

Digest of Green Reports and Studies

Title	Putting Renewables to Work: How Many Jobs Can the Clean Energy Industry Generate
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Summary	Kammen et al examine 13 independent reports on clean energy job production. They find that all 13 show a significant positive impact on employment over fossil fuel-derived energy. They develop a job creation model which shows the implications of each study for future energy employment under different future energy mix scenarios.
Key Findings	<ul style="list-style-type: none"> • There are two basic types of energy studies: input/output models and analytical models. • I/O models usually measure indirect jobs created as a result of the clean energy industry, while analytical models focus on direct impact only. • Every renewable energy source requires more workers per average megawatt than fossil fuels. • Most of these jobs are in construction and maintenance rather than operations. • Employment would be significantly higher under a 20% renewable standard than under the current energy mix. • Extraction industries are on the decline, mainly because of mergers and mechanization.
Recommendations	<ul style="list-style-type: none"> • The United States needs to catch up on renewable energy technology. • Negatively impacted workers should receive retraining to work in the clean energy workforce. • Support for renewables should be enacted in the broader context of clean energy measures, including energy efficiency and sustainable transportation.
Definition of “Green”	Kammen et al do not take a stance on the definition of green, however, they make the point that it is important to distinguish between manufacturing, construction and installation jobs versus operations and maintenance jobs. They believe this is key point for regional and state-level policy.
Methodology	They compare 13 existing models with varying levels of detail and varying methodologies and normalize them. They estimate the number of jobs created per average megawatt of power produced (not the more commonly cited total capacity, which is not comparable since renewable energy is rarely operating at capacity). They compare these estimates to similar figures for fossil fuels and then total employment under five different scenarios.
Data Sources Cited	<ul style="list-style-type: none"> • The Apollo Jobs Report: For Good Jobs & Energy Independence • Wind Force 12. A Blueprint to Achieve 12% of the World's Electricity from Wind Power by 2020 • Renewable Energy and Jobs. Employment Impacts of Developing Markets for Renewables in California • Renewables Work. Job Growth from Renewable Energy Development in California • Clean Energy: Jobs for America's Future • The Work that Goes into Renewable Energy • Jobs from Renewables, study for Kerry/Kennedy • 2 Million Jobs by 2020. Solar Generation • Job Jolt: The Economic Impact of Repowering the Midwest • Working for the Environment: A Growing Source of Jobs (Worldwatch Paper 152) • Wind Energy: The Facts • Meeting the Targets and Putting Renewables to Work • Employment and other macroeconomic benefits of an innovation-led climate strategy for the United States
Report Geography	U.S.
Green Occupations Cited	Manufacturing – 51-0000 Production Occupations Construction – 47-0000 Construction and Extraction Occupations Installation – 49-0000 Installation, Maintenance, and Repair Occupations Operations – 51-8000 Plant and System Operators Maintenance – 49-0000 Installation, Maintenance, and Repair Occupations
Green Industries Cited	Obviously not on a NAICS basis: Wind

	Geothermal Biomass Solar PV Fuel Cells Solar Thermal
Keywords	Energy Renewables Megawatt Energy Mix Electricity
Legislation Cited	None
Bibliography (Y/N)	No, although there are footnotes
Reviewer Name/Org	Bastian, Phil; BLS

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