BLUEGREEN ALLIANCE

The Michigan Green Manufacturing Action Plan

Next Steps in a Clean Energy Manufacturing Policy Agenda for Michigan

THE MICHIGAN BLUEGREEN APOLLO ALLIANCE OCTOBER 2011

Introduction

In March 2009, the Apollo Alliance released a report titled *Make It in America: The Apollo Green Manufacturing Action Plan* (GreenMAP). GreenMAP raised awareness of the opportunity for America to capture the manufacturing jobs that the transition to a clean energy economy will create, and it significantly affected the conversation in Washington, D.C. Now, as a project of the Michigan BlueGreen Apollo Alliance, we are working to advance smart state-level policies to bolster clean energy manufacturing job creation in Michigan.

Manufacturing jobs are typically well-paid, family-supporting jobs with benefits. These jobs have long been the backbone of the American middle class, especially in Michigan. Today, the manufacturing sector is helping lead the American economy out of the current recession. The increasing demand for clean energy products, both in Michigan and globally, offers an excellent opportunity to grow this critical sector if properly supported.

In recent years, Michigan has made great strides in setting the policy framework needed to succeed in the competition for clean energy manufacturing jobs. These programs, amplified by temporary funding from the American Recovery and Reinvestment Act (ARRA) of 2009, have been very effective in stimulating the growth of a nascent clean energy manufacturing sector in Michigan, building on the state's considerable manufacturing capacity, skilled workforce, and natural resources.

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

Overview

Our primary recommendation is for Michigan to strengthen policies that create demand for clean energy, including an increase of the state's Renewable Portfolio Standard (RPS) and a Clean Local Energy Accessible Now (CLEAN) contracts program (sometimes also referred to as standard contracts or feed-in tariffs). Our recommendations also recognize the importance of policies that increase access to capital. Our international competitors are bettering us in providing government support for lending.[1] In the wake of the financial crisis and amidst concerns about reckless lending in the United States, the pendulum has swung too far in the opposite direction. In addition to the excess caution of private lenders in general, businesses operating in emerging sectors like clean energy face the additional hurdle of a lack of familiarity with the technology, which feeds perceptions of higher risk. In fact, because the repayment rate has been so high and the default rate so low, the

Michigan Economic Development Corporation (MEDC) is making a 4 percent return on its loan programs through the modest fees and interest it charges.[2]

Our recommendations related to finance include continuing and expanding the programs that are currently working, such as the state's existing loan and financial incentive programs. We also recommend bolstering the capitalization of clean energy manufacturing in Michigan by strategically investing the state's employee pension fund holdings and university endowments. We urge the creation of a Michigan Clean Energy Bank as a subsidiary of or an office within the MEDC to focus expertise and raise awareness of the state's support for clean energy finance.

In addition to the importance of (1) strengthening demand-side policies and (2) improving the availability of financing, we recommend that the state:

1. Continue targeted incentives for clean energy manufacturing.

2. Continue and expand support targeting small- and medium-sized clean energy manufacturers (CEMs).

3. Continue and expand support for technology cluster initiatives, especially the Centers of Energy Excellence program.

4. Integrate workforce training efforts and increase funding for Michigan's Green Jobs Worker Training Initiative.

5. Push 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 Michigan's clean energy manufacturing sector. The following principles should guide policy development to help achieve this objective:

- Take into account 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.

Clearly, such concepts are not new to Michigan policymakers. The Anchor Tax Credit, for example, explicitly seeks to develop in-state supply chains and bolster job creation. Yet, the low domestic content of products made by some CEMs benefitting from state loan and tax incentive programs has raised concerns. For example, most of the components that go into advanced batteries are foreign made, largely because of the Asian nations' consumer electronics technology capabilities.[3]

Strategic, well-designed domestic content incentives and requirements can effectively promote in-state employment. For example, we offer a recommendation for a Clean Local Energy Accessible Now (CLEAN) program that borrows from Ontario's model, which has persuaded United Solar Ovonic, a Michigan-based solar panel manufacturer, to build a 7,000-square-meter manufacturing facility in LaSalle, Ontario.[4] There have been some legal challenges to domestic (or in-state) content requirements and other approaches that target resources to maximize in-state supply chains. We do not attempt to resolve such legal issues with respect to any of the specific recommendations below. We do emphasize that the principles above are important to good job creation in Michigan and argue for their incorporation to the greatest extent feasible.

Recommendations

1. Renew and extend demand-side policies

Michigan BlueGreen Apollo initiated this process intending to focus on policies that directly encourage manufacturing. While direct support for CEMs is critical, the task force felt that creating demand was the single most important way to bolster clean energy manufacturing in Michigan. If the goal is to develop a robust, competitive clean energy manufacturing sector in Michigan, policies that grow the demand for technology that CEMs produce must be part of the package. Demand will also come from other states or countries, but proximity to demand gives manufacturers an edge. Therefore, demand in Michigan is particularly beneficial for Michigan manufacturers. We offer these recommendations:

a. Expand Michigan's Renewable Portfolio Standard

Established in 2008, Michigan's RPS mandates that 10 percent of energy production in the state must come from renewable sources by clean energy generation, renewable energy credits, and energy efficiency programs by 2015. The state is well on its way to meeting the 10 percent goal on time. The RPS is an important source of demand for Michigan manufacturers. By increasing demand slowly over time, clean energy can be smoothly integrated into the system and can help meet new demand or replace aging power plants.

b. Start a Clean Local Energy Accessible Now (CLEAN) contract program

These policies, which have also been referred to as standard contracts and "feed-in tariff" policies, have been very successful at encouraging residential and commercial-scale distributed generation technologies like rooftop solar photovoltaic systems. RPS policies have been more successful at promoting centralized, utility-scale energy generation.[5] This policy mechanism offers a good opportunity to grow an under-developed segment of clean energy production. To maximize the job creation and other benefits of clean energy, Michigan's CLEAN program should give preference to CLEAN contract applicants that use Michigan-made systems, components, and labor in addition to the usual requirement that the energy be delivered to the Michigan grid.[6]

c. Upgrade transmission infrastructure and streamline siting of generation facilities

Maximizing cost effective clean energy development requires adequate transmission to areas rich in renewable energy resources. Michigan is in need of transmission upgrades. Clean energy project developers also report that the process for siting new electricity generating facilities is too uncertain and cumbersome. Reforms are needed to streamline the approval of appropriate projects. While speedier decision making and better efforts to balance competing concerns are needed, reforms should not go too far. Safeguards against projects that are not appropriate must remain in place.

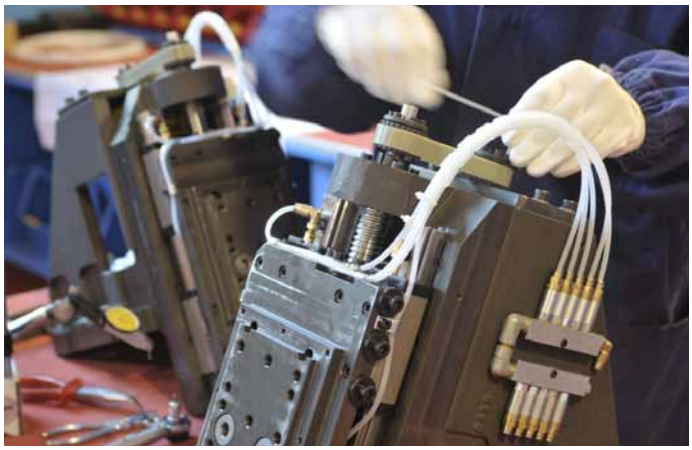
d. Establish bi-annual long-term energy planning

The state's last energy planning exercise was completed in 2005. The state should institute a bi-annual planning

process that will result in a stronger understanding of Michigan's energy needs and opportunities. This will help ensure that this important topic receives the attention it deserves. Further objective analysis will highlight the cost-effectiveness and benefits of greater clean energy use in Michigan's future.

2. Improve access to capital for CEMs

Access to long-term, low-cost, stable financing remains the most important need for attracting and encouraging private-sector investments in clean energy businesses in Michigan. State loan programs targeting CEMs have been a major source of capital for clean energy manufacturing businesses and need continued support, especially as federal ARRA funds that helped support these programs in recent years phase out. The state should also develop other sources of capital for worthy clean energy manufacturing projects, such as state pension funds and university endowments.



a. Continue and expand existing financing programs

The state has in place excellent financial programs — in some cases bolstered by federal funding — which have enabled the growth of clean energy manufacturing activities in Michigan. These include several state-backed loan programs aimed at helping companies seeking to diversify into clean energy manufacturing:

- *The Michigan Energy Efficiency and Renewable Energy Revolving Loan Fund* provides low-interest loans for small businesses with 500 or fewer employees to diversify into the high-growth clean energy sector and invest in the advanced manufacturing of energy systems and components.

- *The Michigan Loan Participation Program* works with lenders to reduce their risks when offering loans to businesses for investment in diversification.

- *The Michigan Collateral Support Program* helps growing businesses whose collateral is not valued highly enough to cover the cost of a loan.

These successful programs should be continued and expanded in order to accelerate their already successful track record of creating clean energy manufacturing jobs in Michigan.

b. Leverage state employee pension fund holdings and university endowments

Investment quality is paramount, of course, but clean energy can be a reliable part of any portfolio. California's Public Employees' Retirement System's environmental initiative (also known as the Green Wave) has delivered strong returns compared to other investments in its portfolio, while at the same time producing energy savings through greater energy efficiency. [7] Michigan should undertake a similar effort to simultaneously benefit from and support this growth sector of the economy by investing pension funds and university endowments in clean energy.

c. Establish a Michigan Clean Energy Bank

We urge the creation of a Michigan Clean Energy Bank as a subsidiary of or an office within the MEDC to focus expertise and raise awareness for the state's support for clean energy finance. The importance of finance to this crucial industry is the underlying rationale.

In June, Connecticut became the first state to make such a move with the introduction of a Clean Energy Finance and Investment Authority. The state diverted an existing revenue stream, a surcharge on residential and commercial electricity bills, which had previously gone to the state's Clean Energy Fund. The United Kingdom has also recently announced plans to establish a Green Investment Bank with $4.8 billion in funds.

3. Continue targeted incentives for clean energy manufacturing

Michigan should continue the type of targeted incentives for CEMs that ended with the state's fiscal year 2012 budget. The fiscal year 2012 budget has converted tax credits to outright grants, not just for clean energy but across the board. Previously, Michigan had offered several targeted tax credits for clean energy that authorized up to $300 million annually, though much less than the authorized amount was used in any particular year.

The introduction of grants instead of tax credits is a useful step. However, we urge the reintroduction of the strategic use of targeting to grow the clean energy sector, and clean energy manufacturing in particular. It would be a missed opportunity if Michigan fails to build on the progress that has been made in the area of clean energy manufacturing. The state is well positioned due to its available industrial capacity and skilled workers. And clean energy is a large and fast growing market, which has continued to grow robustly despite a global economic slowdown. In 2010, global investment in clean energy technologies increased to a record $243 billion, up 30 percent from 2009 levels. The market has experienced 30.5 percent annual growth since 2004. [8]

The newly available grants will be more useful than the previously available tax credits for those CEMs that manage to access them. The large upfront capital costs associated with new or expanded clean energy manufacturing are an important obstacle to job creation. By providing funding sooner and with more certainty — reduced tax liability may not be an incentive at all in slow economic time — grants that target CEMs specifically are an improvement over tax credits.

Rather than moving toward less strategic targeting of incentive funding, we urge the opposite: the state should use incentives and other support to actively help establish clean energy manufacturing component part supply chains. An example of where this has been effective in the past is the company Adaptive Manufacturing Solutions. This collaborative effort of companies with interlocking business relationships was spurred in part by tax credits made available through Michigan's Tool & Die Renaissance Recovery Zones, which encourages companies to work together to receive larger contracts through tax incentives.

4. Prioritize support targeting small- and medium-sized CEMs

The *Michigan Manufacturing Technology Center (MMTC)*, an affiliate of the federal National Institute of Standards and Technology's Hollings Manufacturing Extension Partnership, provides vital services to help small- and medium-sized manufacturers (SMMs) modernize and become more competitive in domestic and global markets. Headquartered in Plymouth, MMTC has five affiliate offices located in Flint, Grand Rapids, Marquette, Saginaw, and Traverse City to serve manufacturers throughout the state. MMTC partners with the Michigan Economic Development Corporation and other economic development organizations, which provide the state's estimated 14,000 SMMs with a variety of services, including operational assessments, process improvement training, mentoring services, website technical assistance, and market diversification tactics. Continuation and expansion of support for SMMs is critical to building out Michigan's clean energy manufacturing supply chains and encouraging the successful commercialization of new technology and products.

5. Continue and expand support for technology cluster initiatives, especially the Centers of Energy Excellence program

The Michigan Economic Development Corporation adopted a strategy that combines several programs to support the growth of an industry "cluster" around a specific clean energy technology. These programs must continue under the new MEDC grant-based approach toward incentives to maintain Michigan's progress as a leader in the development of clean energy clusters. The goal is to match private sector firms with universities, national labs, and the state to accelerate commercialization of new energy technologies. This strategy involves creating Centers of Energy Excellence surrounding existing (or newly attracted, by Anchor Tax Credits or other incentives) high-profile anchor companies that serve as a magnet for new industry growth.[9] Targeted clean energy technology areas include advanced energy storage, solar photovoltaic systems, wind turbine manufacturing, bioenergy, and advanced materials and manufacturing.

6. Integrate workforce training efforts and increase funding for Michigan's Green Jobs Worker Training Initiative

Michigan's large, well-trained, and highly-skilled workforce is one of the state's most important competitive assets. The state has sponsored workforce programs designed to train workers in the skills needed by emerging clean energy businesses. In particular, *Michigan's Green Jobs Worker Retraining Initiative* is considered one of the nation's most aggressive "green jobs" retraining programs. The Initiative aims to help displaced workers and includes the development of Green Skill Alliances. Under the umbrella of No Worker Left Behind, the program works with employers and universities to train Michigan workers in clean energy fields. Its purpose is to provide firms in clean energy industries with a strong supply of well-trained, highly skilled workers and to grow a diverse, sustainable economy in Michigan.

In January 2010, the Apollo Alliance teamed up with Corporation for a Skilled Workforce to produce *Mapping Green Career Pathways: Job Training Infrastructure and Opportunities in Michigan*.[10] This paper detailed a path forward for Michigan's green economy that builds upon existing resources to forge solid career pathways and accessible training opportunities. Here, we summarize the recommendations.

a. Develop a more integrated system of workforce development.

Several training and apprenticeship programs in manufacturing and construction have already developed modules on the specific skills needed in emerging green industries. However, in order to craft actual career pathways for trainees, a more integrated system of workforce development is needed. Connections made through broad coalitions as well as close partnerships with employers will maximize the opportunities available

to Michigan's laborers. Overall, we encourage a meshing of priorities between environmental, economic, and workforce initiatives.

b. Increase data collection to enable improved program design going forward.

Initial steps toward data collection on current green-collar jobs and areas of projected growth have begun. More work should be done in this regard to allow for investments that fill in the gaps rather than duplicate existing efforts.

c. Direct funding towards projects that actively encourage connections and increase accessibility to all members of the Michigan workforce.

Policies should direct funding towards projects that actively encourage connections and increase accessibility to all members of the Michigan workforce. Grants should encourage partnerships between training providers, unions, employers, and Workforce Investment Boards. Potential local workforce intermediaries — such as community and technical colleges — should receive funds to link employers and projects with trainees. Additionally, incentives should encourage training, hiring, and mentoring of those often excluded from manufacturing and construction, including women, people of color, and workers laid off from carbon-intensive industries. Finally, flexibility is important. Programs offering transferable skills and credentials will afford workers a diversity of employment options and the ability to grow their green skill sets over the course of a career.

7. Push for improvements in clean energy manufacturing policy 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, Michigan 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.[11] Less than a third of the eligible projects received the 30 percent tax credit prior to funds running out.

The erratic nature of renewable energy incentives has also held back renewables development in the United States. Michigan'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

Michigan is one of a several states in the industrial Midwest with similar strengths and opportunities for expansion of clean energy manufacturing and integration of supply chains. This creates opportunities for greater

efficiencies through coordination, economies of scale, and collaborative learning through information and lessons exchange. We urge Michigan to join with others in the region to establish a Midwest Clean Energy Manufacturing 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 clean energy manufacturing policy. The Working Group can also promote awareness of the benefits of such policy proposals, thereby increasing the likelihood of their adoption.

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Endnotes

1 "[L]abor is a tiny share of the cost of running a high-tech solar panel factory, [Evergreen Solar CEO] Mr. El-Hillow said. China's real advantage lies in the ability of solar panel companies to form partnerships with local governments and then obtain loans at very low interest rates from state-owned banks." "Solar Panel Maker Moves Work to China," *New York Times*, January 14, 2011.

2 "To date, the program has had no defaults and has generated an estimated 4 percent annual return for Michigan taxpayers. So far, the program estimates that it has created and retained over 1,800 jobs." Michigan Economic Development Corporation, accessed September 12, 2011. Available at: http://www.michiganadvantage.org/Access-to-Capital/.

3 Personal communication with Dan Luria, VP Research, MMTC and Apollo Michigan GreenMAP Taskforce member, April 22, 2011.

4 CM Staff, "$4 M Canadian solar manufacturing investment," *Canadian Metalworking*, April 20, 2011. For wind energy, 25 percent must be locally made — a number that is slated to increase to 50 percent on January 1, 2012. Similarly, solar projects originally required 40 percent domestic content before rising on January 1, 2011 to 50 percent for projects smaller than 10 kilowatts and 50 percent for larger projects.

5 There are exceptions, like New Jersey, where specific technological carve outs ensure some minimum amount of solar photovoltaic capacity is added.

6 There is an issue of whether out-of-state electricity can be "disadvantaged" in a utility's procurement. And there are some legal challenges to encouraging in-state power generation, including the American Enterprise Institute suit against Colorado's RPS, claiming it is a violation of the Interstate Commerce Clause. Requiring delivery of electricity to Michigan (as opposed to the unbundled Renewable Energy Certificate approach that is an alternative), however, would be legal, with the reasoning that such delivered electricity helps avoid in-state generation, which in turn delivers public health benefits to the people of Michigan.

7 CalPERS Global Real Estate Environmental Initiative Update: Report to the Investment Committee, 2009, accessed August 3, 2011. Available at: http://www.calpers.ca.gov/eip-docs/about/board-cal-agenda/agendas/invest/201012 /item08b-2-01.pdf. CalPERS Deploys $500 Million to New Environmental Investment Strategy, 2010, accessed August 3, 2011. Available at: http://www.calpers.ca.gov/index.jsp?bc=/about/press/pr-archive/pr-2010/nov/calpers-deploys.xml.

8 Bloomberg New Energy Finance, "*2011 Summit Results Book*," p. 5; accessed June 5, 2011. Available at:http://bnef.com/WhitePapers/download/41.

9 There also is a focus on acquiring federal dollars to spur development in 'high risk' areas — bridging the gap between early development and commercialization — in areas where Michigan has a competitive advantage.

10 *Mapping Green Career Pathways: Job Training Infrastructure and Opportunities in Michigan*, Apollo Alliance, January 27, 2011. Available at: http://apolloalliance.org/wp-content/uploads/2010/01/mappingreportmichiganjan27.pdf.

11 *Sen. Brown Discusses Efforts to Expand Advanced Energy Manufacturing Tax Credit for Ohio Businesses* (Office of Senator Sherrod Brown, Press Releases, May 2010). Available at: http://brown.senate.gov/newsroom/press_releases/release/?id=6f05e157-36e3-4db5-9a76-2e87401f71e7.

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.

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