

Recommendations Related to Jobs & Workforce Development Emerging from the MGA Energy Advisory Groups

Energy Efficiency

Renewable Electricity, Advanced Coal with Carbon Capture and Storage

Bioeconomy and Transportation

Recommendations Related to Jobs & Workforce Development Emerging from the MGA Energy Efficiency Advisory Group (EEAG)

May 21, 2009

Excerpts explicitly related to jobs and workforce development from the [EEAG Policy Options Document](#) [with corresponding page number]

1. **The biggest energy efficiency job creation engine** within the Energy Security and Climate Stewardship Platform and the EEAG Policy Option Document is the recommendation that:

“States should commit to meet an energy efficiency standard of 2% for electric utilities and 1.5% for natural gas utilities. States should apply EE standards consistently to investor-owned, cooperative, and municipal utilities, while recognizing regulatory and other differences in customers served and service territories, making appropriate adjustments to individual goals. Such a goal will place the MGA states among a select group of states that have achieved the highest levels of energy efficiency.” (EEAG Policy Options Document, p. 12)

- The cost of saved energy is estimated to be roughly \$30/MWh, translating to annual utility spending on energy efficiency in on the order of hundreds of millions of dollars in each state (e.g. in MN, roughly \$200M annually.) While some of the spending is rebates, much is generating work for energy auditors, energy case managers, electricians, HVAC contractors, insulation and window installers, other building contractors, mechanical engineers, architects, trainers, and others. Program administration requires program managers, analysts, marketing people, evaluators, and others.

2. **New or improved building energy codes create additional job and training needs:**

“It is recommended that all jurisdictions adopt state- or province-wide building energy codes for commercial and residential buildings. It is recognized that some jurisdictions do not have statewide building codes. In those cases, new legislation is needed to ensure that all new construction, residential and commercial, meets or exceeds the current national model energy code. Jurisdictions should allow municipalities to adopt more stringent building energy codes and standards. Jurisdictions should be encouraged to become active in the building energy code development process. States and provinces should at least update building codes to reflect the latest in proven conservation and building technology every three years, based on the IECC and ASHRAE code update process, for Midwest states, and every five years, based on the Model National Energy Code of Canada.” (EEAG Policy Options Document, p. 25)

Specific recommendations related to training on codes:

“Invest in training of architects, buildings and local code officials in how to effectively and efficiently comply with new building energy codes in order to reap the full benefits of the codes.” (Energy Security and Climate Stewardship Platform, p. 8)

Enhanced Enforcement and Mandatory Training related to Building Energy Code Implementation

- Currently, much building energy efficiency code enforcement is “Passive” enforcement – for example, through the use of “RES-check” and “COM-check” software programs. There is a

need to go beyond this situation to much more use of active enforcement. Active enforcement includes looking at building plans, inspecting buildings during construction—inspections have to be done at the stages of construction where the energy efficiency measures can be checked easily (for example, by checking insulation before walls are completed). As codes are increased, funding of additional/more stringent inspections should be allocated (potentially funded through fees and permits) to ensure a stronger enforcement to maximize efficiency savings.

- Training should be provided for code officials in the implementation of existing and new building energy codes, and funding should be provided for code-enforcement jurisdictions to train and hire additional FTE (full-time equivalent personnel) for inspection and plan review.
- Training should be mandatory for all builders if states enter into a more stringent building code environment with enforcement and training should be provided for architects, and engineers.
- Training programs should be promoted for building operators to improve education and skills to maximize energy efficiency in current and new building stock.
- Training should be available to homeowners to manage mechanical equipment, indoor air quality, and indoor moisture issues. (an example is Builder Association of Minnesota homesmart.org web site.)
- Jurisdictions should ensure that where any third-party energy efficiency program verification is required that the third-party should be free from any conflict of interest (e.g., mechanical and/or insulation contractors should not be allowed to verify compliance on any project for which they performed the design or installation).” (EEAG Policy Options Document, p. 26 and 27)
- “At least 90% of building projects in Midwest states/provinces will be reviewed and inspected on-site, and inspection programs will be instituted to accomplish this goal. Jurisdictions will provide funding for training and education of code officials.” (EEAG Policy Options Document, p. 29)
- “At least 80% of building code inspectors will have completed at least 16 hours of training in their adopted building code within 2 years.” (EEAG Policy Options Document, p.29)

Additional language on training of code inspectors:

“3. Training for Building Energy Code Implementation

Develop regional training or regional training modules for building energy code inspectors for jurisdictions with the same or similar building energy codes to share resources, minimize costs and maximize results.

- Training should be provided for building code inspection/enforcement officials, as well as for builders/architects/engineers
- Training for building inspectors and others could be provided via the International Code Council
- Involve Community Colleges and Universities in setting up and providing training programs.
- Encourage public and private universities to set a minimum requirement for exposure to green building concepts for architecture students and engineers.
- Involve private code training firms in providing training programs
- Use utility energy efficiency funds for training
- Emphasize that energy is now part of the job for building inspectors, that is, as a central part of their responsibility in addition to safety and other concerns.
- Specify a minimum percentage of building inspectors in each jurisdiction who are to have received at least 16 hours of training in enforcement of the energy provisions of the adopted version of IECC” (EEAG Policy Options Document, p. 30)

3. Public Sector Lead by Example: Public sector building energy efficiency directly creates work for energy performance contracting companies, building engineers, architects, and contractors. It also can help to build capacity for additional private sector work. Public sector recommendations include:

“Make new buildings and major retrofits of existing buildings meet stringent energy efficiency standards

- All new government buildings, including publicly-funded housing, must meet stringent energy efficiency standards that exceed the provisions of the energy codes in force when the buildings are constructed.
- These performance goals should encompass both water efficiency and energy efficiency measures.

Make existing buildings highly energy efficient

- Set a definite goal of having 20% of all government buildings, including publicly-funded housing, recommissioned (evaluated to assure that buildings perform and are operated as they were originally designed to) and improved to meet or exceed current energy codes by 2015, with an additional 3% of buildings recommissioned and improved to meet or exceed codes in each subsequent year. Regularly certify the energy performance of all buildings in subsequent years.” (EEAG Policy Options Document, p. 35)

**Recommendations Related to Jobs & Workforce Development Emerging from the
MGA Renewable Electricity & Advanced Coal with Carbon Capture and Storage (REACCS)
Advisory Group**

May 21, 2009

1. Excerpts explicitly related to jobs and workforce development [with corresponding page number] from the MGA Energy Security and Climate Stewardship Platform of 2007.

1.1 Renewable Electricity

- Expand the region's domestic production of wind turbines, towers and blades, solar technologies, and other renewable energy technologies to provide high-paying manufacturing and operational support jobs. [p.14]
- **Develop economic incentives and workforce development policies to attract renewable energy component manufacturers and service providers to the region.** Take steps to integrate state economic development and workforce development programs and incentives into renewable energy development policies and strategies with the goal of attracting manufacturers and service providers, both for regional economic benefit and to stem the rising capital and labor costs associated with all energy projects. The Midwest already benefits, for example, from the presence of major wind turbine blade and tower manufacturers, turbine assembly operations, engineering and wind farm construction firms, and operations and maintenance providers whose commercial success extends well beyond the region. [p. 17]

1.2 Advanced Coal

- **Update workforce training, with a focus on the gasification and carbon storage industries.** A major barrier to development of IGCC technologies is the lack of trained personnel in the power industry familiar with the design, construction and operation of gasifiers and associated systems, which are operationally more closely associated with petroleum refining than traditional power generation. Similarly, the development of EOR operations is constrained by a lack of commercial experience in much of the oil and gas industry, especially among the smaller-scale companies that dominate production in the Midwest. The utility and oil and gas industries will need expanded workforce training in order to adopt IGCC and CCS on the scale required. [p. 25]

2. Policy Options Document

Excerpts explicitly related to jobs and workforce development that were not included in the Platform [with corresponding Policy Option number – RE/AC-CCS]

2.1 Renewable Electricity

- **RE – 1.** Investment in new technologies resulting from renewable energy investment may spur economic development and corresponding job growth, and to the extent the renewable energy is derived from Midwest-based capital projects, generate additional local tax revenues.
- **Referenced study in RE-6:** Daniel Kammen et al, Putting Renewables to Work: How Many Jobs Can the Clean Energy Industry Generate (2006). <http://rael.berkeley.edu/files/2004/Kammen-Renewable-Jobs-2004.pdf>
- **RE – 8.** Develop and implement economic incentives and workforce development policies to attract renewable energy equipment manufacturers and service providers to the region. Jobs are being lost due to the declining manufacturing industry in the Midwest and jurisdictions in the MGA are currently competing against each other for job creation within the renewable energy industry. By working regionally, the associated risks can be spread out over a larger area that will showcase the positive impact of renewables on the job market.

Policy Design: Inter-state competition should be conducted in a manner that does not interfere with regional success. The Midwestern Region must seek recognition as one of the world's premier locations for advanced energy technology research, development and manufacturing.

Goals: The overall goal of this option is to expand the region's domestic production of wind turbines, towers and blades, solar technologies, and other renewable energy technologies to provide high-paying manufacturing and operational support jobs.

Timing: as quickly as possible to attract new jobs.

Parties Involved: This initiative will be part of MGA's Green Jobs Initiative which will be started in the fall of 2009.

Implementation Mechanisms:

- PTC renewal should be promoted as a reason to protect manufacturing jobs in the renewable energy industry.
- Implementing a marketing strategy would assist in the creation of a regional economic plan. The Midwest should be marketed as a hub of renewable energy within the United States and North America, to raise global awareness by creating a brand to promote. We all stand to benefit, individually and as a region. For example, the MGA could send governors to an international wind conference to promote the region.

- The MGA should perform a market analysis that can translate into a workforce analysis of the education/job training needed for potential employees, along with infrastructure development and an inventory of existing capacity.
- A regional assessment is needed regarding current education and training activities for renewable energy and other “green” jobs. Each state’s assets should be assessed to identify opportunities for collaboration.
 - Catalog current university research efforts and educational programs related to renewable energy.
 - Catalog training programs available related to work force development programs.
- Investigate opportunities for business development based on manufacture of renewable energy component parts to include an inventory of potentially important component parts.
- Highlight ongoing economic development in states.
- Consider re-tooling existing manufacturers, not just creating new companies.

Related policies/programs in place can be found on p. 27.

2.2 Advanced Coal with Carbon Capture and Storage

- **Policy options AC-CCS 1 & AC-CCS 2** do not have specific jobs related recommendations beyond the Platform language. Achievement of the commercialization and infrastructure development goals and milestones for transitioning the coal fleet to carbon capture and storage will require an expansion of the local and regional workforce and updated training.

Recommendations Related to Jobs & Workforce Development Emerging from the MGA Bioeconomy and Transportation Advisory Group (BTAG)

May 21, 2009

There were two specific policy options from the **MGA Energy Security and Climate Stewardship Platform of 2007** that related specifically to bioeconomic workforce and wealth creation.

1. **“Create local wealth.** Recognizing that a diversity of financing models will be necessary to develop a new generation of advanced technologies, ensure that the benefits of biofuels, advanced transportation fuels and biobased product developments accrue to public and private entities in the communities where they are produced. Assure that cooperatives, municipal authorities, other local and community-owned entities, and small investors are not excluded from government incentive programs. Give bonding authority or access to bonding funds to co-ops, municipal utilities, and other local and community-owned entities to fund biomass projects. Wherever possible, make the opportunity available for local ownership in projects receiving public investments.” [pg. 14]
2. **“Create collaborative workforce development programs between industry, state governments and educational institutions.** Curriculum should be developed at all levels of the educational system on biofuels, advanced transportation fuels and biobased products.” [pg. 13]

Policy Options Document

The Bioeconomy and Transportation working group also has several items from the [policy options document](#) that do not directly reference bioeconomic workforce or wealth creation, but do present tremendous opportunity for workforce development.

1. **BT 1.1 Market Pull and Distribution Infrastructure:** Because infrastructure needs to be developed for specific technologies, tying funding and other support for technologies to the production and sale of advanced fuels and vehicles seems like a logical way to combine market pull with infrastructure development. A fuel-neutral technology-driving policy is the LCFS, covered under BT 1.2. [pg. 4]
2. **BT 1.3 Increase Vehicle Fuel Efficiency:** This policy provides one of the three essential components of reducing GHG emissions related to the transportation sector, namely vehicle efficiency (this policy), GHG intensity of fuels (BT1.2), and vehicle miles traveled (BT 2.1,2.2 and 2.3).
 - a. Financial incentives for reducing GHG emissions from vehicles could include:
 - i. Provide incentives for retooling manufacturing facilities to advanced vehicle technology;
 - ii. Provide production tax credits to bring more value-added production of plug-in hybrid electric vehicles to our region; and
 - iii. Promote and fund EV demonstration projects among Midwestern auto manufacturers. [pg. 11 & 12]

3. **BT 2.2-Expand Travel Choices:** One way to reduce GHG emissions from transportation is to provide people with access to transportation modes with low carbon intensity. This policy addresses four such modes: intercity passenger rail, local transit, walking, and bicycling. Each of the recommendation implementation mechanism below would require new and updates to existing infrastructure.
 - a. The MGA states commit to fully implementing the MWRRI by 2015. This will require cooperative applications for federal funding. Once ARRA funding is available, states should evaluate unmet resources and determine an equitable formula for state resources to fill in the gap.
 - b. States should provide adequate governance and taxing authority for local transit systems to qualify for federal New Starts assistance. States should work with members of Congress and the U.S. Department of Transportation to ensure the reauthorization of the federal surface transportation act provides better support for transit, especially to cover operating costs. States should review their aid formulas to better fund transit. Constitutional bans on support for transit should be revisited.
 - c. States should provide complete streets both through their own DOTs and via state aid to localities, using Illinois' law as a guide. States should use Enhancements as a floor for bike-ped funding and consider moving other STP money into these projects, and encourage MPOs and local governments to do the same. [pg. 25]

4. **BT 2.4-Freight Transportation:** The freight sector is at or near capacity for every mode of transportation. Better truck technology, electrification of truck stops, vehicle efficiency improvements to trucks, mode switches, rail technology upgrades, elimination of chokepoints, and rail infrastructure improvements, and shift freight movements from truck to rail wherever possible, are all needed to address the capacity constraints in the freight transportation sector.
 - a. RAIL: The Chicago Region Environmental and Transportation Efficiency (CREATE) program has an unfunded need of \$2.56 billion and to date almost \$200 million has been obligated to implement a three-year plan (2007-2009) to advance 32 projects into final design or construction. MGA states and relevant agencies should support the CREATE program to secure the additional necessary funding from regional, state, and federal agencies to implement the remaining rail improvement projects by CREATE. These rail improvement projects will:
 - Increase rail capacity by addressing rail system bottlenecks and
 - Remove, through regional, statewide and national planning activities, bottlenecks (both physical and operational) for the efficient movement of freight by all modes of transportation. [pg. 36]

5. **BT 4.2 Regional infrastructure for Biobased Product Manufacturing:** The existing regional infrastructure must be enhanced, further developed, and/or utilized as efficiently as possible to support integration of biobased products into the region's system of moving goods. The entire supply chain, from the raw material stage through manufacturing, distribution, and on to the retailers, must be re-examined, options for improvements developed, and a plan for implementation be designed and executed. [pg. 59]

Excerpts explicitly related to jobs and workforce development from the Bioeconomy and Transportation working group [policy options document](#).

- a. **BT 6.1 Bioeconomic Wealth Creation:** The Midwest must build on the pattern of success established by the initial farmer owned ethanol plants. Keeping feedstocks, production and markets in the region, strategically coordinated and interrelated, will keep more dollars circulating in Midwestern communities. [pg. 77]

The following is a sample of proposed implementation mechanisms for this policy. Much greater detail is provided in the BTAG policy options document beginning on page 79.

- Support infrastructure mandates that enable the Midwest to ramp up agricultural-based energy (e.g. all new pumps must be certified to higher ethanol blends), even if they do not mandate its use.
- Fund the conversion of corn ethanol plants into advanced cellulosic ethanol production, encourage any new facilities to have conversion options built-in.
- Establish bonding authority or access to bonding funds for co-ops, municipal utilities, and other local and community-owned entities to fund biomass projects and to, wherever possible, make the opportunity available for local ownership in projects receiving public investments. [pg. 79]

- b. **BT 6.2 Bioeconomic Workforce Development:** This policy most specifically deals with job creation and workforce development. It is the purpose of this policy initiative to create collaborative workforce development programs between industry, state governments and educational institutions that will staff and drive the development of bioeconomy and clean energy jobs. [pg. 82]

Goals: A series of key principles has been outlined by the “Greener Pathways” study sponsored by the Center on Wisconsin Strategy, the Workforce Alliance and the Apollo Alliance. These same principles should guide policy initiatives in the Midwest:

- a. Develop a focused approach by building on a solid foundation of labor market data and analysis:
 - Target specific sectors within the ‘green jobs’ area;
 - Use good labor market data to drive initiatives; and
 - Measure and evaluate new jobs programs as they are created.
- b. Build good jobs through partnerships, linking economic development and job creation:
 - Employ energy standards as green job creation tools;
 - Promote bioeconomy and green energy clusters;
 - Link economic development in the sector to workforce development;
 - Develop coalitions and partnerships; and
 - Integrate green jobs initiatives into existing workforce systems.
- c. Focus attention on job quality, access for all, and upward mobility in the green economy. [pg.82]

Implementation Mechanisms

Involve key players in partnerships among employers, unions, community-based organizations, and public-sector institutions to create strong local and regional workforce development programs for the emerging bioeconomy.

Establish coordinators in each state’s Department of Workforce Development that are responsible for:

- Focusing on and coordinating the transition of jobs programs from generalized skills toward green and bioeconomy-specific skills;
- Coordinating resource deployment across the Midwest to optimize job training investment and resources and to avoid unnecessary duplication of expense and effort;
- Tracking current job losses and determining which categories of displaced workers are good candidates for training for green jobs;
- Working with industry partners to understand and predict the industry job market requirements and to develop curriculum and programs to meet those industry needs;
- Developing labor standards and safety programs that address changes in work settings and potential job hazards; and
- Working with Government, Industry and Labor to establish pay scales that reflect skills required and be sufficiently competitive to encourage participation.

Establish state funds for investment in curriculum, equipment, and other needed resources to move job training from the general to the specific in regard to green jobs. For example, invest in providing wind turbine motors to help move a generalized electrical technicians program toward a specialized wind turbine repair and installation program.

Establish a Midwestern or state-level funds source to better survey and track industry requirements so as to develop job data that is specific to the needs of bioeconomy and green energy companies.

Conduct a region-wide review on a state-by-state basis to determine existing bioeconomy and green energy initiatives and requirements in order to better optimize efforts to use policy and standards to drive economic development and green job creation.

Invest in the development of workforce training programs that:

- Tie development of projects and the industry to specific training options in technical schools and other education providers to ensure the necessary workforce is available;
- Stress on-the-job training as an important facet of workforce development;
- Work with unions to adapt apprenticeship programs to train new green job skill sets;
- Simultaneously meet the emerging needs of industry; train and support workers; and create good, family-supporting jobs;
- Develop job skills commensurate with the requirements of the sector;
- Focus on job quality – compensation, job satisfaction, opportunities for advancement – not just job quantity; and
- Develop community college programs for skilled labor in solar installation, wind tower maintenance, biomass production, and ethanol plant production and operation.

Develop incentives to attract the workforce of the future to more rural areas. Programs that support spouse careers, education opportunities (child and adult learning), quality of life, and community infrastructure are essential. [pg. 83 & 84]

Related policies and programs for this policy option can be found on pages 84 & 85.