



YUDELSON ASSOCIATES

A White Paper from Yudelson Associates

Green Jobs: Separating Hype from Reality

Jerry Yudelson, MBA and Jaimie Galayda, PhD
May 2009

What's the truth about Green Jobs? In this white paper, we help you understand what a green job is, how many there are and how you should evaluate claims that green job creation might represent some form of economic salvation in these parlous times.

The bottom line:

- There are many definitions of green jobs, and most such jobs already exist.
- The only way to benefit the overall economy is to invest in green measures that are already cost-effective without taxpayer or utility ratepayer subsidies, such as energy-efficiency retrofits. Otherwise, you're just 'robbing Peter to pay Paul.'
- Addressing climate change with new forms of energy may be good and necessary public policy, but it will not be without significant economic impacts; for example, there may be losses in conventional jobs even while there are gains in green jobs.
- Understanding green jobs and their potentially beneficial impact on the economy is a complex subject that is frequently oversimplified.

Earlier this year, the White House named a czar for "green jobs," and the President claims that millions of green jobs are just waiting to be created. An ever-growing number of claims and advertisements from a number of sources also push "green jobs" as a twin solution to both economic recession and climate change. These claims are relatively simple, but sweeping and beg for greater scrutiny. Climate change and the Great Recession are incredibly complicated problems that require thoughtful, carefully calculated solutions.

Suggesting that investment in green jobs will easily solve these issues, as do recent ads by the [Alliance for Climate Change Protection](#) and the [Blue Green Alliance](#), might even lead some people to conclude that these problems aren't terribly complex and don't require thoughtful consideration and debate. Investigating the definitions, forecasts, investments, and certifications for green jobs better prepares us to engage with these claims and find out the real business and economic potential for green investment.



YUDELSON ASSOCIATES

Definitions

What exactly is a “green job?” Author and activist Van Jones was recently named as the special advisor for green jobs, enterprise and innovation on the [White House Council on Environmental Quality](#).ⁱ In his New York Times best selling book, “The Green Collar Economy,” Jones defines green-collar jobs as follows:ⁱⁱ

- Blue-collar employment that has been upgraded to better respect the environment
- Family-supporting, career-track, vocational, or trade-level employment in environmentally friendly fields.

Jones goes on to give examples of these type of jobs; such as solar panel and solar hot water installers, farmers engaged in biofuels production, renewable energy power station technicians, and construction workers who build energy-efficient buildings.

A recent [United Nations Environment Programme](#) report, produced by the [Worldwatch Institute](#), provides a broader definition of green jobs:ⁱⁱⁱ

... work in agricultural, manufacturing, research and development (R&D), administrative, and service activities that contribute substantially to preserving or restoring environmental quality. Specifically, but not exclusively, this includes jobs that help to protect ecosystems and biodiversity; reduce energy, materials, and water consumption through high-efficiency strategies; de-carbonize the economy; and minimize or altogether avoid generation of all forms of waste and pollution.

You can see that this definition is broad enough to include a large number of already existing activities and jobs. *But what’s really at issue here is how we can invest productively to create new jobs.* Energy efficiency is the best place to start, because reductions in energy costs have a more immediate effect than investments in renewable energy. In the short run, investments and tax subsidies for renewable energy may cost more than they provide in reduced energy costs. Focusing on energy efficiency provides a quicker payback, but moving towards a low carbon economy will require longer-term investments in renewable energy.



Green Investments and Job Forecasts

The American Recovery & Reinvestment Act (ARRA), enacted in February 2009, provides approximately \$75 billion in potential funding for energy efficiency, renewable energy, and the smart grid.¹ About \$26 billion will be focused more specifically on energy-efficiency related improvements, mostly in buildings.^{iv} Additionally, the Obama Administration's 2010 budget proposal includes revenues from proposed carbon cap-and-trade legislation that would provide further funding for clean energy programs. Overall, the budget assumes about \$645 billion in new carbon-reduction revenues will be generated between 2013 and 2019. Of that, about \$150 billion is targeted for clean (efficient, renewable, and low carbon) energy programs and tax cuts.^v This record amount of funding and tax incentives will be the single largest determinant of growth in green jobs over the next several years.

Of course, more than a half-a-trillion dollars in new taxes and carbon regulations will also create a considerable burden to the current economy, with corresponding reductions likely in current employment, as we phase out some jobs newly considered "polluting," such as making "conventional" automobiles, generating electric power, mining coal, extracting oil and gas, etc. As Nobel Prize winning economist and *New York Times* columnist Paul Krugman points out, the "green economy" is not 'all gain, no pain'.^{vi}

There have been several predictions of green jobs growth in recent months. A U.S. Conference of Mayor's green jobs [report](#), prepared by Global Insight, forecasts 1.5 million potential new green jobs by 2018 in renewable power generation, energy-efficient building retrofits, and renewable transportation fuels. They estimate that a further 846,000 jobs in related engineering, legal, research, and consulting positions could also be added.^{vii}

The [Center for American Progress](#) and the [Political Economy Research Institute](#) at the University of Massachusetts estimate that \$100 billion invested in green economic recovery programs over the next two years could create 2 million green jobs in renewable energy, advanced biofuels, "smart" grid improvements, expanding mass transit and freight rail lines, and energy efficient building retrofits.^{viii} That's a cost of \$50,000 per job created, which seems excessive in cost and overly optimistic in effect.

¹ The entire ARRA encompasses \$787 billion in economic recovery spending programs.



YUDELSON ASSOCIATES

Replacing Recession Job Losses

The U.S. Bureau of Labor Statistics estimates that the recession has claimed more than 5 million jobs, more than double the green job forecasts by the U.S. Conference of Mayors and the Center for American Progress.^{ix} Many critics of carbon regulations feel that a cap-and-trade system, if passed, will result in even more job losses, along with more businesses moving to other countries.

The Council of Economic Advisors estimates that, overall, the ARRA will create or save over 3 million jobs by the fourth quarter of 2010.^x Again, this is a smaller number than current recessionary job losses, which continue to rise. However, because the ARRA is strongly focused on 'clean tech' programs, many of these jobs may become actual "green jobs".

The recession and stimulus package will have differential geographic effects. The areas hardest hit by the recession are places where the housing market overheated, like Arizona, California, Nevada and Florida. The stimulus package distributes recovery funds across the entire country. Slate.com provides an [online map](#) of recessionary job losses while the Administration's website, Recovery.gov, provides a [map](#) of expected stimulus related jobs.

Where the Green Jobs Really Are

Perhaps the most easily gained green jobs will occur in energy-efficiency retrofits and upgrades, beyond the normal repair and replacement cycle. Even here, we have to be careful to distinguish between the ongoing energy-efficiency upgrades that have been occurring since the mid-1980s in many organizations and new jobs generated by federal, state and utility stimulus programs, or by efforts such as the [Clinton Climate Initiative](#) to secure private-sector bank financing for accelerating such programs.



YUDELSON ASSOCIATES

Emerging Green Job Certifications

Green jobs are still somewhat loosely defined. Certifications for these jobs will help pin definitions down and lend credence to certified job applicants. Although green job certification is a newly developing field, there are already several certification programs, for green contractors, plumbers, Realtors® and engineers. The largest green job label comes from the U.S. Green Building Council (USGBC). The [Green Building Certification Institute](#) (GBCI) has accredited more than 100,000 people in the USGBC's Leadership in Energy and Environmental Design (LEED) rating system. Peter Templeton, President of GBCI, describes LEED APs as "green building experts - from building operations and maintenance to the soon-to-debut credential for homes. Together, LEED APs are a force for change, and an inspirational example of how a traditional industry can transform itself from the grassroots up." ^{xi} However, with fewer than 2,600 actual LEED certified projects to date, most of these people have yet to certify a single project, hence there is little incremental "green job gain." In fact, most LEED APs already have "day jobs" in architecture, engineering, construction and facility management, so the net job gain is more in the low 1000's.

The [National Photovoltaic Construction Partnership](#) and the [North American Board of Certified Energy Practitioners](#) offer solar installation training and certification programs. Other larger solar and wind power developers and manufacturers are of course creating employment with their power plants and manufacturing facilities.

Conclusion

Predicting future economic outcomes is like predicting weather – there are too many moving parts to make consistent and accurate forecasts. The best we can do is to analyze the choices carefully and make the most informed conclusion possible. With issues as complex and high stakes as economic recovery and climate change, thoughtful analysis is more vital than ever. There won't be any simple solutions, no matter how appealing the green jobs forecasts are. We still must ask critical questions. For instance, if green jobs are more labor-intensive because it takes more time to make products out of recycled materials than virgin materials, will this mean they are lower-wage jobs? Are consumers willing to pay higher prices for such products? How far into the future will these jobs have to be subsidized?

You can see that there is certainly some reality behind the hype over green jobs, but before anyone starts thinking that they represent a huge part of our economic future, we should analyze ballyhooed claims more carefully, starting with definitions and continuing to realistically assess the cost-effectiveness of green job creation programs.



YUDELSON ASSOCIATES

About Yudelson Associates

Based in Tucson, Arizona, Yudelson Associates provides leading edge consulting, research and training programs in green buildings, green development and sustainability. Recognized as one of the country's leading experts on green buildings, firm principal Jerry Yudelson has written 10 books on the subject since 2006. Jaimie Galayda holds a PhD in ecological economics from Rensselaer Polytechnic Institute and is research director at Yudelson Associates. For more information on the company and its services, go to www.greenbuildconsult.com.

ⁱ greeninc.blogs.nytimes.com/2009/04/07/an-environmental-brain-drain-to-dc, accessed April 29, 2009.

ⁱⁱ Jones, Van. "The Green Collar Economy", HarperOne, New York, NY, 2008.

ⁱⁱⁱ www.unep.org/labour_environment/PDFs/Greenjobs/UNEP-Green-Jobs-Report.pdf accessed April 29, 2009.

^{iv} Callahan, Kateri, "Energy Efficiency & the Stimulus Bill: Rebuilding the Economy Today for a "Green Energy" Tomorrow." Alliance to Save Energy webinar, March 17, 2009.

^v Data taken from www.recovery.gov.

^{vi} www.nytimes.com/2009/05/01/opinion/01krugman.html?_r=1 accessed May 4, 2009.

^{vii} www.usmayors.org/pressreleases/uploads/GreenJobsReport.pdf accessed April 29, 2009.

^{viii} www.americanprogress.org/issues/2008/09/green_recovery.html accessed April 29, 2009.

^{ix} www.bls.gov/news.release/empsit.nr0.htm accessed April 29, 2009.

^x http://otrans.3cdn.net/ee40602f9a7d8172b8_ozm6bt5oi.pdf accessed April 29, 2009.

^{xi} www.gbci.org/News/PressReleaseDetails.aspx?ID=6 accessed April 29, 2009.