

## Guidelines for Designing Effective Energy Information Feedback Pilots: Research Protocols

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Program Manager – Smart Grid Demo's

**EPRI Smart Grid Demonstration Meeting  
Hosted by EDF, Clamart France  
June 10, 2010**

## Report Objectives

How to design social experiments involving feedback to:

- Establish causal relationship between experimental treatments and the outcomes
- Specify methods to analyze experimental data.

Provide methods and output that allow comparisons across feedback experiments

- To support the pooling of data across experiments
- While avoiding redundant research
- Determine whether observed differences across studies are statistically meaningful
- Identify the underlying drivers of the differences.

## EPRI Reports

### Background Report:

- *Residential Electricity Use Feedback: A Research Synthesis and Economic Framework*
- Product ID 1016844

#### Residential Electricity Use Feedback: A Research Synthesis and Economic Framework

1016844

EPRI | ELECTRIC POWER RESEARCH INSTITUTE  
Final Report, February 2009

### New Guidelines Report:

- Guidelines for Designing Effective Energy Information Feedback Pilots: Research Protocols
- Product ID 1020855

#### Guidelines for Designing Effective Energy Information Feedback Pilots: Research Protocols

1020855

EPRI | ELECTRIC POWER RESEARCH INSTITUTE  
Final Report, April 2010

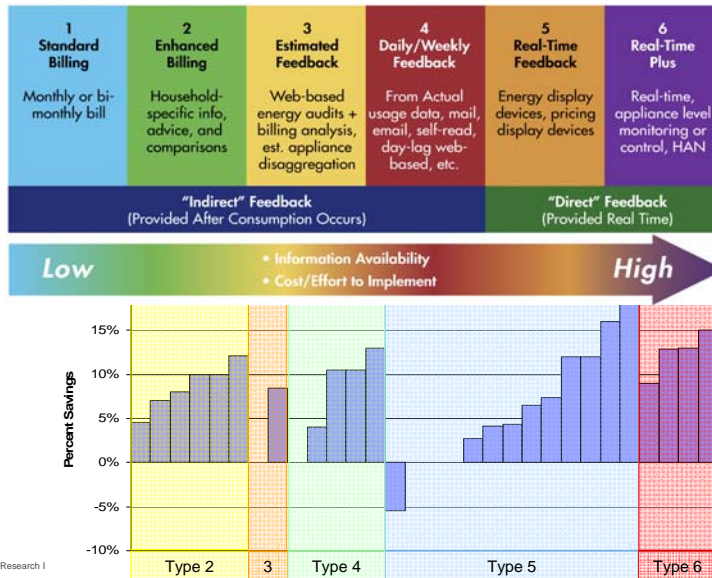
## What are Experiments

The 19<sup>th</sup> Century, John Stuart Mill proposed a set of conditions that must be met in order to show that some condition causes some other condition in the world to change:

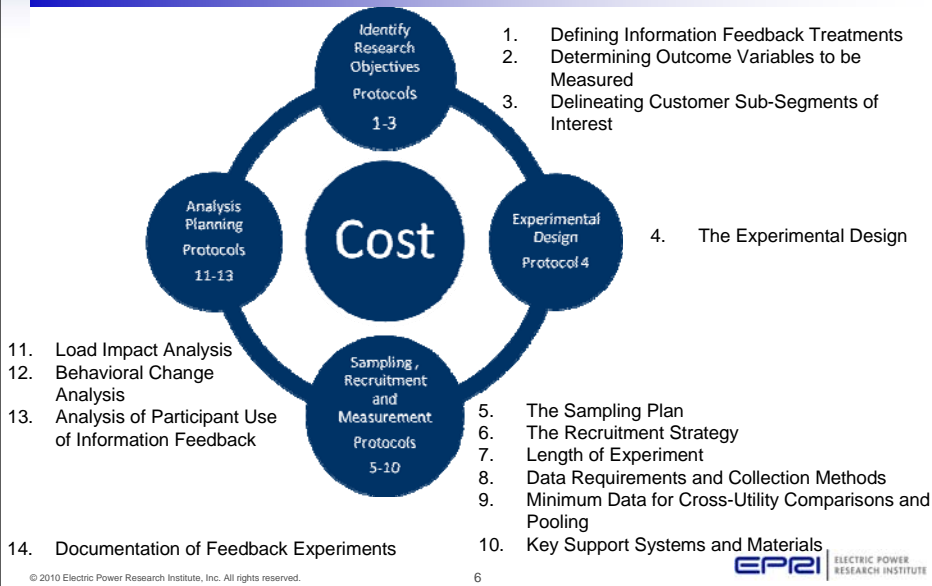
- The supposed cause has to precede the supposed effect in time
- The supposed cause must be correlated with the effect
  - When the cause is present, the effect is present
  - When the cause is not present, the effect is not present
- No other plausible explanations can be found for the effect, other than the cause

These conditions describe the minimum requirements for conclusively demonstrating that feedback causes change in the timing or magnitude of energy use.

# Feedback Mechanisms



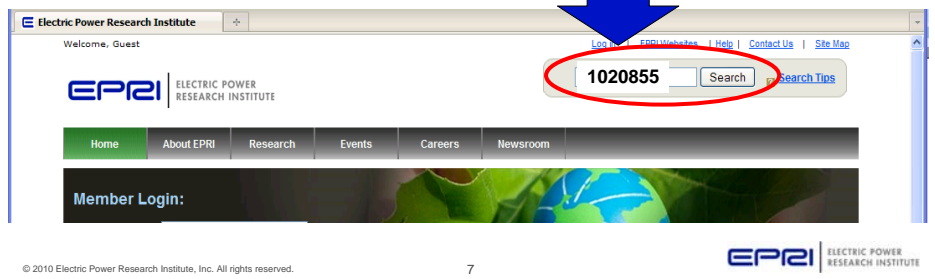
# Feedback Research Protocols—An Overview



## Downloading EPRI Reports at [www.epri.com](http://www.epri.com)

- (Background) Residential Electricity Use Feedback: A Research Synthesis and Economic Framework, Product ID 1016844
- (New Report) Guidelines for Designing Effective Energy Information Feedback Pilots: Research Protocols, Product ID 1020855

Enter Product ID



## EPRI Workshop – Guidelines for Designing Effective Energy Information Feedback Pilots

**What:** A 1.5 day workshop on using experimental design to establish clear, causal relationships between feedback treatments and outcomes of interest

**When:**

Monday, June 21st (1:00 p.m. – 5:00 p.m.)  
Tuesday, June 22nd (8:00 a.m. – 5:00 p.m.)

**Where:** Hosted by American Electric Power (AEP), Columbus, Ohio

**Cost:**

- Free for funders of EPRI Program P170A
- \$500 for all other EPRI members and guests

**To Register:** Register via “EPRI Events” website.  
Or contact Jennifer Robinson ([jrobinson@epri.com](mailto:jrobinson@epri.com), 865-218-8068).

**A Second Workshop:** In September 2010, likely in the Southwestern US

## Cost Benefit Analysis Methodology

### • Accomplishments

- Framework developed with DOE
  - Product ID **1020342**
- Application methods requirements defined
  - DOE requirements
  - EPRI extended requirements

### • On the Go Activities

- Continued DOE coordination to ensure comparability and compatibility
- Application guide development underway
- Test-runs of guide underway

### • Next Steps

- Initial application to all project this summer/fall

Methodological Approach for  
Estimating the Benefits and Costs  
of Smart Grid Demonstration  
Projects

1020342

Final Report, January 2010

**Count  
everything, but  
nothing twice**

**Ensures  
transferability  
of results**

## Thank You

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**Together...Shaping the Future of Electricity**

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