



The Ohio Green Manufacturing Action Plan

Next Steps in a Clean Energy Manufacturing Policy
Agenda for Ohio

THE OHIO BLUEGREEN APOLLO ALLIANCE DECEMBER 2011

Introduction

Over the past five years, Ohio has created policies that prioritized clean energy and sought to rebrand the state as “America’s Energy Gateway.” The state started incentive programs for renewable energy installations and energy efficiency projects, and also passed an Alternative Energy Portfolio standard mandating greater use of renewable and advanced energy resources. Unfortunately, Ohio’s energy policies have been less aggressive in their attempts to build a strong clean energy product supply chain to aid Ohio’s large manufacturing sector. There has been progress, but not enough. Policies specifically targeting the advancement of clean energy manufacturing are scarce.

Ohio can’t afford this ambivalence towards one of the world’s fastest growing industries. The state has lost over 400,000 manufacturing jobs since 2000 and needs to reassert itself as a manufacturing hub.¹ The infrastructure and expertise remain in place: Ohio still has over 630,000 skilled manufacturing employees and the sector accounts for almost one-fifth of the state’s gross domestic product (GDP).² Ohio policymakers should bolster the manufacturing sector by doing more to support those trying to compete in the growing clean energy industry.

Clean energy manufacturing is similar in many ways to traditional manufacturing and many existing firms are already making the component parts needed for clean energy systems. This is not an exotic economic activity. It is a crucial opportunity for the existing workforce and manufacturing base to supply new demand for their products.

One priority is for the state to implement policy mechanisms that increase access to capital for Ohio clean energy manufacturers (CEMs). Since the financial crisis and subsequent recession, private lenders have become extremely cautious and capital has become insufficiently accessible. For CEMs, these difficulties are exacerbated by clean energy’s status as an emerging industry that remains unfamiliar. This feeds perceptions

of higher risk. In reality, green industries are rapidly growing worldwide and Ohio companies have already seen gains from investing in clean energy. Demand for renewable energy — and all of the manufactured component parts and equipment that come with it — is growing internationally and countries are vying for market share. Ohio needs to invest in its CEMs to stay competitive and make sure the state gets its share of family-supporting manufacturing jobs.

In order to offer advice on what steps Ohio can take to win the competition for clean energy jobs, the Ohio BlueGreen Apollo Alliance has convened a task force comprised of representatives from the business, investor, labor, policy, and environmental communities. The following are the Ohio BlueGreen Apollo Green Manufacturing Action Plan (GreenMAP) policy recommendations for the creation of clean energy manufacturing jobs in Ohio.

Summary

Our recommendations in the realm of finance focus on bolstering Ohio’s current clean energy policies with capital access programs exclusive to clean energy manufacturing. Currently, Ohio lacks any financing programs focused solely on clean energy manufacturing. State aid to clean energy manufacturers is sporadic and difficult to attain. Grant programs and tax credits are helpful but do little for companies requiring loans to develop their product lines and enter the market. For this reason, we recommend that Ohio create a loan program exclusive to clean energy manufacturers. Further, loan programs should seek to maximize the benefit of public dollars by leveraging private investment.

In addition to new loan programs targeting clean energy manufacturers, we recommend the continuation and expansion of tax incentives and grant programs aimed at the clean energy industry, so long as they have standards and conditions in place to ensure appropriate use of

funds. These policies have lowered the costs of becoming more energy efficient and producing one's own renewable energy, and have increased demand for the clean energy products that are manufactured here in Ohio.

In addition to these new financing mechanisms and incentives, we also recommend:

- Prioritizing support for small to mid-size clean energy manufacturers.
- Continuing and expanding support for research and development.
- Continuing and expanding support for existing clean energy manufacturing clusters.
- Expanding workforce development programs to train employees for these new industries.
- Expanding Ohio's demand-side clean energy policies.
- Pushing for improvements in clean energy manufacturing policy at the federal and regional levels.

Policies and programs should in all cases be structured to advance the objective of growing good green jobs in Ohio's clean energy manufacturing sector. The following principles should guide policy development to help achieve this objective:

- Take into account positive supply chain building and job creation effects.
- Prioritize and incentivize investments based on in-state content production or job creation.
- Include family-supporting wage and benefit requirements.
- Include reasonable clawback provisions for companies that fail to meet requirements after receiving a state incentive.



Recommendations

I. Support policies that improve access to finance for Ohio clean energy manufacturers

Access to capital is one of the largest barriers for clean energy manufacturers. This is also an area where our international competitors have been outpacing the United States. While especially important for startups and small-to medium-sized companies attempting to commercialize and begin distribution, availability of financing also affects those established manufacturers hoping to retool and take advantage of the clean energy industry. The goal of publicly funded financing programs should be to leverage private investment. This gets the best value out of the public dollar and increases private sector commitment to the industry. Ohio has many economic development programs in place that are available to clean energy manufacturers, although not specifically geared towards

them. Improvements can be made to assure clean energy manufacturers benefit from existing programs and the creation of new financing programs would help build a coherent clean energy manufacturing strategy.

Existing policies to be improved and continued

Ohio offers two energy-related loan programs that have the potential to support clean energy manufacturing. The first is the **Ohio Energy Gateway Fund**, an equity fund created through a public-private partnership that focuses on clean energy, efficiency, and manufacturing investments. With an infusion of \$40 million from the American Recovery and Reinvestment Act (ARRA) State Energy Program and the Ohio Bipartisan Jobs Stimulus Package, the state of Ohio has partnered with a private investor to match each public dollar, thus doubling the investment fund.³ The private investor chosen by the state has complete discretion regarding how the money is invested and splits returns on the investment with the state until an equal “preferred return” is reached. Once the state receives its “preferred return,” the private investor enjoys a greater share of profits.



This Gateway Fund is one of the first of its kind that caps risk for the state, leverages private dollars, and offers profit incentives to private investors. Currently, the Ohio Energy Gateway Fund has committed \$30 million to one investment manager, EnerTech, LLC, and another \$10 million to Arsenal Venture Partners. Eligible projects for investment include solar, solar thermal, geothermal, and

biomass generation projects, as well as energy efficiency projects and the retooling of existing manufacturers to strengthen Ohio’s advanced energy supply chain. EnerTech and Arsenal have matched the public funds and will be in charge of investing \$80 million total. Where each company will invest has not yet been decided.⁴ We recommend that the state prioritize investments in the clean energy manufacturing supply chain in their partnerships with EnerTech, Arsenal, and any future investment management companies.

The **Advanced Energy Component of the Ohio Bipartisan Jobs Stimulus Package** is Ohio’s second clean energy loan program. Passed in 2008, the program budgeted \$28 million per year between 2009 and 2011 for non-coal related clean energy projects.⁵ The program can fund a wide variety of projects and has had the largest focus on manufacturers of any Ohio financing program. In 2009 and 2010 the program funded eight manufacturing projects with loans amounting to \$30 million.⁶ Total investment in these projects amounts to well over \$1 billion and job creation and retention projections are between 5,000 and 6,000. The majority of these are permanent manufacturing jobs.⁷

Funding for the Advanced Energy Component of the State Stimulus program is set to run out at the end of 2011. This program has been highly successful at expanding clean energy manufacturing companies and leveraging private investment. The state should renew funding for these initiatives in 2012 and beyond, and use returns on current loans to continue supporting clean energy manufacturers.

New programs Ohio should pursue

We also recommend the following options to bolster access to credit for Ohio CEMs. The state could:

- A. Help municipalities win available federal funding.
- B. Establish a loan fund similar to the Ohio Capital Access Program specifically targeting CEMs.
- C. Establish a clean energy manufacturing revolving loan fund.

- D. Promote the strategic use of pension funds and university endowments.
- E. Establish a forgivable loan program for CEMs that rewards job creation.
- F. Do more to help when matching funds are needed to win federal funds.

A. Help municipalities win available federal funding

Given the state's budget constraints, a priority should be accessing existing federal funds that are available. The federal **State Small Business Credit Initiative (SSBCI)** program offers such an opportunity to fund a new support program for small- to medium-sized clean energy manufacturers. Unfortunately, the deadline has passed for the state to directly access this funding. However, municipal governments can still apply for these funds. The state should promote this opportunity to the municipalities throughout the state and provide technical assistance to help to win these funds to support greater private sector lending.

The SSBCI was included in the 2010 Small Business Jobs Act, a \$42 billion bill aimed at creating jobs through small business lending initiatives. It is a \$1.5 billion program to aid states struggling to continue their small business lending programs, of which Ohio was deemed eligible for \$55 million. In order to gain access to the funds, the state must show what existing or newly-created small business lending program the federal money will support and partner with private lenders to leverage at least \$10 of private investment for every public dollar.⁸

The deadline for state applications has passed but another phase of the program will allow municipal governments to apply for the funds. The deadline for doing so has yet to be set. Nonetheless, efforts to access these funds to support Ohio CEMs should commence immediately. These funds are federally mandated to focus on small- to medium-sized manufacturers (fewer than 500 employees), target loans of \$5 million or less, and consider benefits to the state, its businesses, and its residents.⁹



Michigan has already received the first third of its \$79.1 million in SSBCI funds and used it to support two loan financing programs limited to manufacturing, research and development, and high technology businesses. So far it has been highly successful, leveraging \$191 million in loans to 23 businesses with only \$20 million of public funds. There have been no defaults and the state has actually seen an estimated 4 percent return on its investments. These programs are also credited with creating or retaining 1,800 jobs.¹⁰ *To be clear, these government programs are earning money for the state, and are boosting clean energy manufacturing job growth.*

Ohio can use this opportunity to focus on bolstering its manufacturing sector and expanding the clean energy supply chain. Ohio already boasts one of the strongest clean energy supply chains in the U.S. and a focused effort to finance more startups and potential clean energy manufacturers will make the state a major player in one of the world's fastest growing industries. It is also a chance to regain many of the manufacturing jobs lost over the past decade, putting Ohioans back to work in a field where they excel.

B. Establish a loan fund similar to the Ohio Capital Access Program specifically targeting CEMs

Establish a loan fund similar to the **Ohio Capital Access Program** that only serves manufacturers working in the clean energy supply chain, attempting to expand into clean energy industries, or attempting to lower costs through energy efficiency projects. The Ohio Capital Access Program leverages private investments by setting up a “loan guarantee reserve” that protects lenders when borrowers default on loans. Both the lenders and borrowers contribute 1.5-3 percent of the loan into the reserve fund, while the state adds another 10 percent of the loan.¹¹ This allows lenders to invest in projects with a higher perceived risk and be assured their investment is protected. Capital Access Programs are widely used throughout the country and are a popular way to leverage private investment with limited public funds.¹²

The creation of a Capital Access Program exclusive to clean energy manufacturers would create more private investment in Ohio’s clean energy supply chain. Manufacturers interested in lowering energy costs or producing clean energy component parts would benefit from having multiple private lenders partnered with the state willing to make higher-risk loans. The partnership between the state and private financiers could become an important part of a focused clean energy manufacturing strategy and provide manufacturers established pathways to attaining loans for the transition to clean energy production.

C. Establish a clean energy manufacturing revolving loan fund

The creation of a **Clean Energy Manufacturing Revolving Loan Fund** is another option that has had success in other states. The advantage of the revolving loan fund is that it is designed to replenish itself from interest and principal payments and thus requires little funding after the initial public investment. The Ohio State Energy Program (SEP) has become another major grant-giving program for clean energy initiatives. While the SEP is a

federally funded program that has existed for 30 years, the 2009 ARRA stimulus package made it a real force in Ohio after awarding the state \$96 million for energy efficiency and renewable energy projects.¹³ According to a January 2011 report, \$92 million had been distributed to the state, of which \$77 million had been obligated to projects.¹⁴ This leaves \$19 million in ARRA funds as one possible source of capital for the creation of a clean energy manufacturing revolving loan fund, which would extend the life of the grant money to serve more projects.

One example that could provide a model is Wisconsin’s **Green to Gold Fund**, a \$100 million revolving loan fund that streamlined federal and state dollars into a financing mechanism solely focused on manufacturers.¹⁵ The fund created a one-stop-shop for any state manufacturer looking to improve their energy efficiency, retool to produce renewable energy systems and component parts, or train the local workforce to work in the renewable energy supply chain. It also attached job quality and wage requirements that guarantee investments will lead to middle-class job creation. Ohio has almost 200,000 more people than Wisconsin working in the manufacturing sector.¹⁶ Our state should show, at the very least, the same commitment to clean energy manufacturing as our neighbors.

D. Promote the strategic use of pension funds and university endowments

Ohio could invest in clean energy manufacturing using state employee pension funds as was done in California’s Green Wave Initiative. In 2004, at the request of California State Treasurer Phil Angelides, the California Public Employees’ Retirement System (CalPERS) and the California State Teachers’ Retirement System (CalSTRS) began a four-pronged approach to investing in clean energy.¹⁷ Initiatives include demanding environmental disclosure from companies they have investments in, targeting private investment in environmental technologies, investing in the stocks of environmentally responsible companies, and reducing energy consumption in the pension funds’ real estate holdings. Both CalPERS



and CalSTRS signed on to each approach and invested billions of dollars into clean energy initiatives.¹⁸ Currently, public employee pension funds in Ohio are a politically volatile subject. As such, the timing may not be right for this concept. However, the pension funds have the potential to act as a huge investor in clean energy manufacturing and can be a viable tool once political concerns are settled.

E. Establish a forgivable loan program for CEMs that rewards job creation

The creation of a forgivable loan program for CEMs that would convert loans to grants based on job creation achievements would be a useful economic development tool for Ohio. In this type of program, the state would serve as a lender, directly offering low interest loans to the borrowing company. The state and the borrower would agree that if a target number of jobs are created and maintained for an agreed time period, then some portion or the entirety of the loan's principal would be forgiven. The rationale for offering some degree of loan forgiveness is that hitting job growth targets is an indicator that additional tax revenues are also being generated. If the job growth targets are not achieved, then repayment plus interest is required. In this way, there need not be a negative fiscal impact on the state. Indeed, the program should be structured to be revenue neutral. We

recommend the broadest practical assessment of cost and benefits (e.g. government spending or revenue impacts). Such a forgivable loan program was recently proposed at the federal level by a bi-partisan duo of Virginia legislators, Senator Mark Warner (D) and Representative Frank Wolf (R).¹⁹ Another example already in existence can be found in Wisconsin, where Ohio's Columbus Castings has benefited from a forgivable loan partnership with Sheboygan County, the City of Sheboygan, and the State of Wisconsin.

F. Do more to help when matching funds are needed to win federal funds

Ohio manufacturers have faced the challenge of securing the matching funds needed to win federal funding. When evaluating potential business loans, the state should take into account and *prioritize projects that are positioned to receive further funding from the federal government, especially projects that require some amount of matching funds* in order for the federal loan to be made. Such projects have the potential to offer the state a better return on their investment. Therefore, the need for matching funds in order to qualify for federal dollars should be included in the evaluation process. Small- and medium-sized manufacturers do not have the resources, time, and expertise that larger companies have to find every possible source of funding available to them. Thus, the process must be a collaborative one between the

state and its manufacturers to ensure opportunities to access federal assistance are maximized. In order to eliminate uncertainty about whether or not federal funding will materialize, state loans that are prioritized due to anticipated federal funding should be made contingent on the receipt of federal funds (assuming this still enables satisfaction of the federal requirements for matching funds).

II. Improve and continue Ohio incentive programs

In addition to measures that improve access to capital for clean energy manufacturers, we recommend continued funding for Ohio's existing clean energy incentive packages. These tax credits and grant programs have made clean energy a priority in the state and have directly or indirectly aided clean energy manufacturers. Many of these programs are set to lose funding at the end of 2011, which will be highly detrimental to the clean energy manufacturing supply chain in Ohio.

Beyond continuation of existing incentive programs, we recommend the creation of an incentive program directly targeting clean energy manufacturing. A clean energy **Anchor Tax Credit** would strengthen both public and private commitment to the clean energy market. The tax credits are designed to provide tax relief for companies that attract other businesses to locate or expand in the state. State certification as an "anchor company" would be required and consistent evaluations are necessary to make the credits cost-effective. This could be especially useful for building Ohio's renewable energy supply chain and leveraging its existing resources. Anchor tax credits are useful for building "clusters" in one business sector and attracting larger companies – original equipment manufacturers ideally – that would benefit from a complete supply chain in close vicinity. The Anchor Tax Credit could complement Ohio's existing "cluster" initiatives, such as the Ohio Hubs of Innovation and Opportunity program and Ohio Third Frontier Program investments.

Ohio should also extend the life of the **Advanced Energy Fund**. The Advanced Energy Fund has been a grant program providing capital for renewable electricity generating installations throughout the state. These projects are generally residential, commercial, industrial, and utility-scale solar panel installations, wind turbines and wind farms, and biomass conversions of existing electric generators. The fund has also financed energy efficiency projects in 65 manufacturing facilities around the state.²⁰ Such industrial energy efficiency improvements lower energy bills, making businesses more competitive. This feature of the incentive program is why we include it here and not under our demand-side policy discussion.

III. Provide tailored support for small to mid-size Ohio manufacturers

For a strong clean energy manufacturing industry to develop in the state, Ohio public officials need to play an active role in fostering its growth. The optimal strategy will go beyond financing programs and tax incentives. The state must also use its resources to keep Ohio's small- to mid-size manufacturers viable and competitive. This is especially important in the emerging clean energy sector, where innovation and new technologies play large roles in how competitive a company is. Ohio policy should reflect this by making investments in fostering communication between clean energy manufacturers, consulting firms, and university research resources. This means continuing existing policies that aid clean energy manufacturers, as well as developing new ways to improve and streamline communication between Ohio's best resources.

The **Hollings Manufacturing Extension Partnership (MEP)** is an existing federal program administered by the U.S. Department of Commerce and the National Institute of Standards and Technology that offers local access and tailored support for small and mid-size Ohio manufacturers. Each state has MEP partners that provide consultation to local businesses on technology innovation and increasing competitiveness.²¹ This can be as simple as helping companies improve their energy efficiency to lower costs or as complex as retooling a manufacturer's

equipment, process, and workforce in order to join a new industry. Ohio has nine MEP partners: MAGNET in northeast Ohio, TechSolve in the southwest, and the seven Edison Technology Centers around the state.²² Using these resources as part of a focused clean energy manufacturing strategy will enable local access to new innovations, university research, and general information on energy efficiency and supply chain development.



In 2008, the Economic Policy Institute estimated the MEP created or retained over 50,000 jobs nationally on a \$100 million budget. Other evaluations have shown that MEP initiatives have saved companies over a billion dollars annually and increased their sales by over \$6 billion.²³ As one of the top five manufacturing states in the country, Ohio's policymakers should be advocating for the continuation and expansion of this vital program.

The **Ohio Hubs of Innovation and Opportunity** is another program that uses a "business cluster" approach to building new industries, attracting companies, and nurturing innovative Ohio companies. There are seven Ohio Hubs, with two related directly to clean energy manufacturing: the Northwest Ohio Solar Energy Hub in Toledo and the Advanced Energy Manufacturing and Storage Hub in Columbus. Hubs are designated to areas that excel in a recognized industry and contain a strong anchor research institution. Each hub receives a \$250,000 grant from the state for collaborative efforts between cluster-related businesses, research programs,

and consulting firms. These collaborative efforts help the state focus its economic development resources on established and growing industries.

The continuation and expansion of these network-building initiatives are an important element of a clean energy manufacturing strategy for the state. While financing for companies might be the most immediate need, collaborative research and innovation efforts like these are what will allow Ohio to carve out a foothold in the clean energy economy and compete for many years to come. They also help brand the state as a friendly place for clean energy businesses and encourage further investment and expansion in our clean energy supply chain.

IV. Expand and continue support for research and development initiatives

Research and development investments will play a major role in deciding where economic gains are seen from the clean energy industry. For Ohio manufacturers to compete on a global level, they must have access to the latest research and breakthrough technologies. The federal government generally plays a large role in providing funds for new research initiatives and Ohio should actively pursue those funds. However, investment programs at the state level have had lots of success in Ohio and they should continue and expand wherever possible.

The **Ohio Third Frontier Program** is the largest research and development state investment program. Between 2002 and 2009 the program spent \$681 million and generated over \$6 billion in economic activity.²⁴ The Third Frontier encompasses many programs with different focuses. Of the clean energy manufacturing companies, the most relevant are the Fuel Cell Program, Advanced Energy Program, and Photovoltaic Program. The Third Frontier also funds different financing programs, such as the Ohio Capital Fund and Innovation Ohio Loan Fund.

Even with these large scale programs focused on business financing and startup development, the Third Frontier still spends the vast majority of its money on university



research through its Wright Centers of Innovation Program, Research Commercialization Program, Ohio Research Scholars Program, and Wright Projects Program. Between 2003 and 2008 over 76 percent (\$684 million) of Third Frontier money went to research projects while 10 percent (\$89.7 million) went to product development and commercialization assistance.²⁵ While the Third Frontier's main focus has always been on research initiatives, the program has also been used as an economic development tool. The enormous disparity between investments in research and investments in economic development is problematic. Third Frontier economic development and entrepreneurial support programs have been more cost effective at creating jobs, and those jobs are accessible for more Ohioans than university research positions.²⁶ While we recommend the state maintain a strong focus on research and development of new technologies, especially clean energy technologies, we also suggest the Third Frontier strikes a much greater balance between university and economic development investments. More emphasis is needed on the commercialization of new technologies.

V. Invest in workforce development

In January 2010, the Apollo Alliance and Policy Matters Ohio released *Mapping Green Career Pathways: Job Training Infrastructure and Opportunities in Ohio*. The report compiled

and analyzed the existing workforce training programs in Ohio and provided recommendations on improving these to meet the needs of the growing clean energy industry. In summary, the report stressed the importance of:

- Using existing workforce training infrastructure rather than the creation of many new programs.
- Achieving greater integration between the state and the different institutional participants: training providers, unions, schools, and businesses.

Of particular importance is the fact that 55 percent of jobs created in green industries are either manufacturing or construction jobs.²⁷ Ohio has strong potential to create these jobs and regain many of the manufacturing jobs lost over the past decade. The Renewable Energy Policy Project (REPP) identified 2,465 Ohio businesses that are primed to manufacture component parts for wind turbines, solar panels, biomass co-firing systems, and other renewable energy generation equipment.²⁸ The Environmental Law and Policy Center recently reported that Ohio already has 106 businesses in the wind turbine supply chain and another 63 in the solar industry supply chain, supporting over 9,000 jobs.²⁹ Part of continuing this expansion and green economic development is making sure the Ohio workforce has the skills needed to support these new businesses. There are shortages

of workers in both specialized energy jobs (e.g. energy auditor, wind turbine technician) as well as existing professions (e.g. welder).

While these programs have provided better access to green-collar job training for students attempting to enter the workforce, a manufacturing workforce development strategy must also focus on incumbent worker retraining. The Ohio Workforce Guarantee has recognized this and provides funding for retraining current employees. In-house company programs that result in a portable certificate can be reimbursed at 100 percent by the state, as well as programs in which an employer partners with a joint vocational center or community college. Programs that do not fall into these categories can still be reimbursed at a 75 percent rate.

These existing training opportunities are great tools for the state and provide a solid workforce training infrastructure. Small steps can be taken to ensure these programs get the greatest value for the community and provide our clean energy manufacturers with a well-trained workforce. The state should start by investing in credible data collection and dissemination to understand the number and types of jobs needed most in the private sector. It should also prioritize financial awards to projects and companies that are committed to hire locally from training and apprenticeship programs. Also, state workforce training grants should be conditioned on interagency collaborations, which would encourage training providers, unions, employers, and Workforce Investment Boards to work together. This will build a coherent and efficient workforce training network that minimizes overlap and allows programs to be tailored to specific company needs. Finally, state investments in workforce training should emphasize flexibility for workers by funding programs that provide portable certificates and degrees.

The state has also been employing federal dollars for its **Energizing Careers** workforce-training program. This program has been a particular boon for clean energy



manufacturers and their employees. In January 2011, the program received \$1.3 million to train over 700 workers at six different companies.³⁰ The advantage of the Energizing Careers program is that it is company specific in how it trains workers, rather than offering the same curriculum for everyone. Thus, each company receiving funding is training workers in a specialized area that will allow those workers to be hired immediately at each company. For example, Willard and Kelsey Group, LLC will be training workers in the production of frameless cadmium telluride photovoltaic solar panels.³¹ Each company receives a trained workforce specific to its needs, while workers are trained through a company that is likely to offer them a job.

Energizing Careers is a \$6 million program created in 2010 with federal ARRA funds. The January 2011 funding was the second round of disbursement from the program. *As funds dwindle and the clean energy manufacturing*



sector grows, it is critical that Ohio legislators continue their commitment to clean energy manufacturers and workers by funding this program as needed and incorporating it into their larger workforce development infrastructure.

VI. Expand and improve demand-side policies

Though this report emphasizes supply-side mechanisms that directly bolster clean energy manufacturers, we must also note the important role Ohio's demand-side policies have played in driving clean energy industry growth. By encouraging the growth of clean energy generation projects in the state, demand-side policies have created a market for local component parts and equipment produced by Ohio's clean energy manufacturers. A key demand-side policy in Ohio is the **Alternative Energy Portfolio Standard (AEPS)**. We recommend an increase in the renewable energy requirements.

Currently, the AEPS requires investor-owned electric utilities to attain 12.5 percent of their electricity from renewable sources (including a 0.5 percent solar requirement) and another 12.5 percent from advanced energy sources (e.g. "clean coal," nuclear) by 2025. It also requires utilities to implement energy efficiency programs to lower their

customers' energy consumption by 22 percent over the same period. Annual benchmarks towards these goals have been set and are enforced by the Public Utilities Commission of Ohio.

The AEPS mandates that 50 percent of the renewable and advanced energy requirements must be electricity-generating facilities located in Ohio and the remainder must be delivered to the state. Utilities can either install their own renewable energy resources or buy the power in the form of Renewable Energy Credits.³² This has led to a huge growth in renewable energy generation installations from residents and businesses wishing to sell the power to utility companies. The state only had 10 MW of wind power capacity in 2010 and 400 MW are now under construction. Utility scale solar installations have also begun to appear in Ohio for the first time. The 12 MW Wyandot Solar Farm opened in June 2010. This is perhaps the best example of market demand aiding clean energy manufacturers: all 159,200 solar panels were manufactured by First Solar Inc. in Perrysburg, Ohio. First Solar began operations in Ohio in 2000 with 50 employees. Today it employs around 1,100 Ohioans, with the majority of them working in the manufacturing sector.³³

While the AEPS has generally been successful, there have been some concerns over weak enforcement of annual benchmarks and that requirements could be weakened. Weakening this law would be a huge step backwards for Ohio's clean energy manufacturing sector and would cause investors to question Ohio's commitment to clean energy industries. Lenient enforcement of the law's annual benchmarks would cause similar problems. Renewable and solar energy benchmarks can be bypassed by a *force majeure* request that the Public Utilities Commission of Ohio (PUCO) must approve. In 2009, the PUCO approved such requests from all four investor-owned-utilities for their failure to reach solar benchmarks. This was partly due to the nascent nature of Ohio's solar industry at the time and a lack of available solar Renewable Energy Certificates (RECs).³⁴ However, in 2010, one of these utilities, FirstEnergy (which attained the fewest solar RECs in 2009), again filed for a waiver of their solar requirement, even though Ohio's current solar industry has more than enough RECs for all four utilities.³⁵ The PUCO is currently reviewing their *force majeure* request, and should enforce, for the first time, the penalties laid out in the original SB 221 legislation.

Strengthened targets and strict enforcement would provide an extra boost to Ohio's clean energy manufacturers with associated job growth benefits.



VII. Push for improvements in clean energy manufacturing policy improvements at the federal and regional levels

A. Federal policy

While the U.S. Department of Energy deserves credit for all the excellent work it has done to promote clean energy development and job growth, there is still room for improvement. The process for acquiring grants and loans is too time and resource intensive. Major awards can require an investment of tens or hundreds of thousands of dollars in staff time and the process can take as long as two years to complete. Reforms should be enacted to increase efficiency and decrease the costs for applicants.

Furthermore, Ohio is in a strong position to be an important voice in the national debate on manufacturing policy. The lack of a coherent approach has put the United States at a disadvantage. The state's policymakers should advocate for a comprehensive national manufacturing policy. Some specific elements that deserve strong support include the following types of measures:

- *Support better access to capital* – provide federal funding to help establish state-level revolving loan funds to assist manufacturers seeking to improve their energy efficiency or retool their plants to produce clean energy products.
- *Tax credits* – extend the Advanced Manufacturing Tax Credit (48c) that was created as part of the ARRA stimulus package in 2009. This has been an extremely popular program for CEMs. Unfortunately, the program was so popular that it exhausted its \$2.3 billion long before it could fulfill the needs of the manufacturing sector.³⁶ Less than a third of the eligible projects received the 30 percent tax credit prior to funds running out. Ohio companies received \$118 million from the program the first time around and the state has multiple approved projects and millions of dollars waiting for the tax credit to receive more funding.³⁷

The erratic nature of renewable energy incentives has also held back renewables development in the United States. Ohio's state and federal elected officials should support more dependable renewable energy incentives, including extension of the Production Tax Credit, which will expire at the end of 2012 without reauthorization.

B. Regional policy

Ohio is one of several states in the industrial Midwest with similar strengths and opportunities for expansion of clean energy manufacturing. This creates opportunities for greater efficiencies through coordination, economies of scale, and collaborative learning through information and lessons exchange. We urge Ohio to join with others in the region to establish a Midwest CEM Policy Working Group under the auspices of the Midwestern Governors Association. This Working Group can help develop proposals for regional, multi-state action to advance smart CEM policy. The Working Group can also promote awareness of the benefits of such policy proposals, thereby increasing the likelihood of their adoption.

Acknowledgements

The recommendations included in this report reflect the input of our task force members, Policy Matters Ohio, and BlueGreen Alliance staff. Phil Stephens has served as lead researcher in support of this project. We are very grateful for the time and expertise volunteered by our task force members:

- **Harriet Applegate**, Executive Secretary, Northshore AFL-CIO
- **Ashley Craig**, Environmental Business Specialist, Environmental Law and Policy Center
- **Lee Geisse**, Regional Program Manager - Labor Climate Project, BlueGreen Alliance
- **Kimberly Gibson**, Director, Advanced Energy Manufacturing Center of Edison Welding Institute
- **Dennis Harwig**, Director - Center Development, EWI
- **Brian Kaiser**, Director of Green Jobs & Innovation, Ohio Environmental Council
- **Wendy Patton**, Senior Associate, Policy Matters Ohio

Thank you!

Endnotes

- 1 Bureau of Labor Statistics, *Ohio Economy at a Glance*. <http://www.bls.gov/eag/eag.oh.htm>
- 2 Ibid.
- 3 <http://www.development.ohio.gov/OhioEnergyGatewayFund/>
- 4 EnerTech, LLC plans to announce initial investments in June 2011.
- 5 http://www.ohioairquality.org/advanced_energy_program/
- 6 http://www.ohioairquality.org/advanced_energy_program/fact_sheets.asp
- 7 Ibid.
- 8 Ibid.
- 9 State Small Business Credit Initiative legislation. Available at: <http://peters.house.gov/uploads/State%20Small%20Business%20Credit%20Initiative%20Legislation.pdf>
- 10 <http://www.michiganadvantage.org/Access-to-Capital/>
- 11 *Capital Access Programs: A Study of Nationwide Performance* (U.S. Department of the Treasury, January 2001). Available online at: <http://www.treasury.gov/press-center/press-releases/Documents/cap01.pdf>
- 12 Capital Access Programs have been successful in leveraging private funds. The state contribution to the loan guarantee reserve fund is extremely small compared to the private lending it leverages. For example, if the state must contribute 10% of the loan to the reserve fund, then it is leveraging ten times its investment in the private sector. Many states contribute far less than 10% — generally in the range of 3%-7% — implying public leveraging of private investments at a ratio of up to 33:1. The 2001 Department of the Treasury report also notes the low cost to the public of job creation and retention. Their report estimates that CAP programs across the country averaged a public cost of \$540 per job created/retained.
- 13 The state proposal that was approved for funding consisted of five focus areas: Deploying Renewable Energy in Ohio, Making Efficiency Work, Transforming Waste to Value, Targeting Industry Efficiency, and Advancing Biofuels Beyond the Basics. Executive Summary of Ohio SEP proposal: http://www.development.ohio.gov/cms/uploadedfiles/Development.ohio.gov/Recovery/Energy/SEP-ARRA_ExecSum_FinalDraft.pdf
- 14 SEP Weekly Dashboard, January 3, 2011. http://www1.eere.energy.gov/wip/pdfs/sep_dashboard_report_010311.pdf
- 15 <http://apolloalliance.org/made-in-america/signature-stories-made-in-america/green-to-gold-fund-would-green-wisconsin-manufacturing/>
- 16 Bureau of Labor Statistics. *State and Area Employment Annual Averages*. (2011) Available at: http://www.bls.gov/sae/etables/sae_annavg110.pdf
- 17 <http://www.treasurer.ca.gov/greenwave/update.pdf>
- 18 The Pension Funds agreed to \$950 million in investments in 2004, as well as agreeing to lower their energy consumption in their \$12.2 billion real estate portfolios by 20%.
- 19 More information:
News article: <http://www2.timesdispatch.com/news/2011/jun/11/tdbiz01-warner-wolf-look-to-bring-jobs-back-from-a-ar-1100683/>
Editorial on the proposal: <http://www2.newsvirginian.com/news/2011/jun/12/editorial-statesmanship-alive-va-ar-1104102/>
Explanation of the program from Senator Mark Warner's web site: <http://warner.senate.gov/public/index.cfm?p=america-recruits>
- 20 Ohio Department of Development Report: *Biennium Report to the Ohio General Assembly on the Universal Service Fund and the Advanced Energy Fund*. June 2010. Available at: http://development.ohio.gov/DepartmentReports/Reports/USF_AEF%202010%20for%20web.pdf
- 21 <http://www.nist.gov/mep/about.cfm>
- 22 Personal correspondence with Ohio MEP Center Director, Beth Colbert.
- 23 *Delivering Measurable Results to Manufacturing Clients*. U.S. Department of Commerce and the Hollings Manufacturing Extension Partnership. Report on FY 2009 released in March 2011. Estimates are based on survey results of 7,786 companies that worked with the MEP in FY 2009. Report available at: <http://www.nist.gov/mep/upload/MEP-Measuring-Results-Mar11-FINAL.pdf>
- 24 *Making an Impact* (SRI International, September 2009).
- 25 *Making an Impact* (SRI International, September 2009).
- 26 Ibid.
- 27 Bivens, J.; Irons, J. and Pollack, E. *Green Investments and the Labor Market* (Economic Policy Institute, April 2009).
- 28 *Building a Clean Energy Assembly Line* (Renewable Energy Policy Project and BlueGreen Alliance, November 2009).
- 29 Craig, A.; Learner, H. and Gray, P. *The Solar and Wind Energy Supply Chain in Ohio* (Environmental Law and Policy Center, January 2011).
- 30 Ohio Department of Development Press Release: *Ohio Employees to Receive Training for Advanced Energy Jobs*. January 5, 2011. Available at: <http://www.naseo.org/news/newsletter/documents/2011-01-20/Ohio.pdf>
- 31 Ibid.
- 32 Each Renewable Energy Credit represents 1 MWh generated from renewable resources.
- 33 Craig, A.; Learner, H. and Gray, P. *The Solar and Wind Energy Supply Chain in Ohio* (Environmental Law and Policy Center, January 2011).
- 34 Hollingsworth, A.; Stephens, P. and Woodrum, A. *Energy Standards at Work: Ohio SB 221 Creates a Cleaner Economy* (Policy Matters Ohio, September 2010).
- 35 Ibid.
- 36 Sen. Brown Discusses Efforts to Expand Advanced Energy Manufacturing Tax Credit for Ohio Businesses (Senator Sherrod Brown's web site, Press Releases, May 2010). Available at: http://brown.senate.gov/newsroom/press_releases/release/?id=6f05e157-36e3-4db5-9a76-2e87401f71e7
- 37 Ibid.

The BlueGreen Alliance is a national, strategic partnership between labor unions and environmental organizations dedicated to expanding the number and quality of jobs in the green economy.

BLUEGREENALLIANCE.ORG
TWITTER: @BGALLIANCE

MINNEAPOLIS
2828 UNIVERSITY AVE. SE, SUITE 200
MINNEAPOLIS, MN 55414

SAN FRANCISCO
330 TOWNSEND STREET, SUITE 205
SAN FRANCISCO, CA 94107

WASHINGTON, D.C.
1020 19TH STREET NW, SUITE 600
WASHINGTON, DC 20036