Behavior Analytics: 
new data + new techniques 
→ understand people, improve programs!

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Things are changing!

• Electric vehicles, renewables, fancy batteries → changing grid

• Energy reductions: need programs to deliver
  ▪ **Where** we need it
  ▪ **When** we need it
  ▪ **How** much we need
Things are changing!

• Electric vehicles, renewables, fancy batteries → changing grid
• Energy reductions: need programs to deliver
  ▪ Where we need it
  ▪ When we need it
  ▪ How much we need
• And cheaply!
• And quickly!

sound overwhelming?
We have a solution: **Behavior Analytics**

- **new, easily accessible data**
- + **new (and old) techniques**

→ **Understand people** & their energy behavior

→ Get programs to **deliver more**
Proof-of-concept (aka, example)

CPP program
smart meter data

9 types of people, with different energy behaviors
Proof-of-concept (aka, example)

CPP program
smart meter data only - no surveys!
no marketing labels!

9 types of people, with different energy behaviors
percent enrollment vs. percent savings

- 15% enrollment
- 60% savings
- 10% savings
You might think people who are more likely to enroll also save the most energy...
But actually – people that enroll more save less energy!
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Which of these are those pesky people who will automatically get lower bills but don’t deliver actual savings? *You might think:*
Which of these are those pesky people who will automatically get lower bills but don’t deliver actual savings? You might think:
Actually – these are the people that automatically get lower bills actually deliver high energy savings. 
→ Let’s get them to enroll! Tell them they’ll save $!
So who are these people who enroll and don’t save much?
These people have flexible energy schedules (maybe \textit{want} to save). Let’s help them save! Tailor the program to fit their needs!
Target to ↑ enrollment of high savers
Tailor programs to ↑ savings of high enrollers
Predict to optimize program planning
Behavior Analytics: it **works**, it’s **cheap**, it can be done **today**!

- **Behavior Analytics**
  - Machine Learning
  - Econometrics & Causal inference
  - Decision Science

- **understand** people & their energy use
  - **Target**
  - **Tailor**
  - **Predict**

- programs that **deliver** what we need!