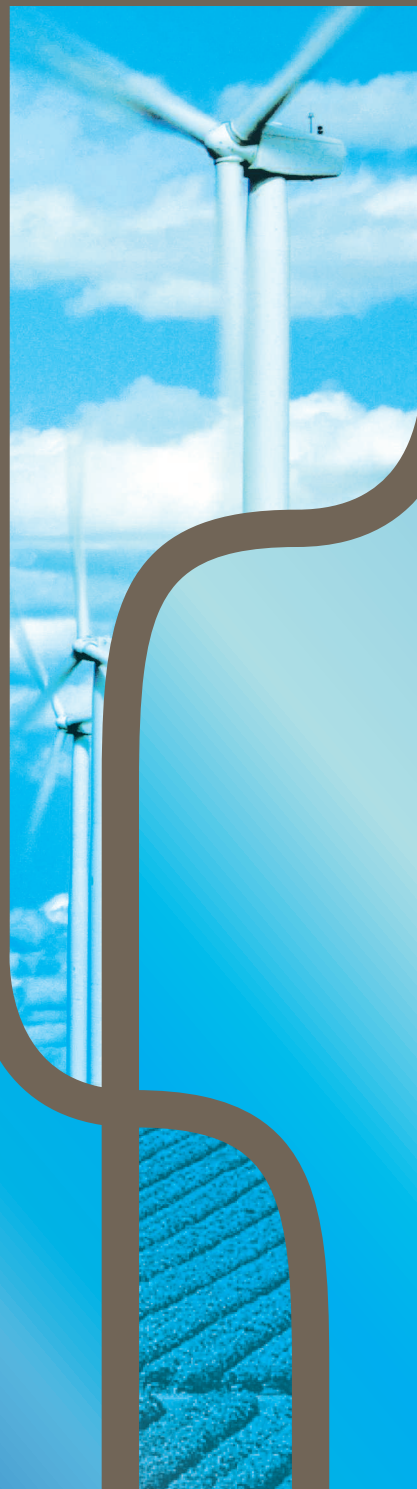


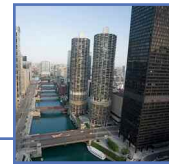
invest in the midwest



Midwestern Investment Platform for the New Energy Economy: Advisory Group Recommendations

February, 2011

Introduction



This advisory group document explores five unique but interrelated strategies to help drive investment in new energy related commercial technologies, firms and infrastructure in the Midwest's new energy economy. The new energy economy generates jobs, businesses and investments while expanding energy production, increasing energy efficiency, reducing pollution, and conserving natural resources. Commercialization activity and business development that supports the creation of products, technologies, processes, and services that adhere to these standards are part of the new energy economy and are the targets for desired investment as explored in this platform.

Investment is essential for the region's new energy economy because it supports innovation and growth in firms and helps grow and retain jobs. When we talk about expanding regional investment, the focus is broad, including but not limited to angel and venture capital, private equity investment, foreign direct investment, research and development, infrastructure development and other types of capital-dependent support that firms require for success throughout their lifecycles. The recommendations range from policy positioning and branding that support a positive investment climate to more-specific investment initiatives. They target an array of regional development stakeholders, with a special but not limited focus on state government leadership.

Strong support from governors' offices could help drive key initiatives forward through a variety of ways. For example, policymakers may drive policy change, convene stakeholders, or simply serve as engaged partners and advocates. These recommendations, developed by a diverse advisory group, seek to leverage collective Midwestern assets, take advantage of unprecedented market opportunity, and help the region achieve its full potential as a leader in the global new energy economy.

BACKGROUND

Over the past several years, governors have come together through the Midwestern Governors Association (MGA) to position the region as a global leader in the new energy economy. Toward that end, governors drew on broad input from throughout the Midwest to develop a comprehensive regional vision and ambitious goals. The governors endorsed those goals in November 2007 in their *Energy Security and Climate Stewardship Platform for the Midwest* (Energy Platform). The goals from the Energy Platform include:

- 2 percent energy efficiency savings per year in regional annual retail sales of natural gas and electricity by 2015, and an additional 2 percent in energy efficiency improvements every year thereafter;
- 20 percent of total electricity consumption from renewable sources by 2020, and 30 percent by 2030;

- 50 percent usage of renewable and low-carbon transportation fuels by 2025; and
- all new coal gasification and combustion plants will capture and store carbon dioxide (CO₂) emissions by 2020, and by 2050, all coal plants in the region will have transitioned to carbon capture and storage.

Following the release of the Energy Platform, governors convened public, private and nongovernmental leaders from across the Midwest who collaboratively developed recommendations for how best to achieve these regional goals over time. In October 2009, after nearly two years of joint analysis and dialogue, three advisory groups presented governors with the *Midwestern Energy Security and Climate Stewardship Roadmap: Advisory Group Recommendations* (Energy Roadmap), outlining a broad package of recommendations.

Also in 2009, a second set of stakeholders met to recommend additional practical ways for the region to meet governors' energy goals and build on the policy recommendations in the Energy Roadmap. From these efforts, governors agreed to a set of workforce development strategies and agreements in the *Platform for Creating and Retaining Midwestern Jobs in the New Energy Economy* (Jobs Platform) that focused on:

- adopting and aligning energy, economic and workforce policies that position the region's workers, firms and communities to compete with and lead other regions of the U.S., and other countries, in creating and retaining jobs in the new energy economy; and
- increasing and optimizing public- and private-sector investments in education, training, entrepreneurship, natural resources, manufacturing, agriculture, intellectual property and research to grow, retain and attract technologies and companies that support jobs and career opportunities in new energy industries.

CURRENT WORK

Now, this document completes the three-part series. It focuses on increasing investment opportunities for those seeking to commercialize and bring to scale new energy economy technologies, products and services. Strategies in this document target investment in a range of firm sizes and stages of development, from new to mature, and recommend aligned policy development and investment in new energy

THE NEW ENERGY ECONOMY generates jobs, businesses and investments while expanding energy production, increasing energy efficiency, reducing pollution, and conserving natural resources. Commercialization activity and business development that supports the creation of products, technologies, processes, and services that adhere to these standards are part of the new energy economy and targets for desired investment described in this paper.



infrastructure—all with the purpose of increasing investment and job creation in the Midwest.

Our region has encountered significant challenges in the past decade as a result of the current economic downturn and historic losses in manufacturing jobs. Embracing the new energy economy can better position the region for sustained economic growth and leverage our agricultural, manufacturing, natural resources, talent and other regional assets. We must ensure that sufficient investment opportunities exist for those who are transitioning into the new energy economy so their businesses can not just succeed, but also drive innovation that will establish the Midwest as a global leader and net job creator.

The case for regional action



Job creation does not heed political boundaries, such as state or local jurisdictions, and neither does the investment that supports it. In the case of the new energy economy, the playing field is global. While local strategies are important, the most successful actors in this space will seek a larger, regional scale that improves access to assets (talent, technology, supply chains) and maximizes return (business creation, jobs, innovation capacity). Working across state boundaries will allow the Midwest to position itself as a hub for new energy activity. Being vocal and deliberate champions of this approach will:

- reinforce for local constituents the advantages of a regional development strategy;
- give policy practitioners and implementers the direction and support they need to focus strategic attention, resources and effort in this area;
- encourage stakeholders and make it easier for them to align their strategies with this direction; and
- make clear to investors and competitors alike that the region is poised to compete.

MIDWESTERN ADVANTAGE

The new energy economy offers promise for numerous regions around the world. Attracting related investment will make the difference and grow and retain more jobs for those seeking to lead in this space. Pursuing a deliberate strategy to position the Midwest as a global new energy leader is smart strategy: The Midwest has several significant advantages that make it ripe for investment and growth.

Natural assets

The Midwest is home to substantial innovation assets that the region can leverage as a global new energy leader. First, the Midwest has abundant natural resources that can support related

research and development, commercialization, and product adoption, all of which support both the supply and demand sides of the new energy economy equation. For example,

- National Renewable Energy Laboratory studies show that wind energy outputs in the Midwest typically fall into good, excellent or outstanding ratings.^{1,2} In addition, the region is home to a robust wind energy supply chain³ and several transmission-system development strategies to maximize these advantages.
- The Midwest is home to the Great Lakes (no less than 20 percent of the world's fresh water supply), abundant inland lakes, groundwater and other water supplies. This is important to support the water needs of various types of alternative energy production but also to offshore energy production, including wind and wave power. These water supplies also help moderate temperatures, provide a transportation option, and offer various recreation and other opportunities.
- The Upper Midwest states of Minnesota, Wisconsin and Michigan are among the most heavily forested in the nation, with 41 percent of their total area, or 20.4 million hectares, in forested lands.^{4,5} Forest plants and soils naturally absorb and store carbon and provide renewable material for various bio-based energy alternatives, products and chemicals, and building materials.
- The region's advanced agricultural base is made possible by its high concentration of arable land,⁶ the greatest in the nation. This base makes the region suitable for renewable crops (including those appropriate for bio-based fuel and products production), local food production, and biomass that supports various areas of new energy development (e.g., biodigestion converts crop residue and manure into fuel). Generally, open farmland spaces also are candidates for wind and solar energy production.
- Today fossil fuels comprise 80 percent of energy usage. As global energy demand continues to rise, demand for fossil fuels will remain high, especially among developing countries. As the U.S. places greater emphasis on energy security and independence, the Midwest has vast coal deposits and shale gas reserves that support greater domestic energy production. To take advantage of these resources, the region is leveraging advanced technologies and practices such as the capture and geologic storage of carbon dioxide (CO₂) that reduce greenhouse gas emissions and other environmental impacts.^{7, 8}

¹ http://www.nrel.gov/gis/images/map_wind_national_lo-res.jpg

² <http://rredc.nrel.gov/wind/pubs/atlas/maps/chap2/2-01m.html>

³ <http://maps.glwn.org/wind/>

⁴ http://resac.gis.umn.edu/forestry/forestry_index.htm

⁵ <http://www.ers.usda.gov/Briefing/RuralAmenities/forest.htm>

⁶ <http://www.nrcs.usda.gov/technical/NRI/maps/mapgif.asp?mapid=4964>

⁷ http://pubs.usgs.gov/of/1996/of96-092/other_files/us_coal.pdf

⁸ http://www.eia.gov/oil_gas/rpd/shale_gas.pdf

Industry and agriculture

In addition to its natural assets, the Midwest has strong industrial and agricultural bases and productivity rates, all of which can be leveraged in support of the new energy economy. With a strong engineering and manufacturing history, the Midwest possesses a wealth of research and technical capacity, as well as facilities and equipment, that could help develop new energy concepts and turn them into reality. Meanwhile, the region's agricultural base has proven critical in advancing bio-based fuel production, bio-based products and chemicals, and even wind and solar energy production.

Research institutions

Further differentiating the Midwest from other regional competitors in the new energy economy is the abundance of research and other academic institutions. The region is home to more than a dozen well-known research institutions, most of which are part of the Midwest Research University Network (MRUN, which covers eight of the MGA's states).

MRUN institutions are among the nation's leaders in research and development (R&D) spending and technology transfer. Collectively, in fiscal year 2006, research universities and institutions within the eight-state MRUN region accounted for:

- 18.6 percent (\$8.87 billion) of total U.S. institutional R&D expenditures
- 16 percent of total U.S. patents filed and issued
- 24 percent of total U.S. options and licenses executed (1,193 of U.S. total 4,963)
- 22 percent of total U.S. license revenue received (\$272 million of U.S. total \$1,249 million)
- 13 percent of total startup companies licensed (101 of the 764 nationally)

In addition to hosting the designated research institutions, the Midwest is home to a number of land-grant institutions, which tend to place heavy emphasis on bio-agricultural research and products, processes and other types of development. It also is home to several U.S. Department of Energy-funded national laboratories, including Ames

MIDWEST RESEARCH UNIVERSITIES

(Carnegie Foundation designation)

- Case Western Reserve University
- Indiana University at Bloomington
- Iowa State University
- Michigan State University
- Northwestern University
- Ohio State University
- Purdue University
- University of Chicago
- University of Cincinnati
- University of Illinois at Chicago
- University of Illinois at Urbana-Champaign
- University of Iowa
- University of Kansas
- University of Michigan
- University of Minnesota, Twin Cities
- University of Missouri-Columbia
- University of Wisconsin-Madison
- Wayne State University

Laboratory, Argonne National Laboratory, Fermi National Accelerator Laboratory and National Energy Technology Laboratory.⁹

Emerging industries

Few regions in the world can boast the quality and quantity of core assets that the Midwest has to succeed in the new energy economy. The result has been the emergence in the Midwest of several key new energy industries:

- **Advanced energy storage systems**—A growing area of development and Midwest leadership is advanced energy storage systems (i.e., batteries) that allow greater flexibility in powering vehicles (e.g., hydrogen, fuel cells, etc.).
- **Solar energy**—With a four-season climate, the Midwest is not known for its abundant sunshine, but it is a viable candidate for cold-climate solar energy research. Further, assets and advances in chemical and other research have resulted in substantial developments in solar energy panels and thin-film technology in various Midwest states. Michigan, for example, is home to the world’s leading producer of high-purity polycrystalline silicon, a main component in solar power applications and semiconductors.
- **Wind energy**—With its vast wind resource potential, industrial base and supportive state policies, the Midwest is rapidly building new wind generation capacity. Six Midwestern states now have over 1,000 MW of installed wind generation capacity, and Iowa became the first state in the U.S. last year to produce 20 percent of its electricity from wind. Midwestern states are becoming an important part of a U.S. domestic supply chain for wind energy development, with traditional manufacturers retooling to support the industry and new factories opening to manufacture blades, towers and increasingly even the turbines themselves. Efforts are under way to align regional production potential—roughly 70,000 MW of capacity if Midwestern governors’ 2030 renewable electricity target is met—with expansion and upgrading of the regional grid, advancements in energy storage, and better coordination of regional supply chains.
- **Biofuels, biochemicals**—The Midwest is the leading region in biofuels production, with more than 80 percent of the nation’s ethanol capacity and a significant proportion of national biodiesel capacity located in the Midwest. The Midwest is also leading the way in the development of next-generation fuels and products. Cellulosic ethanol plants, which can produce biofuels from biomass materials such as crop residues, switchgrass, trees, and

MIDWEST LAND-GRANT INSTITUTIONS

- Iowa State University (IA)
- Kansas State University (KS)
- Lincoln University (MO)
- Michigan State University (MI)
- Ohio State University (OH)
- Purdue University (IN)
- South Dakota State University (SD)
- University of Illinois at Urbana-Champaign (IL)
- University of Minnesota (MN)
- University of Missouri (MO)
- University of Wisconsin-Madison (WI)

⁹ http://www.er.doe.gov/National_Laboratories/print-Map%20of%20National%20Labs-v7.pdf

logging residues, are proposed in North Dakota, Kansas, Missouri and Michigan. Other advanced biofuel projects are advancing in Minnesota and Wisconsin. The Midwest's biofuels industry will continue to grow. A recent USDA report¹⁰ estimates that the Midwestern region will produce 43 percent of new advanced biofuels production required to meet the Renewable Fuel Standard requirement, stimulating \$72 billion in new investments in plant capacity and infrastructure.

Bioproducts are also a large and growing segment of the Midwestern economy. Midwestern companies are producing everything from household cleaners to hydraulic fluids from bio-based materials, substituting for a fossil-based product. Most Midwestern states have procurement preferences for biobased products, so that state agencies preferentially purchase biobased products instead of fossil-based products.

- **Carbon Capture and Storage**—The Midwest has excellent geology for the permanent underground storage of carbon dioxide, or carbon capture and storage (CCS). Moreover, the region's extensive fleet of coal plants, ethanol plants and other industrial facilities provide sources of CO₂ emissions that lend themselves to commercial capture of that CO₂ for use in enhanced oil recovery (EOR) and for long-term storage. According to analysis prepared for the MGA,¹¹ EOR has the potential to produce 4.0 billion to 7.5 billion barrels of low-carbon oil in the region, substantially boosting U.S. recoverable reserves, as well as Midwestern jobs and state tax revenues. The Midwest is already home to important commercial examples of CCS that feature the capture of CO₂ emissions from coal gasification, natural gas processing and ethanol production for use in EOR. Some Midwestern states have made significant policy and financial commitments to CCS deployment, and several key new commercial projects are under development. These state and private-sector commercial efforts, combined with several U.S. Department of Energy-funded public-private carbon sequestration partnerships in the region, have the potential to make the Midwest a global player in a future CCS industry.
- **Smart grid**—The Midwest is a strong contributor to the development of smart grid technologies, meant to create a more responsive, integrated and reliable electricity grid system in the U.S. In 2009, the federal government made \$3.4 billion in grants to states to help promote smart grid development. The Midwest performed particularly well, with over \$1 billion in investments focused largely on electronic transmission systems, electric systems distribution, and advanced metering infrastructure.^{12, 13}

¹⁰ http://www.usda.gov/documents/USDA_Biofuels_Report_6232010.pdf

¹¹ Source: Ferguson, Robert (June 22, 2009). "CO₂-Enhanced Oil Recovery Potential for the MGA Region," prepared for the MGA by Robert Ferguson, Advanced Resources International.

¹² <http://user.cloudfront.com/community/andrewprice/SmartGridGrantLocations.jpg>

¹³ http://en.openei.org/wiki/Gateway:Smart_Grid

Transportation and logistics

Supporting development of the region's new energy industries and resources is a robust transportation system. This system accommodates domestic and international rail, water, highway and air-freight transportation. It is a hub for North American trade, located in the center of the U.S. and between Canada and Mexico, with access to major waterways, including the Mississippi River

and Great Lakes/St. Lawrence Seaway. Further, it boasts the world's busiest international border crossings (Detroit/Windsor, Port Huron/Sarnia), is home to a high concentration of international airports,¹⁴ and hosts more consular offices than anywhere in the nation outside of Washington, D.C., and New York City (Chicago). Moreover, the region will benefit from the U.S. Department of Transportation's "Corridors of the Future" program, intended to ease congestion and modernize key national roadways. Two of six national "Corridor" routes (I-70 and I-69) feature prominently in the Midwest.¹⁵

Many efforts are under way in cities and metropolitan areas to increase transportation choices through the development of light rail, commuter rail, and bicycle and pedestrian infrastructure.

I-Q CORRIDOR

http://www.wisconsinotechnologycouncil.com/policy/IQ_Corridor

- The 400-mile stretch of Interstates 90 and 94 between Chicago and Minneapolis-St. Paul
- "I" stands for interstate, innovation, intellectual property and investment,
- "Q" stands for quality of life, education, workforce and more
- Works to showcase well-known research universities, well-educated tech workers, thriving tech-based companies and significant capital available to invest in early-stage companies
- I-Q Corridor Investor Forums have brought together investors via video conference to review investment deals from across the Midwest.

Policy platform to drive demand for new energy industries

Regional development of new energy industries is further augmented by various policy commitments made by Midwestern governors. These include clear targets for greater energy efficiency, greater integration of biobased products in transportation, higher rates of renewable electricity usage (electricity generated from renewable sources), and advanced coal technologies with CCS. Relevant targets are referenced in the Introduction of this report and can be found in the MGA's Energy Security and Climate Stewardship Platform for the Midwest (Energy Platform).

To develop policies capable of achieving the governors' and premier's energy goals and objectives, the MGA convened industry, agricultural, labor, environmental and governmental stakeholders to serve on three advisory groups: Energy Efficiency; Renewable Electricity and Advanced Coal with Carbon Capture and Storage; and Bioeconomy and Transportation. These groups were tasked with drawing up enabling policy recommendations for the region's states and provinces.

¹⁴ <http://www.wcscargo.com/wordpress/?p=26>

¹⁵ <http://www.corridors.dot.gov/>

Such policy commitments, once implemented, will create market demand for energy efficiency, renewable energy and advanced fossil-energy technologies, and related products and services, helping existing and new firms attract investment, grow, and create jobs.

High stakes

The Midwest is not alone in its quest to lead the new energy economy. The reality is that there is much to be gained through a strong position in this emerging field. According to the U.S. Energy Information Administration's 2010 International Energy Outlook, global energy consumption is expected to grow 49 percent by 2030. While they still make up a relatively small portion of today's energy portfolio, new energy alternatives are the fastest-growing area of demand.¹⁶

The Midwest has a unique opportunity to advance new energy economy investment, potentially more than investment in any other industry sector.

Not surprisingly, therefore, new energy technologies also are the fastest-growing area of venture capital investment. Globally, clean-tech venture capital investment has increased more than \$2 billion each year from 2005 to 2008. Investment climbed 38 percent from 2007 to 2008 alone, peaking at \$8.4 billion in 2008.¹⁷ Investment was down across the board in 2009, but investment in new energy

technologies declined the least of all sectors.

The top sectors in this industry in 2009 were solar, transportation, energy efficiency and biofuels—all Midwestern strengths.

Like other types of investment, venture capital investment spurs prosperity and jobs. A 2008 National Venture Capital Association report found that, from 1970 to 2008, every \$1 of venture capital invested in the U.S. resulted in \$6.36 of revenue. In the same period, one job existed for every \$37,702 in venture capital. The same report found that venture-backed firms experienced higher sales and employment rates than their counterparts and were responsible for 11 percent of the country's private employment and 21 percent of gross national product.¹⁹

The Midwest has a unique opportunity to advance

THE MULTI-STATE COLLABORATIVE FOR HEALTH SYSTEMS CHANGE

www.multistatecessationcollaborative.org

- Comprises 18 states working together to facilitate health systems change in their states and nationally.
- Includes knowledge and practice sharing around state tobacco control and health systems reform.
- Documents emerging and promising practices at the state level to build the case for national change.
- Collectively advocates for state and national policy change to remove barriers to identified goals.

¹⁶ <http://www.eia.doe.gov/neic/speeches/howard052510.pdf>

¹⁷ <http://cleantech.com/about/pressreleases/010609.cfm>

¹⁸ <http://cleantech.com/about/pressreleases/20090106.cfm>

new energy economy investment, potentially more than investment in any other industry sector. Positioning the region to pursue this investment more deliberately could yield economic growth and more jobs at time when both are sorely needed.

Embracing “coopetition”

The Midwest can align efforts to attract new energy investment in all its forms—from venture capital and R&D to later-stage private investment and public investment in infrastructure—without sacrificing the integrity of each state’s individual competitive position. The strategic advantages of acting together include:

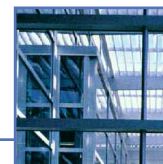
***“Coopetition” refers to “cooperative competition.”
It involves traditional competitors working together in key strategic areas so that, as partners, they are better positioned for success on a larger scale, under changing circumstances, or in the face of other emerging competitors.***

- positioning the region as a globally competitive economic bloc around which to build collective strategy and awareness;
- presenting a collective policy voice that is more likely to be heard in national policy matters important to the Midwest (for example, agriculture policy, energy policy and infrastructure investment);
- offering a critical mass of “fundable” new energy economy deals that will attract potential investors;
- creating opportunities to identify, support and leverage supply chains that cross state boundaries; and
- sharing knowledge and expertise in policy, technology, and other matters that can help the competitive advantage of individual states and the Midwest as a whole.

Pursuing these advantages could make investing in the Midwestern new energy economy more attractive and efficient, resulting in higher potential returns for investors themselves and the states that are home to their activity. Given interconnected supply chains and the natural tendency of economic markets to transcend political boundaries, investment in one state very likely can yield substantial benefits in another.

¹⁹ Page 4: http://www.brookings.edu/~media/Files/rc/reports/2010/0129_venture_capital_samuel/0129_venture_capital_report.pdf

Recommendations



Beginning in summer 2010, the MGA convened an advisory group of diverse experts representing new business development, commercialization, energy, technology, economic development, banking and finance. These advisors met through regular conference calls and two in-person meetings. At the first meeting, the group generated initial thoughts and ideas tied to a regional investment platform. The second meeting of the group included 80 other peers who provided feedback and input on draft concepts. The result is a set of five recommendations described below.

The advisory group agreed that, to maximize the potential jobs and other investment returns of the new energy economy, and to position the Midwest as a global leader in this field, the region's governors and other stakeholders should: make clear their intentions, adopt a regional new energy investment strategy, jointly pursue supportive and consistent policies, and commit resources and efforts to ensure success. Foremost, the governors should:

#1: BE VOCAL, DELIBERATE CHAMPIONS OF A MIDWEST NEW ENERGY INVESTMENT INITIATIVE

A. Proclaim intentions

Adopt a proclamation committing to the launch of a 10- to 20-year initiative aimed at growing the Midwest's new energy economy and positioning it for investment of all kinds.

B. Develop a vision, mission and goals

Agree to development and adoption of a common vision, mission and goals for a Midwestern regional investment initiative to grow new energy economy jobs and infrastructure. For example:

- **MISSION:** Grow investment in Midwestern new energy technology firms, jobs and supporting infrastructure.
- **VISION:** Midwest is a global leader in new energy economy investments.

A useful model for this effort is the Southern Growth Policies Board, a 13-state initiative that emphasizes collaboration around policy, research, and development strategies that leverage Southern states' assets. The effort has been in place for decades and has helped lead substantial progress in the region.

C. Develop a shared communications and messaging approach

Commit to being vocal, consistent and deliberate about sharing the strategy and information about a Midwestern new energy initiative, with a regional communication effort for governors, policymakers and other stakeholders. For example, a strategy could include talking points, media and promotions packages. The effort also should integrate branding and marketing support for the regional effort. The MGA could help coordinate across member offices.

D. Form a team to develop an implementation plan and keep the effort on track

To ensure that these recommendations truly meet the goal of growing regional investment in the new energy economy, it is important to continually engage businesses, investors and other stakeholders, maximizing their input and seeking to meet their needs. An ongoing task force comprised of diverse experts can help create a strategic implementation plan for moving forward, assess progress, help make valuable connections, and keep the effort on track. The members of the task force should include those with experience in, for example, the private sector, academia, technology transfer and commercialization, economic development, and entrepreneurship. Additionally, the task force should be staffed by those who will provide leadership and help ensure that key agreements are carried out. As the implementation plan is carried out, this team should:

- **Measure and track progress** Today, numerous factors, including market conditions, Midwestern resources and emerging sectors, and the will of stakeholders stand well aligned. The opportunity is ripe to advance game-changing strategies that could result in new investment and jobs tied to the new energy economy. This is an area of remarkable growth potential, and the Midwest has an abundance of unique assets that could make it a leader in this space. It is critical to keep these recommendations on the forefront and continually assess, track and report on movement toward their implementation.
- **Identify leadership and resources for support** It will be important to the success of these recommendations that they have a day-to-day champion that is charged with determining what has been accomplished and remains undone, one that will convene

SOUTHERN GROWTH POLICIES BOARD

<http://www.southerngrowth.com>

- Supported by 13 Southern states.
- Provides a venue for regional collaboration on economic development strategies among the region's dealmakers.
- Releases an annual Report on the Future of the South that is the centerpiece of the organization's yearly conference and a catalyst for in-depth discussions on issues facing the region.
- Focuses on technology and innovation, globalization, workforce and community.

stakeholders, facilitate conversations, set priorities and ensure that resources—human, funding, and other—are aggregated and aligned to ensure success. A possible home for this initiative, or a lead partner in it, may be the MGA, with support from partners across various state government, business, and other key stakeholders. For the effort to succeed, it must start with the proper infrastructure and leadership in place. The task force, as part of its implementation planning process, should assess options and make recommendations in this regard.

E. Support regional intelligence & visibility related to new energy assets

Central to success of the Midwestern governors' new energy investment initiative is shared research and intelligence that can help drive intelligent decision-making and highlight advantages and efforts already under way; for example, supply-chain and collaborative initiatives, etc. This recommendation has appeared in other MGA policy platforms, including those related to energy security and jobs, but has not yet been implemented. This effort should be undertaken and, once information is gathered, it should be used to:

- ***Inform strategy and advocacy***
The research could support policy and strategy decisions within individual states and across the region. The information also could be used to back national advocacy efforts and to make the business case for investing in the Midwestern new energy economy.
- ***Promote regional awareness***
Using gathered data and research, governors should commit to developing and launching a multi-pronged awareness strategy aimed at manufacturers, technology developers, investors and foreign markets that:

- makes the case for energy investments in the Midwest versus the East and West coasts (or other places globally);
- showcases investment opportunities through general information-sharing and through regional investment events, competitions, etc.; and

BIOENTERPRISE

<http://www.bioenterprise.com>

- A business formation, recruitment, and acceleration initiative designed to grow health care companies and commercialize bioscience technologies.
- Based in Cleveland (founders and partners are Cleveland Clinic, University Hospitals, Case Western Reserve University, Summa Health System and BioInnovation Institute in Akron).
- Monitors private investment across the health care spectrum—with a special focus on trends, financings and opinions in the Midwest.
- Seeks to provide entrepreneurs, investors, researchers, policymakers and the media with a fast, convenient way of staying informed of the activity in this sector with a special focus on the Midwest.

- o fully leverages online and in-person social network opportunities to ensure a modern, ubiquitous approach to information dissemination (e.g., develop websites, share information via Twitter, Facebook, LinkedIn, etc.)
- **Share intelligence** The effort also should include development of educational sessions across the Midwest to raise awareness of information and assets that can be leveraged regionwide to grow the new energy economy. Another opportunity could be to cross-train a core constituency of each state’s agency staff (e.g., energy experts, workforce developers, economic developers) to promote and leverage state and regional opportunities.
- **Benchmark and keep a scorecard** To support overall transparency and efficacy of the Midwest new energy investment initiative, and to understand the true benefits the effort has yielded, stakeholders should develop indicators and track outcomes around regional success (this is in addition to progress on the goals and benchmarks related to successful implementation of the initiative plan). Following initial benchmarking, partners will be able to track a regular (e.g., annual) scorecard to identify progress in targeted areas. Items to consider including in the scorecard include: companies formed, number of deals, total private equity invested (angel, seed, venture, mezzanine and beyond), jobs created, and average wages per job.

#2: HARMONIZE AND COLLABORATE AROUND REGIONAL ECONOMIC DEVELOPMENT STRATEGIES

With research, promotion and branding materials as well as a collective strategy in hand, Midwest economic developers will be well-poised to “take the show on the road,” promoting the advantages of locating, keeping, expanding and partnering with businesses in the region.

A. Hold regional trade missions

Regional economic development partners should develop a strategy and leverage each other’s international outreach efforts to promote the new energy investment initiatives. One possible opportunity may be to collaborate on regional trade missions around the new energy economy. This could include participating in overseas opportunities or hosting international missions that travel throughout the region.

B. Broker partnerships for Midwest firms

In addition to participating in and hosting trade missions, state economic developers can play an important role, with proper intelligence in hand, in helping Midwest firms connect to partners, technology, processes or services affiliated with firms from inside (and even outside) the region. With a new collaborative initiative in place, economic developers will be able to help Midwestern firms better connect to regional supply chains linked to various elements of the region’s new energy economy.

C. Leverage research and intelligence

In their interactions with possible global, national and Midwestern firms seeking to do business within the region, economic developers should leverage research, promotional and other materials that have been developed to raise awareness of the new energy investment initiative.

D. Convene and strategize

Midwestern economic developers, who may be accustomed to competing for opportunities, should regularly convene (in person, by phone, etc.) to foster continued awareness of the wealth of the region's opportunities ripe for development and to create strategies and otherwise plan for their collaborative efforts.

#3: PROMOTE NETWORK DEVELOPMENT AND EXEMPLARY-PRACTICE SHARING AND IMPLEMENTATION AROUND COMMERCIALIZATION AND ENTREPRENEURSHIP

Investors likely to target the Midwestern new energy economy are seeking opportunity for a return on their investments. This requires high deal-flow, which in turn requires high rates of commercialization and entrepreneurial success. It is important for states to support exemplary practices in these areas. This can be done through the advancement of regional networks that share information and ideas and that pursue fundamental strategies in support of new-business growth and development.

A. Network commercialization strategies

The Midwest is home to numerous commercialization efforts, several specifically targeted at the new energy economy. For the sake of promoting the region's strengths in new energy deal flow, it would be useful to identify and assess these commercialization efforts and make sure both entrepreneurs and investors know about them. More importantly, the region could accelerate its commercialization activity by helping the most viable and successful initiatives network and learn from one another. Initiatives such as the Clean Energy Trust and the Midwest Research University Network already support some of this effort, but it is important for state actors to connect to, partner with, and sometimes even financially support these efforts in order to strengthen their chances of success.

IDEACROSSING

<https://www.ideacrossing.org>

- Free online community whose mission is to create connections between entrepreneurs and the angel and venture capital community
- Available to anyone in the United States (an outgrowth of Jumpstart in Cleveland, OH)
- Provides enhanced visibility to the numerous assets located throughout a given region, including universities, economic development organizations, chambers of commerce, foundations and professional service providers.

An extension of this effort may be to convene regional university technology-transfer offices and even incubators (e.g., JumpStart, TechTown, NorTech) to share information, strategies, and possible alignment around strategies that support business development, success and investment.

B. Better prepare and support entrepreneurs

States tend to offer an array of services to support entrepreneurial success, but often these efforts are either (1) overwhelming and confuse those they are intended to serve, or (2) hard to find and/or access. Regardless of whether a service is government-funded, policymakers should prioritize making services and resources more transparent and findable for entrepreneurs, using a mix of online, hard-copy and person-to-person strategies. The purpose is to promote success of those who take the entrepreneurial leap. To investors, this means lower risk and increased deal flow.

- **Help firms prepare for investment** Keeping in mind both the quality and quantity of possible investment deals, regional entrepreneurship stakeholders should target strategies for new energy economy firms, focusing on how to get ready for angel, venture and other types of investment. Many companies are confused about or are ill-prepared in their early forays into the investment world. Ensuring that training, coaching, mentoring, toolkits and other resources are available can go a long way toward ensuring successful investment in a new or growing firm. Stakeholders can go the next step by offering business-plan competitions, pre-pitch competitions, coaching and practice in order to highlight firms and prepare them for communicating with investors.
- **Provide firms clear pathways to wrap-around supports that aid their success** It is also important to offer and/or coordinate other qualified technical assistance to firms, whether this means addressing an accounting, talent, marketing, regulatory, technology, or other business-related need. Very often resources are available, but firms are unclear about their needs or how to address the needs once they are identified. Providing wrap-around support in conjunction with an investment or other form of firm contact can help firms get started on the right foot.
- **Assess regulations and remove barriers** Once a person has taken the entrepreneurial leap, it is essential for states to support their success. A barrier to success in the mind of many entrepreneurs (and, hence, investors) is the prevalence of regulatory barriers or hurdles that undermine firms' financial health and entrepreneurs' time and patience. Undertaking a regulatory assessment can help states understand how they are serving or disserving their job-creating constituents, while business-driven task forces and work groups can identify strategies to help eliminate barriers altogether. Another strategy may be to find ways to streamline and align business regulatory practices; for example, using web-based forms to identify required permits, licenses and registrations and automatically populate subsequent applications upon completion of the first.

- ***Form a community of practice related to entrepreneurship*** Each of the above strategies to support entrepreneurship is important for states to take. Establishing a community of practice around states' entrepreneurship could essentially serve as a Midwest "job creation accelerator," supporting awareness, adoption and implementation proven to support development of new firms in the new energy economy.

#4: DEVELOP AND PROMOTE A COMMON POLICY PLATFORM AND PRACTICES TO ENCOURAGE INVESTMENT IN THE MIDWESTERN NEW ENERGY ECONOMY

Building on past efforts like the MGA's energy security and jobs documents, regional partners should develop and promote policy strategies specifically related to investment in the region.

To help promote a positive investment climate in the region, partners should build on efforts that have resulted in regionally shared energy efficiency and other standards (such as the Midwest Energy Efficiency Alliance) to collaboratively shape and promote policy that encourages demand for new energy products, processes and services. This may include keeping tabs on national new energy economy policies and weighing in where relevant to the investment cause.

They also should monitor the pulse of federal activity so they can adequately and collectively respond to issues that may affect their interests. In addition to federal issues, partners should address state-based policy strategies that may affect growth in market demand, remove barriers, streamline processes, or otherwise encourage desired investment.

A. Develop and advocate a Midwestern new energy investment policy agenda

To foster an environment conducive to the success of new energy economy firms, the Midwest should engage the regional new economy investment initiative's expert task force in developing a regional investment policy platform and strategy for advancement.

Topics to consider incorporating in the agenda include, but are not limited to:

- state and federal energy policies that promote new energy demand and encourage investment (for example, a regional new energy fund of funds, discussed in recommendation #5);
- funding for energy infrastructure, commercialization and R&D (including incentives for large-scale research funding stemming from the U.S. Department of Energy and Small Business Administration);

- support for new businesses specifically in the new energy economy; and
- regulatory and other issues that may affect strategic factors related to new energy, including agriculture, manufacturing/engineering, natural resources, etc.

Once this group of stakeholders is convened, it should undertake the following:

- ***Advocate for the region*** Part of the strategy for advancing a regional new energy investment framework should explore roles for state staff assigned to advocacy, as well as roles of business, investors, academia, and others participating in the platform development. These stakeholders should be called upon to rally awareness and support of the regional new energy investment agenda at the local, state and national levels. Talking points, toolkits and even web-based information portals could help track and support the region's advocacy efforts.
- ***Proactively seek funding through advocacy and collaboration*** Federal funding can be influenced at a number of different opportunities. One area may be at the policy-concept stage, at which point it is important for Midwest stakeholders, including members of the MGA's new energy economy investment advisory group, to be informed of, and present at, related policy discussions.

Another area may be when a funding opportunity is announced. In this case, Midwest stakeholders need to be ready to explore whether it makes sense to pursue the opportunity collectively or alone (as individual applicants or a cohort of applicants) and, once ideas are submitted, how to continue to garner support of interested legislators, administrative leaders, and others who may be able to influence outcomes. Funding is an area where regional "coopetition" is particularly relevant: partners can develop and seek support for their own new energy economy initiatives while still expressing support for an overall infusion of resources in the Midwest.

Determining whether to work separately or together may require development of shared protocols, guidelines or some other vetting process, including the selection of a person (or persons) charged with tracking, identifying and raising awareness of relevant opportunities.

- ***Identify exemplary state-level policies to serve as models for replication and harmonization*** In addition to the aforementioned task force/advocacy group comprising business, investor, governor and other advocates, the Midwest new energy investment initiative should consider bringing together state legislators and/or staff, as well as other state government officials, to share exemplary practices around state-level policymaking that supports new energy development and related investment. Beyond exemplary practices, the effort may move to actual harmonization of investment and innovation mechanisms that could promote greater investment in the Midwest.

Implementing policies already outlined in the MGA's Energy Roadmap and Jobs Platform that are friendly to new energy economy business growth, together with additional investment-related recommendations, will generate interest from investors. Some areas of potential harmonization may require legislative or regulatory action, but others may simply entail a change of business on the part of state government or other investment stakeholders. Areas to target for state-level harmonization include but are not limited to:

Regulations and policy

- Unifying certain public service/utility commission policies to help reduce confusion and complication for regional projects and investments related to similarly intended but differently implemented state regulations;
- Aligning (and encouraging exemplary practices around) tax incentives for angel capital and other later-stage investment;
- Exploring investment-related tax-credit reciprocity across the region (i.e., one state recognizes and matches tax credits granted by another); and
- Encouraging adoption and enhancement of renewable and clean-energy portfolio standards, energy efficiency performance standards and other regulatory measures to facilitate private investment in new energy resources and technologies.

Business practices

- Encouraging investors, including state-government programs, to use similar processes and procedures related to their applications for investment, review and other processes (e.g., use of tools like Angelsoft); and
- Seeking alignment around Midwestern research and other academic institutions' licensing, commercialization, tenure, alumni-investment and other policies and practices.

#5: EXPLORE A REGIONAL “FUND OF FUNDS” THAT TARGETS NEW ENERGY ECONOMY INVESTMENTS

A major culmination of regional efforts to develop and align investment strategy could be creation of a regional “fund of funds.”²⁰ Such a fund would invest in other regional funds that target new energy economy companies and traditional companies retooling for new opportunities that are based and growing jobs in the region. The fund also could co-invest along with private, state and other funders (e.g., international investors with offices in the region), infusing resources directly into companies that meet identified portfolio standards. As appropriate, the “fund of funds” could support successive funding rounds in firms, meaning it would provide investment at multiple stages of a firm's development. It could

²⁰ http://www.brookings.edu/~media/Files/rc/reports/2010/0129_venture_capital_samuel/0129_venture_capital_report.pdf

also invest in the evolution of technologies from pilot stage through commercialization within established firms.

Despite many practical challenges and details to consider in this strategy, the strong advantages of a “fund of funds” are that it could:

- offer new businesses a single point of contact for information in the Midwest on standards and access to capital;
- help the region develop experience collaborating around investment and attract other investors; and
- catalyze alignment of other investment-related strategies, like those identified in the previous recommendation (e.g., investment tax-credit reciprocity, process alignment for investment applications and review procedures, etc.).

A challenge to the concept is legal limitations placed on states that might prohibit them from investing dollars outside of their jurisdictional borders. A partial solution may be to integrate state pension investments to allow more flexibility in funding allocation. While this may resolve some legal hurdles, it may not address various political ones.

To move forward the fund-of-funds concept, the Midwestern new energy investment initiative should:

A. Convene investment experts

A panel of pension fund managers and other experts should come together to develop a strategic plan for creating a regional fund of funds. The strategy should explore recommending the investment of a portion of state retirement plans (for example 5 percent) in new energy technology.

B. Stage the strategy

The strategy should explore how to move the concept of a Midwest fund of funds for the new energy economy through differently staged approaches; for example, starting off with a smaller investment pool and growing it after a successful test period. Other phasing approaches may include gradually adding service offerings and products or focusing on a broader range of new energy related sectors over time.

The strategic plan should also explore:

- investment and other support from the federal government, state government/pension funds, institutional investors, corporate pension funds, endowments, family offices (giving incentive to these investors to support this strategy);
- focus on new energy economy technology;
- appropriate size of fund to ensure desired impact and visibility (some recommendations have suggested \$1 billion to \$2 billion, while a fund to address more advanced-stage initiatives might need to be larger);
- investment mindset on decades, not just four to five years;
- fund management (e.g., privately managed through competitive bid process);
- business scope of the fund (e.g., venture capital and direct firm investment, but also a line of business that may support technology transfer deals and pre-seed and seed investments);
- role as an information broker and advocate for investment-friendly policy strategies (local, state and federal);
- establishment of a regional leader/driver for this effort that is a credible stakeholder convener and transcends the states' political cycles (one candidate may be the MGA).

Conclusion



These recommendations are designed to leverage collective regional assets, take advantage of unprecedented market opportunity, and help the Midwest achieve its full potential as a leader in the global new energy economy. This will require vision and leadership; commitments of talent, time and other resources; and the traditional Midwestern approach to tackling tough challenges with practical yet innovative solutions. Seeking investments in the new energy economy is a strategy that makes sense for the Midwest: The end result will be jobs and improved economic agility that can help the region transcend the current economic environment.

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