Personalization Through Load Curve Analysis
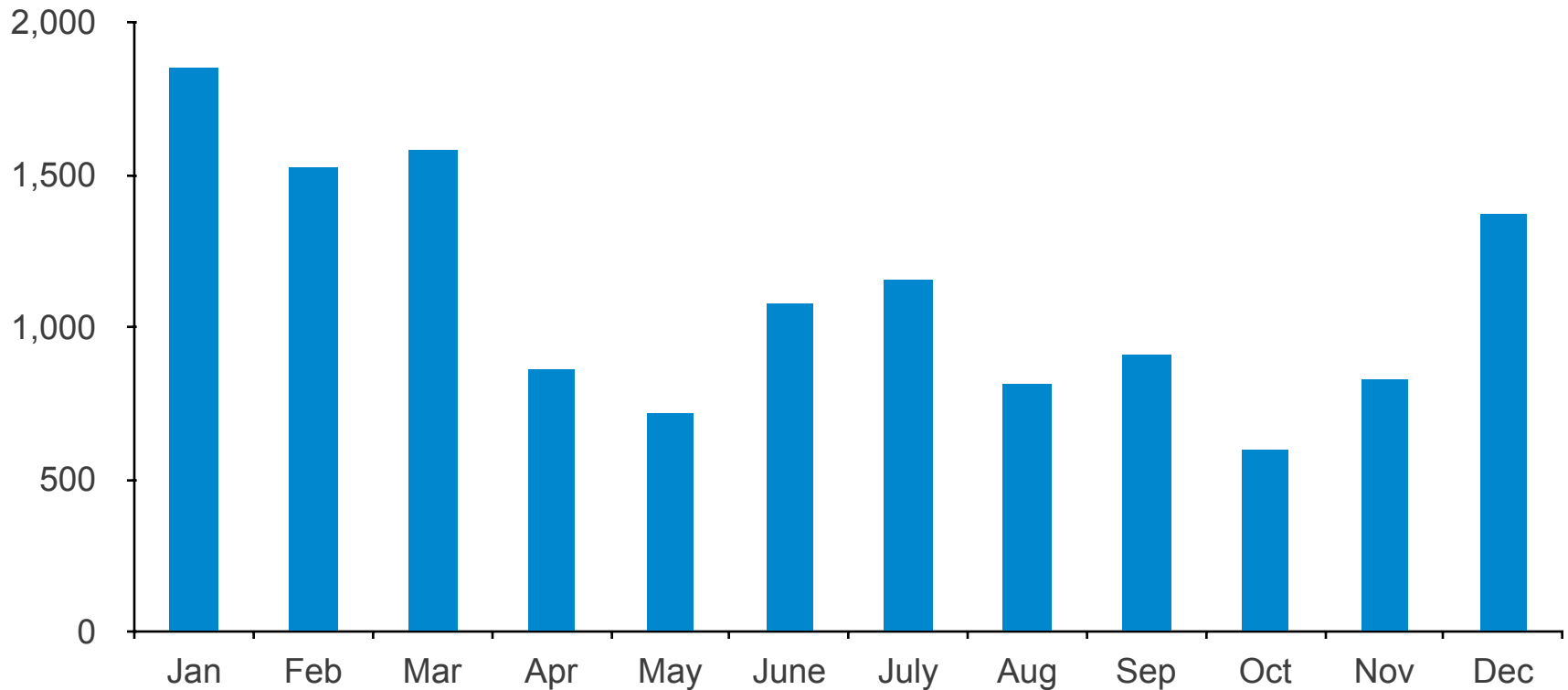
Yearly archetypes

MONTHLY ELECTRIC USAGE
KWh

Summer peak

Winter peak

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

OP⏣WER
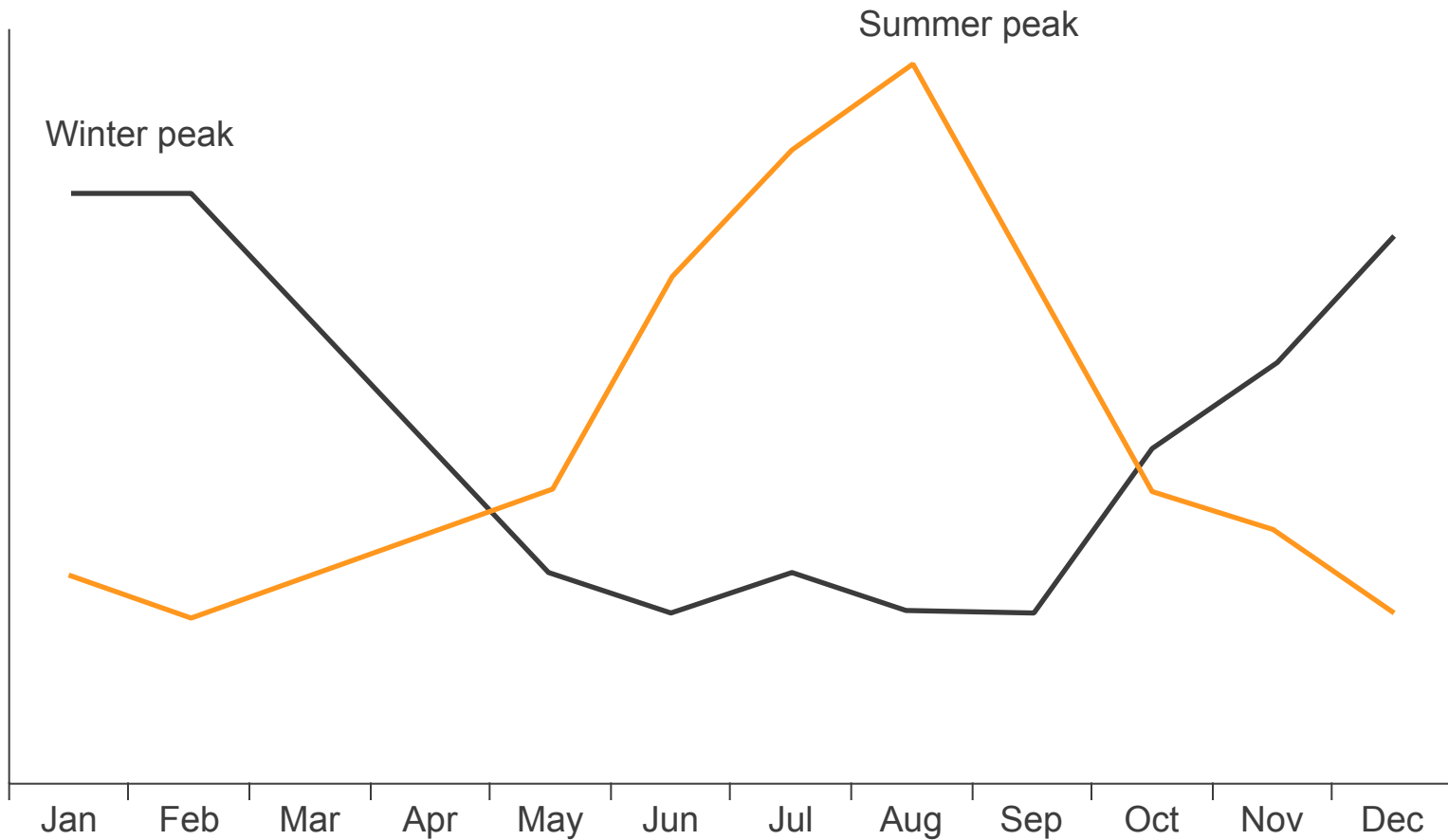
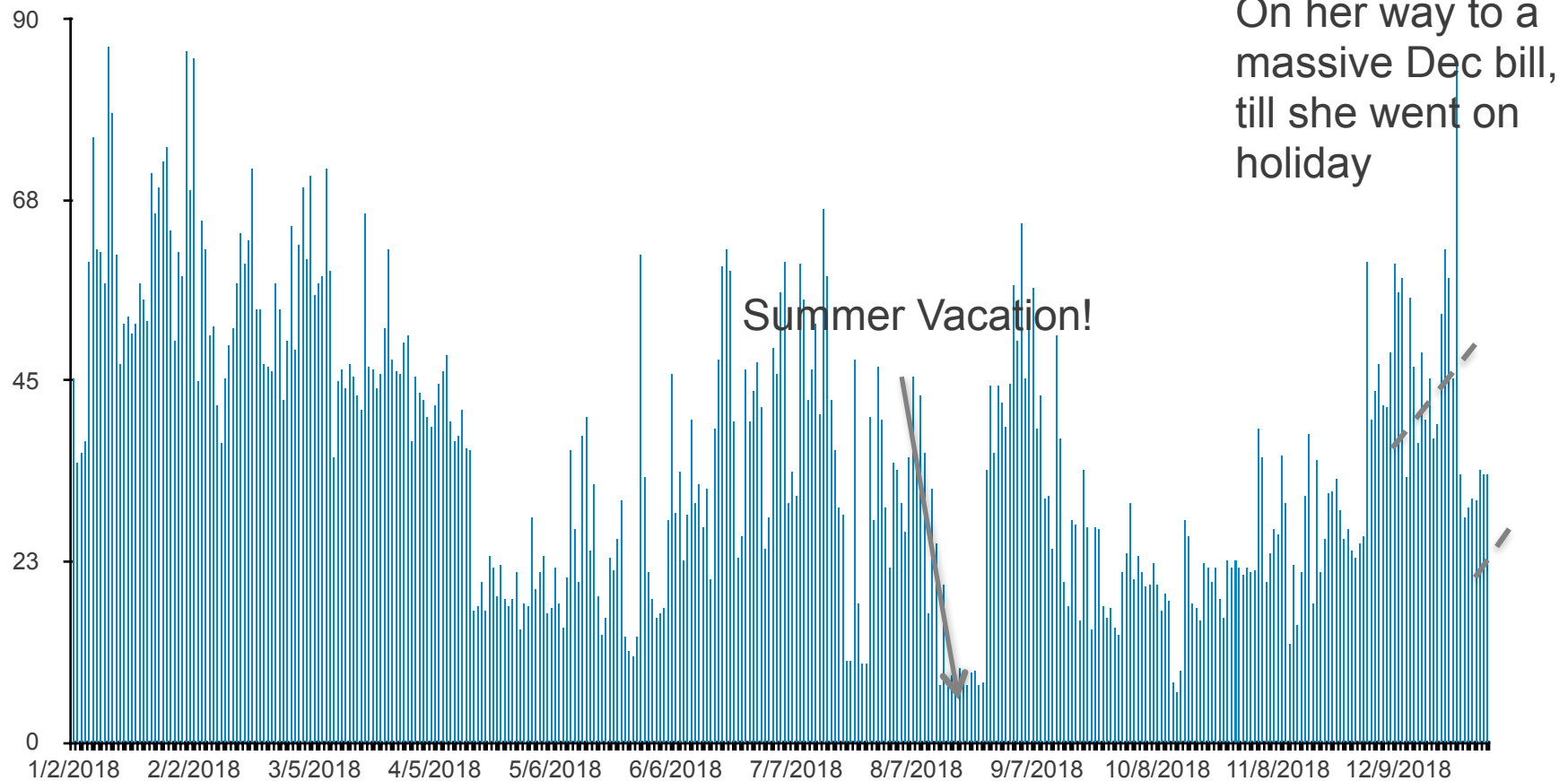# Nancy is a winter peaker

NANCY 2014 MONTHLY ELECTRIC USAGE KWh

But there's more …

Nancy has a smart meter!

Daily data provides a peak under the hood

NANCY 2014 DAILY ELECTRIC USAGE

On her way to a massive Dec bill, till she went on holiday

Summer Vacation!

OP⊙WER

Hourly data opens a window into how she lives

NANCY 2014 WEEKDAY HOURLY USAGE

...but they're most active 7-11pm (eat dinner ~9pm!)

Someone is often home during the day....

Her house gets going about 7am
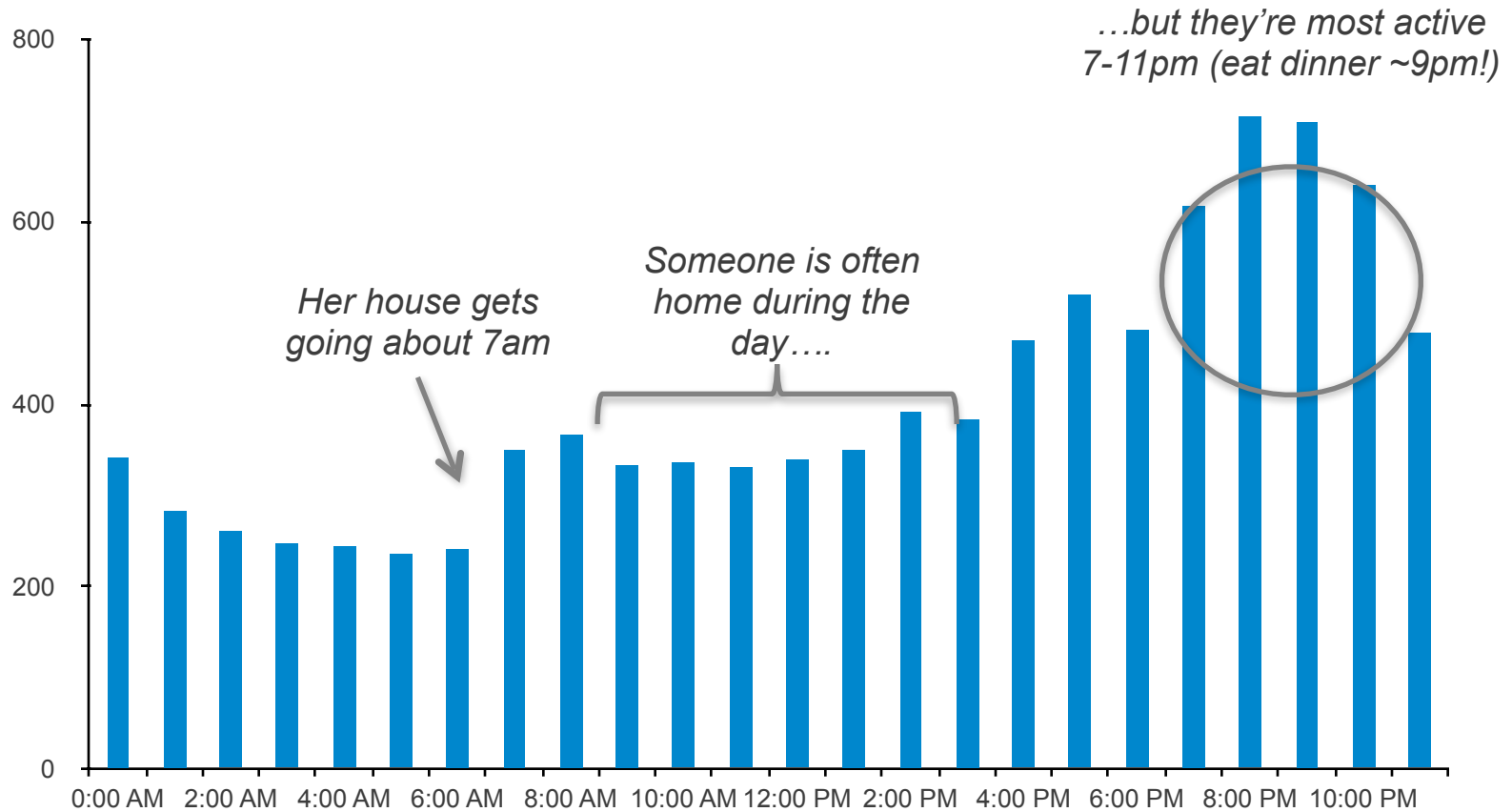
Profiling every customer …

FOR A 1M HOUSEHOLD UTILITY

2 minutes / Household	✕	1M Households	=	961 years

OPOWER

Smart Meter Data
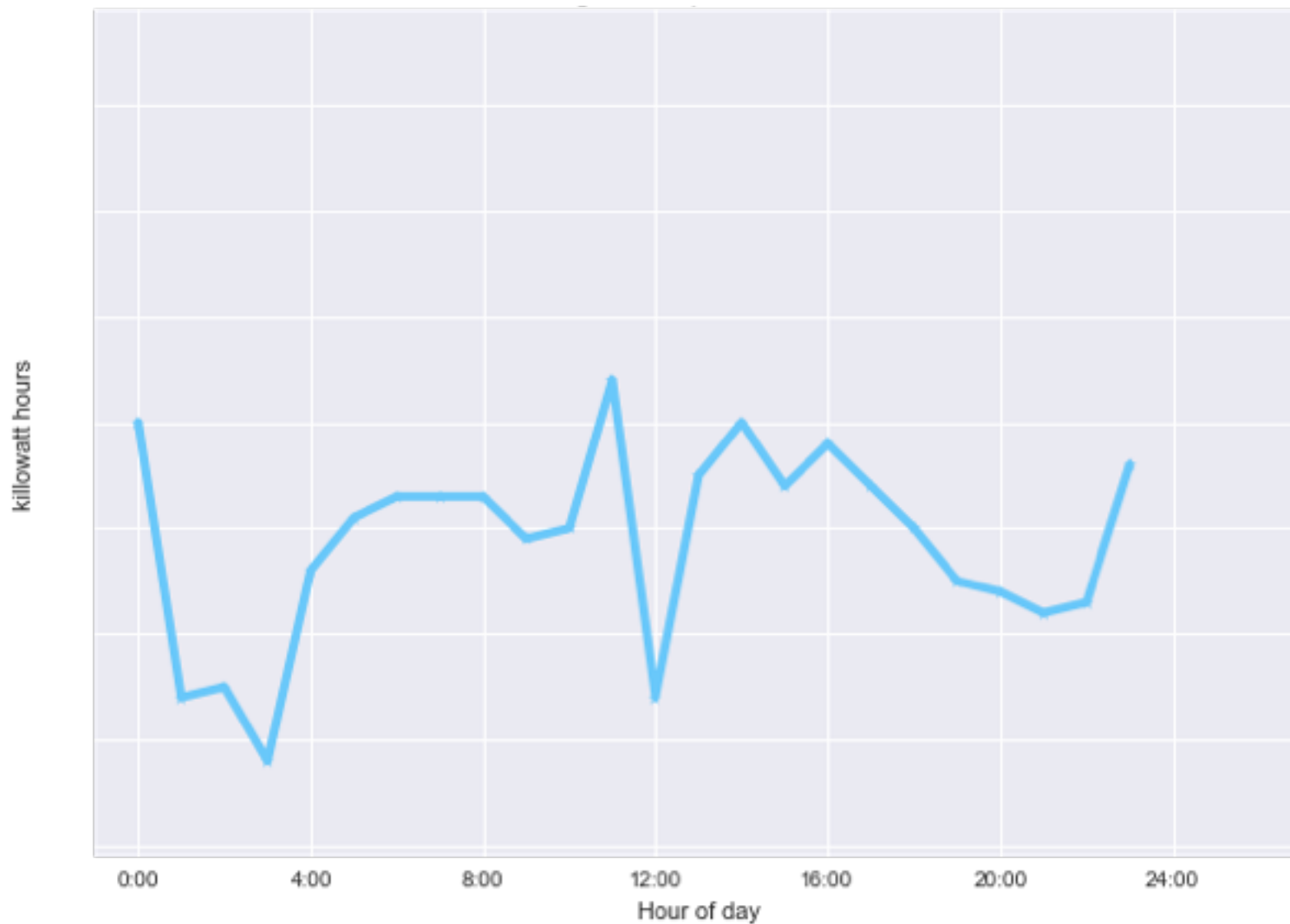
Load Curves – All Customers

Load Curves From 1,000 Customers
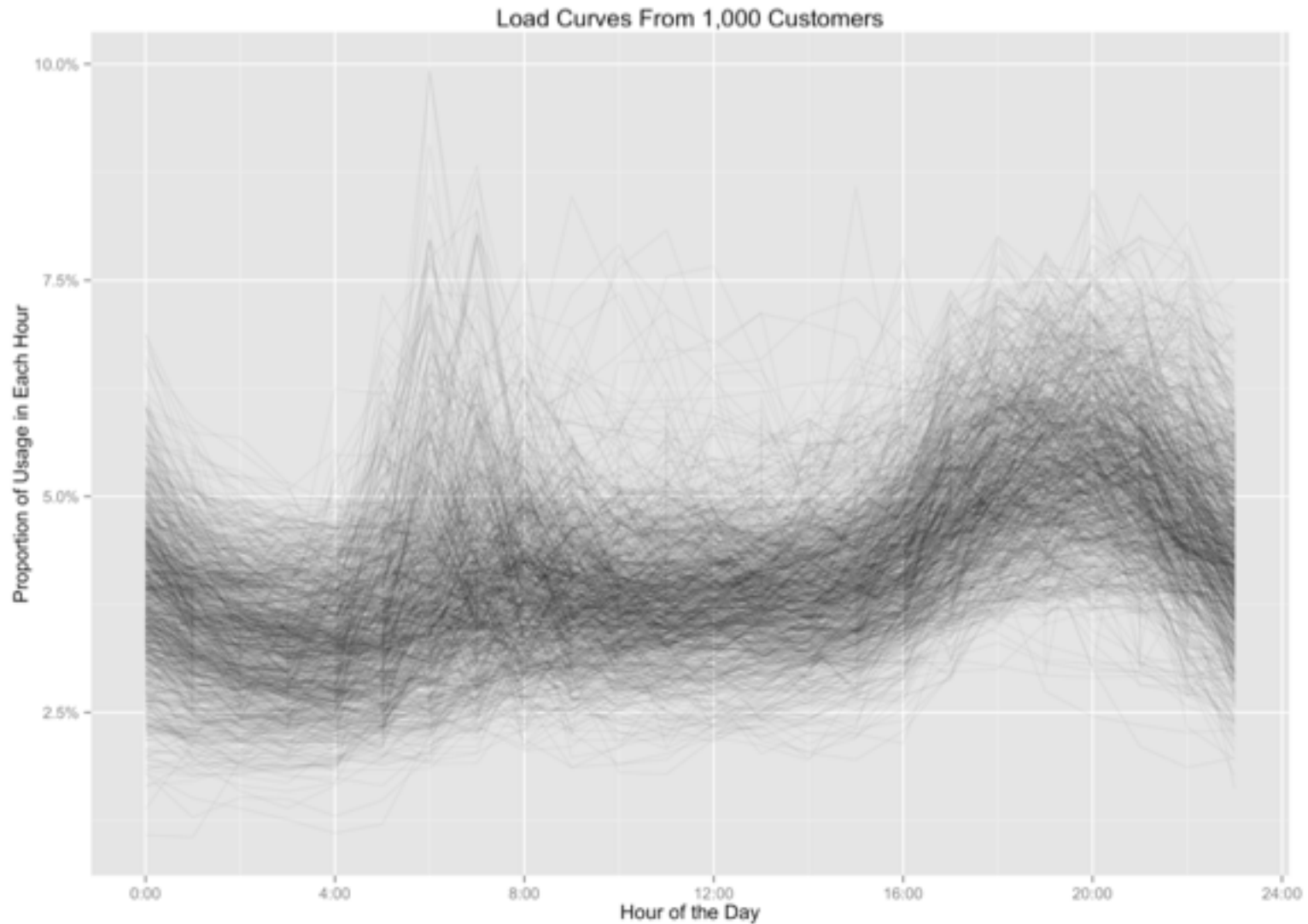
Load Curves – After Clustering

Load Curves From 1,000 Customers
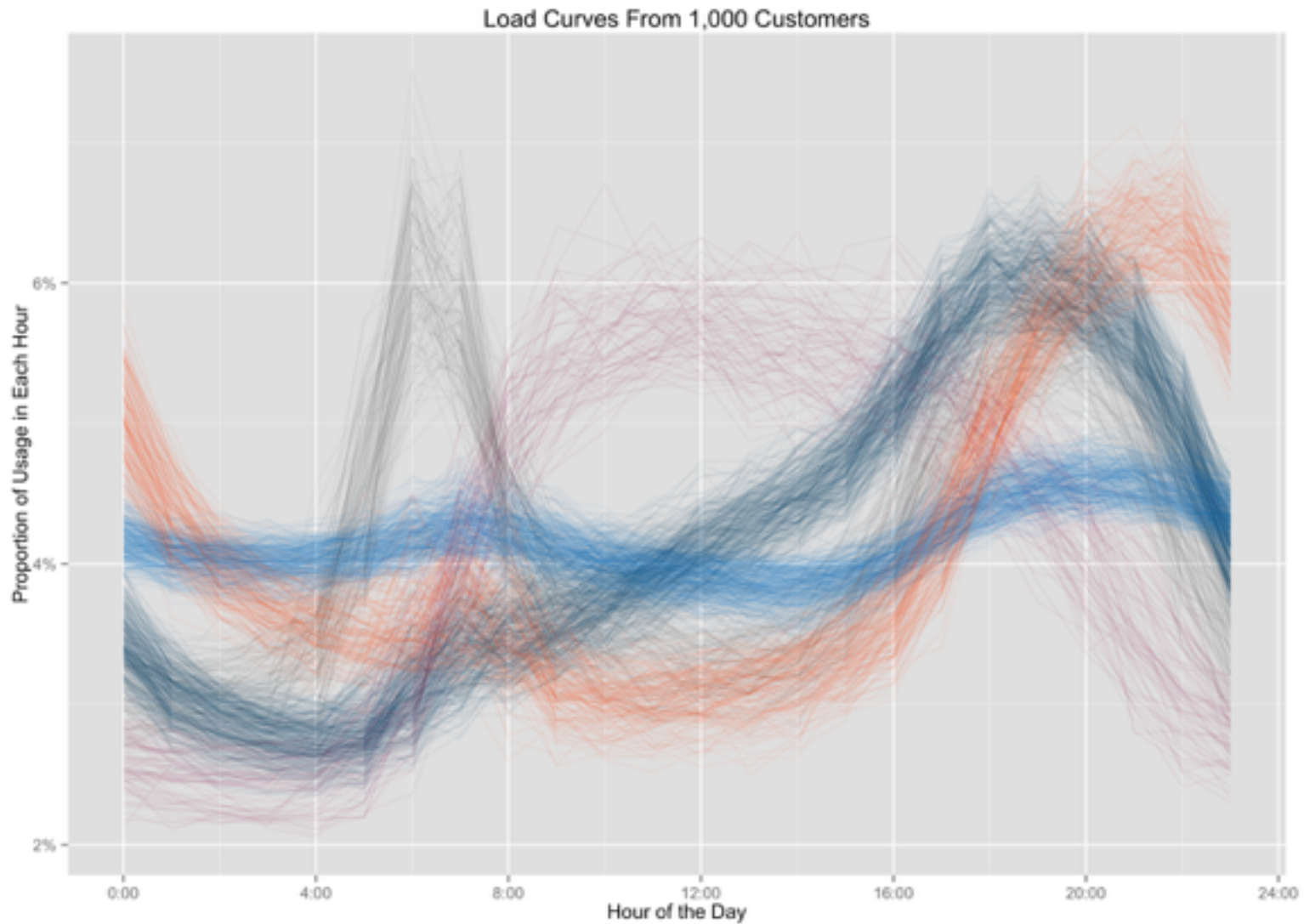
Load Curves – Cluster Centroids

Load Curves From 1,000 Customers
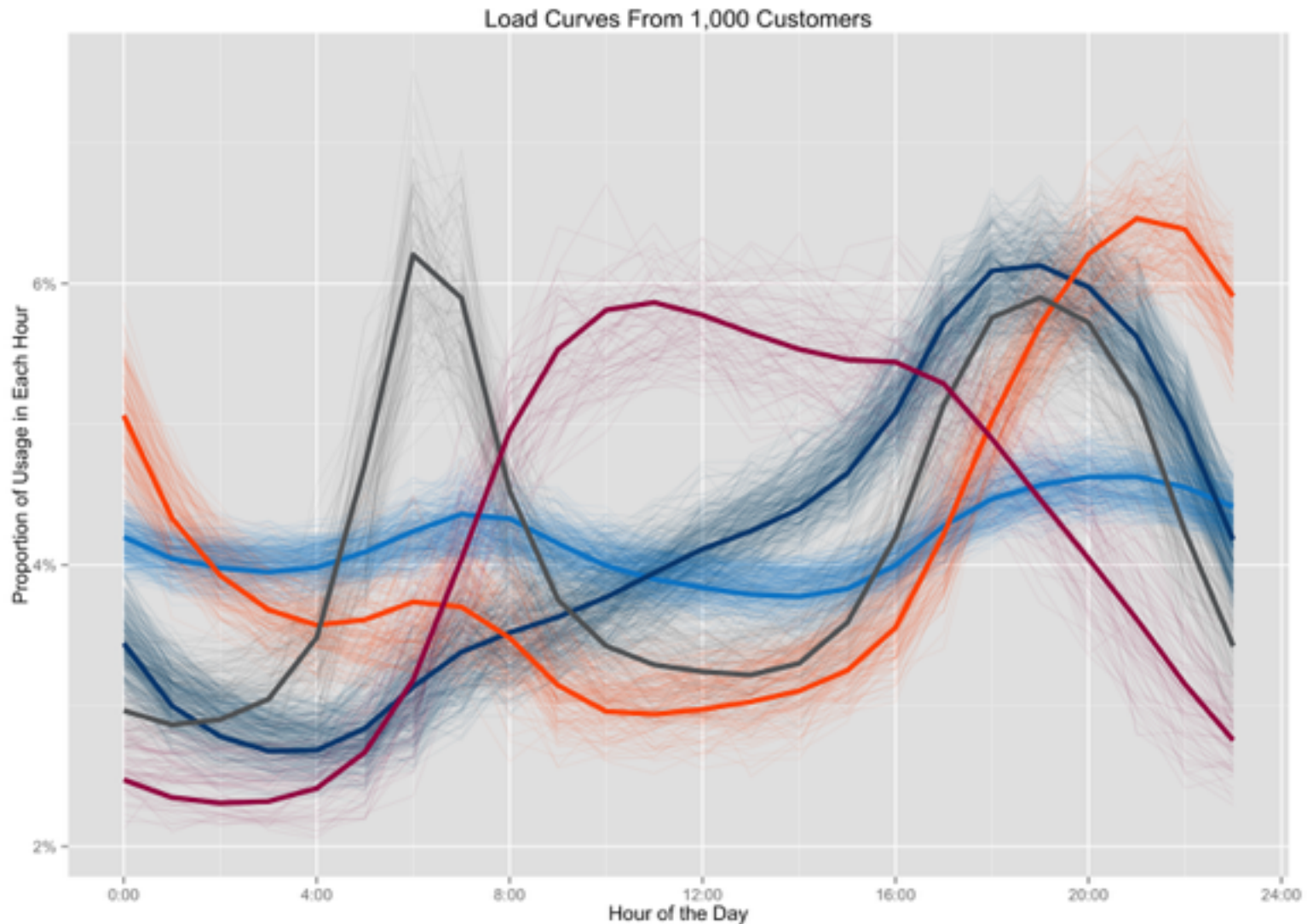
Enter the AMI archetypes
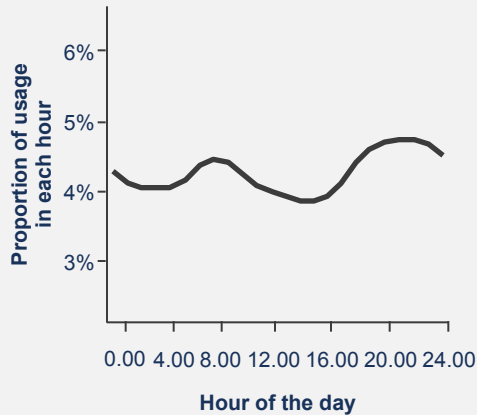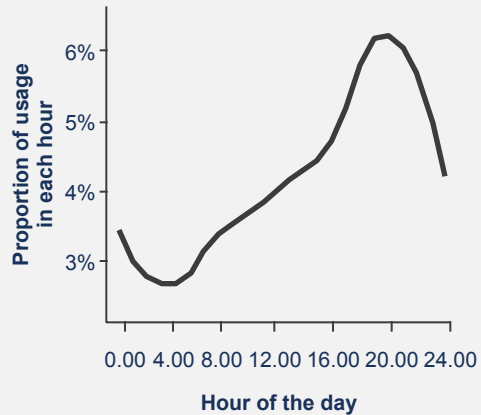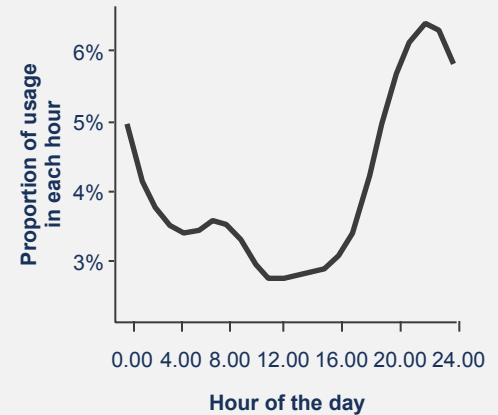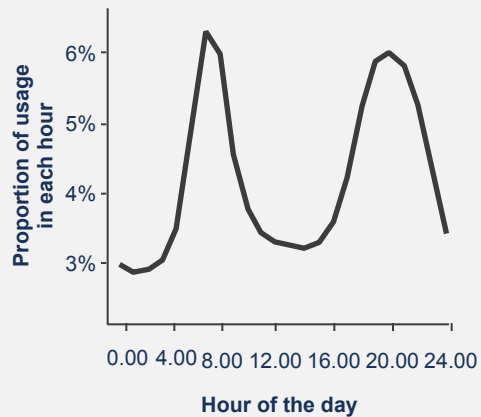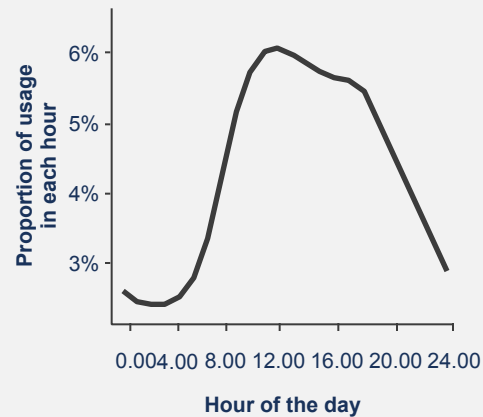
Load Curves – "Twin Peaks" Archetype

Twin Peaks

Proportion of usage in each hour vs **Hour of the day**

OP⦿WER
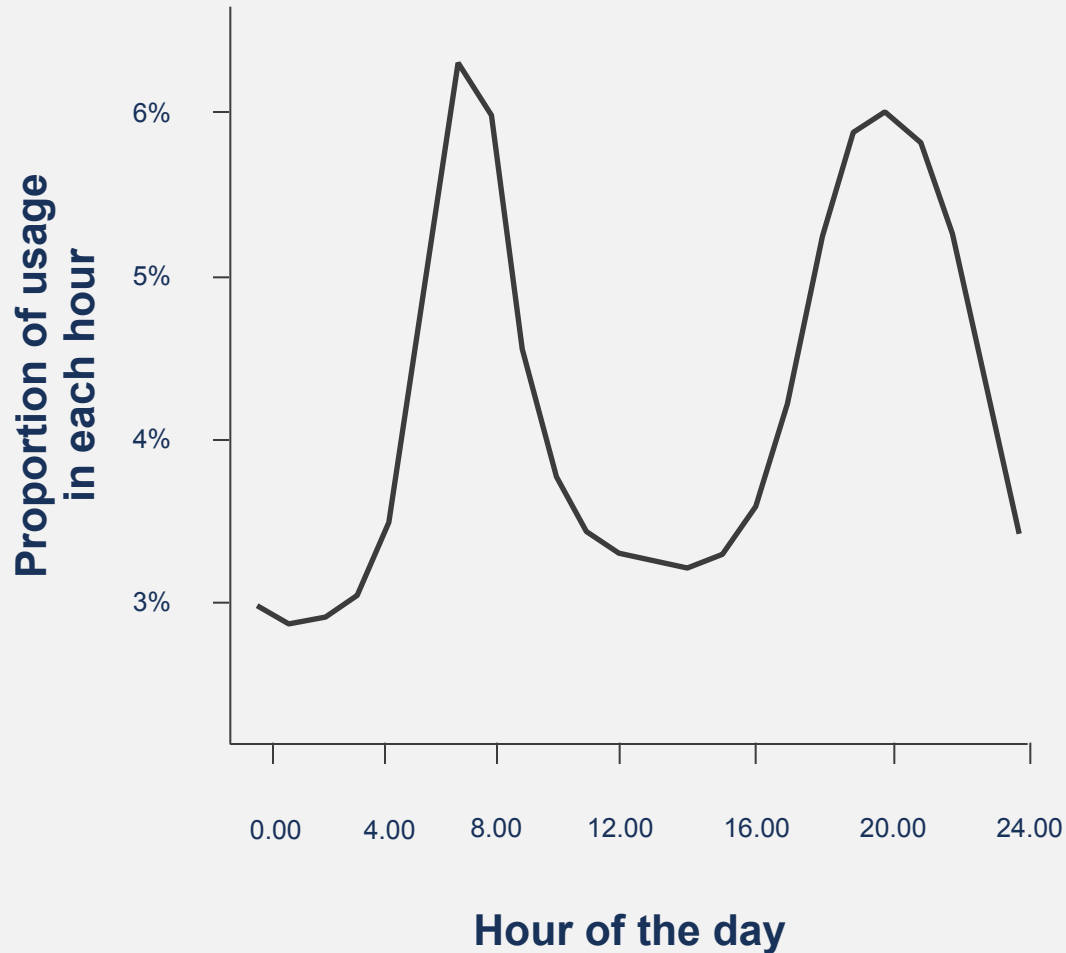
Load Curves – "Steady Eddies" Archetype

Steady Eddies
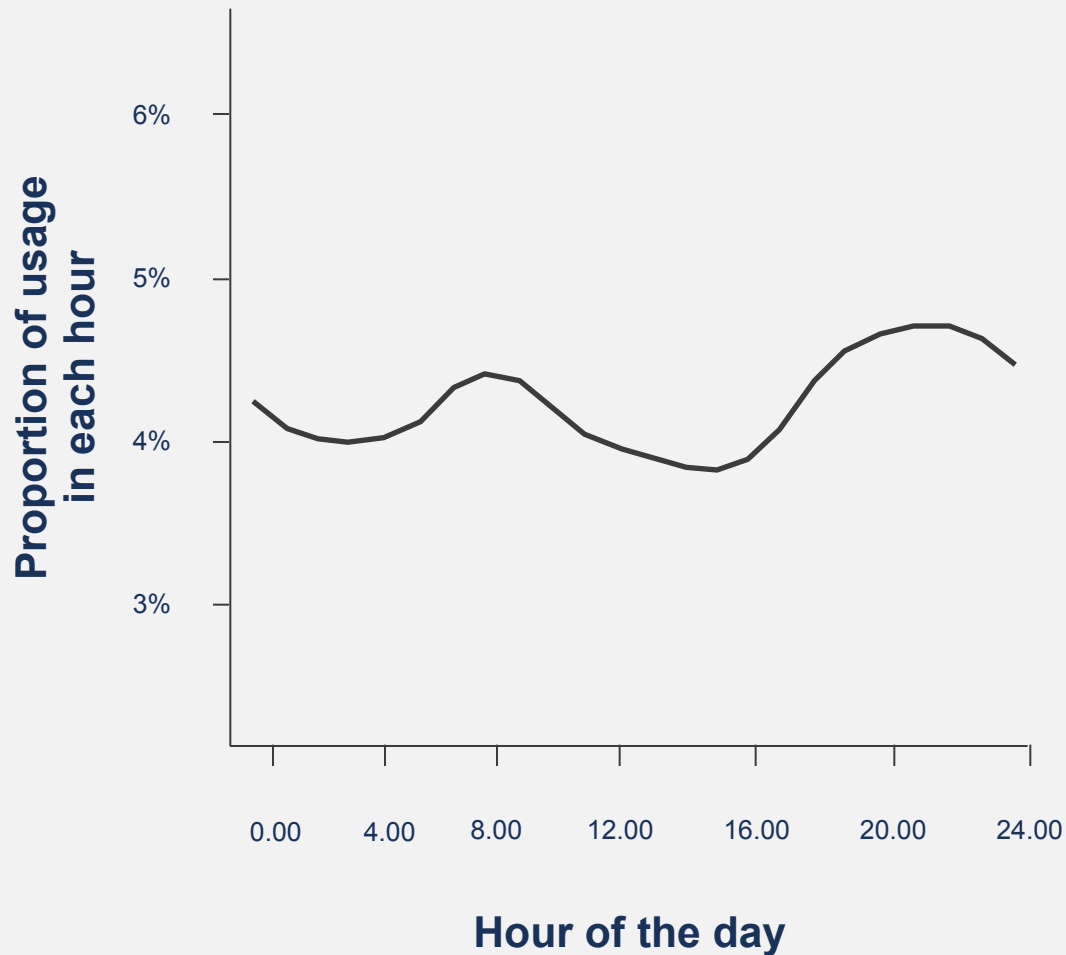
Load Curves – "Evening Peakers" Archetype

Evening Peakers

Proportion of usage in each hour vs. Hour of the day

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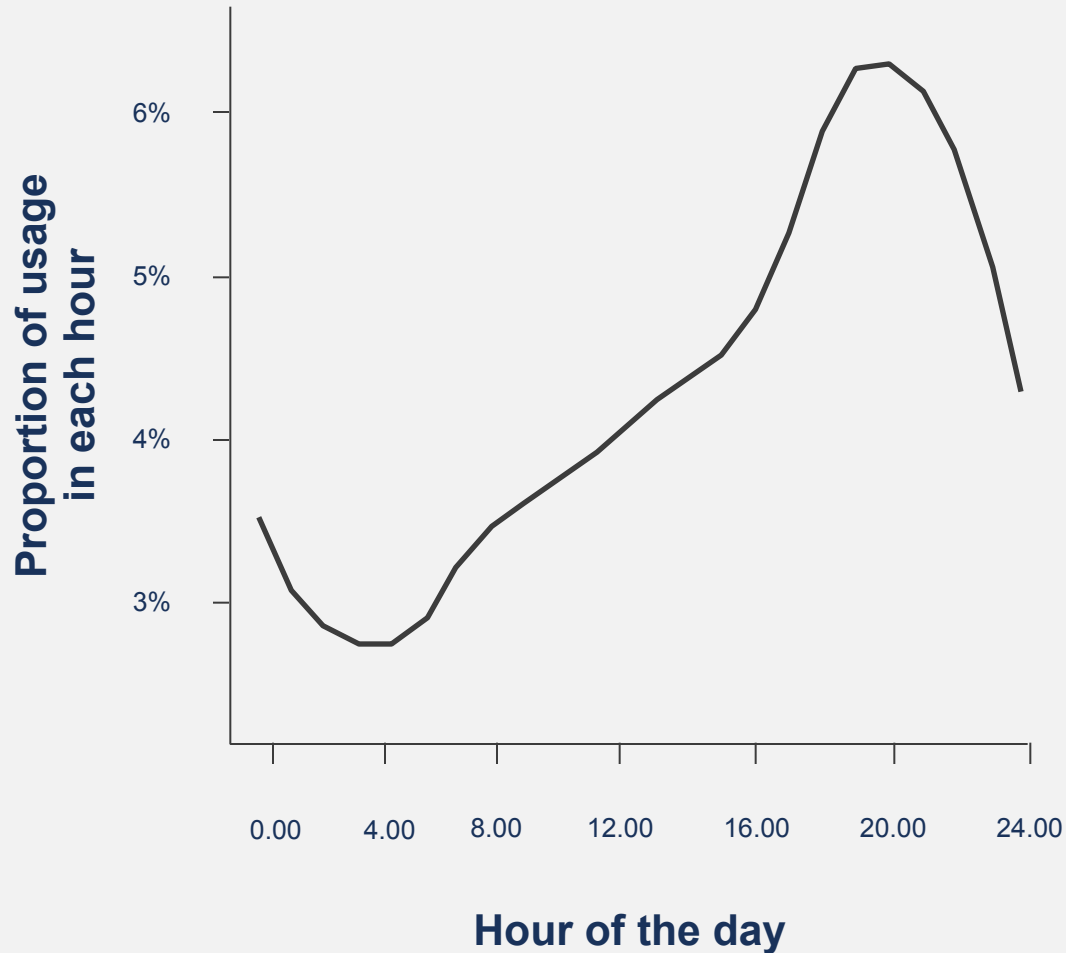
Load Curves – "Night Owls" Archetype

Night Owls
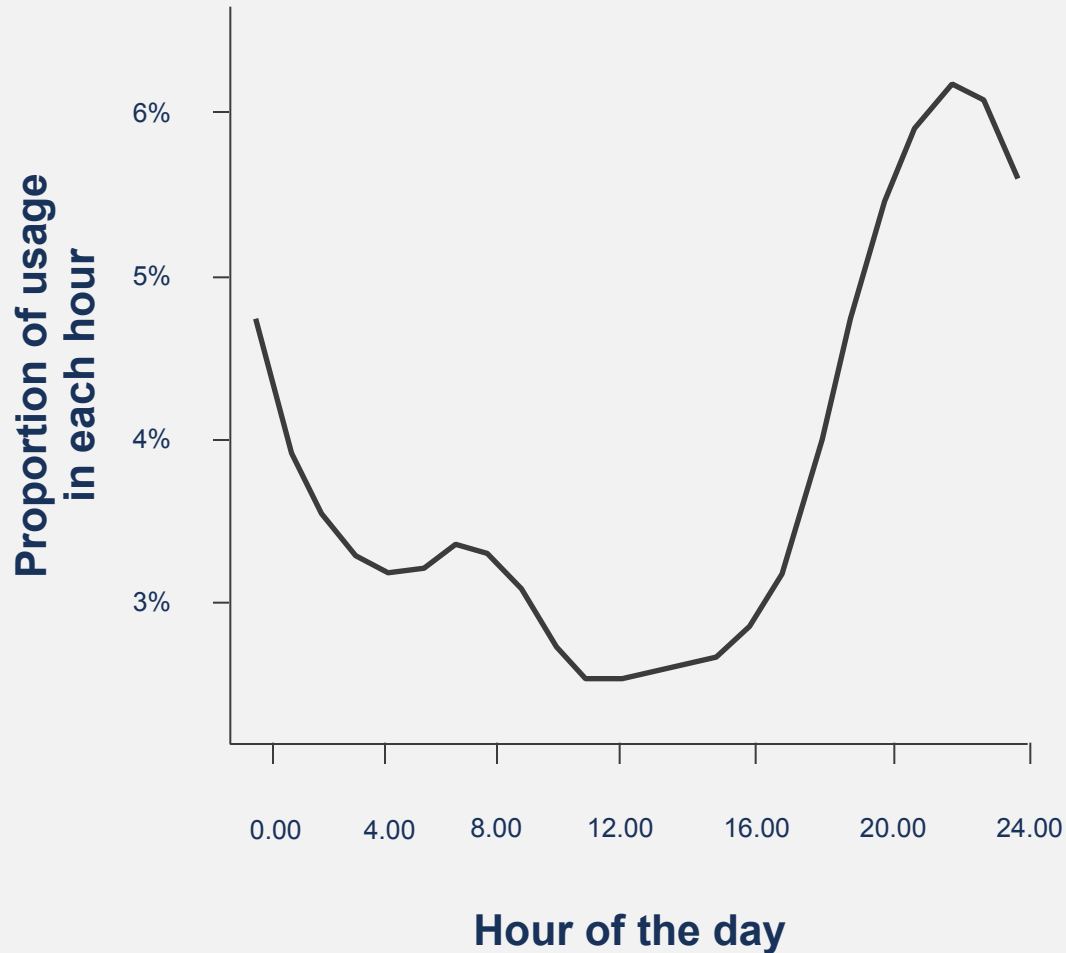
Load Curves – "Daytimers" Archetype

Daytimers

Proportion of usage in each hour
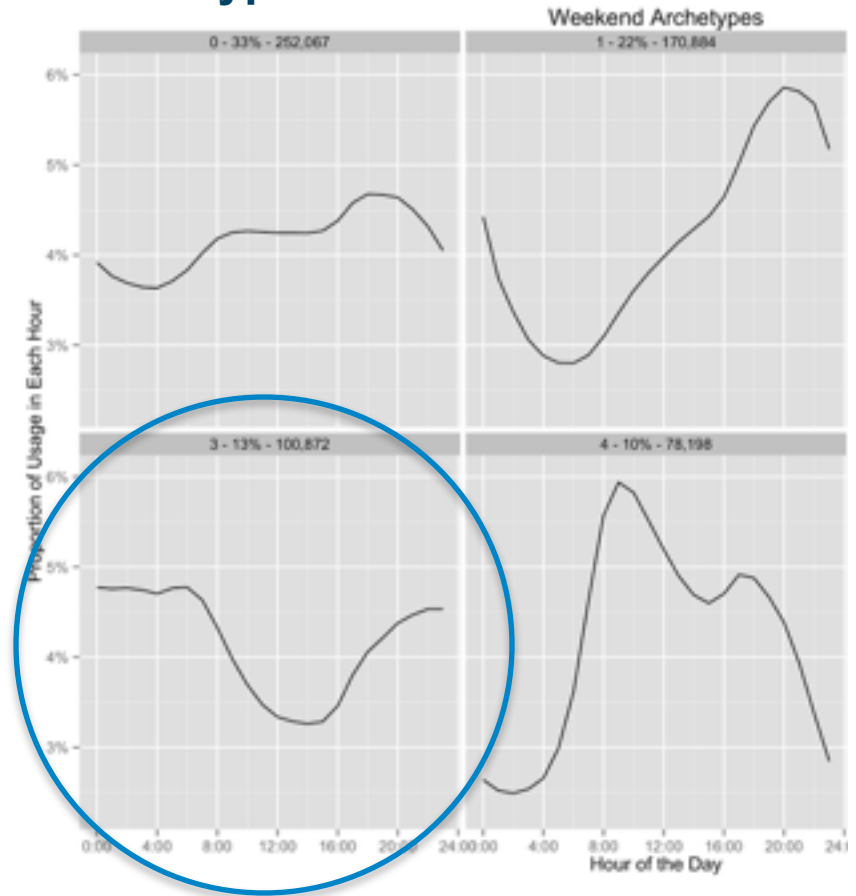
Hour of the day

OP⊙WER
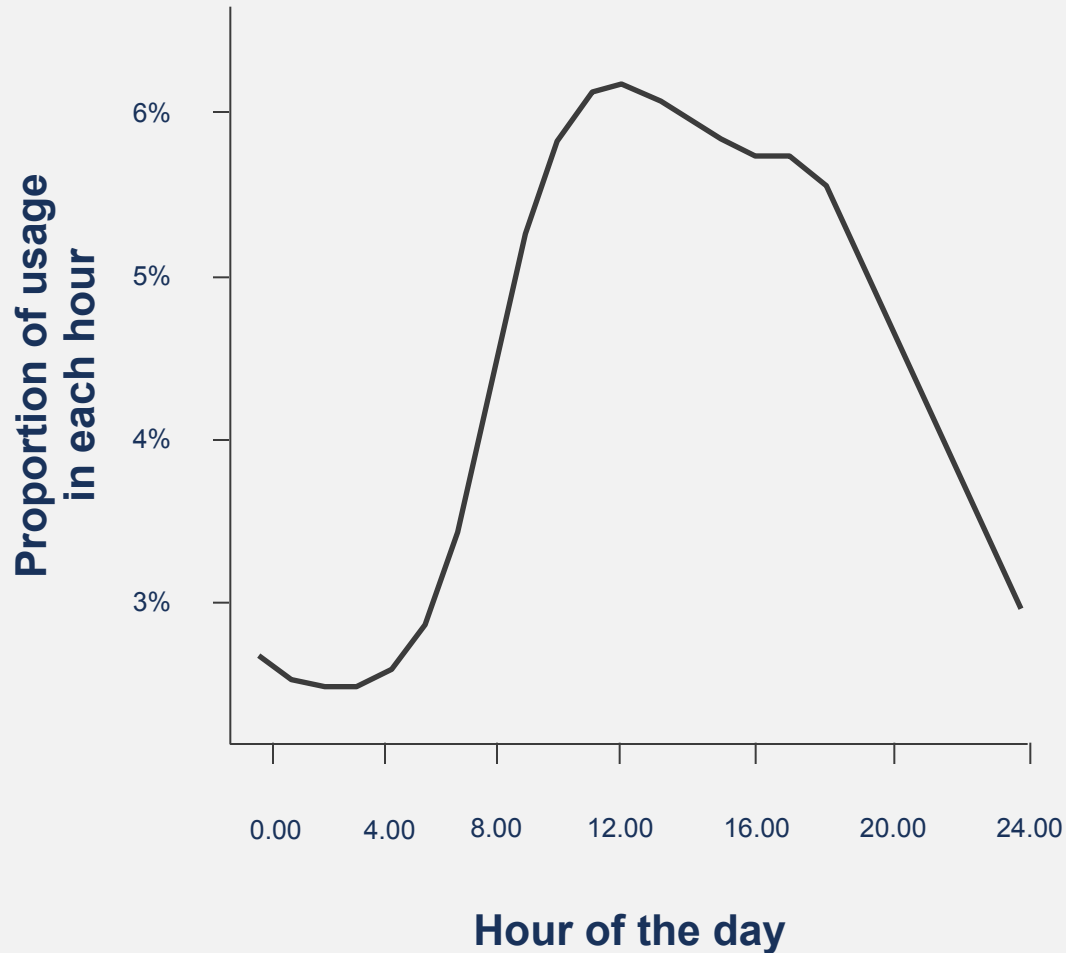
Load Curves – Weekday vs. Weekend

Most common weekday archetypes
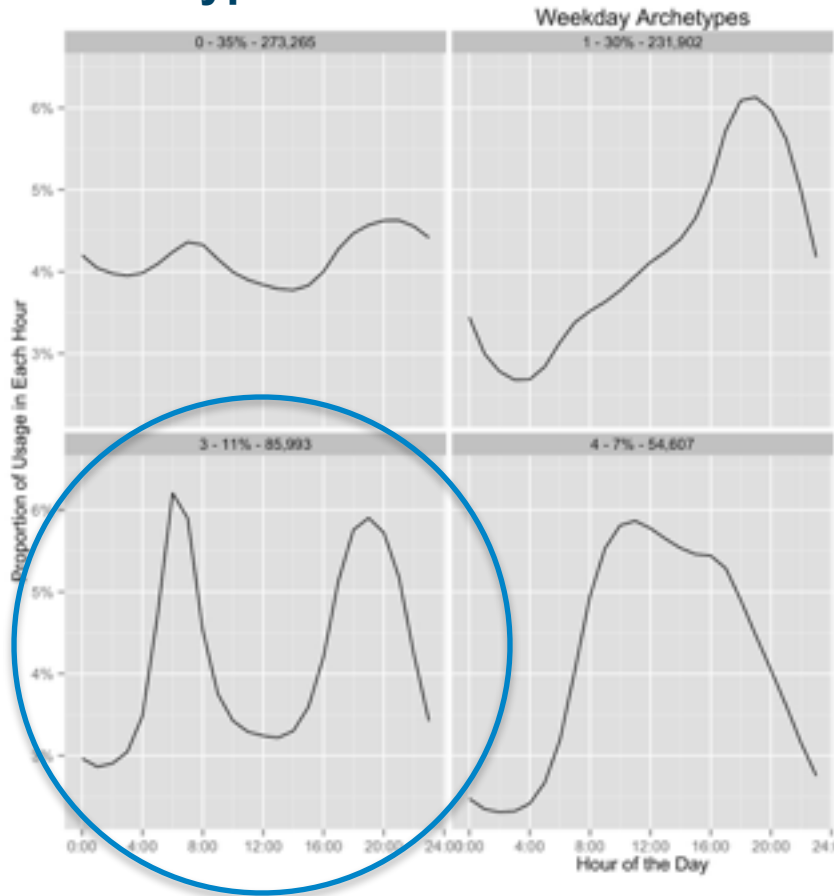
Most common weekend archetypes
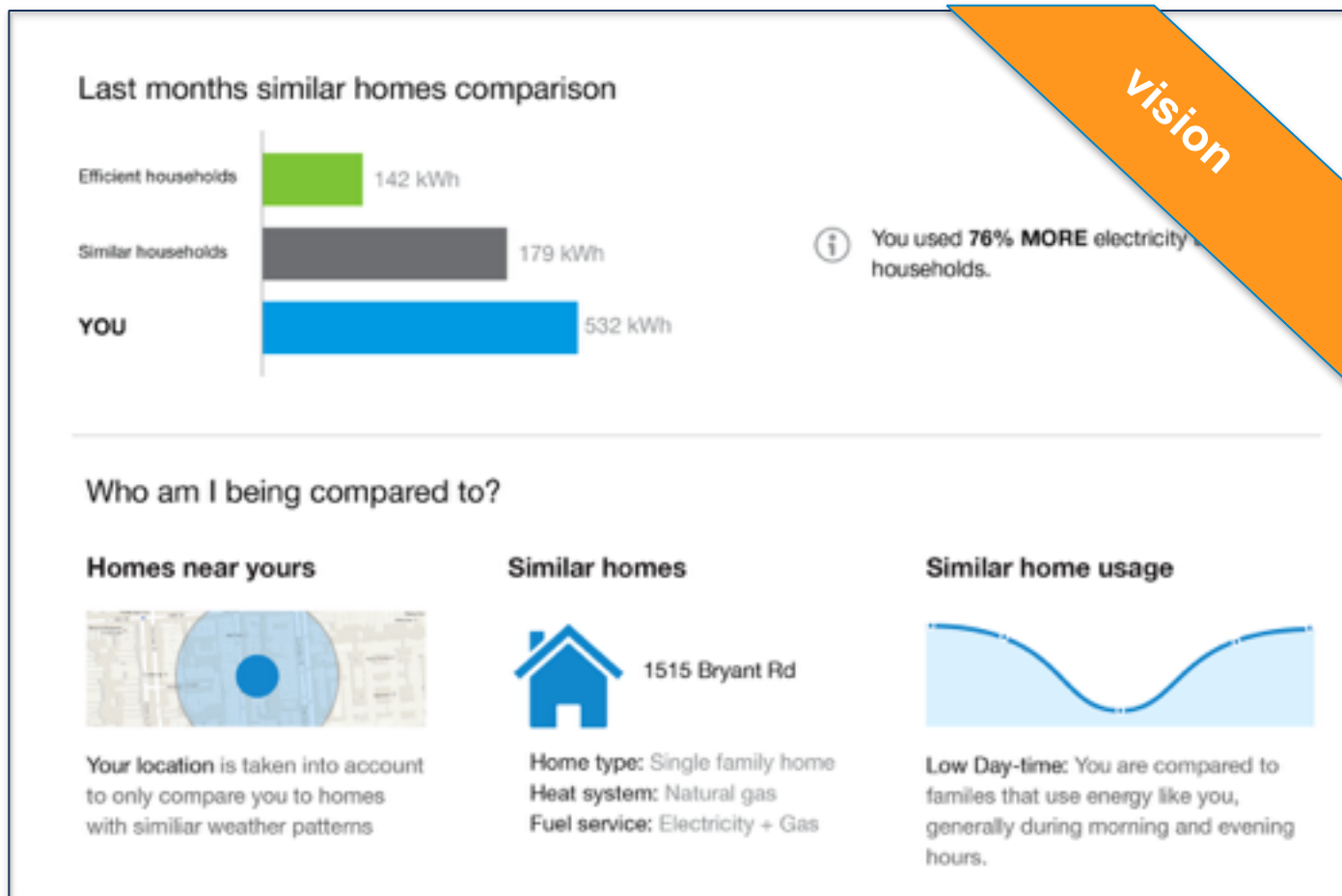
Segment Customers
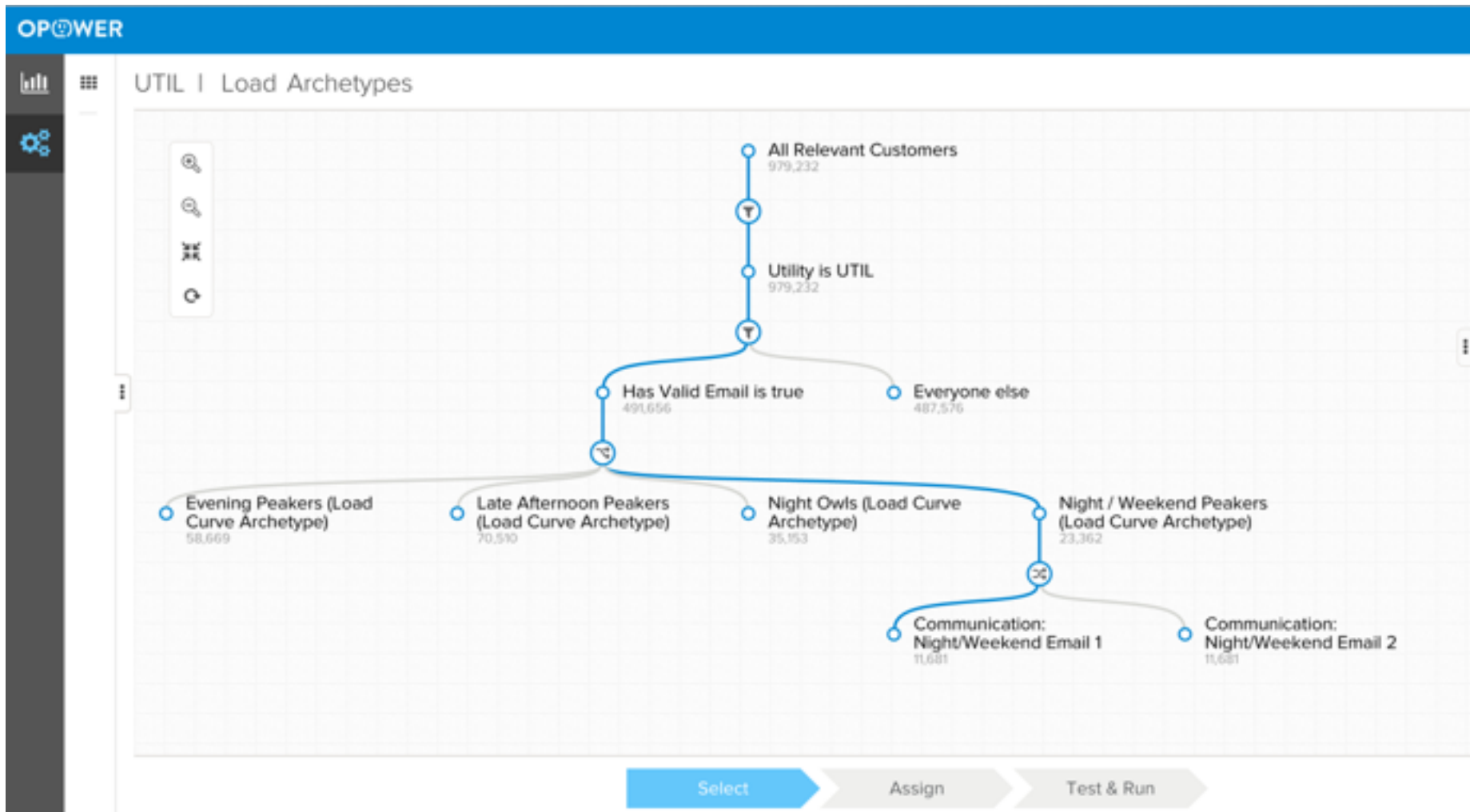
Target Messaging: Afternoon Peakers
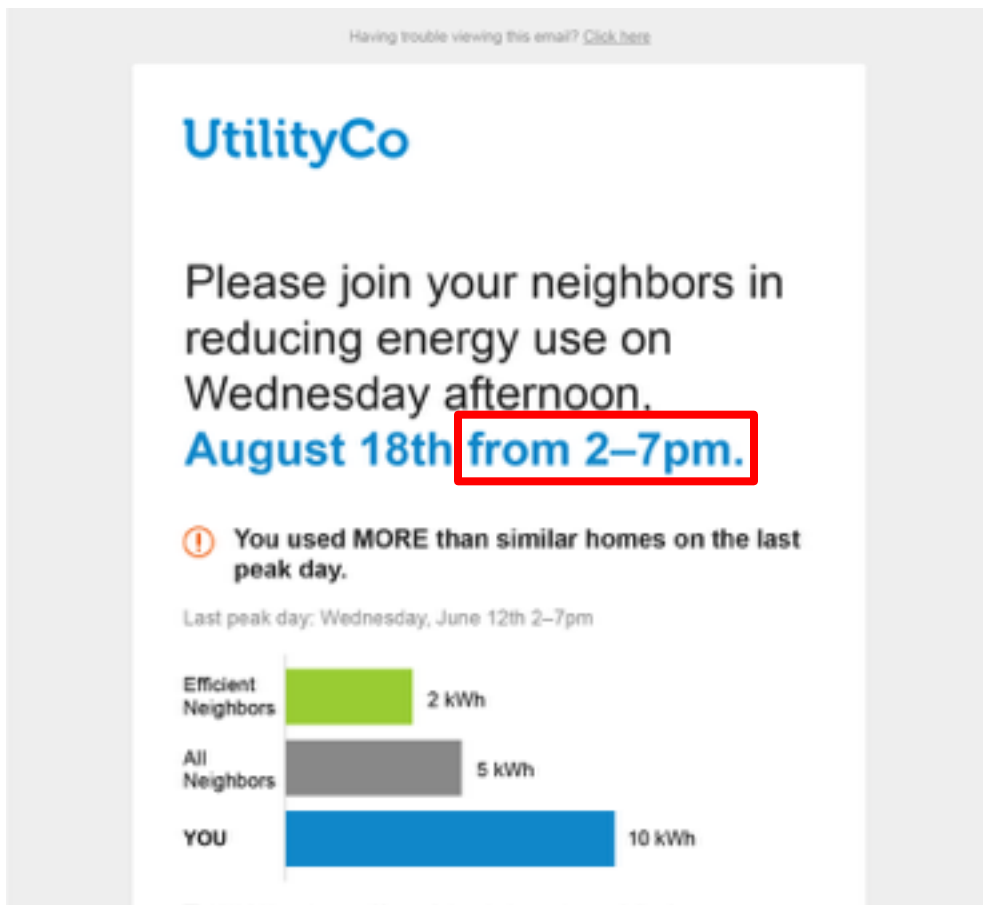
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Drive Improved Personalization

Help drive acceptance of neighbour comparison

Drive Improved Personalization

Recommendations tailored to profile type