Characterizing Customer Preferences:

How the Doritos® Nachos Method Works for Electricity Service Plans

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EPRI

Behavior, Energy and Climate Conference
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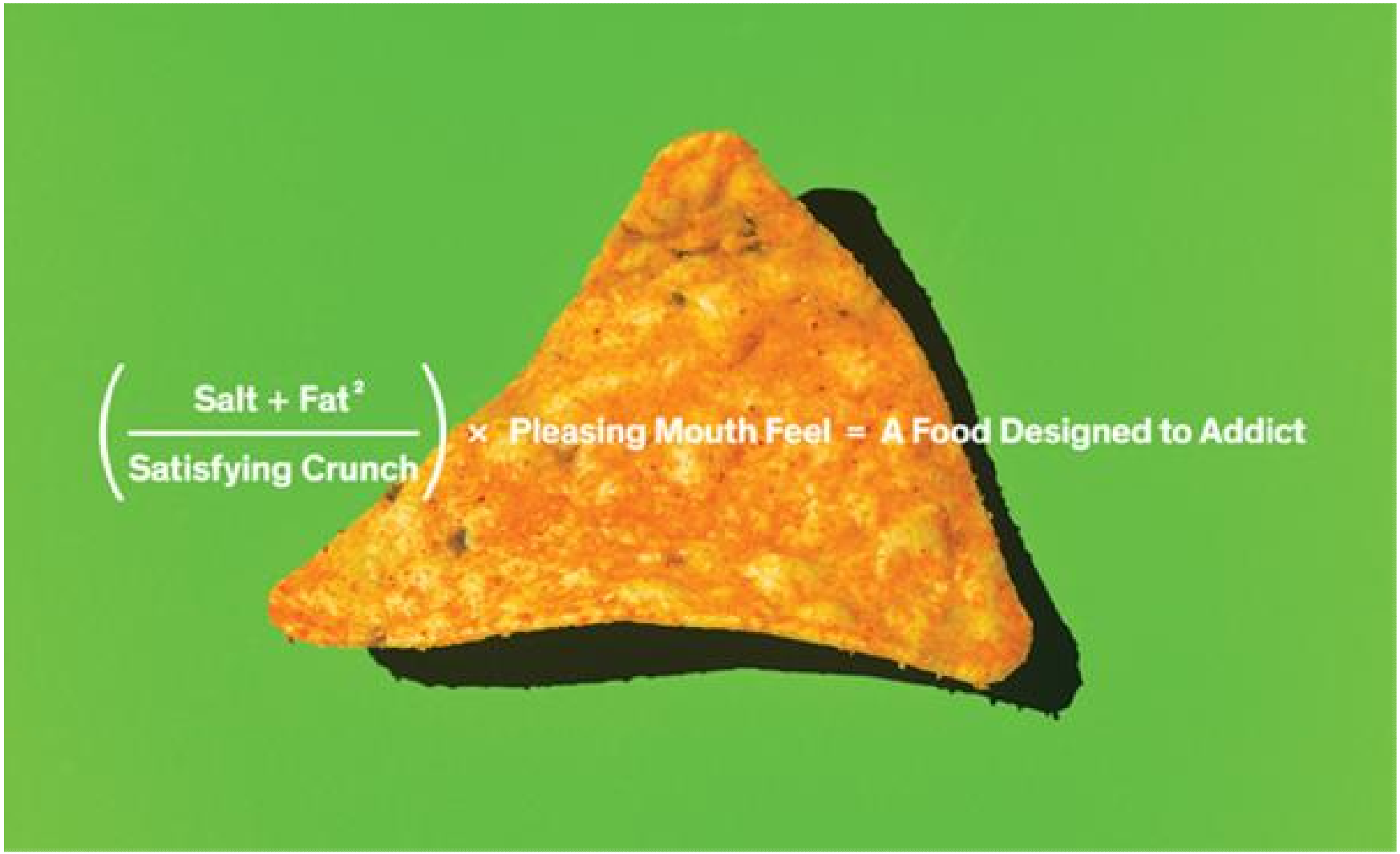
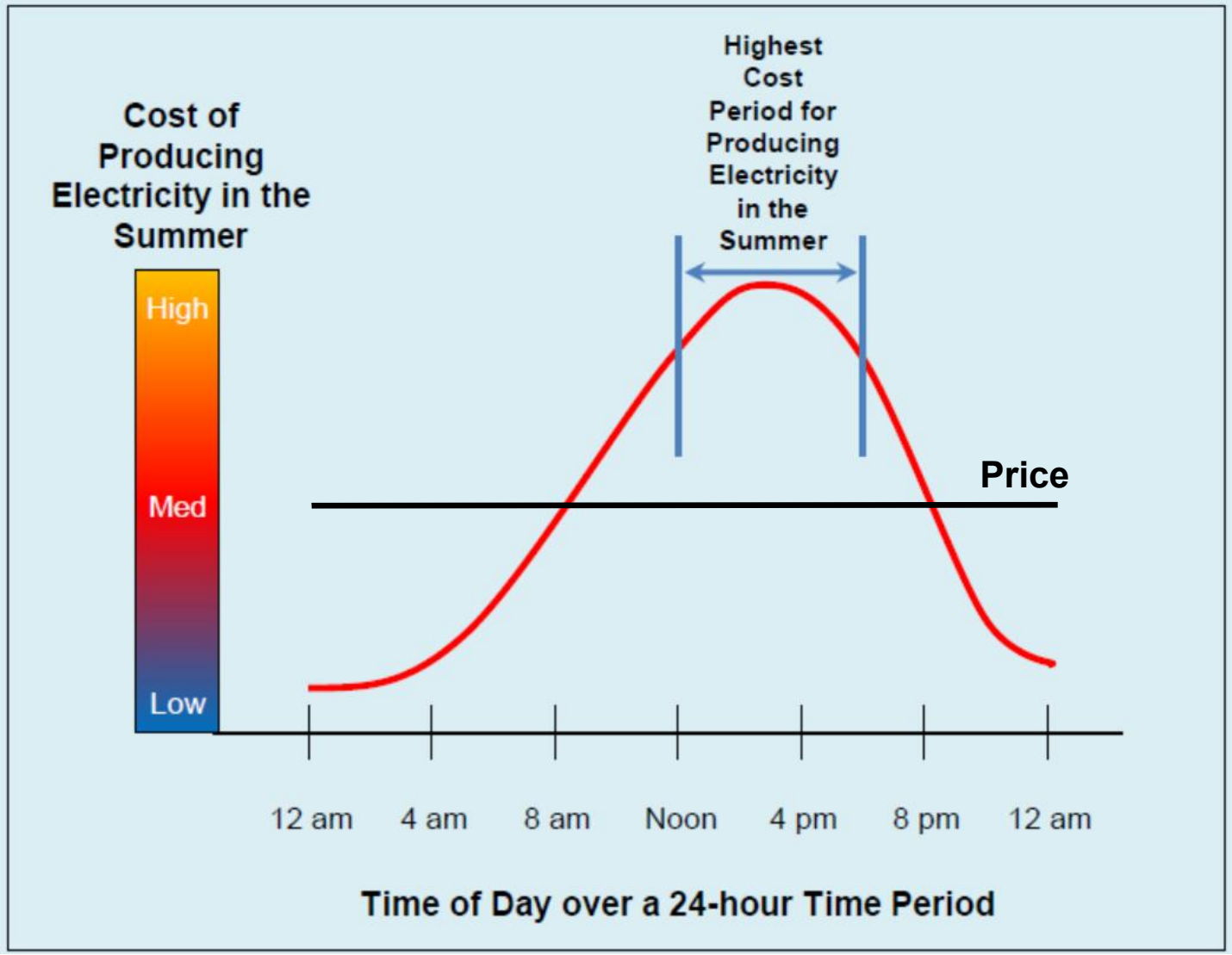


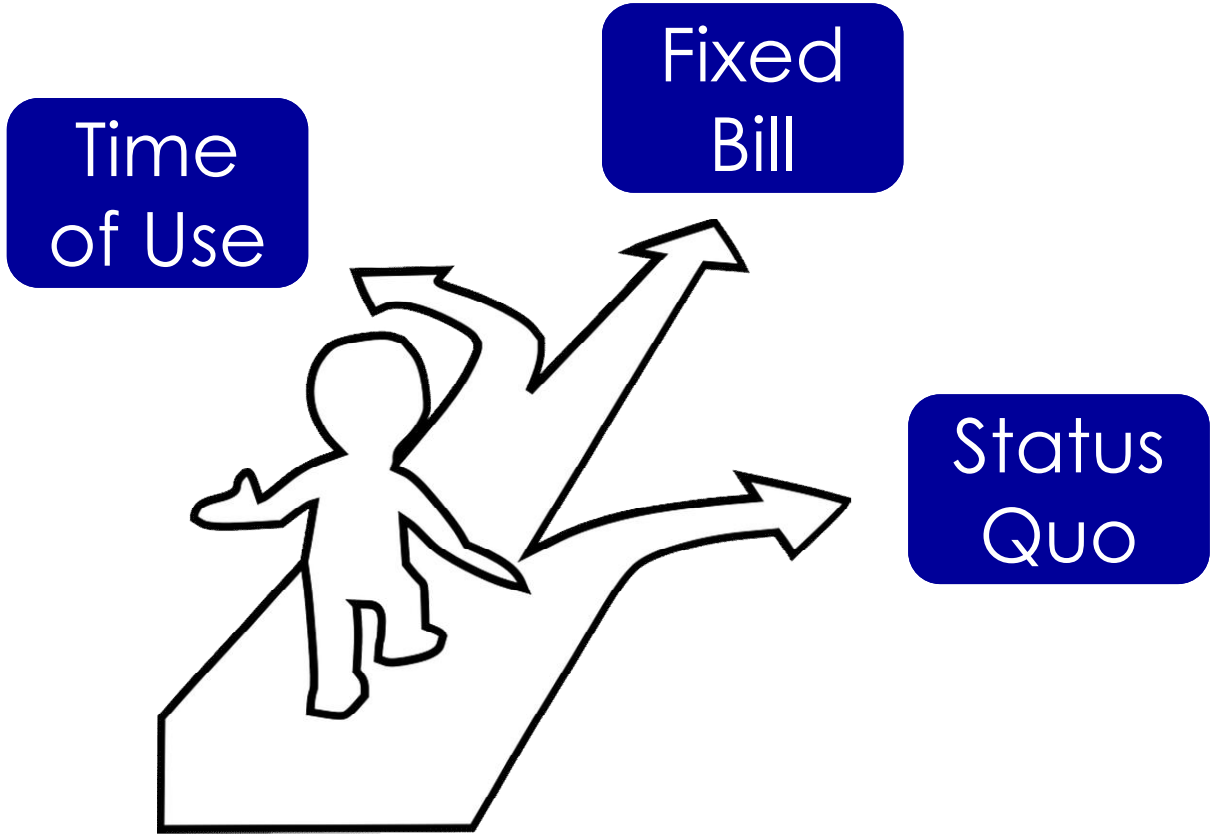
Discrete Choice Experimentation

Source: "The Extraordinary Science of Addictive Junk Food," *The New York Times Magazine*, February 20, 2013.

Consumers Typically Don't Pay the Real-Time Cost of Producing Electricity



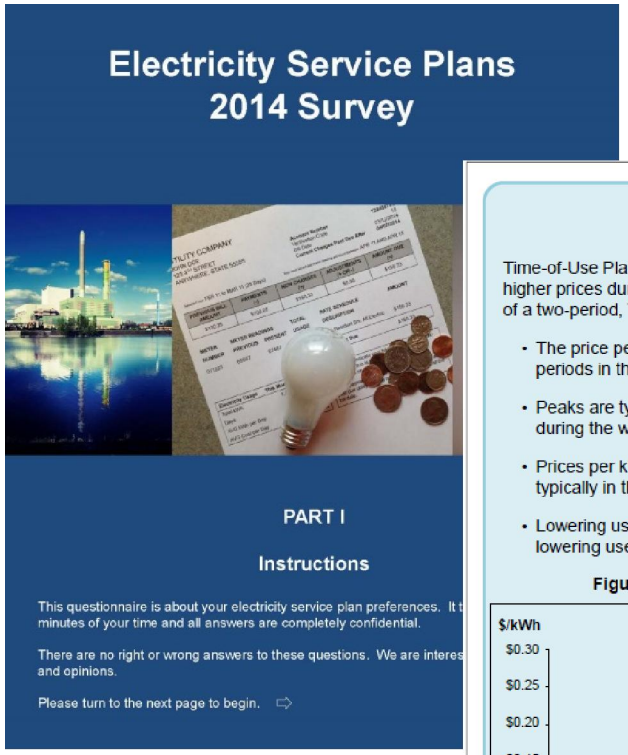
The Challenge



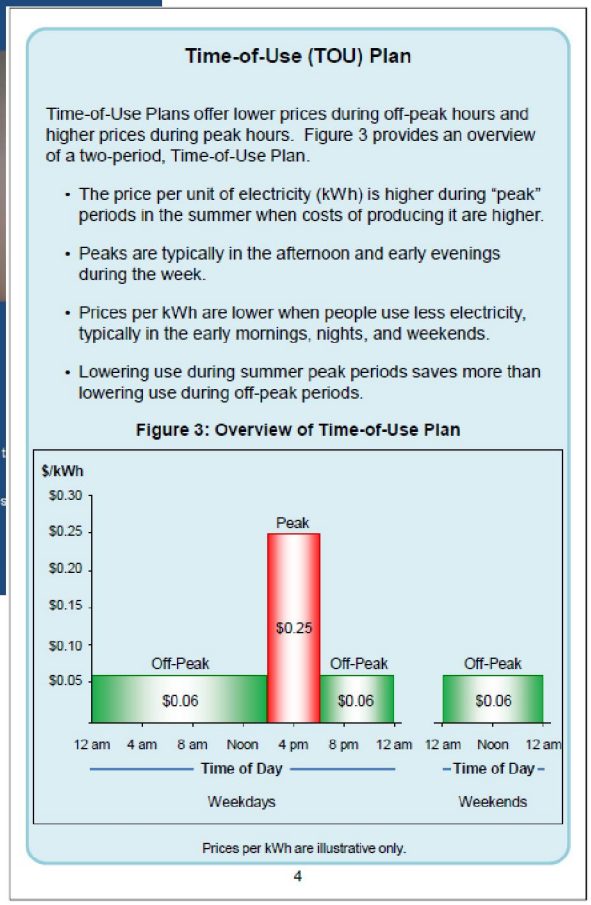
Complex! Made Simple in Survey

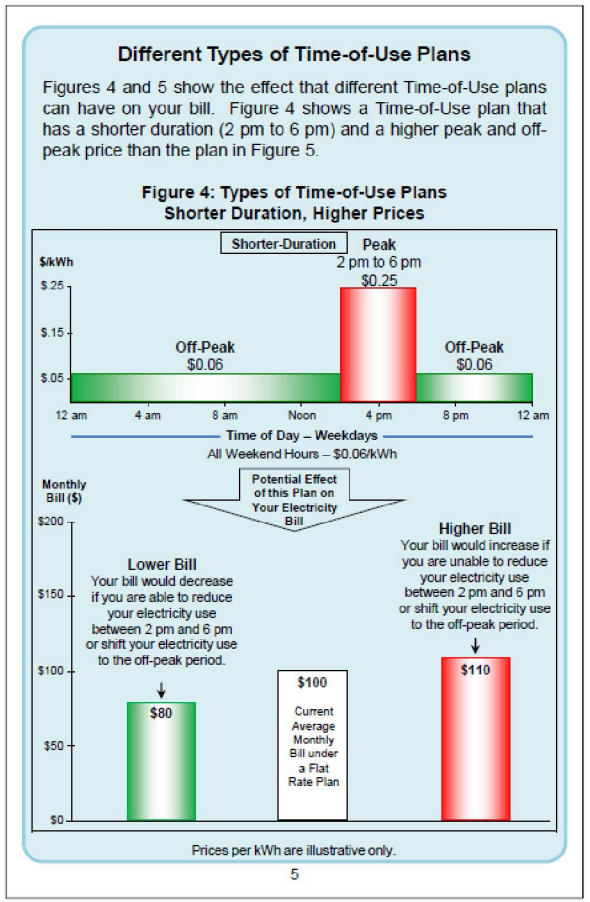
Experiment	Attributes	Levels	
Flat Rate	Price	$0.10	
Time-of-Use	Off-peak price	$0.03, $0.06, $0.09	
	Peak price	$0.12, $0.25, $0.35, $0.45	
	Peak duration and times	2 hours	5 p.m. to 7 p.m.
		3 hours	2 p.m. to 5 p.m.
			3 p.m. to 6 p.m.
			4 p.m. to 7 p.m.
		4 hours	2 p.m. to 6 p.m.
		6 hours	2 p.m. to 8 p.m.
	Season	Summer, summer and winter	
Fixed Bill	Premium	2%, 5%, 15%	
	Contract length	1, 2, or 3 years	

Survey Worked: Easy to Understand



Information Leaflet





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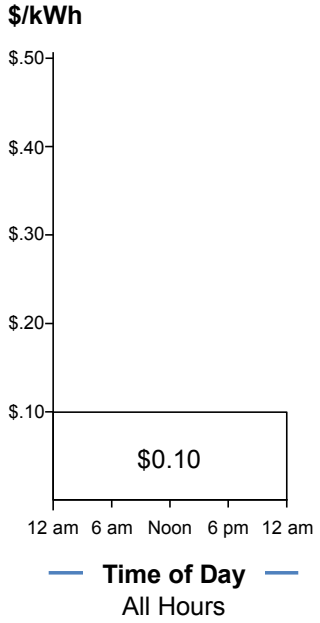
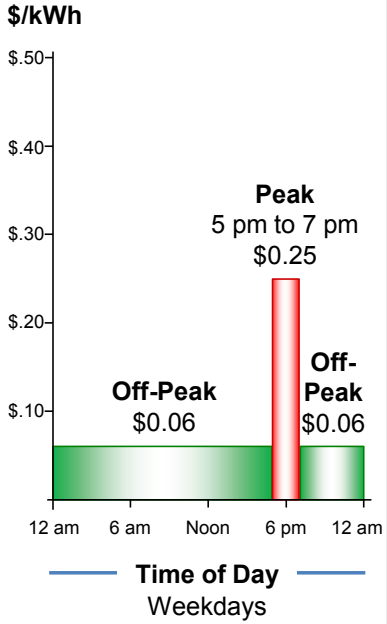
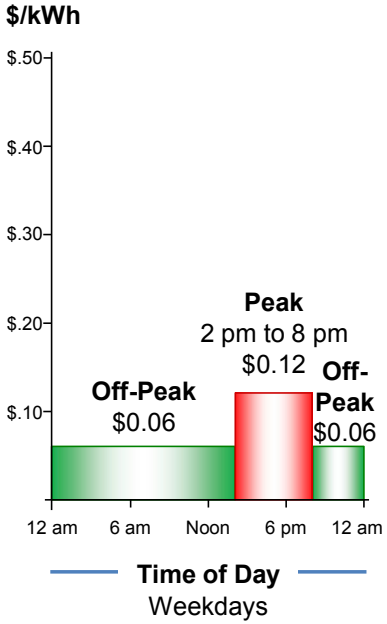
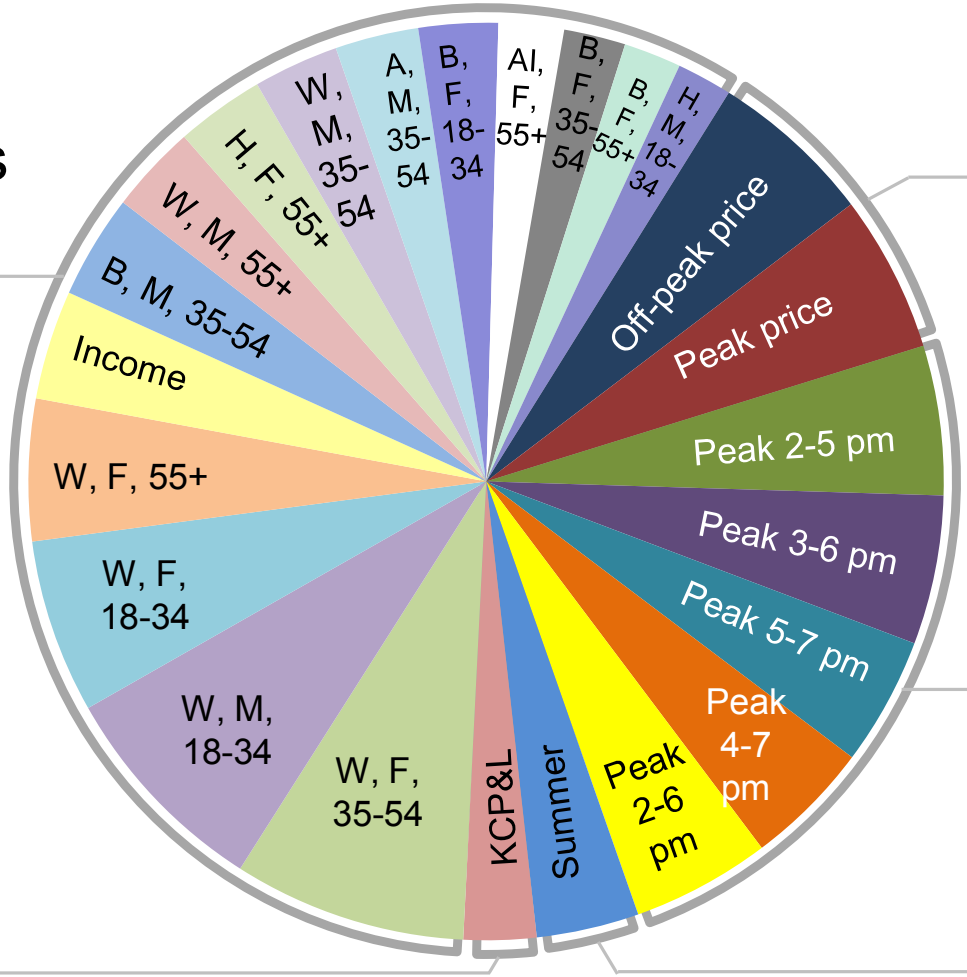
Choice Questions Were Understandable

Attributes	Current Rate	Option A	Option B
Pricing Blocks		 All Weekend Hours $0.06/kWh	 All Weekend Hours $0.06/kWh
Season When This Rate Would Apply	Year-Round	Summer	Summer
Which option would you choose?	☐ I would choose this option.	☐ I would choose this option.	☐ I would choose this option.

Choice Model Results – Time of Use (TOU)



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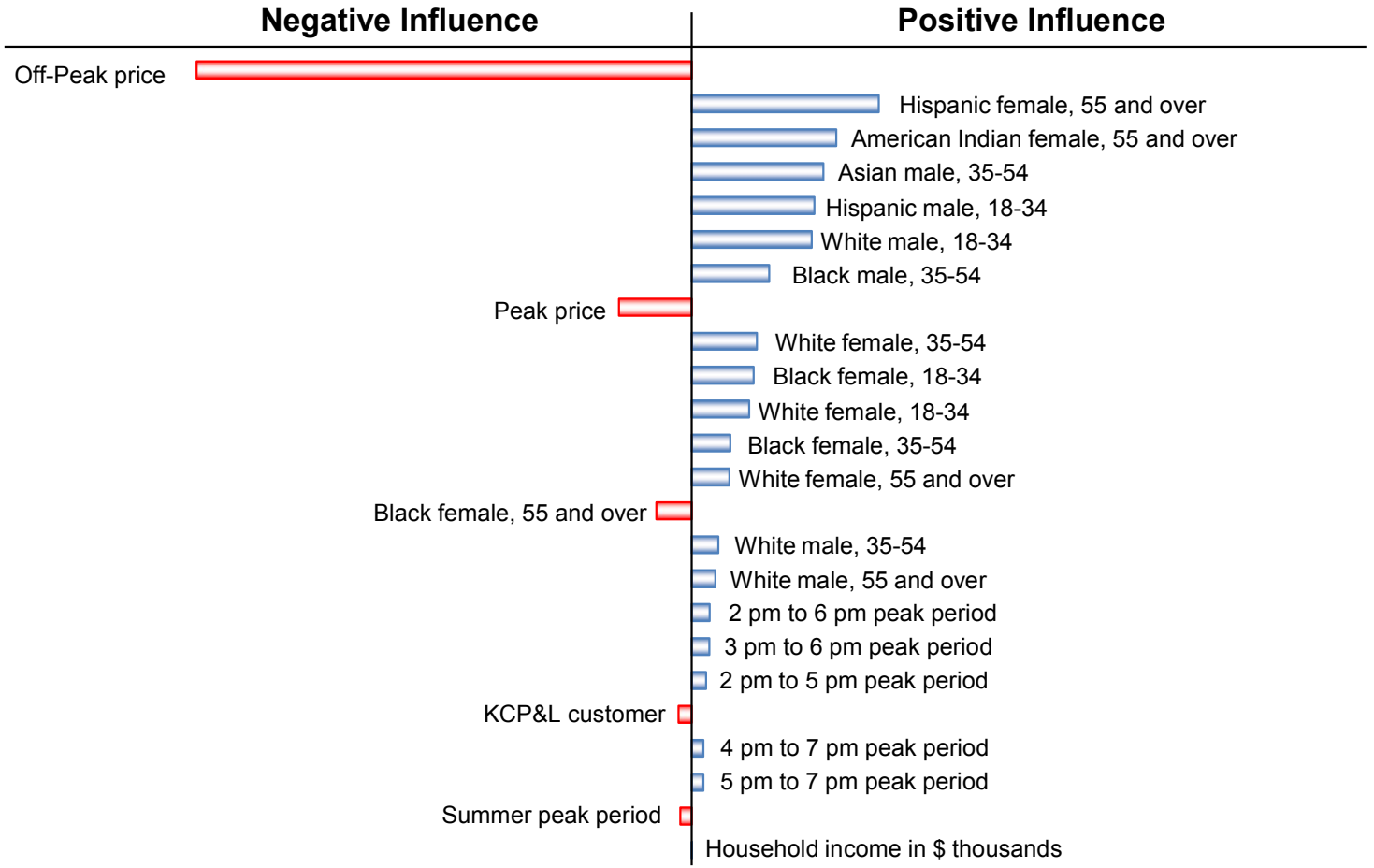
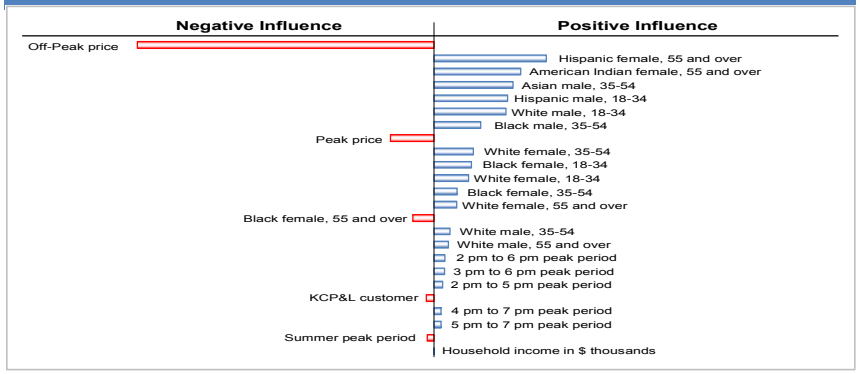
Influence of Factors on TOU Preferences

The factors that influence whether consumers are likely to choose an individual Electricity Service Plan (ESP) are comprised of numerous variables. These variables either negatively or positively affect ESP likelihood at different levels.

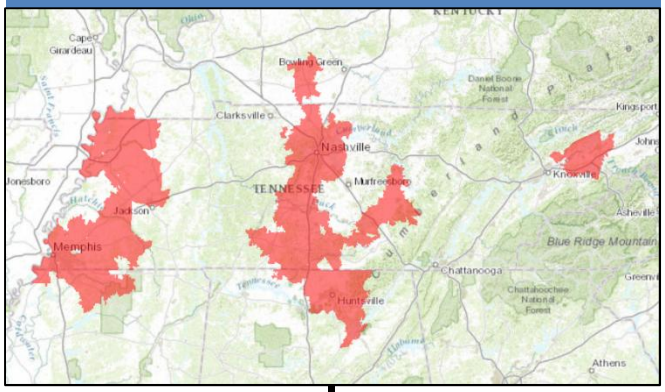


Using Choice Model Results to Develop Predictions of Potential Market Size

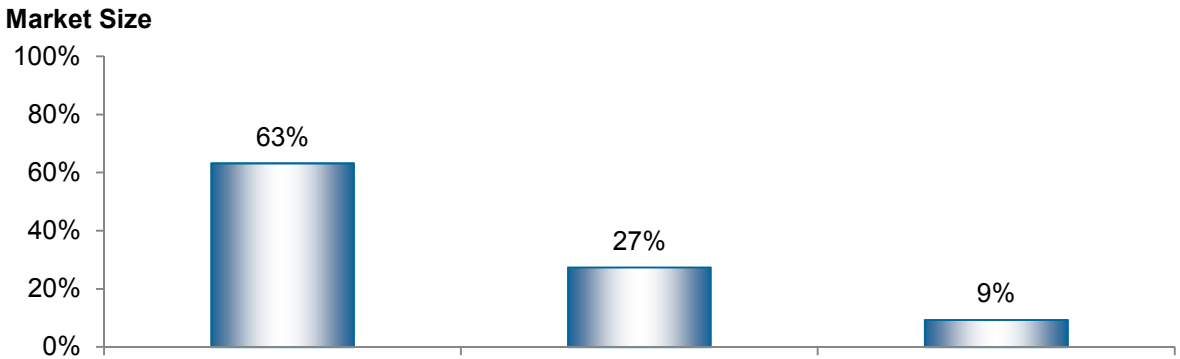
Statistical Model of Characteristics that Relate to ESP Selection Purchase Likelihood



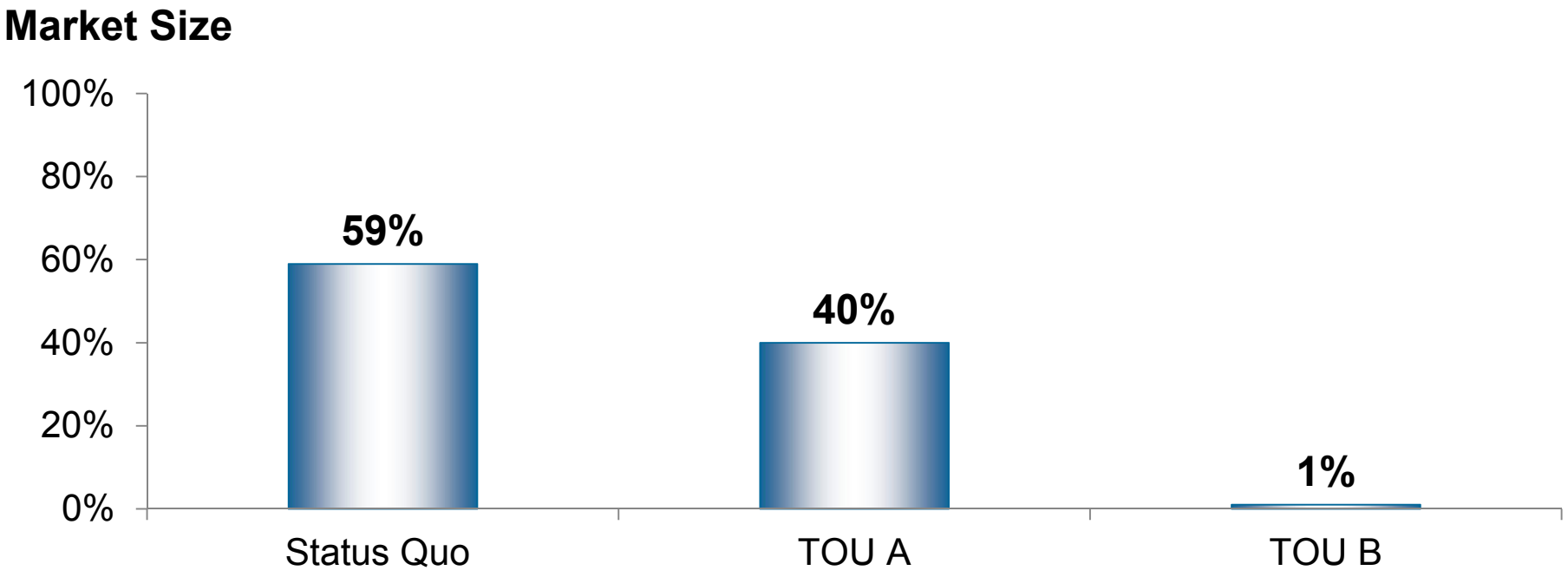
Demographic Data on the Sampled Utilities



Predictions of ESP Potential Market Size for Sampled Utilities

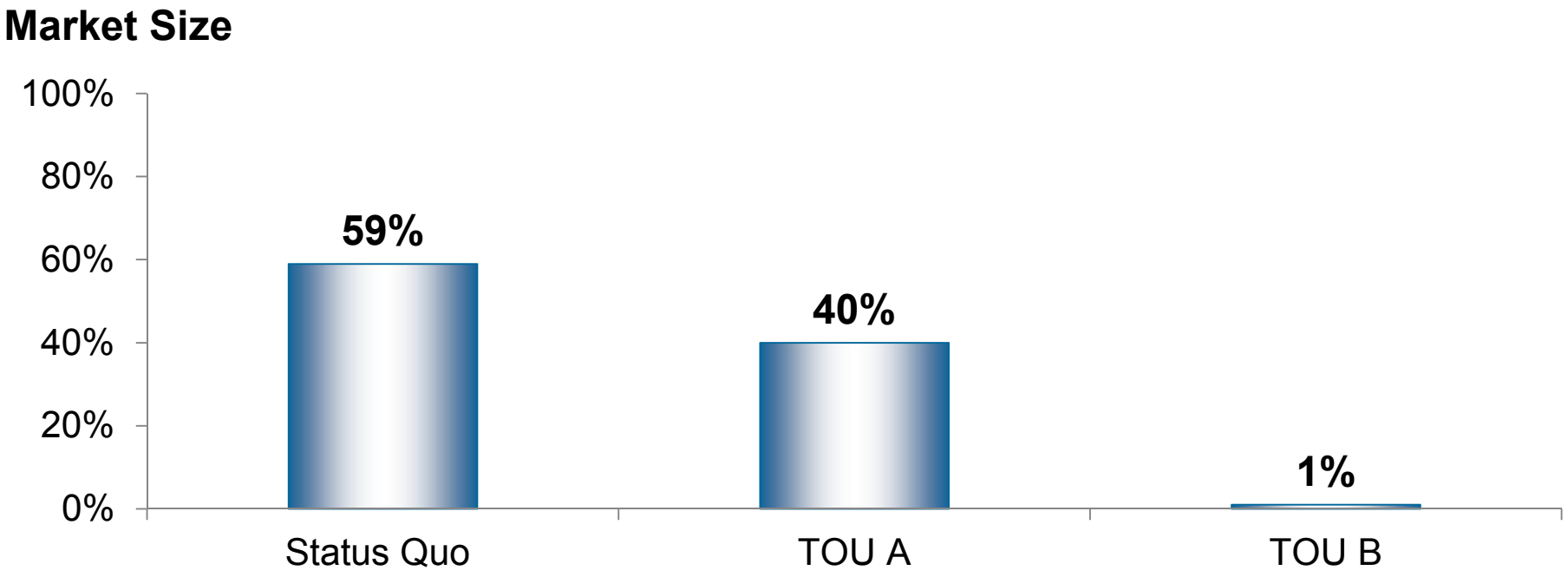


A Tool To Predict Market Size



Flat Rate: $0.10	Off-Peak $0.03	Off-Peak $0.09
	Peak: $0.12	Peak: $0.45
	Peak Timing: 2 pm – 5 pm	Peak Timing: 2 pm – 6 pm

A Tool To Predict Market Size: TOU Peak Price



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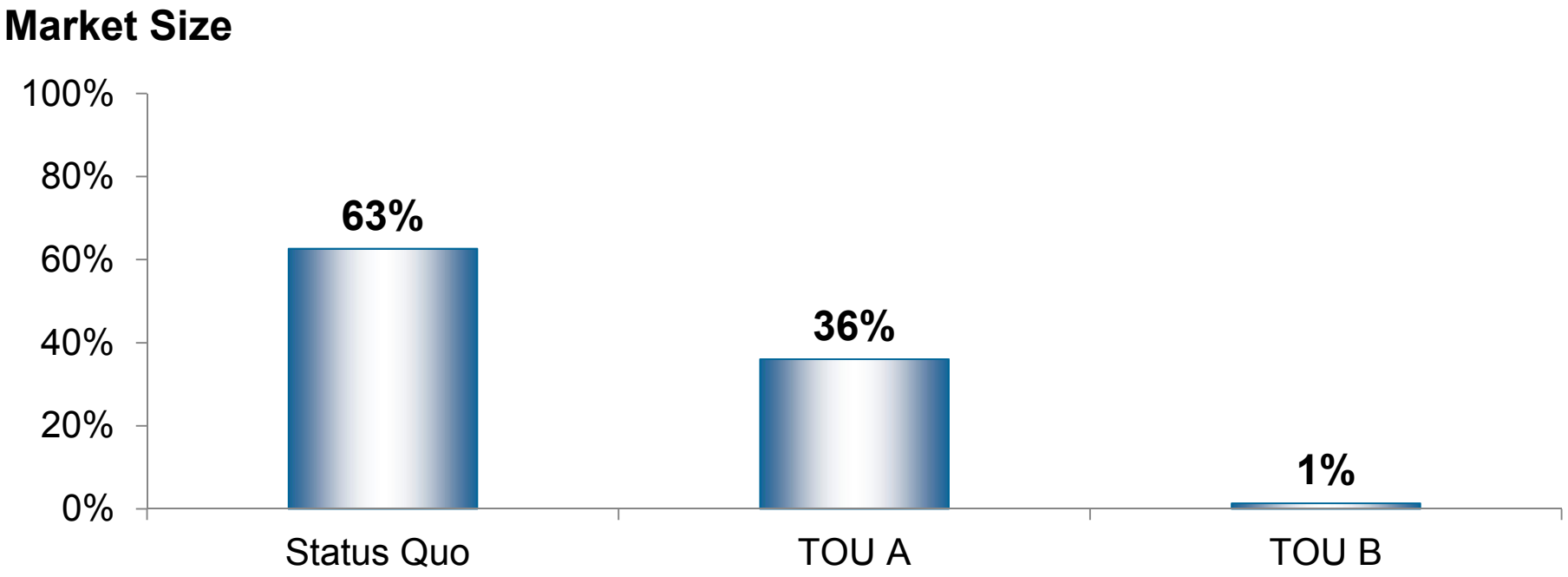

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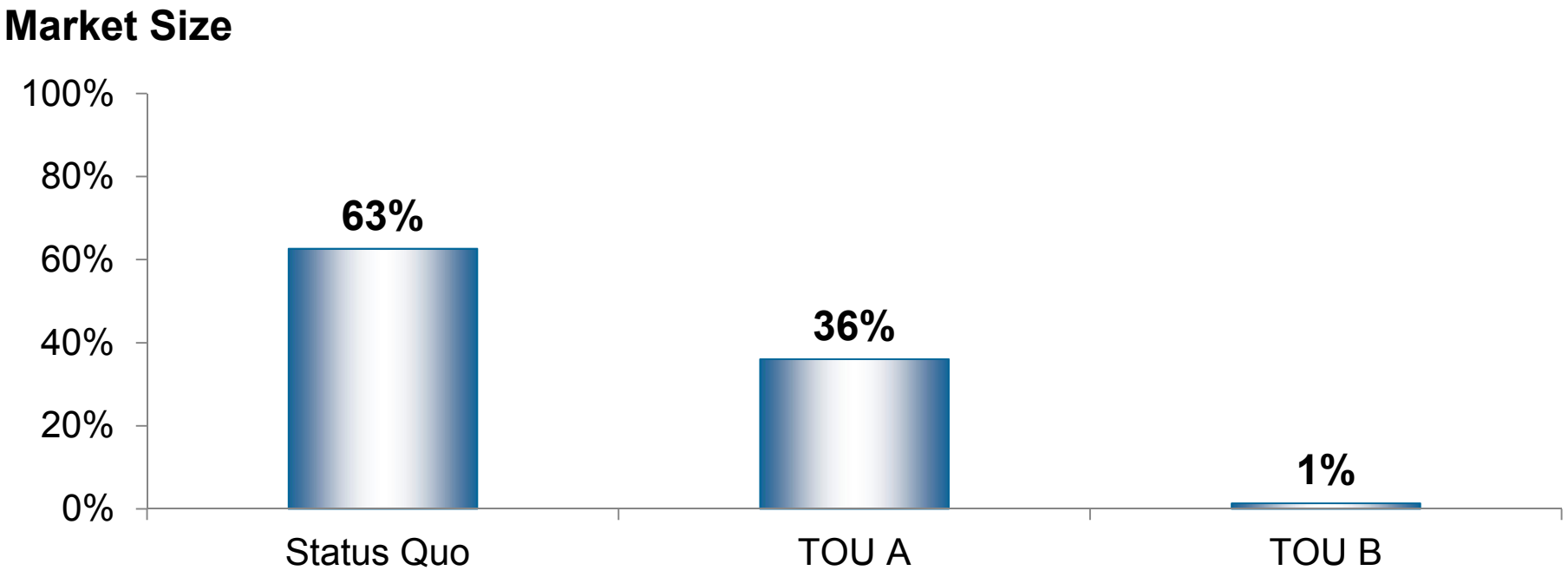
A Tool To Predict Market Size: TOU Peak Period



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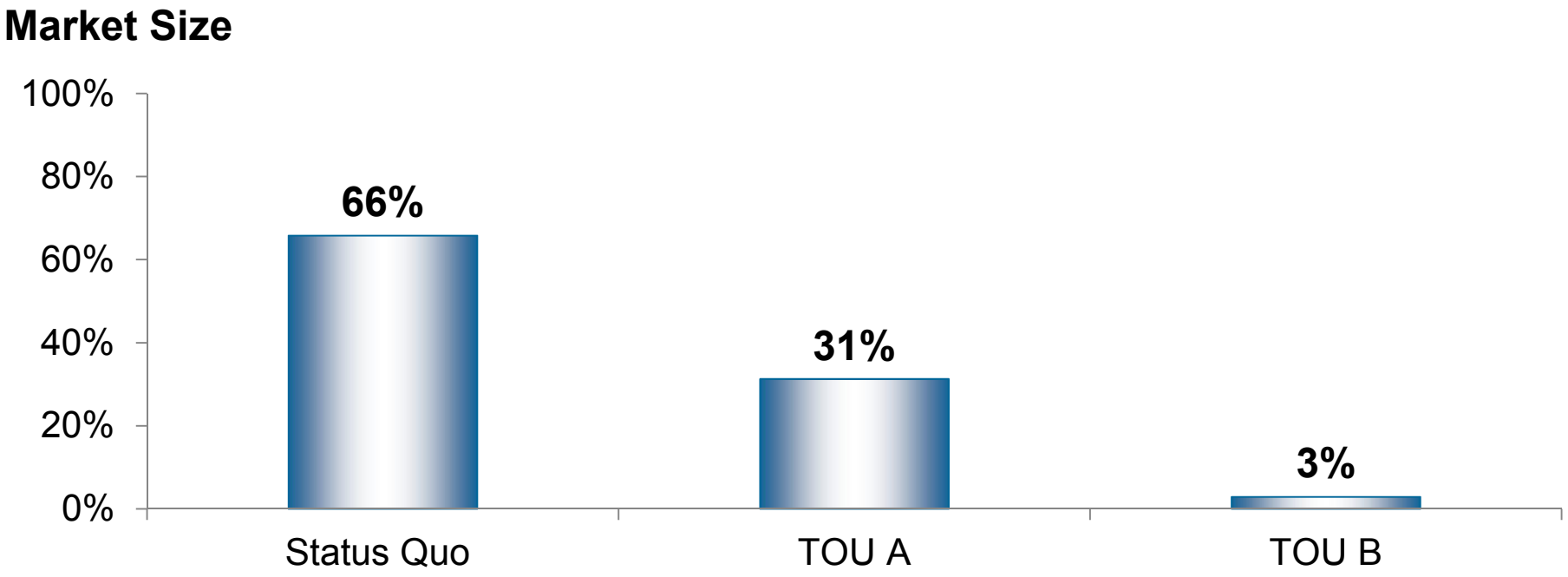

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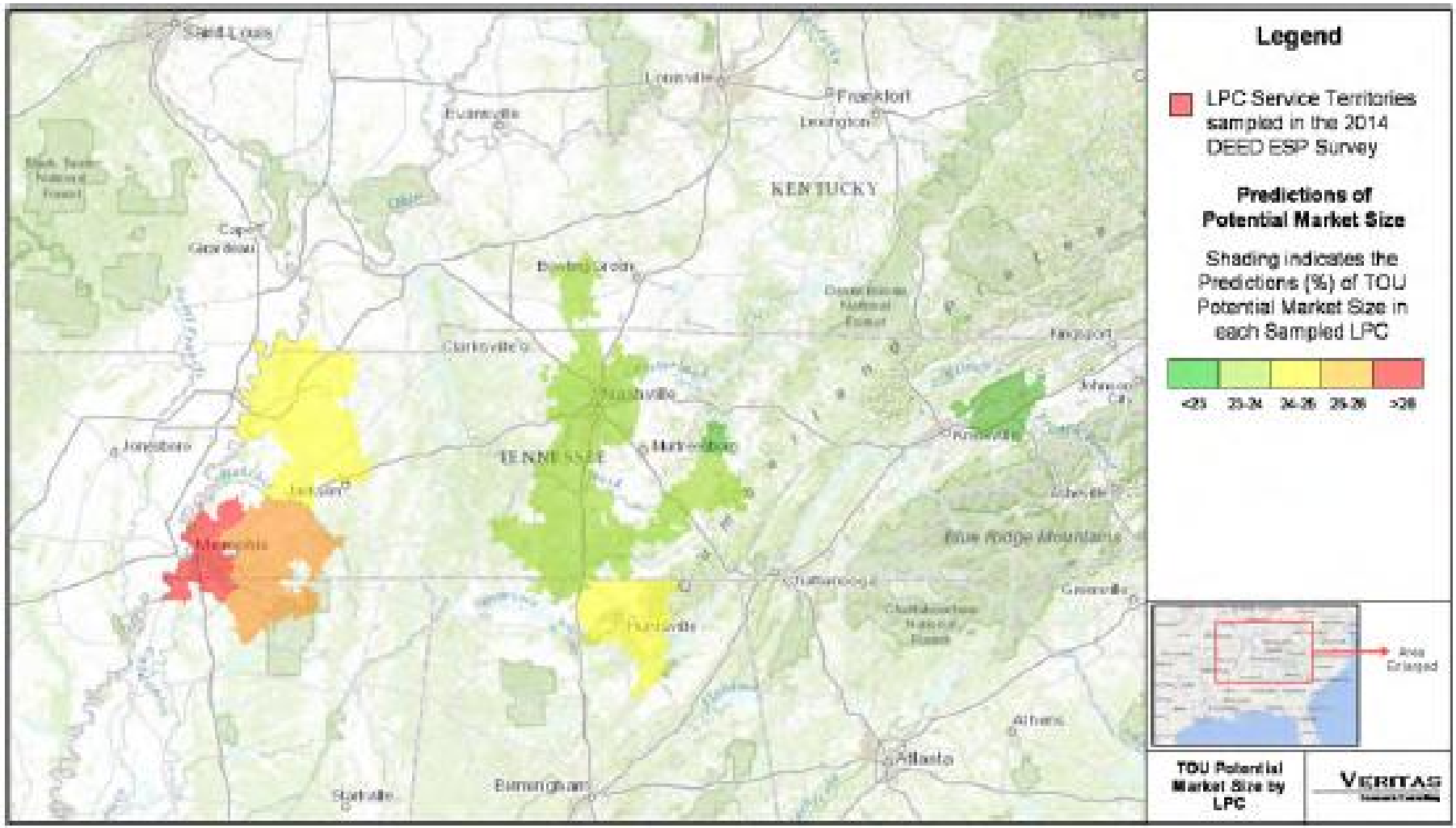
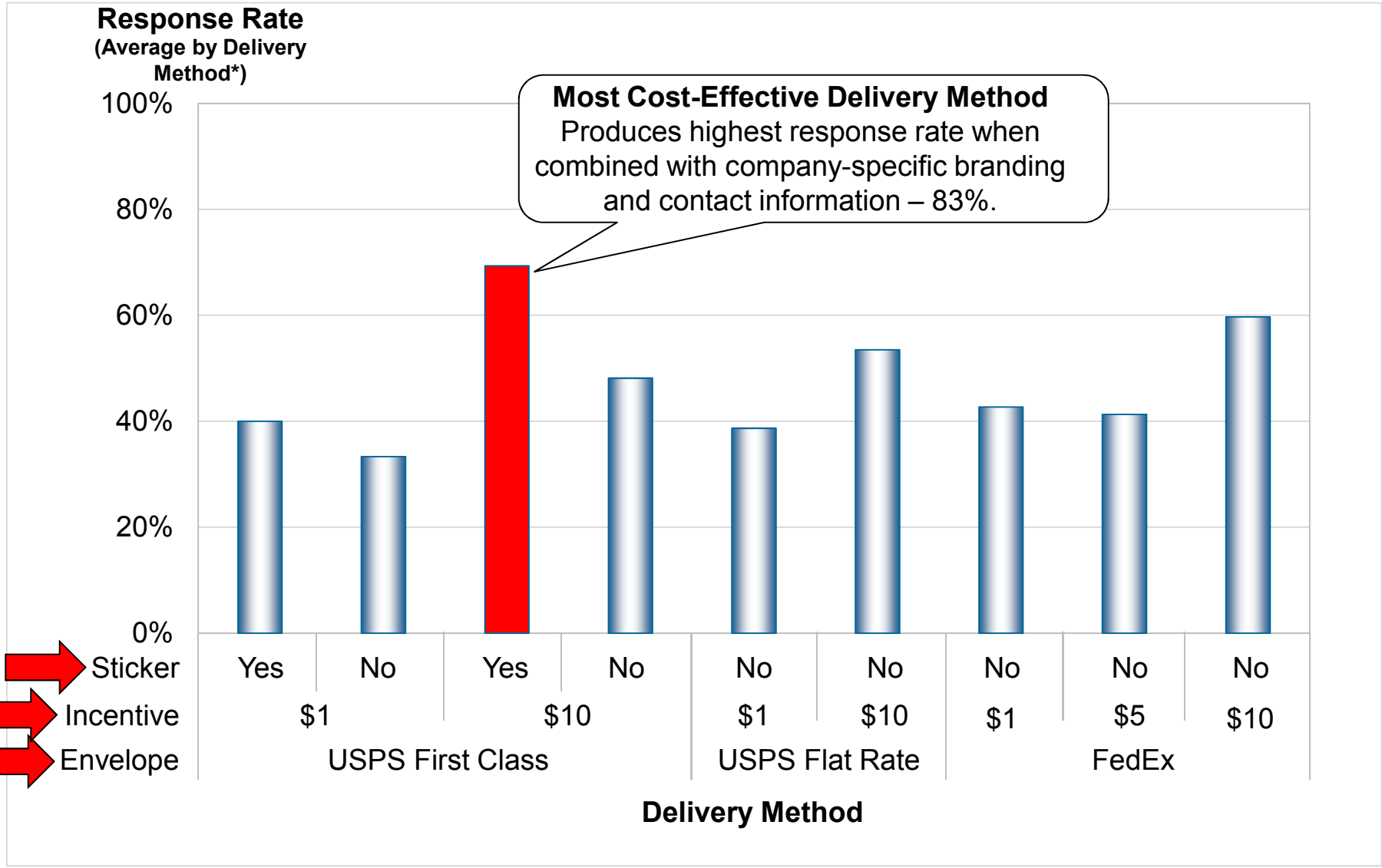
Results Help Understand How Market Potential Varies Across A Market



Excellent Response Rates Achieved



*Of surveys sent to local power companies in the Tennessee Valley

Today Rates; Tomorrow Customer Technologies

- More is on the way…
  - Other utility offerings
  - Solar photovoltaics
  - Plug-in electric vehicles
  - Energy efficiency measures
  - Electricity storage

Measuring Customer Preferences for Alternative Electricity Service Plans: An Application of a Discrete Choice Experiment, EPRI, Palo Alto, CA: 2015. 3002005757.

Resources

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Together…Shaping the Future of Electricity