

ADVANCING THE NEW ENERGY ECONOMY IN THE MIDWEST: SUSTAINED COORDINATION AND IMPLEMENTATION MEETING

June 7, 2011

RIFFE CENTER, 31st Floor | 77 South High Street | Columbus, OH

Sponsored by:

*Association of State Energy Research & Technology Transfer Institutions
Clean Economy Network
Corporation for a Skilled Workforce
Great Plains Institute
Midwestern Governors Association
National Association of State Energy Officials*

FULL MEETING NOTES

Welcome

Stephen Konya, Chief of Staff, Illinois Department of Commerce and Economic Opportunity

Governor Quinn's Chair's Agenda is titled "Advancing the Midwest's New Energy Economy Through Investment, Innovation and International Trade." In 2011, the MGA is building on its Energy, Jobs and Investment Platforms by focusing on issues that, by their nature, cross state boundaries and where progress can help all Midwestern states grow their exports of new energy and bioeconomy products to the rest of world. The Governor is focusing on three areas:

- Increasing Financial and Human Capital;
- Advancing Innovative Technologies; and
- Increasing Midwestern Exports.

State Panel

Bill Grant, Deputy Commissioner, Minnesota Department of Commerce, Division of Energy Resources

- Energy system does not respect political boundaries. Transmission and other infrastructure cross state lines.
- Midwest states have large land masses, geography, and differences in economic base have made collaboration more difficult than in some other regions, such as the N.E. states.
- Separated by energy "haves" and "have-nots": meaning some states have fossil energy options in the ground and others don't, which naturally colors each state's perspective.

Potential Areas for Collaboration:

Energy efficiency (EE)

- *EE manufacturing supply chain.* The Midwest is home to much of the EE manufacturing supply chain, including window and insulation manufacturers, energy service companies, and many others.

- *Improving energy efficiency of government buildings.* Minnesota hopes to reduce energy use in state buildings by 20% within 3 – 4 years. The region is working with the Energy Services Coalition to improve energy efficiency of public buildings across the region. There is an opportunity to use ESCOs more effectively.

Wind energy development

- *Siting wind projects.* Meeting the renewable energy goals across the region will require siting large and small wind projects in both rural and more populated areas. Look to the East where they have dealt with wind siting issues in populated areas to understand exemplary practices and working with industry to move forward while respecting local governments/property owners. In Minnesota, we've started with wind in the low population parts of the state, and now we are needing guidance to figure out how to do this in more densely populated parts of the state; we can't meet our own goals otherwise.

Distributed generation

- *Metering policies and interconnection standards.* Some states have recent work on these issues. Some, like MN have done little for the past 40 years. There are areas for catch up and states can learn from one another.
- *Workshops to share information.* MN is planning a series of workshops featuring people from other states to discuss how they have worked through distributed generation issues, including concerns of rural electric cooperatives.

Investment

- *Increasing investment in the Midwest.* Hoping to work with investment community to figure out why so few deals get done in MN (and instead go to the coasts). Hoping to learn from the investment process that MGA sponsored.
- *Overcoming the "valley of death."* Consider pulling together entrepreneurs with investors.

Future of fossil generation (especially coal fleet)

- *Future of coal generation in the face of coming EPA regulation:* States need to be working together to figure out how to avoid rate shocks, reliability issues, or a combination of both.
- *Work up front with EPA.* MN prepared to lead here in getting ahead of pending regulations by working with EPA to identify points of flexibility (e.g., I.D. coal plants that might get a later retirement date in exchange for a date certain for retirement and repowering.)
- *Carbon Capture and Storage.* MGA work has been valuable. There is little potential in MN but there are opportunities regionally.

Good Examples of Successful Collaboration

- *Organization of MISO States (OMS)* is a critical collaboration if we are to site needed regional transmission.
- *Midwest Renewable Energy Tracking System (MRETS),* which allows utilities to track renewable energy in real time to ensure compliance with obligations. May provide a trading platform for renewable energy credits inter and intra-regionally.
- *Low-carbon Fuel Standard development* (didn't agree on the policy mechanism, but we learned a LOT about transportation fuels and how we can move forward with a suite of lower-carbon options such as advanced biofuels and vehicle electrification nonetheless).

Teresa Kittridge, *President, Minnesota Renewable Energy Marketplace*

- Served in key leadership role for regional \$5 million WIRED Grant.
- Trying to get workforce and economic development to work more closely together.
- Hired by state to serve as state's project manager for state's DOL State Energy Sector Partnership Grant.
- During WIRED, created strong partnership with private-sector which led to development of the Minnesota Renewable Energy Marketplace (a nonprofit focusing on bringing renewable energy to scale in the region).
- Gave 23 grants out from that WIRED \$5 million: Only rule was that the application had to come from within a 36 county region (which crossed state lines).
- With SESP grant, we've done rounds of funding. Our employer driven steering committee is so focused on outcomes and job placement that we've only awarded \$1.1M out of a \$3M round.
- With SESP grant, participating in a national learning network supported by NGA and its partners for the grants to understand what works with placement. Have learned how to strengthen opportunities and build jobs in the energy market. Working with the Center for Energy Workforce Development: Career pathways for economically disadvantaged youth.
- Starting to work with the Blue Green Alliance on the Greening of Manufacturing Greening (another DOL grant in our region), including focusing on industrial energy efficiency.
- Continuing to leverage federal investments that are regionally targeted. Have seen success with private sector partnerships and look forward to connecting better with neighboring states across regions.

Stephan Konya, *Chief of Staff, Illinois Department of Commerce and Economic Opportunity*

- Federal policy grants are increasingly interested in leveraging resources. There is a big opportunity for regional collaboration to develop the right networks of relationships needed to compete effectively for federal funding opportunities, such as:
 - Sustainable Communities initiatives
 - Innovation Accelerator i6 Challenge on regional collaborative networks
- OECD Tri-State Regional Study: Chicago, SE WI, NW IN, the OECD is measuring state competitiveness. This is the first time they are looking at this MW hub and how the states work together and compete with other regions with other characteristics in the world. Driven by Chambers of Commerce in IL and IN and WI. They secured funds to get this study into the area.
- Mapping our labor markets and industry sector hubs (e.g., an animal research corridor); Mapping biotech cluster through a Battelle study, helped secure the return of the international BIO (biotech) convention to the Midwest; I count this as a success for us.
- Could map—and perhaps harmonize—the Angel Tax Credit availability.
- Benchmarking is also useful (e.g., benchmarking a hub in the Midwest and looking at how it competes against other regions globally).
- Border relationships are a good start, but we could expand a hub of policy across multiple states. Seek recommendations around something that is working well. We reached out to Missouri around a federal grant opportunity (SBA) to understand investment portfolios. Had not done this with economic development in the past.
- Collaboration does not have to be government driven. Nonprofits and for profits can lead as well.
- There is international interest in regionalism as well. China wants to have regional partnerships (between a region in China and the Midwest). The Midwest also has easy

access to the coasts and to Europe/Asia. We must make it easy for global partners to find us. Mapping can be an important tool in laying out the respective strengths and features of each state in the region.

Karen Massey, Deputy Director, Missouri State Environmental Improvement and Energy Resources Authority

- The Missouri State Environmental Improvement and Energy Resources Authority focuses on both environment and economic development. They have bonding authority for environmental products: environmental loan funds, brownfield development and other programs. If it involves energy they can get involved. When ARRA came, Massey had the assignment to head the energy stimulus funding for the DNR. She worked directly for the director of the agency to move along stimulus funding and programs.
- Learned a lot about workforce development via MGA's Jobs Platform work. Established relationships with other state energy and economic development and agencies.
- It was helpful to have built a network of relationships via MGA so that she had a group of peers to bounce ideas off of.
- Inter-agency collaboration is as important as inter-state collaboration.
 - Formed partnership with Dept. of Agriculture and State Energy Office (cost-share program on EE).
 - State Energy Sector Partnership Grant.
- Features of good collaboration:
 - Each partner needs to play the role it is best suited to play (can't be forced).
 - Identify and attack common problems (e.g., collaboration across state lines on water and sewer).
 - Focus on things that are "mission critical." All sides need to feel like this is important, not just added work.
 - Early inclusion from the start of the process.
 - Good models to look to include regional planning commissions and regional chambers of commerce.
- A major barrier to collaboration in the energy space is the fact that the energy, workforce and investment worlds speak different languages and think about issues differently and know different networks of people. So figuring out how to align interests and goals is a challenge. The opportunities are huge, but need to be focused on how we attack them.

Comments from Other Participants

- Kansas is working with investor-owned utilities and municipal utilities to increase energy efficiency in buildings and wastewater plants by providing building operator training for incumbent workers (working w/MEEA). This may be an area for collaboration on best practices.
- Energy efficiency financing is an area of potential collaboration.
- Leveraging a combination of Community Development Block Grant (CDBG) and USDA funding at the state level to help communities finance their projects.
- IL legislation with the utilities – requiring an additional utility charge for investing in smart grid upgrades.
- Commercial EE upgrades – able to finance these projects.
- Continue to invest in EE innovation – technology and smart grid.
- Missouri residential EE – starting discussion with utilities about how they are using/targeting their funds.
- Technology innovation is another important area for IL:
 - Illinois has a new smart grid training center.

- Looking for more and more innovations to drive down cost of innovation technologies, smaller scale renewable energy deployment.
- Acumen Fund (<http://www.acumenfund.org/>) – high risk, low reward on the profit – higher social benefits – technology and business development models (US exporting technology in these developing countries). May have application in rural areas of the US.
- Looking for ways to sustain effective collaboration and learning that ARRA and SESP grants brought. Missouri interested in doing a review of all ARRA projects; for example looked at uptake of residential EE funds and was surprised to find oversubscription; talking with utilities now to better target their programs. MN- the SESP grant was a fantastic way to deepen energy/workforce relationship. How do we keep that depth with ARRA money ending (which was a sort of forced lever to create such collaboration)?

National Partner Panel

Lauren Bigelow, Clean Economy Network and Growth Capital Network

- Currently have 17 chapters nationwide; often work at national level, looking to encourage innovation at regional level.
- Minnesota has a successful chapter.
- \$1.4 billion early stage capital—chasm funding to get ideas out of heads into marketplace. Trying to develop a pipeline for financing.
- Encouraging innovation, commercialization, and application of technologies.
- Working on R&D – integrated at the state level – market entry and penetration (cash in lieu of tax credits).
- Ex: technology development tied to aerospace industry and R&D happening at UM and MSU – advanced manufacturing related R&D.
- CEN is trying to bring entrepreneurs to the policy debate in a coherent way, and in a bipartisan way. Focused on policies that make the most sense for clean tech across all levels and stages of development (early, mid-stage, etc.).
- Need long-term policy (market signals) and investment over a 5 – 10 year period.
- Interested in more collaboration on securing R&D funding and R&D integrated into state work.
- Doing a series of events in Detroit on CAFE standards.
- They funded fantastic tech work out of MI aerospace agency, U of M, MSU. Flexible air flow for wind turbine blades. Fire retardancy with tech that could make wind turbine blades longer and stronger. 50-75 jobs per company. Seems small, but this is very important.

John Cuttica, Executive Committee, Association of State Energy Research & Technology Transfer Institutions (ASSERTI)

- ASSERTI is a membership organization of national labs, university centers, state energy agencies and private research institutions. Goal is the deployment of advanced energy technologies.
- \$1 billion of energy R&D done by ASSERTI members on an annual basis
 - EE—commercial and industrial
 - CHP and district energy
- Provides a forum for R&D organizations to understand what one another is doing.

- Link to the national dialogue (and a way to keep up with it); much more effort to do on one's own. Believe that federal government looks to regions to understand how things play out.
- Forges close working relationships with State Energy Offices.
- **POSSIBLE MGA TASK:** Host a conversation among states on how important things that got going with ARRA funds might continue now that ARRA is going away.

Kate Marks, Managing Director, National Association of State Energy Officials

- NASEO represents all 56 states and territories; receives State Energy Program funding appropriation from the federal government. Our key goal as a national organization is to make sure that appropriation meets states' needs. We also look for models of commercialization and try to bring that to the Midwest.
 - Bring together State Energy Offices, National Labs, Investors to figure how to better collaborate
 - Develop coherent approach to state energy planning
 - Better integration of air directors, state energy offices and regulatory officials: air regulations pending from EPA.
- Shale gas working group is being formed to tackle common elements (first discussion at Annual Meeting in Sept.).
- Interested in working with MGA more in the future, especially in helping states to respond more effectively to federal solicitations. Would like to coordinate renewable energy financing approaches among states.
- EE should continue to be an MGA priority because utilities will spend \$1 billion. And the DOE is interested in a potential "Evaluation, Measurement and Verification" (EM&V) project that would help nail down how to quantify EE so that it can be treated like an electricity generation resources.
- Working with NYSERDA on a pilot project around EV infrastructure.
- Expecting a Presidential announcement on new Smart Grid investments.

Private Sector Panel

Jason Hall, Executive Director, Missouri Technology Corporation

The Missouri Technology Corporation is dedicated to supporting entrepreneurs. They focus on early innovation and entrepreneurship, which are tools for job creation.

- Focusing on the New Energy Economy is just the right focus for MGA because there are such large opportunities. Energy is a good investment for the Midwest. It takes natural resource strengths and makes something new and different. It also builds on the Midwestern manufacturing strengths. Stronger regional collaboration will increase opportunities for all the states.
- Midwest has struggled to define its "innovation hubs." Other areas have done this, Silicon Valley = high tech. China has, for the first time, issued more patents than the U.S. Our competition is global, not between Midwestern states.
- Venture capitalists aren't investing here because we haven't reduced the "friction" of doing those deals. The ROI may be good, but the hassle factor is high. Working together will help to reduce the friction of doing deals in the Midwest, which can lead to jobs.
- The Midwest was once home to many entrepreneurs and innovators. We have many 100 year old companies that started here.

- Ohio's Third Frontier Commission is a great example. They have created over 40,000 jobs with their investments.
- KS Bioscience Authority is investing in energy infrastructure and jobs.
- MO Science and Innovation Reinvestment Act will have a concerted stream of funds for investment going forward.
- MO state small business credit initiative -- using federal funds as state-backed equity funding for new energy start-ups.
- Must stop thinking about neighboring states as being only competitors. Our international competitors think about this in a big picture way.
- The MO-KS "Animal Corridor" was something they discovered they had (accounts for 1/3 of animal vaccines and related products). Required MO to accept that working with KS would mean that they would not get every deal, but the result has been an increase in deal-flow that more than makes up for that fact. This is an innovation cluster that we can market internationally.
- Need to document our assets.
- We need to acknowledge that working together means no single state is going to win every deal, but that it will lead to greater benefits for all.

Curt Magleby, Director, U.S. State and Local Government Relations, Ford Motor Company

- Extensive experience overseas. Spent time in a maquiladora, then in Malaysia. Created an electronics deal. Then to Singapore—to bring U.S. suppliers out to support operations then source back to the U.S.
- In Asia, the whole game is about collaboration. Governments project power on behalf of their countries. They promote policies that promote their companies. They are now collaborating even in auto manufacturing.
- In Washington, DC, our policy focus is on "mutually assured destruction."
- Midwest should have Bob the Builder's motto: "Can We Build It and Grow It in the Midwest? Yes! We Can."
- Electrification of transportation is coming; and it will hollow-out the conventional auto supply chain in Midwest. It will be driven by new pending fuel efficiency standards. Hybrids will have electrification. They need lithium ion batteries.
- Nascent network related to batteries in the Midwest – need manufacturing depth within the supply chain and need to start growing this now. Assembly operations are hanging on by their fingernails.
- This is a huge opportunity for regional collaboration. There will be \$10B in battery sales in 10 years coming in the U.S.
- If we don't have a U.S.-based battery supply in the next 10 years, it will be gone. The Asian consumer electronics industry (LG-Chem or Panasonic) is the competition. Auto manufacturers must source batteries and if they don't get value here in the Midwest, they will go elsewhere. This will happen fast. You can't think about it too long.
- MGA IDEA: What about a virtual economic zone (10 years tax free) in the Midwest. States could opt in. We must be bold. No one has anything to lose here.
- To win at this game is going to require regional collaboration.
- Could have corollary pools for training; pool for access to capital.
- MGA IDEA: There is no battery consortium that I see that can bring top level developers together with each other and with educational institutions and state officials. The existing companies must work together or they will die individually. Look, we have to work with our competitors for the health of the industry. We need to do that at the supplier level too.

- Midwestern states are more dependent on oil than ever. There is no reason for this. We produce more ethanol than ever. We have a vision (50% alt fuel by 2025) but without a compelling customer proposition.
- MGA IDEA: Need to adopt the oil industry's model of becoming vertically integrated. Where is vertically integrated biofuel? Need to bring producers together to establish a pricing model. Need to promote corridors based on value. We are hung up on the policy of % of blended fuel- 10%, 15%. This is incredibly short sighted. Need to understand end game. If it's 50% of all fuel, that's not a blend policy, that's a full out alternate fuel policy.
- Can't go to anybody in marketing and ask them to market Flex-fuel Vehicles because there isn't ONE dealership in our network that has customers clamoring for them.
- The only way to be competitive in this economy is by getting every stakeholder involved and by collaboration.

Discussion

- Clean tech new business competitions can help entrepreneurs to develop their ideas, hone their skills and get seen by investors. MI has funded an innovation competition with a \$500k first prize.
- CEN has developed certified GreenTech curriculum that can help students at smaller schools understand what it takes to have an "investor-ready" business idea.
- State of Indiana also has a fund that matches private equity and takes positions in the companies. They hear from business people that they are tired of having government and policy people telling them how to create jobs. Indiana is a leader in new energy economy manufacturing. A lithium ion firm with 2-3 facilities in the state creates 2000 jobs.
- Underground coal gasification as a "technology to watch." Would be helpful if the states could get ahead of that curve by figuring out the regulatory implications (Pembina Institute would be a good resource).
- Still don't have a fully UL-certified refueling system for E-85.
- Need more clarity on what the transportation fuel "end-game" looks like.
- Monmouth College: Building a building that will house both business and science students. This might be a model that other states/colleges would want to emulate. (Robin Johnson is teaching a course starting in Jan. 2011: His students are a source of free labor so we should be thinking about what jobs they might do on behalf of the MGA work.)
- Clean Economy Network: UC Davis Curriculum for R&D Professionals that will help them understand how to commercialize new technologies.
- MGA will establish a new LinkedIn group for anyone interested in Building the New Energy Economy in the Midwest.

New Energy Economy Break Out Sessions

Key questions for each breakout session:

- What state-level work could be supported or enhanced through existing MGA initiatives?
- What state concerns could be supported with additional regional Midwestern Governors Association initiatives?

Energy Efficiency Break Out Session

Introductory power point highlighted MGA energy efficiency work to date and 2011 initiatives.

What state level work could be supported or enhanced through existing MGA Initiatives?

Industrial EE Work

- Potential EE study for WI – biggest opportunity is in IEE, looking at putting more \$\$ in IEE.
- Utility conservation program opt out – MEEA is comparing how state policies/programs are addressing this.
- Industrial EE as a strategy for keeping companies competitive and retaining jobs.
- Raise awareness of the value of industrial energy efficiency.
- Getting manufacturing companies involved across the Midwest.
- Industry networking (e.g., facility managers) related to the costs/benefits of doing IEE work (engagement through the business associations).
- DOE roadmapping on the industrial side – thinking about different sectors to engage on a pilot basis (connecting a target group of industrial companies).
- Develop a blueprint for recommended actions (based on SEE Action Network):
 - Drive demand for IEE and CHP
 - Build the workforce
 - Promote efficient operations and investment
 - Move the market

Industrial EE Training

- Connecting training more directly to EE savings at the company and state level, as well as state and utility level programs (training for existing workforce to do the retrofitting work).
- WI – funding a worker to be located within the manufacturing facility (as an energy manager), moving on after a period of time to another (funding through statewide energy efficiency fund).
- A lot of training is focused on the residential market; gap in the funding for IEE related work and a need in terms of agricultural EE work.

EE Financing: Current work is to 1) increase private investment in commercial and industrial EE, 2) develop recommendations regarding potential implementation of the DOE Efficiency Financing Aggregation Model

- NASEO – state energy loans funds database.
- How are states aligning/leveraging other funding to increase EE financing?
- MI – trying to fund implementation of EE programs as well as the development of EE technologies.
- Environmental finance network in KS.

- Compare state policies on ESCOs – ESC has done some of this (MN – performance contracting as a strategy for supporting municipalities in doing EE work).
- Are states seeing emergence of service contracts for air compression management (with a guaranteed savings)?

What state concerns could be supported with additional regional MGA initiatives:

- Could use more real time data on demand side EE activity for policy makers, companies, etc. to get a better sense of what's being done in the region including information on programs, costs, savings, and cost effectiveness data.
- EM&V is inconsistent across utilities and across states. Coordination would be beneficial. (MEEA, utilities, commissions all have a role resolving this.)
- Potentially create a Midwestern tracking mechanism for EE similar to the Midwest Renewable Energy Tracking System. This could in time allow trading of EE credits.
- Quantify the impact of EE in terms of job retention and creation – business self-reporting and other data collection efforts.
- How are states working with municipally owned or public utilities?
- How to integrate EE and Integrated Resource Planning (integration of supply and demand side)?

Transmission/Smart Grid Break Out Session

An introductory power point highlighted MGA's energy, jobs and investment work to date; then focused on its on-going coordinating efforts on transmission and smart grid.

After the overview by staff, the group identified two major areas where MGA involvement could be useful:

- 1) **MGA could help “map” who is doing what on both Smart Grid and alternative vehicle infrastructure deployment** (e.g., biofuels, EVs, natural gas, hydrogen), so that each state can know, for example, which vendors are good, what products have proven effective, which states have pieces of the supply chain etc. For example, many states have E85 fueling stations, and others are beginning to install clusters and corridors of EV plug-in infrastructure, yet these efforts are not necessarily coordinated across state lines. MGA could help facilitate a coherent, coordinated build-out of such infrastructure by mapping the existing corridors and clusters of stations, and where each state is planning to encourage new infrastructure. MGA could also survey how stations are faring and how the operators/states are choosing which technology to use. IN and IL are among the states dealing with these issues right now. There could be similar value in sharing across states their experience in deploying a smarter grid (for example, many states have gotten DOE grants to do pilot projects, which could usefully learn from one another). Whether for vehicle infrastructure or smart grid, this sort of mapping exercise would give the Midwest as a whole a coherent picture of what its strengths are and where its supply chains lie in these emerging industries and technologies. States could then use this information with prospective investors, foreign and domestic.

Possible Next Steps:

- MGA to host peer-to-peer networks for smart grid and vehicle refueling infrastructure respectively. These networks could help coordinate deployment activities and investment among the states and provide a forum through which states could vet different vendors.
- MGA could secure funding to map the different corridors and clusters of vehicle infrastructure and smart grid deployment (perhaps resulting in an interactive GIS Map).

- 2) **MGA could help coordinate delegation visits from other countries with states in the Midwest.** For example, if a foreign delegation from China were going to visit several Midwestern states, MGA could help both the delegation and the host states see each visit in a larger regional context. Having a sense of the whole itinerary would allow each state to articulate its strengths against the backdrop of the strengths of the other states to be visited, and the Midwest broadly. This would help each state promote itself and the region as a whole simultaneously.

Advanced Transportation Fuels Break Out Session

Introductory power point highlighted MGA energy efficiency work to date and 2011 initiatives. Small group responses to discussion questions:

Electrification of Transportation

- MGA work to date has not seriously considered the integration of the transport and power sectors. How to achieve integration of transmission load, without unnecessarily increasing generation capacity? Where should the strategic emphasis be? What are the key options and bottlenecks for moving forward?
 - There is a whole package of things that fit together here and considerable education of decision-makers is needed.
- MGA could convene a discussion to develop:
 - Uniform codes, standards, permitting for all major aspects of electrification of transportation.
 - Areas of focus on supply and demand side: charging stations (level II and level III); build-out of infrastructure for public charging stations rates and rate-making; urban construction and design codes and standards; corridor development to support electric vehicle usage; incentives for electric vehicle purchases, fleet policies, especially state fleets; consumer education.
 - Either integrated or complementary to MGA Smart Grid work.
 - Involve utilities, utility commissions and other regulatory agencies, vehicle manufacturers, renewable energy/environmental advocates, technology providers/hardware manufacturers.
 - MI PSC has done a lot already; ICC has work underway, also IN.
- Need to provide governors with background on drivers beyond economic development for the importance and value proposition for electrification of transportation.

Biofuels and EOR Policies for Advanced Transportation Fuels Task Force to Address:

- In addition to what's already on the ATF agenda, incorporate a focus on :
 - UL certification of necessary infrastructure for higher level ethanol blends.
 - Codes and standards for infrastructure to support higher-level ethanol blends (from tank to nozzle).
 - EPA registration of mid-level blends (including health effects testing).
- Address the need for mandates or incentives for flexible fuel vehicles (sufficient quantity for market development).
- EOR should be added to Advanced Transportation Fuels advisory group.

Establishing Advanced Battery Manufacturing Consortium

- Midwest has the first tier of companies, but the second and third tiers (the depth) are overseas.
- Midwest needs to consider creating a virtual economic empowerment zone for advanced battery manufacturing on a regional scale.

- Midwestern states need to develop a common package that they offer to interested companies internationally over ten years (incentives, best practices, workforce programs, etc.).
 - Access to low-cost loans (e.g. TIF process) and loan guarantees.
 - Tax free zone over ten years.
 - Workforce development and training package.
 - Relocation assistance.
- States need not offer exactly the same things in a package, but the regional branding could be joint and consistent.
- Status quo in region is confusing and competitive, rather than collaborative.
- MGA/governors could help convene the effort, but they need to rely on existing battery manufacturers (OEMs—stationary and mobile source manufacturers) in the Midwest to be involved and engaged in a consortium and help develop the appropriate package that can successfully attract their international suppliers.
 - Start with commitment to have their top economic development representatives to meet four times/year with major manufacturers in the first four years.
 - Focus on development manufacturing depth.
- Missouri has created the first program that will provide engineering degrees with a focus on advanced batteries (partners are U of MO, Eagle Picher Technologies).
- Governors need to lay the foundation for a more stable, longer-term approach to energy policy, technology, investment and workforce development that extends beyond any one governor's term in office. Industry in particular needs that stability.