

## Economic Development and Energy Careers – Working Group Meeting #2

April 5, 2016; 10:00 am – 12:00 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 Economic Development and Energy Careers. The summary captures issues brought forward by working group members.

##### Attracting and Retaining Business

- There is a commitment to grow Iowa's bio-based energy cluster – this approach could be applied to other bio-based products (plastics, fertilizers, etc.). This could include:
  - o Cultivation Corridor
  - o Bio-refineries for corn and starches
- The Bio-chemical tax credit just passed – this precludes anything for fuel. We have to divide that industry based on fuels VS. chemicals
- We should plan by looking at the broad economic development ecosystem – this includes all the incentives that can drive entrepreneurship into commercialization. Including:
  - o Innovation, R+D
  - o Policies
  - o Capital, incubator space
  - o Educated workforce
  - o Educated citizens – via K12, public education, and fostering a culture that embraces this kind of economic growth
- Many of these pieces exist in the bio-ag area, how do we use existing development to attract additional investment?
- Iowa is projected to be a leading biomass provider by 2030. The feedstock bio-cluster with ISU has already begun to attract investment to Iowa
  - o The bio-cluster is an example of mapping the best location, research university partners, demonstrating return on investment, and showing economic impact (in GDP growth) as a result of having all the pieces in place to invest in home-grown energy.
- Goal is to attract capital to create new industries in Iowa – need to prove-out the models and fill gaps

- Policy support is also needed to create and grow new industries. Data is needed to prove new policies are good for the state
- Predictability and consistency are important for businesses – if energy prices and policies change frequently, this can create challenges
  - o Companies may be willing to invest, but need infrastructure investment first (for example, pipelines)
  - o How to finance/raise capital to invest in Iowa?

### **Energy Affordability and Equity for Individuals**

- Low-Income Housing Energy Assistance Program (LIHEAP) currently established – The state spends \$55mil/year – funds are for low-income residents, most often in old, inefficient homes
  - o Funds are to help pay energy bills – can this instead be invested in energy efficiency in order to lower bills, thus lowering need?
  - o It's an inefficient use of funds to keep spending on utility bills for leaky homes every year
  - o Funds go directly to heat providers for utility costs, so LIHEAP doesn't know how many therms or kWh their paying for
  - o There is a moratorium on shutting heat off for unpaid bills during heating months – if a homeowner starts out behind in the fall, then they're in an even worse position at the end of the heating season when they have to pay again
    - Some residents are in temporary duress, but for those in a more chronic state, the moratorium can worsen their situation.
  - o A goal should be to carve out more of these funds to go toward energy efficiency and energy education
- There is also a Weatherization Assistance Program – could use cost/home served as a benchmark for how much it would take to address efficiency
- The plan should work to make energy accessible to those that need assistance the most
- Most energy-related incentives require some upfront capital – this creates a barrier for people without access to capital – these are also the people living in homes that likely require most investment
  - o Residential customers pay highest per-unit price for energy – homes that consume the most, pay the most
    - What types of policies, incentives, or financing mechanisms can be put in place to help those that don't have access to capital make energy efficiency investments on their homes?
      - Many can't take advantage of tax credits or rebate programs because they still require a co-pay or tax liability – Need to think more creatively
      - PACE could be helpful – but it's only available for people that own property
      - On-bill financing has been implemented by some utilities, but not statewide

## Reducing Energy Costs for Businesses

- Some companies are demanding renewable energy availability when deciding where to locate
  - o For example – Data centers
    - There is more information about this sector and how they consume energy – Schneider electric resource
    - Attraction of data centers as a new industry in Iowa is a job creation opportunity
    - Iowa is currently not targeting data centers as they are high energy users. Focused more on agriculture and bio-economies that are more connected to state's resources
    - Many data centers have come to Iowa so far because of the cost of energy, reliability, and percent of renewable energy generation
- More and more companies are creating sustainability or energy goals
- Mid-American is promoting efficiency to commercial customers through:
  - o Free energy audits for companies
  - o Rebates to encourage new customers to purchase efficient equipment
  - o Assisting large commercial accounts with programs such as building-optimization
- Do these utility programs play a role in attracting business? i.e. Facebook, Google
- Money saved by companies through energy efficiency can be spent within communities
  - o This message needs to reach households and small businesses
  - o A local delivery system for efficiency and renewable programs can magnify and accelerate adoption of utility programs, leading to exponential momentum
  - o This is also related to affordability and equity – it helps keep dollars local and homes more financially sustainable
  - o Efficiency and renewables go hand-in-hand – should promote efficiency programs first, in addition to renewables
    - Example with Distributed Generation – Farmer's Electric Co-op reached 2.5kWh solar penetration per customer. If they scaled this program up over a decade, they could reach 7.5 gigawatts of distributed solar (close to wind accomplishments). This would mean a \$15billion investment in the state, keep \$1billion of energy sales within the state, and create jobs
    - Need to leverage smart, targeted, efficiency and demand response while helping utilities cope with increased renewables
- One obstacle is that business facilities are often inefficient. Capital can often be cost-prohibitive as upgrades to these facilities can have a 10-20 year payback
  - o Need to measure when it is worth it to keep maintaining old facilities VS. building new
- Businesses that focus on efficiency and renewables are more competitive. However getting utility programs and information to them can be a challenge
  - o Need other outreach channels to reach Iowa businesses (and households)
- Grid efficiency is an important piece of the puzzle – we need data on transmission and delivery energy loss
- We need to keep mid-low income customers in mind when promoting efficiency programs – added costs for grid modernization and efficiency incentives can impact rates
- Duck-curve challenge

## Career-Path Education and Training Needs

- Community colleges are working with businesses to understand short-term training needs. Almost every region has an economic development organization which partners closely with community colleges.
- Indian Hills Community College has a program that was started because one of their faculty members was from the energy sector and spearheaded the initiative.
  - o Community Colleges need to start the process of developing new programs early (usually 4-5 years in advance to develop and get them accredited)
    - Hopefully the energy plan can serve as a guide to show what's coming in the future
- K12 is an important piece in addition to the community colleges.
  - o Many K12 schools are offering externships for teachers to get into an industry – they learn about a particular sector and then bring learnings back into the classroom
    - We could do this for the energy industry
  - o Career-on-wheels is another K12 current initiative – One school brought in Mid-American for kids to learn about what they do
- We should work with STEM initiatives
- There is a shortage of contractors to do energy work, particularly home efficiency upgrades – this is a big challenge in rural communities
- Buildings trades programs at high schools are decreasing
- Developing new educational programs takes time and resources
  - o Indian Hill Community College took a big risk when they started their renewables programs.
    - Solar training program is going well, but they had to suspend their bio-energy program. It is starting back up soon
- Community colleges alone can't keep up with job demand

## Providing Public Education

- The Iowa Energy Center is a place for reliable, objective information. Resources are from university, government, and lab sources; not from advocacy or interest groups
  - o It is funded by rate-payers
- The Farm Bureau has good outreach channels. Their public education commercials are effective
  - o Could the energy sector do something similar?
  - o We need an organization that can vet the information and keep it relevant and neutral
- We need to both gather information, and also make it digestible. Are there resources available for marketing material development?
- "Energy District" model is a concept where state and utility programs have a strong local presence in each community
  - o USDA Soil and Water Conservation Districts is another similar model of deep local community engagement
- IEDA has a successful City Energy Management program that provides technical services to help cities promote energy efficiency including audits, upgrade projects, and energy action plans
  - o Can this be replicated for small businesses?
- Specific technical assistance is crucial. Residents and businesses need to know what they need to do, how, who to work with, how to pay for it, etc. – every piece of the process

- Public education is a great avenue for sharing success stories, learning from existing programs and replicating them
- There needs to be a distinction between credible information and “noise” from the media when promoting energy opportunities
- First, we should answer the questions: What do we want to educate the public on? How do we measure success?
  - o We want to educate the public about all energy efficiency opportunities
  - o It would help to have universal applicability of utility and energy programs. For example, it is difficult to promote efficiency programs widely when eligibility and program details change across each utility territory.
- A proposed school program was voted down by constituency because of lack of quality information about the benefits of efficiency and renewables from trusted sources
- Many people don't know about efforts that are already underway. Many residents don't know about the Iowa Energy Center or existing Community College programs
  - o People don't know where to go for information

### **Research and Development**

- Opportunity for agriculture sector to use natural gas in ammonia fertilizer, which is currently a large economic import
  - o Universities are starting to do R+D to look at creating ammonia fertilizers using local sources of energy – need to increase these types of initiatives
- Transportation fuel is another opportunity for development of alternative sources
- More research is needed on recycling nutrients in order to keep them out of watershed and create a closed-loop system
- Research around crops that need less fertilizer would be beneficial.
- More research dollars should be spent directly on greenhouse gas emissions, watershed impacts, and other environmental issues that are currently thought of as externalities.
- Research is largely dependent on grant dollars. If the state is the direct beneficiary of new developments, then the state should make investments to expand
- Need more funds for lab resources, testing, and research around advanced energy crops and nutrient recycling

### **Financing and Capital Needs**

- Iowa needs more local investment in wind and solar projects. Tax credits help, but it would be beneficial to explore possibilities of loan options as well
- We should encourage more private investment in university initiatives
- Technical expertise is needed for businesses to take on adoption of new technologies and potential investment opportunities
  - o For example: Recycling plastics and PVP are business opportunities, but need more information
- It would be a game-changer to make energy investments as easy as investing in mutual funds
  - o For example: For someone to invest in a local wind or solar development, it is not currently clear what makes a project financially feasible for individuals to invest in
  - o A goal of this plan should be to help break through the barriers to investment
    - If the state makes the statement of intention, then finances can fall in place

- Financial industry needs to be secure in decision-making for investments to be made in new technologies
  - o Energy programs are complicated (tax credits, etc.), which creates a barrier to investment
  - o Projects need to be made secure. One possibility is through incentive programs
  - o If you want to invest in a large project, you have to go through a lengthy process
- Examples of local investment opportunities and barriers when it comes to tax issues (will be posted on basecamp)

## **Rural Economic Development**

- Opportunity for innovative renewable energy installations on under-utilized spaces as opposed to large farmland space
  - o Need capital and enabling technologies to make it work
- There is an opportunity for distributed job creation along with distributed energy generation across the state
- Value of Solar approach would help define and agree upon the value that can then open doors to new projects
  - o The industry is getting close to establishing a standard scale and universal definition
  - o AgSolar is starting to measure land use value for Agriculture VS. Solar for farmers – Can this resource be shared more widely?
  - o A land profitability map would be beneficial
  - o Need to consider water quality and other external factors in valuation
- There is some economic analysis of digesters which shows that wastewater infrastructure creates a bottleneck in productivity
- An “all of the above” approach (similar to statements related to the Clean Power Plan) can also be applied to land use types – We should consider both urban and rural applications and think creatively about use of technologies
  - o Community Solar provides a unique opportunity
  - o Meter technology investments are important in leading to load management and demand shaving
  - o Utilities can play a role in promoting and regulating renewable technologies
- There is push-back from farmers on leasing land for renewables. Sometimes selling the land is better economically for the farmers than leasing it for renewable installations.
  - o What happens when the renewable installations need to be repaired or replaced over the long-term? This creates uncertainty for farmers leasing land.
  - o There is a livelihood issue for farmers. Some are willing to sell, others are not.
  - o Important to also consider solar technologies that can be building-mounted, even in rural communities, so as to preserve farmland
  - o One-off VS. Large-scale projects can vary drastically. Economies of scale should be taken into account.

## **Energy Trade Imbalance**

- Efficiency is extremely important. Need to promote process efficiency at every level
  - o For example: Automation can help to reduce energy use in HVAC systems, etc.
  - o Efficiency should be encouraged before generation
  - o We know how to invest in efficiency as the payback is clear. This can help to prevent imbalance

- Efficiency should also be considered when it comes to processes such as fertilizer usage
- A distributed assessment of trade imbalance by county or utility territory would be valuable
  - o More collaboration is needed at the local government level because local municipalities care about local economies
  - o Need to make sure jobs and benefits spread across communities

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

- Would it be possible to put together a chart similar to Lawrence Livermore's energy flow chart? <https://flowcharts.llnl.gov/>
- Mentioned losing industry because of lack of NG. Iowa sends the majority of NG flowing into Iowa through to Illinois. We should have plenty of NG.
- Distributed energy: Is anyone looking at micro and small-hydro possibilities? Should be a few MW in each county.
- STEM --> I prefer STEAM education, include arts & agriculture alongside technology projects.
- Trade Imbalance: petroleum could be reduced or eliminated by synthetic fuel. Not ready now but in 12 to 15 years it should be feasible & cheap.