

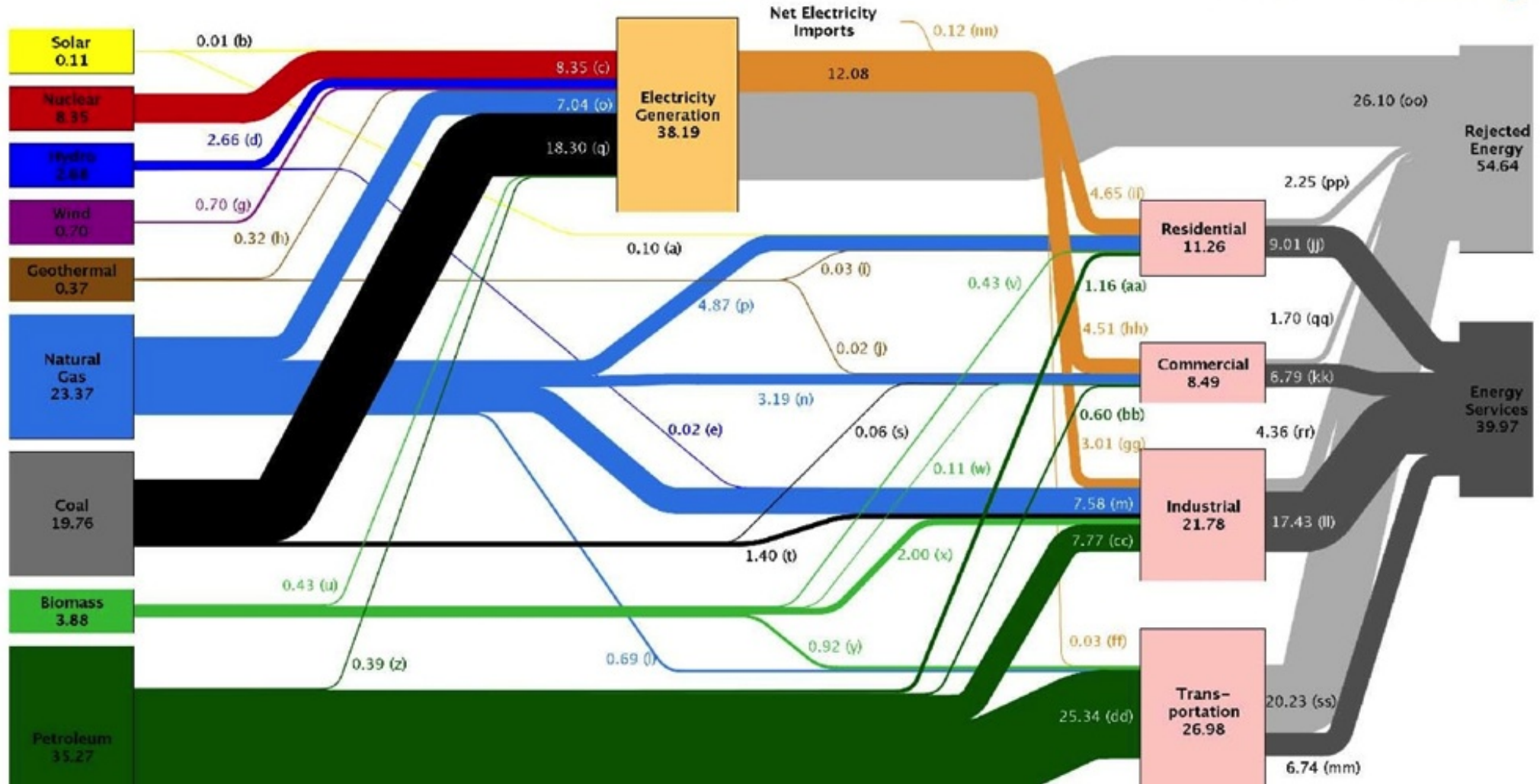


**Smart Grid  
Road Show  
Portland, OR  
November 3, 2010**

**Jon  
Wellenghoff  
Chairman  
Federal Energy  
Regulatory  
Commission**

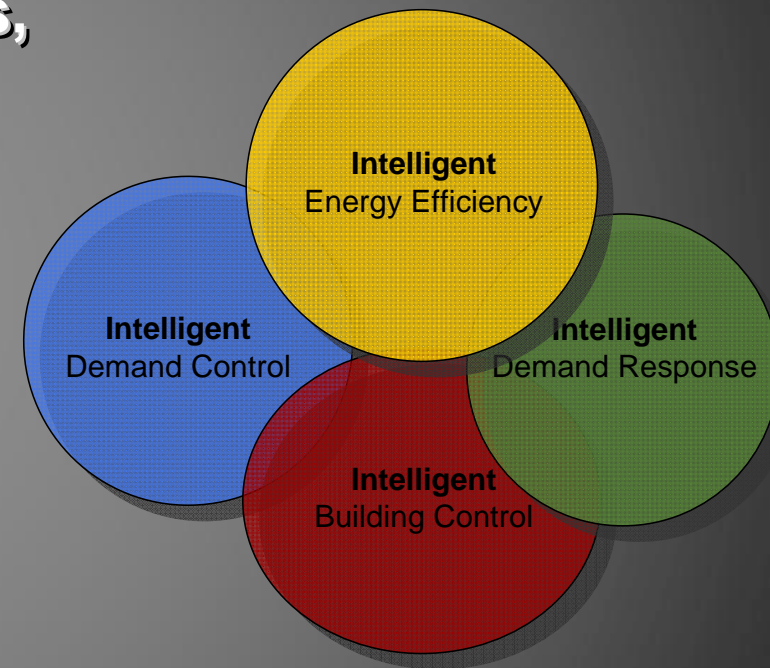
# Current U.S. Energy Flows - Is this

Estimated U.S. Energy Use in 2009: ~94.6 Quads



# Smart Response Solutions

- Consumers have many cost effective opportunities to reduce total energy costs: Reduce peak demand charges, improve power factor, provide VAR support, consume less kWh, supply ancillary services, shift peak-time usage, harvest demand response programs, substitute traditional base load, etc...
- Smart Response, with end use loads at the user site enabled with two way communication, will allow these strategies to be implemented with little effort, risk, or discomfort. Wide scale adoption can be achieved.



# Smart Response Challenges

- **Full Economic Compensation to Customers for Adoption of Smart Response**  
Implementation at the Customer's site is the Biggest Hurdle to Full Scale Participation
- **Smart Response Must Also Improve Risk Management and Be Integral Rather Than Disruptive to Customer Business/Lifestyle**
- **Provision of Implementation Tools and Demonstration of Benefits Will Bring Customers and Capital to the Table**

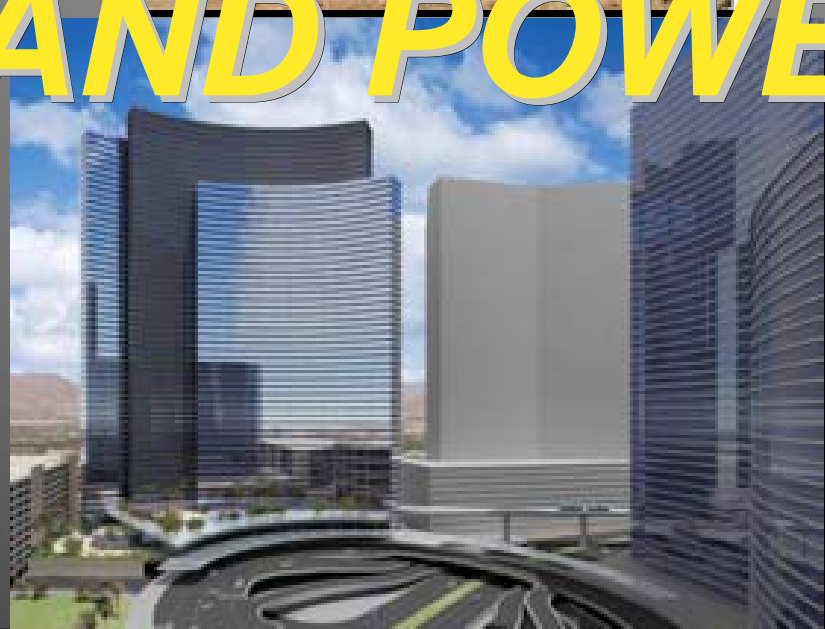




# Smart Response Electric Grid

Dynamic Systems Control

**TWO-WAY FLOW  
OF INFORMATION  
AND POWER**



# Grid Benefits of Demand Response

## Reduce Prices

- Lower Demand/Lower Price
- Flatten Load Profile Reducing Costly Generation
- Reduces Generator Market Power
- Distributed Renewables

## Additional Benefits

- Enhances Reliability
- Supports Renewable Power
- Promotes Distributed Generation and Advanced Meters
- Defers G/T/D Investments

# Economic Opportunities

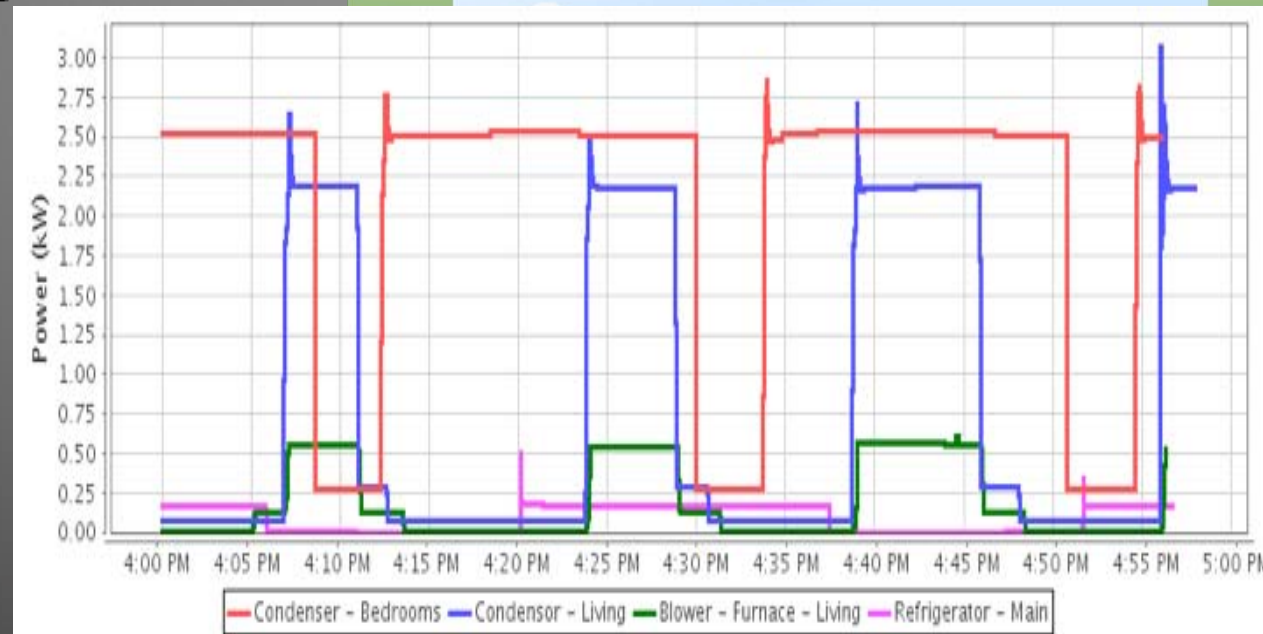
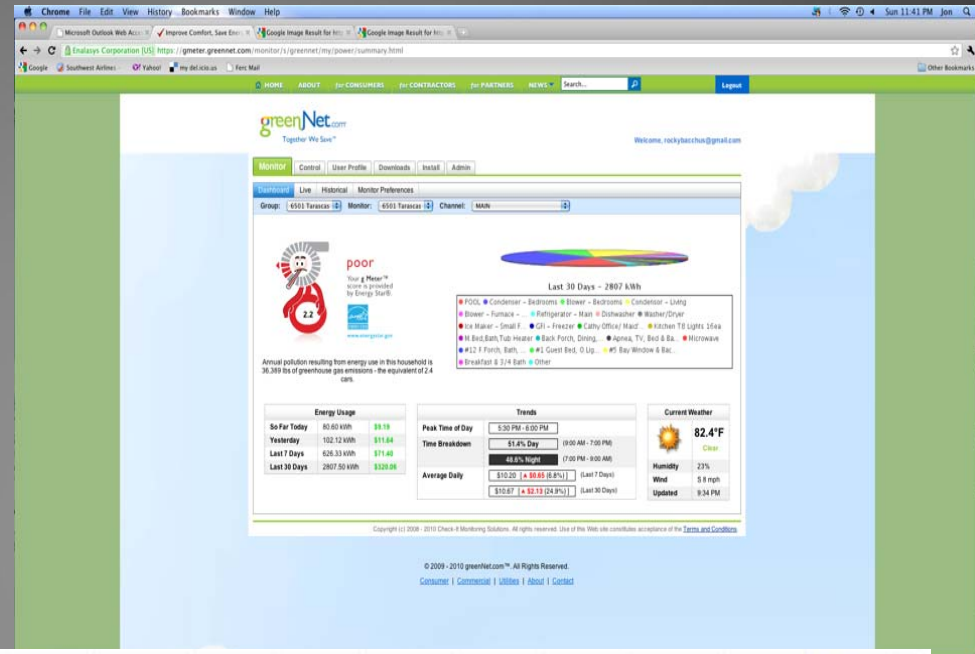
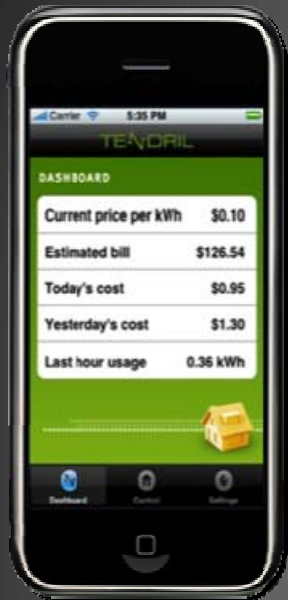
- Demand Response
- Energy & Capacity
- Peak and Non-Peak
- Ancillary Services
- Regulation
- Spinning Reserve
- Var Support/Reactive Power



# The Smart Response for the Smart Store



# Home Management Systems



# Smart Consumer Appliances



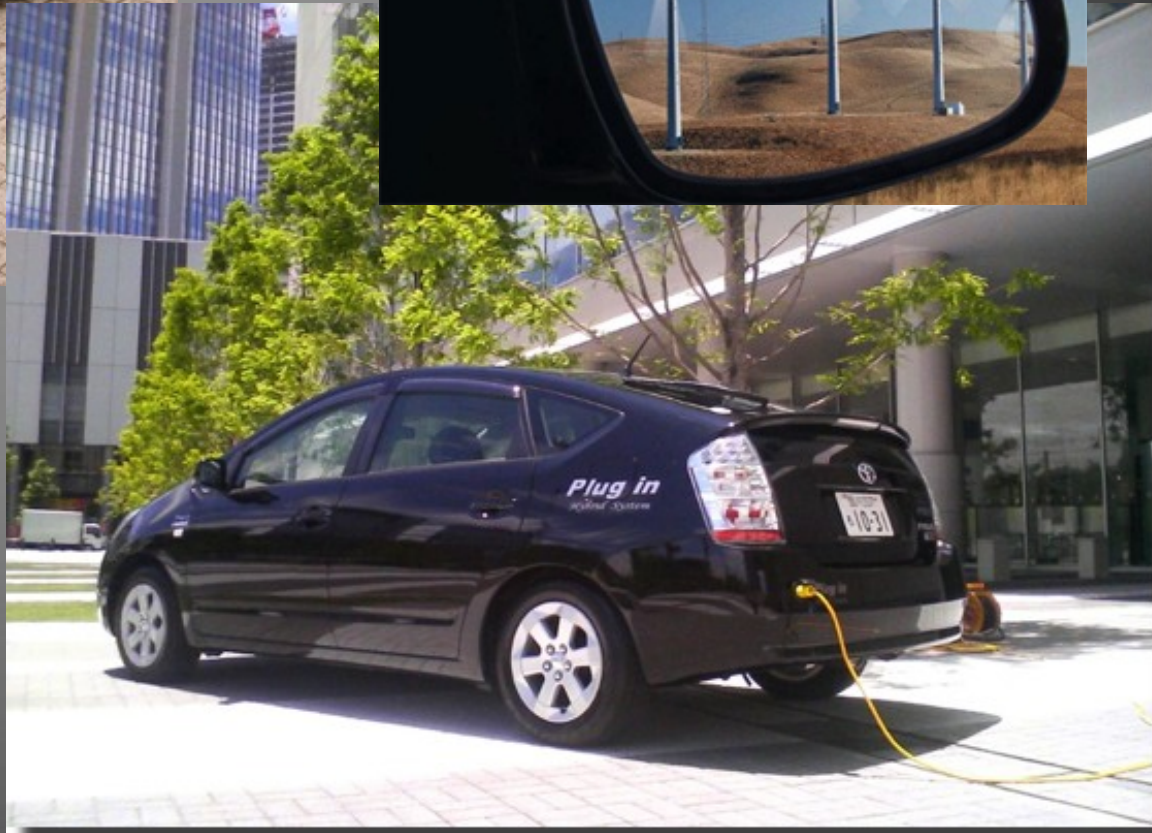
# Grid Control Box



# What Makes Smart Appliances “Smart”?



# Electric Transportation









# Dynamic Customer Interface Engages Customers

**XcelEnergy**  
RESPONSIBLE BY NATURE™

**Home energy report**  
Account number: 1234 567 890 1  
Report period: 11/09/08 – 12/09/08

We are pleased to provide this personalized report to you as part of a pilot program. The purpose is to:

**Provide information** This report is an educational tool to help you understand your home's energy use.

**Track progress** We will help you learn about how your home's usage changes over time and where you likely have opportunities to save.

**Share energy efficiency tips** On the back of the report, we provide ideas for saving energy and money. You can find more tips at [www.xcelenergy.com/energyreport](http://www.xcelenergy.com/energyreport)

BOB SMITH  
414 NICOLLET MALL GO 6  
MINNEAPOLIS, MN 55401

**Looking for ways to save?**  
A home energy audit can help.  
For only \$35 (\$150 value) get a professional home energy audit and save up to hundreds of dollars per year.

Call 1-800-895-4999  
to schedule your audit and mention the Home Energy Report

**Who are your Neighbors?**

- All Neighbors**: Approximately 100 similar sized homes within 1.2 miles with similar heating type. To learn more or update your profile, visit [www.xcelenergy.com/energyreport](#)
- Efficient Neighbors**: The lowest energy use 20% of all neighbors.

**Last 12 Months Neighborly**  
This costs you about **\$1,452 EXTRA** per year.

Key:  
■ YOU  
■ All Neighbors  
■ Efficient Neighbors

Your estimated heating usage is based on last winter's energy use and temperature. For more details, visit [YourCompany.com/reports](#).

Track your progress and find ways to save at [xcelenergy.com/energyreport](http://xcelenergy.com/energyreport)

**Neighborhood Efficiency Rank**  
Your energy efficiency rank out of 100 neighbors:

**Do you want to save energy?**

It's easier than you think.  
National Grid is helping hundreds of customers like you in the Boston area save energy and money by setting goals to use less than last year. Set your goal online today!

**See your goal progress**  
ON TRACK  
BEHIND AHEAD

**Set your goal to start saving**  
Go to [NationalGridUs.com/energyreports](http://NationalGridUs.com/energyreports) and click the **My Goal** tab at the top

**Understanding your energy use**

**Typical annual electricity use in the Chicago area**

Heating is the largest use of energy, followed by water heating and appliances. Focus on these areas for maximum savings.

**Top Tips for Saving**

Tip	SAVE up to
<input type="checkbox"/> Look for the ENERGY STAR label	\$600/year
<input type="checkbox"/> Adjust your thermostat wisely	\$165/year
<input type="checkbox"/> Improve insulation and seal air leaks	\$370/year
<input type="checkbox"/> Turn off computer at night	\$75/year
<input type="checkbox"/> Seal leaky ducts	\$335/year
<input type="checkbox"/> Be smart about clothes washing	\$65/year
<input type="checkbox"/> Install a programmable thermostat	\$245/year

Other appliances & electronics include dishwashers, washing machines, dryers, computers, TVs & entertainment systems. Usage is based on a typical household with gas-powered heating and water heating.

Already do these tips? Find more ways to save online  
For energy-saving tips visit [ComEd.com/energyReport](http://ComEd.com/energyReport)

**XcelEnergy**  
RESPONSIBLE BY NATURE™

runs on OPGWER

[www.xcelenergy.com/energyreport](http://www.xcelenergy.com/energyreport) | 1-800-824-1688 | [energyreports@xcelenergy.com](mailto:energyreports@xcelenergy.com) © 2009 Opower

# OPOWER Product Suite: Web Platform

ComEd - An Exelon Company | Home

http://www.comed.com/Pages/home.aspx

ComEd An Exelon Company

John, 2513 Cedar St  
My Profile | My Account

Dashboard My Energy Usage My Plan Ideas & Advice Neighborhood

How I'm doing What uses the most When I use the most Comp

My usage details Electricity By Day

Tues. June 30

12 kWh

Highest use: 1 - 6 pm

Time	Usage (kWh)
12am	4.5
1am	5.5
2am	4.5
3am	4.0
4am	3.5
5am	3.5
6am	4.0
7am	3.5
8am	3.5
9am	4.0
10am	5.5
11am	6.5
12pm	7.5
1pm	8.5
2pm	9.0
3pm	9.0
4pm	8.5
5pm	8.0
6pm	7.5
7pm	7.0
8pm	6.5
9pm	6.5
10pm	6.0
11pm	5.5

Think doing

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ComEd An Exelon Company

Dashboard My Energy Usage My Plan

### My Plan

We've made a customized plan for you based on:

Homeowner High cooling High baseload No pool

Complete this plan and save up to \$825/yr:

- Raise your thermostat**  
Save up to: \$180 50 neighbors do this
- Fix gaps around windows and doors**  
Save up to: \$135 40 neighbors do this
- Contact a professional about your ducts**  
Save up to: \$235 68 neighbors do this
- Upgrade your central air conditioner**  
Save up to: \$100 34 neighbors do this

ComEd - An Exelon Company | Home

http://www.comed.com/Pages/home.aspx

ComEd An Exelon Company

John, 2513 Cedar St  
My Profile | My Account

Dashboard My Energy Usage My Plan Ideas & Advice Neighborhood

## Welcome, John

**Your Bill**  
Current account balance: \$724.98  
Bill due: 6/24/09 Pay my bill  
Help me understand my bill

**Your Profile is 20% Complete**  
Make sure we have the right info about your home. Is your house is 2700 sq. ft?

**Share with your neighbors**  
What have you done this week to reduce?  
Ask a question Ask for help with an energy issue. Help is here.  
Review a Contractor Do you know a good local contractor? Write a review.

**Recent Energy Usage Jun 2 - 20**  
Usage Cost

Category	Efficient Neighbors	All Neighbors	You
Usage	870 kWh	1095	1605

How you're doing: Great, Good, More than average

**In your community**  
Robert17 reviewed the GE 47448 Energy Smart Spiral Light Bulb. This is a pretty great product. Can't tell the difference from these and my old ones. My wife doesn't mind them either.  
johnlin wrote a new post, Great Uses for the Kill-a-Watt. The Kill-a-Watt is a great little device for figuring out how much power things draw. You probably don't want to take the time to put...  
EcoGuy412 received an award, Expert: Heating  
EcoGuy412 set a goal to...

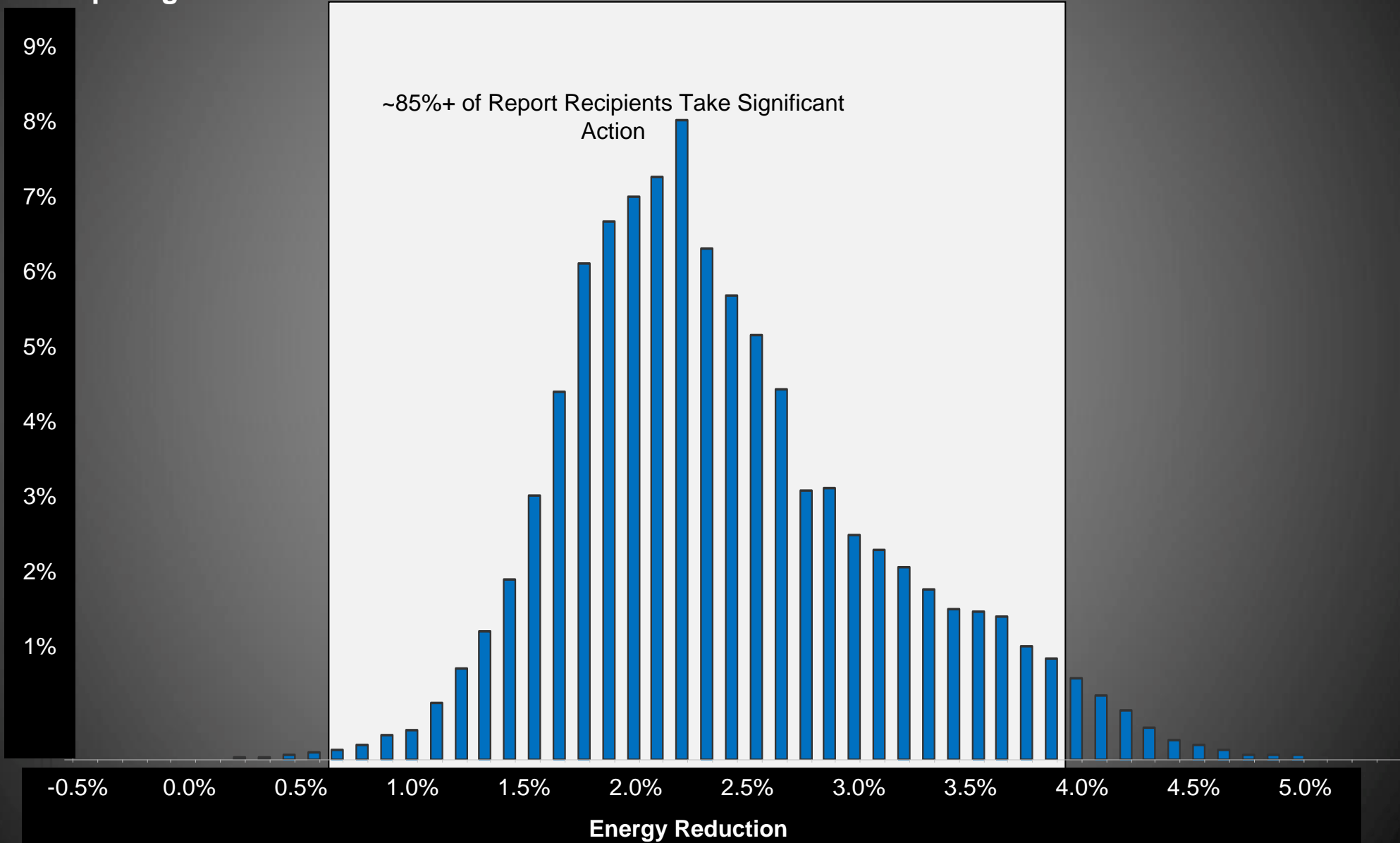
**You have 2 insights**  
We've analyzed your usage and identified some areas to focus on. [How it works](#)

- Your biggest problem is cooling.**  
Last summer you spent \$1,081 more on cooling than your neighbors. Find out why you use more than normal. [Take the cooling audit.](#)  
Cooling: neighbor average \$1,273 you \$2,354
- Your baseload use is higher than average.**  
Baseload is from the things in your home that are always on. You're spending \$394 more than your neighbors on baseload. Find out why you use more than normal. [Take the baseload audit.](#)  
Baseload: neighbor average \$792 you \$1,186

**We've created a plan just for you**  
Based on: Homeowner High cooling High baseload No pool 3+ people Update & add more

# Broad Customer Engagement Key to Success

% of Participating Households

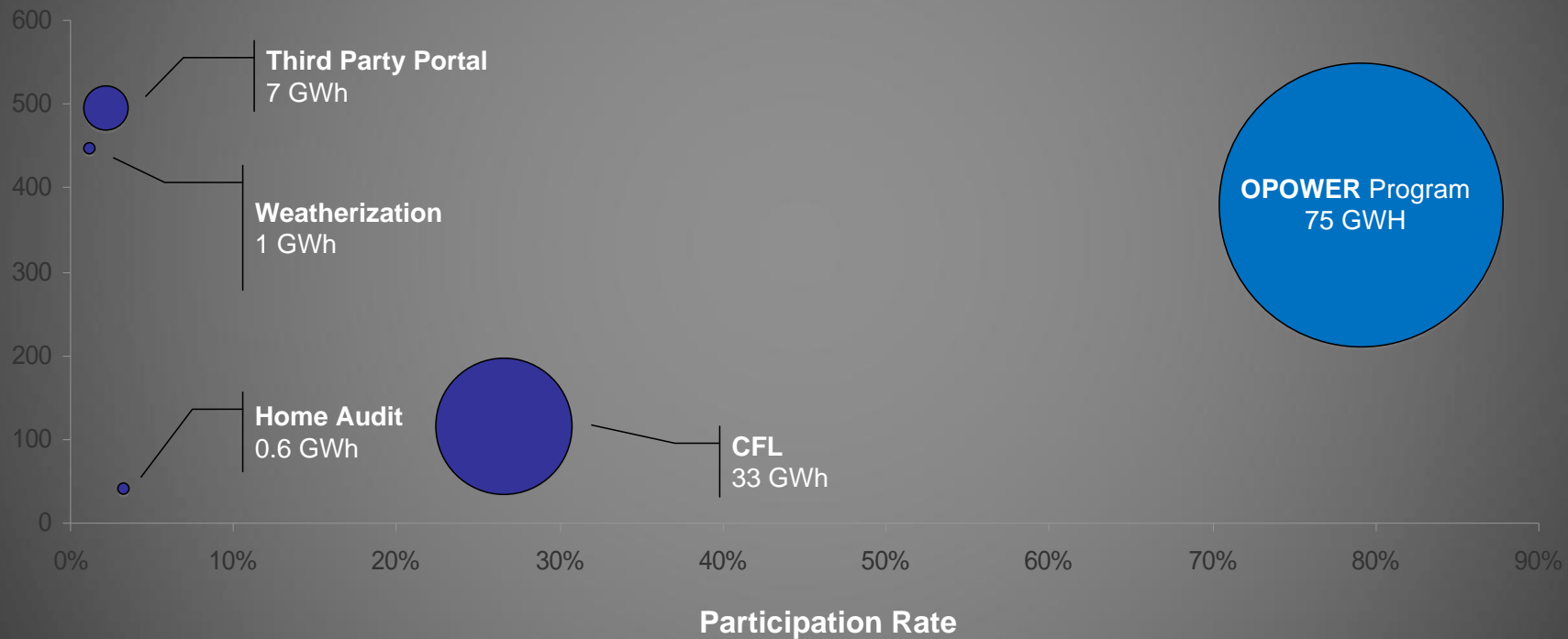


Independent Verification by Summit Blue Demonstrates High Customer Engagement

# High Participation Rate Drives Large Energy Savings

## 100,000 Household Efficiency Plan Deployment Comparison Over 3 Years

### Annual Savings Per Household

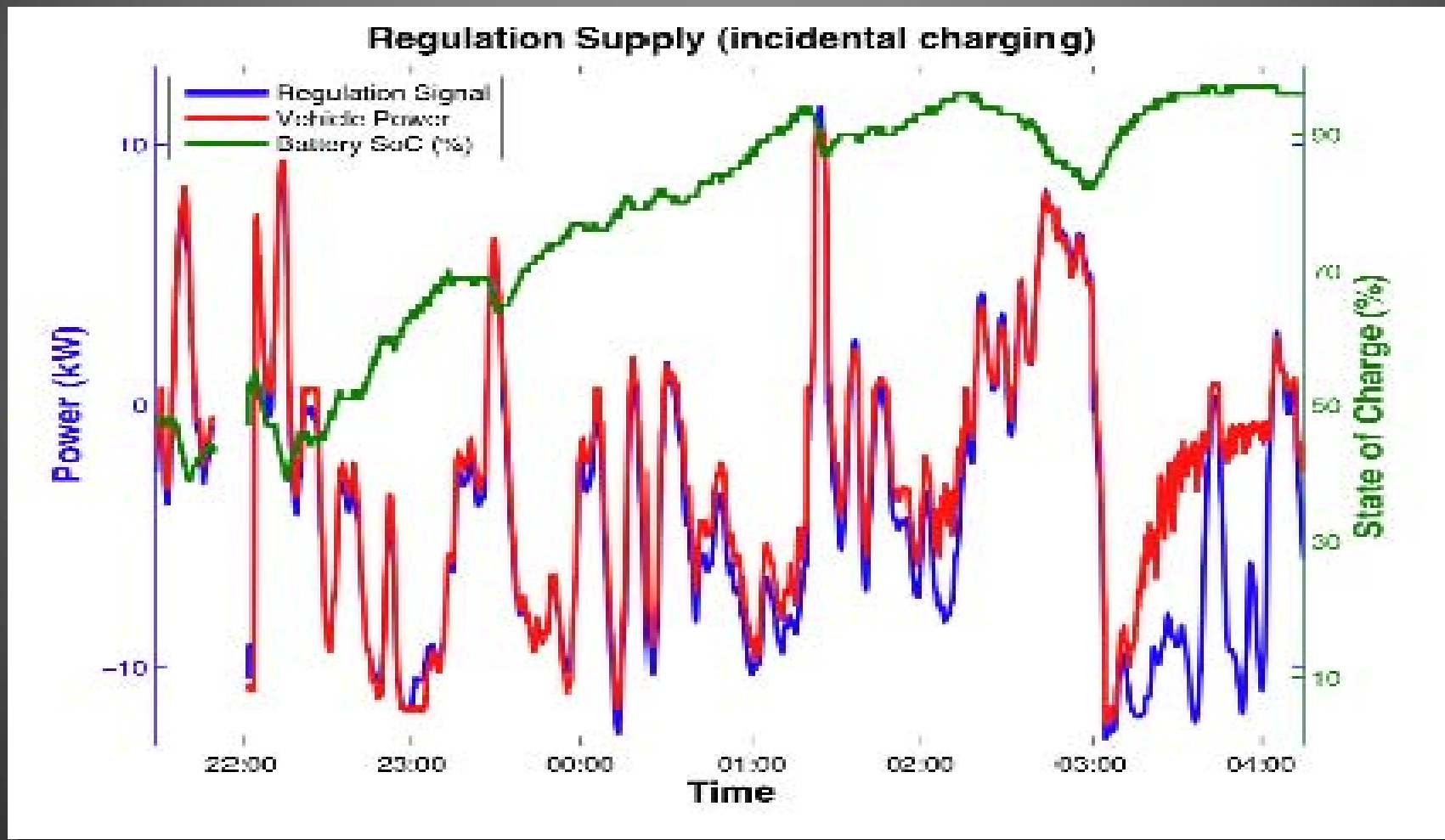


	Participation Rate	Annual kWh Savings/Participant	Total Three Year Impact (GWh)
OPOWER	85.0%	294	75
National CFL	28.0%	132	33
Third Party Portal	1.5%	500	7
Weatherization	0.3%	482	1
Home Audit	3.0%	22	0.6

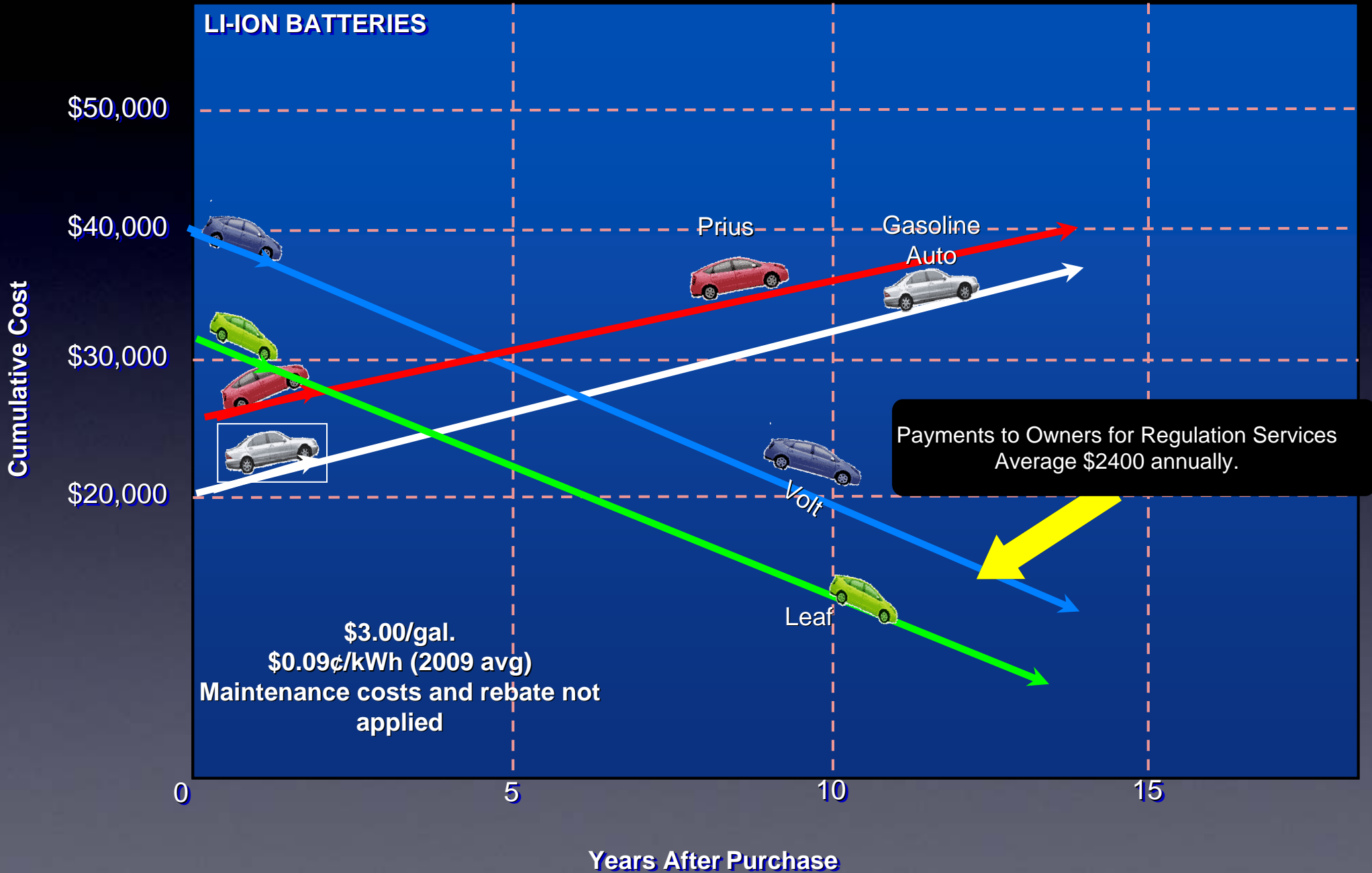
# Demonstration of Regulation Services



# Regulation Services While Charging



# Regulation Services and the Cashback Car





**Thank  
You!**