

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