
Kansas Utilities Division Kansas Corporation Commission

Energy Efficiency Workshop

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Evaluation Issues Facing State Regulatory Offices

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4 Topics Covered Today

1. The changing importance of program evaluation.
2. Evaluation reliability and the influence of evaluation budgets.
3. Net-to-gross issues.
4. Critical policy issues relating to evaluation.
5. The future of Energy Efficiency

1. Changing Importance of Evaluation

Evaluation provides decision-support information in a changing environment...

- More people understand the true cost of fossil fuel & nuclear power supply and are demanding change.
- Energy Efficiency represents the single largest impact potential for greenhouse gas reduction.
- Energy efficiency is moving to be the resource of choice.
- Public resistance to new plants, including some renewable energy facilities.
- ISO's, Commissioners, ALJs and others are asking for *more* reliable evaluations.

Accurate information is essential for Policy Decisions.



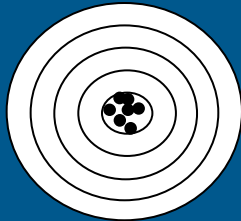
2. Reliability & Evaluation Budgeting

Several states are worried about the accuracy and reliability of evaluation results

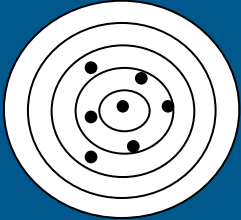
- Accuracy & reliability are controlled by the evaluation budget & the evaluation timeline.
- States are struggling with evaluation budget decisions.
- Some are legislating budgets without understanding the effects.
- Currently some states are setting evaluation budgets below the level of accuracy desired.

2. Reliability & Evaluation Budgeting

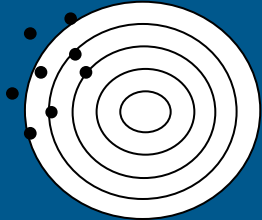
Relationship between funding and results



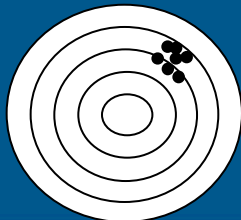
Strong Funding – Right Approach



Weak Funding – Right Approach



Weak Funding – Wrong Approach



Strong Funding – Wrong Approach

2. Budgeting for Evaluation

| | | |
|-----|------|--------------------------------|
| NY | 2% | Moved from 1% |
| ILL | 3% | Set in legislation |
| WI | 4% | Moved up from 3% |
| MI | 3-5% | Proposed - Now being discussed |
| KY | 5% | Proposed - Now being discussed |
| OH | 5% | Proposed - Now being discussed |
| NC | 5% | Proposed - Now being discussed |
| SC | 5% | Proposed - Now being discussed |
| IN | 5% | Proposed - Now being discussed |
| CA | 8% | Moved up from 4.25% |

3. Net to Gross Issues

Net savings definitions and measurement approaches are not consistent across states, and sometimes across studies within a state.

Different definitions from state to state

- Freeriders (10% to 60% of the program-claimed savings)
- Participant spillover (5% to 40% of the program-claimed saving)
- Short term non-participant spillover - market effects (5% to 20% of the program-claimed savings)
- Long-term non-participant spillover market effects (40% to >500% of the program-claimed savings)

Study results are inconsistent and not comparable.

3. NTG Definitions Used

| | | |
|-----|-------------------------------------|------------------------|
| NY | Gross – freeriders | Can adjust for PS & ME |
| ILL | Gross – freeriders + part spillover | Not yet agreed |
| WI | Gross – freeriders + ME | As documented in eval |
| MI | In discussion now | Not yet agreed |
| KY | Gross – freeriders + adjustments | As documented in eval |
| OH | Gross – freeriders + adjustments | As documented in eval |
| NC | Gross – freeriders + adjustments | As documented in eval |
| SC | Gross – freeriders + adjustments | As documented in eval |
| IN | Gross – freeriders + adjustments | As documented in eval |
| CA | Gross – freeriders | Now looking at options |

3. Current NTG Issues

- Are self response approaches biased...
 - Asks what they would have done after the program influenced their decisions.
- Effective programs should increase freeridership – that is often the goal.
- Current approaches penalize programs for being effective
 - Decreases *apparent* cost effectiveness

3. Program-Focused NTG Options

1. Self reports from participants
2. Self-reports from non-participants (with/without demo/psycho match)
3. Actions taken comparison group (parts pre-program or matched group)
4. Billing analysis by program and participant type
5. Participant pre and post decision model assessments
6. Business/customer decision model comparisons
7. Change cause exposure analysis, SEM type or simplified approach

3. Market-Focused NTG Options

1. Measure penetration studies by sector/segment
2. Market adoption rate and or adoption stage studies by sector/segment
3. Expert opinion of manufacturers, industry officials, trade allies, contractors, market experts, etc.
4. Market based business decision model analysis
5. Message exposure analysis trend line and exposure
6. Actions taken comparison group by type of program within the market
7. Billing analysis across market segments, sectors
8. Historical market-based portfolio offering analysis
9. Complementary supporting program assessment across market sectors

4. Critical Evaluation Policy Questions for Regulators

Do we now...

1. Set policies that limit Effective Useful Lives so that savings have no value past 20 years?
2. Value energy savings below policy thresholds or supply cost?
3. Not value greenhouse gas achievements at their estimated value?
4. Discount achievements until they have no value?
5. Require energy efficiency to be cheaper than the price of fossil fuel or we won't consider it for inclusion in a program?

4. Evaluation Related State Issues

Do our discounting policies make energy savings worthless after 20 years...

- Should the savings in year 20 be worth *more* or *less* than today's savings?
- Does it make sense to discount the energy needs of our future years so that they have no value in today's decisions?

4. Evaluation Related State Issues

Should we value energy saved at...

- current fossil-based avoided cost,
- market price at time of saving,
- Consumer retail cost,
- Avoided cost of renewable energy,
- Other approach?

4. Evaluation Related State Issues

How should we evaluate greenhouse gas savings...

- Annual grid average?
- Average annual distribution average?
- Hourly weighted average?
- Hourly dispatched net load change assessment x the carbon output of the plants not used at each hour?

4. Evaluation Related State Issues

Should we value greenhouse gas savings at...

- Policy based fixed price,
- Market price for carbon-dioxide,
- U.S. long-term societal cost,
- World long-term societal cost,
- Other approach?

5. A Look Into The Future

Changes I see coming...

1. Avoided cost will be set equal to the full lifecycle cost of wind energy (or other renewable).
2. There will be no discounting of future savings.
3. Technologies will have full EUL.
4. Greenhouse gas will be valued at the societal cost of expected damage.
5. Utilities will be the financing centers for capturing energy savings.
6. It will be cost effective to rebuild most homes.
7. Utilities can have large profit centers for EE.
8. Public regulation and oversight will be more dominate.

Thank You

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