EUI Potential Study Advisory Committee

Meeting #2 – October 2, 2017 – Notes

I. Kickoff
   a. 2nd Advisory Group meeting
   b. Purpose of the committee – advise the development of the potential study – results should be ready by February

II. Wilder Research – EUI Survey Results
   a. 25 participants – utilities were about 65-75% of respondents
   b. Supply Sides Efficiency Gains
      i. Factors considered for supply side infrastructure improvements are cost-effectiveness, reliability, safety – efficiency does not come in as a top priority
   c. Supply-Side Changes
      i. Should savings be counted towards savings /spending
         1. IOUs more evenly split between agree/disagree – Munis and Coops more likely to agree
      ii. 1% DSM requirement
         1. A lot of respondents had comments on this provision – there is uncertainty related to this provision in statute – including timing of projects
      iii. Recommendations
         1. Reconsider the 1% DSM rule
         2. Educate utilities on potential projects
         3. Clarify rules and process
      iv. Current supply-side projects in CIP
         1. Many pros and cons, open ended questions
         2. Pro-side: more acknowledgment and credit for these programs is good
         3. Con-side: free ridership – uneven across years – encourage these projects more broadly

III. Project Update on EUI Study
   a. Survey feeding into the process of policy barriers and recommendation and action plan
   b. The team has gathered a lot of non-utility source data
      i. Biggest piece of information on generation side required is GROSS generation capacity
         1. Qualitative interviews with generation assets owners will take place to put info in context
      ii. Lots of data missing on T&D Side
         1. Survey targets
         2. Load forecasts – work with DSM study
3. Ideal case is that the study would have number of transformers and distribution line – and technical aspects of that information i.e. voltage
   a. Statistically significant sample of T&D equipment will guide study
4. Many DSM potential studies have been completed – not for EUI though
   a. Figuring out reasonable assumptions and potential from the model – to help guide reasonable policy
   b. Advisory Committee is very helpful to help guide the study and data collection
   c. Department – is not a part of the NDAs – results will be reported at a high level –
   iii. EUI study is working with Xcel to compile a reasonable data request
   c. What advisory committee members can do to help?
      i. 13 Co-ops, 5 Munis will need to be contacted. Input regarding on who to contact is appreciated.
      ii. Generation Asset Owners - Input and recommendations are appreciated
      iii. Reaching out to utilities
         1. Full list of data – working with Xcel to get a pared down request
            a. ‘Reasonable’ data request will be sent out as soon as possible
   iv. Concerns from the group???
      1. A lot of detailed data – unclear on how that will be taken into the model – given wide difference on systems?
         a. Models are based on DSM potential models – works well for T&D side
         b. Generation models are a little more tricky – only looking at parasitic loads
         c. Current maintenance is the baseline – improving utility policy would count towards savings
      2. Work from manufactures
      3. Working from potential – replacing from failure of T&D equipment
         a. Where are the intervention points? Not possible to look at every scenario where this equipment can be improved

IV. Mary Santori – Distribution System Planning
   a. Distribution planning – last step between customer and generation – very important
   b. Distribution System Planning process
      i. Load forecast – look at the peak hottest day – look at the risk and mitigation plans – budget is created – Engineers design and then construction
      c. Planning for the future – DR coming on everywhere – is it dependable - needs to be forecasted
         i. Electric Vehicles – when will that significantly hit the grid?
   d. Conservation load control – how dependable is it?
   e. Look at load all day - need new ways to plan for the system
f. Hosting capacity analysis – next one is due Nov. 1st – heat map showing where most suitable sites for DR

g. Intelligent Distribution System – better able to plan

h. World is changing – in Distribution System Planning

i. Energy Efficiency in Distribution
   i. Surge Arresters
   ii. LED outdoor lighting in all states – 38% - 60% savings
   iii. Transformers –
      1. DOE implemented efficiency that dictate minimum standards
   iv. A lot of the decisions that affect efficiency – effect the whole fleet of the equipment – but large service territory
   v. Modeling is used in this planning – Synergy
   vi. Replacing Transformer – old transformer that is undersized can still be used in the territory
   vii. Conservation Voltage Reduction has not been rolled out much in the territory
      1. Pilot program in Minnesota – results are under review

viii. Grid Modernization?
   1. Efforts may be parallel and overlapping – important to keep in mind when policy considerations are taking place

ix. No conversations have took place in the Distribution group with the CIP group about counting the EUI savings
   1. Complexity of a large organization makes it difficult to coordinate these efforts especially in complex decision making processes
   2. Lack of awareness is a key policy barrier
   3. CIP dollar policy question is also a discussion
   4. Safety and reliability will always trump efficiency in terms of distribution operation

V. Rob Scott Hovland – MRES
   a. Least-cost resource is the key for the members
   b. NGEA – members added Residential Program – in all four states
   c. EM&V – third party verification
   d. MRES does not measure infrastructure programs
      i. Lack of certainty – 4 different states need to look at the projects
   e. EUI qualified savings – doing traditional prescribed measures at buildings – is being completed – the rest of EUI savings are more uncertain for MRES
   f. Generation opportunities – fossil fuel plants
      i. Coal plant, peaking plants all in different states
      ii. Outside of MRES’s decision making authority
   g. Transmission – is managed by MISO
      i. N-1 Philosophy
         1. Reliability is the main concern
   h. Distribution upgrades
i. Substations – possible EE upgrades – once every 20 years or so

ii. Primary or Secondary Metered customers – many large customers are secondary meaning MRES does not have authority
   1. Possibility to offer a rebate for these customers?
      a. That would be a hard sell to implement – hard to ensure certainty
      b. Maybe after lighting savings are reduced

VI. Delano – Paul T.
   a. Infrastructure – transmission owner
   b. Overhead – to underground transmission in 2014
   c. 26 MW capacity – diesel and combustion
      i. MISO –
   d. Transformers – getting in that direction that manufactures will dictate the choices one has
      i. Amorphous Metal – transformers –
         1. Thin and delicate – they blow up when too hot – at least with Generation One – they are also larger
         2. They save energy – cost of savings
      ii. Rebuilt transformer – standard and amorphous – rebuilt
         1. Less than half the costs of new – savings are hard to verify
         2. Energy savings are only one facet on these rebuilds
      iii. Smaller utilities across Minnesota are similar to Delano
         1. DIY mentality to keep the costs low and keep the power on
   e. Transformers – Energy Savings for amorphous rebuilds are sound
   f. 15KV URD Cable:
      i. Delano – is growing – more wire needed
      ii. No choice – wires are more efficient – less resistance and better conductivity
      iii. Economics based only on energy savings is low – but other factors make these wires more attractive.
      iv. Manufactures are moving forward
   g. Distribution Voltage
      i. Energy savings line loss – reliability and increased capacity are larger concerns
      ii. Fuses’ and voltage effect economics
   h. Where does efficiency fit in this process
      i. Munis and coops have different barriers