

# Ensuring that Green Jobs are Quality Jobs



**Author**

Elena Foshay, Deric Licko, Ana Mileva, Josh Mukhopadhyay, as a class project for City Planning 223, Local Economic Development Planning (Professor Karen Chapple)

**Cover Photo**

Courtesy of Green For All.

**Key Support**

We give our thanks to Karen Chapple for advising us and then pushing us to publish and to Carol Zabin for her feedback and work on this. We would also like to thank Cheryl Brown and Andrea Buffa for their support, and to Kate Gordon and the Apollo Alliance for their leadership on this issue.

**The Center for Community Innovation (CCI)** at UC-Berkeley nurtures effective solutions that expand economic opportunity, diversify housing options, and strengthen connection to place. The Center builds the capacity of nonprofits and government by convening practitioner leaders, providing technical assistance and student interns, interpreting academic research, and developing new research out of practitioner needs.

University of California  
Center for Community Innovation  
316 Wurster Hall #1870  
Berkeley, CA 94720-1870

<http://communityinnovation.berkeley.edu>

April 2009

# Table of Contents

---

INTRODUCTION.....	2
WHAT ARE GREEN JOBS?.....	2
<i>Why Green Jobs?</i> .....	3
<i>Public Support for Green Jobs</i> .....	4
<i>What Green Jobs Are Being Created?</i> .....	5
JOB QUALITY STANDARDS.....	6
<i>Defining Job Quality</i> .....	6
<i>Prioritizing Job Quality Elements</i> .....	9
HOW CAN WE ENSURE THAT GREEN JOBS ARE QUALITY JOBS?.....	10
STRATEGIES FOR ENSURING GREEN JOBS ARE QUALITY JOBS.....	10
1. LOCAL GOVERNMENT ACTION.....	10
2. PROJECT-BASED NEGOTIATED AGREEMENTS.....	15
3. CERTIFICATION PROGRAMS.....	17
4. UNION-BASED STRATEGIES.....	19
5. WORKFORCE DEVELOPMENT STRATEGIES.....	20
6. SECTOR-BASED ECONOMIC DEVELOPMENT STRATEGIES.....	22
7. PLANNING INTERVENTIONS.....	24
MONITORING JOB QUALITY INDICATORS.....	25
CONCLUSION.....	26
BIBLIOGRAPHY.....	28

## Introduction

---

The green economy is an exciting, emerging phenomenon that has captured the attention of community organizations and political leaders nationwide. Advocates bring a message of hope that as we develop solutions for climate change and other environmental problems, millions of new jobs will be created. The assumption is that these jobs will pay living wages and provide good benefits, and, if made accessible to the poor and to those with barriers to employment, can provide a way for people to rise out of poverty.

President Barack Obama has expressed his commitment to investing in clean energy and green jobs. The Obama administration's proposals for stimulating economic recovery include federal dollars for large-scale infrastructure projects, energy efficiency retrofit programs, green jobs training, and renewable energy projects. Federal and state legislation is currently seeking to harness the potential of the green economy by stimulating its growth. The stimulus, energy and climate bills, as well as many other federal, state, and local policies, set new regulations and invest in clean technologies, while also supporting green workforce development. In many cases, a portion of the proposed funding is specifically targeted at vulnerable populations, linking unemployed and low-wage workers to new opportunities in the green economy.

Many of the jobs generated in the green economy will be in manual labor, manufacturing, and the skilled trades. While jobs in these sectors have the potential to help working people gain access to the middle class, there is no guarantee that they will be quality jobs providing the "pathways out of poverty" that supporters anticipate. At the same time, the green economy bridges a diverse set of interests and provides a unique and unprecedented opportunity for collaboration among

community-based organizations, local governments, labor unions, environmental groups, research institutions, and local businesses. Working together, these groups can ensure that government and private investments in the green economy provide equitable benefits.

This report proposes several ways that governments, unions, and other actors can bring pressure to bear to increase the number of green jobs, ensure that green jobs are quality jobs, and link target populations to these jobs. The report begins by defining green jobs and describing the current context of green economic growth. It then offers a framework for defining job quality standards that can be applied to green economic development. Following this is a discussion of seven strategies that organizations can apply to create or retain high-quality green jobs. Included in this discussion are just a few of the many examples, from California and elsewhere, of where these strategies have been applied. Finally, this report concludes by highlighting the importance of tracking and reporting job quality standards, and discusses the role of local governments and community organizations in monitoring accountability.

## What are Green Jobs?

---

There is currently no consensus on which jobs should be considered "green jobs." A green job is not simply a job in a business that has implemented some type of green practice in their day-to-day operations, such as recycling and conserving energy. Green jobs taken as a whole are those in businesses whose products and processes reduce negative human impacts on the environment and improve the productive and responsible use of natural resources. Green jobs can be

entry-level jobs, skilled labor jobs, or jobs that require a two- or four-year college education.

In the narrowest sense, green jobs are restricted to jobs in businesses creating green products that preserve or improve environmental quality, such as solar panel manufacturers or biofuels processors and distributors. These jobs are primarily newly created, and include both science and engineering occupations, and manual labor and the skilled trades. The latter are sometimes referred to as 'green-collar jobs,' or blue-collar jobs in green industries (Pinderhughes 2007). Green-collar jobs are well-paid, career track jobs that contribute directly to preserving or enhancing our environment, and include both entry-level positions and those requiring more advanced skill (Apollo Alliance 2007). Many advocates believe that with improved access to training green-collar jobs can provide new opportunities for low-income populations and those with barriers to employment.

A broader definition of green jobs includes numerous jobs in existing occupations that not only produce green products, but are also involved in the transition to a greener economy. Some jobs will be newly created, but most will be existing jobs that adapt to incorporate new technologies or skills. These include jobs in industries that are greening their production processes, such as utilities, refineries, manufacturers, or construction firms. They also include jobs in existing industries that benefit the environment or mitigate climate change, such as public transportation, waste management and recycling, and environmental services. As participants in the transition process, workers in these industries will require slightly different skill sets and training in new technologies. Where new jobs are created in traditional industries, new green career pathways must be

established to incorporate green technologies into existing training programs and to help both new and existing workers access these opportunities.

While green-collar jobs are an important element of the green economy, regulatory changes and public investment have the potential to reach a much larger segment of existing workers. The broader definition opens up the benefits of this investment to a wider audience, and allows it to have a more significant impact. At the same time, the job quality element of green-collar jobs is essential, and should form part of any green economic development strategy. When implemented, the quality standards and leverage points discussed in this report will benefit not just workers in green jobs, but all workers connected to the green economy.

### *Why Green Jobs?*

Green jobs have come to the forefront of public policy for two main reasons. The first is concern for the environment and the impacts of climate change, which will be a challenge for humanity for decades to come. Addressing these will require major regulatory changes and large-scale economic restructuring, driving the expansion of the green economy and creating new jobs in the process. The second reason is related to the economic trends of the past few decades. Manufacturing jobs have been lost, replaced by a rise in the low-wage service economy. Fewer employment opportunities exist for working class people, making it increasingly difficult to support a family. The green jobs movement is at the nexus of these two factors, aiming to link the people who have been hurt by economic trends to the new opportunities that fighting climate change and expanding the green economy will create.

Talk of green jobs can be heard widely, and some have raised concerns that the green jobs hype mirrors the early days of the dot-com bubble (Greene 2008). However, the green jobs movement is different from the dot-com boom in a number of ways. To begin, climate change is a serious problem that will be with us long term and will require significant public and private intervention. Major regulatory changes at the federal and state levels will spur both public and private investment, which will drive long-term expansion of the green economy. At the same time, the climate crisis is bringing together a diverse array of interest groups and building partnerships in new and unique ways. The result is an unprecedented opportunity for public investment into sustainable economic development, job creation, workforce development, and collaboration with both the private and nonprofit sectors.

### *Public Support for Green Jobs*

Federal, state, and local governments have demonstrated their support for green jobs nationwide by passing a wide array of policies which stimulate green economic growth (CCS 2008). Public funding is starting to flow into research and development, green job creation, and the development of a green workforce. The American Recovery and Reinvestment Act of 2009 represents the most significant federal investment in clean energy and green jobs to date. With over \$100 billion of investments in energy efficiency, renewable energy, transportation, and job training, the scope and volume of the green economy will increase even more rapidly. In implementing the stimulus package, state and local governments will be engaged in efforts to expand green industries and create millions of quality green jobs.

One piece of the American Recovery and Rein-

vestment Act provides an excellent example of how federal investments will spur local green economic growth. The Energy Efficiency and Conservation Block Grant (EECBG) program authorizes \$3.2 billion a year to cities and local governments for a variety of sustainability measures. Modeled on the Community Development Block Grant program, cities can apply for federal grants to improve efficiency and conservation in public buildings, develop building codes to encourage green buildings and energy efficiency, regulate automobile use and traffic flows, procure green products and clean energy vehicles, and use renewable energy as sources for local utilities. Measures such as these will both increase demand for green jobs, such as those in construction, public transportation, and biofuels, and support local businesses.

Another important federal policy is the Green Jobs Act (GJA), passed as part of the 2007 Energy Independence and Security Act (EISA) and still awaiting appropriations. The Green Jobs Act authorizes \$125 million per year to identify needed skills, develop training programs, and train workers for jobs in a range of industries, including energy-efficient buildings, construction and retrofits, renewable electric power, energy-efficient vehicles, biofuels, and manufacturing that produces sustainable products using sustainable processes and materials (Green Jobs Act of 2007). Twenty percent of the total funding, or around \$25 million, must be used for creating “pathways out of poverty,” job training programs specifically targeting low-income people (Ella Baker Center 2008).

At the state level, one important example is California’s AB32, the landmark Global Warming Solutions Act of 2006, which requires the state to reduce its carbon dioxide emissions to 1990 lev-

els – a 25 percent reduction – by 2020, and to 80 percent below 1990 levels by 2050. The state Air Resources Board (ARB) recently adopted regulations detailing how AB 32 will be implemented, achieving targets in a manner that minimizes economic impact and catalyzes the development of new jobs. These jobs will be in industries such as public transportation, renewable energy, water conservation, energy efficiency, construction, waste management, and sustainable agriculture and forestry. The Act also includes one element of job quality, requiring payment of a prevailing wage by defining any construction, installation, and repair work receiving public subsidies or incentives as “public works.” The Act also offers ARB the option to impose a variety of fees on carbon dioxide emitters; those revenues can potentially be reinvested in green jobs (California Climate Action Team 2007).

At the local level, many cities have developed comprehensive climate action plans. New York City, for example, developed a set of 127 legislative priorities, called PlaNYC, to tackle the effects of climate change and improve New York’s urban environment (PlaNYC 2008). The primary goal of PlaNYC is to support sustainable long-term growth and economic development. Community groups such as the New York City Apollo Alliance and Urban Agenda have been active in efforts to grow green-collar jobs linked to PlaNYC’s initiatives. Partnerships of labor unions, environmentalists, businesses, educators, and community organizations have formed working groups tasked with charting a coordinated green workforce development road map. These groups will assess the current environment and identify green jobs training opportunities, develop strategies for linking target populations to training, coordinate with employers, establish labor standards to ensure job quality, and build

partnerships to achieve the road map agenda.

### *What Green Jobs Are Being Created?*

A report by the Apollo Alliance (2008) concludes that a comprehensive national investment of \$500 billion over ten years in energy efficiency and renewable energy could result in the creation of up to five million jobs in the United States. These jobs would be in the areas of renewable energy generation, green construction and energy efficient retrofits, alternative fuels production and distribution, component manufacturing, power plant and refinery upgrades, expansion of public transit infrastructure, manufacturing and repair of fuel-efficient and hybrid vehicles, and research and development. Large-scale national investment would also produce a multiplier effect, generating jobs along supply chains in occupations like transportation, logistics, and office support.

The potential of investment in renewable energy to create jobs cannot be understated. A commitment to renewable energy will create jobs in construction and installation, operations and maintenance, research and development, and manufacturing and transport of component parts. Numerous studies assert that the renewable energy sector generates more jobs per unit of power installed and per unit of energy produced than the fossil fuel-based energy sector, such that switching to renewable energy creates net employment gains (Kammen 2007). Energy efficiency also creates employment in the areas of research, development, manufacturing, construction, and installation. Specifically, energy efficiency creates around 10 jobs in construction and 3-4 jobs in materials manufacturing for every \$1 million invested, plus additional jobs in other sectors along the supply chain (Rogers 2007).

A California survey provides an example from one industry of how these numbers translate on the ground (Carrese and Oliver 2008). This sector scan estimates that solar companies in the state now employ between 16,500 and 17,500 people and may hire another 5,000 in the next year (though it is unclear how the solar industry will be impacted by the economic slowdown). While some of these jobs are high-quality green-collar jobs, others are entry-level, nonunion jobs with little opportunity for advancement. The median annual wage for an entry-level solar installer is \$31,200; the median annual wage for experienced installers and technicians is \$60,000 for solar thermal and \$52,000 for solar photovoltaic installations. The prevailing wage for a union electrician trained to install solar systems is up to \$44 per hour or more than \$88,000 a year.

While many jobs will be created in the green economy, other jobs may be lost. This is particularly true for jobs in heavy-polluting industries, as they are required to limit operations or are replaced by cleaner technologies. Unions and organizations representing workers that may be affected, such as the United Mine Workers and the Apollo Alliance, argue that investment must be made to transition affected workers into new jobs, preferably where they can contribute their skills to growing the green economy. Opportunities for retraining, or 'retooling,' must be provided, along with income supplements to ensure that workers can continue to support their families during the transition.

## **Job Quality Standards**

It is clear that the growth of the green economy will create jobs, but the question remains whether these new jobs will meet the job quality

standards necessary to create "pathways out of poverty." This section provides a framework for understanding how job quality can be defined. After reviewing the different elements, this section discusses how standards can be prioritized and applied to green economic development.

### ***Defining Job Quality***

The term 'quality job' is subjective and requires further definition before being applied in the context of green jobs. There are many types of compensation that an employee desires in order to be able to afford more than the bare minimum of food and shelter, so that beyond self-sufficiency he or she is in a position to build assets and raise his or her standard of living over time. Both ideas will be discussed in greater detail below.

#### ***i. Standard of living***

The most commonly used metric for standard of living is the federal poverty line. Devised by the Social Security Administration in the 1960s, it is, according to some critics, out of line with modern society, since the standard is largely based on nutritional considerations and food security. Our system of industrialized agriculture has managed to increase the food supply while making calories available more cheaply than ever, but the same cannot be said for other necessities like housing, health care, transportation, and child care.

Many community development intermediaries advocate developing a more realistic standard. For instance, the Oakland-based Insight Center for Community Economic Development has devised a self-sufficiency index that takes into account some of this missing information and provides an alternative metric on a county-specific level. Housing costs are taken from Department of Housing and Urban Development regional

data. California Department of Education information is used to estimate child care expenses. The Department of Health and Human Services provides health insurance figures. Census data is used to figure transportation expenditures. The Department of Agriculture still provides food cost estimates, but now it is only part of the answer (Insight CCED 2008).

The difference between these competing metrics is stark: while the federal poverty line for an individual is \$10,400/year (just under \$5.00/hour), Insight’s self-sufficiency index for a single person living in Alameda County, for example, is \$23,240/year (\$11.00/hour). For a single parent with child the gap is even wider. The federal poverty line for a family is \$14,000/year (\$6.62/hour), while the self-sufficiency index for the

identical family unit is \$40,736/year (\$19.29/hour) (Insight CCED 2008).

*ii. Job quality elements*

To better define job quality, it is helpful to identify five constituent elements of job quality based on factors considered in the self-sufficiency index: (1) wages, (2) hours, (3) hiring, (4) advancement, and (5) benefits (Good Jobs First 2003; Gross 2005). These elements are summarized in Table 1 and discussed in greater detail below.

**Wages:** Clearly, job-quality advocates would like wages to be as high as possible; however, there are several considerations that can inform the exact amount and how wages change over time.

- *Set Level:* Simplest of all is negotiating a given wage and then agreeing on built-in increases

**Table 1. Elements of job quality.**

Job Quality Element	Options
Wages	Set Level
	Benchmarked to External Standard
	Flexible Standard
Hours and Conditions	Guarantees
	Leave
	Retention
	Health and Safety
	Flexibility
Hiring and Procurement	Local Preferences
	Workforce Training
	Sourcing
Advancement	Career Training
	Professional Development
Benefits	Health Care
	Retirement Planning
	Child-care Assistance
	Financial Education
	Transportation Subsidy
	Housing

es and renegotiation provisions.

- *Benchmarked to External Standard:* There are many external standards to which compensation can be tied, including the state or federal minima, prevailing or living wages, and the like. The wage can be a certain percentage of these standards and increases can be indexed to increases in inflation, the consumer price index, and similar cost of living indicators.
- *Flexible Standard:* Employers often want the flexibility to have different pay levels for the same job classification, based on things other than tenure, such as performance. One way to address this type of request is to agree on an average wage that must be maintained regardless of any single individual's pay level.

**Hours and Conditions:** The duration and intensity of employment is a very important job condition, particularly when it comes to physical labor.

- *Guarantees:* Non-salaried employees often want the assurance they will work enough hours to earn a steady wage and qualify for benefits that require full-time status.
- *Leave:* Time off for holidays, sickness, parental or child care, professional development, etc. and the ability to retain unused credits across time periods is also a high priority.
- *Retention:* At-will employees want to know about the severance package and retraining assistance that will be available should they be discharged.
- *Health and Safety:* Employees want to know they will have reasonable time for on-the-job breaks and that the workplace environment is safe.
- *Flexibility:* The ability to choose or swap work assignments and hours and telecommute is increasingly important, and can be considered an environmental mitigation or green practice.

**Hiring and Procurement:** Besides the taxes an employer pays, hiring from and doing business with the local community further increases the impact on local economic development.

- *Local Preferences:* Local residents who may be low-income, referred by community groups, designated as having special needs, and/or displaced by development often want preferential access to jobs. Advertising the job is another element that advocates want conducted in a way that best reaches their constituency.
- *Workforce Training:* Requirements to hire from local apprenticeship or other job training programs help improve job access for newly trained workers. Advocates want employers to help train prospective employees who lack relevant job skills.
- *Sourcing:* An employer may be compelled to first contract with local and/or minority-owned businesses to further boost the city's economy.

**Advancement:** Allowing employees to obtain jobs with greater responsibility and pay within the same organization where they started helps those employees build assets and strengthen the community.

- *Career Training:* Employees want on-the-job training to help them advance up their career ladder. The employer should offer jobs that are accessible at the entry level but also provide an opportunity for advancement from within.
- *Professional Development:* Employees may also receive scholarships or other support for pursuing education off the job, including coursework towards university certificates or degrees.

**Benefits:** Wages are increasingly not enough to pay for necessities like health insurance and child

care, so using the employer's size and bargaining power to access these services is a major negotiating point. Assuming benefits are offered, there remains the question of how long employees need to be on the job before those benefits vest them.

- *Health Care:* Advocates want employers to not only offer insurance for employees and dependents, but also pay all or most of the premiums.
- *Retirement Planning:* Pensions and retirement accounts like matching 401(k)s are increasingly important as social security's long-term viability becomes more uncertain.
- *Child-care Assistance:* Like health care, the cost of child care is increasing very quickly; if the employer subsidizes it or provides it on site that is a major benefit.
- *Financial Education:* Employers can make financial planners available to employees to help with taxes and access things like the EITC.
- *Transportation Subsidy:* Public transit passes and compressed work schedules help mitigate traffic and air quality impacts.
- *Housing:* Employers can provide low-interest loans for homebuyers to help stabilize their workforce.

### *iii. Other considerations*

There are many factors other than those discussed above that contribute to a person's standard of living, three of which are particularly relevant to this topic.

The first is location, presuming that a quality job is one whose location minimizes commute time and is accessible by walking, biking, or public transportation. The second is current and projected demand, presuming that a quality job is one in demand, with prospects for growth. The third is

required qualifications, or steps in a career ladder. This presumes that a quality job is one where the required qualifications are accessible to a wider array of skill levels, including both entry-level and more advanced opportunities (Urban Habitat 2008).

There is also the matter of job satisfaction, which can be less tangible. One factor in job satisfaction is believing that your job makes the world a better place (Pinderhughes 2007). Given that concerns over the environment helped kick-start the green jobs movement, such jobs should rank highly on the intangible satisfaction scale.

Union representation is the single best way to guarantee job quality standards for the majority of workers. A unionized workplace creates a set of organizing conditions that improve employees' leverage and help them negotiate for better wages, benefits, and other conditions of labor. While many employees have the theoretical right to organize, if the employer is willing to sign a neutrality or card check agreement, the union information process becomes easier. This will be discussed further in the section on union-based strategies.

### *Prioritizing Job Quality Elements*

Given the myriad job quality elements and other considerations, it is reasonable to ask how advocates should prioritize them. Community groups, along with private employers and government bodies, all have input into what sorts of jobs are created, and it is important to have a hierarchy of preferred standards to inform this dialogue. As a point of reference, one can examine sample Community Benefits Agreements and Project Labor Agreements to see what sorts of job quality

## How Can We Ensure That Green Jobs Are Quality Jobs?

elements the advocates in question most highly valued. Not surprisingly, high wages, health benefits, and job training and preferential hiring were the core elements in the Staples and Los Angeles International Airport Community Benefits Agreements, for example (Good Jobs First 2005). See the discussion in the section on project-based negotiated agreements, below, for more details. It is important to remember that there will always be trade-offs between different elements. If the advocates have a good idea of their ‘must-haves’ going into the process, that increases the odds those requirements will be met.

Once job quality standards are set, elected officials, community groups, and coalitions must consider ways of ensuring that green jobs are quality jobs. Advocates seeking to increase the supply of high-quality green jobs can choose from a variety of strategies. There are seven strategies listed here, all focusing on one or more of the following goals: (1) increasing job quality, (2) increasing the number of available green jobs, and (3) linking people to quality jobs. Each strategy and its related impacts will be discussed in detail below, but are summarized in Table 2.

**Table 2. Strategies for increasing the quality and quantity of green jobs.**

Strategy	Increase Job Quality?	Increase the Number of Green Jobs?	Link People to Quality Jobs?
Local Government Actions	Yes	Yes	Yes
Project-based Negotiated Agreements	Yes	Maybe	Yes
Certification Programs	Yes	Yes	Maybe
Union-based Strategies	Yes	No Y	es
Workforce Development	Maybe	No Y	es
Sector-based Economic Development Strategies	Yes	Yes	Yes
Planning Interventions	Yes	Yes	Maybe

# Strategies for Ensuring Green Jobs are Quality Jobs

## 1. Local Government Action

Local governments can play a powerful role in both increasing demand for green jobs and in ensuring job quality standards. Indeed, local policy measures are one of the most effective ways to ensure that the benefits of the green economy are equitably distributed across all sectors (Pinderhughes 2007). What follows is a discussion of a number of different strategies local governments can use to both create green jobs and ensure that these jobs meet certain quality standards.

The ability of local governments to take these actions is limited by the degree of political support behind both the creation of high-quality green jobs and the implementation of sustainable practices. Where cities make both of these a priority, local organizations and activists have significantly more leverage to advocate for sustainability commitments and policies that establish job quality standards. Once these commitments and policies are established, their implementation must be monitored and enforced. Cities must delegate this responsibility and allocate sufficient resources to fulfill it. In addition, the authority to implement and enforce sustainability measures and job quality standards must be backed by the mayor or the city council to provide adequate legitimacy.

### *Increasing green labor force demand through local sustainability plans*

By making a commitment to sustainability, cities can play an important role in feeding the green economy and supporting green businesses. This commitment can be detailed in city-wide sustainability plans which, if implemented, invest both public and private money in the green economy

and increase demand for people to fill green jobs. Many cities and counties across the nation have adopted sustainability plans which set out long-term targets and goals for increasing energy efficiency, improving job quality, attracting and sustaining green businesses, reducing waste, and improving environmental health, among others. In following these plans, cities make investments which have the potential to create high-quality green jobs (Apollo Alliance 2008).

A local sustainability plan might include the following commitments:

- Conduct energy-efficient retrofits and solar panel installation for public buildings financed with capital budgets, bonds, or performance contracting.
- Build new facilities to green building standards.
- Build public transit infrastructure.
- Convert local government fleets to alternative vehicles or fuels.
- Increase public green space, plant trees, and manage storm water with green infrastructure.
- Purchase green supplies from local suppliers.
- Provide tax incentives, streamlining, or reduced fees for private building owners that invest in energy efficiency, renewable energy, or green building.
- Provide technical assistance or innovative financing for private investment in renewable energy, efficiency, green buildings, alternative vehicles, or green space.
- Create green building codes, energy conservation ordinances, or other requirements for green buildings or retrofits of existing buildings.
- Create land use and infrastructure policies that support green manufacturing companies.

- Promote local green entrepreneurship by providing low-interest loans and other business start-up assistance.

The Alameda County, California, sustainability plan, for example, is supervised by a Sustainability Program Manager housed in its General Services Agency. Elements of the sustainability program include:

- An environmentally preferable purchasing policy, which mandates that all departments procure goods and services that minimize global environmental impacts and expand local markets
  - A mandate that all county construction projects must be built to a minimum LEED Silver standard
  - Green Seal certification for all county janitorial staff
  - A recycling, reuse, and composting program at all county facilities to meet the 75 percent waste diversion goal
  - Utilization of energy and water conservation technology, as well as sustainable landscaping and pest management methods
  - Installation of solar panels on nine different facilities, saving \$540,000/year in energy costs
  - Installation of a fuel cell power plant at the Santa Rita Jail, which produces ultra-clean power in conjunction with solar panels
  - Conversion of the county fleet to gas/electric hybrid vehicles and biofuel trucks
  - A green business recognition program that certifies local businesses for their environmental performance
  - Preference for local and green certified businesses on all county contracts
- It is estimated that over \$7.8 million taxpayer dollars are saved every year through Alameda County's program of energy efficiency retrofits,

onsite renewable power generation, hybrid fleet, composting, office equipment reuse, and recycling.

By adopting a sustainability plan, local cities demonstrate their commitment to improving environmental quality, save taxpayer money by increasing energy efficiency, and make public investments which both create green jobs and support local green businesses.

### *Local Government Action*

In addition to increasing the demand for a green labor force, local governments can take action to increase the number of green jobs, ensure that green jobs are quality jobs, and link local workers to these jobs. Cities and counties have particular leverage in requiring minimum wage and benefit standards, as well as local hiring, from employers contracted to help implement sustainability measures. Over time, such requirements have a tendency to raise standards for workers who are not contracted by the city, improving job quality for greater numbers of people (Teplitzky 2002; Fairris et al. 2005). The following are a number of local policies and initiatives cities can implement, and examples of where they have been previously applied.

#### *1. Living wage and benefits ordinances*

Living wage ordinances are local policies that set wages and benefits at levels sufficient to lift workers out of poverty. They are among the most common of the established job quality standards – more than 140 cities across the country have living wage ordinances in place (Living Wage Resource Center 2009). Cities have the most leverage over wages in publicly funded projects, and

significant leverage over contractors who benefit from public funds.

Many cities in California have passed living wage ordinances guaranteeing a certain minimum pay and level of benefits for certain categories of workers. The Oakland Living Wage Ordinance, passed in 1998, sets minimum wage at \$10.39 with health benefits and \$11.95 without, and requires contractors to provide twelve days of paid vacation and sick leave and ten unpaid days of sick leave per year to full-time employees. The City also adopted an Equal Benefits Ordinance for city contracts, which stipulates that city contractors must provide the same benefits to employees and their domestic partners as they do to employees and their spouses. Both ordinances apply only to contractors receiving public funds.

San Francisco's Minimum Wage Ordinance, established in 2004, sets a city-wide minimum wage of \$8.50, to be adjusted annually with inflation. This wage level applies to all businesses and nonprofits in San Francisco, regardless of the number of employees. In addition, San Francisco passed a Minimum Compensation Ordinance in 2000 which establishes a minimum wage of \$11.03 plus 12 paid days off and 10 unpaid days off (if full-time) for employees of commercial businesses and nonprofits that contract with the City.

Opponents of living wage ordinances claim that they impose unreasonable costs on businesses and result in job loss and an unfriendly business climate. Evidence has shown, however, that additional costs for employers paying living wages are negligible, and that the benefits of lower staff turnover, worker morale, and productivity are significant (Teplitzky 2002; Reich 2005). In many

cases, these ordinances raise the bar for jobs that are not publicly funded, increasing wages among larger numbers of workers. In Los Angeles, for example, the Living Wage Ordinance has increased pay for an estimated 10,000 jobs (Fairris et al. 2005). For around 2,000 of these jobs, increased wages have been matched by improvements in health benefits. This has taken place without a loss in the total number of jobs, as employers have recovered costs through reduced absenteeism and hiring more highly trained workers.

## *2. Prevailing wage*

Prevailing wage is the basic hourly rate paid on publicly funded projects to a majority of workers engaged in a particular craft, classification, or type of work in a particular local area. For projects that are not publicly funded, prevailing wage provides a standard used as a leverage point in contract negotiations. The wage rate takes into account the training and high skill levels of union tradespeople, and is therefore generally significantly higher than that defined by a living wage ordinance. The rate in California is determined by master agreements between labor unions and the California Department of Industrial Relations, and reassessed twice yearly.

Many states have prevailing wage laws that apply to projects defined as 'public works,' including any remodeling, renovation, building construction, or utilities construction project that is executed at the cost of the state, local public agency, or municipality. Some states extend that definition to include projects that benefit from any kind of public subsidy or incentive. Prevailing wage includes definitions of work hours, hourly and overtime wages, travel stipends,

benefit amounts, and the amount of payment into training funds. Though critics claim that prevailing wage increases contract costs, studies have shown that this presumption is false. Prevailing wage does not increase project costs because it guarantees workers are highly trained, skilled tradespeople, which ensures the quality of the work, safety of the workplace, and high levels of productivity (BCTC 2008).

### **3. Local hiring**

Local hiring requirements can also be included in publicly funded projects, Community Benefits Agreements or Project Labor Agreements (discussed below), or can be added as part of local permit requirements. Local hiring ordinances require developers who benefit from public money to reserve a percentage of jobs for local residents, ensuring that unemployed or under-employed citizens benefit from local economic development. Local workforce development agencies and unions then serve as partners in matching quality workers with project jobs.

There are three main approaches to local hiring (Lin 2008). The first, or goal-setting approach, mandates that a specific percentage of construction work must be done by locally hired workers. Consequences for developers and contractors who do not meet the goal are also specified in the agreement. With this approach, a working relationship with unions is often established as part of the hiring process. The second approach uses a process model that spells out the rules for a process in which a local hiring team only hires local residents. The intent is not only to ensure a certain percentage of local residents hired, but also to establish a lasting process where city staff can connect workers with jobs. The third approach

combines the first two models, establishing a percentage goal and establishing consequences for not meeting it, and setting up a permanent local hiring process.

There are many benefits to local hire agreements. First and foremost, local hiring guarantees access to jobs for local residents. This is particularly important in communities with large numbers of people with barriers to employment, as local hire agreements can establish pathways to link them to training and jobs. Local hire agreements also encourage contractors to purchase locally. This creates a ripple effect — when materials are purchased locally, two or three secondary jobs are generated for each construction job. Local hiring also has important benefits in terms of the environmental impact of a project, as it implies that workers will not be creating air pollution by traveling long distances to the work site (Lantsberg 2008).

Local hire agreements are not without their challenges. To begin, there is disagreement over whether local hiring should be mandated or simply encouraged. There is also disagreement over what percentage of a project's workforce should be hired locally, and how 'local' should be defined. Developers and contractors often argue that there are insufficient local skilled workers to meet demand. They also argue that local hire favors workers' geographic location over the quality of their work. In this case, skilled workers who usually work for a particular developer may be excluded from a particular project because they do not meet the geographic requirement. Unions that use hiring hall systems struggle with having to skip over workers at the top of their list in favor of those who are local residents.

In spite of these challenges, many local hire ordinances have been established that effectively connect local residents with quality construction jobs. The City of Oakland, California, for example, has instituted a local hiring requirement for all Public Works Agency contracts, which establishes that 50 percent of work hours must be performed by Oakland residents, and 50 percent of new hires must be local (LSLBE Program 2005). The program includes incentives to hire through state-approved apprenticeship and other formal training programs. Responsibility for proving that the requirement has been fulfilled falls on the contracted businesses themselves.

Since the 1980s, the city of Berkeley, California, has implemented its First Source Program (FSP), which requires participation from firms that are working on any public contract of \$100,000 or more, developers of any commercial project of 7,500 square feet or greater, and companies applying for a small business loan or housing trust fund money (PolicyLink 2008). Participation in the program is required before these projects can receive a zoning permit. The Berkeley program does not include a percent set-aside for how many employees must be residents of Berkeley. Rather, contractors are expected to announce open positions to the FSP office first and leave them open for four days. If they do not find an applicant to fill their position from those FSP refers, then the position is opened up to the One-Stop Career Center, operated by the local Workforce Investment Board.

#### **4. Universal health care**

One final way that local governments can guarantee health benefits for all workers is to provide universal health care coverage. This coverage

is detached from employment status or income levels, applying equally to all uninsured citizens. It does not replace existing county and private health coverage, but rather complements it by providing benefits to the uninsured. San Francisco is the only city to date that has taken action to ensure that all of its citizens, including low-wage and part-time workers, are guaranteed health care. The Healthy San Francisco program offers free or low-cost health care to all San Francisco residents through existing and expanded county health providers. The cost of the program is partially covered by an employer spending requirement for businesses with more than 20 employees.

## **2. Project-Based Negotiated Agreements**

There are two main types of project-based negotiated agreements that are effective for attaching job quality standards to different types of economic development projects. Project Labor Agreements have been successfully applied to both small- and large-scale, public and privately funded construction projects. Community Benefits Agreements are more appropriate for privately funded, large-scale development projects.

### ***Project Labor Agreements***

A Project Labor Agreement (PLA) is a comprehensive pre-hire collective bargaining agreement between unions and units of government, project owners, or contractors carrying out privately or publicly funded projects. Under a PLA, contractors make exact bids for labor costs, which include wages, benefits, and workers' compensa-

tion. This means that the basic terms and conditions for labor are established in advance and open to scrutiny by the public sector employer, contractor and subcontractors, and workers. The terms of the agreement vary from project to project, but their goal is to bring together workers from many different crafts under a common set of work rules. In the private sector, union-only PLAs are often negotiated, but public projects are required to accept both union and nonunion workers.

There are a number of benefits to PLAs. Since unions are party to the agreement, their reputation is on the line. Not only do PLAs guarantee a high-quality, well-trained workforce, they also tend to bring a project in on schedule, on budget, and safely. They also provide an important vehicle for local hire requirements, and requirements for hiring out of apprenticeship programs. Additionally, many PLAs include Apprentice Utilization Requirements, which are a mechanism to ensure that participants in state-approved apprenticeship programs are provided a gateway to quality jobs. Opponents claim that PLAs increase construction costs. According to the Building and Construction Trades Council, this claim has not been substantiated (BCTC 2008). Indeed, the private sector has embraced PLAs because they stabilize labor costs and keep projects on schedule. Finally, by utilizing union hiring hall and apprenticeship training systems, they help facilitate fair access to living wage jobs (Apollo Alliance 2007).

There are a number of examples of how PLAs have been used. The Port of Oakland, California, designed an innovative PLA which specifies a 50 percent local hiring requirement, prevailing wage payment, benefits requirements, 20 percent

apprentice hiring requirement, safety standards, and that unions be the sole collective bargaining representatives. The PLA also establishes a Social Justice Committee and Labor/Management Committee to administer the contract terms (Port of Oakland 2004). The New York City School Construction Authority and the New York Building and Construction Trades Council signed a PLA which includes union hiring, preference for hiring women and minorities, work hours, wages and benefits, and a number of other rules. This PLA applies to all contractors and subcontractors working on New York school construction projects for a period of five years (New York City School Construction Authority 2005). Contra Costa County, California, has a policy set by their board of supervisors in 2002 that any county-funded construction project with a budget over \$1 million must include a PLA. The Contra Costa Water District, a public utility, also uses PLAs in its construction projects, most recently in construction of a water treatment facility in Brentwood.

### *Community Benefits Agreements*

A Community Benefits Agreement (CBA) is a private deal typically struck between community interests and development proponents. The community interests are often a coalition of different actors that are somehow concerned with the proposed development and want it to better respect the preexisting social landscape and proactively meet its needs. These types of projects at a minimum require public entitlement approvals, and may often be the recipient of additional tax or cash subsidies. Because these public process prerequisites exist, community interests can stall, modify, or even kill the development process by petitioning elected officials, using the legal

system, or courting public opinion through the media. In exchange for agreeing not to use these advocacy options, development interests are expected to provide benefits to the community (Good Jobs First 2005).

Community groups have many concerns that can be addressed by a CBA. Proposed development might lead to instant displacement due to land acquisitions by eminent domain or cause long-term community upheaval due to gentrification pressures. The development might also be implicated in adverse health impacts, for example from increased traffic and air pollution. Community groups might also want to make sure that local residents have an opportunity to work on the project and that those jobs are good ones. If the project is residential and not commercial, the advocates may request an affordable housing set-aside. A collection of these arguments and expectations will often be marshaled into a package and presented to the developer. CBAs can create demand for green jobs by mandating green practices for both the construction process and the eventual full-time employment (if any) that will be housed on site. CBAs can make sure these are quality jobs by requiring that the developer implement some of the elements discussed above.

Passing a CBA generally comes with significant challenges. Development interests will not always be willing to deal with community groups. If the coalition is too small or divided, they will lack the leverage to seriously threaten the development process. From the opposite perspective, a small project probably may not be seen as enough of a threat or potential source of employment to justify the complex and time-consuming process. As a result of this dynamic, CBAs have

historically only been successful in fairly large projects like the Los Angeles Staples Center, the Los Angeles International Airport Expansion, the Harvard-Allston Expansion, the Columbia-Morningside Heights Expansion, and the Oak-to-Ninth-Street project. There are also enforcement issues — the community group needs to monitor whatever the CBA promised and take action if the terms are not being respected. This oversight responsibility can be difficult to maintain over time as the coalition shifts.

### **3. Certification Programs**

This section considers two very different types of certification programs: worker certification programs and green business certifications. The first type of certification program addresses the supply or skilled workforce side, and can play an essential role in boosting quality among green jobs by creating opportunities for advancement. These kinds of certification programs are the next step in career progression after initial job training, leading to increased upward and lateral career mobility. The second type of certification program seeks to increase demand for green products and services. Part of the certification process assesses the degree to which green businesses provide quality jobs, by taking into account wages, benefits, working conditions, and other job quality criteria.

#### ***Worker certification programs***

Community college and union apprenticeship programs are both effective and affordable ways to train a skilled workforce. These programs are currently experiencing a higher demand from contractors and clients for green technologies and practices, particularly in the construction

industry. The most innovative programs are responding by developing certifications that both standardize the skill set required for a particular green job, and guarantee the worker's knowledge in applying new technologies. Good certification programs are developed in collaboration with employers, so that the skills taught reflect those that workers actually need in the field.

Several examples of successful worker certification programs currently exist. Laney College in Oakland, California, working in collaboration with Lawrence Berkeley National Labs, has developed an advanced Environmental Controls Technology certification program to train students in high-tech HVAC systems and building efficiency. The program emphasizes energy efficiency in commercial buildings, and trains students using the latest technologies.

The Northern California Carpenters union is currently developing a LEED certification element for its journey-level leadership training program. The program, which trains project managers and construction foremen, would include U.S. Green Building Council LEED standards in its training curriculum, so that graduates would be prepared to work on green building projects.

The North American Board of Certified Energy Practitioners (NABCEP), a multi-stakeholder organization, has developed a voluntary national certification program for installers of photo-voltaic (PV) and solar thermal systems. The certification was developed with the participation of multiple stakeholders, including both employers and workers. The process began by conducting a task analysis for the program to define the general set of competencies or skills typically required of practitioners who install and maintain PV and

solar thermal systems. The Board, comprised of representatives from the solar industry, independent installers, labor, educators, and government, then approved a set of requirements for achieving certification. The certificate program learning objectives can then be adopted by union apprenticeship programs, community colleges, and other programs.

### *Green business certification*

Green business certification programs are expanding in many places as consumer demand for environmentally friendly products increases. Businesses can be certified as green by programs around the country if they meet higher standards of environmental performance, and, in some cases, if they provide high-quality jobs. The Bay Area Green Business Program, for example, partners with county government agencies and utilities to help local businesses comply with all environmental regulations and take actions to conserve resources, prevent pollution, and minimize waste in their day-to-day operations (Bay Area Green Business Program 2008). Businesses that get certified green gain a competitive advantage, as customers who prefer doing business with companies that protect the environment can easily access services.

The city of Berkeley, California, home to 87 green businesses, hosts one example of a comprehensive green business certification program. To be certified, businesses must work through a long checklist of efficiency upgrades and day-to-day behavioral changes that increase environmental sustainability. Additionally, job training, job placement, and wage requirements are included in sustainability criteria. The city Sustainable Business Action Plan sets out a program to de-

velop green businesses by increasing demand for green products and services, nurturing existing green businesses in the city, creating the necessary conditions for start-up environmental businesses, and developing an environmentally oriented “Berkeley brand” that would be useful to all the city’s green businesses (Pinderhughes 2007).

#### **4. Union-based Strategies**

As discussed above, strong unions are one of the most important mechanisms for ensuring job quality in the green economy. Indeed, the right to organize is an important characteristic of job quality, and jobs in sectors that are organized tend to meet higher job quality standards (Walsh and White 2008; Canadian Labor Congress 2003).

The green economy presents a set of important opportunities for labor unions. First, many of the green jobs being created are in already organized sectors, such as construction, the trades, and transportation. Second, green job growth provides an opportunity for unions to increase their membership by organizing and building strength in these sectors. Finally, unions can play an important role as participants in community coalitions, lobbying for local, state, and federal legislation that supports green jobs training programs and invests in green industries. This allows unions to strategically position themselves as partners in training and economic development initiatives, and as advocates for job quality standards.

There are four major challenges unions face in participating in the green economy. First, current labor laws do not adequately protect the workers’ right to organize. The Employee Free Choice Act

is an important piece of legislation which would protect the rights of workers to organize by requiring employers to recognize a union when the majority of workers vote to join it. It also stiffens penalties against employers who block union organizing. The Employee Free Choice Act failed to pass the Senate last year, but will likely be reintroduced in the new Congress. Without such protections, new organizing campaigns will face many difficulties.

In focusing on this challenge, some labor unions have been somewhat ambivalent about getting involved in activism around climate change, because they don’t see it as an issue that is relevant to their members or their mission (Brecher, Costello, and Smith 2008). Many unions would prefer to dedicate their limited resources to immediate needs, such as contract negotiations and organizing, and don’t see green jobs as a priority issue to organize around. Additionally, some unions will experience job loss as the green economy grows, and they are focused on making sure that newly unemployed workers are provided with assistance in making the transition. Finally, the very nature of some green jobs is that they are hybrids of different job categories, particularly those in the construction sector. This presents a challenge to those unions that wish to organize the green-collar workforce but are not open to flexibility or collaboration with other sectors.

In addressing and overcoming these challenges, unions can advocate for local policies and agreements that guarantee labor peace, ensure job quality, and that link their members to high-quality green jobs. To begin, unions can demand agreements between units of government and contractors carrying out publicly funded projects that include requirements or incentives for

local hiring and for employing workers trained through state-approved apprenticeship programs (COWS 2007). Unions can also link these agreements to apprenticeship training programs, to provide members with access to jobs created through public investment.

Unions should also demand job quality standards for businesses receiving government grants, subsidies or tax credits related to energy efficiency and renewable energy. These standards ensure that new jobs created will be “high road” jobs, providing a decent income and health benefits (COWS 2007). Unions should also involve themselves in Best Value Contracting (BVC), an alternative to the traditional lowest-bid method of contracting (Apollo Alliance 2007). BVC requires contracts to be awarded to the contractor offering the best combination of price and quality standards, including use of skilled workers and payment of living wages and benefits.

For those in sectors that stand to benefit from the green economy, such as construction workers, electricians, sheet metal workers, and engineers, opportunities for partnerships in job training abound. Unions can play a key role in designing training curriculum and job certification programs that reflect the actual skills workers need and incorporate new technologies and green practices (COWS 2007). They can also offer advanced skills training programs to help newly unemployed workers build on existing skills and enter the green labor force. Finally, unions can enhance their apprenticeship programs and link them to pre-apprenticeship training programs, to help build green career ladders for their members.

While some unionized sectors will experience

green job growth, others anticipate loss of jobs in the move towards environmental sustainability. This is particularly true for the fossil fuels and manufacturing industries (Kammen 2004). For those sectors that may experience job loss, unions can play an important role in retraining skilled workers in new green technologies, and in linking these workers to high-quality green jobs. Unions can also advocate for different types of compensation for newly unemployed workers, and for incentives to employers that absorb these workers. In the sectors experiencing job loss unions can also advocate for financial or tax incentives for renewable energy companies or other green businesses that absorb and train newly unemployed workers.

## **5. Workforce Development Strategies**

Workforce development strategies are an integral part of the green economy. It is anticipated that many new workers will need to be trained in green technologies and processes to fill an increasing demand (Kammen 2004; BW Research 2007; SFBGSVCE 2008). At the same time, increasing amounts of federal, state, and local funding will go towards green workforce development, often specifically targeting low-income populations and those who face barriers to employment (BW Research 2007; Apollo Alliance 2008).

There are a number of elements essential to the effectiveness of green workforce development programs and strategies. First and foremost, green workforce development strategies must occur in concert with local and regional economic development strategies, and must build on exist-

ing workforce development programs rather than attempt to create new, boutique training programs (UCLASPA 2006; Apollo Alliance 2007). This requires a new level of integration between government entities accustomed to operating in silos.

The state of Michigan offers a key example of how state agencies can integrate economic and workforce development strategies, while transforming existing programs to build the green economy. Michigan's Governor recently combined the state Department of Energy with the Department of Labor and Economic Growth to create DELEG. This represents an innovative effort to combine under one authority efforts to develop the state's economic base, with an emphasis on the renewable energy and energy efficiency sectors; create jobs in a number of high-growth sectors; and coordinate training partnerships that link training opportunities to jobs in these sectors. One of the DELEG's key projects is the Green Jobs Initiative, which invests in workforce development for emerging green economic sectors, and then involves existing training programs in preparing workers for occupations in these sectors.

Second, green workforce development strategies must be linked to the real needs of local employers through the development of new training partnerships. These partnerships must include community colleges, vocational training programs, labor unions, employers, community-based organizations, and local or state workforce development officials. These partnerships can help identify training needs and serve as intermediaries who link workers to training progressions or career ladders (Apollo Alliance 2008). They can also advocate for state and federal invest-

ment in green jobs training programs, and for local hiring requirements linked to these programs. Training curricula should be flexible enough to respond to new technologies, should reflect the real skills needed for different job categories, and should include on-the-job training or internship components (Fitzgerald and Green Leigh 2002). To accomplish this, a systematic forum should be created for education and training programs, Workforce Investment Boards, and firms to continually assess needs for certain skills and provide consultation for curriculum design (UCLASPA 2006).

Washington State Industry Skills Panels (ISPs), for example, are regional training partnerships that bring together businesses, labor unions, community organizations, economic development officials, and educational institutions to build a skilled workforce in 14 key industry sectors. Industry Skills Panels are coordinated by the state Workforce Training and Education Coordinating Board (WTECB) and convened by workforce intermediaries, such as a Chamber of Commerce, a Center for Excellence, or a Workforce Development Council. They focus on sectors such as energy, manufacturing, green construction, and apprenticeship connections. The ISPs meet to identify critical skills needed within an industry, and develop Industry Skill Standards to serve as a basis for curriculum development. Panel members respond by developing new training curriculum and programs which help workers meet these standards. Initial funding for the ISPs comes from the WTECB, which is then leveraged to access additional grants. Intermediaries play an important role in guiding strategic planning, coordinating relationships between ISP members, and facilitating ISP activities.

Third, workforce development strategies must be built around career ladders or lattices, providing multiple entry points for different skill levels and providing a variety of opportunities for skill advancement (Fitzgerald and Carlson 2000). High school career and technical education, pre-apprenticeship programs, and union apprenticeship are all important resources for providing low-cost, real-skills training which effectively links graduates to quality jobs. Community colleges can provide low-cost training and certification programs that are connected to the needs of local industries, as well as advanced skills training and two-year degree programs that prepare graduates for higher-skill, higher-paid jobs. Skills taught in any type of training program should include both those that are specific to a particular job, such as green construction techniques, and those that are transferable across professions, such as computer equipment training. To ensure participant success, these programs should also provide both soft skills training and wraparound services, including career counseling, case management, supported employment, and long-term tracking (Apollo Alliance 2008).

The Wisconsin Technical College System and the State Department of Workforce Development, for example, worked in collaboration to develop a progressive workforce development schema that links green job training to a career progression (Walsh and White 2007). Employers played an important role in identifying the different steps in the progression, and defining the skills needed at each step. The career ladder begins with basic intensive work readiness and support, as well as introductory vocational training. This training can be accessed through high school technical education classes, adult education programs, and nonprofit vocational programs. Graduates from

these programs move into unskilled or semi-skilled jobs. Secondary-level training is followed by short-term industry or community college certificate programs that help program participants access entry-level skilled jobs. Those who continue their training can move into one- or two-year technical diploma programs at community colleges, which open up entry-level technician jobs. Union apprenticeships, applied associates degree and four-year technical degree programs filter participants into more skilled, higher-paid jobs. Finally, advanced degrees train participants for technical professional and managerial jobs.

There are a number of strategies that green workforce development initiatives must adopt in order to be successful. First, programs must be able to respond to changing needs by building long-term relationships with employers that include consistent communication systems. Second, training programs must successfully build in the flexibility needed to meet changing employer needs and to link workers to newly emerging job categories. Third, workforce development partnerships and intermediaries must guarantee equitable access to training and work opportunities by working to combat discrimination and act as brokers between employers and program graduates. Finally, training programs must provide adequate support and job placement services to ensure the long-term success of participants.

## **6. Sector-based Economic Development Strategies**

All the strategies discussed so far can increase the likelihood that green jobs are quality jobs, but another equally important strategy is ensuring that there are enough jobs retained in the green

economy that can pay the wages and benefits necessary to meet or exceed minimum job quality standards. Sector-based economic development strategies play an important role in building up local industries, improving the quality of their jobs, and retaining jobs that might have moved elsewhere in the process. Sector-based strategies target a specific industry with promising growth potential, create a good business climate to support that industry, and link education and training to anticipated demand for skilled workers (Fitzgerald and Green Leigh 2002). In the green economy, sector-based strategies may focus on a variety of different sectors, including construction (new construction or retrofits of existing buildings), manufacturing (of renewable energy or energy efficiency component parts), clean technology (research, development, and commercialization of new green technologies), or biofuels (agriculture, production, and distribution).

Sector strategies focus on building partnerships between employers, training providers, community organizations, and other key stakeholders that focus on meeting the needs of a specific industry. Sector-based development requires a coordinated effort to develop strategic action plans around training and economic development solutions. Most sector initiatives begin with research to identify target industries that have promising job growth potential. Once identified, economic development strategies focus on developing and supporting these industries. Workforce development strategies should also tie in to sector initiatives, to ensure an adequate, trained, local workforce.

Local governments play a key role in planning and facilitating sector-based development, as well as building collaborative relationships. They

can help build the right business climate to lower the cost of production and support local companies. Local governments and institutions also play an important role in gathering regional data, creating a particular market identity, and stimulating consumer demand. Local governments can also play an important role in building entrepreneurial capacity. Finally, local governments can help coordinate and fund job training initiatives that prepare the necessary skilled workforce to support local industry.

A related strategy, particularly effective at the regional level, is the development of clusters. A cluster concentrates groups of businesses with similar products and services in the same geographical area as a way to increase competitive advantage and achieve greater economies of scale (Porter 1998). Local governments looking to build their green economy could promote the development of a green tech cluster. For instance, the Oakland Partnership Green Industry Cluster brings together a variety of public, university, and private partners to coordinate and market Oakland's green economic development activities, while the East Bay Green Corridor Partnership performs the same function on a regional scale. Working in partnership with local green businesses, regional and city governments can help create clustered linkages and build up regional green business identities. Linked to other sector-based strategies, the "virtuous circles" of competition, expansion, and innovation created by this green tech cluster could generate a self-perpetuating growth cycle and create quality jobs for local workers (COWS 2007). The result would be a regional identity based on the latest green technologies, as well as increased potential for the development of an export market. Indeed, a study by the Research and Policy Center of

Environment California shows that for California alone, a renewable energy industry servicing the export market can generate up to 16 times more employment than an industry that only manufactures for domestic consumption (Kammen 2004).

## 7. Planning Interventions

The actions of local planning agencies can also have important impacts on both creating green jobs and ensuring that green jobs are quality jobs. Through the power of general plans, zoning, and permitting regulations, planning agencies can help support green economic development. At the same time, the public hearing process for discretionary permits can be used as a starting point for negotiations around community benefits agreements, and as a leverage point to mandate green business and/or job quality standards. Often, community support is needed in order to get a certain type of business or development approved, and the public hearing is the best time to start applying pressure. Opportunities for public involvement in the planning and permitting process provide an important forum for local organizations and community groups to push for sustainability and for job quality standards.

One important action cities can take to promote the creation of more green jobs is to make efforts to preserve industrial land. Population growth and suburban sprawl put intense pressure on cities to convert vacant industrial land to housing developments. In urban areas across the nation, hundreds of acres of industrial land are being rezoned as residential or mixed-use. Once housing is built, opportunities for developing local industry and creating jobs are lost. Cities that preserve land that is already zoned as industrial, therefore, will place themselves at a competi-

tive advantage for attracting green businesses. In addition to providing space for these businesses to grow and flourish, preservation of industrial land can complement economic and workforce development strategies by creating the necessary conditions for job growth.

Planning interventions can also serve to promote the green building industry, in particular, by setting requirements and providing incentives through building codes and the permitting process. An increasing number of cities around the country have adopted various types of green building codes, which, in turn, generate demand for architects and contractors skilled in green building techniques, as well as local suppliers of green building materials.

The city of Atlanta, Georgia, for example, requires that all new and renovated municipal construction projects for buildings of over 5,000 square feet, or projects with a budget of over \$2 million, be LEED Silver certified. The city of Pasadena, California, requires that all new municipal construction over 5,000 square feet be LEED silver certified, and that all private construction of commercial buildings or residential buildings over four stories be LEED certified. The city of San Francisco requires that all new small residential buildings meet GreenPoint rated guidelines, and that all new large residential, commercial, and municipal construction be LEED Silver certified. Additionally, any large-scale renovation project must meet LEED certification guidelines.

Incentives provided through the permitting process are particularly effective in attracting the attention of developers and promoting green building in the private sector. An industry study by Yudelson Associates (2007) identified three

## Monitoring Job Quality Indicators

---

main types of incentives currently used in cities across the nation:

1. Priority in building permit processing and plan review, sometimes with a requirement for posting a bond to guarantee the result,
2. Tax incentives, particularly property tax abatements, for projects achieving LEED Silver or better certification,
3. Increased Floor-to-Area (FAR) ratios, which allow a developer to construct more building area than allowed by applicable zoning. Successful incentive programs also include technical assistance to developers in meeting the necessary green building standards. Some also include access to innovative financing sources, such as revolving loan funds or grants, or rebates on utility payments.

San Diego County, for example, has a green building incentive program that promotes use of recycled content materials, installation of gray water systems, and increased energy efficiency. Builders can receive expedited plan checks of 7 to 10 days for meeting certain green building requirements. They may also qualify for a reduction in permit fees for installing solar panels, and a reduction in development fees for green projects.

In addition to its green building guidelines that require that all new construction meet LEED Silver standards, San Francisco offers a priority permitting program, which gives preference to projects meeting certain green building criteria. San Francisco also has an expedited development review process for green building projects.

Beyond applying job quality standards via the strategies above, it is important that local governments and community organizations identify and monitor job quality indicators to ensure that green jobs remain quality jobs for the long term. Good monitoring of job quality standards creates a feedback loop for local government and advocacy organizations, allowing them to find out what is working well and what needs to be changed. Once job quality indicators are defined and tracked, policy measures can be proposed to reinforce the desired set of standards. Such measures might require city contractors and recipients of development funds to meet specific job quality standards and report on the designated indicators. Additionally, measurement and reporting of clearly defined job quality standards will raise the benchmark for other employers seeking to attract workers in those sectors affected by city contract regulations.

The following are the job quality standards discussed in this report, and some suggested indicators for each:

- Living wage: the number of jobs meeting a city's living wage requirements
- Health benefits for both full and part-time employees: the number of jobs providing health benefits
- Pension benefits for both full and part-time employees: the number of jobs providing pension benefits or access to retirement accounts
- Paid leave: the number of jobs providing 12 days paid vacation or sick leave and 10 days unpaid sick leave
- Safe working conditions: the number of jobs meeting Occupational Safety and Health (OSHA) standards
- Family-friendly working conditions: the

number of jobs offering flexible schedules, family leave, or child care subsidies

- Occupational mobility and opportunities for advancement: tracing clear career ladders for different types of occupations, measuring the number of jobs providing opportunities for continued training and education, the number of jobs that offer advancement into higher-skill or increased-responsibility positions based on experience (upward movement), the number of jobs where advancement has taken place, the number of jobs where an employee has retrained based on experiences obtained in a previous job (lateral movement)
- Entry-level jobs accessible to those with barriers to employment: the number of entry-level jobs available; the number of people with barriers to employment placed in quality jobs, particularly youth, people of color, older workers, and formerly incarcerated people
- Meaningful work: self-reporting of individual level of job satisfaction
- Local hiring practices: percentage of work hours performed by local residents, percentage of new hires that are local residents
- Job training linked to real jobs: partnerships between employers and job training programs to develop curriculum, internships, and job placement; number of people enrolled in these programs; number of people hired by connected employers
- Flexible work schedules: the number of jobs allowing at least one aspect of flexibility, such as flexible hours, work at home, or time allowances for use of public transportation
- Access to membership in labor unions: percentage of workers in each sector or occupation who are union members, existence of card check neutrality or labor peace.

Cities and counties with sustainability plans, local hire requirements, and PLAs already track many of these indicators. Others are tracked and reported by local advocacy groups and labor unions, which use data to support their policy agendas. But local governments that wish to make a real commitment to job quality and sustainable economic development should develop clear sets of standards and indicators, and devise a centralized reporting system that is open and accountable. If this is done well, local governments and community organizations can work together to track increases in green jobs and ensure that these are quality jobs.

## Conclusion

---

The climate change crisis brings together a diverse range of interests, from labor to environmentalists, from elected officials and planners to business and industry groups. This provides an unprecedented opportunity for partnerships to guide both public and private investment in the green economy. Investment in renewable energy and clean technologies has significant potential to create quality jobs accessible to workers in existing occupations, those entering the labor force, and those with barriers to employment. The strategies presented here can be employed to ensure that those jobs meet quality standards and potentially to retain or increase the number of green jobs.

Traditional economics tells us that when it comes to jobs, there is a tradeoff between quality and quantity. Many have argued that requirements that aim to increase wages or benefits lead to a decrease in the total number of jobs, as employers reduce their workforce in response to higher

costs. Green economic development provides an opportunity to reframe the tradeoff between job quality and the number of jobs, to address both issues simultaneously and effectively. At the same time, the tradeoff cannot be completely eliminated – ensuring that green jobs are quality jobs may mean that fewer jobs are created. But if certain standards are guaranteed, the individual and community-wide net effects are positive.

Climate change and other environmental and resource issues are exceptionally challenging because the solutions impose visible, short-term, private costs in the way of taxes and higher prices while promising long-term, diffuse, public benefits. Politicians are loathe to enact the policies scientists suggest are needed to move our economy to a sustainable path, because they risk angering their constituents without being able to reap the eventual benefits that will accrue to future generations. Green jobs are vitally important because they offer a way out of this intergenerational conflict. By integrating sustainable employment development into environmental policies, we can offer benefits today as well as tomorrow. Economic losses in old industries can be compensated by gains in new areas. If framed properly, the potential of green jobs can convince constituencies that have traditionally opposed environmental regulations to now support them, leading to new coalitions and a new political direction.

## Bibliography

- Apollo Alliance (2004). *New Energy for America: The Apollo Jobs Report – Good Jobs & Energy Independence*. Retrieved May 14, 2008, from [http://www.apolloalliance.org/downloads/resources\\_ApolloReport\\_022404\\_122748.pdf](http://www.apolloalliance.org/downloads/resources_ApolloReport_022404_122748.pdf)
- Apollo Alliance. (2007). *Community Jobs in the Green Economy*. Retrieved May 14, 2008, from [www.apolloalliance.org](http://www.apolloalliance.org)
- Apollo Alliance. (2008). *The New Apollo Program*. Retrieved September 2, 2008, from [www.apolloalliance.org](http://www.apolloalliance.org)
- Apollo Alliance and Green for All. (2008). *Green-collar Jobs in America's Cities: Building Pathways out of Poverty and Careers in the Clean Energy Economy*. Retrieved May 14, 2008, from <http://www.greenforall.org/resources/green-collar-jobs-in-america2019s-cities/download>.
- BarackObama.com. *Energy & Environment*. Retrieved May 14, 2008, from <http://www.barackobama.com/issues/energy/>
- Barrett, J. and Hoerner, J.A. (2002). *Clean Energy and Jobs: A Comprehensive Approach to Climate Change and Energy Policy*. Retrieved May 14, 2008 from <http://www.epi.org/studies/cleanenergyandjobs.pdf>
- Bay Area Green Business Program. *About the Green Business Program*. Retrieved May 16, 2008, 2008, from <http://www.greenbiz.ca.gov/AboutUs.html>
- Brecher, J., Costello, T., and Smith, B. (2008). *Labor's war on global warming*. *The Nation*, March 10, 2008.
- Burtis, P. R. (2004). *Creating the California Cleantech Cluster: How innovation and investment can promote job growth and a healthy environment*. *Natural Resources Defense Council and Environmental Entrepreneurs*, September 2004.
- BW Research Partnership. (2007). *The Economic and Workforce Development Opportunities of Green Technology*. Retrieved May 14, 2008, from [www.bwresearch.com](http://www.bwresearch.com)
- California Climate Action Team (2006). *Climate Action Team Final Report to the Governor and Legislature*. Retrieved May 16, 2008, from [http://www.climatechange.ca.gov/climate\\_action\\_team/reports/index.html](http://www.climatechange.ca.gov/climate_action_team/reports/index.html)
- Carrese, J. and Oliver, J. (2008). *Environmental Scan: Solar Industry, San Francisco and Greater Silicon Valley Regions*. Retrieved May 11, 2008, from [http://cccwv.net/files/resources/Solar\\_Scan\\_SF-SV\\_08.pdf](http://cccwv.net/files/resources/Solar_Scan_SF-SV_08.pdf)
- Center for Climate Strategies (CCS). (2008). *Economic Stimulus, Recovery, and Climate Mitigation: Policy and Program Opportunities from the States*. Retrieved January 5, 2009, from <http://www.climatestrategies.us/ewebeditpro/items/O25F20666.PDF>
- Center on Wisconsin Strategy (COWS). (2007). *IGCC with Carbon Capture and Storage: Opportunities and Challenges for Labor*. Retrieved May 14, 2008, from [www.cows.org/pdf/rp-igcc.pdf](http://www.cows.org/pdf/rp-igcc.pdf)
- City of Oakland. (1998). *Sustainable Development Initiative Report*. Retrieved May 14, 2008, from [http://www.oaklandnet.com/business/industry/industry\\_sust\\_init.html](http://www.oaklandnet.com/business/industry/industry_sust_init.html)
- City of Oakland. (2005). *Sustainability Overview*. Retrieved May 14, 2008, from [https://bspa.berkeley.edu/access/content/group/5fec3914-4e56-44cf-80a8-33c895a0d554/1\\_29\\_2008/Oakland%20sustainability%20plan.pdf](https://bspa.berkeley.edu/access/content/group/5fec3914-4e56-44cf-80a8-33c895a0d554/1_29_2008/Oakland%20sustainability%20plan.pdf)
- City of Oakland. (2008). *Oakland Green Job Corps RFP*. Retrieved May 10, 2008, from [http://www.oaklandnet.com/documents/030408\\_oakland\\_green\\_jobs\\_corps\\_rfp.pdf](http://www.oaklandnet.com/documents/030408_oakland_green_jobs_corps_rfp.pdf)
- City of Richmond. (n.d.). *Building Robust Partnerships to Support Green Collar Job Training Initiatives*. Retrieved May 14, 2008, from <http://www.ci.richmond.ca.us/DocumentView.asp?DID=3060>
- Dellums, R. V. (2008). *State of the City Report, January 14, 2008*. Retrieved May 14, 2008, from [http://www.oaklandnet.com/documents/011408\\_report\\_state\\_of\\_the\\_city.pdf](http://www.oaklandnet.com/documents/011408_report_state_of_the_city.pdf)
- East Bay Alliance for a Sustainable Economy (EBASE). (n.d.). *Living Wage and Workplace Standards*. Retrieved May 13, 2008, from <http://www.workingeastbay.org/article.php?list=type&type=15>
- EBASE. (2007). *Putting Oakland to Work*. Retrieved May 14, 2008, from [http://www.workingeastbay.org/downloads/Putting\\_Oakland\\_to\\_Work.pdf](http://www.workingeastbay.org/downloads/Putting_Oakland_to_Work.pdf)
- Ella Baker Center. (n.d.) *National legislation: Green Jobs Act of 2007*. Retrieved May 14, 2008, from <http://www.ellabakercenter.org/page.php?pageid=27&contentid=298>
- Fairris, D., Runsten, D., Briones, C., and Goodheart, J. (2005). *Examining the Evidence: The Impact of the Los Angeles Living Wage Ordinance on Workers and Business*. Retrieved May 14, 2008, from <http://www.losangeleslivingwagestudy.org/>
- Fitzgerald, J. (2007). *Help wanted – green*. *The American Prospect*, January/February 2007. Retrieved May 14, 2008, from <http://www.prospect.org>
- Fitzgerald, J. and Carlson, V. (2000). *Ladders to a better life*. *The American Prospect* 11:15, 54-67.
- Fitzgerald, J. and Green Leigh, N. (2002). *Economic Revitalization*. Thousand Oaks: Sage Publications.

- Good Jobs First. (2003). The Policy Shift to Good Jobs: Cities, States, and Counties Attaching Job Quality Standards to Development Subsidies. Washington, DC: Good Jobs First.
- Green Jobs Act of 2007. United States Congress. Retrieved May 14, 2008, from <http://www.greenforall.org/files/green-jobs-act.pdf>
- Greene, N. Energy bill ping-pong can help avoid a clean tech pop. Switchboard Blog. Retrieved May 14, 2008, from [http://switchboard.nrdc.org/blogs/ngreene/energy\\_bill\\_pingpong\\_can\\_help.html](http://switchboard.nrdc.org/blogs/ngreene/energy_bill_pingpong_can_help.html).
- Gross, J. (2005). Community Benefits Agreements: Making Development Project Accountable. Retrieved May 14, 2008, from [http://www.goodjobsfirst.org/acountable\\_development/reform3.cfm](http://www.goodjobsfirst.org/acountable_development/reform3.cfm)
- Hanson, C. (2008). Port plan decried. Long Beach Press Telegram, March 3, 2008.
- Insight Center for Community Economic Development. (n.d.). California Family Economic Self-Sufficiency Standard by County. Retrieved May 13, 2008, from <http://www.insightccd.org/index.php?page=ca-sss>
- Kammen, D., Kapadia, K., and Fripp, M. (2004). Putting Renewables to Work: How Many Jobs Can the Clean Energy Industry Generate? Retrieved May 10, 2008, from <http://rael.berkeley.edu/files/2004/Kammen-Renewable-Jobs-2004.pdf>
- Kammen, D. (2007). Green jobs created by global warming. Testimony for the United States Senate Committee on Environment and Public Works. Retrieved May 14, 2008, from [http://rael.berkeley.edu/files/2007/kammen\\_senate\\_epw-9-26.pdf](http://rael.berkeley.edu/files/2007/kammen_senate_epw-9-26.pdf)
- Knatz, G. (2008). Diverging truck routes. Los Angeles Business Journal, April 21, 2008.
- Lantsberg, Alex. Interview. July 2, 2008.
- Lin, Jenny. Interview. October 5, 2007.
- Living Wage Resource Center. (2009). A Compilation of Living Wage Policies on the Books. Retrieved January 7, 2009, from <http://www.livingwagecampaign.org/index.php?id=1958>
- Local and Small Local Business Enterprise Program (LSLBE). (2005). Local Employment Program. Retrieved May 10, 2008, from [http://cces.oaklandnet.com/ContComp/Pdf/2005%20LSLBE%20Program\(edits\)most%20recent.pdf](http://cces.oaklandnet.com/ContComp/Pdf/2005%20LSLBE%20Program(edits)most%20recent.pdf)
- New York City School Construction Authority. (2004). Project Labor Agreement. Retrieved January 7, 2009, from [http://source.nycsca.org/pdf/pla/syrny1-667549-v8-pla\\_for\\_sca.pdf](http://source.nycsca.org/pdf/pla/syrny1-667549-v8-pla_for_sca.pdf)
- Oakland Community Task Force. (2006). Community Task Force Report on Economic Development. Retrieved May 10, 2008, from [http://www.oaklandnet.com/TaskForceInfo/Economic\\_Development.pdf](http://www.oaklandnet.com/TaskForceInfo/Economic_Development.pdf)
- Office of the Mayor. (2006). Annual Report on Sustainability. Retrieved May 10, 2008, from <http://clerk.websvr1.oaklandnet.com/attachments/15068.pdf>
- Pinderhughes, R. (2007). Green collar jobs: An analysis of the capacity of green business to provide high quality jobs for men and women with barriers to employment. Retrieved May 14, 2008, from: <http://www.ellabakercenter.org/downloads/rtf/v12OctoberFullReport.pdf>
- PlaNYC (2008). PlaNYC 2030. Retrieved January 5, 2009, from <http://www.nyc.gov/html/planyc2030/html/home/home.shtml>
- PolicyLink. (2008). Equitable Development Toolkit. Retrieved April 30, 2008, from [www.policylink.org](http://www.policylink.org)
- Port of Oakland. (2004). Port of Oakland Maritime and Aviation Project Labor Agreement. Retrieved January 7, 2009, from: [http://www.portofoakland.com/pdf/busi\\_maplaAgreement.pdf](http://www.portofoakland.com/pdf/busi_maplaAgreement.pdf)
- Porter, M. (1998). Clusters and the new economics of competition, Harvard Business Review, November 1, 1998.
- Purinton, A. (2003). The Policy Shift to Good Jobs. Retrieved May 14, 2008, from [www.goodjobsfirst.org](http://www.goodjobsfirst.org)
- Reich, M., Hall, P., and Jacobs, K. (2005). Living wage policies at the San Francisco airport: Impacts on workers and businesses. Industrial Relations 44:1, 106-138.
- Rogers, J. (2007) Seizing the Opportunity (for Climate, Jobs, and Equity) in Building Energy Efficiency. Retrieved January 8, 2009, from <http://www.greenforall.org/resources/seizing-the-opportunity-for-climate-jobs-and>
- Sahagun, L. (2008). Port of Los Angeles plan weighs on shippers. Los Angeles Times, March 21, 2008.
- Sahagun, L. (2007). Rival ports join forces on green growth. Los Angeles Times, December 25, 2007.
- San Francisco Bay and Greater Silicon Valley Centers for Excellence (SFBGSVCE) (2008). Bay Region Solar Industry Workforce Study Preliminary Findings. Retrieved May 14, 2008, from <http://cccwedd.net/industryscans>
- SB 1672. California Senate. Retrieved May 14, 2008, from [http://www.leginfo.ca.gov/pub/07-08/bill/sen/sb\\_1651-1700/sb\\_1672\\_bill\\_20080506\\_amended\\_sen\\_v97.pdf](http://www.leginfo.ca.gov/pub/07-08/bill/sen/sb_1651-1700/sb_1672_bill_20080506_amended_sen_v97.pdf)

- Scanlon, M. (2007). Solar partnership trains Richmond residents. Silicon Valley/San Jose Business Journal. Retrieved May 14, 2008, from <http://www.bizjournals.com/sanjose/othercities/eastbay/stories/2007/10/01/story6.html>
- SFEnvironment. (2003). Sustainability Plan Report Card. Retrieved May 14, 2008, from <http://www.sfenvironment.org/downloads/library/spreportcard.pdf>
- State Building and Construction Trades Council of California (BCTC). (2008). Prevailing Wage. Retrieved August 5, 2008, from <http://www.sbctc.org/default.asp?id=27&pagetype=hotissues>
- Teplitzky, S. (2002). A Report on the Benefits and Impacts of a Living Wage Ordinance on the Cities of Santa Rosa and Petaluma. Retrieved January 7, 2009, from <http://www.livingwagesonoma.org/fiscalimpact.pdf>
- Urban Habitat. (n.d.). Quality Jobs Working Group. Retrieved May 13, 2008, from <http://www.urbanhabitat.org/sec/qj>
- White, S. and Walsh, J. (2008). Greener Pathways: Jobs and Workforce Development in the Clean Energy Economy. Madison, WI: Center on Wisconsin Strategy.
- Yudelson Associates. (2007). Green Building Incentives that Work. Retrieved August 25, 2008, from <http://www.naiop.org/foundation/greenincentives.pdf>



