

## Net-to-Gross Technical Advisory Group Meeting Minutes December 19, 2011

Attendees: Tom Eckman, Steve Schiller, Val Jensen, Michael Rufo, Caroline Guidry for Dick Spellman (GDS Associates), Stu Schare and Dan Violette for Kevin Cooney (Navigant), Elizabeth Titus, Hossein Haeri, and Tina Jayaweera

- Cadmus distributed a Word document with standard definition of terms (much taken from Northeast Energy Efficiency Partnerships, or NEEP). Does it adequately cover issues we need to discuss?
- The way the individual protocols are structured, they deal with primarily adjusted gross savings.
- Four corrections that apply to adjusted gross savings: Free-ridership, participant spillover, non-participant spillover, and rebound.
- Cadmus recommends having a separate chapter in the document that deals with each of the issues. Main section of net-to-gross (NTG), with subsections dealing with four effects.
- When we go from adjusted gross to net, what else do we need to take into account?
- Titus – Sometimes there’s an aggregate ratio that you can’t distinguish between.
- Long-term market effects – Price decrease results in more people purchasing, but in some instances is classified as spillover. Framing just in terms of spillover is not full enough frame. If program causes price to decrease over time, causing more people to adopt, would be a long-term market effect, but might be counted as free-riders instead. Spillover frame does not capture that accurately.
- Adjusted gross savings – Schiller doesn’t like term. Implies that you present gross as “uncorrected” and that there were adjustments beyond data errors and installation rates. Gross savings is better, because can categorize as ex post, reported by administrator. Other terms might be Verified Gross Savings, or Evaluated Gross Savings. Schiller and Titus are coordinating definitions for National Action Plan for Energy Efficiency (NAPEE) Guide and NEEP Evaluation Measurement and Verification (EM&V) Forum. For NAPEE, they are currently coming up with definitions of adjusted gross savings. Regional differences in how terms are used.
- Haeri – We want to be consistent with what we use for NAPEE guide. We’ve seen verified gross savings and evaluated gross savings.
- What are the adjustments?
  - Checking for data errors
  - Installation rates (in-service rates)
    - Installed? And correctly installed?
  - Assumptions – for example
    - Hours of operations – generalize to usage cycle
    - Weather data
    - Production rate of factory
  - Leakage – in-flow and out-flow
  - Persistence
- Baseline – Where does this fall in the above? Is this one of the adjustments?

- Haeri – This might be dealt with in calculation of ex ante or gross savings.
- Schiller – We have three or four categories: data errors, installation rate (is what was supposed to be installed actually installed), assumptions (HOU, baseline assumption, load factor, production rate of factory – whatever assumptions went into calculation of gross savings), and persistence, but only as applies to lifecycle savings. Persistence would then have subcategories – removal rates, degradation rates, dynamic baseline assumptions.
- Haeri – We start with ex ante savings, that’s where we check for accuracy of calculations and assumptions. Then we have gross savings, where we look at participation rates. Check to see if things are recorded accurately.
- Violette – We’re debating rebound effect, definition. Research shows rebound effect so large that it effectively mitigates any efficiency that has been attained. How are you defining rebound effect?
- Haeri – Separate chapter in the doc. Cross-cutting issue. We’re not going to discuss specifically on this call, but we will deal with in the project. We used to talk about rebound at participant level: take-back. Now there is the broader issue, which has to do with improved efficiency increasing consumption.
- Rufo – How much should we be down in the weeds in this conversation? I have questions about terms and how they will be combined.
- Haeri – Most useful to start with simple questions and see if we can get consensus from group. First question is do we agree that free-ridership, spillover, and market effects are the only things we need to account for when going from adjusted gross to net savings?
- Violette – I would question whether or not rebound would be net savings concept. The right way to talk about it is income effect. Same services at lower cost, increasing income to be spent on other goods and services. Benefit, not cost. I’m not convinced that rebound should be in NTG ratio. We’re working on white paper about that now.
- Haeri – We weren’t planning on including it. That’s where Cadmus stands. Rebound we wanted to include as a discussions; we don’t have plans with how to treat it.
- Titus – Net is a category of behavioral activity WRT contra-factual measurements – i.e., something that can’t be measured, like energy saved.
- Haeri – During last call, one question was whether issues related to net savings should be discussed in context of specific measures or in broad chapter. Looks like we think it should be in separate chapters. Then show in a table how concept applies to individual measures.
- Schiller – Hopes that standalone method will show how to calculate gross, and then going from net to gross within the method. Not a lot of support for including take-back.
- Haeri – For free-ridership, I envisioned a chapter discussing in detail how each method is employed with variations across commercial, residential, and other. A table that shows that the measure applies to x, y, and z. Won’t get into details in measure chapters about how to calculate net savings, but will refer to net chapter, where the approach is laid out in detail.
- Titus and others – They will want to see the concept definitions, then details about how to perform the net calculation. Chapters should go to heart of what pros and cons are, without repeating methodological or philosophical basis.

- Haeri – We also describe any exceptions as to how to apply particular method.
- **ACTION: Send out residential lighting method to Net-to-Gross Technical Advisory Group.**
- The typical jurisdiction won't have the funding to go after higher degrees of accuracy, such as those techniques detailed in the "net" section.
- Haeri – Avoid different levels of rigor. The protocols will have what the expert feels is the best way to do it, but will also have caveats. E.g., If you don't have the resources to do your own data collection, here are the secondary sources.
- Is the method recommending what the experts prefer, or what is best for the average jurisdiction? Certain important things may not be feasible and are not included for practical reasons. We need that to be clear to readers.
- Question of baseline – We have asked experts to discuss appropriate way to designate and calculate baseline for individual measures. A couple of conversations about what kind of baseline is used. Code or market? What are the implications for net savings? If baseline is based on actual market conditions, then NTG issue is addressed, but not entirely. Parts of spillover effect aren't going to be explained if we use market baseline to calculate savings.
- Eckman – If you start with assumption that baseline is market practice, then you have one path through NTG translation and you would expect smaller modifications between the net and gross value. If you assume code and it's not as good as current practice, you might see larger modifications between two numbers. Still have potential for spillover and long-term market effects that aren't captured. Reasonable to discuss both paths; they're both used. One perspective is tied to resource planning.
- Haeri – This is part of each protocol. What to use as baseline and how to measure it.
- Persistence and leakage - Should they be measured and how would we measure them?
- NEEP – Calculate effective useful life (EUL) and call it persistence. Titus thinks that for new program, they should know about persistence, but not necessarily implement. Often based on not a lot of info. Probably shouldn't spend a lot of money trying to estimate. Expensive and requires long track record with programs. In stand-alone study, Titus got feedback that members didn't know how to incorporate into other evaluation practices where they're estimating realization rates. Programs that are just beginning should know about this, but shouldn't be expected to take on from a resource and practical perspective.
- Schiller – Two options: discuss standard way to estimate savings over time or a chapter on persistence like the one on snap-back.
- To require net for each measure type by program by year would not be appropriate.
- Violette – It makes sense for evaluators to periodically do this, if there are measures subject to fiscal decommissioning. Depending on program and target.
- Leakage – Not a lot of attention to this outside of upstream delivery methods. If there is an opportunity for this in the delivery mechanism, mention, but otherwise don't. Maybe can be mentioned in more general section of the report.
- Haeri – Frequency of movement – Every few years at program level?
- Violette – And specific to delivery mechanism and/or technology involved.

- Haeri – How should NTG ratio be applied – retrospectively for determination of performance or prospectively for program design and planning – more policy, not so much technical, maybe it shouldn't be in the methods?
- Schiller - Getting into a number of areas that should be covered in NAPEE Guide. Getting into every evaluation issue, gets to be guidance, rather than a method. Understand internal consistency of the calculation, e.g., baselines. Make sure it's aligned with policy.
- Haeri – Clear framework for how these are to be addressed. Framework, without taking position.
- In NEEP study – Is it appropriate to report net savings across the board?
- If commission is requiring you to report net savings, this is the best way to do it.
- Violette – Movement in policy arena that gross savings are good enough for policy. If you're talking to resource planners at utility, they want to know net impacts because they're talking to other power plants. It's an important undertaking. We need to give right ammunition to evaluators and demand side management (DSM) people to communicate with utilities. Never heard resource planners who want to use gross. Power plants get performance incentives. You can draw parallels to say you're achieving targets that are gross targets.
- Haeri – In agreement. We have attribution issues, which are political and policy-related. Forecasting and integrated resource planning. We have to make sure about the types of savings that are involved.
- Schiller – Net is tied into baseline. Can vary from place to place. Issues we discussed with our states and commissions.
- Another meeting in January; first week.