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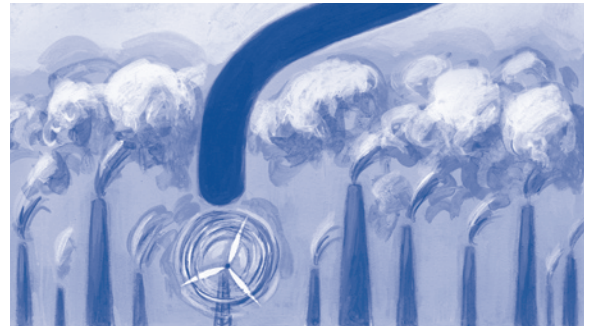
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# Workforce Investment in Maine's New Energy Economy

by Robert E. Brown II

Clifford M. Ginn



*Building a new energy economy based on increasing efficiency and developing new energy sources requires the development of a trained workforce. Robert Brown and Clifford Ginn point out that Maine could be in an excellent position to take advantage of “green economy” workforce funds and programs if the state develops the needed policies, institutions, industry partnerships and practices that have been successful elsewhere. *

Maine has enormous potential to build a new energy economy that will sustainably produce, distribute, consume, and reduce demand for energy. This will lower costs for citizens, businesses, government, and civic institutions while reducing global warming. Following the successful approaches other states have taken would

- Create demand for efficiency and renewable energy through high standards.
- Generate funding within the energy system to meet standards and to leverage private investment.
- Centralize programs and information in a single transparent and accountable entity.
- Invest in efficiency and renewable technology research and development.
- Develop and fund training initiatives and integrate them into industry partnerships, to develop the workforce needed to transform the energy economy.

Maine can make the public investments and leverage private investments to transform its energy economy without raising taxes or energy bills. It simply needs to re-channel the money already spent on energy consumption into energy efficiency. Energy efficiency is the lowest of the “low-hanging fruit.” It is the cheapest, fastest, and most widely available energy source we can tap. A kilowatt hour (kWh) saved through efficiency costs much less than one produced through new electricity generation. However, even if we remove the many financial and regulatory barriers for individuals, businesses, and others who want to lower energy costs, we need to invest in the skills and education of our workforce to get the job done. If Maine does not do this right, funds generated to pay for efficiency investments will remain idle, pay for substandard work, or flow mostly to out-of-state workers. And once again, Maine will stagnate while other states capitalize on new economic opportunities on the strength of their skilled workforce.

The demands of the new energy economy present substantial challenges and opportunities for our work-

force. Maine has the lowest incomes and educational attainment levels in New England. We have the nation’s oldest workforce, and the highest percentage of 18- to 24-year-olds who are neither working nor pursuing education. Over the next decade, 90 percent of jobs in high-growth sectors, such as the new energy sector, will require training beyond high school. Maine’s workers cannot compete without accessible educational opportunities.

#### JOBS IN THE NEW ENERGY ECONOMY

Many green-collar jobs resemble traditional ones. For every new energy auditor, solar thermal installer, or weatherization or wind technician, Maine will need dozens more electrical or HVAC technicians, engineers, designers, insulation installers, steelworkers, carpenters, plumbers, IT specialists, instructors, and managers and supervisors, all with upgraded green-skills certifications. Most of these are middle-skill jobs and, in Maine and nationally, they have the greatest potential for job and income growth in the coming decades. They require some amount of post-secondary education, up to and sometimes including a four-year degree.

Research by the Workforce Alliance (Holzer and Lerman 2007) and the Center for Workforce Information and Research (Evans, Mills and Huhtala 2008) shows that Maine already cannot supply enough trained workers to meet employers’ demands, and this gap is projected to widen. States have successfully closed such gaps by focusing on sector development (Hayes, Rafkind and Byrd 2008; Walsh and White 2008), creating industry partnerships between employers, unions, educational institutions, community groups, state agencies, and other stakeholders to determine industry and workforce needs and to ensure that the workforce has the skills that employers demand. Industry partnerships with strong stakeholder cooperation are critical if

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we are to rapidly develop this or any other sector. The best initiatives maximize the extent to which low-income and disadvantaged workers participate in training with comprehensive career ladders that lift people out of poverty. They also rely on the best data and subject themselves to rigorous evaluation.

In the specific area of energy efficiency, conservative estimates suggest that every \$1 million of public investment will directly create eight to 11 jobs, with another nine to 11 jobs created indirectly—a better rate of job creation than investments in most any other sector (Economic Opportunity Studies 2008; Walsh and White 2008). By focusing our resources, we can develop a sector where starting wages generally exceed Maine's current median wage (\$13.72 per hour, or \$28,620 per year), and where median wages exceed it by 30 percent to 250 percent. Jobs in this sector would be spread throughout the state.

#### ELEMENTS OF A NEW ENERGY INITIATIVE

**I**f Maine raises its standards to increase demand for investment in energy efficiency and renewable energy, re-channels public and private energy spending to meet that demand, and creates efficiency efforts through a Vermont- or Oregon-style independent efficiency utility, how will we build the workforce to reshape our energy economy?

The place to start is with the first rung of the career ladder, our career and technical education (CTE) centers, or vocational high schools. They exist in 26 well-dispersed locations and have a successful track record developing traditional and nontraditional educational opportunities. CTEs can embed in their building trades and related programs a broad range of nationally recognized certifications and credentials, developed in concert with industry and other stakeholders. Students can move up this ladder from the CTEs into an apprenticeship program, which integrates education and training with work, awards federally funded college credits, and delivers a paycheck. From there, they can enter associate's or bachelor's degree programs. For this to work, this career ladder must be coherent, comprehensive, and aggressively promoted through regional industry partnerships.

Oregon has developed a model career ladder in the new energy sector, integrating a comprehensive green-skilled curriculum across a variety of educational institutions, programs and workplaces, with the potential to attain a bachelor's in renewable energy technology. They have shown that the curriculum makes workers more likely to complete programs and helps businesses to meet their workforce needs in a predictable, sustainable way (Hayes, Rafkind and Byrd 2008).

Maine can fine-tune this system to suit our circumstances. For example, in addition to developing a large energy-efficiency workforce, Maine could integrate workforce development, research and development (R&D), and economic development efforts to create a Down East wind power R&D triangle, in a region with tremendous human and natural resources but with deep poverty and unemployment. Most of Maine's wind development, whether on- or off-shore, will happen near this region, and it has a surplus of manufacturing facilities and skilled labor. The region is anchored on two points by excellent deep water ports (Eastport and Searsport) for component manufacture and export and on a third by Maine's flagship university, with world-class R&D on wind and composite technologies.

If Maine develops the policies, institutions, industry partnerships, and workforce development practices that have led to successful transformation elsewhere, we will position ourselves to benefit from a flood of public and private investments in the green energy sector, including a fair share of the hundreds of billions of dollars likely to be appropriated as job-creating federal stimulus in the near future. The Green Jobs Act and Northern Border Regional Development Commission (both likely candidates for dramatic expansion in an economic recovery package) are already in place and can drive millions into green-skilled workforce development in Maine. Senator Olympia Snowe's SECTORS Act (coauthored with Senator Sherrod Brown of Ohio) would provide grants to states with industry partnerships pursuing sector-based workforce development. Maine could be first in line for green economic and workforce development funds, but only if we put the structures in place now that are needed to effectively and efficiently spend them.

## CONCLUSION

A well-designed new energy initiative would build a comprehensive, green-skilled career ladder, providing thousands of Mainers with good jobs. It would catalyze the demand for that workforce, with substantial investments in weatherizing, retrofitting, rehabbing, and increasing use of distributed renewable technology in Maine's homes, public and private commercial buildings, and industrial facilities, and in expanding our wind power production and component manufacturing.

We can create jobs and raise incomes, open up business opportunities for entrepreneurs, lower heating and energy bills, and move toward energy independence. Building a new energy economy is a golden opportunity to solve many problems at once and is an ideal place to shift towards a sector-based development model. 🐟

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**Clifford M. Ginn**, president of Opportunity Maine, is an attorney licensed to practice in Maine and Massachusetts. He is a graduate of Harvard Law School and was an editor for the *Harvard Law Review*. He has done research and analysis on economic, taxation, corporate governance, environmental protection, civil rights and other policy issues for a number of publications and organizations.

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