

Illinois Cost Effectiveness Methods and TRM Application Issues – Agenda

Thursday, April 12, 2012

9:30 AM – 4:30 PM

ICC, 527 East Capitol Avenue, Springfield, IL 62701
Hearing Room C, 1st floor, Illinois Commerce Commission
Conference Line #1-877-802-4003 passcode 445470

9:30 AM – 10:00 AM	Introductions Agenda Goal of Meeting
10:05 AM – 11:25 AM	Overview of Cost Effectiveness Analysis and Other States Illinois Total Resource Cost test as defined pursuant to 20 ILCS 3855/1-10 and 220 ILCS 5/8-104(b) – Overview of Costs and Benefits Should the ex post TRC analysis be conducted using a Program-level TRC calculation or a Measure-level TRC calculation that then aggregates up to the program and then portfolio? What is the added value of estimating the ex post TRC using a single spreadsheet for the program as opposed to using multiple spreadsheets for the different measures that make up the program as was done for cost effectiveness screening during planning? Based on the Illinois TRC test definition, is there an appropriate discount rate that should be used? Should societal discount rate or WACC be used in ex post TRC calculation? Or both? Illinois TRC test – Benefits Based on the Illinois TRC test, what might be included in the societal benefits? Based on the Illinois TRC test, how might one interpret benefits to the system and does this mean transmission infrastructure and equipment improvements above baseline? How is NTG (free-ridership % + spillover %) applied to the benefits side of the IL TRC equation?
11:40 AM – 12:15 PM	Lunch
12:15 PM – 3:00 PM	Illinois TRC test – Costs How is NTG (free-ridership % + spillover %) applied to the cost side of the IL TRC equation (<i>See Relevant Materials section for CA Standard Practice Manual Clarification</i>)? Are all energy efficiency program costs supposed to be included in the IL TRC? Program-specific discussion regarding participant/incremental measure costs, incentive costs, and program costs and NTG. Should the ex post TRC analysis use the Participant/Incremental Measure Costs included in the TRM? Should Non-Rider program costs be included in the program TRC analysis or portfolio TRC analysis or not at all? Should the ex post TRC calculation for the program use the estimated NTG for the program year or the NTG applicable using the NTG framework (potentially the value from 2 years before)? What is best way to show TRC results from joint program implementation efforts when the various utilities use different TRC software? Is there a delay in appropriate program cost attribution (cost sharing/splitting reflective of program year implementation efforts) when calculating the program TRC for each utility separately for joint programs?
3:05 PM – 4:30 PM	Illinois Statewide TRM Policy Issues and applicability of TRM values in cost effectiveness screening and ex post analysis (e.g., incremental measure costs, load shapes)

Meeting Goals

1. Develop an understanding of where Illinois utilities and evaluators, who conduct the TRC analysis, are in terms of consistency in TRC approaches. ✓
2. Get through the full issues list, providing the framework for you to consider when deciding your position. ✓
3. After today's meeting we will circulate minutes from the meeting (discussion points, action items) with all interested parties. ✓
4. >>> We will hold a follow-up teleconference and ensure that all interested parties are able to attend and provide valuable input on this subject matter.
5. At that point, we will use an email process to seek consistency in approaches for TRC methodologies (e.g., cost classification) for the evaluation of the cost effectiveness of the IL utilities energy efficiency programs, and all interested parties will have an opportunity to provide their full input then, in writing. All interested parties should inform Jennifer Hinman at ICC Staff (jhinman@icc.illinois.gov) if they wish to be included on emails regarding these issues.
6. After everyone has had an opportunity to provide input, we will summarize positions on each issue and indicate where agreement seems to be forming. We may then need to set up 1 or more conference calls on specific topics where positions are more varied to try to resolve differences such that consistent TRC approaches will be applied over time.

Illinois TRC test Statutory Definitions:

"Total resource cost test" or "TRC test" means a standard that is met if, for an investment in energy efficiency or demand-response measures, the benefit-cost ratio is greater than one. The benefit-cost ratio is the ratio of the net present value of the total benefits of the program to the net present value of the total costs as calculated over the lifetime of the measures. A total resource cost test compares the sum of avoided electric utility costs, representing the benefits that accrue to the system and the participant in the delivery of those efficiency measures, as well as other quantifiable societal benefits, including avoided natural gas utility costs, to the sum of all incremental costs of end-use measures that are implemented due to the program (including both utility and participant contributions), plus costs to administer, deliver, and evaluate each demand-side program, to quantify the net savings obtained by substituting the demand-side program for supply resources. In calculating avoided costs of power and energy that an electric utility would otherwise have had to acquire, reasonable estimates shall be included of financial costs likely to be imposed by future regulations and legislation on emissions of greenhouse gases. 20 ILCS 3855/1-10. (Electric)

(b) For purposes of this Section, "energy efficiency" means measures that reduce the amount of energy required to achieve a given end use and "cost-effective" means that the measures satisfy the total resource cost test which, for purposes of this Section, means a standard that is met if, for an investment in energy efficiency, the benefit-cost ratio is greater than one. The benefit-cost ratio is the ratio of the net present value of the total benefits of the measures to the net present value of the total costs as calculated over the lifetime of the measures. The total resource cost test compares the sum of avoided natural gas utility costs, representing the benefits that accrue to the system and the participant in the delivery of those efficiency measures, as well as other quantifiable societal benefits, including avoided electric utility costs, to the sum of all incremental costs of end use measures (including both utility and participant contributions), plus costs to administer, deliver, and evaluate each demand-side measure, to quantify the net savings obtained by substituting demand-side measures for supply resources. In calculating avoided costs, reasonable estimates shall be included for financial costs likely to be imposed by future regulation of emissions of greenhouse gases. 220 ILCS 5/8-104(b). (Gas)

- Illinois Cost Effectiveness Methods Workshop -

- Meeting Notes -

April 12, 2012 – 9:30 AM to 4:30 PM

Illinois Commerce Commission (“ICC” Hearing Room C) – Springfield, IL

Meeting notes primarily drafted by Navigant Consulting and Itron with some edits by ICC Staff

Please e-mail corrections to the meeting notes to Jennifer Hinman, jhinman@icc.illinois.gov



TRC workshop
Springfield 2012 04 1:

Action Items:

1. Revisit the incremental costs associated with residential and non-residential new construction programs and develop a standard approach that is acceptable and uniformly applied.
 - a. ComEd to ask ECW for nonresidential side.
 - b. DCEO to ask SEDAC about this as well. ✓
 - c. Ted Weaver will ask the implementation contractor for residential NC for gas / electric
2. Determine what the emissions and environmental externalities GHG (carbon, SO_x, NO_x, and Mercury) are being applied to avoided cost by each utility.
 - a. Ameren will determine this for AIC
 - b. ComEd will determine this for electric
 - c. Ted will provide Nicor
 - d. Jennifer Hinman will ask Integrys for this information ✓
3. Determine how to apply *quantifiable societal benefits* – use societal discount rate and NEBs? Cadmus suggests using both. ComEd must use WACC unless the Commission orders them to do otherwise.
 - a. To be discussed at the SAG meeting for comment
4. Determine how to legitimize the TRM now and each year:
 - a. Mike Brandt will take the question of how to file the statewide TRM back to ComEd lawyers to determine the process.
 - b. Discuss during the 4/17 SAG meeting whether a framework written up within a stipulated agreement and informational filing is useful.

The meeting was called to order at 9:30 AM and attendance of those at the ICC and those attending via the dial-in conference bridge was taken. The attendance list is included in these minutes as Attachment A. The ICC Staff scheduled the Illinois Cost Effectiveness Methods Workshop to address the following:

- Cost effectiveness analysis and other states' treatment of the Total Resource Cost Test (TRC)
- Review and discussion of costs and benefits that are central to the TRC
- Address specific policy issues related to implementing the TRC
- Discuss points of difference and similarity with regard to implementing the TRC

Dr. Sami Khawaja of The Cadmus Group opened the meeting to facilitate the initial discussion of cost effectiveness methods. Subsequent to Dr. Khawaja, Roger Baker of ComEd also presented on the topic of the TRC and its uses in Illinois - the combined notes from the 2 presentations Dr. Khawaja and Roger Baker are shown as follows:

Cost-Effectiveness:

- What is cost effectiveness - measurement of economic attractiveness of an option (e.g., Demand Side-Management) compared to another standard (e.g., generation)
- Application of differing TRC test perspectives can lead to different test results / answers – TRC is the sole determinant of “cost-effectiveness” in Illinois
- Economic comparison of alternative cost-effectiveness tests
 - Need for an “apples-to-apples” comparison (e.g., consistent timeline for costs and benefits is needed)
 - Timeline – discounting process to account for inflation when using more than the present year
 - Cost of Capital – cost to deliver; cost to acquire the money/capital
 - Internal Costs
 - Naturally occurring changes – net vs. gross point of view
 - Usually the TRC is applied in a two part step “measure/program” screening process
 - ComEd notes that the first gate which measures the TRC is a threshold and, then, it moves to the second test (gate) level for further measurement
 - Second gate (measure) chooses and ranks amount an energy-efficiency (EE) program can achieve (within a budget and also have greater benefits)
- Overview of Cost Effectiveness Analysis and Other States (Sami)
 - Definitions
 - What is cost effectiveness? Measurement of economic attractiveness of one option (DSM) versus another (supply option).

- Need apples to apples comparison – time line, cost of capital, costs included, etc.
- 5 perspectives – TRC, RIM, UCT, PCT, SCT. Societal test uses societal discount rate, other perspectives use utility’s weighted average cost of capital.
- TRC = sum of RIM and Participant Cost Tests
 - Benefits – avoided generation, avoided capacity, NEBS?
 - Cost – utility costs and admin, customer contribution.
 - Bill savings/revenue loss cancel out.
- IL statutory language allows for inclusion of quantifiable NEBs. Carbon tax (use cap and trade as proxy \$10-30/ton) and other emissions
- ComEd uses NYMEX projection 3 years out. Includes risk premium to address carbon tax. No better data to say otherwise.

Various Applications of Cost-Effectiveness:

- Review of various cost-effectiveness tests - e.g., TRC, Rate Impact Measure (RIM), Utility Cost Test (UCT), Participant Cost Test (PCT) and Societal Cost Test (SCT)
 - Overview of various *benefits* applied by each test – avoided generation, avoided capacity, non-energy benefits (NEBs)
 - Overview of various *costs* applied by each test – utility costs (admin and incentives), customer contributions, incentives
 - Concerns with the TRC Test
 - Does not include all non-energy benefits – this is why some states allow societal benefits to be included in the test – also, qualitative factors are not included (e.g., quality of light, etc.) – Mary (ODC) notes that survey efforts to attempt to quantify non-energy benefits are tortuous.
 - TRC isn’t fully symmetric in application of the cost and benefit measures
 - Very hard to quantify qualitative or safety measures or variables (“soft measures”)
 - Over-reliance on the robustness of the TRC analysis in the ex-post review
 - Ameren noted that it allocates certain administrative costs across measures (when using DSMore) – arbitrary allocation based on first year kWh savings per measure versus costs
 - ComEd noted that the best use of the TRC for DSM measure analysis is in the design phase of the programs – noting that the TRC is not very good after-the-fact (in ex-post reviews)
 - The group discussed TRC applied at the measure level – some of the key points included:

- Ex-post analysis is at program level and then portfolio level - doing it at the measure level is not necessarily more accurate
 - Regardless of the level of TRC analysis, utilities still have to satisfy ICC and SAG that utilities are being prudent.
 - If a TRC measures 1.5 or greater, then the utility is likely to be comfortable; while if the TRC measures 1.0 or less, a utility is likely to do a “deep dive” to determine what caused the low result on an ex post basis
 - It was discussed that this is not just about cost effectiveness, it is also about meeting overall savings goals
- TRC = PCT + RIM (key components)
 - Benefits = avoided generation, avoided capacity...sometimes non-energy benefits (NEBs)
 - Costs = utility costs (admin and incentives), customer contributions after the utility incentives
 - Bill reduction and lost revenues cancel out
 - Time value of money is a central component – later years are discounted to today’s dollars
 - Note: When the RIM test is deployed, rarely does an EE program pass the RIM test (only occurs if avoided costs are very high) – there was discussion of certain assumptions of the RIM test
 - NEBs in practice
 - Many jurisdictions use a flat percentage adder to account for NEBs (e.g., CO = 5%; IA = 10% for electric and 7.5% for gas)
 - Other states include actual \$/kWh benefits
 - A suggested approach is to apply NEBs on an incremental basis:
 - Tier 1 – TRC alone; Tier 2 – add NEBs with defensible monetary basis; Tier 3 – add NEBs with less defensible monetary benefits; etc.
- Difference between TRC and SCT
 - SCT contains NEBs (non-energy benefits)
 - SCT uses societal discount rate – while TRC often uses weighted average cost of capital (WACC) – variations on a straight TRC include some societal factors
- Brief discussion of the California Standard Practice Manual (SPM 1983; SPM also had later revisions)
 - California SPM is used, but disagreement on application of SPM remains

- Measures the net costs of DSM programs as resource option based on the total costs of the program including participant and utility costs
- TRC represents the combination of the effect of the program on both the participants and non-participants
- Illinois TRC Statutes – Electric and Gas (both are similar to one another)
 - Electric = 20 ILCS 3855/1-10
 - Gas = 220 ILCS 5/8-104(b)
 - Includes avoided costs, administrative costs, incremental costs
 - Both allow “other quantifiable societal benefits”
 - Carbon Risk – e.g., green house bases, “cap and trade”, etc.
 - MidAmerican noted they include such costs in certain models
 - ComEd noted that the long-term risk of carbon is used by the company in calculating its NYMEX risk analysis
- Review of other Jurisdictions
 - Analysis:
 - TRC is the dominant model (with variations)
 - Sometimes it is a modified TRC (with other benefits (non-energy) and/or lower discount rate than utility WACC)
 - Key Issues: discount rate; avoided costs; NEBs and Net-to-Gross (NTG)
 - majority of jurisdictions (15 of 27) apply a WACC with TRC test (only three of those look at NEBs)
 - smaller group (9 of 27) applies a societal test with TRC with NEBs
 - only three (of the 27) apply WACC with UCT
- WACC and Discount Rate:
 - Debt to equity ratio (WACC) – the group discussed a utility company’s cost of capital vs. consumer / societal discount rates
 - Group discussed various applications of the utility WACC and the point that if the ICC wants a specific discount rate to be applied, then the Commission should provide a directive to that effect (this was stated clearly by ComEd and the group agreed)
 - Discussion of TRC discount rates varying by jurisdiction; modified TRC test which incorporates either a societal discount rate or NEBs (sometimes both)
 - Some key points discussed:
 - Dr. Khawaja of Cadmus argued that the utility cost of capital is not the right one to use - it is a societal investment and that should be used. WACC is appropriate on the supply-side.

- Roger Baker of ComEd questioned “How many states that do not use WACC use the societal discount rate based upon law or Commission order?”
 - One party noted that it used to be assumed (believed) people in the future would be more well off so we discounted investments - today, there may be a need for a negative discount rate since people may be poorer in the future. On the other hand, since energy efficiency investments funded through the EE riders are ratepayers funds, then customers’ opportunity cost of capital of 20% should be used.
- Cost Effectiveness – What level should the test be applied (e.g., measure of 1 or Greater) – does every level have to pass:
 - Measure Level
 - Program Level
 - Sector Level
 - Portfolio Level
 - Comments from ComEd (aside):
 - Old days: Two steps - screen measures on TRC; then apply UCT.
 - Quoting Dr. Martin Kushler, ACEEE - As currently implemented, the TRC test is fundamentally imbalanced. ... It includes all customer costs for an energy efficiency project, but essentially ignores the customer 'non-energy' benefits from the project.
 - Others noted that the TRC ignores non-energy costs as well.
 - ComEd noted in its presentation that it applies the TRC for program design at the measure, program and portfolio levels. For ex-post evaluation, they apply the TRC at the program and portfolio levels
 - ComEd claims that the TRC is useful for:
 - Program design
 - Useful for screening out measures and programs at the front end – not ex-post
 - Must be cognizant that the TRC is not the sole determinant – TRC is only one measure
 - Specific examples were discussed by the group where one scenario provided marginal TRC result with twice the savings, while, in comparison, the second scenario had better TRC results, but cost more to implement
- ComEd Perspective on TRC (Roger Baker)
 - Best use of TRC is in the design phase of a program. For program design, do measure level, program level, portfolio level TRC.

- Not good in ex-post review stage. Don't do ex-post evaluation of measure cost. Do program level, portfolio level TRC.
 - Measure level TRC discussion
 - ComEd – hard to allocate program costs at measure level for ex-post analysis, appliance recycling may be one of few programs where that could happen
 - Easier to lump program costs as separate line item rather than allocating at the measure level.
 - Ameren past ex post TCR analysis (PY2) they allocated program costs to measures based on 1st year kWh savings – however 1st year costs could also have been used to allocate – it is really arbitrary to allocate program costs and measure level
 - Tom – want to see b/c results ex-post.
 - Karen – already had judgment, policy on. Judged at portfolio level.
 - JH – portfolio level TRC>1 is *minimum* requirement for plan approval 220 ILCS 5/8-103(f) – utilities can go further
 - Roger – 'artificial accuracy' to allocate actual program cost at the measure level.
 - Tom – want to use ex-post info to adjust program offerings in future.
 - Widget scenarios / examples.
 - Karen (Ameren)– also have goals to attain. And limited budget. That drives them to include measures that give biggest bang for the buck. Biggest savings per \$ spent.
 - Ameren doesn't see any philosophical difference with ComEd and Ameren is fine calculating the TRC at the program level on an ex post basis as ComEd has been doing.
- Discount rates (Sami)
 - WACC – argument for – same as what's used on supply side. Against – since \$ comes from ratepayers, not the utility – better to use societal discount rate.
 - To use value different from WACC, utilities (especially ComEd) need ICC directive.
 - NEBs
 - Incremental approach, see slide with 4 tiers.
 - Ameren uses environmental adders (incorporated in avoided costs), ComEd too but explicitly identified (based on Markey bill- from Chris Neme). Nicor has estimate of carbon costs, run both ways.
 - Problem is a lack of consistency in approaches.
- TRC – Costs
 - California attempted to clarify the use of net-to-gross (NTG) in TRC costs in 2007 – many disagree with this ruling
 - Three TRC calculations were discussed: (i) assuming no free-riders, (ii) with free-rider incentive portion of measure cost excluded (Cadmus approach), and (iii) free-rider incentive portion of measure costs included (CPUC approach)

- Cadmus believes the third, CPUC approach is punitive since it results in an unnecessarily low TRC – Cadmus applies the NTG to the entire cost of measure (including incentives)
- Discussion of administrative costs, customer (measure) costs, and incentives
 - Incentive levels do not affect TRC costs - Treated as a transfer payment from the nonparticipant to participant with no overall system cost – however what should really be classified as an “incentive”?
 - Should certain incentive-type costs be classified as incentive costs and customer costs (in which NTG applies) or as program “administrative” costs (NTG does not apply to cost category in TRC calculation)?
 - e.g., cost saving for improved EE construction - “tighter construction” that leads to lower construction costs can be viewed as a benefit
 - e.g., cost savings from implementing LED \$20 bulbs that last many more hours than halogen or incandescent bulbs with shorter lives can be viewed as a benefit (or conversely possibly a negative cost)
 - Note: DSMore 2012 solves the negative cost issue
- What is the difference between treating incentives as a benefit as compared to treating them as a negative cost?
 - In the example discussed, a negative cost can result in a negative benefit/cost answer, but the net present value (NPV) would still be positive – therefore, a proper answer can still be made based upon the positive NPV
- Treatment of replacement costs -early replacement vs. replacing in the future, Nicor planning to do dual baseline, if equip past useful life, then use 1/3 EUL. (ComEd and Ameren working on??)
 - Expected useful life (EUL) – e.g., fixed number of years
 - Remaining useful life (RUL) – e.g., percentage of the EUL
- Specific incentive examples:
 - Small Business Direct Install – direct install costs is an incentive
 - Some jurisdictions designate direct install costs or appliance removal costs as a program cost
 - Discussion of whether customer behavior changes (e.g., OPower changing behavior) should be accounted for as a cost (e.g., customers buying light bulbs based upon program effects)

- Navigant noted that if there is a good control group, customer costs should be negated in the above scenario
 - New Construction – payment to customer and/or design team are likely incentives – the improved design and speed to construction that lowers overall costs can be possibly viewed as a benefit
- Some detail of the group’s discussion of TRC:
 - Dr. Khawaja noted that the IL TRC is punitive in certain respects
 - Nicor noted that it includes estimates of carbon costs - that point was included in its order
 - Dr. Khawaja’s proposal:
 - Energy savings = kWh * (1-fr+so)
 - Costs = installed cost * (1-fr+so) + admin costs
 - It was discussed that California does not include any spillover.
 - Dr. Kennedy noted that it is easier to measure free-riders than spillover effects.
 - Roger Baker discussed recapture of the incentive – this may be OK for California because net benefit is part of the incentive structure – CA wants to make sure that they do not overpay benefits.
 - Ted Weaver (representing Nicor) agreed with Sami that California does not approach it correctly.
 - Roger Baker noted that ComEd does not included tax credits since they typically expire in six months and the lifetime is too short. However, Ameren does include tax credits. Tax credits treated inconsistently across utilities’ TRC approaches.
- **Costs**
 - NTG
 - CA applies NTGR to participant’s out of pocket costs but not to incentive amount.
 - CADMUS - Benefit = energy savings * (1-FR%+SO%), Cost = installed cost (1-FR%+SO%) + Admin cost
 - Classification
 - Consistency issue, where do you put incentive \$? Customer costs or program cost
 - What’s included
 - Include federal tax credits as reduction to TRC measure cost. Roger – know it’s there, haven’t reflected. Uncertainty over date. Ameren including it, take off incremental cost. Business programs – deductions 5 years subtracted of incremental cost?
 - Added fuel costs for fuel switching? Discussion regarding how Ameren and DCEO treat air source heat pumps and ground source heat pumps and baseline.

- Also interactive effects (impact on electric and gas). CFL impact on heating and cooling. Ted Weaver (representing Nicor) – make sure does not impact gas company goals. If gas utility is not paying for the measure, then increased gas caused by measures paid for by electric utility should not work to offset gas utility’s progress towards meeting goal. Biggest impact – commercial lighting. Adding penalty of increased gas use will not materially affect cost-effectiveness. Don’t have to get TRCs perfect. As long as ballpark okay, make good decision.
 - Incentives
 - E.g., AR incentive. Is it an incentive or program cost? ComEd – incentive treated as incentive, pickup cost = program cost. Incentive = program cost per Ameren. ComEd argues incentive is transfer, the incentive cancels out. Cadmus believes it should count in TRC. Ms. Hinman pointed out that incentive payment to customer could be \$200,000 or \$50 and based on ComEd’s calculation approach, the TRC value would not change.
 - AR - MidAmerican treats pick up cost as customer cost, not admin cost. Bounty treated as incentive. But could see treating bounty as program cost. PA treats bounty as marketing cost.
 - 2 issues (1) incentive does not go to TRC, (2) if goes into program cost, NTG doesn’t apply
 - Home Energy reports/behavioral programs – don’t know what customers have done. Do reports incent customers to do other things? OPower looks at actions taken by control and treatment groups. Conclusion - Immaterial impact, difficult to measure.
 - Elem education program – incentive to teacher to return survey = program cost (marketing cost). Also EE kit= measure cost and program cost b/c kits have overhead – thinking of splitting up costs, bracelet to kids = marketing costs. NTGR doesn’t apply. Ted Weaver (representing Nicor) – thinking of splitting up kit cost into program cost and DI costs/incentive.
 - Retro-commissioning study, audit, energy assessments – treat as incentive/DI costs and customer costs so the NTG would apply.
 - E3 categories – admin cost, direct install cost (labor and materials) – treated same as incentives, incentives, measure cost. Audit treated same as DI. NTGR applies to 3 of the 4, Admin cost not affected by NTGR
 - Direct install – E3 – 3 categories: incentives, direct install costs, incentives. Direct install costs treated same as incentives.
- New Construction – Roger - don’t have good #s for incremental cost of NC above code. Some EE projects may actually cost less (due to smaller chillers, etc.). using CA 2007 #s now.
- LED lights - \$12 – last 25,000 hours. Incremental cost is negative vs. baseline cost replacing new halogen bulbs every year @ \$2/bulb. Models can’t handle negatives.
- Treat negative incremental cost as benefit.
- New Construction – if less up-front cost, treat as benefit. Design incentive goes to A&E firm, measure incentive goes to customer.
- CACES - focus on more efficient ACs, eliminated maintenance measures.
- E3 treat measure cost as full cost, incentive is portion of measure cost.

- Early replacement – how to calculate incremental cost. See slide.
 - Carbon treatment different across utilities. ComEd uses separate CO2 adder. Ameren’s avoided cost already includes it. DCEO taking weighted average of IOUs – DCEO avoided cost undervalues since ComEd uses separate CO2 adder.
- JLH Summary: It appeared that most utilities preferred to apply the NTG to the full incremental measure costs (including incentive amounts – thus measure costs before incentives reduce this amount) for TRC purposes (contradicts the California decision – see slides 43-44 of presentation). The main impact of this on the magnitude of the TRC is really tied to how certain utility expenses are treated in the TRC for specific programs.
 - JLH Summary: One area of disagreement relates to what is classified as the measure cost for the appliance recycling program – some parties believe the cost of payments to contractors to pick-up the refrigerators for recycling should be classified as a measure cost (and incentive) (Ameren and MidAmerican Energy) - meaning the NTG application to this measure cost would increase the TRC from what the TRC would otherwise be if the cost of pickup and recycling was treated as a utility cost (NTG does not reduce these costs in TRC) (ComEd treats pickup costs as utility costs). Units that do not qualify for rebates may be picked up sometimes (e.g., if implementer arrives on-site to find that the fridge is not actually working) – so in this case, it would seem that at least those expenses for pickup and recycling should be treated as a utility cost where NTG does not apply. The other half of the issue is whether the payment to the customer to induce them to retire the unit should be treated as either an (1) incentive and incremental measure/customer cost (or just measure cost), (2) incentive only (ComEd, MidAmerican- but during discussion MidAmerican indicated willingness to treat as a utility cost b/c it does seem like a marketing cost), or (3) utility cost (Ameren)– which the practical implications in terms of the impact on the TRC are (1) NTG reduces how much of these costs are counted in the TRC, (2) cost never shows up in the TRC – meaning inducement payment could be \$5,000 or \$30 and the TRC would remain unchanged (ComEd approach), or (3) these costs are fully “counted” in the TRC (Ameren approach and Sami agrees), respectively.
 - JLH Summary: One other area of disagreement relates to what is classified as the measure cost for utility direct install (DI) programs – some parties (Nicor, MidAmerican, Ameren) believe the cost of payments (Time and Materials –T&M) to contractors for installing the measures (when customer pays zero out of pocket costs) should show up as a measure cost (and incentive) – meaning the NTG (which has not been 100% in the past – tenants were surveyed) application to this measure cost would increase the TRC from what the TRC would otherwise be if these costs were classified as a utility cost (ComEd approach and consistent with California) (NTG does not reduce these costs in TRC). Since the installation of the measures involves removing items before the end of their useful life, the argument that the full measure cost (rather than incremental measure cost) should be used would make sense. However, through the NTG surveys with tenants, the questions do not ask whether the person would have hired a contractor to come and install the measure for the tenant – which could have resulted in a measure cost theoretically more comparable to the T&M cost of payments to contractors for installing the measures (what utility pays). The free-rider tenants who would have purchased and installed the DI item perhaps would have paid a much lower measure cost in the absence of the program e.g., likely purchase the upstream residential lighting

program bulbs which could cost less than the T&M DI costs the utilities subsidize 100% through the program. Suggestion to consider: would it make sense to have the TRM list the incremental measure cost and in addition list the full measure cost (for DI items), and then for TRC purposes the TRM full measure cost may be used/counted as the measure cost (and incentive) in the TRC (and these costs would be reduced by the NTG which would increase the TRC, ceteris paribus) and then the rest of the T&M DI costs in excess of the TRM full measure cost*# items installed would then be classified as a utility cost (not reduced by NTG) in the TRC?

- [JLH Summary: Based on current and past inconsistent treatment of certain program/participant/incentive costs in the TRC analysis, it would be extremely difficult and time consuming to attempt to aggregate costs and savings up and analyze the net benefits in a meaningful way from the Illinois utilities' EE portfolios since the EE programs began.]

Key Questions to the Group:

- A few key questions posed to the utilities on TRC:
 - Should ex-post TRC calculations use updated avoided costs or avoided costs used in the EE plan filing:
 - ComEd – avoided costs are updated each year and cannot use old avoided costs in new DSMore software – however, avoided cost numbers used in a plan should be consistent and avoided cost numbers that are updated for future years should not be applied as corrected numbers in a current year's plan.
 - Ameren – updating avoided cost numbers is not an annual event – it is done on an “as needed basis” – however, it is starting to become an annual event because of Ameren Missouri. Generally they use the avoided cost estimates from their 3 year program plan filings. Ameren has DSMore with “frozen” avoided costs, so does not have the same issue as ComEd claims.
 - MidAmerican – avoided costs are updated annually, but EE filings use the same “plan” filing avoided cost numbers (not the updated numbers).
 - Should ex-post TRC calculations of the program use the estimated NTG for the program year or the NTG applicable using the NTG framework (potentially from 2 years before)?
 - Ameren – do not change the actual NTG for the ex-post TRC
 - Ms. Hinman – Should the evaluators use the best available information known at the time when conducting the ex post TRC analysis of the EE portfolio and reporting that to the ICC? Utilities appear to agree that the best available information regarding incremental costs should be used, but the rest of the key TRC inputs (other than participation) should be based on assumptions from plan filing or TRM.

- Should the ex-post TRC calculation for the program include non-Rider program costs?
 - Ameren – certain employee costs are not included in the TRC
 - ComEd – includes non-rider energy efficiency services staff
- Should societal discount rate or WACC be used in ex-post TRC calculation?
 - Ameren – uses WACC and societal pursuant to evaluator
 - ComEd – use the corporate WACC unless directed by the ICC through formal order to use another approach/number
 - MidAmerican – uses both the WACC and the societal discount rate since it applies both the TRC and Societal test, but is allowed to use a lower hurdle societal test in IA (e.g., 10% statutory NEBs)
- Where do we stand questions.
 - **Plan vs. Updated Avoided Costs.** ComEd – can't use plan avoided costs, since DSMore has been updated. Use updated values. Ameren – concern about adjusting measure mix mid plan due to changing avoided costs. Increases their risk. Ameren has DSMore with “frozen” avoided costs, so does not have the same issue as ComEd claims. MidAmerican, Nicor concur with Ameren.
 - **NTG framework.** Use framework value (potentially from previous year's evaluation, or 2 years earlier). Ameren – prefers to use plan values, 2 issues (1) meeting savings goals, (2) cost-effectiveness – retrospective approach. Prospective – planning.
 - **Non-rider program costs.** Some support staff cost not included (ComEd, Ameren). Ameren costs to run TRC for plan filing and ex post analysis do not flow through the energy efficiency riders.
 - **Discount rate.** Societal vs. WACC. Write up – no strong support for either, have utilities run both ways. DCEO – would like to report Societal. MidAmerican runs both ways. Uses long term government securities rate to set Societal value (~3.5%)
 - **Quantifiable NEBs.** Iowa uses 10% adder.
 - *Action item: what is the carbon penalty that is being applied to avoided costs by each utility? Also – other emissions.*
 - *Action item: determine how to apply quantifiable societal benefits using societal discount rate and NEBS.*
 - *Action item: assemble questions and email out.*
 - *Action item - Need to develop standard approach for developing cost estimates for new construction for both Res and Nonres. ComEd to ask ECW for nonres, DCEO ask SEDAC doing Illinois nonres., RSG doing res/gas – will ask for nonres.*
 - *Mike Brandt will take the question of how to file the TRM to ComEd lawyers. To contact Ameren, other utility lawyers.*

Illinois Statewide TRM Policy Issues:

- TRM legitimization / approval by the ICC
- Keep of TRM? Everyone seems fine with 3rd party administrator
 - Discussion of approval of the TRM by the ICC – the group discussed the approach to move procedurally before the ICC approval (pros and cons discussed) – Gas utilities’ Orders did not approve “deemed” values, thus if don’t seek clarification or TRM approval, then likely will be litigation in the savings compliance dockets on appropriate values to be used.
 - Focus on annual approval by group, by individual utilities in plans or by other means/process:
 - If approved by the ICC, Ameren’s idea is that this would be an annual compliance filing
 - A key point is how to manage the process throughout the year – there is a need to balance resource requirements with TRM calculations and program management (e.g., budget limitations) – utilities, evaluators, and any other parties would be responsible for bringing TRM administrator updates
 - Also, there is the question of what are utilities going to be held accountable to from a compliance perspective – if ICC doesn’t officially approve an update, then perhaps this leaves updated algorithms that haven’t been officially approved open for interpretation in the savings compliance dockets.
- Actual evaluation numbers vs. applying the TRM
 - Discussion of data application
 - Deference to evaluators on data to collect – ICC Staff - evaluators and utilities should work together prior to the start of each program year and agree on the data that needs to be collected in order to use the TRM – to minimize potential gaming by choosing to report the “default” values at end of year rather than more customized if the default values permit higher savings to be claimed.
 - Discussion of evaluation/TRM planning
 - TRM data collection activity appears to be underway at each utility – at least Nicor and Ameren. Kevin Grabner noted that the utilities currently appear to collect most of the TRM data – however, it may be that the documents containing the info are scanned and put into the computer as a pdf, but for usability and efficiency, the TRM info would need to be put into the computer in a useful format in the tracking system.

- Agreement by utilities that utilities and evaluators will cooperate to gather the appropriate TRM data
- Evaluators will verify to make sure TRM is applied correctly – sample to make sure installed and operating. Mary indicated will need to sample and verify TRM application for each program each year, however, Nicor may not agree with every program every year approach. Perhaps sample 85/15 at portfolio level.
 - Budgets and time need to be managed by evaluators to meet the goals and collect TRM data
 - Report savings of “verified-as-deemed” and “verified-as found on site”
- Sample design:
 - Mix of TRM and non-TRM measures – question of whether they can they be evaluated as one program
 - This is a sample design question and hinges on whether the evaluator can assess them appropriately
 - Question of new interim information and applying the new interim information to an annual TRM update (or periodic updates)
 - Question of incremental measure costs vs. total measure costs
- Mike Brandt (ComEd) and Karen Kansfield (Ameren) are okay with being required to use the TRM in savings forecasts in their Plan Filing
- Utilities all prefer to use actual incremental measure costs rather than TRM incremental measure costs, if known – needs SAG discussion
- Shawn will draft position of use of TRM and provide before the next draft of TRM is released.



TRM_Application_Issue_Tracking Ameren

Action Items:

1. Revisit the incremental costs associated with residential and non-residential new construction programs and develop a standard approach that is acceptable and uniformly applied.
 - a. ComEd to ask ECW for nonresidential side.
 - b. DCEO to ask SEDAC about this as well. ✓
 - c. Ted Weaver will ask the implementation contractor for residential NC for gas / electric

DCEO Response to New Construction Action Item – provided April 16, 2012

The cost of high performance buildings is really not a defined number. DCEO does not require that clients provide cost estimates for the baseline. No one does. It is just too cost prohibitive to design both buildings for bid and then have someone estimate them. I hear 3% all the time, but I think it is more, particularly when you factor in the added cost of design.

The only source she could provide was this slide show from USGBC

https://www.usgbc.org/Docs/Member_Resource_Docs/makingthebusinesscase.pdf

MidAmerican Response to New Construction Action Item – provided April 16, 2012

Our Commercial New Construction contracted provided the following response ...

Incremental costs for efficiency strategies are determined by asking the design teams on each project for the cost of the strategy beyond the cost to just meet minimum code requirements. For the streamlined Quick Energy Design projects and small buildings under 15,000 sq ft, The Weidt Group (our commercial new construction contractor) provides a set of industry cost values that the design teams may update as appropriate for their building project.

Yes, incremental costs for an individual measure may occasionally be negative. Lighting is a good example. For example, at code level, there may be 10 fixtures in a room to meet lighting levels. At 10% better than code, there may be 6 fixtures needed that have a higher lumen output or higher quality light that allows for fewer fixtures. The total cost to purchase and install the 6 fixtures is less than the 10, even though the 6 fixtures are individually more expensive. For Commercial New Construction, the incremental costs are added together and payback is calculated on the bundle of strategies as a whole.

I believe the residential process is similar. I think our contractors would say it is very rare that the total incremental cost for an entire bundle of strategies would be negative.

2. Determine what the emissions and environmental externalities GHG (carbon, SO_x, NO_x, and Mercury) are being applied to avoided cost by each utility.
 - a. Ameren will determine this for AIC
 - b. ComEd will determine this for electric
 - c. Ted will provide Nicor
 - d. Jennifer Hinman will ask Integrys for this information ✓
3. Determine how to apply *quantifiable societal benefits* – use societal discount rate and NEBs? Cadmus suggests using both. ComEd must use WACC unless the Commission orders them to do otherwise.
 - a. To be discussed at the SAG meeting for comment – Chris Neme is a good source.
4. Determine how to legitimize the TRM now and each year:
 - c. Mike Brandt will take the question of how to file the statewide TRM back to ComEd lawyers to determine the process.
 - d. Discuss during the 4/17 SAG meeting whether a framework written up within a stipulated agreement and informational filing is useful.

- Attachment A – Attendance List –

Attendees on the Conference Bridge:

N	Name	Organization
1	Dan Rourke	Nicor
2	Arlene Juracek	Illinois Power Agency
3	Louis Lampley	ComEd
4	Jonathan Cheszes	Navigant
5	Jeff Erickson	Navigant
6	Rick Voytas	Ameren
7	Ed Carroll	Franklin Energy
8	John Madziarczyk	Nicor
9	Dave Nichols	ComEd
10	Travis Hinks	GDS
11	Wayne Deforest	WECC
12	Sue Nathan	AEG
13	Emilio Ron	AEG
14	Matt Haakenstadt	Navigant
15	Ted Weaver	First Track Consulting (Nicor Team)
16	Shaun Dentice	Resource Solutions Group
17	John Moran	Peoples Gas / North Shore Gas
18	Jane Colby	Cadmus
19	Rebecca Devens	CUB
20	Larry Kotewa	CNT Energy
21	Ryan Del Balso	Navigant
22	Vishy Tirumalashetty	Itron
23	Shawn Enterline	VEIC
24	Kevin Grabner	Navigant

Attendees at the ICC:

N	Name	Organization	Phone	eMail
1	Tom Kennedy	ICC	217-785-1414	tkennedy@icc.illinois.gov
2	Jennifer Hinman	ICC	217-785-1078	jhinman@icc.illinois.gov
3	David Brightwell	ICC	217-785-1158	dbrightwell@icc.illinois.gov
4	Stefano Galiasso	ERC-DCEO	312-9996-8666	sgaliasso@uic.edu
5	Bob Willen	Ameren	314-554-2688	rwillen@ameren.com
6	Karen Kansfield	Ameren	309-677-5045	kkansfield@ameren.com
7	Michael Brandt	ComEd	630-576-6825	Michael.brandt@comed.com
8	Keith Goerss	AIC	309-677-5708	kgoerss@ameren.com
9	David Baker	DCEO	217-785-5222	David.s.baker@illinois.gov
10	Karlynta Oredugba	Ameren	314-206-1818	koredugba@ameren.com
11	Jonathon Jackson	AIC	309-677-5093	Jjackson5ode5@ameren.com
12	Chuck Rea	MidAmerican Energy	563-333-8868	cbrea@midamerican.com
13	Robert Neumann	Navigant	312-583-2176	Rob.neumann@navigant.com
14	Randy Gunn	Navigant	312-583-5714	Randy.gunn@navigant.com
15	Jim Zolnierek	ICC	217-524-5073	jzolnier@icc.illinois.gov
16	Roger Baker	ComEd	630-576-6786	Roger.Baker@ComEd.com
17	Jennifer Fagan	ITRON	608-235-1314	Jennifer.fagan@itron.com
18	Mary Sutter	Opinion Dynamics	510-444-5050 x104	msutter@opiniondynamics.com

Utility Responses to Cost Effectiveness Questions Provided Before the April 12, 2012 Meeting

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Ameren Responses Before the Meeting

Q1. Responses provided April 4, 2012

- 1) Should the ex post TRC calculation use updated avoided costs or the avoided costs used in the EE Plan filing? Explain pros and cons of each approach.

The ex-post TRC should use the avoided costs used in the EE Plan filing. The program performance is being compared to what was planned, and the change in avoided costs (either to the benefit or the detriment of the program) were not known, and beyond the control, of the utility or the implementers.

- 2) Should the ex post TRC calculation for the program use the estimated NTG for the program year or the NTG applicable using the NTG framework (potentially the value from 2 years before)? Same question for "deemed" values – should evaluator-recommended values be used or the "deemed" values in the ex post TRC calculation? Explain pros and cons of each approach.

The NTG and measure values used for a year's TRC should mirror the AIC order's approved framework used by EMV for that year; especially since we are using EMV results for the benefits. The NTG per the NTG framework would apply for NTG. The measure values used for Y4 are what were filed, and the measure values for subsequent years are applied prospectively for standard measures and retrospectively for custom and new measures.

- 3) Should the ex post TRC calculation for the program* include non-Rider program costs? Explain pros and cons of each approach.

No. These are too undefined and unidentifiable, as are all allowed items on the benefits side (other quantifiable societal benefits).

- 4) Should societal discount rate or WACC be used in ex post TRC calculation? Or both? Briefly explain pros and cons of each.

As recommended by Cadmus, the TRC should be calculated both ways. These are traditionally accepted methods. And the societal discount rate is currently the most traditionally accepted method for trying to address the "other quantifiable societal benefits".

- 5) Should the ex post TRC calculation for the program include interactive effects associated with other fuels for a single fuel utility or savings for both fuels from dual fuel savings measures for a utility offering only a single fuel to that particular household? E.g., lighting – interactive effects, HEP program install insulation and only including benefits associated with one fuel. Explain pros and cons of each approach.

The TRC definition provides for the application of all fuel benefits (gas and electric); regardless of what utility is providing the fuel.

- 6) What is the added value of estimating the ex post TRC using a single spreadsheet for the program (as opposed to using multiple spreadsheets for the different measures that make up the program as was done for cost effectiveness screening during planning)? Explain in detail the pros and cons of each approach for ex post TRC analysis.

A single spreadsheet provides for a more rapidly performed TRC analysis. If only purpose of the analysis is to prove whether or not the item is CE in general (and not the degree of the CE), the analysis is complete. However, the single spreadsheet approach tends to yield TRC analysis results that are lower than what would be seen with the detailed measure by measure analysis. This is because the change in avoided costs, over time, is not constant.

Regarding treatment of items within the TRC analyses, the treatment was consistent across all programs. What appears to be exceptions – Appliance Recycling for example, is not – it is just a program that touches a certain set of rules. The rules for the treatment of data used within the TRC are shown below.

Multifamily Direct Install Program		
TRC Classification	Costs	Comments
Incremental Cost/Unit	Includes items such as Installation Labor, Measure cost, Cost of Audit	Typically incremental but depending on the nature of the program this can be the full measure cost. Basically, these costs are the costs that would be incurred by the customer if they were to install the measure themselves. In the case of an audit, this would be the price that the customer would pay for the audit.
Annual Fixed Cost	Includes annual maintenance fees associated with the efficient measure that are in excess of the maintenance fees, if any, that are present with the base measure.	We don't typically see these values in the measures that have been implemented to date.
Program Admin Costs	Program Admin costs include program level items such as marketing (performed by the implementation contractor), administrative fees charged by the contractor to perform the program, support offices of the contractor, etc.	These costs are costs assigned at a program level and are typically incurred by the implementation contractor in the implementation of the program.
Incentive Cost per Customer	Fee paid to the customer to reduce the customer cost of the measure that they are installing	This cost cannot exceed the incremental cost.
Implement/Participation Utility Cost per Customer	A cost that the Utility bears in providing the measure to the customer	We typically do not use this field.
Utility Other/Miscellaneous Cost per Customer	This is a cost that is incurred when the utility offers something like a bounty or other inducement, for which there is no reduction in incremental cost to the customer, as a method of inducing the customer to participate.	This cost is captured when the bounty exceeds the incremental cost, in which case the part of the bounty that is less than or equal to the incremental cost is treated as an incentive, with the remainder treated as a bounty and placed within this field.

In response to the remaining questions, about the breakdown of the Administrative costs into the subcomponents, we do not have or use that information within the TRC analysis. It would not add value to the analysis results.

Regarding the specific measure information, we received the measure level savings, costs, incentives, etc from the EM&V contractors for preparation of the TRC assessment of the program. The measure level NTG values that were supplied by the EM&V contractors were applied to each measure within our DSMore analysis. DSMore treats the NTG as a freerider (freerider = 1-NTG).

Q2. Could you provide more detail underlying the cost definitions used for each program?

Responses provided March 6, 2012

Regarding your second question, more detail on the cost descriptions found on page 6 of the report, there were 4 cost definitions (shown below):

1. Incremental Cost
 - The incremental measure cost associated with the selection of the efficient measure over the base measure
2. Annual Fixed Cost
 - The annual fixed costs associated with the selection of the measure (ie. some measures may have annual maintenance, etc.)
3. Other Utility Cost
 - Typically blank, except for the Appliance Recycling program – this is the cost associated with recycling the measure
4. Incentive Cost
 - This is the customer incentive amount for each measure (applies to all programs except Appliance Recycling)

My responses are:

1. Incremental Cost
 - a. This is the difference in the cost of the efficient measure and the base measure. For example, if the efficient measure has a cost of \$30 and the base measure has a cost of \$23, then the incremental cost would be \$7. This assumes (for this example) that an efficient measure and corresponding base measure have the same effective useful life, would be installed at the same time based on the choice of either the base or the efficient measure, and have the same installation cost,
2. Annual Fixed Cost
 - a. As described above, some measures have an associated annual fixed cost for maintaining the measure and this cost would be the difference in the efficient and base measure annual fixed costs. For example, if the efficient measure has an annual cost associated with the measure of \$100 and the base measure has an annual cost associated with the measure of \$25, then the Annual Fixed cost that would be used for the analysis would be the difference between the efficient annual cost and base annual cost, or \$75.
3. Other Utility Cost
 - a. Our description here is related to our use of the Other Utility Cost field. We use this cost field to account for costs incurred by the utility as part of the program, which are not really “incentives” as in the Appliance Recycling program. In the Appliance Recycling program, money (\$35) is given (a “transfer payment”) to the customer to pay for “nothing”, since the customer is not acquiring a new measure and the incremental costs of the measure in this case is \$0 (the company is not reducing the cost of a measure). Therefore, we treat this as an “Other Utility Cost”. This also applies when the “incentive” is really a combination of an “incentive” and a “transfer payment”. The amount of money transferred in excess of the incremental cost is moved into the “Other Utility Cost” field. For example, if a measure has an incremental cost of \$23, as in (1) above, and the amount of money that is required to move the customer to obtain the efficient measure is \$25, then \$23 of the \$25 is identified as an incentive, and the remaining \$2 is identified as an “Other Utility Cost”.
4. Incentive Cost
 - a. As described above, the incentive is money given to the customer to offset the incremental cost of a measure. Again, any funds in excess of the incremental cost are treated as “Other Utility Costs”.

Q3. Can you please explain the approach taken in conducting the TRC analysis for the appliance recycling program? There are several exceptions noted for the Appliance Recycling program, could you please explain the \$90 one-time (per customer) cost for the Appliance Recycling program?

Responses provided March 6, 2012

Regarding your third question, most of the answer can be found in my expanded descriptions of the "Other Utility Cost" and "Incentive Cost" values (above). Regarding the one time (per customer) \$90 cost, this is the pickup and recycle cost associated with the measure, and upon reviewing the actual analysis we have seen that this value was double counted – both as a customer cost and as a cost within program administration, resulting in an understated TRC. In addition, the \$35 bounty to the customer for retrieval of the device should have been treated as an "Other Utility Cost", as described above.

The net result of the re-analysis of the Appliance Recycling Program is a Total Portfolio level TRC of 1.97 versus the originally calculated Total Portfolio level TRC of 1.95, and a Total Societal level TRC of 2.37 versus the originally calculated Total Societal level TRC of 2.34. The net result of the re-analysis of the Appliance Recycling Program on the Residential Portfolio TRC is a TRC of 1.63 versus a TRC of 1.59, and on the Residential Portfolio Societal level TRC of 1.87 versus a Societal level TRC of 1.83.

Nicor Responses Before the Meeting



Memorandum-Nicor
Gas Cost Assignment:

MEMORANDUM

To: Jim Jerozal

CC: Dan Rourke,

From: Ted Weaver

Date: March 28, 2012

Re: Treatment of Program-Specific Costs by Nicor Gas in Cost-Effectiveness Analysis

In response to the inquiry from Jennifer Hinman in her email of March 9, 2012, I've drafted this memorandum to identify how various costs will be treated for cost-effectiveness analysis. While Jennifer asked specifically about two programs (Home Energy Savings and Multifamily Home Energy Savings), I've structured this memo to broadly address all of the programs. Table 1 summarizes the Nicor Gas approach.

Table 1
Nicor Gas Cost Assignments for Cost-Effectiveness Analysis

Activity	Program Costs	Incentives/ Direct Installation	Participant Costs	NTG Applied To Participant Costs
Implementation Contractors				
• Administration	X			
• Marketing	X			
• Direct installation materials and labor		X	X	X
• Energy assessments		X	X	X
• Incentives paid to customers		X		
• Fees received from customers		X*		
Customer Investments				
• Customer payments to trade allies			X	X
*Customer fees are treated as negative incentives.				

Implementation Contractor Charges

- Nicor Gas tracks payments to implementation contractors in the following general cost categories:
 - Administration
 - Marketing
 - Direct installation measures
 - Energy assessments
 - Incentive payments to customers
- Note that not all implementation contractors bill charges to all of the categories. For example, many programs do not incorporate direct installation measures.
- Administration costs cover most costs required to manage programs, including labor for program management staff, and expenses for items such as rent and utilities. Administration costs are assigned as program costs for calculating cost-effectiveness.
- Marketing costs cover dedicated charges for marketing labor and materials required to develop and deliver marketing campaigns. Marketing costs are assigned as program costs for calculating cost-effectiveness.
- Direct installation measures cover the costs implementation contractors charge to Nicor Gas for these measures. While these usually include both labor and materials, the specific breakout of charges varies depending on the contract Nicor Gas signed with each contractor. For cost effectiveness, the full cost of direct installation measures are tracked as participant costs (measure costs). Simultaneously, costs less any fees received from customers are also tracked as incentives. (More accurately, the E3 cost-effectiveness model has a specific cost category for direct installation costs, which are treated like incentives within the California Standard Practice.) Consistent with all participant costs in the California Standard Practice, net-to-gross ratios are applied to direct installation participant costs.
- Energy assessments cover the costs implementation contractors charge to Nicor Gas for energy audits and similar technical assistance provided to customers. While these usually include only labor, to the extent that implementation contractors have monetized their other charges (such as travel or software development) in their assessment charges, they would also implicitly include these cost components. For cost effectiveness, energy assessment costs are treated as described above for direct installation measures. That is, the full cost of energy assessments are tracked as participant costs. Simultaneously, costs less any fees received from customers are also tracked as incentive/direct installation costs. Net-to-gross ratios are applied to assessment participant costs.
- Incentive payments cover the costs implementation contractors charge to Nicor Gas for incentive payments provided to customers who purchase measures directly from trade allies. Incentive payments are assigned as incentive costs for calculating cost-effectiveness.

Customer Investments

- Corresponding to the incentive payments paid to implementation contractors, Nicor Gas estimates the associated customer payments made directly to trade allies for energy efficiency measures. These measure costs are treated as participant costs for calculating cost effectiveness, and net-to-gross ratios are applied.

Integrys Responses Before the Meeting



032812 ICC

Response - Docket 10-



040412 ICC

Response - Docket 10-

Memorandum

To: Illinois Commerce Commission
From: Applied Energy Group
Subject: Requested Information on Cost-Effectiveness Analysis for Docket 10-0564
Date: April 3, 2012

This memorandum provides information that was requested from the Illinois Commerce Commission (ICC) on cost-effectiveness analysis utilized to analyze the Integrys (Peoples Gas and North Shore Gas) three-year energy efficiency filing. Applied Energy Group (AEG) completed the cost-effectiveness analysis in May and June 2011 with the assistance of Franklin Energy and input from Integrys. The following sections address each question posed by the ICC on March 22, 2012 [email from Jennifer Hinman to Pat, Integrys -Peoples Gas].

1. ICC Question: Should the ex-post TRC calculations use updated avoided costs or the avoided costs used in the EE Plan filing? Explain pros and cons of each approach.

Response: In order to make an accurate comparison between the EE Plan filing results and any ex-post analysis, the same avoided costs should be used. The pros to using consistent avoided costs is that it allows for an accurate comparisons between pre and post. Additionally it mitigates the need to spend additional time and resources developing the avoided cost forecast and re-evaluating the planned program cost effectiveness. The con to using previous avoided costs is that they may not accurately reflect current market conditions and forecasts. The main pro for using updated avoided costs for ex-post calculations is that the most recent market conditions and forecasts are accurately reflected in the TRC. The major con is that using differing avoided costs does not allow for accurate comparisons of pre and post analysis.

2. ICC Question: Should the ex-post TRC calculations of the program use the estimated NTG for the program year or the NTG applicable using the NTG framework (potentially the value from 2 years before)? Same question for “deemed” values – should evaluator-recommended values be used or the “deemed” values in the ex-post TRC calculations? Explain pros and cons of each approach.

Response: NTG and deemed values as filed should be utilized in ex-post analysis in order to make accurate comparisons. “Updated” values can be utilized for scenario analysis in ex-post TRC to compare how changing NTG and deemed

values affect the TRC. The pros and cons for using updated vs. filed NTG and deemed values are consistent with the pros and cons for using updated vs. filed avoided costs as previously noted. An additional con to using updated NTG and deemed values is that evaluation of programs can take a long period of time and sample design for accurately calculated NTG and deemed values can be problematic depending on the population and participant groups.

3. ICC Question: Should the ex-post TRC calculation for the program include non-Rider program costs? Explain pros and cons of each approach.

Response: The ex-post TRC analysis should include all cost associated with the implementation of the program that can be accounted for and allocated with reasonable effort and accuracy. Non-rider program costs for personnel and administrative positions as well as marketing efforts that may provide cross-functionality outside the energy efficiency program can be included if there is a reasonable amount of certainty supporting the derivation of the costs. However, it should be noted that such non-rider costs can be relatively insignificant related to the magnitude of the overall costs [less than a few percent]; therefore the need to account for such a small amount is minimized. To allow for proper comparison to filed TRC results, the same cost categories should be used [i.e., if the non-rider costs were not included as filed, ex-post TRC should also exclude the costs].

4. ICC Question: Should societal discount rate or WACC be used in ex-post TRC calculation? Briefly explain pros and cons of each.

Response: The ex-post analysis should utilize the discount rates as prescribed by the California Standard Practices Manual. The societal discount rate is used in the TRC and the WACC is utilized in the Utility Cost Test. If the higher WACC rate is utilized, the relative cost-effectiveness is decreased.

5. ICC Question: Should ex-post TRC calculation for the program include interactive effects associated with other fuels for a single fuel utility or savings for both fuels from dual fuel savings measures for a utility offering only a single fuel to that particular household? E.g., lighting – interactive effects, HEP program install insulation and only including benefits associated with one fuel. Explain pros and cons of each approach.

Response: Where possible, interactive effects should be included. By including interactive effects the total benefits of a program are captured consistent with the definition of the Total Resource Cost test, but they are at times difficult or cost prohibitive to calculate. If a program passes TRC without the inclusion of interactive effects, the inclusion will typically only increase the TRC and make the program more cost-effective.

6. ICC Question: What is the added value of estimating the ex-post TRC using a single spreadsheet for the program (as opposed to using multiple spreadsheets for the different measures that make up the program as was done for cost-effectiveness screening during planning)? Explain in detail the pros and cons of each approach for ex-post TRC analysis.

Response: Each program should be evaluated on its own. The measure-level calculations are performed to determine which measures to include in each program (each measure must pass a TRC threshold). The ex-post TRC should be done at the measure level only to help refine future plans, not to determine evaluated results. The main con to performing ex-post measure level analysis is in the case where measures are installed and paid for, but fail TRC; in this case the costs are still recorded in the program, but no savings can be claimed from the failed measures.

7. ICC Question: How are spillover and free-rider customer costs treated in the TRC and how would these costs need to be input in the specific TRC software to ensure an appropriate TRC calculation (e.g., no double counting of costs) for each of the programs? Does this input vary depending who the incentives are paid to (e.g. end use customer versus contractor)?

Response: In the filed TRC calculations, the NTG factor is applied to savings values only; it is not applied to costs. The ex-post TRC analysis may exclude the explicit cost of free rider program costs. Excluding program costs associated with free riders is a methodology that other state commissions (e.g. New York) have requested. The reason free rider costs may be excluded is because free rider savings are excluded (by using a NTG factor), if free rider costs are included the saving must be included as well regardless of who the incentive is paid to.

Memorandum

To: Illinois Commerce Commission
From: Applied Energy Group
Subject: Requested Information on Cost-Effectiveness Files, Inputs, and Methodologies for Docket 10-0564
Date: March 28, 2012

This memorandum provides information that was requested from the Illinois Commerce Commission (ICC) on the cost-effectiveness methods, inputs, and methodologies utilized to produce the Integrys (Peoples Gas and North Shore Gas) three-year energy efficiency filing. Applied Energy Group (AEG) completed the cost-effectiveness analysis in May and June 2011 with the assistance of Franklin Energy and input from Integrys. The following sections address each item the requested on March 9, 2012.

Native Cost-Effectiveness Files

Two separate files are provided, one for each utility. The file names are 'ICC Response – North Shore Program Level Bencost_Docket 10-0564' and 'ICC Response – Peoples Program Level Bencost_Docket 10-0564'. Each file consists of two major types of tabs: a 'General Inputs' tab that contains information consistent across all programs including retail rates, commodity costs,

discount rates, etc; and analysis tabs that include cost-effectiveness results for each portfolio, sector, and program. Descriptions for how to read each type of tab are located below.

- General Inputs Tab
 - Data is organized by Input Data Category (Retail Rate, Commodity Cost, etc), Input Data, Escalation Rate (the rate of increase if the data absent a specific yearly forecast), and Data Source.
 - Data in the 'General Inputs' tab is utilized and presented in each analysis tab.
- Analysis Tabs
 - Each portfolio, sector, and program has an individual analysis tab.
 - The Analysis Tabs are organized into three (3) sections: Data Inputs, Test Results, and Tests
 - Data Inputs
 - Includes each of the data inputs from the 'General Inputs' tab as well as specific program/measure inputs.
 - Program and measure inputs include Project Costs, Participant Costs, Project Life, Number of Participants, Therms Saved, and Incentives.
 - Data inputs are located in columns A through H and rows 9 through 48.
 - Tests
 - The five (5) standard cost-effectiveness tests are calculated in columns J through CE including the Ratepayer Impact Measure Test, Utility Cost Test, Societal Test, Participant Test, and Total Resource Cost Test.
 - Test Results
 - Results to each cost-effectiveness test in the form of the net present value of net benefits and benefit-cost ratio are located in columns A through H and rows 52 through 62.

Results to program-level Bencost results are also provided in the *North Shore Gas-Peoples Gas Compliance Filing, Docket 10-0564* Section 3.8.

Cost-Effectiveness Analysis Inputs

All cost-effectiveness analysis measure-level inputs assumptions are included in the attached spreadsheet titled 'ICC Response – Bencost Input Assumptions and References_Docket 10-0564'. The spreadsheet is organized by Program and Measure with information on Measure Savings, Net-to-Gross Ratios, Incremental Costs, and Measure Lifetimes. There are specific references provided for each data input. Specific measure-level inputs are also provided in the *North Shore Gas-Peoples Gas Compliance Filing, Docket 10-0564* Section 3.8.

Program and Measure Cost Allocations and Methodologies in Cost-Effectiveness Analysis

Budget and cost allocations are listed in the attached spreadsheet titled 'ICC Response – Cost Allocation by Program_Docket 10-0564'. Costs are broken out into six (6) separate categories: Administration, Marketing, Implementation, Incentive-Delivery, Incentive-Rebates, and EM&V (Evaluation, Measurement, and Verification). A description of what each cost category includes is below.

- Administration: Overall management of program.

- Marketing: Recruits customers in target audiences for the service being delivered.
- Implementation: Delivering the portfolio and programs to specific target audiences.
- Incentive-Delivery: The cost of purchasing and installing direct-install equipment
- Incentive-Rebates: Direct payments to participants to offset the cost of purchasing energy efficiency equipment.
- EM&V: Annual evaluation of each program and portfolio can include impact, process, and market evaluations.

Budget details are also provided in the *North Shore Gas-Peoples Gas Compliance Filing, Docket 10-0564* Section 3.8.

For TRC purposes, all cost categories with the exception of Incentive-Rebates are included as costs for the TRC for all programs. Specific programmatic questions posed by the ICC related to program costs are answered by program.

- Multifamily Direct Install Program
 - Installation and material costs are accounted for in the Incentive-Delivery cost category and included as a cost in TRC because there is no cost to the customer.
 - Different NTG factors were utilized for Showerheads (93%), Aerators (94%), Pipe Insulation (67%), and Programmable Thermostats (76%). The net to gross factor was applied to gross savings, thereby reducing total gas savings by the specific NTG factor.
- Residential Prescriptive Program
 - Incremental measure costs that were developed for each measure are counted as a cost in TRC. There other cost categories that are included in TRC are detailed in the 'ICC Response – Cost Allocation by Program_Docket 10-0564' spreadsheet.
- Residential Home Energy Reports Program
 - There are no costs to the customers in this program, so all program and implementation costs are accounted for in the TRC test.
- Residential Whole-House Retrofit Program
 - The incremental costs of the retrofit are counted as a cost in TRC. There other cost categories that are included in TRC are detailed in the 'ICC Response – Cost Allocation by Program_Docket 10-0564' spreadsheet.
- C&I Prescriptive Rebates Program
 - Incremental measure costs that were developed for each measure are counted as a cost in TRC. There other cost categories that are included in TRC are detailed in the 'ICC Response – Cost Allocation by Program_Docket 10-0564' spreadsheet.
- C&I Custom Rebates Program
 - The incremental costs of the custom project are counted as a cost in TRC. There other cost categories that are included in TRC are detailed in the 'ICC Response – Cost Allocation by Program_Docket 10-0564' spreadsheet.
- C&I Retrocommissioning Program
 - Installation and material costs are accounted for in the Incentive-Delivery cost category and included as a cost in TRC. The natural gas portion of the customer incremental cost is accounted for and also included in TRC.
- Small Business Efficiency Program

- There are three types of measures in this program: direct install, cost sharing, and traditional incentives.
- For direct install measures, there is no cost to the customer where installation and material costs are accounted for in the Incentive-Delivery cost category and included as a cost in TRC.
- For cost sharing measures, the portion paid for by the utility are included in the Incentive-Delivery cost category and included as a cost in TRC.
- For traditional incentive measures, the incremental measure costs that were developed for each measure are counted as a cost in TRC.
- Programs Paying Contractors
 - “Incentives” paid to contractors, HERS raters, etc. are accounted for in the Implementation or Incentive-Delivery budget and counted as a cost in TRC.
- All Programs – Net to Gross Factors
 - Specific measure-level NTG factors were utilized for each individual measure. The NTG factors are detailed in the ‘ICC Response – Bencost Input Assumptions and References_Docket 10-0564’ spreadsheet. The net to gross factor was applied to gross savings, thereby reducing total gas savings by the specific NTG factor.

Other Program and Measure Data

The gross and net savings assumptions and source data are provided in specific participation and Budget and cost allocations in the ‘ICC Response – Bencost Input Assumptions and References_Docket 10-0564’ spreadsheet. Specific measure level participation for each year of the program can be found in the latest program documentation filed with the ICC. Note that some totals may differ due to rounding.

Navigant Responses Regarding ComEd's TRC Assumptions Before the Meeting



TRC Assumptions
Review 2012-03-21 V

Residential Lighting Program

Participant/Incremental Costs

Participant costs of \$2.47 per bulb were used. This represents a weighted average of the pre-incentive cost of standard and specialty bulbs included in this program. Navigant notes that this cost should be reduced by the weighted average cost of non-CFL standard and specialty bulbs. In addition, the benefit associated with longer useful lives of CFLs as compared to incandescent bulbs was not incorporated into this analysis. Therefore, the program costs included in the DSMore TRC calculation are overstated.

Incentives

Incentives in this program were paid primarily to the retailers on bulbs sold and additionally there were a small amount of coupons made available to end consumers. The incentives offset a portion of the incremental costs.

Appliance Recycling Program

Participant/Incremental Costs

Participants do not bear any costs to participate in this program.

Incentives

Incentives were paid to residential home owners who allowed ComEd to pick up and retire their old appliances.

Residential Multi-family All Electric

Participant/Incremental Costs

This program was a direct install program where participants did not bear any costs to participate, however the incremental costs are included as part of the program implementation/participation costs paid for by the utility.

Incentives

Incentives were not paid to participants but were provided in the form of measures installed. In terms of the TRC calculation, by including these costs as implementation costs 100% of the measure cost is included as a cost

in the TRC calculation. This is appropriate because in absence of the program these measures would not have been installed and therefore the full cost of the measure should be included.

The Central Air Conditioning Efficiency Services (CACES)

The Central Air Conditioning Efficiency Services (CACES) program consists of two distinct programs serving different markets through a common marketing and delivery infrastructure. The Diagnostics and Tune-Up program targets improved efficiency for existing residential air conditioning equipment. The Quality Installation program addresses high-efficiency equipment installations for new and replacement air conditioning equipment.

Diagnostics and Tune-Up program

Participant/Incremental Costs

There are no participant costs included in DSMore for this program. The participant costs associated with this program are those incurred by the contractor for the purchase of diagnostic and Service Assistant equipment needed to conduct the diagnosis and tune-up of air conditioning equipment or the equipment required to conduct the quality installations. These costs should be included in the program level TRC, however their relative cost is likely to be small and not expected to make a material difference on the TRC analysis.

Incentives

The incentives in this program are provided to participating HVAC contractors due to costs associated with using the diagnostic tool and the extra time required to adhere to the protocols needed to conduct the analysis.

Quality Installation Program

Participant/Incremental Costs

There are no participant costs included in DSMore for this program. This program shared the same installation team as the Diagnostics and Tune-Up Program. The equipment costs that were paid for by the installers in order to conduct the installations to the required specifications, should be included in the program level TRC, to the extent that the same equipment was used to conduct both programs, these costs should be divided amongst them.

Incentives

The incentives in this program are provided to participating HVAC contractors due to costs associated with using the diagnostic tool and the extra time required to adhere to the protocols needed to conduct the analysis.

Single Family Home Performance

This program was a direct install program and included an energy audit of participant's homes. Measures installed included CFLs, faucet aerators, hot water pipe insulation, low flow showerheads, water heater turndown and an energy survey.

Participant/Incremental Costs

Participant costs used in DSMore are \$25 per participant, which was the required participant co-payment, and represents a cost that they would not have incurred in absence of the program.

Incentives

Incentives were not paid to participants but were provided in the form of measures installed and the remaining cost of the energy audit. In terms of the TRC calculation, by including these costs as implementation costs 100% of the measure cost is included as a cost in the TRC calculation. This is appropriate because in absence of the program these measures would not have been installed and therefore the full cost of the measure should be included.

C&I Prescriptive Program

Participant/Incremental Costs

Navigant's engineering review of a sample of projects also included reviewing the Workpapers that accompanied them. These workpapers included incremental costs based on third party references, like DEER, other utilities, third party reports or KEMA's experience. Overall, these costs are reasonable.

Incentives

Incentives were paid to participants and covered a portion of the incremental participant costs.

C&I Custom Program

Participant/Incremental Costs

Incremental cost data was provided by participants as part of their application for this program. Both the efficient measure and baseline costs are requested when completing an application to this program and these costs are reviewed by the program implementer KEMA for reasonableness before being submitted. This approach is sound.

Incentives

Incentives were paid to participants and covered a portion of the incremental participant costs.

C&I Retro Commissioning Program

Participant/Incremental Costs

DSMore shows Participant/Incremental costs as \$24,574 + Average incentive per participant. The incentive cost represents the costs associated with the studies performed for participants and would not have been incurred in absence of the program, there these costs should be included as part of the total incremental costs. In short, they are appropriate.

Incentives

The incentives cover a portion of the study costs and are paid on behalf of the participants.

C&I New Construction Program

Participant/Incremental Costs

Incremental costs were estimated for this program based on an industry average used in ComEd's 2007 plan and was escalated by 3% per year. The program manual states that incentives will be set at 50 – 100 % of incremental costs. As estimated, incentives represent 36% of incremental costs, suggesting that the incremental costs are lower than anticipated. Given the difficulty in obtaining specific incremental costs and costs used relative to incentives, these costs seem reasonable.

Incentives

Incentives are paid directly to participants to offset a portion of the incremental costs.

A/C Cycling Program

Participant/Incremental Costs

There are no participant/incremental costs associated with this program.

Incentives

The incentives are paid to participants in order to encourage and maintain participation.

Home Energy Report

Participant/Incremental Costs

These costs are included as zero in the program DSMore. However, it is unknown if participants made any investments in energy efficient devices to help them reduce energy use as a result of the information they received due to the program. The costs associated with any such investments would ideally be included in the TRC test for this program, assuming the cost for doing so is reasonable.

Incentives

There are no incentives paid in this program.

Avoided energy costs (\$/kWh)

As per ComEd, avoided energy costs are based on NYMEX "ATC" for NI-Hub.

Avoided capacity costs (\$/kW)

Avoided capacity costs are based on the latest PJM Reliability Pricing Model (RPM) clearing price for the Regional Transmission Organization. PJM's RPM represents what ComEd would have to pay for capacity going forward and therefore is an appropriate source for capacity costs.

Discount Rate

The discount rate used of 8.51% reflects ComEd's weighted average cost of capital (WACC) and is appropriate rate to use for the Total Resource Cost (TRC) Test or the Rate Payer Impact Measure (RIM) Test.

The discount rate for the Societal Test is typically lower than the rate used in the TRC test. The Societal test is like the TRC except that it adds additional non-traditional benefits, like avoided environmental benefits, and the discount rate used is a societal discount rate, which is typically lower than a utility WACC.

Line Losses

The line losses of 9.08% are based on ComEd's internal analysis and were included in the three year plan filed with and approved by the commission. These line losses are in the higher end of the range that Navigant has seen, but are reasonable.

CO2 Benefits

The Illinois TRC requires that CO2 benefits be included. ComEd incorporates a value for CO2 of \$0.0139 / kWh. As described in Exhibit A of ComEd's last plan filing, this value is calculated by using an expected value of carbon emissions of \$18.50 / tonne, which is based on the average value calculated from the NRDC's analysis of the proposed Waxman-Markey and Kerry-Lieberman legislation, and PJM's 2009 marginal power plant emission rate.

MidAmerican Energy Responses Before the Meeting



Revised Illinois Cost
Effectiveness Writeup

Incentive Costs

Incentive costs for energy efficiency programs are generally defined to be any payment made directly to a customer, to a third party on behalf of a customer, or to a program implementation contractor doing work that directly benefits a customer. Incentive costs will always be less than or equal to customer incremental participation costs, with the exception of direct load control programs and interruptible load programs, where no customer participation cost is considered in the analysis.

For each program, incentives are defined as follows:

- Residential Equipment

- All payments made directly to customers as rebates for the purchase of high energy equipment.

- Residential Audit

- 100% of the cost of the audit (payable to the auditing company ... also included as a customer incremental participation cost).
- 100% of the cost of direct- install measures installed during the audit.
- All payments made directly to customers as rebates for the purchase of follow-up measures recommended during the audit (primarily insulation).
- Amounts paid to MidAmerican's CFL lighting contractor to buy down the cost of CFLs in MidAmerican's upstream buy-down program for residential CFL lighting.

- Residential New Construction

- All payments made directly to housing construction contractors as rebates for the purchase of high efficiency equipment or building shell measures installed in the home.
- All payments made to home raters for reimbursement of costs associated with the rating of homes under the HERS new construction track (also included as a customer incremental participation cost).

- Nonresidential Equipment

- All payments made directly to customers as rebates for the purchase of high energy equipment.

- Commercial New Construction

- All payments made directly to construction contractors as rebates for the purchase of high efficiency equipment or building shell measures installed in the building.
- All payments made to MidAmerican's commercial new construction contractor for design work associated with the Commercial New Construction program (also included as a customer incremental participation cost).

- Nonresidential Custom

- All payments made directly to customers as rebates for the purchase of high energy equipment.

- Small Commercial Audit

- 100% of the cost of the audit (payable to the auditing company ... also included as a customer incremental participation cost).

- 100% of the cost of direct-install measures installed during the audit.
- All payments made directly to customers as rebates for the purchase of follow-up measures recommended during the audit.

- Nonresidential Energy Analysis

- 100% of the cost of the building walkthroughs and assessments (payable to the engineering implementation contractor ... also included as a customer incremental participation cost).
- 100% of the cost of work done by the engineering implementation contractor associated with design and analysis of customer-specific energy efficiency plans (also included as a customer incremental participation cost).
- All payments made directly to customers as rebates for the purchase of high energy equipment.

- Residential Low Income

- 100% of the costs paid to low-income agencies associated with implementation of the Residential Low Income program.

- Residential Direct Load Control

- All payments made directly to customers as a result of participating in the program.

- Commercial/Industrial Load Curtailment

- All payments made directly to customers as a result of participating in the program.

Administrative Costs

All administrative costs allocated to Illinois energy efficiency programs are included in the cost effectiveness analyses. For gas programs, all administrative costs are recovered through the energy efficiency recovery riders. For electric programs, there are some administrative costs that are not recovered through the riders. Administrative costs are defined to be any cost associated with an energy efficiency program that is not defined as an incentive cost.

Customer Incremental Participation Costs

For the Residential and Nonresidential Equipment programs, incremental costs associated with energy efficiency measures are estimated through incremental cost algorithms developed from the 2009-2018 Iowa Statewide Assessment data where enough data is available to develop reliable algorithms. Where algorithms are not available (primarily for measures with low participation that were not included in the assessment, or that do not otherwise appear in the assessment), regression models are used to estimate costs per kWh/therm saved based on the installed costs and calculated savings of individual measures. Where insufficient data exists to either develop an algorithm or a statistical savings model, the full installed cost of the measure is used.

For the Residential and Small Commercial Audit programs, the incremental cost is assumed to be the full installed cost of each measure and the cost of the audit itself. Incremental costs for the Nonresidential Custom and Energy Analysis programs, and the new construction programs, are determined on an individual project basis by MidAmerican's implementation contractors responsible for implementation of these programs.

For energy efficiency measures that provide electric and gas savings, the incremental participation cost for that measure is split 50/50 between electric and gas programs. For dual fuel measures that are installed by a customer that only takes electric service or gas service from MidAmerican but not both, only 50% of the incremental participation cost is counted in the cost-effectiveness testing.

Workshop Presenters

M. Sami Khawaja, Senior Vice President, The Cadmus Group, Sami.Khawaja@cadmusgroup.com
Roger Baker, Principal Business Analyst, DSM & EE Program Planning – ComEd,
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Relevant Materials – available before the meeting



TRM_Application_Iss
ue_Tracking (2).xlsx

TRM Application Issues file with questions to review *before* the meeting.

To facilitate a constructive discussion surrounding the issue of incremental measure (participant) costs, incentive costs, and program costs and NTG application (to costs and benefits) in TRC analysis, it is recommended that the following document is reviewed *before* the meeting.



NTG and TRC Costs
D0801006 Attachment

<http://docs.cpuc.ca.gov/published/Graphics/77641.PDF>



IL EE Programs -
Cost Classif DISCUSS

Illinois Energy Efficiency Program List

For convenience, the links to the California Standard Practice Manual and other CA cost effectiveness related documents are provided below:

<http://www.cpuc.ca.gov/PUC/energy/Energy+Efficiency/EM+and+V/>

<ftp://ftp.cpuc.ca.gov/puc/energy/electric/energy+efficiency/em+and+v/Std+Practice+Manual.doc> SPM

<http://www.cpuc.ca.gov/NR/rdonlyres/3D41FF54-9809-4651-8898-78F93F84999B/0/CorrectionMemoSPM1071988.pdf> 1988 Correction Memo

<http://www.cpuc.ca.gov/NR/rdonlyres/A7C97EB0-48FA-4F05-9F3D-4934512FEDEA/0/2007SPMClarificationMemo.doc> 2007 Clarification Memo

<http://www.cpuc.ca.gov/NR/rdonlyres/101F0713-7277-43A8-883D-8EF2712EFA8A/0/NumericalExamplesNTGAdjtoTRCD0709043.pdf> NTG Adj to TRC

http://docs.cpuc.ca.gov/PUBLISHED/FINAL_DECISION/77638.htm INTERIM OPINION DENYING JOINT PETITION FOR MODIFICATION OF DECISION 06-06-063