Steering Committee Meeting Notes – 4/26/12
Commercial Lighting

Attendees

Dan Beckley	Michael Li
Michael Brandt	Diana Lin
Doug Bruchs	Julie Michals
Nikolaas Dietsch	Bill Miller
Tom Eckman	William Newbold
Carla Frisch	Mary Ann Ralls
Donald Gilligan	Alexandra Rekkas
Brian Granahan	Amy Royden-Bloom
Hossein Haeri	Steven Schiller
David Jacobson	Alan Shedd
Tina Jayaweera	Rodney Sobin
Chuck Kurnik	Malcolm Woolf

- Net-To-Gross – moving this section into Phase II of process. Recruited experts to write chapter; two experts from Tetra Tech and one from Navigant; will have third external review advisor who will work closely with technical experts; will have outline next week; make sure coordinates with NEEP M&V Forum.
- SC Member – We worked NTG into one protocol we already went through; using NTG findings to change baseline values; are we separating calculating baselines from attribution subject?
- Hossein Haeri – Discussion of baselines will remain as part of existing protocols. Setting appropriate baselines will be part of NTG section. Will address what market baseline will be addressing and its relationship with attribution.
- Tina Jayaweera – We are adding text to protocols about market baselines.
- Commercial lighting: Overview of protocol by Dakers Gowans
    - Common commercial measures
    - Common delivery strategies (emphasis on retrofit, but also discussion of new construction baselines)
    - First year savings
    - Not covered: net effects, cost-effectiveness, sampling, controls, lifetime savings
- SC Member – On first year savings, it would be valuable to have more about lifecycle savings. Has been a lot of focus on first-year savings, but should be more focus on lifecycle. Not necessarily helpful to goal of industry to move toward deeper, longer term perspective.
- Hossein Haeri – This issue came up before and the sentiment was that this would be a cross-cutting issue, under persistence.
- Tina Jayaweera – The issue of dual baselines came up, which will also be part of the other evaluation issues chapter.
- SC Member – How different will lifecycle savings be from protocol to protocol?

- SC Member – Can put this conversation on hold. Is sampling going to be with respect to how to pick rooms in a building to investigate, or about picking buildings in a program to investigate and applying that to the whole population or both?
- Dakers Gowans – Both. Sampling is required at project and line (usage group/room) level.
- SC Member – Cross-cutting will provide guidance on both of those?
- Hossein Haeri – Yes, commercial lighting would be an exception where sampling would be done at different levels. In the protocol, describe the different levels of sampling. In terms of methods, will reference the cross-cutting section in terms of design.
- SC Member – The application of how to do it can be confusing.
- Dakers Gowans – The framework I had in mind was that I would describe what needed to be done, but wouldn't provide a tutorial about sampling by usage group. I would provide references such as the cross-cutting protocol, but will not say how to set up a spreadsheet to do actual sampling.
- Savings algorithm – identifying independent variables used to determine actual savings of project.
- Approach relies on data being collected during implementation of program. Fixture wattage, HOU, developing ex ante estimates for each project. Evaluator samples from the population of completed projects and does a review including an IPMVP Option A of metering HOU for sample. Develops realization rates and ex post savings.
- Data for independent variables – deemed, does not require implementers to conduct metering studies to determine HOU for retrofits (falls on evaluator). Requires HOU for sample of fixtures.
- Most impact evaluations rely on similar methods. Programs require some sort of information documentation from contractors, the quality of which is varied. The reporting formats (how contractors assemble data for all fixtures, etc.) needs to be specified by implementers.
- Feedback from review process:
    - Readers not always clear on who collects what data at which stage.
    - Reliability of deemed building HOU values (depends on prior studies for wattage and HOU. HOU are general and the design parameters of the studies are not always clear). Thinks that HOU tables can be used with confidence. User must be careful about where they take HOU values from (in terms of geography and building types).
    - Suggestion to provide more guidance for administrators to select fixture wattage and HOU data. Provided references to assist readers. Up to program implementer to select the one that makes more sense to program.
- SC Member – Were HOU data selected to be full-load hours of use? Or building hours of use?
    - Dakers Gowans – They are equivalent of HOU that you would get from a metering study, equivalent full-load hours.
- SC Member – Were HOU data based on metering study post realization estimates or program TRM? Adjusted for evaluation results?
    - Dakers Gowans – Across the board. The programs that use these hours are not always clear on source of hours. In references, tried to select ones with some evidence that there are some metering study behind actual values and not meta-analysis.

- SC Member – Guide readers toward metering studies instead of building schedules. Make sure we have terminology correct.
    - Dakers Gowans – Agreed.
- SC Member – Clarify use of term "deemed hours of use." Confusing when reference made to using deemed values versus measuring deemed values. Confusing when talking from planning perspective versus evaluation perspective. Clarify what recommendation is being made to evaluate this measure using option A and how it relates to deemed HOU values.
    - Dakers Gowans – Rather than use "deemed" use "estimated." Make distinction that program administrator estimates HOU for each lighting project based on a table of values drawn from multiple sources. The evaluator measures the hours and develops the realization rate based on those. "Estimate" is more accurate and allows programs to use tables of values of HOU.
- SC Member – Not sure that the other protocols go into such depth of planning side versus evaluation side. Make clear where talking about planning.
- SC Member – The format and level of description is different from other protocols. Overall direction is correct, but needs formatting and consistency across protocols.
- SC Member – Area designations are only good if applied correctly. Address how areas are categorized. Wattage tables assume a certain fixture type that is well-ventilated. Address that wattages are different in closed fixtures and well-ventilated fixtures. Another area for guidance is how to deal with difference in counting. When counting how many fixtures were changed, implementer, administrator, and evaluator get different values, how to address that?
- Bill Miller – Question about transparency. Make sure there is recorded information about where these numbers come from and what is the source. Emphasis on decreasing opaqueness of evaluations.
- Hossein Haeri – We should be prepared to deal with different measures in different ways when it comes to reviewing, verifying, and calculating savings. In commercial lighting, more emphasis on project or facility level.
- SC Member – Although we have different authors for each protocol, it may make sense to have a more consistent format. If there is a section that is not relevant to a particular measure, you state that. Also, algorithms are different. Make documents read in such a way that can understand where certain approaches are being used.
- Dakers Gowans – Another reviewer commented on need for dual baselines. Also, balance between evaluator's need for data and diverse reporting forms. Protocol does not develop a form to be used by every contractor, but it does say that the data field needs to be specified. Needs to be a uniform way that data gets from implementer to evaluator.
- SC Member – When you have a code or standard and retrofit baseline is different. Is there a notation dealing with different administrators with different codes and standards? Potential adjustment downstream for baseline wattage.
    - Dakers Gowans – The protocol states that it needs to be accounting for if you are accounting for lifetime savings.
- SC Member – Protocol measures early replacement?

    - Dakers Gowans – Early replacement for lighting retrofits and will handle new construction, but in NC, the baseline is codes and standards.
- Dakers Gowans – I make distinction between retrofit and a gut-and-replace, which becomes a NC project.
- SC Member – Base conditioning interaction term missing from savings algorithm.
- Dakers Gowans – I didn't include coincidence factor for demand or interactive effects, but there's a section in protocol that takes kWh per year saved… Some programs have interactive factors by system type and some are generic across all system types.
- SC Member – If you have air conditioning or don't makes a big difference.
- SC Members concur
- SC Member – We are getting more comfortable with wattage and HOU assumptions, but interactive factor is major question marks. That's an area that could use a lot of work and the industry doesn't have a simple straightforward manner to do this yet.
- SC Member – Concerned with complexity. Not clear how far you can get people to go.
- David Jacobson – Kema has a simple equation that they've been using for 15 years. Multiplying lighting kWh reduction by percent of heat that makes it into space, by efficiency of cooling equipment. Numbers determined by onsite estimates. Other approach is computer simulation.
- Bill Miller – Proprietary issues?
- David Jacobson – No, straightforward calculations.
- SC Member – We've been talking about cooling, but also applies to heating.
- David Jacobson – People pay less attention to heating because it's a different fuel.
- Hossein Haeri – On one hand, simulation model is too expensive. My recommendation is to use simple algorithm, and then more specific instructions on where to get parameters.
- Dakers Gowans – Refinement of simple interactive factor approach that is already in protocol.
- SC Member – Fine-tune simulation work that has been done elsewhere. We know interactive effects exist, just not clear on how big it is.
- SC Member – The protocol includes energy and demand, seems to be one of few protocols that includes demand.
- Hossein Haeri – There will be peak load impact calculation and we're treating that as a cross-cutting chapter. Describes how to convert energy to peak load impacts.
- SC Member – If demand is going to be included, discussion of metering must be expanded.
- David Jacobson – It's difficult to infer that from other service territories, not always the same. Coincident demand reduction is what lights are doing relative to hottest peak day at local utility.
- Hossein Haeri – That has been premise.
- SC Member – Will other protocols include demand impacts as well?
- Hossein Haeri – Will deal with peak savings with demand reduction.
- David Jacobson – This protocol has more discussion about demand savings and other protocols leave demand out.
- Dakers Gowans – Should I remove discussion?
- Hossein Haeri – Leaning toward yes.
- SC Member – Concerned with simplifying too much.

- David Jacobson – If you really need to measure the demand for your area, how can you not at least once every 3 years, do lighting logger measurements. Other protocols are written to require these measurements, but this one doesn't mandate periodic measurements, although it's a measure that makes up a big portion of savings.
- SC Member – Is the recommendation to use Option A as M&V approach whereby parameter to be measured is HOU?
- Dakers Gowans – Yes for evaluator, implementer uses estimates.
- David Jacobson – Now protocol seems to says it's ok to use estimates from another service territory. Reads that it's acceptable to use look-up tables from other service territories and this measure is too important to not require firmly that there be periodic measurements.
- Dakers Gowans – That was not intent of protocol, so I will make that clear.
- David Jacobson – Don't have to do it every year, but even smallest PA should do a lighting logger study.
- SC Member – How many sites would you have to do?
- David Jacobson – I've seen as little as 20 or 30 for a decent study, function of precision requirements.
- SC Member – Is it a general construct to not do metering every year?
- David Jacobson – The best thing is to use own evaluated savings and do metering as many years as you can afford to do it.
- SC Member – The question is what are threats of reliability of result metric?
- David Jacobson – While you are doing HOU study, you are forced to do serious verification of counts, whether customers are removing fixtures, etc. It comes with HOU estimate. Comprehensive study.
- SC Member – The approach is the right one, just needs additional work. In other protocols, there was discussion about alternates. One here is lighting circuit measurements.
- Chuck Kurnik – Out of time, will get to refrigerator recycling in another meeting.
- SC Member – Can we keep that one on schedule? We already discussed.
- Doug Bruchs – Draft was revised, but not very big changes to overall methodology.
- Hossein Haeri – Any comments that we didn't address?
- Doug Bruchs – No, a few comments where reviewers had different viewpoints, but no fundamental disagreements.
- SC Member – That's from technical point of view, but also sent in comments about general suggestions about other sections that would be worthwhile to have in these protocols.
- Tina Jayaweera – All SC comments and responses on UMP website.
- Chuck Kurnik – If everyone is comfortable we will discuss the refrigerator recycling protocol through text.
- Tina Jayaweera – Can arrange calls if needed.
- SC Member – Biggest issue with this protocol is that it contains discussion on NTG.
- Doug Bruchs – Any discussion of gross savings on this particular program must have discussion of net savings, due to high level of free-ridership for this measure.
- SC Member – One option would be in coverage of energy use in energy savings.

- Doug Bruchs – Negative spillover…
- Chuck Kurnik – We will post commented version of refrig recycling protocol. Let us know if there are any more questions.