



For background, there's an ACEEE conference next week in Denver

Energy Efficiency as a Resource

- Largely aimed at utilities

Ryan, Noel, Mathias and I are all attending

Mathias and I are presenting

Broader paper on how to turbocharge utility efficiency programs

Coming out of Reinventing Fire, and promoting a white paper we've written

Mathias is presenting research on a new kind of deep retrofit program for utilities

SO – presentations are not finish, but wanted to get feedback on a first cut from you

EXECUTIVE SUMMARY

- Provide a high-level overview of RMI's upcoming publication, *Reinventing Fire*
 - 2050 vision and solutions
- Explain our logic for why utility programs need to go broader and deeper
 - Savings gap
- Discuss lessons we've learned from leading utilities for how programs can go broader and deeper
 - Catalog of solutions and case studies



The presentation has three main parts:

1) Reinventing fire is the title

- 1) Giving a broad overview of RMI's upcoming publication,
 - Explain what we mean by this
 - Visions
 - Solutions

2) To support the reinventing fire vision, provide our logic for when SPECIFICALLY Utility programs need to go broader and deeper

3) Lastly, some lessons learned and best practices from utilities to achieve breadth and depth

RMI WILL BE RELEASING A NEW PUBLICATION OCT 24



Reinventing fire is the title of RMI's upcoming publication and initiative
•Released on Oct 24th

Most ambitious effort to date across four sectors of RMI's practice
•transportation, industry, buildings, and electricity

This is a 2 year piece of work

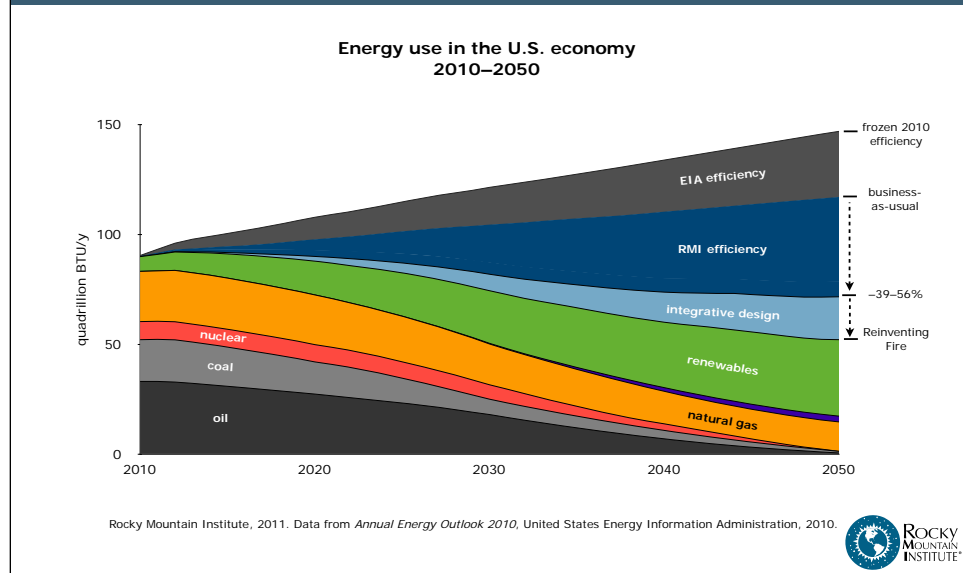
Pulled together existing research on where opportunities

Bulk of the analysis designed to get U.S. off coal and oil by 2050, 1/3 less natural gas

Give an very high level overview of Reinventing Fire results and recommendations
But the real focus of this presentation lessons learned on how we can capture more energy efficiency to meet the goals set by Reinventing Fire

Launch 27th

REINVENTING FIRE VISION FOR 2050



So what is RMI's vision for 2050?

Four sectors: transportation, industry, buildings and electricity

How do we get to our 2050 vision?

Efficiency first: both in terms of implementing more efficient technologies and more productive use

Keeping with the long-term approach at RMI

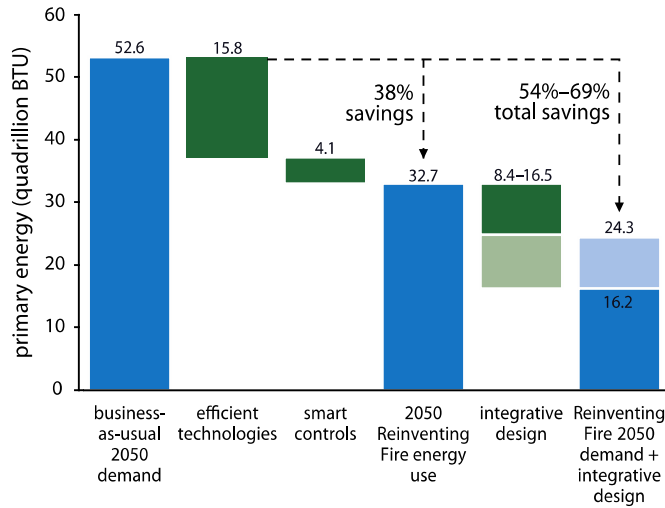
Remained of consumption filled largely with Renewables

Ambitious targets

Zero coal and oil, some natural gas

Significant focus of the results are potential gains in efficiency in two end-uses relevant to utilities: buildings and industry

ENERGY SAVINGS POTENTIAL: BUILDINGS



This waterfall chart is RMI's savings potential for the building sector

savings potential are relative to a BAU case

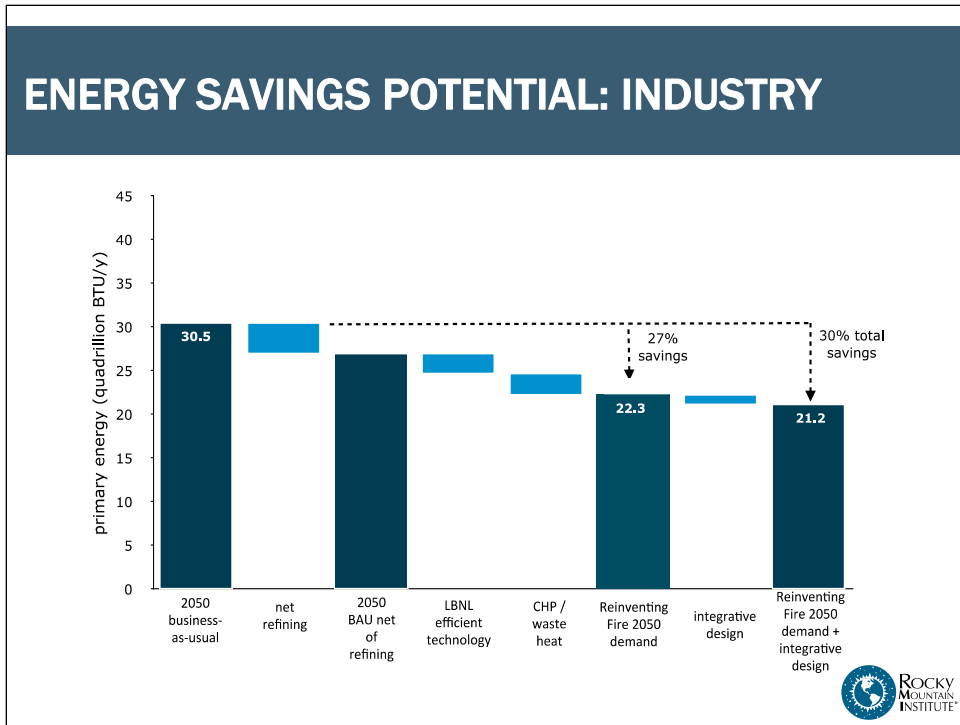
- which is EIA efficiency projected out to 2050

For efficient technologies, our research was largely based on analysis from National Academies ACEEE

38% Savings

Integrative design, or whole building approach, is also a strong area for savings, but perhaps less certain

From best practices in integrative design, identified savings



This waterfall chart is RMI’s savings potential for the industrial sector

Industrial is a bit more complex than the building sector

Again, savings potential are relative to a BAU

But in this case Baseline efficiency and structural changes in

- For example, heavy manufacturing to less energy intensive industries

Savings are based on LBNL reports

Waste heat is also from LBNL

27% from BAU baseline

REINVENTING FIRE KEY DRIVERS FOR CHANGE

Buildings

- Energy-efficient technologies
- Smart controls
- Integrative design
- Codes and standards
- Low-cost financing
- Valuing non-energy benefits

Industry

- Energy-efficient technologies
- Integrative design
- Cogeneration
- Fuel-switching
- Closed material cycles
- Biomimicry & additive manufacturing

Electricity

- Superefficient end use
- Renewable-dominated supply
- Smart, resilient grid
- Full competition between investment options
- Transparent markets
- Utilities' and customers' incentives aligned

BUT, Going beyond magnitude of savings here are our drivers for change across the sectors

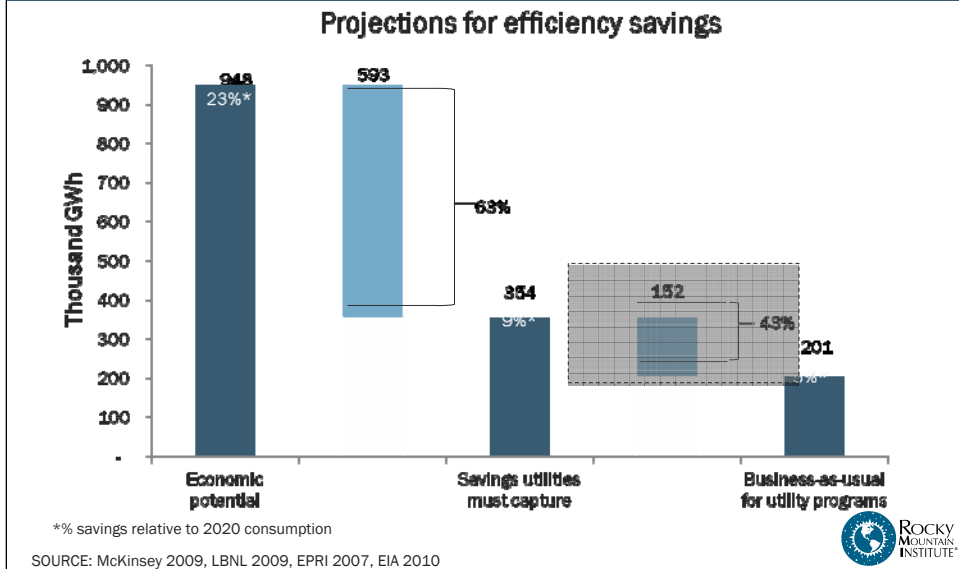
Though RF is focused on 2050 as end goal, these action items are important today.

Utilities can be a major driver for many of them

<animation>

These are the ones we feel are most applicable to energy efficiency as a resource.

THERE IS A GAP THAT NEEDS TO BE ADDRESSED



Focusing on the near term opportunity now, Let's talk about where we're at over the next ten years

This is McKinsey's economic potential out to 2020

Next bar dark blue bar to the right is savings utilities are on the books to capture over the same time period

Final bar is Business as usual case –

- what EPRI's identified as potential savings captured with current programs

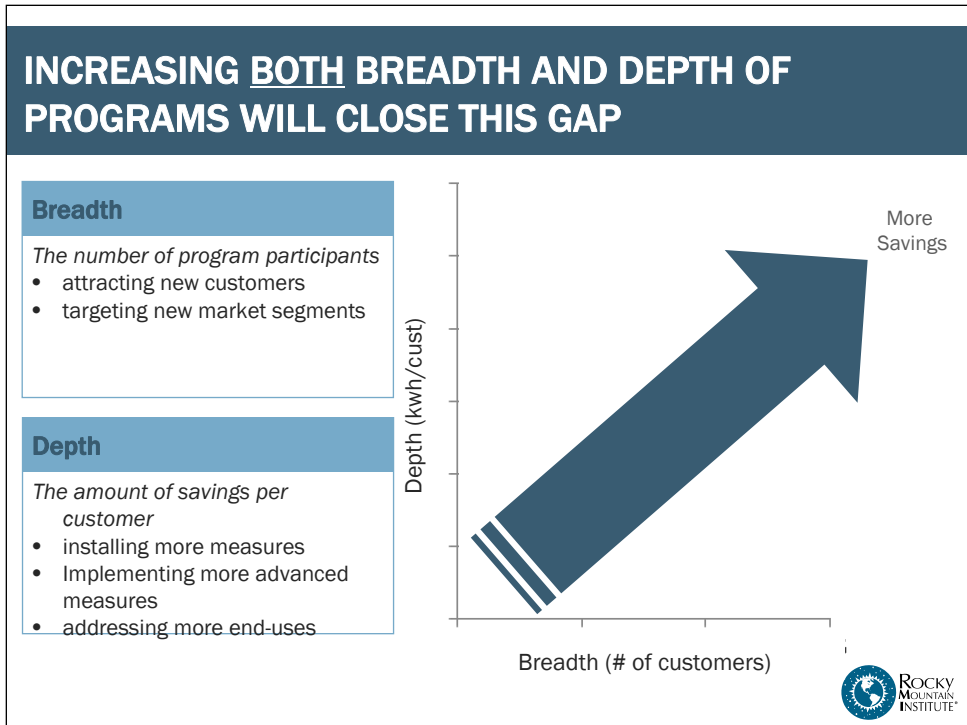
The point being that there's a gap, in fact gaps

- Certainly between economic and mandated savings

- BUT, we would like to emphasize

These are ambitious goals, capture more of the potential than they already are

In order to close this gap we're trying to help utilities go broader and deeper



Hearing about broader and deeper a lot, but we believe that it's not an either or questions

Really need both to meet these ambitious goals and close the gap between BAU and mandated savings

We are defining Breadth as number of program participants

And depth as the amount of savings per customer

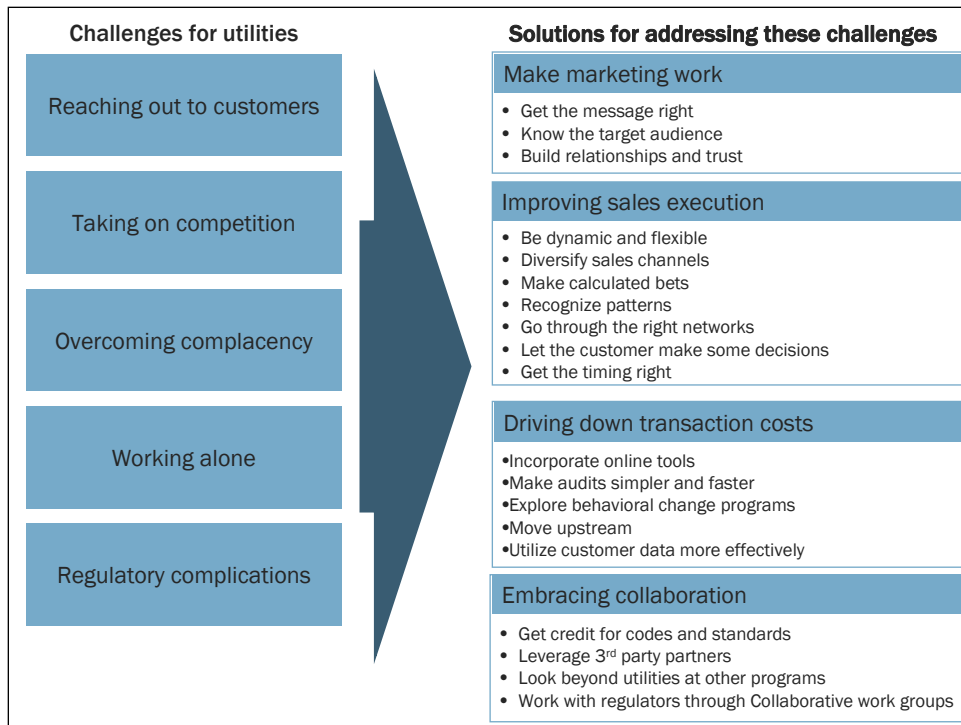
UPCOMING REPORT DESCRIBES LESSONS LEARNED FOR GOING BROADER AND DEEPER

Turbocharging Energy Efficiency: Going for Broader and Deeper Savings

Our report (to be released Mid-October) explores how utility programs can go broader and deeper by:

- Identifying utility-specific barriers
- Describing how some of the leading utilities are working to address these barriers
- Analyzing 6 of the best performing programs.





While it's relatively easy to say going broader and deeper is needed.

There are a lot of barriers to EE, both at a systems and customer level

BUT, in this paper, we wanted to emphasize the barriers specific to utilities getting breath and depth out of their programs

There's a lot of digest in this slide

Best utilities do some of these things, No utilities do all
Need to excel in all areas to get breath and depth

In the paper, we have a catalog of solution, but we wanted to emphasize one in each area

Dig a little deeper into the targeted solutions in each one of these areas

Ideas about what's working well, and grouped
Each is discussed in detail in the whitepaper, so a plug of sorts

- Highlight specific areas and case studies that we feel exemplifies them

MAKING MARKETING WORK: KNOW THE TARGET AUDIENCE

Energy Trust of Oregon Strategic Energy Management Initiative

Challenge: Reaching out to customers in challenging times

- Deploying human capital, not only technological capital
- Encouraging peer-to-peer learning
- Internal champions and teams to focus on the energy issues at the company



ETO faced stiff acquisition goals and a recession
Making capital investment projects less appealing
Low capital, operations employee behavior

IMPROVING SALES EXECUTION: LET THE CUSTOMER MAKE SOME DECISIONS

NYSERDA New Construction Program

Challenge: Attract different kinds of customers

- Long-term changes in design practices
 - *integrating efficiency into commercial building design*
- Offers building owners three tracks to pursue:
 - *pre-qualified, custom, and whole building*
 - more projects can participate
- Considered efficiency at the right time



Dynamic and flexible in sales approach
Hard for consumers to try efficiency before they buy it
Hard to tangibly understand what you're investing in
Really letting consumers make decisions

DRIVING DOWN TRANSACTION COSTS: MAKE AUDITS SIMPLER AND FASTER

Southern California Edison and Southern California Gas Set to Save Program

Challenge: Make efficiency a priority for homeowners

- First going broad, then deep
- Enabled EnerPath to identify good deep candidates
- “low-hanging fruit” actually complements the bundling of measures in an integrative manner to accrue larger savings



EMBRACING COLLABORATION: LEVERAGE 3RD PARTY PARTNERS

Challenge: Work with others in the marketplace

Xcel Energy

Energy Star New Homes Program

- 3rd Parties
 - *ARRA-funded efficiency campaign of the Governor's Energy Office*
 - *HERS Raters*
- 19% ENERGY STAR new homes in 2008
- 47% today
- Redefine incentive levels

Northeast Energy Efficiency Partnership

Retail Products Initiative

- Leverages the total buying power of seven states' utilities, retailers
 - *Good data drives attribution of savings*



Utilities are one part of a larger efficiency system
Leveraging this and clearing attributing savings to the utilities

NEXT STEPS

Reinventing Fire Release Oct 24th

- www.reinventingfire.org

Utility Programs White Paper

- Will be posted on www.rmi.org Mid-October

- Identify roadmaps for ideal programs portfolios for different types of utilities



Moving forward, we would like to IDENTIFY a portfolio of different

THANKS!

QUESTIONS?

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