DSM Potential Study Advisory Committee Meeting

February 27th 2018

Introduction by Carl Nelson

- Went through an overview of the potential study and the remanding schedule
- Full measure characteristics will be sent out after the meeting – please send this around to the appropriate people in your organization and send feedback back to the project team
- Avoided costs data – and other inputs for the economic potential will be discussed in an additional advisory groups
- ‘Working group form’ is being handed out. Voluntary workgroup to provide feedback the measures, programs and economic inputs. Does not need to be advisory group members – so forward along to other people in your organizations to help advise some of the inputs of the potential study

Primary Data Collection, Preliminary Results – Chris Plum (CEE)

- Printed out slides in the packet with the data rich components – will email out presentation after the meeting
  - Let us know if you have any problems or suggestions with the data
- MN Homes/building different than around the country – so primary data collection will enhance the potential study’s results
- Seventhwave looked at homes, and large commercial buildings — completed small commercial studies
- Trade ally survey
  - Question - New Construction and Builders looks like over sampled?
    - CEE wanted to get at least 10 of each - group and results are fairly consistent
    - CEE may add a few more HVAC contractors to the study
- Phone and site visits for residential are sampled across the state of Minnesota
  - Blower door test in every home – only 20% of homes surveyed were at code -
    - National average is lower in Minnesota
  - Only 36% of homes use and set the programmable thermostat
  - Auditors gave recommendations for energy savings
- Commercial buildings – site visits across the state – phone survives too
  - Schools -
    - Maintenance in schools is good – due to dedicated staff
    - Lighting opportunities are still out there
    - Window to wall ration in schools is around 15%
    - Plug loads are rising
  - Office Buildings –
    - Over 50,000 sqft buildings
- **Health Care Buildings** –
  - Hospitals and clinics – hospitals are older and clinics are newer
  - Lots of automation in the hospitals – but site visits indicated that there are opportunities to expand automation
  - Patient facing rooms have LEDs – back rooms older lighting
  - Constant projects – always aware of utility projects and rebates
  - Most hospitals have two big kitchens – plug loads are not huge
  - Thermostat Settings – no setbacks in the clinics – but overall for commercial buildings setbacks are there

- **Trade Allies Interviews** – Talked with contractors across the state working with many utility territories
  - HVAC replace on fail is more common than early replacement
  - LEDs, building automations are important opportunities
  - This primary data collection – will help adjust the inputs for the potential study model – any technologies where you feel have good data would be helpful for input on the models – to help with the applicability of the measures etc.
  - The trade ally data will be reported in detail once the analysis and surveys are complete

- **Question** – total energy costs as a percentage of revenue – and also opportunities for utility intervention would be helpful.
  - Yes, programs part of the study will help identify best points of intervention
    - Non-energy benefits are very important - reducing maintenance costs are important

### Sales Data Disaggregation – Scott Pigg (Seventhwave)

- Important for the potential study – you need this to estimate the amount of efficiency potential in the state
- Disaggregation based on 30-year weather normalization using 2016 EIA data
  - 5 – levels of disaggregation –
    - Utility, Sector, Segment, End-Use, Sub-end use
      - GIS Mapping Approach to add census data and business data to utility areas
    - Primary data collection used to distribute end-uses to split out electricity to the utility levels
    - As part of the data QA, Seventhwave compared the total energy usage in the disag. to EIA sales – at the state level and found about 10-15% margin – but the adjustments are bigger for the smaller utilities
- 142 weather stations were analyzed – many other data was also analyzed for the disag.
  - CARD, EIA, utility sales, etc.
- Gas side is a little more fuzzy because service territories are unknown – and not everyone in the city uses natural gas etc. Electric utilities have known utility territory shapefiles
- Sankey diagrams go through the energy uses by utility – minus CIP opt-out customers
  - Energy centric results – so not total light bulbs but the percentage of electricity that is consumed by the type of bulb
  - Farms are split out in the disag to get a better sense of where that energy is going

**Technical Potential, Preliminary Results – Matt Socks (Optimal Energy)**

- Have developed a functioning Model – but the results are preliminary – and several streams of data to refine the model are still being added in
- Overall – technical potential – is everything you could do to improve the efficiency in the built environment – no concerns of economics and other barriers
  - Technical potential is higher than achievable and economic potentials
  - Technical potential is generally conservative
  - Technical potential is a stepping stone to get to the achievable potential
- Winner take all approach for technologies that overlap each other and competing for baseline energy – so the one with the highest savings is the one that is kept into the model – going forward the model will handle interactions – considering economic concerns and implementations – and influences with other measures
- Cumulative savings are over a 10 year analysis period – no double counting between early replacement and replace on failure
  - A little more potential with the cumulative potential rather than a non-cumulative
- Single statewide analysis – after QA/QC we will run 7 model runs for all the utilities
- Residential electric potential – ranges from about 50-27% cumulative for 2029
  - Fairly typical to national trends - and results will be improved by refining inputs and adding measures
- Lighting is smaller percentage of total savings
- C&I percent savings
  - Numbers will probably be bigger due to improving the measures – and refining results
    - Lightings is a large percentage of total savings – ~46% - due to lack of controls and upgrades
- This is the beginning of an iterative process – and the models will be improved going forward - economic and achievable potentials will be populated going forward
- Question – Assumptions or adjustments for emerging technology?
MN is a gross state – so the study is trying to match state potential – market transformation may still be accounted for and will be noted in the study
- Breaking things out by year and three years cycles will be forthcoming when looking at economic and achievable potentials
- Non-EISA scenario also sales prohibition – versus lag in them coming off the shelves is an issue that will need to be addressed in the model assumptions
- Conference Call for the Gas Side of technical potential on March 15th

Policy Comments – Mike Bull (CEE)
- This potential study has two goals –
  o 1) Refresh our understanding so we are on the same page of where the remaining savings are and how we get it
  o 2) a parallel conversation on policy framework of DSM and CIP in Minnesota
- Started with telephone surveys with stakeholders and had other conversations with stakeholders too
  o Initial Request for Written Comments on a variety of topics including behavioral and operational programs, carbon reductions, electrification, etc.
    ▪ We will talk about these comments and next steps going forward
    ▪ Not a lot of agreement across stakeholders on the 7 issues – however all the comments will be noted in the policy section of the Final Report and there will be another round of comments requested to clarify some issues.
  o Question about how to define behavioral and operational programs
    ▪ Behavioral is both residential and commercial and operational is more commercial
  o Question if CO2 reductions are a core goal of CIP or a benefit of CIP – important questions
    ▪ Whether or not CIP is only focused on kWh or BTUs or incorporating Demand Response and electrification/fuel switching
  o Comments on tracking progress and CIP savings compliance – variety of differing opinions – e.g. lifetime savings and first-year kWh
  o Codes and Standards – most acknowledged this will affect utilities ability to meet energy efficiency goals
- Next Steps – New Round of questions will be emailed out to the Advisory Committee. Send answers back to CEE by the end of April – so we can talk about them at the May Advisory Committee meeting.
  o Draft question ideas:
    ▪ Operation Savings – what would we need to make sure they are identified and captured - may already be captured?
- Demand Response, CO2 Reductions and Electrification - why cannot these be addressed with different regulatory processes – so what is missing if we do not include them in CIP?
- Lifetime Benefits of EE – what policy changes would be useful?
  - This change happened in IL – a webinar to discuss the IL case would be helpful
- Potential Studies for CIP Targets – Statute allows DOC to adjust goals on potential studies – what you think of offering 3 year potential studies to help adjust goals – cost implications?
- Codes and Standards – the pros and cons of doing codes programs in California?
  - One-pager on California programs on codes and standards would be helpful
- Bonus Questions – How can DSM potential study inform Integrated Resource Plan proceedings –
  - This gets to the Question of how CIP is a resource –
  - Baked in question by what do we mean by efficiency – what do we mean as resource – could be a lot of things
- (Jessica) Extra Bonus Questions – two definitions of energy conservation and energy efficiency in statute – do we think these are accurate and reflect what the situation is today

What are the priorities for the group AC members should rank their priorities in their comments – it is hard to tackle them all – what mechanism is needed to carry out the change, rulemaking, policy guidance, or legislative changes
- Important to learn from other states to learn best practices so we are not reinventing the wheel
- There may be a problem with written comments – because we have to go up the chain of the organization- so maybe another meeting to discuss freely so we can talk as a group and get on the same page – to eventually get to written comments
- Other policy considerations, e.g. privacy can be considered as a priority