

Making a Difference: How to Maximize the Impact of your Organization on the Development of Energy Efficiency Portfolios

Michael Messenger
Senior Principal Energy Consultant
Itron, Inc

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Thoughts on Portfolio Planning



- Begin with the End in Mind

- “The road to h___ is paved with:
 - > Choose one below!
 - > “good assumptions”
 - > “good intentions”
 - > “untested program designs”

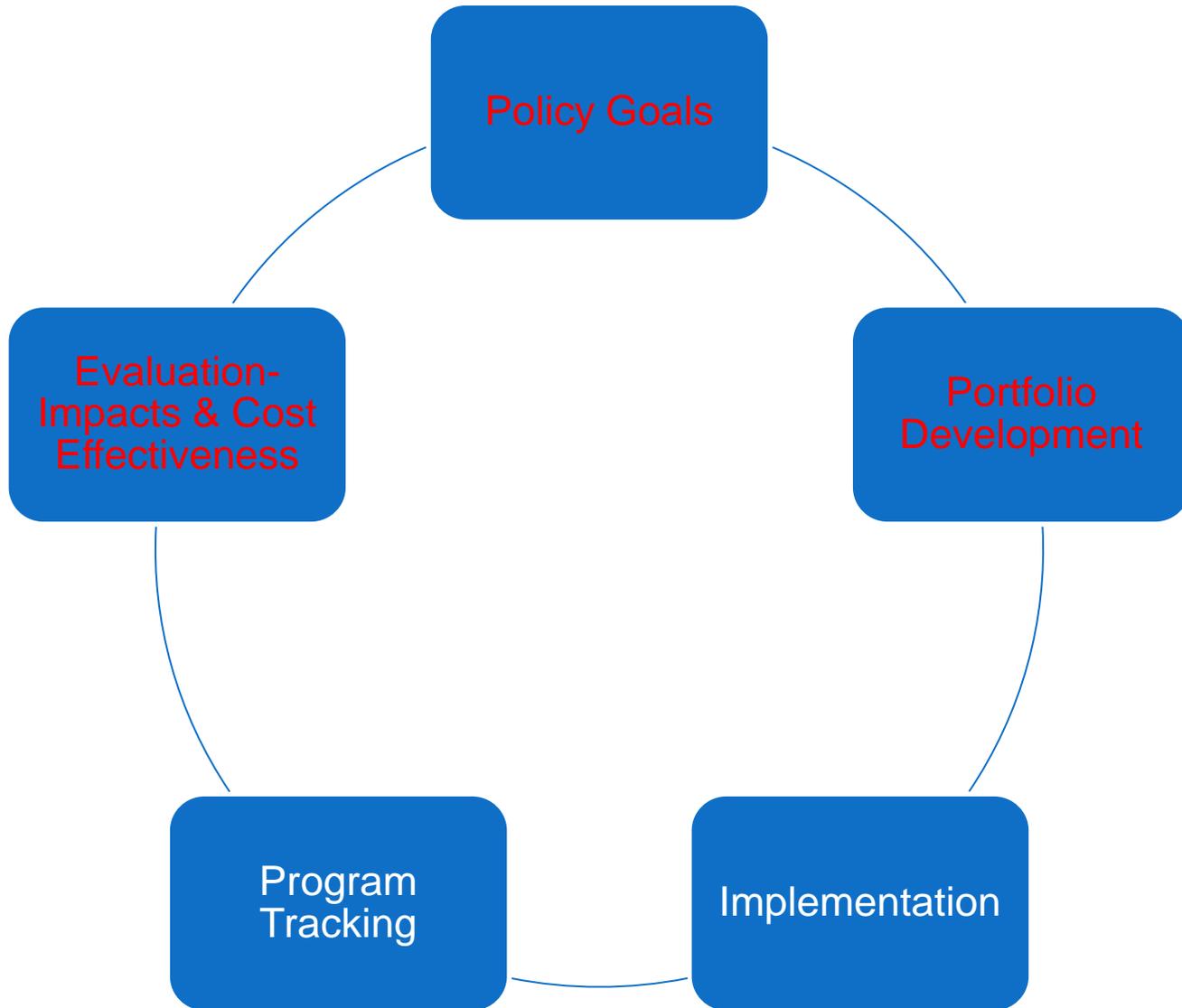
- Feedback is essential to all thinking organisms

Preview of Today's Talk



- Objectives for Today- Learn and have fun
- Definitions
- Policy Goal Development
- Portfolio and Program Development
- Best Practices
- Choosing Where to Intervene
- Portfolio Risks- Identification and Mitigation
- Summary

The Circle of EE Life



Objectives for Today

- Identify range of energy efficiency policy goals, how they are developed and where to intervene
- Discuss pros and cons of a range of portfolio planning approaches
- Discuss where to intervene in portfolio development and program planning processes
- Discuss model portfolio plans and success metrics to follow their progress
- Discuss risks in meeting portfolio goals and mitigation
- Summarize choices for intervention and likely outcomes

Definitions- What is a Portfolio?

- A portfolio is a cohesive set of energy efficiency programs designed to work strategically and comprehensively to promote specific technologies, practices, and programs at a market level to achieve specific policy objectives or goals
- Often, policy goals and objectives are left vague and undefined, potentially resulting in chaos and controversy later: Was the Portfolio successful?
- Knowing who sets/adopts policy goals and objectives for any portfolio is crucial to understanding when and how to intervene



Definitions-- Program Savings Terms



■ Gross Energy Savings:

Gross energy savings are the change in energy consumption and/or demand that results **directly from program-promoted actions taken by program participants regardless of the extent or nature of program influence on their actions.**

■ Net Energy Savings:

Net energy savings refer to the **portion of gross savings that is attributable to the program.** This involves separating out the impacts that are a result of other influences, such as consumer self-motivation. Given the range of influences on consumers' energy consumption, attributing changes to one cause (i.e., a particular program) or another can be quite complex.

■ Estimates of Co-Benefits:

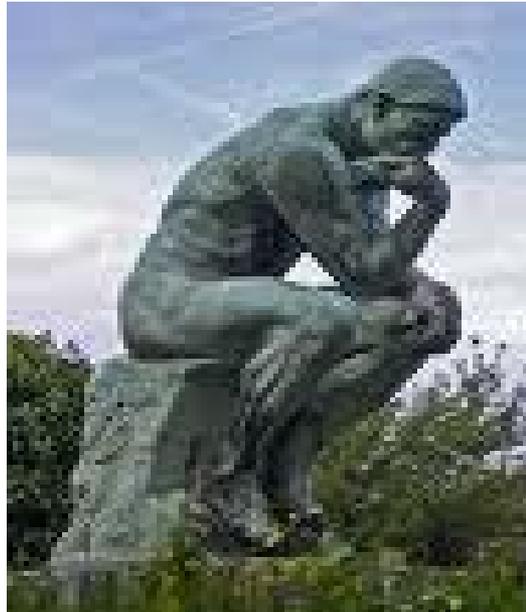
A co-benefit commonly documented and reported is avoided air emissions: the air pollution (e.g., greenhouse gases) that would have been emitted if more energy had been consumed in the absence of the energy efficiency activity.

■ Market Transformation-

Market Transformation is a Long-lasting sustainable changes in the structure or functioning of a market achieved by reducing barriers to the adoption of energy efficiency measures to the point where further publicly-funded intervention is no longer appropriate.

Source: Schiller and Associates Presentation To RAP on Evaluation Planning

Choices, Choices, Choices??



1. Intervene and attempt to Influence the Development of High level Policy Goals

Or

2. Accept Policy Goals and Work on Developing Programs and Securing Resources and Market Players to Achieve them

- > *Most advocacy organizations choose option 2*
- > *We will review both options*

Policy Goal Development

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Option 1- Influencing Policy Goal Development

- Types of Policy Goals
 - > Cost Effectiveness - Energy or Peak savings goals within budget constraint, utilities should pursue the most cost effective resources, place EE first in loading order
 - > Savings -(absolute value, % of baseline, % of load growth, per capita reductions)
 - > Equity- Deliver programs to folks paying for it or folks who can't afford it -Creation of Independent Administrators-
 - > Lost opportunity-Achieve Comprehensive Savings at each participating site to support Climate Change Goals
 - > Resource Planning- Reduce ISO costs in Forward Capacity Markets
 - > Integrative - EE +DG+DR leads to xx % reduction in fossil fuel use or overall central system generation

Pros and Cons of Pursuing Different Policy Goals



Policy Goal	Pros	Cons
Energy Savings Goals	Rewards advocates with strong analytical abilities; easier to communicate to public	Easy to game if evaluation skills are poor
Cost Effectiveness Goals	The best way from economists perspective but..	-Can stifle innovation -Leads to controversy/lobbying -Net savings hard and costly to measure
Climate Change	Topical and results mainly in no loser recommendations	Not all policy makers are convinced; GHG analysis is still highly uncertain
Equity	Fight for folks w/o representation-	Can lead to low B/C results for Portfolio.

Pros and Cons of Pursuing Different Policy Goals



Policy Goal	Pros	Cons
Lost Opportunity	Maximizes energy savings per participant and could lead to more sustainable trade allies	May lead to lower overall savings and lower cost effectiveness for portfolio
Resource Planning	Energy efficiency as a power plant concept and done well can increase understanding of risks in planning environment.	-EE investments are not exactly the same as supply investments - Encourage sole focus on economics
Integrative	Ideally the best outcome from a societal perspective	Tools to integrate cost effectiveness across EE, DR, and renewable gen not yet developed

Four types of development processes

1. Legislative- Legislature defines goals- Program Administrators implements with oversight from PUC/PSC
 2. Regulatory- PUC or PSC define goals- Program Admin implements
 3. Collaborative- Legislature or PUC defines high level goals- Collaborative works out detailed objectives and implements
 4. Appointed Board- Develops goals based on high level guidance from Governance body within a given rule framework
- *Choice of where to intervene and which process is most likely to be receptive to change varies by state/region*

Types of Energy and Peak Savings Goals *Itron*

- Peak savings as % of load growth (Texas)
- Energy savings as % of base sales or peak demand (Illinois, Pennsylvania, Connecticut)
- Achievable savings (or fraction thereof) determined in an EE potential study (2004, California)
- Absolute MWh goal by year x- based on bottoms up savings forecast based on historical program performance (Florida in 2004)
- Choice of Gross or Net program Savings

Portfolio and Program Development



Option 2- Influence Portfolio Mix Development

- Opportunities to influence mix and scope of Program Mix depend on:
 - > Processes being used to develop portfolio details (range of processes described on next slide)
 - > Who makes final decisions on portfolio mix
 - > Availability of necessary market data and expertise to develop programs and or portfolios
 - > Ability to require program administrators to do their homework BEFORE the process starts.
 - > Ability to develop concrete objectives to meet policy goals
 - > Presence or absence of performance payments

Range of Approaches for Developing Program Portfolios



Approach	Lead	Final Decision Maker
Regulatory: Passive- bring me a testimony “rock” & hearings will follow	Utility Program Administrator (PA)	PSC/PUC high level, PA program details
Regulatory: Active- workshops to gather input; Require “Case Management Statement” from parties to narrow issues (may still require testimony w hearings)	ALJ/ Commissioner- directs PA to respond to issues, fill out templates, encourages Intervener participation, and requires submission of a joint statement of consensus and non-consensus issues	PSC/PUC on budgets and objectives, PA on program design details
Collaborative (Col.)- Given a budget, diverse group develops program portfolio plans.	Consultant Team or Leader appointed by PSC	PSC on budget, Remaining Details based on Col. consensus

Range of Approaches for Developing Program Portfolios



Approach	Lead	Final Decision Maker
Quasi Legislative- Direction on how to develop Program & Procurement Pr. Implementers- public comment period	State agency or Independent Administrator	State Agency for overall Budget, Independent PA for program details and budgets
Non Profit- internal or external process	Non profit lead with funders input on style and process	Non profit subject to governance review of funding partners

Pros and Cons of Different Portfolio Approaches

Approach	Pros	Cons
Regulatory: Passive	Most time efficient, works well if PA goals are aligned with public goals	Can result in minimum public input due to barriers to entry
Regulatory: Active	Leads to good outcomes if process is well facilitated, Commission sets goals (not prescribed designs), and timelines and deliverables are well defined. Objective-Narrow issues before they reach Decision makers	In practice use of workshops and advisory groups can lead to delays if: process is not well structured with deadlines and does not close loop on intervenor comments and PA response.
Collaborative	In theory the best approach if all competing perspectives agree to work together toward common goal.	In practice, can lead to long time delays because parties have no incentive to reach agreement; dueling experts
Quasi Legislative-	Easier for state or its agents to represent public interests compared to private interests	In practice, difficult to penalize public actors for program design/ implementation mistakes
Internal- non profit	Responsive to funding agency/stakeholders	May choose not to involve public in plan dev. process

Possible EE Portfolio objectives

- > Maximize energy or peak savings within or outside of program cost caps (with or without shareholder incentives)
- > Maximize cost effectiveness of programs-incentives rewarded as a fraction of net benefits produced. (with or without a minimum savings goal)
- > Aim to acquire deep and comprehensive savings at each premise, to minimize lost savings/carbon reduction opportunities that can be much more costly (or impossible) to achieve later
- > Maximize leverage of program dollars in creating private investment in energy efficient products to achieve more savings than just programs
- > Programs should defer specific resource planning needs- (peaking or base load plants, T lines) and or contribute to maximizing GHG gas emissions
- > Maximize fraction of population participating in programs by sector (Equity)
- > Maximize customer satisfaction and loyalty to program administrator





Successful portfolio plan contains:

- Clear set of policy goals and objectives
- Clear mission statement with roles and responsibilities
- Clear summary of current market environment and strategies to be used to achieve success
- Program Budgets and Anticipated Load Impacts
- Clear metrics of program and portfolio success
- Buy in from relevant stakeholders and market actors on high level resource allocation and program strategies

- Minimize regulatory risk with tried and true EE programs - low risk (examples Florida, Iowa, Indiana, Maine)
- Maximize potential for future energy/peak savings from utility programs by pushing the envelope - medium risk (New York, examples CA in late 90's early 00's, MD, IL)
- Maximize Market savings - set market savings goals and work with trade allies to develop customer based solutions - medium to high risk (Northwest Energy Efficiency Alliance, MA, CA for 2009-11)

Portfolio Development- The Process



- Opportunity to influence Mission Statement?
- Suggested Goals for a Portfolio Development Process-
 - > Understand what policy goals have been set and any flexibility
 - > Understand context of market & regulatory environment
 - > Ensure all necessary actors are involved in process to achieve buy in and commitment to policy goals
 - > Preview key drivers of customer participation trends in programs and how they might evolve over time
- Agree on roles and responsibilities and expectations for stakeholders
- Agree on roles and responsibilities for Program Administrators and other “experts” in the process.
- Recognize the need for many personality types- Organizers, “Brainstormers”, Blue sky thinkers, Integrators, Market Researchers, and Analysts to perform cost effectiveness and scenario analysis

Portfolio Development- Process 2



- Agree on the Final Product (Use template Outlines- see example next slide)
- Market scan should be first step – Discuss: Likely trends in energy prices, costs of EE measures, econ growth by sector, ee public awareness ? Bring in trade allies! Does region need new resources? What new EE technologies to add to program mix? How will economy trends effect participation?
- Identify necessary inputs and outputs of the process- usually a function of policy goals and relative emphasis on cost effectiveness
- Use Program Templates to follow up promising ideas with market research before next cycle.
- Discuss needed market research to fill gaps in knowledge at the end of the process-

What do we need to know about the Market NOW?



- Customer Segment Size
- End Use Breakdowns
- Building Structural Characteristics
- Customer Decision Making Processes
- Trade Ally Decision Making Processes
- Sales and Media Channels
- Equipment and Appliance Sales by Efficiency Bin
- Baseline energy use trends-
- Savings potential areas- Cost of conserved energy
- Memorialize in Program Development Templates

Example Portfolio Template



- Overview of Plan
- Energy Efficiency Program Summary Tables and Charts
- Program Descriptions
- Program Management and Implementation Strategies
- Reporting and Tracking Systems
- Quality Assurance and Evaluation, Measurement and Verification
- Cost Recovery Mechanism
- Cost Effectiveness- When and How filed, goals?
- Plan Compliance Information and Other Key Issues
- Appendices (See detailed template on RAP website)

What should be learned before next Portfolio is built?

- Output from portfolio process should be a list of areas where more information is needed before next cycle.
 - > Program Penetration by Market Segment
 - > Customer willingness to pay and incremental cost trends
 - > Customer and Trade Ally Satisfaction- Repeat customers?
 - > Load impacts and cost effectiveness by program
- Interim EM&V feedback during cycle
- Portfolio budget should include funds to complete market research and evaluation of programs



Best Practices in Portfolio Planning



- Identify key Interested stakeholders ,their expertise, and desired inputs
- Solicit stakeholder input into the portfolio and program plans either through a formal interview process or a collaborative planning or workshop process involving key stakeholders.
- Set expectations for what will be done with stakeholder inputs
- Conduct selective market analyses around information gaps and key issues, discovered during input process
- Conduct baseline research to support the next planning process
- Allocate market research efforts strategically across the portfolio.
- Target resources toward the very largest markets, and those that are least understood.
- Set quantitative goals for all key objectives
- Develop a long term market strategy and use it to guide market entry/exit decisions.
- Link strategic approach to policy objectives and constraints.
- Build feedback loops into program design & logic and to program administrators.
- Maintain the flexibility to rebalance portfolio initiatives, as needed, to achieve portfolio goals

- Source : *NATIONAL ENERGY EFFICIENCY BEST PRACTICES STUDY VOLUME P1 – PORTFOLIO BEST PRACTICES REPORT: see link on resources page*

Best Practices for Seeking Intervener input *Itron*

- Advisory Groups
 - > Input via formal reports
 - > Output via formal reports assessing portfolio filing
 - Cons- multiple master problems, ownership
- Shadow member of program development team
- Join Collaborative Group Decision Making
 - > Cons- time and limited resource constraints
- Targeted testimony or public comment
 - > Cons- testimony not conducive to compromise
- Best practice- Make sure loop is closed between intervener comment and PA response

Where and When to Intervene?



Where to Intervene in the Process



- Stage 1-Balancing Policy Priorities
- Stage 2-Brainstorming new ideas
- Stage 3- Setting Overall Budget & Motivation of Program Administrators
- Stage 4-Program description formats (Template)
- Stage 5- Base Portfolio Program Proposal-\$ and savings
- Stage 6- Refinements to Program Design- Adapting New programs from other jurisdictions
- Stage 7- Comments on Proposed Portfolio- (appeals to ultimate decision maker)

Internal- Planning Within Program Administrator organization, final plan put out for comments

Keys for Interveners- Trust and Access to Decision Makers

External- Led or Managed by Governance Staff with participation by Program Administrators, planning mostly in public meetings

Keys for Interveners- Public speaking skills and access to public staff

Collaborative- Panel of “experts” leads the process, responds to schedule and budget constraints from governance body

Keys for Interveners- access to experts and technical expertise to understand lingo and make proposals

- What regulators want:
 - > reported or verified energy savings and net benefits (savings minus costs) at a given level of confidence, participation counts, program costs, & case studies for publicity
- What program administrators want –
 - > verified installations and program/ measure cost tracking to support performance payment, auditable tracking system
- What program designers want –
 - > Evidence to verify program theories, are barriers real?, fraction of market participating.
- What program evaluators want –
 - > indicator results that increase confidence in forecasts of future program energy savings, improve effectiveness of program design, or verify ex ante assumptions. Tracking for billing analysis
- What Advocates want; Lets ask audience- type in chat room

Example Success Metrics- Portfolio Level *Itron*

- Energy and Peaks Savings per capita, abs, or %
- Benefit Cost Tests
- Levelized Program Cost
- Average customer bill savings by sector
- Fraction of Customer Classes Served/Participating
- Product Price drops in Market Place
- Evidence of Market Transformation
- High level goals- 25% reduction in HVAC use. 10 million solar roofs, (appeal to public)
- Combination of activity related and stretch goals
- Private Dollars Leveraged
- GHG emission reductions

Program Planning Process



1. Gather Input

- review evaluation studies
- research other successful programs/'best practices'
- conduct program manager and trade ally interviews

2. Develop new conceptual program design & a program theory

3. Obtain feedback from key stakeholders

4. Develop advanced program designs with value proposition, customer, trade ally and measure targets

5. Complete program plans, adding detailed goals, budgets, marketing strategies, etc.

Interventions at the Program Level



- Advocates often good at making case for new technology support or social marketing
- Requires understanding market channels in target market, how to work with trade allies, and patience
- Demonstrations with key allies-good PR value
- Worry that utilities are “wasting” money on rebates
- Desire to shift dollars to underserved sectors
- Other reasons?
- CFL’s a good case study with interveners on both sides

Components of a Program Plan



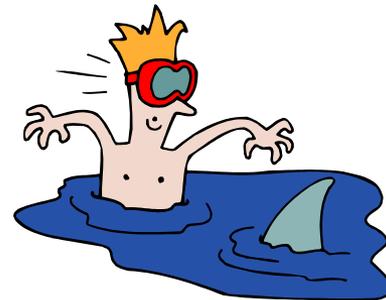
- Program description
- Value proposition
- Customer & trade ally targets
- Eligible measures
- Market barriers & strategies to address
- Incentive/Motivation strategy
- Program process steps
- Marketing and promotion
- Quantitative goals, budgets & schedule
- See example template posted on RAP site.

Portfolio Risks-Identification and Mitigation **Itron**



Biggest Risks to Portfolio Success

- Overestimates of Gross Savings due to faulty baselines
- Net to gross adjustments.-- due to moving usage baselines and “unstable” self reports of what would have happened in absence of program
- Low customer participation due to poor program designs, trade ally participation or slow economy
- Performance Incentives induce War like behavior between defenders of the rate base and greedy admin



Understanding Risks of Non Performance *Itron*

- List all factors in program savings & participation forecast that are likely to vary significantly- be uncertain
- Use Monte Carlo analysis to understand what are the key inputs that drive portfolio savings or cost effectiveness outcomes
- Example- What are the key assumptions that will effect the probability that a given portfolio will reach its net savings targets?
 - > Participation Forecasts
 - > Net to gross ex ante assumption
 - > Realization rates
 - > Program Design Acceptable to trade allies
 - > Others?

Example Output of a Monte Carlo simulation

Assumptions	ContributionToVariance
Net to Gross Adjustment	62%
Installation Risk	24%
Gross Savings per unit Risk	13%

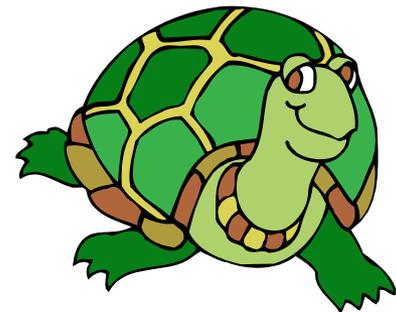
Does not include regulatory risk – change in measurement methods or policy rules, and business cycle risk

Strategies to Mitigate Risk of Achieving Savings Goals

- Actions to mitigate portfolio risks
 - > Negotiate frozen net to gross ratios - use new NTG results in next portfolio
 - > Transfer some installation & NTG risk to third parties through contracts
 - > Bound expected variation in gross or net savings per unit by pre screening potential participants or getting regulators evaluators to agree to deemed savings gross or net values ex ante
 - > Diversify delivery mechanisms= counter cyclical
 - > Diversify performance incentive mechanisms- Not all payments hinging on complex net savings analysis

Deciding How and Where to Make a Difference *Itron*

- Review roles and responsibilities-Look for gaps
- Match your strengths to perceived weaknesses in existing portfolio or policy goal development
- Review Lessons Learned from last Portfolio Development
- Work with researchers to gather the market data necessary to make good decisions.
- Look for synergies with other programs, program champions who can be held up as role models, & case study wins
- Slow but steady wins this race!



- Interveners can make a significant difference in outcomes of EE portfolio planning process if they think strategically and do their homework
- Choosing Where to Intervene and at What level is a very crucial decision- time, resources and risk.
- Intervener strategy should be guided by what is most important to your organization: environmental goals, equity or efficiency goals
- Planning processes are fairly sophisticated in many states, costs of entry can be high (and not reimbursable) if you don't understand how the game is played in the jurisdiction of interest.

For more Information on Portfolio Planning

- Portfolio Plan template
 - > See **Template for Pennsylvania EDC Energy Efficiency And Conservation Plans** on RAP Website

- Program Planning template
 - > See General Program Planning Template used for a Midwest Utility on the RAP Website

- Portfolio Best Practices:
 - > Download National Best Practices Study at <http://www.eebestpractices.com/pdf/portfolio.pdf>

Questions

