

## **Clean Energy and Creating Manufacturing Jobs in Maryland**

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When Maryland takes steps to encourage the growth of clean energy generation projects in the state, demand-side policies create a market for component parts and equipment produced by clean energy manufacturers. Maryland should seize this opportunity to offer an opportunity to the domestic manufacturers located in Maryland and across the United States.

A great deal of clean energy manufacturing occurs here in the United States, and the targeted investments made in the American Recovery and Reinvestment Act (ARRA), helped those industries develop. The large sums of public spending towards clean energy projects included a preference for the use of domestic iron, steel and manufactured goods where possible. These investments in domestic clean energy manufacturing in both the renewable energy sector and the energy efficiency sector provided these industries the ability to grow and mature. However, after the initial ARRA investment, the lack of comprehensive climate change legislation passing in Congress presented the industry with challenges, and essentially left climate change to state governments to address.

These ARRA investments however were not without impact, especially as we take a closer look at how these events have shaped the present energy landscape in the state of Maryland. A 2016 US Department of Energy study reports that Maryland has a low concentration of energy employment, with 28,929 Traditional Energy workers statewide.

Electric Power Generation employs 13,053 workers in Maryland, 1.5% of the national total. Solar makes up the largest segment with 7,279 jobs, followed by traditional fossil fuel generation at 3,834 jobs. Yet overall the top two employment sectors in Electric Power Generation is Construction, which is responsible for most of the employment with 39.7% of jobs. Utilities employment comes in second represents 28.5% of the total. Manufacturing only represents 5.7% of the jobs in the entire electric power generation (which includes solar, wind, traditional hydroelectric, natural gas, coal, oil/fossil fuel, and other areas).

Transmission, distribution, and storage employment in Maryland represents 1% of the national total in the segment. Construction employs the largest percentage of Transmission, Distribution, and Storage jobs in Maryland, with 57.1% of jobs statewide. Manufacturing is only 2.4% of these jobs state wide in MD

Maryland has an additional 67,061 jobs in Energy Efficiency (3.1% of all energy efficiency jobs nationwide). The largest number of these employees work in traditional HVAC firms, followed by high efficiency HVAC and renewable heating and cooling. 79.7% of this is construction industry jobs related to installation and maintenance, manufacturing makes up 4.4% of the jobs.

Most the jobs in renewable energy and energy efficiency in Maryland are in construction and installation, but the state has some options to consider that could grow its manufacturing footprint in this sector.

Maryland could apply its existing Buy America preferences to any taxpayer funded procurement of renewable energy or energy efficiency products. This would be a demand side policy that would offer domestic manufacturers a level playing field in this procurement market, that also offers a common-sense waiver process when domestic items may not be available.

Other steps Maryland could take would be to focus Maryland's clean energy policies with capital access programs exclusive to clean energy manufacturing. Access to capital is one of the largest barriers for clean energy manufacturers. International competitors have been outpacing the United States in this area. Availability of financing affects not only small to medium entities and start-ups, but established manufacturers hoping to retool and take advantage of the clean energy industry.

Publicly funded financing programs should leverage private investment. This gets the best value out of the public dollar and increases private sector commitment to the industry. Maryland likely has an array of economic development programs in place but 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.

For a strong clean energy manufacturing industry to develop in the state, Maryland must use its resources to keep Maryland's manufacturers viable and competitive. This is especially important in the emerging clean energy sector, where innovation and new technologies play large roles in a company's competitiveness. Maryland 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 Maryland'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 Maryland manufacturers. Each state has MEP partners that provide consultation to local businesses on technology innovation and increasing competitiveness. 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 to join a new industry. 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.

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

Maryland to brand itself as a friendly place for clean energy businesses and encourage further investment and expansion in our clean energy supply chain.

Maryland must also analyze the existing workforce training programs in the state and provide recommendations on improving these to meet the needs of the growing clean energy industry. It is important for the state to use existing workforce training infrastructure rather than creating new programs. Maryland needs to achieve greater integration between the state and the different institutional participants: training providers, unions, schools, and businesses.

Growing clean energy generation projects in Maryland offers an opportunity to improve Maryland's economy by reinvesting in the domestic manufacturing sector, fostering a competitive environment in Maryland for clean energy manufactures, utilizing the existing programs at the state's disposal, and offering new opportunities for the existing workforce and those about to enter it.