



**Green Jobs in the Granite State**  
Toward a Sustainable New Hampshire Economy

by *David j. Morrill*

MBA in Organizational & Environmental Sustainability  
Antioch University New England  
April 24, 2009

**Acknowledgments:**

Dave Chase, Polly Chandler, James Key-Wallace, Kenli Okada, Tessa Young, Bennett Konesni, Margie McClain, Eric Masters, Sue Patroliia, Mindy Coleman, Val Snowdon.

# Table of Contents

Vision .....	4
Intention & Summary .....	5
Current Economic & Environmental Situation.....	5
Local Markets vs. Net Export.....	7
Eight Segments of a Green New Hampshire Economy .....	9
Local & Sustainable Agriculture	
Renewable Energy	
Training	
Smart Tech	
Green Construction	
Environmental Services	
Transportation	
Green Products & Services	
Recommendations .....	18
Investment	
B Corporation	
A Necessary First Step.....	21
Appendix A – Eight Segments .....	22
References .....	23

## **Vision**

This is the vision of a New Hampshire in the not too distant future; Public transportation and increased walk-ability of communities make getting around the state and towns quick and easy. An online rideshare program makes finding a ride with portable devices safe and easy. What vehicles are on the roads run on one of a number of renewable energy sources and emit benign waste if any at all. Human activities make water cleaner allowing wildlife to thrive. All landfills in the state are closed not because they have been filled, but because there is no need for them due to the expanded availability of recycling and composting services. Energy is produced at homes and businesses using photo voltaic cells and small-scale wind turbines, as well as at waste treatment facilities using clean waste-to-energy processes. Electricity is managed efficiently by a new smart-grid that New Hampshire tech businesses play a large part in developing and maintaining. If electricity is imported it is produced using a variety of clean and renewable sources. Local farms are plentiful and produce enough food to feed the state year-round. Forests are harvested for lumber, paper products and bio-fuels in a way that leaves them healthier. The state economy is booming and the unemployment rate is lower than it has ever been.

This may seem a grand and distant vision, but it is one that is possible if we want it and are willing to work for it. The first step to this future is building a green economy.

## **Intention & Summary**

This document advances the discussion of a green economy by providing recommendations and ideas of how to develop an economy that considers the needs of people and place while making a profit.

- I begin with a brief summary of the current economic and environmental situation, moving from broad global and national perspectives to a narrower New Hampshire focus.
- Then I introduce and explain two distinct strategies for economic growth in a region: Local Markets and Net Export. I discuss why one strategy may be more beneficial for certain industries in a region depending on the assets of that area.
- Next, I name 8 different potential segments of investment to build a green economy in New Hampshire.
- After explanation of the eight segments, I make recommendations of how to develop growth within these segments in New Hampshire.
- Lastly, I describe what comes after the development of green jobs - a sustainable New Hampshire economy.

## **Current Economic & Environmental Situation**

The price of gasoline has dropped significantly since it reached highs in the four-dollar range. This has given a false sense of energy security and the illusion of long-term affordability of petroleum. The oil industry is volatile, petroleum resources are limited and the price of oil promises to rise again. Stock markets continue to falter. Budgets are being cut and unemployment rates are on the rise. Considering the state of affairs is it any wonder that the economic situation in America today is being compared to the Great Depression?

The global climate is in store for dramatic changes in the near future as humans continue to extract natural resources and produce unprecedented amounts of waste with little forethought concerning the outcomes of such behavior. Human produced carbon dioxide emissions contribute to global climate change. Many other waste materials, arguably due to poor design, are toxic.

These economic and environmental problems are having obvious effects on our home state of New Hampshire. The March 2009 unemployment rate in New Hampshire was 6.2 percent, the highest since 1993 (Associated Press, 2009). Climate change poses a threat to industries that are dependent on the traditional New Hampshire climate, such as tourism and maple syrup production.

Recently more and more people recognize the potential to rebuild the national

and state economies and the environment at the same time with so-called green jobs. According to a 2008 University of New Hampshire study there are currently approximately 17,000 green jobs in NH, with the potential to grow to 40,000 by 2018 (Haberman, 2008).

*“Green” as used in this paper:*

In this paper the term “green” is used often and should be defined early. There is debate around whether the term means anything at all or if it is so cliché it has become hollow (Lemonick, 2009). I use “green” in the context of being *more* environmentally friendly or *less* damaging to the natural environment. This does not necessarily mean, however, that “green” products or services, in this sense, have a positive impact on the environment. For example if a car gets 100 mpg it is making less of an environmental impact than a car that gets 30 mpg, but it is still burning fossil fuels and it still requires resources to design, advertise, manufacture and ship. This idea of being better for the environment is what William McDonough and Michael Braungart, authors of the book *Cradle to Cradle*, refer to as “eco-efficiency” (McDonough & Braungart, 2002).

*“Green Jobs” as used in this paper:*

The concept of green jobs is relatively new to the popular consciousness and has enjoyed a considerable increase in coverage since the 2008 presidential race. Because the term is so new it is still being defined. Right now there seems to be a lot of debate but no agreed upon definition.

One argument says a green job is any job that contributes to reducing human impact on the environment. For example, a bus driver is a green job because public transportation is energy efficient and helps reduce carbon-dioxide emissions. However, as mentioned above, a bus is still using fossil fuels and still contributing to environmental degradation (Knoy, 2008).

Another argument says a green job refers only to a job that directly contributes to improving the environment or directly remediates an environmental problem. For example, rehabilitating a brownfield site is a green job because it fixes an environmental problem (Knoy, 2008).

I suggest that both types of jobs are under the larger green jobs umbrella. However, jobs as defined by the latter argument are part of a sub-group of green jobs I refer to as “regenerative”. These jobs literally regenerate the environment as either the primary function or as a by-product.

In summary, a green job is any job that helps the environment by either mitigating impact or rehabilitating the environment. A regenerative job is specific to a job that rehabilitates the environment.

## Local Markets vs. Net Export

Focusing on local markets and focusing on a net export are two different strategies businesses can adopt. Businesses that choose local markets will focus on offering products and services within the state, while businesses that choose net export will focus on exporting products outside of New Hampshire. Both strategies are valuable and should be used in the appropriate industries.

On the one hand, a truly sustainable New Hampshire economy depends on local food and local energy producers. This will improve food security and energy independence, as well as create New Hampshire jobs.

On the other hand, if New Hampshire businesses can establish themselves as a supplier of certain products this will be a good generator of revenue.

A region can establish itself as a net exporter of a green good and a leader in a specific industry by strengthening its ability to provide a product more cost effectively than other regions. This ability to be more cost effective in a specific industry is called comparative advantage. There are a number of ways for a region to strengthen its comparative advantage including developing economies of scale, agglomeration effects and increasing ability to innovate and take risks (Ong & Patraporn, 2006).

- **Developing economies of scale**- Cost savings for an organization on production due to the marginal cost of production decreasing as production increases (Ong & Patraporn, 2006).
- **Agglomeration effects**- Cost savings for a physical cluster of organizations in the same industry on shipping and transportation. Also, marketing benefits for being associated with an area known for a specific industry (Ong & Patraporn, 2006).
- **Innovation & Risk**- Innovation comes from the sharing of knowledge which is facilitated by intellectual assets of a region including companies in an industry and universities that offer training in that industry (Ong & Patraporn, 2006).

Comparing the photo voltaic cell (PV) manufacturing industries in Austin, Texas and Toledo, OH illustrates that choosing the right industry for export can be complicated. Austin seems to have everything needed to be a leader in PV production. There is strong support from political leaders, citizen groups, and the business community. The city owned utility, Austin Energy, offers generous incentives for installation of PV cells - 50 to 65 percent of installation costs for a \$20,000, 3-kilowatt rooftop system. In 2001 Austin initiated a clean energy in-

cubator with the intention of encouraging solar research and development and manufacturing in the city. However, with national competition for renewable energies (especially solar and wind increasing over the last few years) Austin only has one PV manufacturing company despite efforts for more (Fitzgerald, 2009).

Toledo, while not traditionally thought of as the environmentally conscious city that Austin is, has the largest solar production company in the US, First Solar, which announced an expansion at the end of last year. The question arises; why is Toledo ahead of Austin in PV manufacturing? Not only does Toledo have a strong PV-specific program at the University of Toledo, it also has an established glass manufacturing industry. The technology for its glass industry, which has lost 200,000 jobs, is easily transferable to PV production, giving Toledo the advantage over Austin (Fitzgerald, 2009).

## **Eight Segments of a Green New Hampshire Economy**

Green jobs are not just about renewable energy. Energy sources that can be produced locally while decreasing our dependence on fossil fuels will certainly play a large role in building new jobs and making our country and state more secure. However, that is only a piece of the green economy puzzle.

Below I list eight different segments that are key areas of development for a green economy. Investment in these segments will encourage green business growth and the creation of jobs while protecting our environment.

It is important to mention that the boundaries of these segments are fuzzy, and there will be some overlap. Composting, for example, could be included in either sustainable agriculture or environmental services.

- **Local Sustainable Agriculture**  
*Farms, Restaurants, Markets*
- **Renewable Energy**  
*Cellulosic Bio-fuels, Solar, Wind, Algae, Waste to Energy*
- **Training**  
*Higher Education, Trade Schools*
- **Green Smart Tech**  
*Smart Grid, Energy Efficient Appliances*
- **Green Construction**  
*Building Retrofitting, New Construction*
- **Environmental Services**  
*Recycling, Water & Air testing, Environmental Remediation*
- **Transportation**  
*Public Transportation, Infrastructure, Non-Polluting Personal Transportation, Shipping Services*
- **Green Products & Services**  
*Retail, Travel/Hospitality, Manufacturing*

## Local & Sustainable Agriculture:

*“If we cannot grow the economy without destroying the fertility of the soil, how can we, no matter how clean our machines, hope to thrive, or, even survive?”*

- Woody Tasch

Businesses within this segment include farms, farm suppliers, markets and restaurants. When farmers use sustainable agricultural practices they produce a product that is environmentally friendly, and the act of farming sustainably can restore the environment.

In addition to the environmental benefits of producing local food, food security is another important reason to invest in local food production. For these reasons businesses of the food segment should focus on local distribution.

How long would it take for New Hampshire grocery store shelves to be emptied if trucks stopped shipping food in from across the country and over seas? It is hard to tell for sure but estimates suggest it could be as fast as 3 days (Daigle, 2009).

Recent nation-wide scares of food tainted with e-coli or salmonella make it clear that a centralized food distribution system also leaves the entire country vulnerable to accidental and intentional food contamination. Shifting to more local and sustainable sources of food will make New Hampshire more resilient to food shortages and more resistant to any contamination along the supply chain.

Not only does investing in this segment make good sense in terms of food security and safety, it makes economic sense too because of the existing farms it would save, and the new farm-related jobs it would create. There is, however, a question of food cost and whether the price of food would increase due to a loss of economies of scale when moving toward a more decentralized food supply. In the short term, relief for any food cost increases could come in the form of small farm subsidies from federal and state governments and food assistance for the poor. In the long term, the cost of oil may make it cost prohibitive to ship food as far as we do today. Creating a more resilient food supply chain would help buffer New Hampshire from such events.

## Renewable Energy:

*“The transition from our reliance on fossil fuels to clean and renewable energy is the linchpin of the green economy.”*

- Van Jones

Areas of business in the Renewable Energy segment include, but are not limited to; solar cell manufacturing and installation, wind turbine production and maintenance, and bio-fuel production and distribution. Most of these products and services would be distributed locally with the exception of mechanical parts for energy producing equipment like ball bearings for wind turbines.

A local-use strategy for renewable energies is advisable for any state when you consider the money spent on petroleum-based fuels every year. Money that is spent on petroleum products leaves the state and contributes to global climate change, poor air quality, and other environmental issues.

Investing in local and sustainable energy production will help keep money in the region and create new jobs. It will also help reduce pollution-based illnesses and our impact on the environment, as well as increase New Hampshire and US energy independence.

As the Van Jones quote above suggests, it is of vital importance to invest in this segment, but we need to ensure that production of local energy is done in a sustainable way. For example, cellulosic Ethanol made from forest resources will only be a permanent solution to the energy crisis if the trees are harvested in a sustainable manner. In this example third party certification by an organization such as Forest Stewardship Council would be required to ensure this. This point is crucial to the development of a sustainable economy.

## Training:

*According to the National Renewable Energy Laboratory one of the biggest barriers to the use of renewable energy sources is the lack of workers with the proper skills and training in installation, maintenance, and inspection services.*

(Margolis, 2006)

Businesses in the Training segment include universities, community colleges, and other technical training programs. The services provided by the Training segment should focus on building a local green workforce. This would involve not only training New Hampshire residents, but also the creation of incentives for them to remain in the state when training is completed. Incentives could include partial or full student loan forgiveness.

Investment in this segment will produce three main benefits. Due to an increase in demand for green job training (Feldbaum, 2009) investment will show a good financial return. Developing green job training programs will also help build the workforce needed for green jobs, and create education jobs in the process.

For example, Solar Energy International, a not-for-profit organization in Colorado that provides training in renewable energy and green building technologies, has increased enrollment by 14 percent (about 300 students) through 2008 (Underwood, 2008).

## Smart Tech:

*“If Alexander Graham Bell were transported to the 21st century, he would not begin to recognize the components of modern telephony – cell phones, texting, cell towers, PDAs, etc. – while Thomas Edison would be totally familiar with the grid.”*

(Litos Strategic Communication, 2008)

Smart or Green Tech uses technology to make energy use more efficient. From residential appliances to the national electric grid system, electrical and software engineers make energy production, transfer and use smarter and more efficient.

Businesses in the Smart Tech segment include green appliance manufacturers, electric utilities, and electrical and software engineering.

New Hampshire has a comparative advantage in smart tech due to the preexisting technology sector. Therefore, when it comes to exporting this is where New Hampshire should focus.

According to a 2008 study, New Hampshire high tech industries make up 9 percent of private sector employment, or 49,000 jobs. In 2006 those employed in high tech industries made, on average, just under \$75,000/year (75 percent higher than the average earnings across all industries). In 2007 New Hampshire exported \$1.1 Billion in high tech goods (36 percent of total exports) (Gittell, 2009).

Investing in Smart Tech businesses would expand this already thriving piece of the New Hampshire economy, while helping organizations and individuals reduce their impact on the environment.

## Green Construction:

*“The most obvious option for rapid green investment in communities is a large-scale building retrofit program, which would rely entirely on known technologies.”*

(Polin, Garret-Peltier, Heintz and Scharber, 2008)

Whether building new, renovating, or just increasing building efficiencies, green construction can save money long term, reduce environmental impacts and create jobs. Most jobs in this segment would be existing conventional construction jobs that simply shifted to green projects, but many would be new jobs dedicated to weatherizing older, less efficient buildings.

In the US buildings are responsible for 48 percent of the country’s total CO<sup>2</sup> emissions (Laumer, 2006). Estimates of the cost of the operation and maintenance of a building range from 60-85 percent of the cost of a building over its lifecycle compared to 5-10 percent for construction (Morton, 2002). Building green can help mitigate environmental impact and total cost by reducing CO<sup>2</sup> emissions and maintenance costs over the life of the building.

Inefficient buildings can use 30 percent more energy costing 30 percent more to heat and emitting 30 percent more CO<sup>2</sup> (Jones, 2008). Weatherizing these buildings means fewer people left in the cold, less impact on the environment, and more new jobs.

## Environmental Services:

*"In the past three decades alone one-third of the planet's natural resource space has been consumed... Gone! We are cutting and mining and hauling and trashing the place so fast that we're undermining the planet's very ability for people to live here."*

- Annie Leonard

Industries in this segment directly improve the environment as a primary function. Environmental services include water supply management, wastewater treatment, waste management, recycling, environmental inventory and environmental remediation. This segment focuses exclusively on local services and products.

This may not traditionally be a sector for economic boom, but there is room for that to change. Corporate spending on sustainable waste management is expected to increase by 20 percent in 2009 (Panel Intelligence, 2008). This evidence suggests that sustainable waste management businesses, such as commercial composting, can be financially viable. Commercial composting would make a profit, help businesses save money (including those in waste management) create jobs, reduce materials going to landfills, produce renewable energy, all while providing a high quality product that regenerates depleted soils.

Industries like composting and recycling are especially critical to New Hampshire because landfills are near capacity (Phinizy, 2008) and the percentage of waste recycled is very low, only 17 percent (NH Department of Environmental Services, 2006).

## Transportation:

*“A massive investment in public transportation would immediately help the poor, create long-term jobs, and cut greenhouse gases.”*

- Van Jones

Businesses in the Transportation segment include mass transit such as bus & rail, shipping services, bicycle shops and ride share programs. While getting people and materials from point A to point B is certainly an integral part of our economy, it has major impacts on the environment including nearly one-third of US greenhouse gas emissions (Greene, 2003).

The environmental impacts of transportation can be reduced in a number of ways such as increasing vehicle efficiencies, and reducing the number of vehicles on the road by expanding public transportation, developing bike-able and walk-able communities, and encouraging telecommuting.

New Hampshire is rural and traditional public transit may not be viable for much of the state. There are, however, innovative solutions to the challenges of a rural transportation system. Online rideshare programs, for instance, can connect drivers and riders in a safe and convenient way.

There is also room for expansion of traditional services between and within cities. One option for expanding public transportation is the development of rail service along Route 93 into Massachusetts. This would require engineering and construction jobs during the installation, and then maintenance and operational jobs once the system is in use. In addition to creating jobs, rail would mitigate traffic congestion, reduce greenhouse gas emissions and eliminate the need to expand the highway.

Transportation within towns and cities is another area of potential investment. Expanding existing bus service and starting it where it would be viable would create jobs. Convenient bus service in conjunction with walk-able communities would provide car-less residents a way to work. This would increase economic activity. Additionally, public transit and walk-ability contribute to a healthier community (Lee, Mikkelsen, Srikantharajah & Cohen, 2008).

## Green Products & Services:

*“Companies with their eye on their ‘triple-bottom-line’ outperform their less fastidious peers on the stock market.”*

- The Economist magazine  
(Ecomall, n.d)

Even in the current economic condition, consumers are continuing to buy green products in growing numbers. In 2008 the Natural Marketing Institute recorded the highest use of sustainability products (LOHAS Report, n.d.). This suggests room for growth and opportunities for investment in green products. This includes the manufacturing of green products such as cleaning supplies, as well as retail operations such as grocery stores.

The Green Products segment goes beyond the grocery store and includes any environmentally friendly product or service made to substitute a conventional product. Examples of other Green Products/Services include organic clothing, shoes made from recycled content, green cleaning, natural landscaping, and eco-tourism.

Green spending goes beyond residential use as well. Other larger services to include would be green healthcare, sustainability consulting, and socially responsible Investing (SRI).

According to a Panel Intelligence report “Eighty percent of corporate sustainability executives surveyed from across North America plan to maintain or increase levels of sustainability-related spending in 2009, despite the current economic conditions” (Panel Intelligence, 2008). This suggests that even during the current economic downturn investment in green products will be a profitable venture.

## Recommendations

Economic Development for Environmentalists or Ecological Conservation for Capitalists. The bottom line, or should I say, the triple bottom line is that green business will stimulate the economy, improve social equality and protect the natural environment.

The following describes recommendations for developing green businesses and building a green economy in New Hampshire.

### Investment:

According to a study done by the Center for American Progress (CAP) investing \$432.1 million (New Hampshire's share of a hypothetical \$100 billion from the federal government) in New Hampshire green jobs would result in 9,245 jobs created (Polin, Garret-Peltier, Heintz and Scharber, 2008). The CAP study did not include the segments; Local & Sustainable Agriculture, Training, Environmental Services, or Green Products as described in this paper.

The CAP study advocates for a federal investment of \$100 billion nationwide specifically in green ventures. They suggest three avenues of investment: 50 percent to Tax Credits, 46 percent to Direct Funding, and 4 percent to Loan Guarantees (Polin, Garret-Peltier, Heintz and Scharber, 2008). My recommendation for New Hampshire is to take a similar approach, with funds coming from Regional Greenhouse Gas Initiative (RGGI), the energy efficiency portion of the System Benefits Charge (SBC) that appears on PSNH customers' electric bills (New Hampshire Office of Energy and Planning, n.d.), and funding provided to New Hampshire by the economic stimulus package.

- 1) Tax Credits:** Currently New Hampshire allows municipalities to offer tax credits for residential electricity production using renewable energy methods. The state should subsidize such tax credits. The state should also offer permanent credits to businesses implementing green initiatives including purchasing of green products and services, renewable energy production and sustainable waste management. A governmental agency or a third party should determine the validity of these green initiatives.
- 2) Direct Funding:** New Hampshire is running a pilot program called Pay as You Save (PAYS). This allows customers to pay for approved efficiency initiatives using their electric bill. The cost of devices or services is paid for by the utility company. There is then a corresponding PAYS charge included on the customers monthly bill (New Hampshire Office of Energy and Planning, n.d.). This program should be funded by the state, made permanent and expanded to include photo voltaic and wind energy production.

New Hampshire could also pass a permanent ordinance that state construction and renovation projects be done using green construction practices. The state could also make it policy to purchase green supplies for cleaning, office, transportation and landscaping, etcetera.

- 3) Loan Guarantees:** New Hampshire should offer loan guarantees to locally owned banks for projects fitting within the eight segments described in this paper.

These three strategies will encourage the growth of the eight segments, which will help our green economy grow. In addition to these strategies of investing in a green New Hampshire economy, I recommend a less conventional idea as well. New Hampshire should recognize the B Corporation.

### **B Corporation:**

B Corporation is a new type of corporation that combines the capital and power of the for-profit sector with the social involvement of the not-for-profit sector. B Labs, a not-for-profit organization, has created the B Corp and the certification requirements (B Corporation, 2008).

Currently B Corp is a label for socially responsible companies. Businesses register with B Labs as a B Corporation, pay a fee based on earnings. A small company with \$2 million in annual sales would pay \$2,000 per year (B Corporation, 2008). This fee goes toward marketing, legal and other efforts for B Corporations.

B Corporations commit to social responsibility and triple bottom line practices. In order to ensure the corporation remains committed to social responsibility over the life of the organization, B Corporations are required to incorporate the interests of employees, community and environment into their corporate governing documents (B Corporation, 2008).

The goal of B Labs is that B Corporation be recognized by the states and tax preferred by the IRS, providing benefits to for-profit organizations that commit to social responsibility (B Corporation, 2008).

There are three main actions for New Hampshire to take in regards to B Corporation:

- 1) Create a corporate structure** that protects the values of companies that incorporate the needs of all stakeholders in their operations. The B Corp structure gives shareholders the ability to hold directors accountable for not considering the needs of all stakeholders. The

B Corp structure also protects mission-driven directors if company ownership changes.

- 2) **Create tax incentives** for B Corporations that would place them between for-profit and not-for-profit rates.
- 3) **Give procurement preferences** to B Corporations that would give them preference in the bidding process.

If New Hampshire were to recognize the B Corporation it would give the state two main benefits:

- 1) **B Corporations would create** a new source of social service, environmental protection and economic activity powered by the creativity and energy of entrepreneurs from New Hampshire and across the country. This would also provide some relief to New Hampshire not-for-profit organizations.
- 2) **New Hampshire would be the first** state to recognize B Corporations giving it the advantage in attracting cutting edge companies that choose the B Corp status.

## **A Necessary First Step**

By investing in the eight segments covered here as well as recognizing the B Corporation New Hampshire will effectively grow its green economy. This will create new jobs, increase the quality of existing jobs while saving money and reducing the State's environmental footprint.

This is a great goal, but by no means a final destination. The green economy discussed in this paper means New Hampshire businesses, residents and government would be stimulating the economy while doing less damage to the environment. This would be eco-efficiency as mentioned on page 5, and in the words of William McDonough and Michael Braungart; "Being less bad is not being good" (McDonough & Braungart, 2002).

The ultimate destination involves the large majority economic activity falling under the "regenerative" category outlined in the beginning of this paper. Eco-efficiency is a great step in the right direction, and it is where we need to start today. However, like any first step it is just the beginning. It will be our responsibility to make sure we continue that journey to a sustainable and regenerative New Hampshire economy.

## Appendix A Eight Segments

Segment	Industries	Jobs
Local and Sustainable Agriculture	Farms, Farm Suppliers, Markets, Restaurants	Farm Product Purchasers, Cashiers, Agricultural Processor, Broker, Certifiers, Distributors, Inspectors, Farm Suppliers, Ingredient Supplier, Manufacturer, Packaging Supplier, Chefs, retailer, wholesaler, Farm Operators, Farm Laborers, Composters, Farm Equipment Dealers, Veterinarians, Mechanics, Government regulators
Renewable Energy (Polin, Garret-Peltier, Heintz and Scharber, 2008)	Wind, Solar, Biofuels	<b>Wind:</b> Environmental Engineers, Iron & Steel Workers, Millwrights, Sheet Metal Workers, Machinists, Electrical Equipment Assemblers, Construction Equipment Operators, Industrial Truck Drivers, Industrial Production Managers, First-Line Production Supervisors, <b>Solar:</b> Electrical Engineers, Electricians, Industrial Machinery Mechanics, Welders, Metal Fabricators, Electrical Equipment Assemblers, Construction Equipment Operators, Installation Helpers, Laborers, Construction Managers, <b>Biofuels:</b> Chemical Engineers, Chemists, Chemical Equipment Operators, Chemical Technicians, Mixing and Blending Machine Operators, Agricultural Workers, Industrial Truck Drivers, Farm Product Purchasers, Agricultural and Forestry Supervisors, Agricultural Inspectors, Foresters*, Algae Farmers*
Training	Higher Education, Trade Schools	Instructors, Administrators, Office Workers, Marketers
Smart Tech (Polin, Garret-Peltier, Heintz and Scharber, 2008)	Energy Efficiency, Smart Grid	Computer Software Engineers, Electrical Engineers, Electrical Equipment Assemblers, Electrical Equipment Technicians, Machinists, Team Assemblers, Construction Laborers, Operating Engineers, Electrical Power Line Installers and Repairers, product designers*
Green Construction (Polin, Garret-Peltier, Heintz and Scharber, 2008)	Construction, Retrofitting	Electricians, Heating/Air Conditioning Installers, Carpenters, Construction Equipment Operators, Roofers, Insulation Workers, Carpenter Helpers, Industrial Truck Drivers, Construction Managers, Building Inspectors, Architects*, Contractors*, Foundation Layers*
Environmental Services	Recycling, Water and Air Testing, Composting, Environmental Restoration, Land Conservation	Master Composters, Compost Laborers, Recycling Laborers, Industrial Truck Drivers, Water Testers, Air Quality Testers, Chemists, Chemical Engineers, Chemical Equipment Operators, Chemical Technicians, Soil Testers
Transportation (Polin, Garret-Peltier, Heintz and Scharber, 2008)	Mass Transit, non-polluting personal transit, Shipping Services	Civil Engineers, Rail Track Layers, Electricians, Metal Fabricators, Engine Assemblers, Bus Drivers, Locomotive Engineers, Dispatchers, Railroad Conductors, City Planners*, Sustainability Directors*
Green Products	Retail, Travel, Manufacturing	Sustainability Directors, Marketers, Product Designers, Package Designers, Graphic Designers, Travel Agents

\*The segments that reference the CAP are based on similar segments in that publication. The jobs with asterisks in these segments are additions I made.

# References

- Associated Press. (2009, April 14). NH jobless rate 6.2%, highest since 1993. Vermont Public Radio. Retrieved April 16, 2009, from [http://www.vpr.net/news\\_detail/84687/](http://www.vpr.net/news_detail/84687/).
- B Corporation - About B Corp. (2008). B Corporation. Retrieved April 17, 2009, from <http://www.bcorporation.net/about/>.
- B Corporation - Become a B Corp. (2008). B Corporation. Retrieved April 17, 2009, from <http://www.bcorporation.net/become/official>.
- Daigle, R. (2009, March 11). An Isolated Idaho. Boise Weekly. Retrieved April 17, 2009, from <http://www.boiseweekly.com/gyrobase/Content?oid=oid%3A321774>.
- Ecomall - Socially and Environmentally Responsible Investments. (n.d.). Ecomall. Retrieved April 17, 2009, from [http://www.ecomall.com/biz/menu\\$.htm](http://www.ecomall.com/biz/menu$.htm)
- Energy Efficiency Programs in New Hampshire. (n.d.). New Hampshire Office of Energy and Planning. Retrieved April 17, 2009, from <http://www.nh.gov/oep/programs/energy/resources.htm>.
- Feldbaum, M., & States, H. (2009). Going Green: The Vital Role of Community Colleges in Building a Sustainable Future and Green Workforce. National Council for Workforce Education and the Academy for Educational Development.
- Fitzgerald, J. (2009). Cities on the Front Lines. *The American Prospect*, 20(3).
- Gittell, R., & Tebaldi, E. (n.d.). New Hampshire - NH Tech Schools. Retrieved March 21, 2009, from [http://www.technology-colleges.info/states/new\\_hampshire.html](http://www.technology-colleges.info/states/new_hampshire.html).
- Greene, D., & Schafer, A. (2003). Reducing Greenhouse Gas Emissions from U.S. Transportation. Pew Center on Global Climate Change.
- Haberman, S. (2008, November 13). How N.H. can get Obama 'green' jobs funds. *seacoastonline.com*. Retrieved March 16, 2009, from <http://www.seacoastonline.com/articles/20081113-BIZ-811130395>.
- Jones, V. (2008). *The Green Collar Economy*. New York: HarperCollins.
- Knoy, L. (2008, December 17). The Exchange. Working Green in the Granite State. Retrieved from <http://nhpr.org/node/19688>.
- Lee, V., Mikkelsen, L., Srikantharajah, J., & Cohen, L. (2008). Strategies for Enhancing the Built Environment to Support Healthy Eating and Active Living. Healthy Eating Active Living Convergence Partnership. Retrieved from <http://www.preventioninstitute.org/documents/builtenvironment.pdf>.
- Lemonick, M. D. (2009, March). Top 10 Myths about Sustainability. *Scientific American*. Retrieved March 25, 2009, from <http://www.sciam.com/article.cfm?id=top-10-myths-about-sustainability>.
- Leonard, A. (n.d.). The Story of Stuff with Annie Leonard. The Story of Stuff. Retrieved April 7, 2009, from <http://www.storyofstuff.com/>.
- Laumer, J. (2006, May 24). Buildings Account for Half of All CO<sub>2</sub> Emissions. *TreeHugger*. Retrieved April 2, 2009, from [http://www.treehugger.com/files/2006/05/buildings\\_accou\\_1.php](http://www.treehugger.com/files/2006/05/buildings_accou_1.php).
- Litos Strategic Communication. (2008). *The Smart Grid: An Introduction*. Washington D.C.: U.S. Department of Energy.
- LOHAS Report: Consumers & Sustainability Series. (n.d.). Retrieved March 25, 2009, from [http://www.nmisolutions.com/r\\_lohas.html](http://www.nmisolutions.com/r_lohas.html).

Morton, S. (2002, November). Business Case for Green Design. Facilities Net. Retrieved April 2, 2009, from <http://www.facilitiesnet.com/designconstruction/article/Business-Case-for-Green-Design--1481>.

Margolis, R., & Zuboy, J. (2006). Nontechnical Barriers to Solar Energy Use: Review of Recent Literature. National Renewable Energy Laboratory. Retrieved April 2, 2009, from <http://www.nrel.gov/docs/fy07osti/40116.pdf>.

McDonough, W., & Braungart, M. (2002). Cradle to Cradle. New York: North Point Press.

Ong, P. M., & Patraporn, R. V. (2006, June 30). The Economic Development Potential of the Green Sector. The Ralph and Goldy Lewis Center for Regional Policy Studies, UCLA . Retrieved November 3, 2008, from [http://repositories.cdlib.org/lewis/pb/Policy\\_Brief\\_06-06/](http://repositories.cdlib.org/lewis/pb/Policy_Brief_06-06/).

Panel Intelligence Survey Finds Corporate "Green" Spending on Sustainability is Increasing Despite Weakening Economy. (2008). . Panel Intelligence. Retrieved March 25, 2009, from [http://www.panelintelligence.com/docs/PI\\_Sustainability\\_Study\\_Q4-08\\_Final.pdf](http://www.panelintelligence.com/docs/PI_Sustainability_Study_Q4-08_Final.pdf).

Pay As You Save. (n.d.). New Hampshire Office of Energy and Planning. Retrieved April 17, 2009, from <http://www.nh.gov/oep/programs/energy/pays.htm>.

Phinizy, J., & McLeod, M. (2008, May 23). Solid waste disposal: a growing N.H. problem. allbusiness. Retrieved April 7, 2009, from <http://www.allbusiness.com/government/government-bodies-offices-regional-local/10562219-1.html>.

Pollin, R., Garrett-Peltier, H., Heintz, J., & Scharber, H. (2008, September). Green Recovery: A Program to Create Good Jobs and Start Building a Low-Carbon Economy. Center for American Progress. Retrieved from [http://www.americanprogress.org/issues/2008/09/pdf/green\\_recovery.pdf](http://www.americanprogress.org/issues/2008/09/pdf/green_recovery.pdf).

State Posts Solid Waste Disposal Tonnages and Recycling Rates for Municipalities. (2006, August 28). NH Department of Environmental Services. Retrieved April 7, 2009, from <http://des.nh.gov/media/pr/2006/aug/060828.htm>.

Tasch, W. (2008). Inquiries into the Nature of Slow Money. White River Junction, VT: Chelsea Green Publishing.

Underwood, K. (2008, July 28). Solar Job Training On the Rise. TreeHugger. Retrieved April 3, 2009, from <http://www.treehugger.com/files/2008/07/solar-job-training.php>.