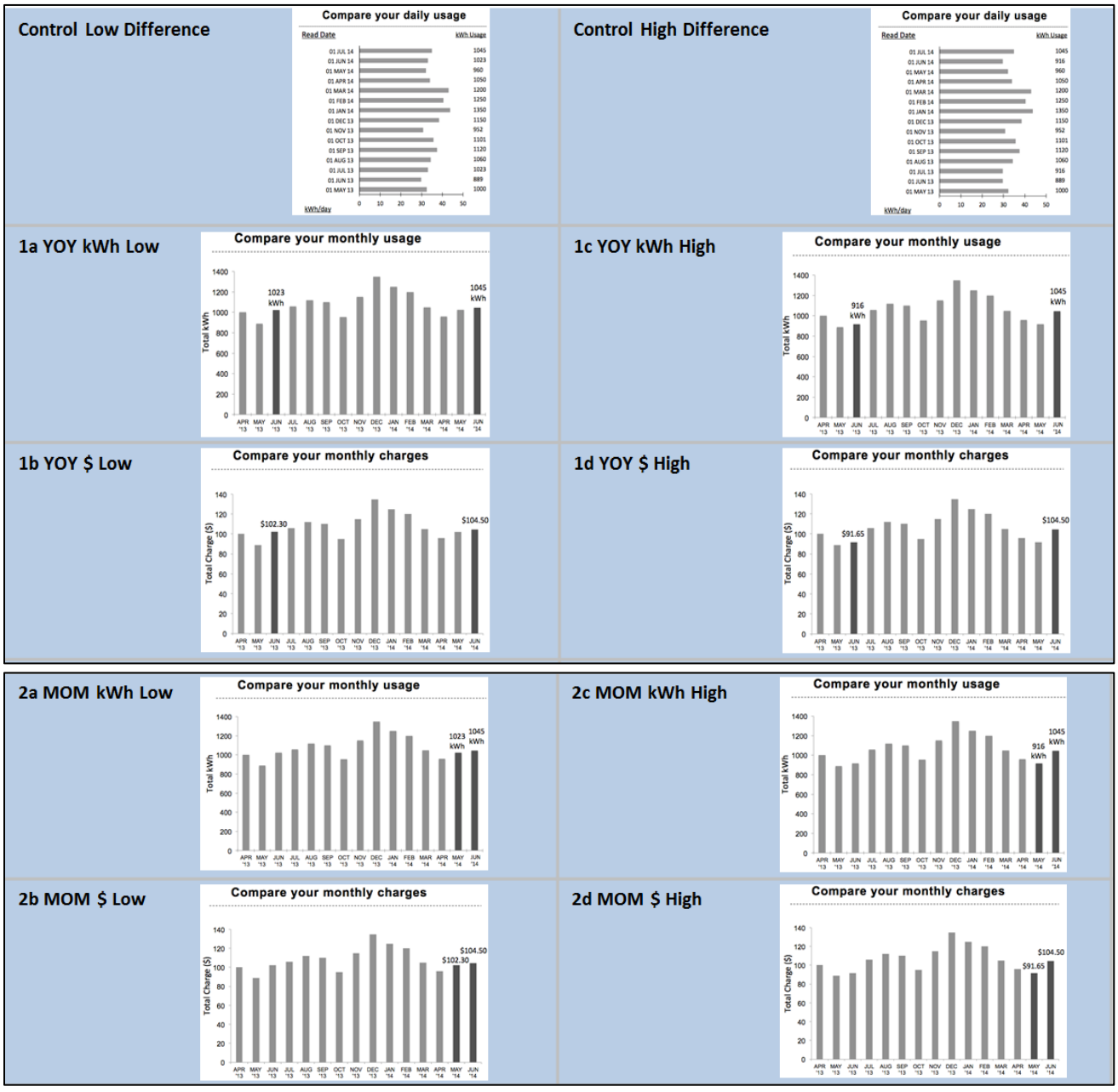
Understanding	*Scale: (1 = "Very Difficult" to 7 = "Very Easy")*
Motivation, Fairness, & Information Overload	*Scale: (1 = "Strongly Disagree" to 7 = "Strongly Agree")*
Comprehension, Engagement, & Recall	*Multiple Choice*
Shift	*Universal DV question assessing likelihood of using appliances during various hours of the day*

Blue highlight denotes a significant difference from both controls (control and control simplified kWh)

p < .06
****p < .05***
*****p < .001***

Appendix C – Nudge Panel Experiments

Figure 30: Longitudinal Consumption Visual- Cell Sizes



Appendix C – Nudge Panel Experiments

Table 28: Longitudinal Consumption Visual- Cell Sizes

				Factor: Difference between consumption or electricity charge (between current and month prior or current and equivalent month a year prior)		
				Large Difference	Small Difference	Total
			Control	86	91	177
Factor: Highlighted Comparison	MOM	kWh	kWh + MOM	90	95	185
		$monthly Charge	$monthly + MOM	89	91	180
	YOY	kWh	kWh +YOY	93	86	179
		$monthly Charge	$monthly +YOY	83	92	175
			Total	441	455	**896**

Appendix C – Nudge Panel Experiments

Table 29: Longitudinal Consumption Visual- Sample Demographics

Sample Size	**896**	
Gender	50% Female	
Age	18 – 24: 25 – 34: 35 – 44: 45 – 54: 55 – 64: 65+	21% 41% 21% 10% 6% 1%
Highest level of Education	Less than High School High School / GED Some College 2- year College Degree 4-year College Degree Post-Graduate Degree	1% 11% 28% 13% 36% 11%
Household Income	<$60k: $60k - $120K: $120k - $180k: $180k +	66% 29.5% 4% 0.5%
Current Residence	Apartment / Condo Attached House Detached House Other	33% 13% 52% 2%
Own/Rent	50% Own	
State with Dynamic Pricing?	15% (40% of these are TOU pricing)	

Appendix C – Nudge Panel Experiments

Table 30: Longitudinal Consumption Visual– Cell Means

	Dependent Variables	r (effect size)	Control		Low Difference				High Difference			
			Low Difference	High Difference	YOY kWh	YOY $	MOM kWh	MOM $	YOY kWH	YOY $	MOM kWh	MOM $
Understanding	How easy is it for you to understand this information?	0.22	**5.85**	**5.56**	**6.20***	**6.37***	**5.95**	**5.80**	**6.22***	**6.36***	**6.19***	**6.36***
			1.31	*1.37*	*1.10*	*0.86*	*1.08*	*1.22*	*1.15*	*1.05*	*1.00*	*1.14*
	How easy do you think it is for the average American to understand this information?	0.22	**4.92**	**4.85**	**5.09***	**5.78***	**5.05***	**5.26***	**5.35***	**5.59***	**5.34***	**5.54***
			1.25	*1.54*	*1.25*	*0.98*	*1.19*	*1.21*	*1.31*	*1.26*	*1.33*	*1.23*
Behaviour	I am likely to reduce my electricity consumption after seeing this visual	0.10	**4.38**	**4.34**	**4.55**	**4.59**	**4.53**	**4.64**	**4.76**	**4.77**	**4.44**	**4.72**
			1.37	*1.57*	*1.50*	*1.75*	*1.40*	*1.61*	*1.33*	*1.38*	*1.62*	*1.62*
	Others are likely to reduce their electricity consumption after seeing this visual	0.12	**4.18**	**4.06**	**4.28***	**4.55***	**4.38***	**4.48***	**4.63***	**4.49***	**4.33***	**4.55***
			1.35	*1.57*	*1.4*	*1.52*	*1.32*	*1.54*	*1.22*	*1.35*	*1.48*	*1.53*
Comprehension	Based on the graph, what was your total charge for the month of June 2014?	0.09	**0.92**	**0.88**	**0.92**	**0.88**	**0.88**	**0.90**	**0.95**	**0.90**	**0.91**	**0.96**
			0.27	*0.32*	*0.28*	*0.33*	*0.32*	*0.3*	*0.23*	*0.3*	*0.29*	*0.21*
	According to the graph that you saw earlier in the survey, what was the total electricity charge for the most recently billed month?	0.59	**0.92**	**0.88**	**0.92**	**0.88**	**0.88**	**0.9**	**0.95**	**0.9**	**0.91**	**0.96**
			0.27	*0.32*	*0.28*	*0.33*	*0.32*	*0.3*	*0.23*	*0.3*	*0.29*	*0.21*
	According to the graph that you saw earlier in the survey, how many kilowatt-hours (kWh) were consumed in the most recently billed month?	0.68	**0.12**	**0.51**	**0.86***	**0.93***	**0.98***	**0.97***	**0.92***	**0.94***	**0.94***	**0.97***
			0.33	*0.50*	*0.35*	*0.25*	*0.14*	*0.18*	*0.27*	*0.24*	*0.23*	*0.18*
Shift	Motivation to Change Behaviour	0.13	**0.95**	**0.97**	**0.97***	**0.95**	**0.98***	**0.97**	**0.98***	**0.96**	**0.98***	**0.97**
			0.12	*0.07*	*0.10*	*0.12*	*0.06*	*0.07*	*0.07*	*0.07*	*0.06*	*0.09*

0.00	Top **(bolded)** number represents the Mean
0.00	Bottom *(italicized)* number represents the Standard Deviation

Measures Used per Question

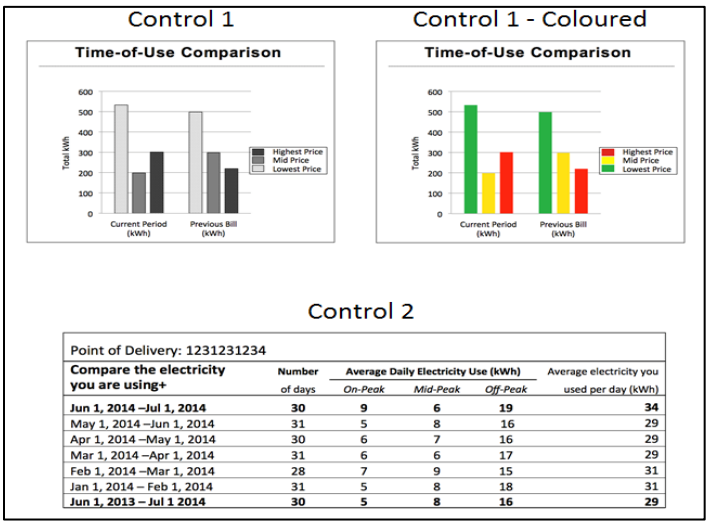
Understanding	*Scale: (1 = "Very Difficult" to 7 = "Very Easy")*
Behaviour	*Scale: (1 = "Strongly Disagree" to 7 = "Strongly Agree")*
Comprehension	*Multiple Choice*
Shift	*Universal DV question assessing likelihood of using appliances during various hours of the day*

Blue highlight denotes a significant difference compared to both controls

p < .06
****p < .05***
*****p < .001***

Appendix C – Nudge Panel Experiments

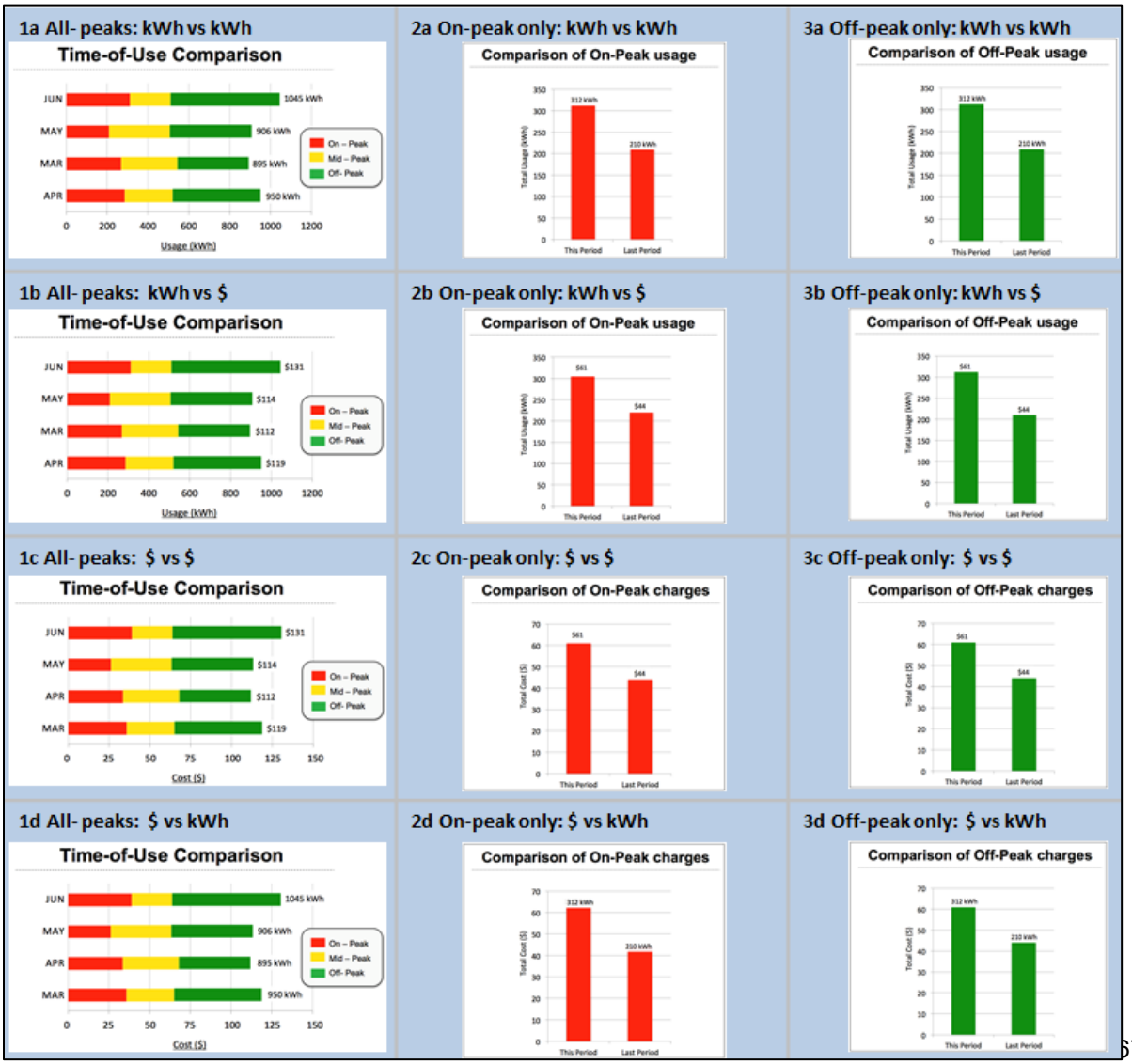
Figure 31: TOU Period Consumption Visual- Conditions



Control 2

Point of Delivery: 1231231234

Compare the electricity you are using+	Number of days	Average Daily Electricity Use (kWh) On-Peak	Mid-Peak	Off-Peak	Average electricity you used per day (kWh)
Jun 1, 2014 –Jul 1, 2014	**30**	**9**	**6**	**19**	**34**
May 1, 2014 –Jun 1, 2014	31	5	8	16	29
Apr 1, 2014 –May 1, 2014	30	6	7	16	29
Mar 1, 2014 –Apr 1, 2014	31	6	6	17	29
Feb 1, 2014 –Mar 1, 2014	28	7	9	15	31
Jan 1, 2014 – Feb 1, 2014	31	5	8	18	31
Jun 1, 2013 – Jul 1 2014	**30**	**5**	**8**	**16**	**29**



Appendix C – Nudge Panel Experiments

Table 31: TOU Period Consumption Visual- Cell Sizes

			Control 1		Control 2 (Hydro One)	Total
			Standard (Toronto Hydro)	Coloured		
			58	58	53	169
			Factor: Period shown in visual			
			All	On-Peak Only	Off-Peak Only	**Total**
Factor: Metric comparison	kWh on x-axis	kWh vs kWh	58	57	58	173
		kWh vs $	60	60	58	178
	$ on x-axis	$ vs $	55	60	57	172
		$ vs kWh	60	55	59	174
Total			233	232	232	**866**

Appendix C – Nudge Panel Experiments

Table 32: TOU Period Consumption Visual- Sample Demographics

Sample Size	**866**	
Gender	57% Female	
Age	18 – 24: 25 – 34: 35 – 44: 45 – 54: 55 – 64: 65+:	20% 42% 20% 11% 5% 1%
Highest level of Education	Less than High School High School / GED Some College 2- year College Degree 4-year College Degree Post-Graduate Degree	1% 10% 29% 13% 36% 11%
Household Income	<$60k: $60k - $120K: $120k - $180k: $180k +	61% 32% 5% 2%
Current Residence	Apartment / Condo Attached House Detached House Other	30% 14% 54% 3%
Own/Rent	52% Own	
State with Dynamic Pricing?	14% (34% of these are TOU pricing)	

Appendix C – Nudge Panel Experiments

Table 33: TOU Period Consumption Visual- Cell Means

	Condition	r (effect size)	Control (Toronto Hydro)	Control (Toronto Hydro In Colour)	Control (Hydro One)	All - Peaks				On-Peak Only				Off-Peak Only			
						kWh on x-axis		$ on x-axis		kWh on x-axis		$ on x-axis		kWh on x-axis		$ on x-axis	
						kWh in plot area	$ in plot area	kWh in plot area	$ in plot area	kWh in plot area	$ in plot area	kWh in plot area	$ in plot area	kWh in plot area	$ in plot area	kWh in plot area	$ in plot area
Understanding	How easy is it for you to understand this information?	0.14	**5.66**	**5.55**	**5.45**	**5.59**	**5.65**	**5.47**	**5.82**	**6.17***	**5.81**	**5.83**	**5.73**	**5.95**	**5.64**	**5.7**	**5.54**
			1.38	*1.25*	*1.50*	*1.30*	*1.48*	*1.37*	*1.10*	*0.91*	*1.25*	*1.25*	*1.15*	*1.18*	*1.35*	*1.24*	*1.47*
	How easy do you think it is for the average American to understand this information?	0.14	**4.86**	**4.88**	**4.68**	**4.83**	**4.80**	**4.56**	**4.88**	**5.35***	**5.02**	**5.20**	**5.04**	**5.09**	**4.78**	**5.09**	**5.00**
			1.41	*1.58*	*1.62*	*1.38*	*1.66*	*1.32*	*1.38*	*1.29*	*1.25*	*1.35*	*1.49*	*1.25*	*1.26*	*1.34*	*1.50*
Reduce Consumption	I am likely to reduce my electricity consumption after seeing this visual	0.20	**4.67**	**4.81**	**4.96**	**4.71**	**5.00**	**4.56**	**4.18**	**5.17***	**5.17***	**5.23***	**5.29***	**4.91**	**4.64**	**4.96**	**4.66**
			1.42	*1.40*	*1.44*	*1.52*	*1.50*	*1.42*	*1.82*	*1.38*	*1.39*	*1.28*	*1.38*	*1.35*	*1.77*	*1.52*	*1.63*
	Others are likely to reduce their electricity consumption after seeing this visual	0.20	**4.24**	**4.40**	**4.30**	**4.43**	**4.52**	**4.40**	**4.02**	**5.00****	**4.89***	**4.87***	**4.89***	**4.66**	**4.64**	**4.86**	**4.51**
			1.53	*1.43*	*1.65*	*1.45*	*1.31*	*1.41*	*1.56*	*1.25*	*1.25*	*1.33*	*1.33*	*1.35*	*1.35*	*1.47*	*1.41*
Motivation (Composite; α = .87)	**1)** I feel motivated to conserve On-Peak electricity; **2)** I feel motivated to share this with others in my household; **3)** I feel motivated to shift my electricity usage to Off-peak hours; **4)** I feel like the cost savings would be worth the effort of shifting my electricity consuming activities Off-Peak times of day	0.17	**5.32**	**5.34**	**5.18**	**5.06**	**5.48**	**4.84**	**5.04**	**5.40**	**5.42**	**5.35**	**5.44**	**5.38**	**4.81**	**5.03**	**5.22**
			0.97	*1.00*	*1.23*	*1.32*	*1.17*	*1.13*	*1.47*	*1.06*	*1.03*	*1.12*	*1.28*	*0.93*	*1.59*	*1.15*	*1.32*
Already Conserving	I feel like I am already doing everything I can to conserve electricity	0.12	**4.47**	**3.91**	**4.19**	**4.62**	**4.16**	**4.15**	**4.38**	**4.40**	**4.05**	**4.16**	**4.33**	**4.26**	**4.48**	**4.12**	**4.21**
			1.56	*1.53*	*1.52*	*1.56*	*1.32*	*1.47*	*1.70*	*1.58*	*1.46*	*1.45*	*1.63*	*1.40*	*1.51*	*1.54*	*1.50*
Consuming Too Much	I have consumed too much On-Peak electricity this period/month	0.19	**4.64**	**4.71**	**4.60**	**4.36**	**4.73**	**4.18**	**4.40**	**5.14**	**4.68**	**4.87**	**5.00**	**4.52**	**4.12**	**4.39**	**4.86**
			1.45	*1.41*	*1.62*	*1.68*	*1.46*	*1.46*	*1.66*	*1.34*	*1.36*	*1.38*	*1.52*	*1.42*	*1.57*	*1.19*	*1.49*
Comprehension (Score out of 2)	Based on the graph, your Off-Peak consumption for the (current period/most recent month) is _____ than your Off-Peak consumption from (your previous bill /the month prior Based on the graph, your On-Peak consumption for the (current period/most recent month) is _____ than your On-Peak consumption from (your previous bill /the month prior	0.41	**1.53**	**1.55**	**1.69**	**1.91****	**1.89****	**1.75**	**1.73**	**1.42**	**1.35**	**1.27**	**1.27**	**1.24**	**1.11**	**1.18**	**1.09**
			0.71	*0.68*	*0.64*	*0.33*	*0.36*	*0.56*	*0.54*	*0.65*	*0.64*	*0.55*	*0.49*	*0.66*	*0.78*	*0.58*	*0.68*
Recall	According to the content you have seen in this survey, electricity is most expensive during which Time-of-Use period?	0.14	**0.91**	**0.93**	**0.85**	**0.88**	**0.95**	**0.88**	**0.91**	**0.89**	**0.95**	**0.96**	**0.86**	**0.95**	**0.91**	**0.96**	**0.95**
			0.91	*0.93*	*0.85*	*0.88*	*0.95*	*0.88*	*0.91*	*0.89*	*0.95*	*0.96*	*0.86*	*0.95*	*0.91*	*0.96*	*0.95*
Shift	Motivation to Change Behaviour	0.11	**0.89**	**0.89**	**0.89**	**0.88**	**0.88**	**0.87**	**0.88**	**0.89**	**0.89**	**0.89**	**0.89**	**0.89**	**0.91**	**0.88**	**0.86**
			0.09	*0.07*	*0.09*	*0.10*	*0.08*	*0.11*	*0.10*	*0.10*	*0.08*	*0.10*	*0.08*	*0.09*	*0.08*	*0.13*	*0.10*

0.00	Top **(bolded)** number represents the Mean
0.00	Bottom *(italicized)* number represents the Standard Deviation

Measures Used per Question

Understanding	*Scale: (1 = "Very Difficult" to 7 = "Very Easy")*
Reduce Consumption, Motivation, Already Conserving, & Consuming too Much	*Scale: (1 = "Strongly Disagree" to 7 = "Strongly Agree")*
Comprehension and Recall	*Multiple Choice*
Shift	*Universal DV question assessing likelihood of using appliances during various hours of the day*

Blue highlight denotes results that were significantly greater than the Hydro One control

Orange highlight denotes results that were significantly greater than both controls

Grey highlight denotes results that were significantly greater than the Toronto Hydro control

p < .05

****p < .05***

*****p < .001***

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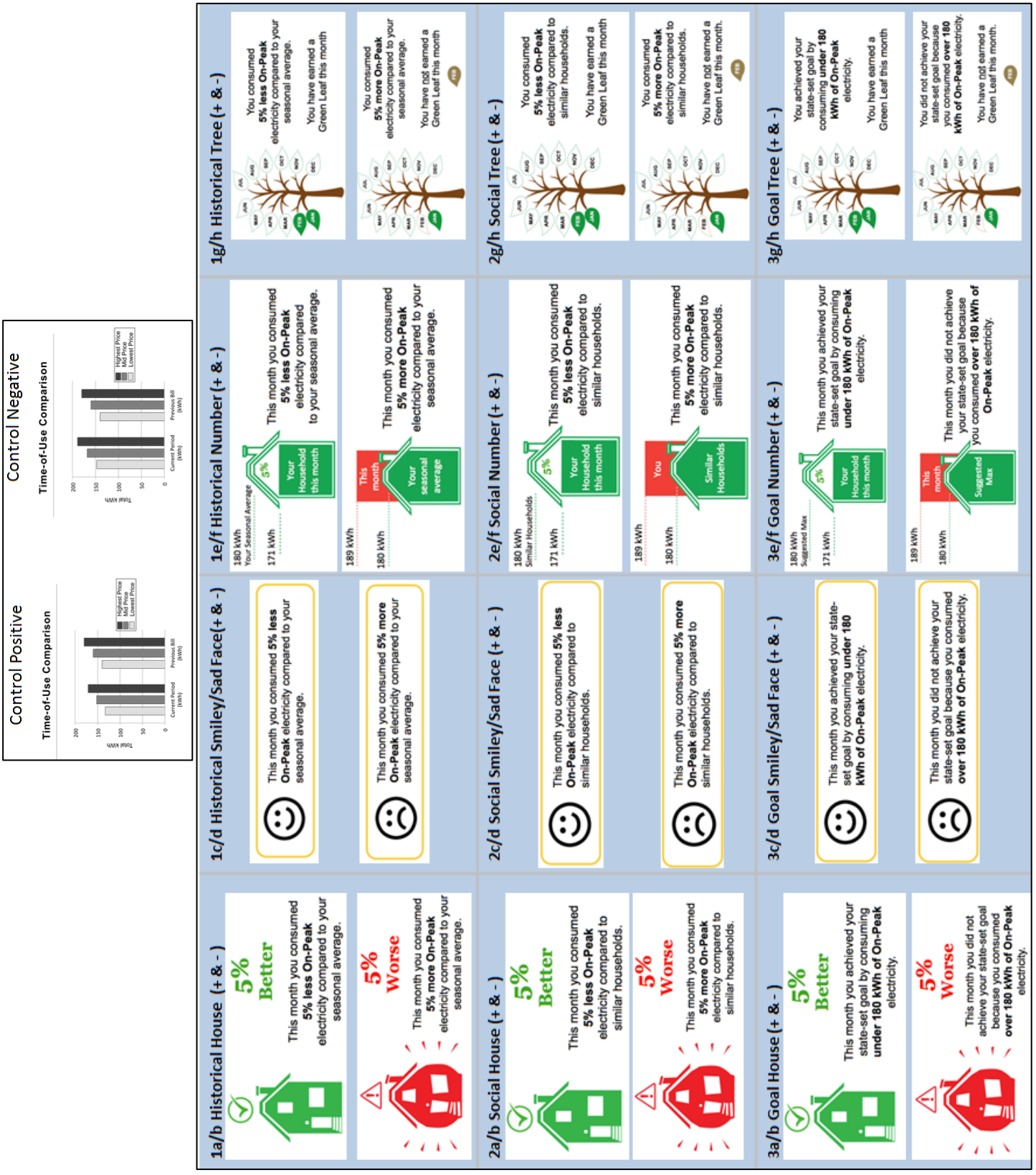
Figure 32: Consumption Benchmarks- Conditions



Appendix C – Nudge Panel Experiments

Table 34: Consumption Benchmarks- Cell Sizes

					Control Positive	Control Negative	Total
					64	53	117
			Factor: Image Type				Total
			House	Emoticon	Number House	Tree	
Factor: Message Type	Positive	Historical	58	58	56	62	231
		Social	62	58	55	62	237
		Goal	60	60	53	60	233
	Negative	Historical	58	58	56	62	234
		Social	63	64	57	63	247
		Goal	59	60	60	62	241
		Total	360	358	337	371	**1423**

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Table 35: Consumption Benchmarks- Sample Demographics

Sample Size	**1423**	
Gender	55% Female	
Age	18 – 24: 25 – 34: 35 – 44: 45 – 54: 55 – 64: 65+:	21% 43% 20% 10% 5% 1%
Highest level of Education	Less than High School High School / GED Some College 2- year College Degree 4-year College Degree Post-Graduate Degree	1% 10% 29% 13% 36% 11%
Household Income	<$60k: $60k - $120K: $120k - $180k: $180k +	61% 32% 5% 2%
Current Residence	Apartment / Condo Attached House Detached House Other	30% 14% 54% 3%
Own/Rent	51% Own	
State with Dynamic Pricing?	14% (42% of these are TOU pricing)	

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Table 36: Consumption Benchmarks- Cell Means

	Dependent Variable	r (effect size)	Control (+)	Control (-)	Goal: Narrow House (+)	Goal: Wide House (-)	Goal: Happy Emoticon (+)	Goal: Sad Emoticon (-)	Goal: # House (+)	Goal: # House (-)	Goal: Goal Tree (+)	Goal: Goal Tree (-)
Reducing On-Peak Consumption	After seeing this visual on my electricity bill, I am likely to consume _____ On-Peak electricity.	0.17	**2.63**	**4.34**	**2.85**	**2.69****	**3.07**	**2.90***	**2.87**	**2.75****	**3.08**	**2.48*****
			1.21	*1.34*	*1.2*	*1.39*	*1.27*	*1.34*	*1.09*	*1.34*	*1.18*	*1.26*
	After seeing this visual on their electricity bill, others are likely to consume _____ On-Peak electricity.	0.20	**2.89**	**4.43**	**3.20**	**2.71*****	**3.60**	**2.95****	**3.30**	**2.62*****	**3.70**	**2.84****
			1.27	*1.22*	*1.18*	*0.91*	*1.45*	*1.11*	*1.20*	*0.94*	*1.11*	*1.10*
Guilt/"Offensive"	If I were to see this visual on my electricity bill, I would find it offensive	0.26	**2.00**	**2.15**	**2.17**	**3.29*****	**2.53**	**2.95****	**2.08**	**2.22**	**2.07**	**2.63**
			1.36	*1.39*	*1.45*	*1.86*	*1.69*	*1.69*	*1.27*	*1.35*	*1.38*	*1.52*
	If I were to see this visual on my electricity bill, it would make me feel guilty	0.36	**2.95**	**3.30**	**3.12**	**4.00***	**3.00**	**4.43*****	**4.02**	**3.60**	**2.77**	**4.05**
			1.87	*1.78*	*1.67*	*1.65*	*1.62*	*1.54*	*1.57*	*1.69*	*1.72*	*1.65*
Inclusion	This visual should be included on electricity bills	0.14	**3.88**	**3.28**	**4.05**	**3.68**	**3.77**	**3.80**	**3.91**	**3.77**	**3.73**	**3.73**
			1.96	*1.69*	*1.72*	*1.92*	*1.85*	*1.62*	*1.69*	*1.73*	*1.71*	*1.86*
Useful/Motivations	If I were to see this visual on my electricity bill, I would find it useful	0.14	**5.41**	**5.32**	**5.8**	**5.31**	**5.52**	**5.47**	**5.72**	**5.83**	**5.45**	**5.55**
			1.62	*1.34*	*1.23*	*1.68*	*1.16*	*1.27*	*0.95*	*1.04*	*1.45*	*1.39*
	If I were to see this visual on my electricity bill, I would feel motivated to conserve On-Peak electricity	0.13	**5.38**	**5.21**	**5.53**	**5.27**	**5.32**	**5.48**	**5.6**	**5.62**	**5.18**	**5.56**
			1.59	*1.26*	*1.40*	*1.57*	*1.23*	*1.19*	*1.01*	*1.18*	*1.41*	*1.37*
	If I were to see this visual on my electricity bill, I would feel motivated to share it with others	0.17	**5.52**	**5.64**	**5.58**	**4.88**	**5.42**	**4.95**	**5.77**	**5.58**	**5.18**	**5.37**
			1.72	*1.15*	*1.39*	*1.87*	*1.41*	*1.53*	*0.91*	*1.43*	*1.64*	*1.58*
Ease of Understanding	This visual is easy to understand	0.14	**5.45**	**5.40**	**5.98**	**5.81**	**5.65**	**5.90**	**5.66**	**6.12**	**5.85**	**6.03**
			1.64	*1.35*	*1.08*	*1.32*	*1.29*	*1.15*	*1.37*	*0.92*	*1.22*	*0.90*
Recall	According to the image you saw earlier in the study, your electricity consumption differed from by ____%.	0.40	*NA*	*NA*	**0.60**	**0.58**	**0.15**	**0.18**	**0.40**	**0.33**	**0.17**	**0.13**
					0.49	*0.5*	*0.36*	*0.39*	*0.49*	*0.48*	*0.38*	*0.34*
Shift	Motivation to Change Behaviour	0.14	**0.90**	**0.86**	**0.89**	**0.89**	**0.89**	**0.87**	**0.85**	**0.87**	**0.87**	**0.90**
			0.10	*0.15*	*0.12*	*0.08*	*0.10*	*0.13*	*0.11*	*0.10*	*0.10*	*0.08*

	Dependent Variable	r (effect size)	Control (+)	Control (-)	Historical: Narrow House (+)	Historical: Wide House (-)	Historical: Happy Emoticon (+)	Historical: Sad Emoticon (-)	Historical: # House (+)	Historical: # House (-)	Historical: Goal Tree (+)	Historical: Goal Tree (-)
Reducing On-Peak Consumption	After seeing this visual on my electricity bill, I am likely to consume _____ On-Peak electricity.	0.17	**2.63**	**4.34**	**3.05**	**2.53*****	**2.96**	**2.55*****	**3.13**	**2.91***	**2.68**	**3.12**
			1.21	*1.34*	*1.41*	*1.26*	*1.03*	*1.33*	*1.53*	*1.42*	*1.02*	*1.23*
	After seeing this visual on their electricity bill, others are likely to consume _____ On-Peak electricity.	0.20	**2.89**	**4.43**	**3.15**	**2.82****	**3.46**	**2.67*****	**3.43**	**3.00***	**3.02**	**3.35**
			1.27	*1.22*	*1.22*	*1.27*	*1.24*	*1.15*	*1.41*	*1.19*	*1.22*	*1.16*
Guilt/"Offensive"	If I were to see this visual on my electricity bill, I would find it offensive	0.26	**2.00**	**2.15**	**2.23**	**2.76**	**2.16**	**2.66**	**1.83**	**1.95**	**1.76**	**2.51**
			1.36	*1.39*	*1.42*	*1.69*	*1.47*	*1.46*	*1.37*	*1.31*	*0.97*	*1.5*
	If I were to see this visual on my electricity bill, it would make me feel guilty	0.36	**2.95**	**3.30**	**2.62**	**4.22****	**2.75**	**4.50*****	**2.69**	**3.80**	**2.80**	**3.85**
			1.87	*1.78*	*1.40*	*1.87*	*1.52*	*1.72*	*1.70*	*1.63*	*1.64*	*1.67*
Inclusion	This visual should be included on electricity bills	0.14	**3.88**	**3.28**	**3.41**	**3.84**	**3.37**	**3.95**	**3.76**	**3.73**	**4.34**	**3.85**
			1.96	*1.69*	*1.87*	*1.83*	*1.60*	*1.65*	*1.83*	*1.78*	*1.73*	*1.70*
Useful/Motivations	If I were to see this visual on my electricity bill, I would find it useful	0.14	**5.41**	**5.32**	**5.44**	**5.91**	**5.63**	**5.66**	**5.85**	**5.71**	**5.81**	**5.39**
			1.62	*1.34*	*1.31*	*1.27*	*1.25*	*1.22*	*0.96*	*1.12*	*0.99*	*1.33*
	If I were to see this visual on my electricity bill, I would feel motivated to conserve On-Peak electricity	0.13	**5.38**	**5.21**	**5.15**	**5.64**	**5.65**	**5.34**	**5.59**	**5.46**	**5.71**	**5.39**
			1.59	*1.26*	*1.44*	*1.39*	*1.19*	*1.33*	*1.22*	*1.24*	*1.05*	*1.19*
	If I were to see this visual on my electricity bill, I would feel motivated to share it with others	0.17	**5.52**	**5.64**	**5.11**	**5.40**	**5.30**	**5.45**	**5.76**	**5.57**	**5.81**	**5.15**
			1.72	*1.15*	*1.62*	*1.57*	*1.61*	*1.47*	*1.33*	*1.35*	*1.12*	*1.55*
Ease of Understanding	This visual is easy to understand	0.14	**5.45**	**5.40**	**5.77**	**6.01***	**5.68**	**5.86***	**5.93**	**5.84**	**5.98**	**5.68**
			1.64	*1.35*	*1.28*	*1.21*	*1.38*	*1.15*	*1.13*	*1.32*	*1.22*	*1.35*
Recall	According to the image you saw earlier in the study, your electricity consumption differed from by ____%.	0.40	*NA*	*NA*	**0.74**	**0.69**	**0.67**	**0.69**	**0.78**	**0.73**	**0.54**	**0.45**
					0.44	*0.47*	*0.48*	*0.47*	*0.42*	*0.45*	*0.5*	*0.5*
Shift	Motivation to Change Behaviour	0.14	**0.90**	**0.86**	**0.89**	**0.90**	**0.89**	**0.89**	**0.89**	**0.91**	**0.89**	**0.87**
			0.10	*0.15*	*0.11*	*0.10*	*0.10*	*0.09*	*0.11*	*0.07*	*0.11*	*0.11*

	Dependent Variable	r (effect size)	Control (+)	Control (-)	Social: Narrow House (+)	Social: Wide House (-)	Social: Happy Emoticon (+)	Social: Sad Emoticon (-)	Social: # House (+)	Social: # House (-)	Social: Goal Tree (+)	Social: Goal Tree (-)
Reducing On-Peak Consumption	After seeing this visual on my electricity bill, I am likely to consume _____ On-Peak electricity.	0.17	**2.63**	**4.34**	**2.94**	**2.81****	**3.12**	**3.17**	**2.67**	**3.09**	**2.87**	**3.02**
			1.21	*1.34*	*1.07*	*1.44*	*1.29*	*1.5*	*1.12*	*1.33*	*0.98*	*1.17*
	After seeing this visual on their electricity bill, others are likely to consume _____ On-Peak electricity.	0.20	**2.89**	**4.43**	**3.20**	**2.94****	**3.66**	**3.16**	**3.18**	**3.05**	**3.24**	**3.38**
			1.27	*1.22*	*1.22*	*1.05*	*1.25*	*1.20*	*1.28*	*0.97*	*1.22*	*1.11*
Guilt/"Offensive"	If I were to see this visual on my electricity bill, I would find it offensive	0.26	**2.00**	**2.15**	**2.13**	**2.97**	**1.97**	**2.83**	**2.29**	**2.35**	**1.74**	**2.48**
			1.36	*1.39*	*1.43*	*1.91*	*1.17*	*1.5*	*1.36*	*1.42*	*1.09*	*1.33*
	If I were to see this visual on my electricity bill, it would make me feel guilty	0.36	**2.95**	**3.30**	**2.89**	**3.94**	**2.72**	**4.31**	**2.69**	**3.61**	**2.81**	**4.11**
			1.87	*1.78*	*1.37*	*1.83*	*1.39*	*1.68*	*1.46*	*1.74*	*1.51*	*1.59*
Inclusion	This visual should be included on electricity bills	0.14	**3.88**	**3.28**	**3.98**	**3.27**	**4.07**	**3.64**	**3.80**	**3.68**	**4.16**	**3.98**
			1.96	*1.69*	*1.75*	*1.79*	*1.89*	*1.69*	*1.75*	*1.62*	*1.80*	*1.56*
Useful/Motivations	If I were to see this visual on my electricity bill, I would find it useful	0.14	**5.41**	**5.32**	**5.56**	**5.38**	**5.59**	**5.58**	**5.35**	**5.63**	**5.68**	**5.54**
			1.62	*1.34*	*1.24*	*1.43*	*1.2*	*1.1*	*1.34*	*0.98*	*1.29*	*1.06*
	If I were to see this visual on my electricity bill, I would feel motivated to conserve On-Peak electricity	0.13	**5.38**	**5.21**	**5.4**	**5.24**	**5.4**	**5.44**	**4.98**	**5.44**	**5.63**	**5.38**
			1.59	*1.26*	*1.35*	*1.64*	*1.41*	*1.19*	*1.76*	*1.07*	*1.27*	*1.24*
	If I were to see this visual on my electricity bill, I would feel motivated to share it with others	0.17	**5.52**	**5.64**	**5.48**	**4.89**	**5.50**	**5.28**	**5.24**	**5.51**	**5.60**	**5.22**
			1.72	*1.15*	*1.41*	*1.75*	*1.19*	*1.33*	*1.57*	*1.18*	*1.27*	*1.44*
Ease of Understanding	This visual is easy to understand	0.14	**5.45**	**5.40**	**5.89**	**5.62**	**5.81**	**5.95**	**5.73**	**5.89**	**6.08**	**5.79**
			1.64	*1.35*	*1.03*	*1.45*	*1.29*	*0.93*	*1.35*	*1.06*	*1.16*	*1.11*
Recall	According to the image you saw earlier in the study, your electricity consumption differed from by ____%.	0.40	*NA*	*NA*	**0.61**	**0.71**	**0.69**	**0.63**	**0.60**	**0.65**	**0.58**	**0.54**
					0.49	*0.46*	*0.47*	*0.49*	*0.49*	*0.48*	*0.5*	*0.50*
Shift	Motivation to Change Behaviour	0.14	**0.90**	**0.86**	**0.88**	**0.88**	**0.86**†***	**0.89**	**0.88**	**0.88**	**0.87**	**0.85**
			0.10	*0.15*	*0.10*	*0.10*	*0.12*	*0.09*	*0.11*	*0.11*	*0.11*	*0.16*

0.00	Top **(bolded)** number represents the Mean
0.00	Bottom *(italicized)* number represents the Standard Deviation

Measures Used per Question

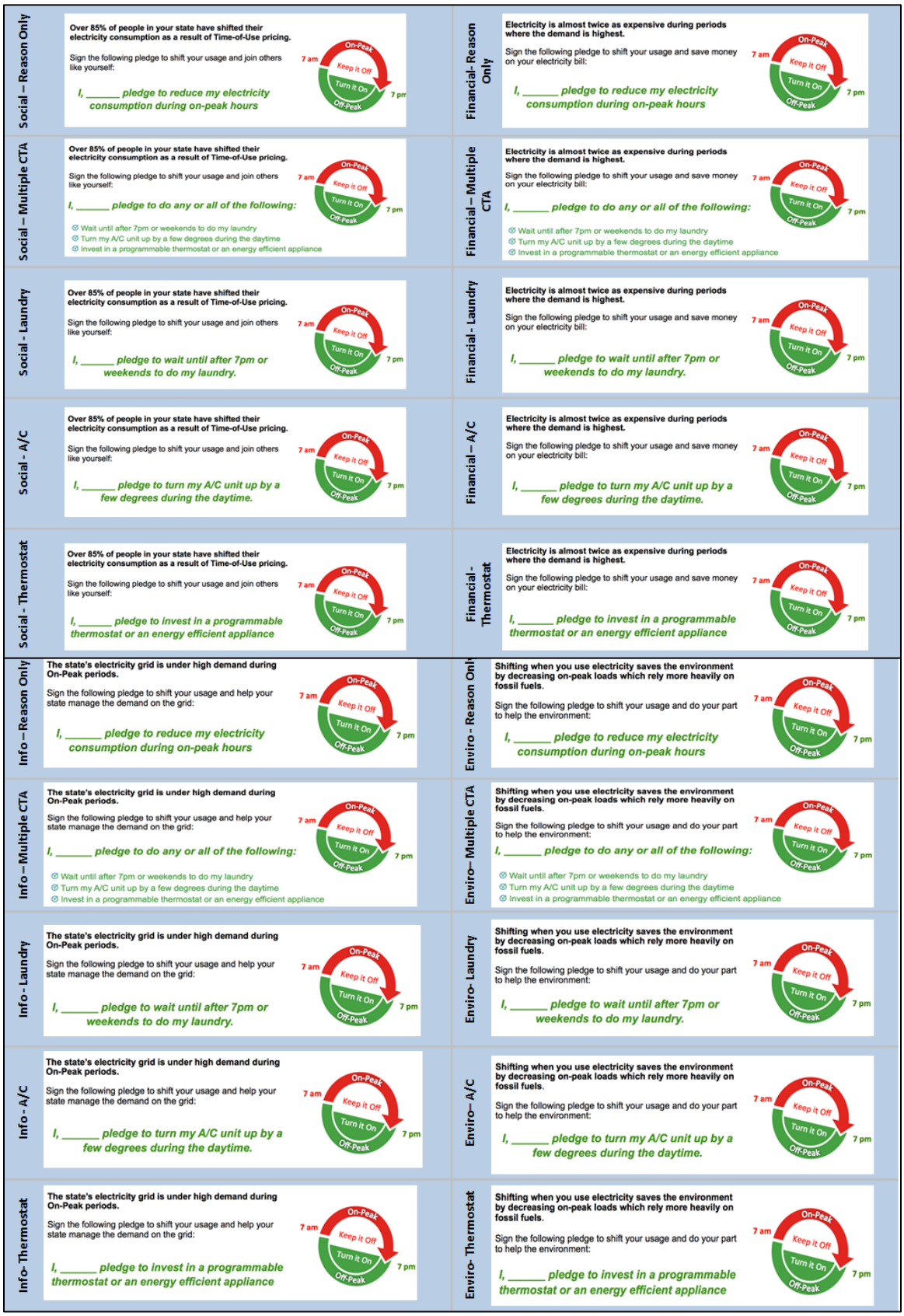
Reducing On-Peak Consumption	*Scale: (1 = "Much Less" to 7 = "Much More")*
Guilt/Offensiveness, Inclusion, Useful/Motivations, & Ease of Understanding	*Scale: (1 = "Strongly Disagree" to 7 = "Strongly Agree")*
Recall	*Multiple Choice*
Shift	*Universal DV question assessing likelihood of using appliances during various hours of the day*

Blue highlight signifies significant variance from the control (negative)

p < .06
****p < .05***
*****p < .001***

Appendix C – Nudge Panel Experiments

Figure 33: TOU Pledge- Conditions



Appendix C – Nudge Panel Experiments

Table 37: TOU Pledge- Cell Sizes

			Factor: Message Type				Total
			Social	Financial	Informational	Environmental	
Factor: Call-to-Action (CTA)	Reason		77	78	61	69	285
	Reason + Multiple CTA		73	77	68	74	292
	Reason + 1 CTA	Laundry	71	72	69	74	286
		A/C	72	76	66	77	291
		Thermostat	77	74	74	66	291
Total			370	377	338	360	**1445**

Appendix C – Nudge Panel Experiments

Table 38: TOU Pledge- Sample Demographics

Sample Size	**1445**	
Gender	46% Female	
Age	18 – 24: 25 – 34: 35 – 44: 45 – 54: 55 – 64: 65+:	19% 36% 18% 10% 5% 1%
Highest level of Education	Less than High School High School / GED Some College 2- year College Degree 4-year College Degree Post-Graduate Degree	1% 10% 30% 11% 37% 11%
Household Income	<$60k: $60k - $120K: $120k - $180k: $180k +	66% 28% 5% 1%
Current Residence	Apartment / Condo Attached House Detached House Other	35% 14% 49% 2%
Own/Rent	49% Own	
State with Dynamic Pricing?	14% (40% of these are TOU pricing)	

Appendix C – Nudge Panel Experiments

Table 39: TOU Pledge- Cell Means

		Signing the Pledge	Recall
	Dependent Variable	To sign the pledge enter the word "yes" in the box provided and then click "Next" If you prefer to not sign the pledge, leave the box blank and then click "Next" (Image of the pledge is shown with a text box underneath)	Which of the following activities were mentioned on the pledge you saw earlier? (select all that apply) (MC: all the CTA are shown as multiple choice options. Therefore, the correct answer was condition dependent)
	r (effect size)	0.08	0.59
	Control	*NA*	**0.67** *0.47*
Messages: Social / Environment / Financial / Information	**A/C**	**0.66** *0.47*	**0.49** *0.50*
	Laundry	**0.68** 0.47	**0.55** 0.50
	Multiple	**0.76***** *0.43*	**0.66***** *0.47*
	Reason	**0.68** *0.48*	**0.47** *0.50*
	Thermostat	**0.64** *0.48*	**0.43** *0.50*

Dependent Variable		Motivation to Change Behaviour	
r (effect size)	0.12		
Control		**0.96** *0.07*	
		Signed the Pledge (%)	
		Yes	**No**
Social		**0.98*** *0.06*	**0.94** *0.11*
Environment		**0.97*** *0.08*	**0.96** *0.09*
Financial		**0.96** *0.09*	**0.97** *0.07*
Information		**0.97*** *0.09*	**0.95** *0.10*

0.00	Top **(bolded)** number represents the Mean
0.00	Bottom *(italicized)* number represents the Standard Deviation

Measures Used per Question

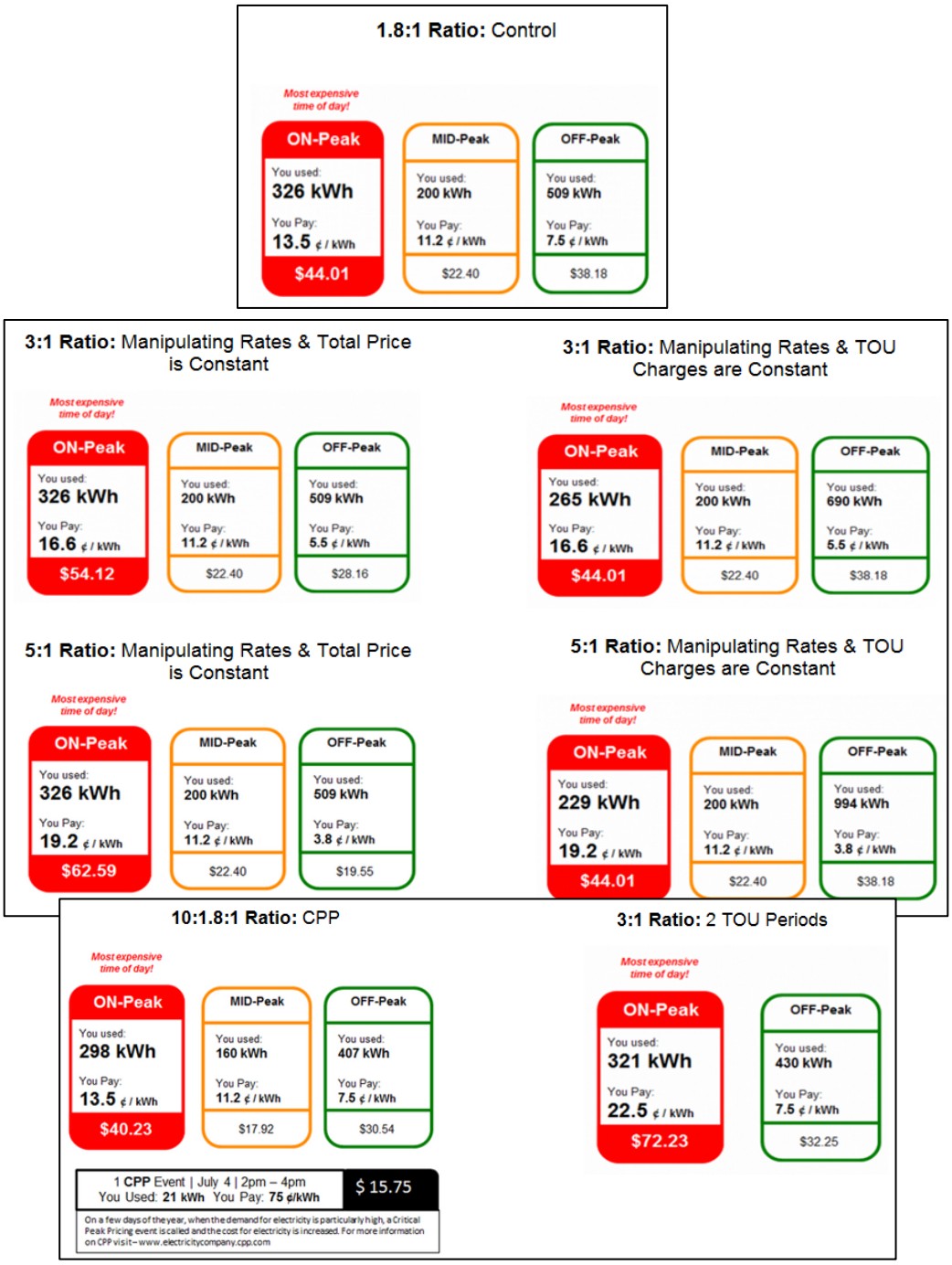
Understanding	*Scale: (1 = "Not at all" to 7 = "Completely")*
Comprehension	*Multiple Choice*
Recall	*Multiple Choice*
Shift	*Universal DV question assessing likelihood of using appliances during various hours of the day*

Significantly different from Thermostat, A/C, and Reason conditions
Significantly different from all conditions except Laundry and Control
Significantly different than the equivalent "non-signing" counterpart

p < .06
****p < .05***
*****p < .001***

Appendix C – Nudge Panel Experiments

Figure 34: Pricing Extremes- Conditions



Appendix C – Nudge Panel Experiments

Table 40: Pricing Extremes- Cell Sizes

		Factor: Charges vs kWh Usage		
		Manipulating kWh Usage	Manipulating Period Charges	**Total**
Factor: TOU Ratio	3:1	89	89	178
	5:1	92	85	177
	Total	181	174	355
Control (1.8 : 1 Ratio)				95
Critical Peak-Price (10 : 1.8 : 1 TOU Plan +CPP)				89
2 TOU Periods [On-Peak and Off-Peak] (3:1 TOU Plan)				87
			Total	**626**

Appendix C – Nudge Panel Experiments

Table 41: Pricing Extremes- Sample Demographics

Sample Size	**626**	
Gender	45% Female	
Age	18 – 24: 25 – 34: 35 – 44: 45 – 54: 55 – 64: 65+:	26% 43% 17% 9% 5% 1%
Highest level of Education	Less than High School High School / GED Some College 2- year College Degree 4-year College Degree Post-Graduate Degree	1% 11% 27% 13% 37% 11%
Household Income	<$60k: $60k - $120K: $120k - $180k: $180k +	62% 31% 6% 1%
Current Residence	Apartment / Condo Attached House Detached House Other	33% 14% 52% 1%
Own/Rent	49% Own	
State with Dynamic Pricing?	15% (51% of these are TOU pricing)	

Appendix C – Nudge Panel Experiments

Table 42: Pricing Extremes- Cell Means

	Dependent Variables	r (effect size)	Control + CPP	Control	2 TOU Periods	Δ Charge		Δ kWh	
						3:1 Ratio	5:1 Ratio	3:1 Ratio	5:1 Ratio
Understanding	How easy is it for you to understand this information?	0.18	**5.47** *1.32*	**6.04*** *1.15*	**6.18**** *1.05*	**5.94** *1.10*	**6.05*** *1.13*	**5.87** *1.33*	**6.05**** *1.17*
	How easy do you think it is for the average American to understand this information?	0.33	**4.39** *1.55*	**6.05***** *1.15*	**5.52***** *1.16*	**5.35***** *1.31*	**5.25***** *1.35*	**5.00*** *1.51*	**5.42***** *1.34*
Motivation to Conserve (Composite, α = .98)	**1)** I feel the cost savings would be worth the effort of shifting my electricity consuming activities (ex. Laundry) to Off-Peak times of day; **2)** I feel motivated to conserve On-Peak electricity; **3)** I feel motivated to shift my electricity usage to Off-Peak hours	0.14	**5.60** *1.29*	**5.82** *1.09*	**6.04** *0.93*	**5.78** *1.11*	**6.04** *1.02*	**5.75** *1.11*	**5.93** *1.03*
Consuming Too Much	I have consumed too much On-Peak electricity this period	0.24	**5.11** *1.48*	**4.96** *1.53*	**5.51** *1.14*	**5.08** *1.38*	**5.62*** *1.42*	**4.60** *1.64*	**4.60** *1.60*
Fairness	The way electricity is priced is fair	0.12	**4.16** *1.60*	**4.44** *1.62*	**4.41** *1.48*	**4.72*** *1.45*	**4.38** *1.49*	**4.62** *1.70*	**4.66** *1.47*
Attitude	Generally, I have a positive attitude towards this plan	0.16	**4.45** *1.60*	**4.80** *1.56*	**4.83** *1.50*	**5.20**** *1.47*	**5.02** *1.49*	**4.85** *1.53*	**5.17** *1.45*
Control	I would be comfortable allowing my utility company to cycle down some of my major appliances during especially high peak times of day	0.12	**3.85** *1.94*	**4.20** *1.91*	**4.52** *1.62*	**4.44** *1.80*	**4.14** *1.90*	**4.11** *1.94*	**4.47*** *1.87*
	With this plan I would need to have programmable thermostat and appliances	0.09	**5.17** *1.55*	**5.26** *1.39*	**5.24** *1.58*	**4.96** *1.57*	**4.95** *1.48*	**5.28** *1.46*	**5.23** *1.33*
	With this plan I have enough control over my spending on electricity	0.15	**4.60** *1.51*	**4.89** *1.37*	**4.97** *1.31*	**5.18** *1.28*	**5.11** *1.36*	**5.02** *1.58*	**5.30*** *1.30*
	With this plan I would be too dependent on automation	0.11	**3.76** *1.59*	**3.53** *1.41*	**3.84** *1.52*	**3.57** *1.45*	**3.75** *1.47*	**4.03** *1.69*	**3.62** *1.64*
Recall (Score out of 3)	**1)** According to the bill you just saw, you consumed the most amount (kWh) of electricity during:; **2)** According to the bill you just saw, you were charged ($) the most for electricity during which period?; **3)** According to the bill you just saw, approximately how much electricity did you consume during On-Peak hours?	0.21	**1.66** *0.96*	**2.17*** *0.90*	**2.21**** *0.95*	**2.30***** *0.82*	**1.98** *0.95*	**2.12*** *0.89*	**2.17*** *0.88*

0.00
0.00
Top **(bolded)** number represents the Mean
Bottom *(italicized)* number represents the Standard Deviation

Measures Used per Question

Understanding — *Scale: (1 = "Very Difficult" to 7 = "Very Easy")*

Motivation to Conserve, Consuming Too Much, Fairness, Attitude, & Control — *Scale: (1 = "Strongly Disagree" to 7 = "Strongly Agree")*

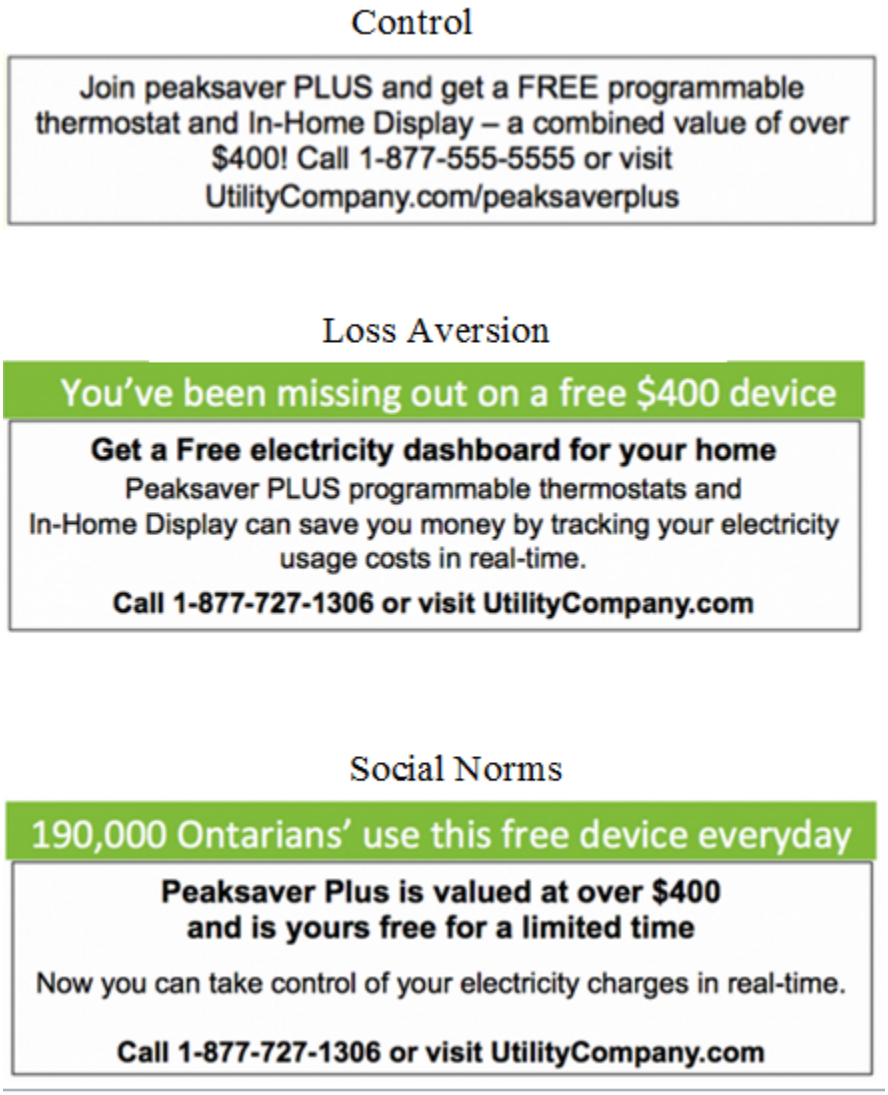
Recall — *Multiple Choice*

Blue highlight denotes results that were significantly greater than the Control +CPP Condition
Orange highlight denotes results that were significantly greater than the control

p < .06
****p < .05***
*****p < .001***

Appendix C – Nudge Panel Experiments

Figure 35: PeaksaverPLUS- Conditions



Appendix C – Nudge Panel Experiments

Table 43: PeaksaverPLUS- Cell Sizes

Condition	Total
Control	312
Loss Aversion	304
Social Norms	319
Total	**935**

Appendix D – Bill Statement Experiment

D. Bill Statement Experiment

The survey was administered between November 14 and November 18, 2014. Similar to the *Electricity Consumer Survey* and *Bill Click Tracking Study*, participants for this study were obtained from a panel of Ontarians that had opted-in to participate in online surveys. To be included in the Ontario Resident Survey, participants were required to live Ontario, be over the age of 18, and live in a household that has received an electricity bill within the past year. Additionally, participants who completed the *Electricity Consumer Survey* and *Bill Click Tracking Study* were not eligible for this survey. As reward for their participation, participants received either AIR MILES reward miles or points towards a retail gift card. This cut-off was based on the expected minimum time requirements to complete the survey and the variability in reading speed and comprehension.

Participants

1036 participants met this criteria, however 101 participants were removed because total survey duration was longer than 3 standard deviations from the median (42 minutes) and shorter than 5 min. This cut-off was based on the expected minimum time requirements to complete the survey and the variability in reading speed and comprehension. Demographics of the sample can be found on Table 34.

Table 44: Cell sizes for the Bill Statement Experiment

Condition	Total
Toronto Hydro Control (TH_control)	102
Hydro One (HO_control)	107
Toronto Hydro Visual Consumption (TH_VC)	101
Hydro One Visual Consumption (HO_VC)	96
Bill 1	107
Bill 2	100
Bill 3	108
Bill 4	108
Bill 5	106
Total	**935**

Appendix D – Bill Statement Experiment

Table 45: Demographics of Ontario Residents who completed the Bill Statement Experiment

Sample Size	**935**	
Gender	55% Female	
Age	18 – 24: 25 – 34: 35 – 44: 45 – 54: 55 – 64: 65+:	5% 16% 18% 23% 17% 20%
Highest level of Education	Less than High School High School / GED Some College 2- year College Degree 4-year College Degree Post-Graduate Degree	2% 14% 17% 20% 34% 13%
Household Income	<$60k: $60k - $120K: $120k - $180k: $180k +	36% 43% 16% 6%
Current Residence	Apartment / Condo Attached House Detached House Other	16% 17% 64% 2%
Own/Rent	83% Own	

Appendix D – Bill Statement Experiment

Analysis

Measuring fluency, likelihood to conserve electricity, and motivations to shift electricity to least expensive period

Table 46 highlights the mean (bolded) and standard deviation (italicized) for the dependent variables that measure fluency, clarity, emotions towards the bill, likelihood to conserve electricity, and motivations to shift electricity to least expensive period (e.g. from on-peak to off-peak). A one-way ANOVA was used to test for differences among the conditions. For dependent variables where there was a significant difference across the means, a post hoc pair wise comparison LSD test (multiple comparisons corrected using the Hochberg's method) was used to identify significant differences across the conditions. Cronbach alpha for questions pertaining to likelihood to conserve electricity (questions 8 – 12) was -0.25; clarity of information (questions 10, 11, and 13) was 0.68; and motivation to shift to the least expensive period (questions 8, 9, 12) was 0.69. For all three items the reliability to combine the questions was low and so we examined each question individually.

Table 46: Participant responses to questions on fluency (questions 1 and 2), clarity (10, 11, and 13), emotions towards the bill (14,15), likelihood to conserve electricity (3 – 4), and motivations to shift electricity to least expensive period (8,9, and 12)

		CONDITIONS								
#	Dependent Variables	TH	HO	TH_VC	HO_VC	Bill 1	Bill 2	Bill 3	Bill 4	Bill 5
1	How easy is it for you to understand the information on this bill?	**5.0** *1.4*	**5.1** *1.6*	**5.2** *1.4*	**5.2** *1.4*	**5.3*** *1.3*	**5.6** *1.4*	**5.5** *1.6*	**5.3*** *1.3*	**5.4*** *1.4*
2	How easy do you think it is for the average Canadian to understand the information on this bill?	**4.4** *1.5*	**4.2** *1.6*	**4.3** *1.3*	**4.4** *1.5*	**4.6*** *1.5*	**4.3** *1.5*	**4.3** *1.5*	**4.6*** *1.4*	**4.8*** *1.5*
3	Wait until after 7pm to run your dishwasher	**6.0** *1.5*	**6.0** *1.5*	**6.2** *1.2*	**6.1** *1.3*	**6.0** *1.3*	**6.1** *1.3*	**6.0** *1.6*	**6.2** *1.3*	**6.0** *1.6*
4	Unplug silent electricity consumers when not in use (TV, computers, coffee machine, etc)	**4.6** *1.7*	**4.2** *1.8*	**4.0** *1.7*	**4.2** *1.9*	**4.4** *1.9*	**4.4** *1.9*	**4.4** *2.0*	**4.3** *1.9*	**4.3** *1.9*
5	Turn off lights in a room when it is unoccupied	**6.2** *1.2*	**6.1** *1.3*	**6.1** *1.2*	**6.1** *1.4*	**6.4** *1.0*	**6.4** *0.9*	**6.3** *1.2*	**6.4** *1.1*	**6.1** *1.4*
6	Wash your dishes by hand instead of running the dishwasher	**4.3** *2.2*	**4.0** *2.1*	**4.3** *2.0*	**4.2** *2.1*	**4.5** *2.1*	**4.1** *2.0*	**3.8** *2.2*	**4.3** *2.1*	**4.4** *2.2*
7	Invest in a energy efficient appliances or lightbulbs	**5.5** *1.5*	**5.4** *1.6*	**5.4** *1.5*	**5.7** *1.5*	**5.7** *1.3*	**5.8** *1.3*	**5.5** *1.5*	**5.5** *1.5*	**5.7** *1.3*
8	I feel like the cost savings would be worth the effort of shifting my electricity consuming activities (ex. laundry) to Off-Peak hours	**5.6** *1.5*	**5.4** *1.5*	**5.7** *1.3*	**5.6** *1.3*	**5.5** *1.3*	**5.4** *1.6*	**5.4** *1.4*	**5.7** *1.3*	**5.5** *1.5*
9	I have consumed too much On-Peak electricity this period	**4.9** *1.7*	**4.5** *1.4*	**4.8** *1.6*	**4.5** *1.3*	**4.9** *1.5*	**4.8** *1.6*	**4.7** *1.7*	**4.5** *1.6*	**4.4** *1.8*
10	Electricity costs are presented clearly	**5.1** *1.4*	**4.9** *1.5*	**5.2** *1.3*	**5.2** *1.3*	**5.4*** *1.4*	**5.3*** *1.4*	**5.3*** *1.2*	**5.4*** *1.2*	**5.6*** *1.2*
11	There is too much information on the bill (reverse scored)	**-3.6** *1.7*	**-3.2** *1.5*	**-3.6** *1.5*	**-3.2** *1.4*	**-3.1*** *1.6*	**-3.7** *1.6*	**-3.5** *1.6*	**-3.5** *1.4*	**-3.3** *1.7*
12	I feel motivated to shift my electricity usage to Off-Peak hours	**5.7** *1.4*	**5.4** *1.4*	**5.7** *1.3*	**5.7** *1.3*	**5.3*** *1.5*	**5.1*** *1.5*	**5.2*** *1.4*	**5.5** *1.3*	**5.6** *1.4*
13	I prefer this bill layout compared to the one I currently receive from my electricity provider	**4.4** *1.4*	**4.3** *1.3*	**4.5** *1.4*	**4.5** *1.2*	**4.8*** *1.5*	**4.8*** *1.4*	**4.6** *1.5*	**4.7** *1.3*	**4.7** *1.5*
14	If I were to receive this electricity bill I would feel guilty about using too much On-Peak electricity	**4.6** *1.8*	**4.2** *1.8*	**4.6** *1.5*	**4.1** *1.6*	**4.2** *1.8*	**4.2** *1.7*	**4.1** *1.7*	**4.3** *1.6*	**4.4** *1.8*
15	If I were to receive this electricity bill I would find it offensive (reverse scored)	**-3.0** *1.8*	**-2.9** *1.6*	**-3.6*** *1.7*	**-3.0** *1.7*	**-2.8** *1.5*	**-3.0** *1.6*	**-3.1** *1.6*	**-3.4** *1.6*	**-2.8** *1.7*
16	This bill makes me want to be more environmentally conscious	**5.2** *1.6*	**4.8** *1.5*	**4.8** *1.6*	**4.9** *1.2*	**5.1** *1.6*	**5.0** *1.6*	**4.8** *1.6*	**4.9** *1.5*	**5.2** *1.6*

Appendix D – Bill Statement Experiment

Measuring Recall

To measure recall, participants were asked to recall 4 piece of information that were considered important for shifting electricity usage to off-peak periods: (1) price for each TOU period ($/kWh), (2) total charge for on-peak usage, (3) the start and end time of the most expensive TOU period, and (4) the name of the most expensive period. Similar to the Table above, the means are bolded and standard deviations are italicized. The statistical methods are same as that outlined for Table 46.

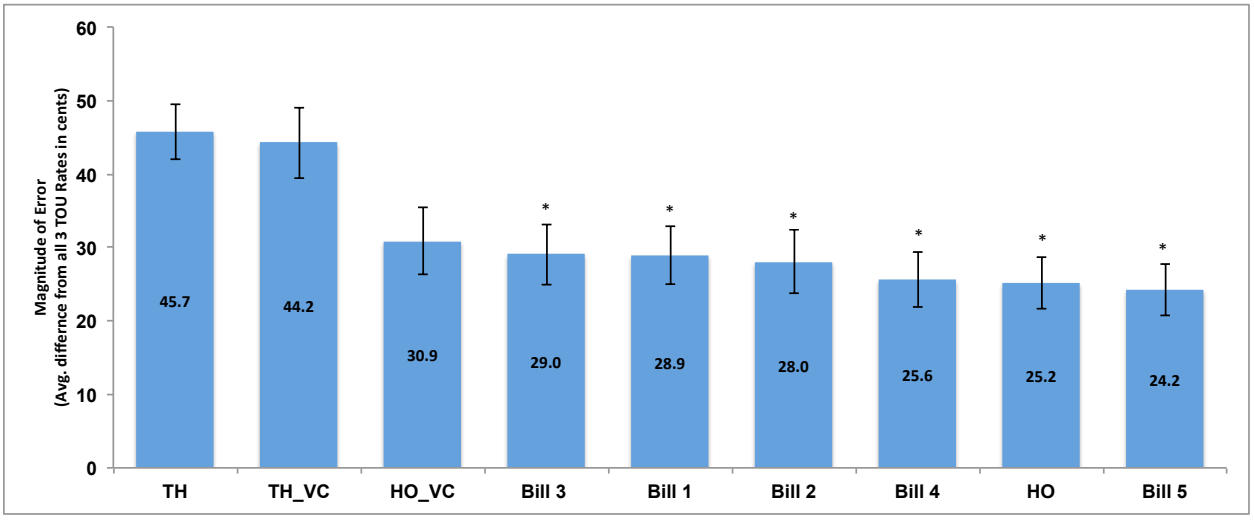
For (1) Price for each TOU period ($/kWh), participants were asked to recall the rate ($ for TH_control and TH_VC, ¢ for the remaining bills) of the three time of use periods. Participants provided their response by moving a slider to a $value. The dependent variable was the absolute difference between the value the participant moved the slider to and the actual rates presented on the bill for each period (magnitude of error). Table 47 highlights this difference across the bill conditions for each TOU period.

Table 47: Average magnitude of error for each TOU period (in cents).

Highlighted in blue are means that were significantly different form TH_control. Highlighted in grey are means that were significantly different from the HO_control. And, highlighted in orange are orange are means that were significantly different from both TH_control and HO_control

	TH	HO	TH_VC	HO_VC	Bill 1	Bill 2	Bill 3	Bill 4	Bill 5
On-peak (Most Expensive Period)	**31.6** *19.2*	**16.3** *16.3*	**31.9** *22.1*	**28.3** *24.1*	**21.3** *17.6*	**21.7** *20.6*	**23.3** *20.1*	**14.8** *15.4*	**13.0** *12.6*
Mid-peak	**37.2** *17.7*	**21.1** *16.3*	**38.8** *22.1*	**28.0** *20.6*	**27.8** *21.1*	**28.4** *22.8*	**31.1** *25.0*	**19.4** *16.2*	**18.9** *15.0*
Off-Peak (Least Expensive Period)	**31.60** *19.24*	**16.3** *16.3*	**31.9** *22.1*	**28.3** *24.1*	**21.3** *17.6*	**21.7** *20.6*	**23.3** *20.1*	**14.8** *15.4*	**13.0** *12.6*

Figure 36: Average magnitude of error across all three TOU periods (in cents)



* represents means that are significantly different from TH

Appendix D – Bill Statement Experiment

For questions (2) total charge for on-peak usage, (3) the start and end time of the most expensive TOU period, and (4) the name of the most expensive period, participants were asked to select the correct response from a set of options. Table 48 highlights the means and standard deviations, and the statistical methods are same as that outlined for Table 37.

Table 48: Percentage of correctly answered for recall questions

Highlighted in blue are means that were significantly different form TH_control. Highlighted in grey are means that were significantly different from the HO_control. And, highlighted in orange are orange are means that were significantly different from both TH_control and HO_control.

Recall (% Correct)	TH	HO	TH_VC	HO_VC	Bill 1	Bill 2	Bill 3	Bill 4	Bill 5
According to the bill you saw earlier, what was your total dollar charge for On-Peak electricity?	29% *46%*	24% *43%*	31% *46%*	14% *34%*	33% *47%*	25% *44%*	38% *49%*	39% *49%*	47% *50%*
According to the bill you just saw, you consumed the most amount (kWh) of electricity during:	20% *40%*	24% *43%*	28% *45%*	33% *47%*	33% *47%*	26% *44%*	34% *48%*	40% *49%*	38% *49%*
According to the bill you just saw, electricity is most expensive during which Summer Time-of-Use period?	61% *49%*	52% *50%*	54% *50%*	56% *50%*	64% *48%*	53% *50%*	67% *47%*	57% *50%*	64% *48%*
According to the bill you just saw, electricity costs the most during which Time-of-Use period?	45% *50%*	50% *50%*	48% *50%*	38% *49%*	46% *50%*	40% *49%*	44% *50%*	27% *45%*	24% *43%*

Appendix D – Bill Statement Experiment

Measuring Engagement with the Bill

Similar to the *Bill Click Tracking Study*, participants were asked to click on areas of the bill that they would typically look at and/or read. Clicks served as a proxy for what participants attended to / read on the bill. Unlike the click-tracking experiment, in which participants could make an unlimited number of clicks, participants could only make up to 10 clicks for each side of the bill i.e. a participant could only make up to 10 clicks on the front of the bill, and up to 10 clicks on the back of the bill.

Additionally, below the front page, participants were provided with two options (1) I would like to see the back of the bill, and (2) I would not like to see the back of the bill. Only participants who selected the first option (1) saw the back of the bill, otherwise they proceeded to the survey questions

Below we highlight both the number of clicks and the likelihood to click for three key regions of the bill: TOU Price Break Down Region (Price Clarity Region), TOU illustration, and Visual Consumption graphs (in Table form in HO and HO_VC).

Table 49: Participant engagement with the bill

Highlighted in blue are means that were significantly different form TH_control. Highlighted in grey are means that were significantly different from the HO_control. And, highlighted in orange are orange are means that were significantly different from both TH_control and HO_control.

	TH	HO	TH_VC	HO_VC	Bill 1	Bill 2	Bill 3	Bill 4	Bill 5
Looked at the back of the bill	56%	63%	50%	61%	65%	68%	64%	57%	59%
Total Clicks	***5.5***	***4.1***	***4.7***	***3.7***	***4.3***	***4.6***	***4.4***	***5.2***	***4.8***
	3.5	*3.4*	*3.6*	*2.9*	*3.5*	*3.6*	*3.6*	*3.8*	*3.7*
Number of Clicks into TOU Breakdown Pricing Area (Price Clarity)	***1.08***	***0.87***	***0.76***	***0.63***	***0.98***	***1.00***	***1.07***	***1.42***	***1.40***
	1.3	*1.2*	*1.1*	*1.2*	*1.3*	*1.4*	*1.4*	*1.4*	*1.5*
Liklihood to Click into TOU Breakdown Pricing Area (Price Clarity)	***0.51***	***0.39***	***0.42***	***0.31***	***0.43***	***0.42***	***0.49***	***0.57***	***0.52***
	0.50	*0.49*	*0.50*	*0.47*	*0.50*	*0.50*	*0.50*	*0.50*	*0.50*
Number of Clicks into TOU Illustration	***0.60***	***0.20***	***0.01***	***0.24***	***0.43***	***0.63***	***0.39***	***0.45***	***0.35***
	0.99	*0.48*	*0.10*	*0.59*	*0.87*	*1.32*	*0.80*	*0.81*	*1.08*
Liklihood to Click into TOU Illustration	***0.33***	***0.17***	***0.01***	***0.18***	***0.27***	***0.31***	***0.28***	***0.30***	***0.18***
	0.47	*0.38*	*0.10*	*0.38*	*0.45*	*0.46*	*0.45*	*0.46*	*0.39*
Number of Clicks into TOU Visual Consumption Graph	***0.50***	*not*	*not*	*not*	***0.38***	***0.58***	***0.55***	***0.62***	***0.55***
	0.64	*applicable*	*applicable*	*applicable*	*0.98*	*1.03*	*0.87*	*0.90*	*0.83*
Liklihood to Click into TOU Visual Consumption Graph	***0.42***	*not*	*not*	*not*	***0.26***	***0.36***	***0.40***	***0.40***	***0.36***
	0.50	*applicable*	*applicable*	*applicable*	*0.44*	*0.48*	*0.49*	*0.49*	*0.48*
Number of Clicks into Month over Month Total Consumption Graph	***0.48***	*not*	*not*	*not*	***0.51***	***0.54***	***0.44***	***0.48***	***0.54***
	0.84	*applicable*	*applicable*	*applicable*	*1.11*	*0.64*	*0.60*	*0.65*	*0.68*
Liklihood to Click into Month over Month Total Consumption Graph	***0.35***	*not*	*not*	*not*	***0.37***	***0.48***	***0.39***	***0.41***	***0.46***
	0.48	*applicable*	*applicable*	*applicable*	*0.49*	*0.50*	*0.49*	*0.49*	*0.50*
Number of Clicks into Consumption Information (Visual Consumption Graphs or Table)	**0.98**	**1.54**	**0.64**	**0.84**	**0.90**	**1.12**	**0.98**	**1.10**	**1.08**
	1.14	*2.09*	*1.27*	*1.37*	*1.60*	*1.46*	*1.22*	*1.27*	*1.27*
Liklihood to Click into Consumption Information (Visual Consumption Graphs or Table)	**0.54**	**0.58**	**0.34**	**0.51**	**0.46**	**0.52**	**0.51**	**0.54**	**0.53**
	0.50	*0.50*	*0.47*	*0.50*	*0.50*	*0.50*	*0.50*	*0.50*	*0.50*

Appendix D – Bill Statement Experiment

Figure 37: Toronto Hydro Control (TH)

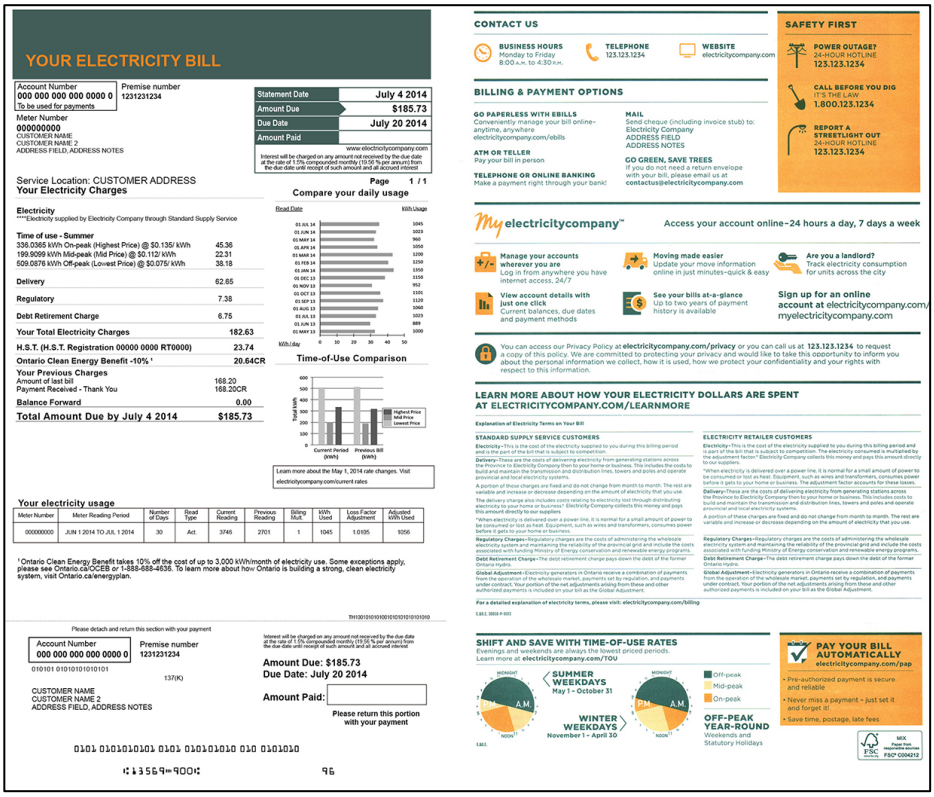
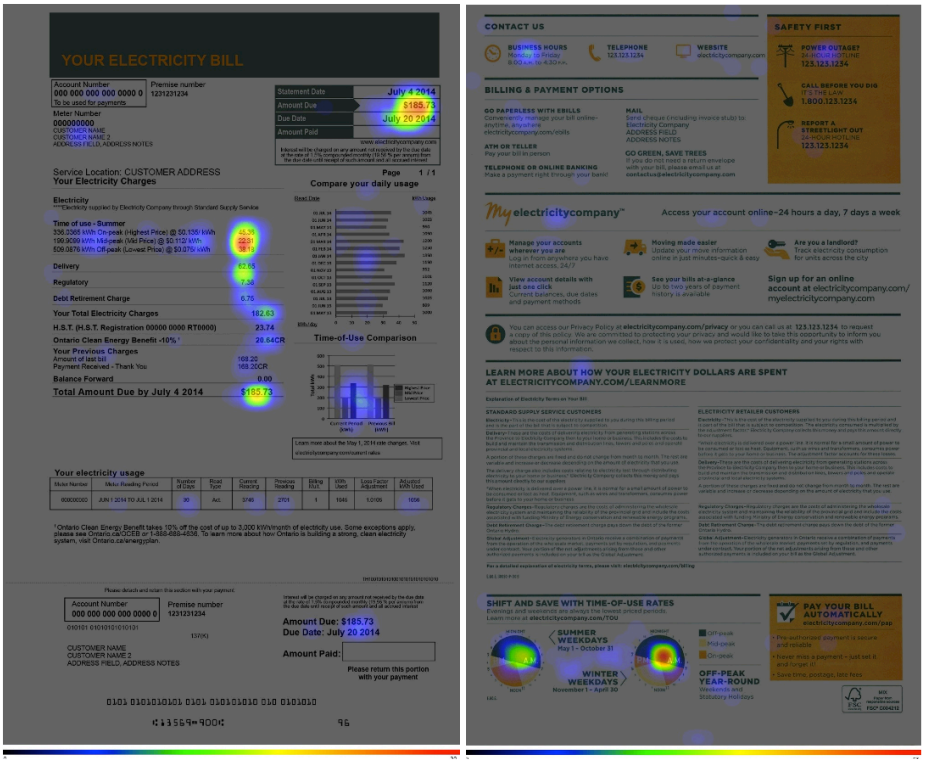
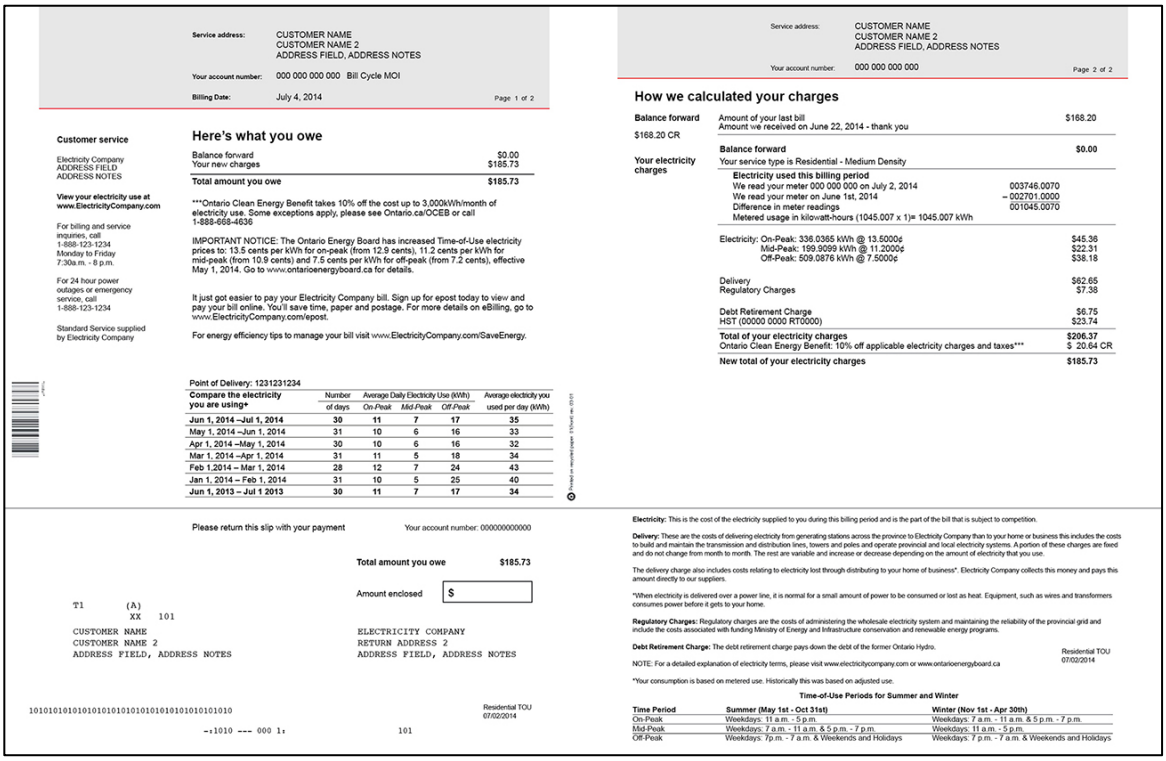


Figure 38: TH Heat map



Appendix D – Bill Statement Experiment

Figure 39: Hydro One Control (HO)



Service address: CUSTOMER NAME
CUSTOMER NAME 2
ADDRESS FIELD, ADDRESS NOTES

Your account number: 000 000 000 000 Bill Cycle MOI

Billing Date: July 4, 2014

Page 1 of 2

Customer service

Electricity Company
ADDRESS FIELD
ADDRESS NOTES

View your electricity use at www.ElectricityCompany.com

For billing and service inquiries, call 1-888-123-1234 Monday to Friday 7:30a.m. - 8 p.m.

For 24 hour power outages or emergency service, call 1-888-123-1234

Standard Service supplied by Electricity Company

Here's what you owe

Balance forward	$0.00
Your new charges	$185.73
Total amount you owe	**$185.73**

***Ontario Clean Energy Benefit takes 10% off the cost up to 3,000kWh/month of electricity use. Some exceptions apply, please see Ontario.ca/OCEB or call 1-888-668-4636

IMPORTANT NOTICE: The Ontario Energy Board has increased Time-of-Use electricity prices to: 13.5 cents per kWh for on-peak (from 12.9 cents), 11.2 cents per kWh for mid-peak (from 10.9 cents) and 7.5 cents per kWh for off-peak (from 7.2 cents), effective May 1, 2014. Go to www.ontarioenergyboard.ca for details.

It just got easier to pay your Electricity Company bill. Sign up for epost today to view and pay your bill online. You'll save time, paper and postage. For more details on eBilling, go to www.ElectricityCompany.com/epost.

For energy efficiency tips to manage your bill visit www.ElectricityCompany.com/SaveEnergy.

Point of Delivery: 1231231234

Compare the electricity you are using*	Number of days	Average Daily Electricity Use (kWh) On-Peak	Mid-Peak	Off-Peak	Average electricity you used per day (kWh)
Jun 1, 2014 –Jul 1, 2014	30	11	7	17	35
May 1, 2014 –Jun 1, 2014	31	10	6	16	33
Apr 1, 2014 –May 1, 2014	30	10	6	16	32
Mar 1, 2014 –Apr 1, 2014	31	11	5	18	34
Feb 1,2014 – Mar 1, 2014	28	12	7	24	43
Jan 1, 2014 – Feb 1, 2014	31	10	5	25	40
Jun 1, 2013 – Jul 1 2013	30	11	7	17	34

Please return this slip with your payment

Your account number: 000000000000

Total amount you owe $185.73

Amount enclosed $

T1 (A)
XX 101

CUSTOMER NAME
CUSTOMER NAME 2
ADDRESS FIELD, ADDRESS NOTES

ELECTRICITY COMPANY
RETURN ADDRESS 2
ADDRESS FIELD, ADDRESS NOTES

1010101010101010101010101010101010101010

Residential TOU
07/02/2014

-:1010 --- 000 1: 101

Service address: CUSTOMER NAME
CUSTOMER NAME 2
ADDRESS FIELD, ADDRESS NOTES

Your account number: 000 000 000 000

Page 2 of 2

How we calculated your charges

Balance forward
$168.20 CR

Amount of your last bill Amount we received on June 22, 2014 - thank you		$168.20
Balance forward		**$0.00**
Your electricity charges		
Your service type is Residential - Medium Density		
Electricity used this billing period		
We read your meter 000 000 000 on July 2, 2014	003746.0070	
We read your meter on June 1st, 2014	– 002701.0000	
Difference in meter readings	001045.0070	
Metered usage in kilowatt-hours (1045.007 x 1)= 1045.007 kWh		
Electricity: On-Peak: 336.0365 kWh @ 13.5000¢		$45.36
Mid-Peak: 199.9099 kWh @ 11.2000¢		$22.31
Off-Peak: 509.0876 kWh @ 7.5000¢		$38.18
Delivery		$62.65
Regulatory Charges		$7.38
Debt Retirement Charge		$6.75
HST (00000 0000 RT0000)		$23.74
Total of your electricity charges		**$206.37**
Ontario Clean Energy Benefit: 10% off applicable electricity charges and taxes***		$ 20.64 CR
New total of your electricity charges		**$185.73**

Electricity: This is the cost of the electricity supplied to you during this billing period and is the part of the bill that is subject to competition.

Delivery: These are the costs of delivering electricity from generating stations across the province to Electricity Company than to your home or business this includes the costs to build and maintain the transmission and distribution lines, towers and poles and operate provincial and local electricity systems. A portion of these charges are fixed and do not change from month to month. The rest are variable and increase or decrease depending on the amount of electricity that you use.

The delivery charge also includes costs relating to electricity lost through distributing to your home of business*. Electricity Company collects this money and pays this amount directly to our suppliers.

*When electricity is delivered over a power line, it is normal for a small amount of power to be consumed or lost as heat. Equipment, such as wires and transformers consumes power before it gets to your home.

Regulatory Charges: Regulatory charges are the costs of administering the wholesale electricity system and maintaining the reliability of the provincial grid and include the costs associated with funding Ministry of Energy and Infrastructure conservation and renewable energy programs.

Debt Retirement Charge: The debt retirement charge pays down the debt of the former Ontario Hydro.

Residential TOU
07/02/2014

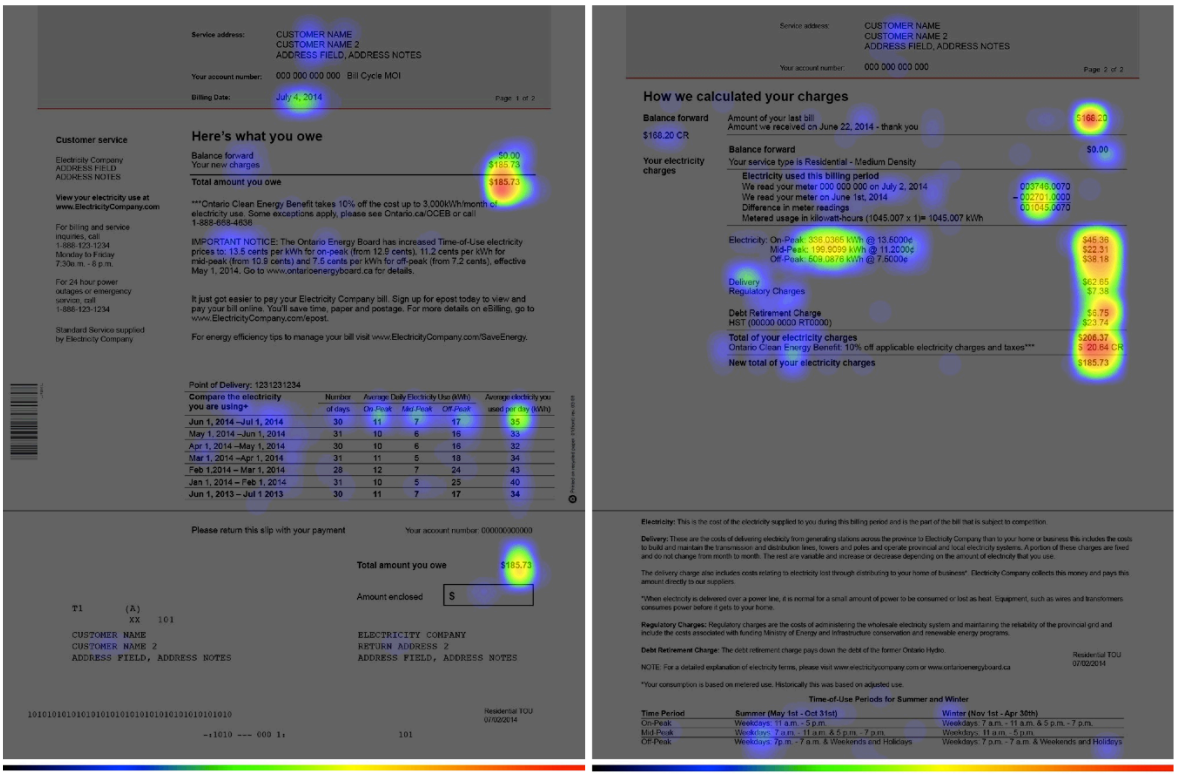
NOTE: For a detailed explanation of electricity terms, please visit www.electricitycompany.com or www.ontarioenergyboard.ca

*Your consumption is based on metered use. Historically this was based on adjusted use.

Time-of-Use Periods for Summer and Winter

Time Period	Summer (May 1st - Oct 31st)	Winter (Nov 1st - Apr 30th)
On-Peak	Weekdays: 11 a.m. - 5 p.m.	Weekdays: 7 a.m. - 11 a.m. & 5 p.m. - 7 p.m.
Mid-Peak	Weekdays: 7 a.m. - 11 a.m. & 5 p.m. - 7 p.m.	Weekdays: 11 a.m. - 5 p.m.
Off-Peak	Weekdays: 7p.m. - 7 a.m. & Weekends and Holidays	Weekdays: 7 p.m. - 7 a.m. & Weekends and Holidays

Figure 40: HO Heat map



Service address: CUSTOMER NAME
CUSTOMER NAME 2
ADDRESS FIELD, ADDRESS NOTES

Your account number: 000 000 000 000 Bill Cycle MOI

Billing Date: July 4, 2014

Page 1 of 2

Customer service

Electricity Company
ADDRESS FIELD
ADDRESS NOTES

View your electricity use at www.ElectricityCompany.com

For billing and service inquiries, call 1-888-123-1234 Monday to Friday 7:30a.m. - 8 p.m.

For 24 hour power outages or emergency service, call 1-888-123-1234

Standard Service supplied by Electricity Company

Here's what you owe

Balance forward $0.00
Your new charges $185.73
Total amount you owe $185.73

***Ontario Clean Energy Benefit takes 10% off the cost up to 3,000kWh/month of electricity use. Some exceptions apply, please see Ontario.ca/OCEB or call 1-888-668-4636

IMPORTANT NOTICE: The Ontario Energy Board has increased Time-of-Use electricity prices to: 13.5 cents per kWh for on-peak (from 12.9 cents), 11.2 cents per kWh for mid-peak (from 10.9 cents) and 7.5 cents per kWh for off-peak (from 7.2 cents), effective May 1, 2014. Go to www.ontarioenergyboard.ca for details.

It just got easier to pay your Electricity Company bill. Sign up for epost today to view and pay your bill online. You'll save time, paper and postage. For more details on eBilling, go to www.ElectricityCompany.com/epost.

For energy efficiency tips to manage your bill visit www.ElectricityCompany.com/SaveEnergy.

Point of Delivery: 1231231234

Compare the electricity you are using* | Number of days | Average Daily Electricity Use (kWh) On-Peak | Mid-Peak | Off-Peak | Average electricity you used per day (kWh)
Jun 1, 2014 –Jul 1, 2014 | 30 | 11 | 7 | 17 | 35
May 1, 2014 –Jun 1, 2014 | 31 | 10 | 6 | 16 | 33
Apr 1, 2014 –May 1, 2014 | 30 | 10 | 6 | 16 | 32
Mar 1, 2014 –Apr 1, 2014 | 31 | 11 | 5 | 18 | 34
Feb 1,2014 – Mar 1, 2014 | 28 | 12 | 7 | 24 | 43
Jan 1, 2014 – Feb 1, 2014 | 31 | 10 | 5 | 25 | 40
Jun 1, 2013 – Jul 1 2013 | 30 | 11 | 7 | 17 | 34

Please return this slip with your payment

Your account number: 000000000000

Total amount you owe $185.73

Amount enclosed $

T1 (A)
XX 101

CUSTOMER NAME
CUSTOMER NAME 2
ADDRESS FIELD, ADDRESS NOTES

ELECTRICITY COMPANY
RETURN ADDRESS 2
ADDRESS FIELD, ADDRESS NOTES

1010101010101010101010101010101010101010

Residential TOU
07/02/2014

-:1010 --- 000 1: 101

Service address: CUSTOMER NAME
CUSTOMER NAME 2
ADDRESS FIELD, ADDRESS NOTES

Your account number: 000 000 000 000

Page 2 of 2

How we calculated your charges

Balance forward
$168.20 CR

Amount of your last bill
Amount we received on June 22, 2014 - thank you $168.20

Balance forward $0.00

Your electricity charges
Your service type is Residential - Medium Density

Electricity used this billing period
We read your meter 000 000 000 on July 2, 2014 003746.0070
We read your meter on June 1st, 2014 – 002701.0000
Difference in meter readings 001045.0070
Metered usage in kilowatt-hours (1045.007 x 1)= 1045.007 kWh

Electricity: On-Peak: 336.0365 kWh @ 13.5000¢ $45.36
Mid-Peak: 199.9099 kWh @ 11.2000¢ $22.31
Off-Peak: 509.0876 kWh @ 7.5000¢ $38.18

Delivery $62.65
Regulatory Charges $7.38

Debt Retirement Charge $6.75
HST (00000 0000 RT0000) $23.74

Total of your electricity charges $206.37
Ontario Clean Energy Benefit: 10% off applicable electricity charges and taxes*** $ 20.64 CR
New total of your electricity charges $185.73

Electricity: This is the cost of the electricity supplied to you during this billing period and is the part of the bill that is subject to competition.

Delivery: These are the costs of delivering electricity from generating stations across the province to Electricity Company than to your home or business this includes the costs to build and maintain the transmission and distribution lines, towers and poles and operate provincial and local electricity systems. A portion of these charges are fixed and do not change from month to month. The rest are variable and increase or decrease depending on the amount of electricity that you use.

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Debt Retirement Charge: The debt retirement charge pays down the debt of the former Ontario Hydro.

Residential TOU
07/02/2014

NOTE: For a detailed explanation of electricity terms, please visit www.electricitycompany.com or www.ontarioenergyboard.ca

*Your consumption is based on metered use. Historically this was based on adjusted use.

Time-of-Use Periods for Summer and Winter

Time Period | Summer (May 1st - Oct 31st) | Winter (Nov 1st - Apr 30th)
On-Peak | Weekdays: 11 a.m. - 5 p.m. | Weekdays: 7 a.m. - 11 a.m. & 5 p.m. - 7 p.m.
Mid-Peak | Weekdays: 7 a.m. - 11 a.m. & 5 p.m. - 7 p.m. | Weekdays: 11 a.m. - 5 p.m.
Off-Peak | Weekdays: 7p.m. - 7 a.m. & Weekends and Holidays | Weekdays: 7 p.m. - 7 a.m. & Weekends and Holidays

Appendix D – Bill Statement Experiment

Figure 41: Toronto Hydro Visual Consumption Graph (TH-VC)

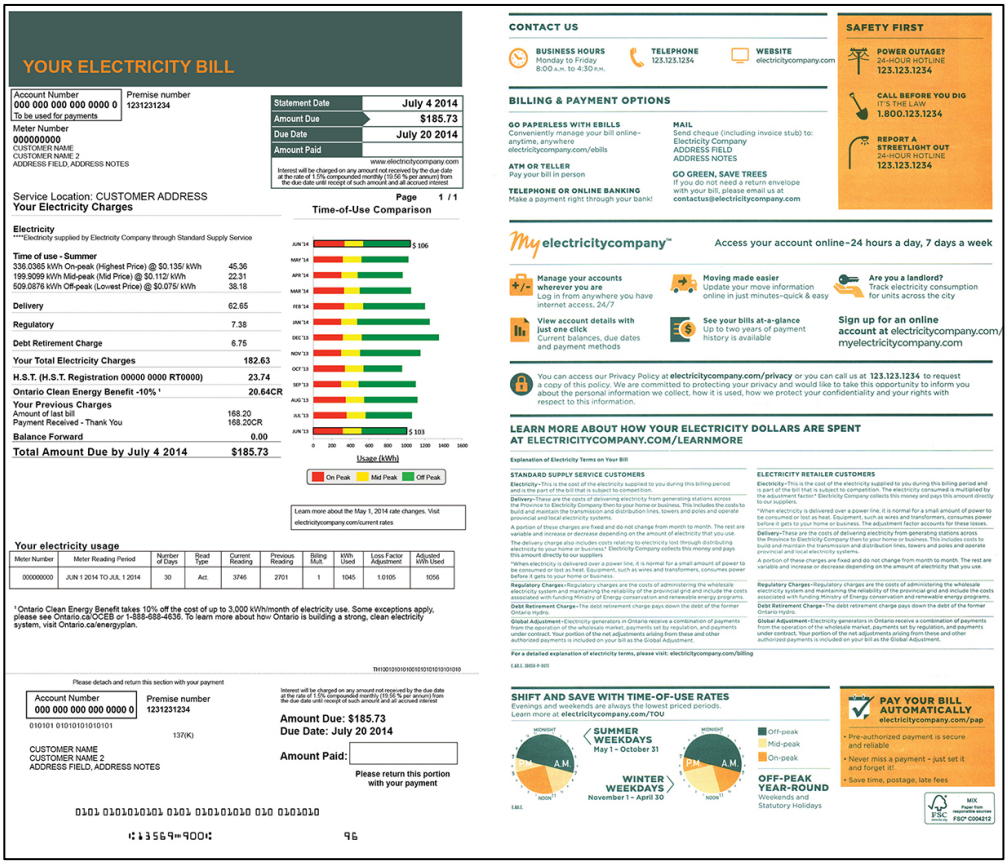
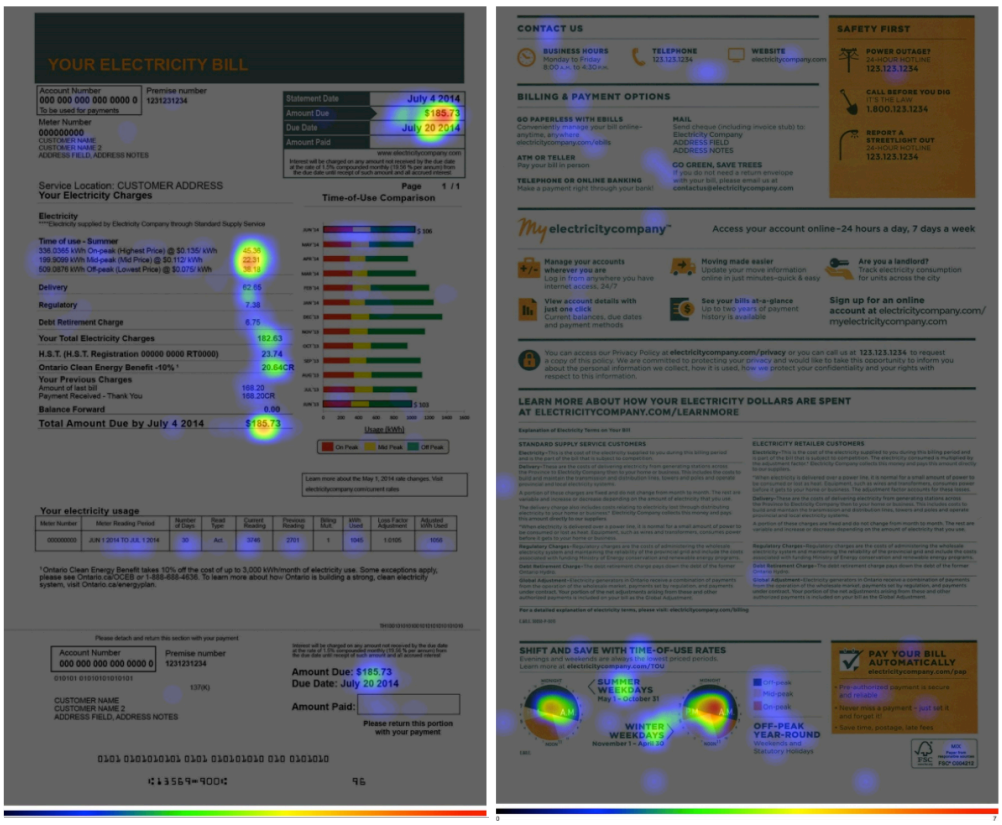


Figure 42: TH-VC Heat map



Appendix D – Bill Statement Experiment

Figure 43: Hydro One Visual Consumption (HO-VC)

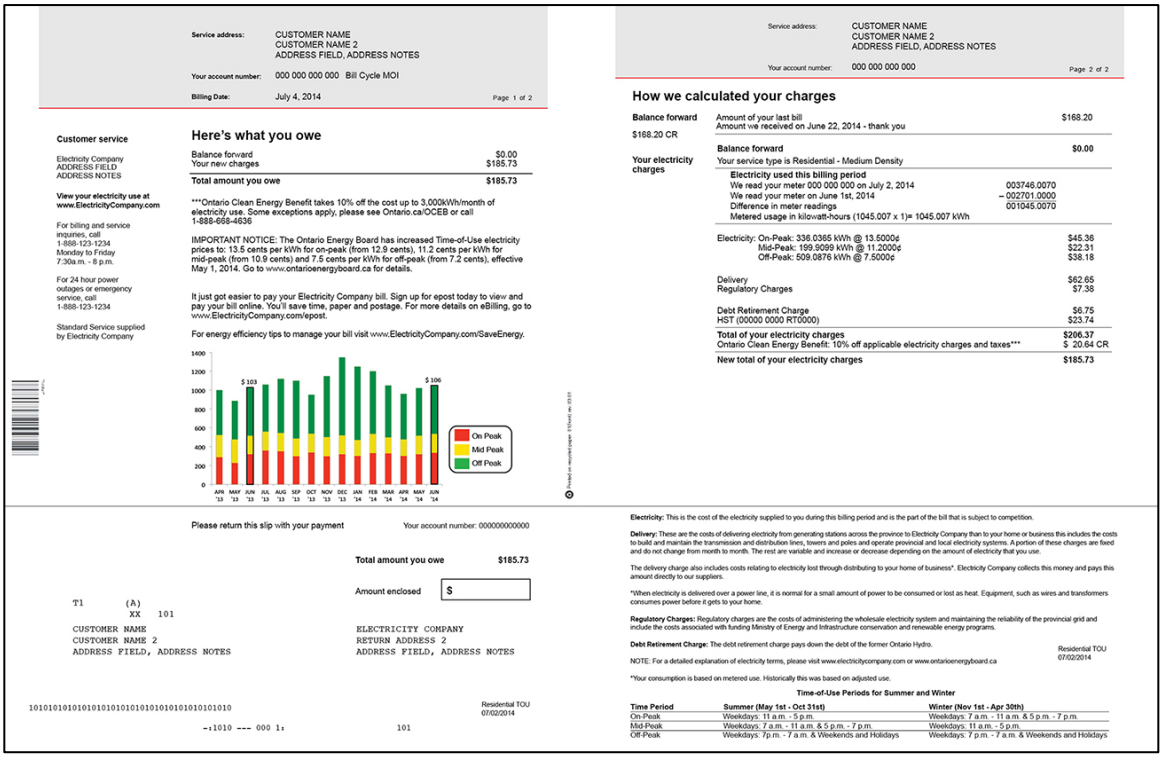
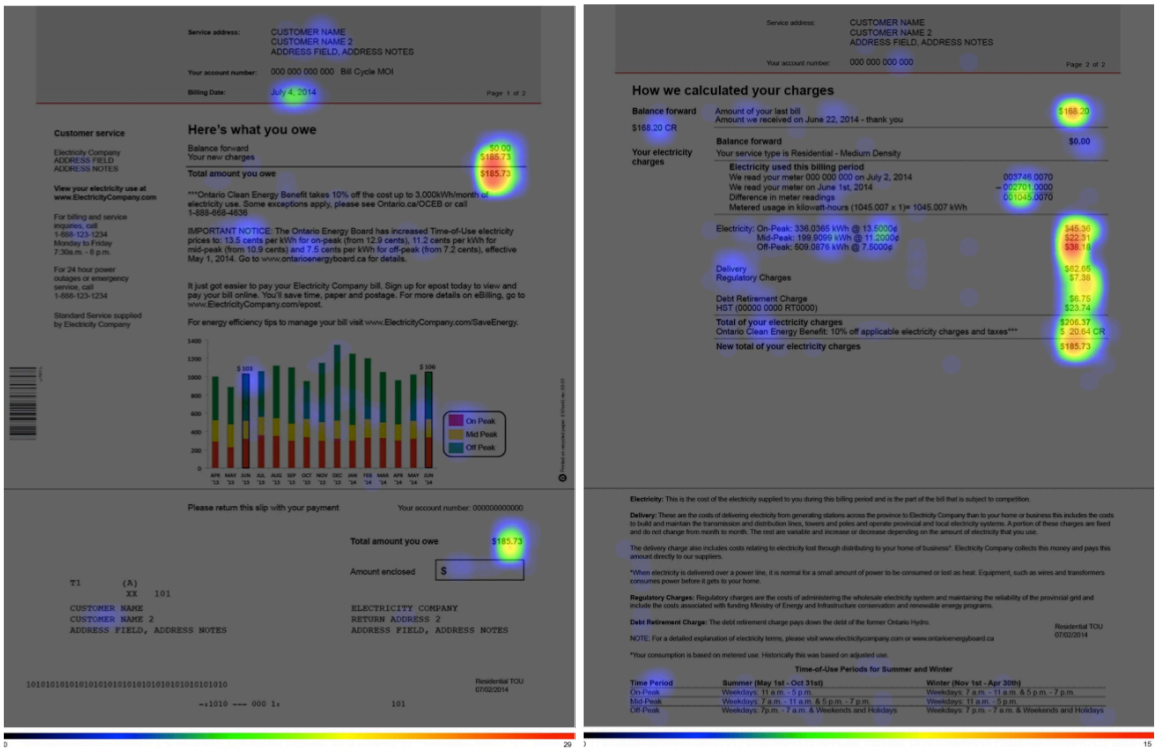


Figure 44: HO-VC Heat Map



Appendix D – Bill Statement Experiment

Figure 45: Bill 1

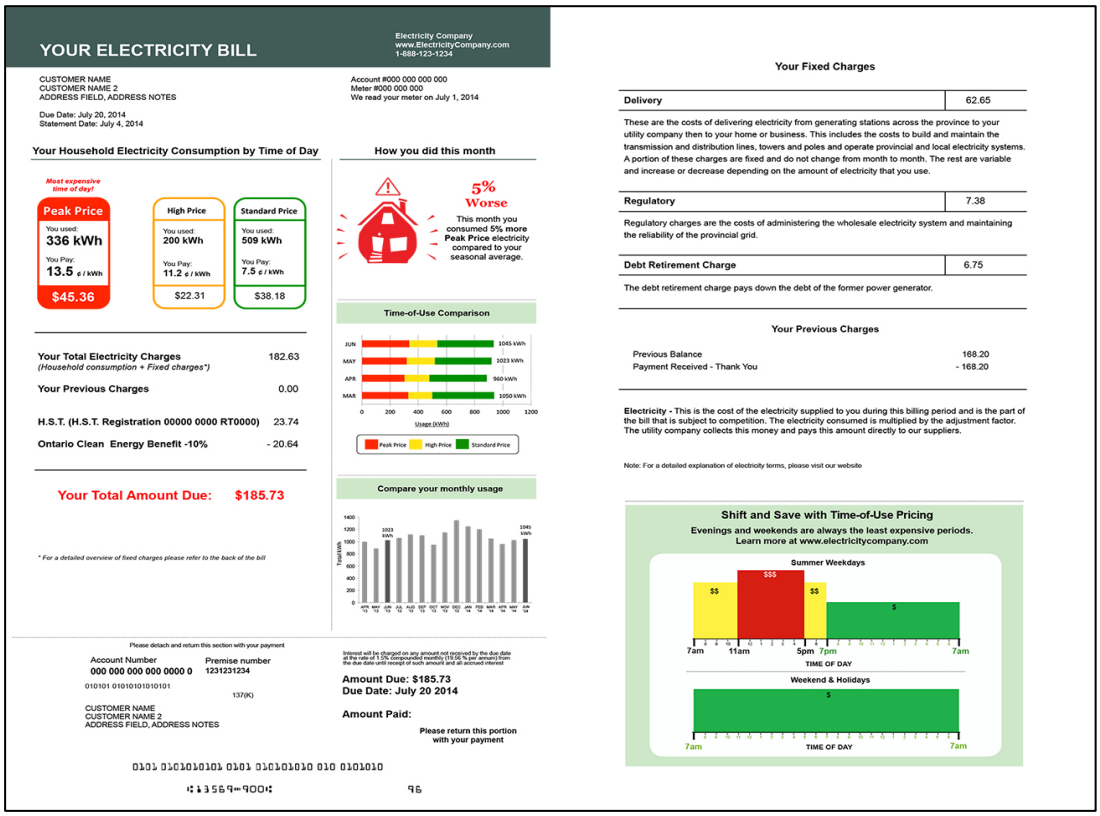
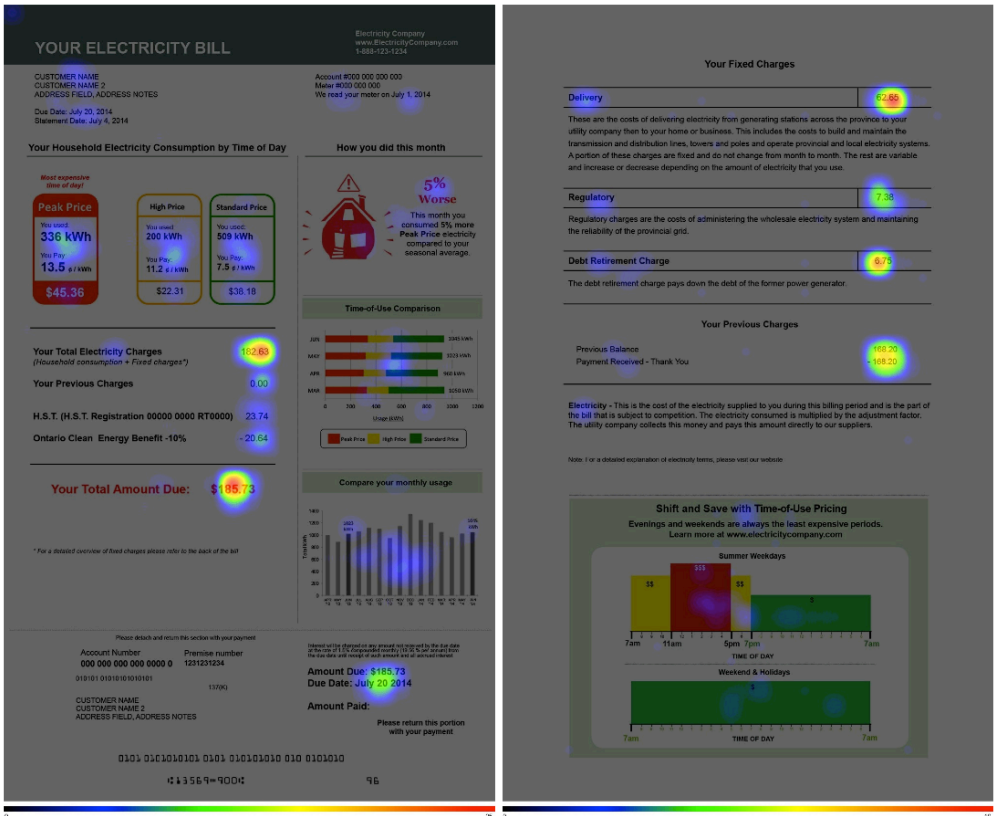


Figure 46: Bill 1 Heat Map



Appendix D – Bill Statement Experiment

Figure 47: Bill 2

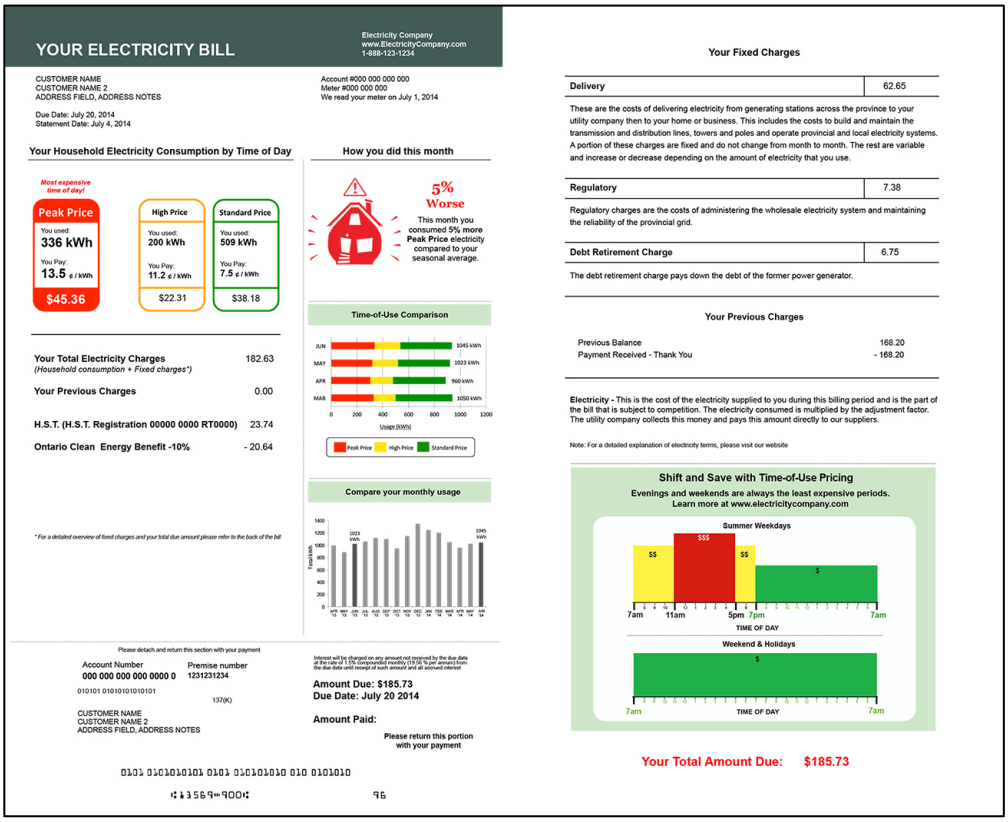


Figure 48: Bill 2 Heat map

Appendix D – Bill Statement Experiment

Figure 49: Bill 3

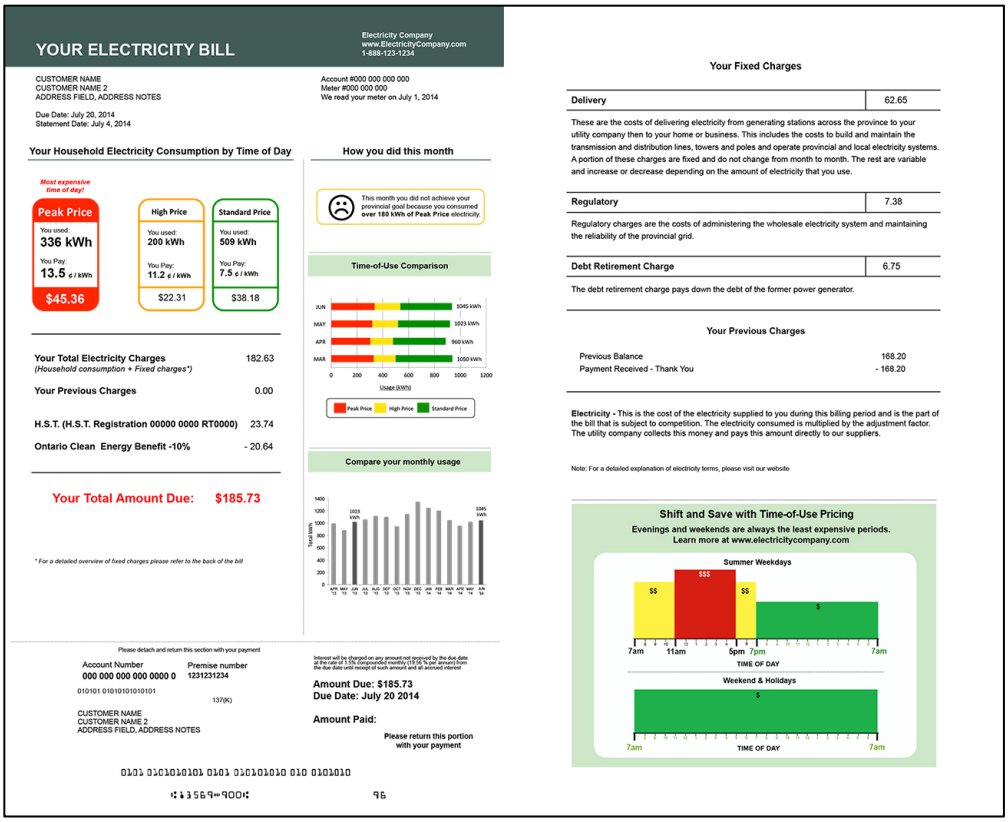


Figure 50: Bill 3 Heat map

Appendix D – Bill Statement Experiment

Figure 51: Bill 4

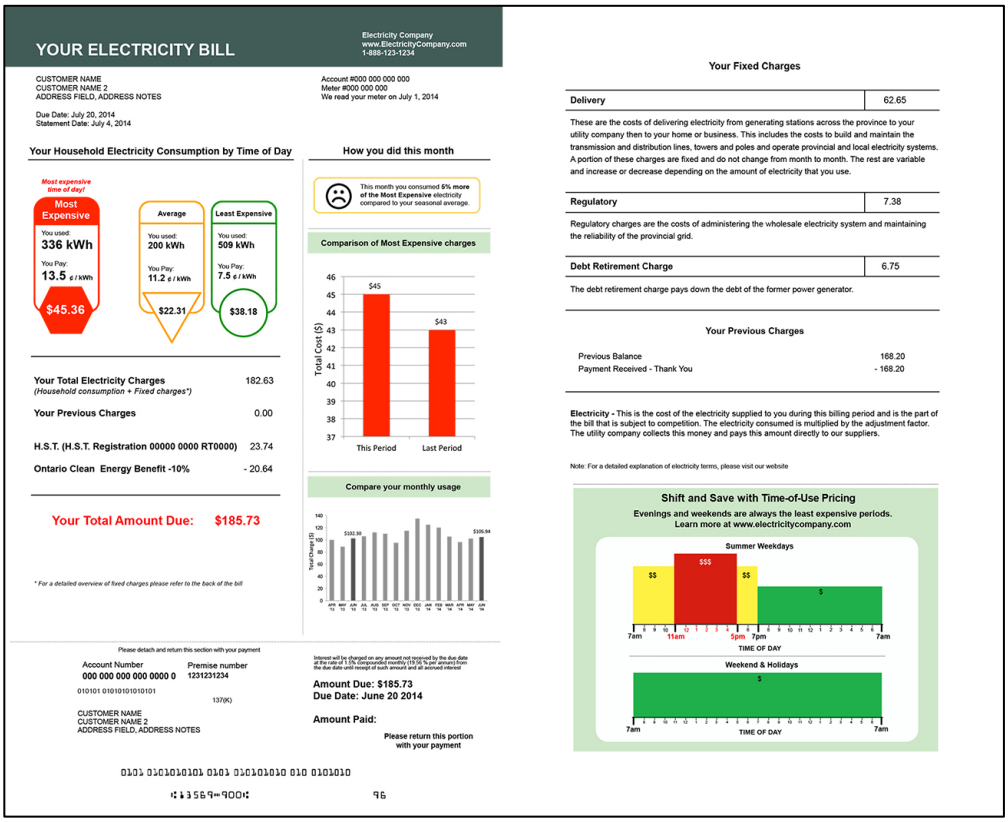


Figure 52: Bill 4 Heat map

Appendix D – Bill Statement Experiment

Figure 53: Bill 5

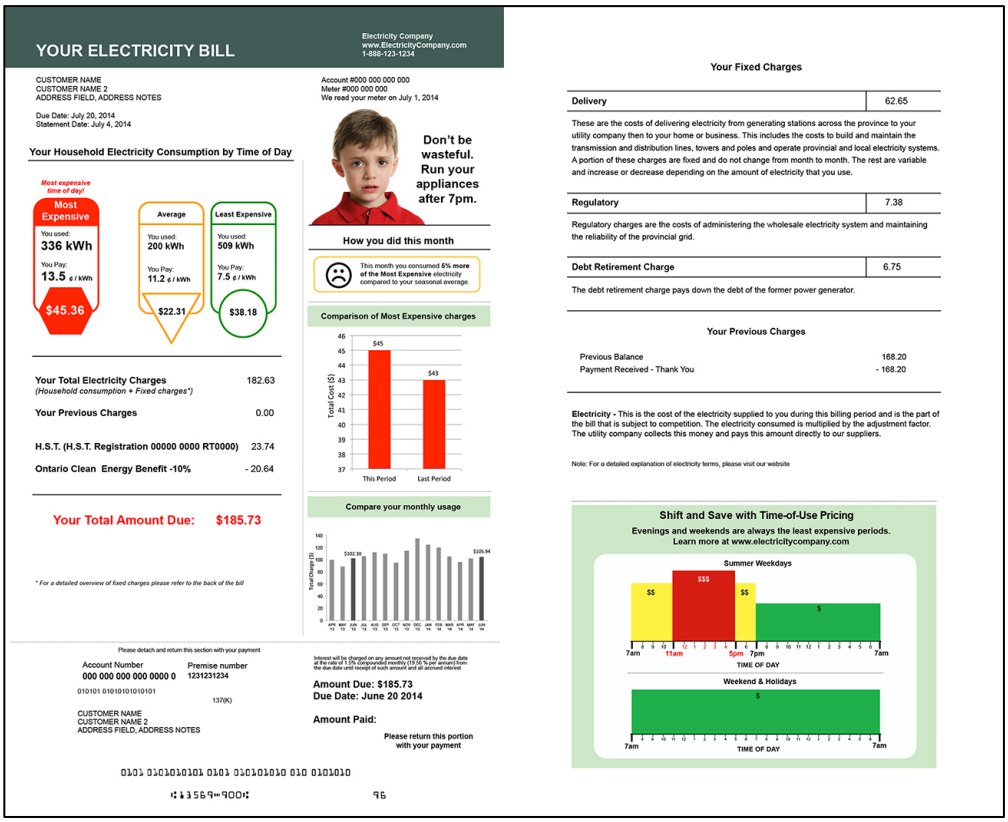


Figure 54: Bill 5 Heat map