

## Iowa's Energy Resources – Working Group Meeting #2

April 7, 2016; 1:00 pm – 3:00 pm

### Meeting Summary

#### I. Meeting Objectives

- To **dive deeper** into the conversation and continue to **develop current challenges and areas of opportunity** and organize them by topic area.
- To **share expertise** around topic areas and frame the issues associated with that topic.
- To **gather more information** and facts on issues and opportunities.

#### II. Summary of Key Comments

**The following topic areas were discussed as they relate to Iowa's Energy Resources. The summary captures issues brought forward by working group members.**

##### Overall Planning Process

- In response to the initial research and policy inventory, we need to answer the questions, "What is this effort an answer to?" What is the "So what?"
- What kinds of recommendations and guidelines can the working groups give back to Iowa that will create economic benefit and manufacturing support, while considering environmental factors and other externalities?
- This process needs to take a regional lens. For example, Iowa has benefited from importing hydroelectric power within the region
- The plan also needs to focus on the economics of various sources (i.e., the "things we can get money for") regardless of whether that is through imports, exports, or both. Being a net-importer or net-exporter is not good or bad, it is just a fact to consider when planning for what's best for the state.
- The facilitators will make sure these comments and concerns are captured for the larger planning process.

##### Distributed Renewable Energy Generation

- The question of "should we be promoting DG in Iowa?" is unclear
  - o There should be a freedom of choice
  - o DG is a national trend that is growing
  - o Iowa should at least allow and not impede it. We can leave it up to economics and let the market determine whether it's viable.
- Iowa needs to allow for more than just intermittent generation. Some renewables can help with time-of-use rates and load sharing
- All renewable energy applications would require some DG. So if Iowa wants renewable energy, we need to allow for DG
- Overall, could we make it so that DG should neither be promoted nor prohibited?
  - o To do this, we'd need to determine if there are any current barriers that need to be removed

- The general assembly should be able to set a policy guide based on the costs (however this could lead to an equity issue)
  - Removing barriers is not that simple as municipal and co-op utilities have different circumstances (i.e. DG should not be funded through utility rates)
  - Neutrality on the issue doesn't work for environmental initiatives if we want to promote clean, renewable sources
    - Need to define what "neutral" means from a policy perspective
- Some states have passed laws making it clear that some utilities wanted to kill DG. Iowa needs to understand the costs such as infrastructure and then make a decision based on cost-effectiveness.
  - Nothing in the rate structure should be punitive or create undue costs
  - Policy shouldn't create barriers to renewable development
- The question of changing rate structures is very loaded for utilities. Municipal and co-op utilities and their decisions are approved by locally elected leaders. Therefore each community has different wants and needs from their utilities
  - Should it be left up to utilities to decide what's right for their constituencies?
  - Investor-owned utilities have the same policies across communities
  - If Iowa is going to promote DG, we would need a more level playing field for customers of all utility territories
  - Another limitation is created for municipal utilities that have wholesale purchase requirements
- There is a presumption that the state should expand DG because it "is the right thing to do". It would be more effective to look at it as a financial decision. Then the conversation becomes more about the details of implementation, as opposed to the politics
- A deep understanding of what is involved in the rates and prices is needed in order to make rate structure decisions
- Some rate structure studies have found a wide disparity of economics for a company to put in Combined Heat and Power based on energy pricing. This can cause a barrier to promoting CHP adoption because standby-rate fixed charges don't change even when energy use is decreased. Therefore energy savings doesn't necessarily lead to economic savings.
- Does Combined Heat and Power at manufacturing facilities count as DG?

## Solar Energy

- Value of Solar (VOS) measures what the utility should pay to a customer for power generated by solar photovoltaic (PV) applications belonging to the customer – Should include both the utility's avoided costs as well as externalities avoided by not generating and delivering that amount of energy.
- When considering the solar on agricultural land, PV is often not as economical when compared to wind
- Technical potential does exist – Studies have shown that rooftop solar in Iowa could generate 36% of electricity demand
  - However there are risks associated with the grid's capacity to allow for that amount of distributed generation
- There is potential to utilize brownfields and other unused land for solar installations
- The threshold of creating a rate impact for utilities is about 2.5% renewable penetrations. Iowa is currently at about 1%

- We should use this time for data collection as renewable adoption grows, in order to prepare for future decisions when we reach that tipping point (i.e. we could do a VOS study when the state is approaching that point). Some VOS studies come out at or above retail value
- There is a need to properly value the grid and entire system, not just solar in isolation
- Solar is most valuable during peak times. Storage would add a lot of value.
- There is a need for land use regulations that accommodate and provide some structure for installations
- We have to be careful in Iowa when using system averages for demand as it hides some nuances due to wide variety of land uses, population density, etc.
- Iowa needs to create policies to address current needs for reliable, sustainable energy, as opposed to waiting until we reach a higher penetration later
- Many parts of the state don't have any current land use regulations. This lack of regulation creates a barrier beyond direct permitting issues.
  - Suggesting a change in regulation in order to allow for more solar installations misses half the problem, as comprehensive regulations should be developed first. For example, Minnesota is requiring large scale solar proposals to conduct drainage studies, add vegetation measures, etc. in the permitting process.
    - Project complexity changes depending on type, size and location of solar being installed
- Great Plains Institute has a model DG for Solar ordinance and permitting that can be shared

### **Utility-Scale Renewable Energy Generation**

- Iowa's lack of RPS has caused problems in terms of long-term planning for MISO
  - Iowa didn't have anything to provide to MISO for planning assumptions
- Do we need to carve out at utility scale for biomass?
  - Biomass emits CO<sub>2</sub> when transporting material. Many biomass assessments don't account for those emissions
  - It is a useful fuel if it's not necessary to move long distances. Useful bio-char material can be pulled out on-site
    - If you utilize this material and don't transfer it anywhere, biomass can actually be carbon-negative
  - There may be some benefits at utility scale. Biomass complements Iowa agriculture nicely and is an opportunity to make use of utility-scale infrastructure in new ways
- Iowa needs policy to encourage technologies to scale
  - The state needs to decide if we're ready to specifically address reducing CO<sub>2</sub> emissions from existing coal plants
- Solar storage is crucial, particularly for rural uses
- There is both an incentivized and a mandated approach for utilities. Incentivized has the potential to build on what is already happening in the market. A policy like a state tax credit could incentivize utility renewable adoption
- Biofuel technology info will be posted on Basecamp

### **Energy Affordability and Equity**

- There can be an equity issue through utility incentives for rooftop solar. Residents who can afford to install rooftop solar get incentives which can cause utility rates to increase, which in turn hit the low-moderate residents the hardest.

- Externality costs of energy need to be accounted for. One way to do this is to raise the price of energy in order to promote efficiency
- Wind costs have come down so much that they are competing with efficiency. There may be an opportunity to combine these affordable options.
- It is important to maintain diversity. Moving more to natural gas as coal plants close is good, but need to keep renewables as well.
- Net metering will need to be addressed
- Companies with sustainability commitments are buying wind power. Therefore Iowa's economy benefits by having a green energy portfolio
  - o This is a branding/marketing opportunity for the state
  - o However, we also need affordable energy in order to attract companies. Affordability could be coupled with social/PR drivers
  - o Need to consider job attraction
- When considering affordability for manufacturing, energy is one potential place for companies to create a competitive advantage
  - o Competitors in other locations can lower costs of labor, safety, environmental regulations, etc. Energy might be one place where Iowa manufacturers can pass savings along to customers and be protected against price volatility
- Need to address who pays for incentives if we want to encourage utilities to establish more large-scale renewables
- It is difficult to avoid passing costs to customers when the public funds projects or incentives
- People waste when they don't think something is expensive. Iowa needs to keep energy affordable, while not letting it be wasted

### **Energy Infrastructure Modernization**

- Iowa should have an IRP
  - o This would allow utilities forecast rates, loads, etc.
  - o Can there be coordination between different utility groups on different IRP processes?
- Planning should be bigger than just generation. MISO and others plan for transmission, pipelines, and other infrastructure
- Utilities don't make changes or improvements without approval from MISO and others. This process works well now, RTO's could help streamline it further
- Do utilities cut back infrastructure budgets in order to keep rates down?
  - o No, the utilities do make substantial infrastructure investments from both distribution and generation budgets in order to maintain reliability
  - o Infrastructure decision-making is a long-term process that does have rate impacts
  - o When considering DG and other changes, the utility's primary goal is to connect consumers to power sources (this happens two-directionally and includes putting power back onto the grid)
- Post a description of IRPs on basecamp

### **Technology Research and Development**

- There are opportunities for partnerships between industry and universities
  - o There may be changes needed at the university-level to work more closely with private sector

- The private sector should engage with economic development departments at universities, as well as regional economic development efforts throughout Iowa. There are examples of this already happening in new technology parks, etc.
- The Iowa Energy Center is a good resource for technology research
  - This resource is getting even better. It is currently a small pot of funding, but they are working on giving dollars to match and leverage with other funding sources for bigger projects

### III. Comments and Questions Received from the Public

- I have concerns about distributed RE which must be load followed. Also I don't like net metering where full retail prices are paid to individuals for their RE. One energy source that should be looked at is micro-hydro which utilizes gravity (a constant influence). Europe seems to be ahead of the US on this. <http://www.restor-hydro.eu/en/>
- Rate payers are also tax payers. I would like to see how much subsidized energy sources actually cost on both sides of the equation. This would entail transparency in rate structures.
- California is starting to need to turn off solar at midday due to over-penetration. Another aspect of the ISO grid duck. <http://ww2.kqed.org/science/2016/04/04/what-will-california-do-with-too-much-solar/>
- Part of the recent move to RE is concerns about climate change; within that area I am more concerned with ocean acidification. Plankton is under stress - and creates 1/2 the oxygen we breathe! With that in mind, I believe that a "renewable portfolio" would be better named "clean energy portfolio". Though IMO RE, when tied to load-following fossil fuels, is not clean energy. Perhaps grey energy is a better term.
- Sequestration through biomass is generally for a single year or decade. We need sequestration timelines of thousands of years (geologic timescales!) to be effective. These shorter term biomass are nearly worthless for CO<sup>2</sup> reduction.
- I would much prefer nuclear replacing old coal plants than NG. NG is still dirty with CO<sub>2</sub> and CH<sub>4</sub> emissions. Nuclear AP100 or ESBWR until 2030 - likely some Gen4 options after 2030. Nuclear can load follow and is safer than nearly any other energy source (dept. of labor, WHO). Green portfolios are cleaner with nuclear, IMHO.
- Ontario, Quebec, Switzerland, Sweden, & France all have electrical emissions less than 200Lbs of CO<sup>2</sup> per MWh. Why should Iowa settle for ~1300? This is a quality of life concern - EPAs CPP sucks IMHO.
- State of Oregon is actively supporting NuScale (nuclear SMR) which should have a prototype within 10 years. Utah & Wash state utilities are also supportive. [www.uamps.com/index.php/38-items/24-carbon-free-power-project](http://www.uamps.com/index.php/38-items/24-carbon-free-power-project)