

Digest of Green Reports and Studies

Title	<i>Greener Pathways – Jobs and Workforce Development in the Clean Energy Economy</i>
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URL	http://www.cows.org/pdf/rp-greenerpathways.pdf
Summary	<ul style="list-style-type: none"> • The report details current economic and workforce development opportunities in three leading industries: energy efficiency, wind, and biofuels. • The report examines federal resources that can support state green jobs initiatives. • The objective of the report is to help states with clean energy agendas that meet industry demand; train and support workers; and create good, family-supporting jobs. • The new energy economy can retain and create significant numbers of domestic jobs in 3 areas: research and development, manufacturing and construction, and maintenance and operations. • Most green-collar jobs are and will be middle-skill jobs requiring more than high school, but less than a four-year degree. • Reducing the waste of energy via the upgrading of residential and commercial buildings can create good jobs. • Wind is a zero-emission source of energy. Turbine and component part production can re-energize flagging economies, particularly in states with a strong manufacturing base. • The largest wind farms can create large numbers of jobs in manufacturing, installation, operations and maintenance. Some of the best locations in the U. S. for wind farms are in the Great Plains area, which could use new industry. • State policies account for the disparity between wind speeds and wind projects. Market-creation policies such as renewable portfolio standards and feed-in tariffs provide certainty for companies looking to move into particular states. • Middle-skill level jobs in the wind industry will be found in installation (construction and transportation), wind farm maintenance and operations, and wind turbine manufacturing. • Biodiesel is a clean-burning fuel derived from vegetable oils or animal fats. It is currently produced on a smaller scale than corn based ethanol and faces its own technological limitations such as cold temperature sensitivity. • Grain based ethanol will become a significant contributor to carbon reduction only if biofuel refining can become energy efficient, using biomass rather than fossil power. • Cellulosic ethanol is the real hope for the future. It is ethanol produced with non-food biomass ranging from native perennial grasses to wood, crop, and municipal waste. • The Midwest will continue to enjoy regional advantages as biofuels production moves into cellulosic feedstocks. The U. S. Departments of Agriculture and Energy estimate that the Midwest has about 50% of the nation's total biomass. • More jobs could be created by the biofuels industry via the building or retrofitting of biofuel distribution networks. Much of the fossil fuel pipeline in this country is designed to bring fuel in and up through the country. A Midwest-based biofuels industry would need to reverse that flow, transporting product out to the coasts and down the Mississippi River. • Middle-skill level jobs in the biofuels industry require basic reading, writing and communications skills; math and computer literacy; and preferably some specific training in laboratory techniques, process control, industry-specific software, occupational safety and health, waste and wastewater management.
Key Findings	<ul style="list-style-type: none"> • Every \$1 million invested in energy efficiency retrofits generates eight to eleven on-site jobs. • With total installed capacity of 16,800 MW, the United States has nosed ahead of Spain and is expected to overtake the current world leader, Germany, by the end of 2009. • Industrial capacity and transportation networks are key assets to turbine production. Wind turbines are massive and extremely heavy machines. The supply chain for turbine component parts has not been able to keep up with the demand.

	<ul style="list-style-type: none"> • The United States needs to add 185,000 MW of renewable energy in ten years in order to stabilize carbon emission levels. Wind power's share of this energy output would support around 400,000 domestic manufacturing jobs. • Transportation, including the emissions from the production of transport fuels, is responsible for about one-quarter of energy-related greenhouse gas emissions. • Cellulosic ethanol could reduce green house gas emissions by 88% compared to a gallon of gasoline. Researchers are still working on how to produce this product on a large scale at a reasonable cost. • The Midwest supplies 94% of U.S. ethanol. • Jobs in biofuels often look like traditional chemical manufacturing jobs. These jobs pay decent wages, but offer few jobs. A few good jobs still could bring significant benefits to rural communities.
Recommendations	<ul style="list-style-type: none"> • The best way to prepare a green-collar workforce is to build on the existing foundation of state and local workforce systems. More time should be spent including green skills training within current curricula, and less inventing new programs. • Green jobs initiatives should address upward mobility. There should be pathways available to move workers from unemployment or low-wage jobs up to jobs that would provide higher wages and benefits. • Publicly-funded workforce development projects should promote green-collar jobs accessible to those with less than a BA. • States need to understand targeted green industries at the level of regional economies. • Green jobs initiatives should create or expand on regional partnerships organized by industry sector.
Definition of "Green"	"Green" jobs are family-supporting, middle-skill jobs in the primary sectors of a clean energy economy – efficiency, renewables, and alternative transportation and fuels.
Methodology	Comprehensive report on 3 key green industries: energy efficiency, wind, and biofuels.
Data Sources Cited	<p>U.S. Energy Information Administration American Council for an Energy-Efficient Economy U.S. Bureau of Labor Statistics U.S. Department of Energy, National Renewable Energy Laboratory American Wind Energy Association Database of State Incentives for Renewables and Efficiency Bonneville Power Administration ISU Center for Agricultural and Rural Development Des Moines Register</p>
Report Geography	No particular geography, but some mention of how it pertains to the Midwest (U.S.)
Green Occupations Cited	<p><u>Energy Efficiency Jobs</u> Construction laborers Sheet Metal workers Insulation workers; floor, ceiling and wall Cement masons & concrete finishers Heating, air conditioning & refrigeration mechanics & installers Hazardous materials removal workers Carpenters Plumbers, pipefitters, & steamfitters Electricians Boilermakers</p> <p><u>Wind Industry Jobs</u> Team assemblers Laborers & freight, stock & material movers; hand Computer-controlled machine tool operators; metal & plastic Cutting, punching, & press machine setters, operators & tenders; metals & plastic Customer service representatives Welders, cutters, solderers & brazers Production, planning & expediting clerks Machinists Maintenance & repair workers; general</p> <p><u>Biofuels Industry Jobs</u> Laborers & freight, stock & material movers; hand Mixing & blending machine setters, operators & tenders Shipping, receiving & traffic clerks Separating, filtering, clarifying, precipitating & still machine setters, operators & tenders Truck drivers; heavy & tractor trailer</p>

	Chemical equipment operators & tenders Chemical technicians Chemical plant & system operators Electrical & electronics repairers, commercial & industrial equipment Sales representatives, wholesale & manufacturing, technical & scientific products
Green Industries Cited	Energy Efficiency Wind Power Generation Biofuel production
Keywords	Energy efficiency; wind power; biofuels; green jobs; biodiesel; cellulosic ethanol; green collar jobs.
Legislation Cited	Green Jobs Act (GJA) 2007 Energy Independence and Security Act (EISA) CA AB 32 – California Global Warming Solutions Act Workforce Investment Act (WIA)
Bibliography (Y/N)	Y
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