Appendix A – Experimental Protocol

Upon opening the survey, participants were first consented to participate in the study by reading through a brief information sheet and then voluntarily agreeing to participate by clicking to continue to the survey. Participants were then provided with a general overview of the survey that read as follows:

Overview of the Survey

This survey will have several parts. The first part of the survey involves making decisions about which electricity plan you would choose from the options provided by a local electric utility. You will be presented with several hypothetical choice scenarios, and in all of the scenarios presented to you, there will always be two plan options offered by the electric utility: Plan A and Plan B.

Plan A electricity is the conventional alternative and is generated by combustion of coal or natural gas. Plan B electricity is the green alternative and is generated by a renewable source like wind or solar. In addition to how the electricity is generated between the two plan options in each scenario, there will also be potential differences in the average monthly cost between the two plans. In each scenario, you will be provided with information about the monthly price of each plan for a typical usage level.

If you are currently a customer of an electric utility company, then imagine each scenario as representing a setting where your utility company contacts you and presents you with information on two new plans and you must choose one of the plans. If you are not currently a utility customer, then imagine each scenario as representing a setting where you contact the utility about starting up service and they present you with information on two plans and you must choose one of the plans.

When making your decision about the plan you would choose in each scenario, please make your selection under the condition that you would be committed to that plan for a period of at least 12 months. All of the pricing information provided will be in terms of a projected monthly price associated with the usage of a typical consumer. For each scenario, please imagine that you are a typical consumer. We kindly ask that you carefully consider all the information provided to you, you seriously consider the options available, and you answer honestly about which electricity plan you would choose based on the information provided. In the survey you will be asked to make a plan choice for 12 different scenarios

After reading through the general overview, Participants were provided with a brief description of a sample choice scenario, and asked to answer four comprehension check questions. They were required to ultimately answer the questions correctly before proceeding. Below is copy of the specific information Participants received:

Sample Choice Scenario

For each of the choice scenarios, you will be provided with an information table for both of the electricity plans offered in that scenario. For each plan, the table will reveal how the electricity is generated (either conventional or green) and monthly pricing information for the plan.

Because the cost of generating electricity is variable, the rates that the utility company charges for each plan are subject to change. For each of the two plans offered, the table will provide information on the possible price volatility associated with each plan. Specifically, the table will display information on the possible monthly prices, and the likelihood of that price occurring (displayed as a percentage). The average expected monthly price of each plan will also be displayed at the bottom of the table.

Below is a sample of the information you will be given for each decision scenario you will encounter:

PLAN A – CONVENTIONAL ELECTRICITY		PLAN B – GREEN ELECTRICITY	
Generating Source: Coal or Natural Gas		Generating Source: Wind or Solar	
Possible Monthly Price	Chance of Price	Possible Monthly Price	Chance of Price
$93	15%	$98	10%
$100	70%	$108	80%
$107	15%	$118	10%
Average Expected Monthly Price: $100		Average Expected Monthly Price: $108	

Based on the scenario presented above, for Plan A (the conventional electricity plan) there would be a 70% chance your monthly bill would be $100, a 15% chance the bill would be $93, and a 15% chance the bill would be $107. On average, you would expect to pay $100/month under Plan A.

Alternatively, for Plan B (the green electricity plan) there would be an 80% chance your monthly bill would be $108, a 10% chance the bill would be $98, and a 10% chance the bill would be $118. On average, you would expect to pay $108/month under Plan B.

Please answer the following questions about the above example scenario:

1) What is the average expected monthly price of electricity under Plan A

2) What is the average expected monthly price of electricity under Plan B

3) What is the highest possible monthly price of electricity under Plan A

4) What is the % chance of having to pay $118 in a month for electricity under Plan B

Participants were then randomly assigned to treatment, provided with the corresponding information intervention (detailed in Appendix B), and asked to make their plan selection in each of the 12 choice scenarios. Lastly, they were asked to fill out the short demographic survey.

Appendix B – Copy of Information Statements

Panel A – Information about Conventional Gray Electricity Generation		
	Advantages	Disadvantages
	• There is an abundance of coal and natural gas • The electricity that is generated is continuous during peak times • It is a relatively cheap and reliable energy source • It is versatile and can be used in a variety of applications and different environments • It is easy to store and transport coal and natural gas to electricity-generating facilities • Modern coal and natural gas power plants are very energy efficient	• Are nonrenewable sources of energy that deplete over time • Emits greenhouse gases into the atmosphere • Emits harmful substances like sulfur dioxide, which can lead to acid rain • Environmental damage is associated with mining coal and obtaining natural gas • Mining coal is dangerous and hazardous to the health of miners • Over 500 gallons of fresh water are used per megawatt hour of electricity generated
Panel B – Information about Renewable Green Electricity Generation		
	Advantages	Disadvantages
	• No limit to the energy sources in the future • Doesn't contribute to greenhouse gas emissions • Doesn't produce air pollution that can be harmful to humans • It is a domestic source of energy, reducing our nation's dependence on trade • It is beneficial to rural economies • Doesn't use freshwater resources	• It doesn't provide a continuous source of electricity (sun doesn't always shine and the wind doesn't always blow) • Requires large areas of land to be disrupted, potentially damaging ecosystems • Often developed long distances from where the electricity is needed, requiring the construction of transmission lines • Difficult to store and transport the energy • Expensive relative to conventional sources • Pollution and emissions are generated during the manufacturing process
Panel C – Information about Electricity Generation		
	Neutral	
	• According to the U.S. Energy Information Administration, the average U.S. household used 11,000 KWh of electricity in 2014 • Space cooling and lighting account for about 25% of the total U.S. residential electricity use • There are more than 450,000 miles of high-voltage transmission lines in the U.S to move electricity from the generating source to the end user • The U.S. EIA estimates that in 2013, 5% of generated electricity was lost in transmission and distribution • The average price for electricity in the U.S. is $0.12 per KWh • The price of electricity varies throughout the day and throughout the year	

Appendix C – Information Intervention Manipulation Check

As part of the experimental design, respondents were provided with information about either: (i) positive or negative information about the gray plan, (ii) positive or negative information about the green plan, (iii) some combination of positive or negative information about both plans, or (iv) neutral information (generic facts about electricity). This information intervention was in the form of a block of six statements pertaining to attributes associated with the electricity generated from the given source. Our aim was to provide information that highlighted either the possible advantages or disadvantages of electricity generation associated with renewable green power generation or conventional gray power generation. The specific statements that were used for each manipulation are presented above in Appendix B. To verify that the collection of statements in each condition incited the desired perception about the corresponding plan, we tested the manipulation on an independent sample (n = 136) of participants drawn from the same business school student population who completed the choice-based experiment (although no respondents participated in both tasks).

We implemented the following survey procedure. All participants were shown the collection of six neutral statements about electricity facts that comprised the *Baseline* condition. There were then instructed to think about whether the statement is supportive of: (i) conventional, hydro-carbon electricity generation (e.g., coal or natural gas), (ii) renewable, green electricity generation (e.g., wind or solar), or (iii) neutral, and then indicate their response on the Likert scale from 1 to 7 provided (1=supporting hydro-carbon electricity; 4=neutral; 7=supporting green electricity). In addition, participants were also shown either all twelve statements pertaining to the green plan (six from *PosGreen* and six from *NegGreen*) or all twelve statement pertaining to the gray plan (six from *PosGray* and six from *NegGray*). They were then instructed to indicated on a Likert scale from 1 to 7 whether each statement was positive or negative (1=very negative; 7=very positive).

Several measures were implemented to minimize order affects. First, we randomized whether respondents rated the six neutral statements first or the twelve gray/green plan statements first. Second, we randomized the order of the twelve gray/green plan statements such that advantageous and disadvantageous statements were mixed together. Third, we considered four different blocks (each with a different order of the statements) and tested for block effect (which we didn't find any significant effects). The average scaled evaluation of each statement, as well as the overall, respondent-level average across all six statements is provided in the tables below:

Evaluation of Neutral Information Statements (N= 136):

Statement	Average Ranking 1=ProGray; 7=ProGreen 4=Neutral
[1] According to the U.S. Energy Information Administration, the average U.S. household used 11,000 KWh of electricity in 2014	3.44
[2] Space cooling and lighting account for about 25% of the total U.S. residential electricity use	3.85
[3] There are more than 450,000 miles of high-voltage transmission lines in the U.S to move electricity from the generating source to the end user	3.49
[4] The U.S. EIA estimates that in 2013, 5% of generated electricity was lost in transmission and distribution	3.51
[5] The average price for electricity in the U.S. is $0.12 per KWh	3.60
[6] The price of electricity varies throughout the day and throughout the year	3.92
Overall Respondent-level average over all six items	**3.63**

Evaluation of Gray Plan Statements (N=79)

Statements	Average Ranking 1=Negative; 7=Positive 4=Neutral
Advantages (PosGray condition) 1) There is an abundance of coal and natural gas	5.20
2) The electricity that is generated is continuous during peak times	4.82
3) It is a relatively cheap and reliable energy source	5.82
4) It is versatile and can be used in a variety of applications and different environments	5.63
5) It is easy to store and transport coal and natural gas to electricity-generating facilities	5.30
6) Modern coal and natural gas power plants are very energy efficient	5.61
Overall Respondent-level average over all six *PosGray* items	**5.41**
Disadvantages (NegGray condition) 7) It is derived from nonrenewable sources of energy that deplete over time	2.52
8) It emits greenhouse gases into the atmosphere	2.35
9) It emits harmful substances like sulfur dioxide, which can lead to acid rain	1.85
10) Environmental damage is associated with mining coal and obtaining natural gas	2.42
11) Mining coal is dangerous and hazardous to the health of miners	1.97
12) Over 500 gallons of fresh water are used per megawatt hour of electricity generated	2.86
Overall Respondent-level average over all six *NegGray* items	**2.33**

Evaluation of Green Plan Statements (N=57)

Statements	Average Ranking 1=Negative; 7=Positive 4=Neutral
Advantages (PosGreen condition)	
1) No limit to the energy sources in the future	5.93
2) Doesn't contribute to greenhouse gas emissions	5.81
3) Doesn't produce air pollution that can be harmful to humans	6.14
4) It is a domestic source of energy, reducing our nation's dependence on trade	5.58
5) It is beneficial to rural economies	5.77
6) Doesn't use freshwater resources	5.00
Overall Respondent-level average over all six *PosGreen* items	**5.70**
Disadvantages (NegGreen condition)	
7) It doesn't provide a continuous source of electricity (sun doesn't always shine and the wind doesn't always blow)	3.16
8) It requires large areas of land to be disrupted, potentially damaging ecosystems	2.16
9) The electricity is often generated long distances from where the electricity is needed, requiring the construction of transmission lines	3.47
10) It is difficult to store and transport the energy	3.12
11) It is expensive relative to conventional sources	3.14
12) Pollution and emissions are generated during the manufacturing process	2.35
Overall Respondent-level average over all six *NegGreen* items	**2.90**

Appendix D – Additional Data Analysis

Data from Ambiguous Conditions

For brevity, in the main text we do not report any analysis from the two ambiguous conditions – *PosGreen+PosGray* and *NegGreen+NegGray* – which were included as part of the full factorial design. In footnote 23 we discuss how these two conditions yield largely null findings in terms of their impact on planned adoption of the green plan, as we might expect given their (ex-ante) ambiguous nature. Below we reproduce the aggregate data from these conditions in Figure 2.A1, as well as the main regression analysis in Table 2.A1. As can be verified from Table 2.A1, the two ambiguous conditions result in a largely null effects on their impact of green plan selection.

Figure 2.A1: Impact of Information Conditions on Adoption of Green-power Plan (Including *Ambiguous* conditions)
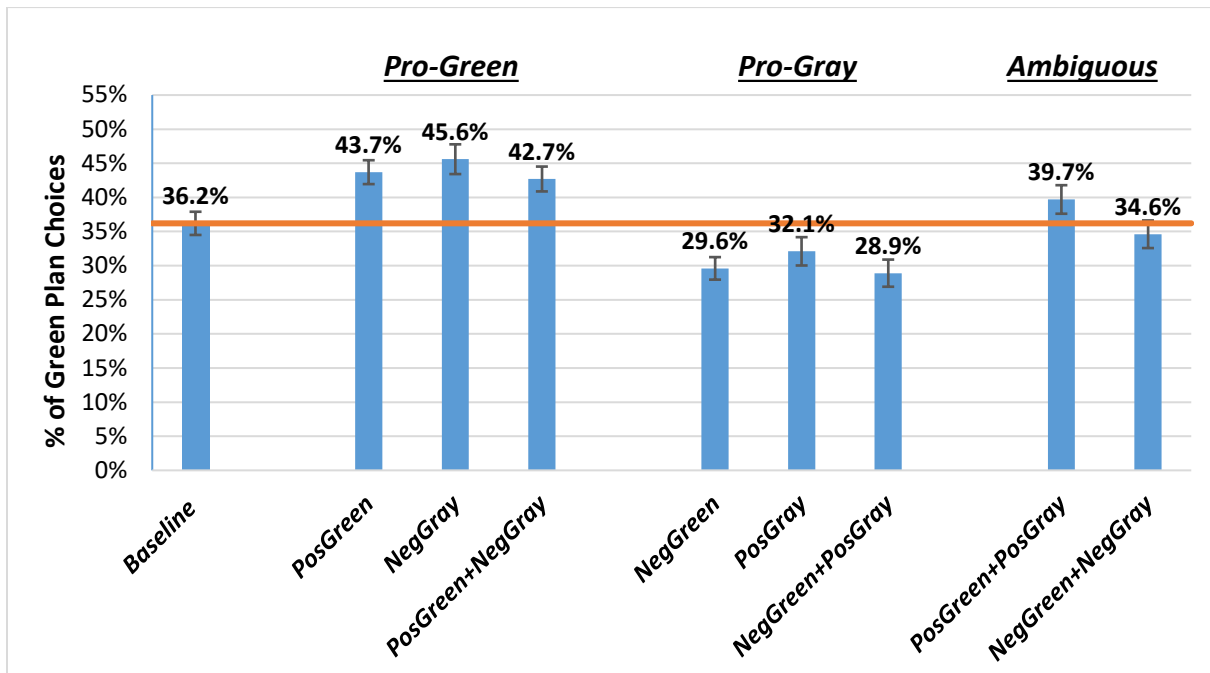
Table 2.A1 – Logit Models with Green Plan Choice as Dependent Variable (Including Ambiguous Conditions)

	Dependent Variable: *Green Plan Choice*			
	1	2	3	4
PosGreen	.073***	.078***	.073***	.078***
	(.027)	(.025)	(.027)	(.025)
NegGray	.092***	.076**	.092***	.076**
	(.033)	(.032)	(.033)	(.032)
PosGreen+NegGray	.065**	.058*	.065**	.058*
	(.032)	(.031)	(.032)	(.031)
NegGreen	-.069***	-.052**	-.069***	-.052**
	(.026)	(.025)	(.026)	(.025)
PosGray	-.039	-.040	-.039	-.040
	(.034)	(.032)	(.034)	(.032)
NegGreen+PosGray	-.074**	-.077**	-.074**	-.077**
	(.034)	(.032)	(.034)	(.032)
PosGreen+PosGray	**.037**	**.033**	**.037**	**.033**
	(.032)	**(.031)**	**(.032)**	**(.031)**
NegGreen+NegGray	**-.012**	**-.012**	**-.013**	**-.012**
	(.032)	(.031)	(.032)	(.031)
$10 Price Premium			-.109***	-.109***
			(.006)	(.006)
$15 Price Premium			-.231***	-.231***
			(.008)	(.008)
Male		-.013		-.013
		(.016)		(.016)
Education		.016***		.016***
		(.006)		(.006)
Income		.005		.005
		(.004)		(.005)
Children		-.045**		-.045**
		(.022)		(.022)
Green Plan Customer		.050**		.050**
		(.025)		(.025)
NEP Scale		.002**		.002**
		(.001)		(.001)
Green Electricity		.080***		.080***
		(.010)		(.009)
RSRP	.008	-.007	.008	-.006
	(.016)	(.020)	(.016)	(.020)
Block Dummies	Yes	Yes	Yes	Yes
Respondent Clustering	Yes	Yes	Yes	Yes
N	21,384	21,258	21,384	21,258

Notes: This table reports the results of a logit regression with green plan choice as the binary dependent variable. Marginal effects are reported with standard errors in parentheses.
*** denotes statistical significance at the 1% level; ** denotes significance at the 5% level.

Replication Main Analysis of Treatment Effects from the Qualtrics Panel Sample Only

In the main text we report results from the pooled sample of the representative Qualtrics Panel and the student sample. To ensure that our main results are robust, we replicate the main regression analysis reported in Table 2 for just the Qualtrics Panel only. Table 2.A2 reports the results, which are largely consistent with those reported in Table 2.

Table 2.A2 – Logit Models with Green Plan Choice as Dependent Variable (Qualtrics Panel Only)

|	**Dependent Variable: *Green Plan Choice***			
	1	2	3	4
PosGreen	.095**	.102***	.096**	.102***
	(.042)	(.038)	(.042)	(.039)
NegGray	.087**	.075*	.087**	.075*
	(.044)	(.044)	(.044)	(.044)
PosGreen+NegGray	.060	.055	.060	.055
	(.043)	(.042)	(.044)	(.042)
NegGreen	-.127***	-.117***	-.127***	-.117***
	(.044)	(.042)	(.044)	(.042)
PosGray	-.037	-.033	-.037	-.033
	(.047)	(.044)	(.047)	(.044)
NegGreen+PosGray	-.070	-.066	-.070	-.066
	(.047)	(.044)	(.047)	(.044)
$10 Price Premium			-.087***	-.087***
			(.008)	(.008)
$15 Price Premium			-.179***	-.178***
			(.010)	(.010)
Male		-.008		-.009
		(.023)		(.023)
Education		.015**		.015*
		(.008)		(.008)
Income		.011		.011
		(.008)		(.008)
Children		-.065***		-.065***
		(.022)		(.022)
Green Plan Customer		.062**		.062**
		(.027)		(.027)
NEP Scale		.001		.001
		(.001)		(.001)
Green Electricity		.076***		.076***
		(.013)		(.013)
Block Dummies	Yes	Yes	Yes	Yes
Respondent Clustering	Yes	Yes	Yes	Yes
N	13,298	13,208	13,298	13,208

Notes: This table reports the results of a logit regression with green plan choice as the binary dependent variable. Marginal effects are reported with standard errors in parentheses. Only the Qualtrics panel sample is included.

*** significance at 1% level; ** significance at 5% level; * significance at 10% level

<u>Exclusion of Those Participants who Reported that Their Current Utility Uses Green Energy</u>

To ensure that our main results are not being bias by respondents who may have previously received information about green plans from their current utility provider, we reproduce the main treatment effects reported in Figure 2 *excluding* all respondents who self-reported that their current utility plan uses green energy. From Figure 2.A2 below, we see the result are generally consistent for this subsample.

Figure 2.A2: Impact of Information Conditions on Adoption of Green-power Plan (*excluding respondents where current utility used green energy)*
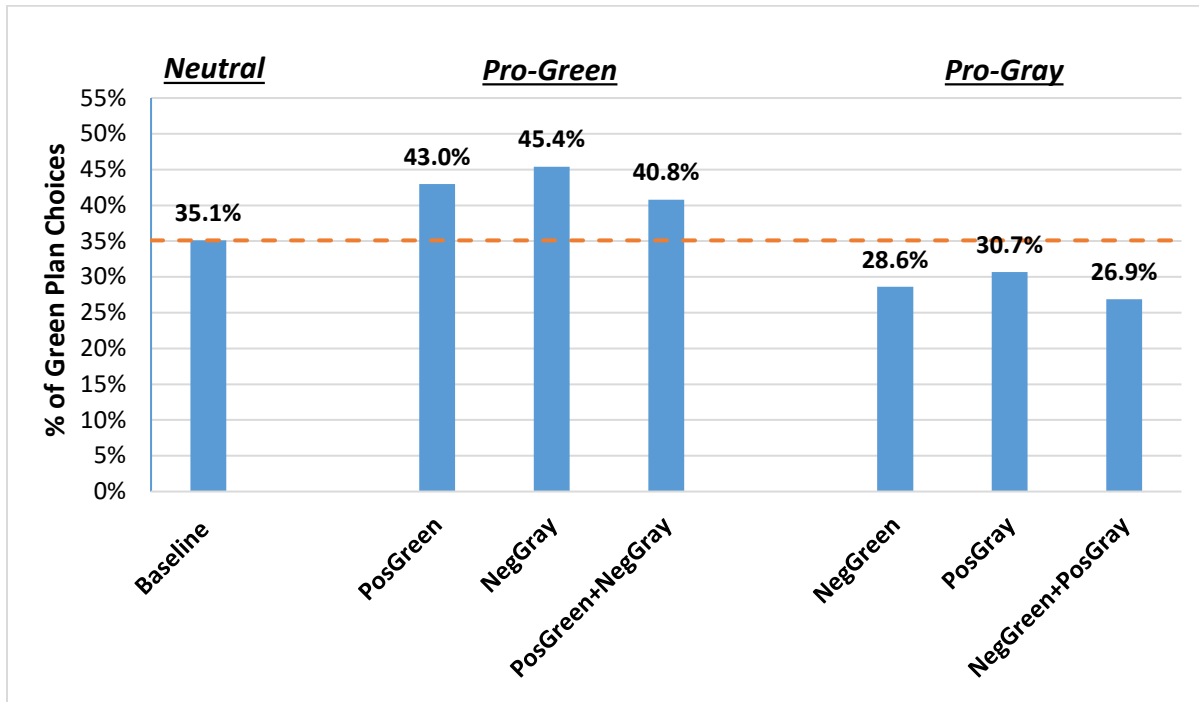
Additional Analysis of Heterogeneous Treatment Effects (Qualtrics Panel Only)

Here we provide additional analysis regarding the possible heterogeneous treatment effects based on observable respondent demographics. In Table 3.A we perform subsample analysis. For Income Level, Education, and Environmental attitudes we split the sample at the median. We then exclude those respondents at the median. We then classify respondents as being relatively *low/high* income and education if they are strictly below/above the reported median level. Similarly we classify respondents as being relatively *less/more* environmentally conscious if they are strictly below/above the median reported NEP level. Lastly, we categorize existing green plan customers as those who self-reported that they participate in a green plan. We re-run our main specification for each subsample separately.

Table 3.A Sub-sample Analysis: Estimated Logit Model with Green Plan Choice as Dependent Variable (Above/Below Median)

	Dependent Variable: *Green Plan Choice*							
	Income Level		Education Level		Environmental Attitude		Existing Green Plan Customer	
	Low	High	Low	High	Less	More	No	Yes
Pro-Green	.073	.085*	.025	.090	.099**	.029	.100***	.015
	(.074)	(.052)	(.054)	(.055)	(.046)	(.057)	(.038)	(.082)
Pro-Gray	-.127*	-.084	-.137**	-.025	-.046	-.139**	-.088**	-.035
	(.075)	(.054)	(.056)	(.060)	(.049)	(.057)	(.041)	(.082)
$10 Price Premium	-.093***	-.077***	-.101***	-.060***	-.082***	-.090***	-.094***	-.049**
	(.014)	(.014)	(.011)	(.013)	(.011)	(.012)	(.008)	(.025)
$15 Price Premium	-.151***	-.206***	-.166***	-.192***	-.164***	-.186***	-.185***	-.145***
	(.018)	(.019)	(.014)	(.018)	(.014)	(.015)	(.011)	(.029)
Respondent Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Block Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Respondent Clustering	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	3,585	4,844	6,289	5,069	6,394	6,057	11,057	2,151

Notes: This table reports the results of a logit regression with green plan choice as the binary dependent variable. Marginal effects are reported with standard errors in parentheses. Only the Qualtrics panel sample is included. Columns 1 and 2 report the results when the sample is split into those below and above the median income level, respectively. Columns 3 and 4 report the results when the sample is split into those below and above the median education level, respectively. Columns 5 and 6 when the sample is split into those below and above the median NEP scale, respectively. Columns 7 and 8 report the results when the sample is split based on whether the respondent reported being an existing green plan customer.

*** significance at 1% level; ** significance at 5% level; * significance at 10% level

In Table 4.A we run additional logit specifications with our measure of environmental attitude (*NEP* scale) and a dummy for existing *Green Plan Customer* interacted with our categorical treatment dummies – *Pro-Green* and *Pro-Gray.* We then report the marginal effects of these two treatment dummies on green plan selection evaluated when *NEP* = 25th percentile (*Less* environmental) and *NEP* = 75th percentile (*More* environmental); as well as when *Green Plan Customer* = 0 (*No*) and *green plan customer* = 1 (*Yes*).

Table 4.A Interaction Effects of Treatment with Environmental Attitude and Green Plan Customer

	Dependent Variable: *Green Plan Choice*					
	Environmental Attitude			Existing Green Plan Customer		
		Marginal Effects			*Marginal Effects*	
		Less	*More*		*No*	*Yes*
Pro-Green	1.63*	.101**	.040	.460**	.102**	-.065
	(.969)	(.040)	(.048)	(.182)	(.041)	(.081)
Pro-Gray	1.19	-.047	-.122***	-.406**	-.087**	-.067
	(.987)	(.041)	(.045)	(.191)	(.040)	(.080)
$10 Price Premium	-.396***			-.398***		
	(.036)			(.036)		
$15 Price Premium	-.813***			-.816***		
	(.049)			(.049)		
Pro-Green X **NEP**	-.026					
	(.019)					
Pro-Gray X **NEP**	-.031					
	(.019)					
Pro-Green X **Green Plan Customer**				-.739*		
				(.398)		
Pro-Gray X **Green Plan Customer**				.116		
				(.398)		
Respondent Controls	Yes			Yes		
Block Dummies	Yes			Yes		
Respondent Clustering	Yes			Yes		
N	13,208			13,208		

Notes: This table reports the results of a logit regression with green plan choice as the binary dependent variable. Only the Qualtrics panel sample is included. Colum 1 reports the estimated coefficients (with standard errors in parenthesis) when *NEP* scale is interacted with treatment. Columns 2 and 3 report the marginal effects evaluated at *NEP* = 25th percentile and *NEP* = 75th percentile, respectively. Column 4 reports the estimated coefficients (with standard errors in parenthesis) when *Green Plan Customer* is interacted with treatment. Columns 5 and 6 report the estimated marginal effects when *Green Plan Customer = 0 and Green Plan Customer = 1,* respectively.

*** significance at 1% level; ** significance at 5% level; * significance at 10% level

Appendix E – Price Volatility Manipulations

Price Volatility Manipulation	Possible Monthly Price	Chance of Price	Variance	Range
Low Volatility (LV)	- $5 $0 + $5	5% 90% 5%	2.5	$10
Medium Volatility/Low Dispersion (MV-LD)	- $15 $0 + $15	20% 60% 20%	90	$30
Medium Volatility/High Dispersion (MV-HD)	- $30 $0 + $30	5% 90% 5%	90	$60
High Volatility/Low Dispersion (HV-LD)	- $15 $0 + $15	40% 20% 40%	180	$30
High Volatility/High Dispersion (HV-HD)	- $30 $0 + $30	10% 80% 10%	180	$60

Notes: This table displays the five specific price volatility manipulations we used with the corresponding variance and range of each price distribution, as part of the larger data collection process. All the prices displayed in the table are depicted relative to the expected monthly price of each plan; therefore, changes in the premium of the green plan just shifted the entire price distribution by the amount of the price premium, which does not change the variance or range of the distribution.