



**Capital Workforce Partners
Green Jobs Industry Sector Regional Plan**

2010-2012

**Capital Workforce Partners
Green Industry Sector Regional Plan**

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I. Executive Summary

The Capital Workforce Partners Green Jobs Advisory Committee is responsible for overseeing the development of an operational plan to lead efforts in the implementation of all regional ongoing and proposed green-related economic and workforce development investments. This Green Jobs Sector Industry Business Plan has been developed to serve as a guide the Green Jobs Advisory Team in implementing strategies to build the green economy in North Central Connecticut. The strategies outlined will enhance current initiatives and build new long term programs to develop a qualified and skilled 'green collar' workforce.

The Plan takes into consideration current Labor Market Information, surveys and the economic climate. While defining green and the occupations and industries it encompasses is still being debated, the proposed plan addresses the current workforce needs while also developing strategies to grow a pipeline for the future.

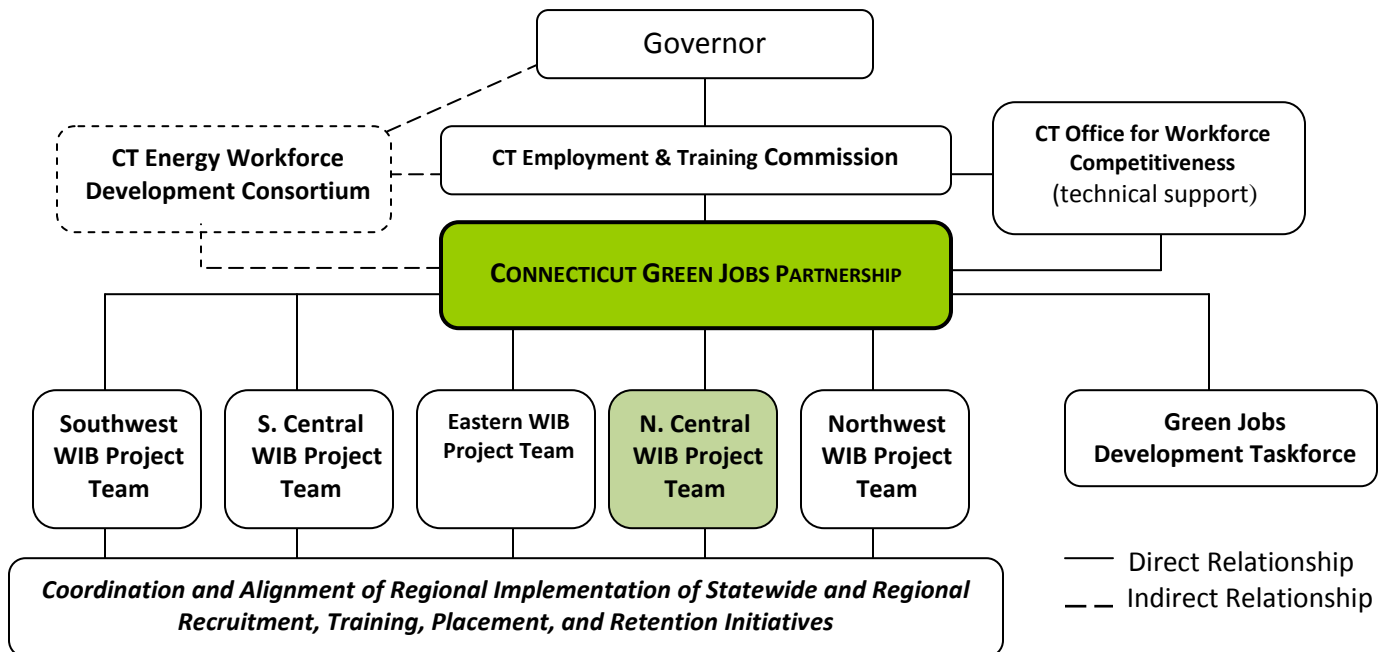
The Plan will reach its vision by pursuing the following goals:

1. Green and upgrade the skills of our current workforce, making the workers as well as employers more competitive;
2. Recruit and Train Dislocated Workers and Adults in green career pathways;
3. Create a Pipeline of future green workforce;
4. Increase employer Engagement through outreach, Incumbent Worker Training and On-the-Job Training grants.
5. Alignment of all green initiatives in our region to ensure a seamless and cohesive system of delivery.

CWP will work with the Jobs Funnel, educational partners including the CT Community College system and business and employer partners for outreach and job training activities that will target four main groups: In-School Youth, Out-of-School Youth, Adult and Dislocated Workers, and Incumbent Workers.

Training will initially be paid for utilizing the grant funding, leveraged Individual Training Account funds, and CWP Incumbent Worker Training funds with an initial focus on 'benched' and incumbent workers. CWP through the Green Jobs Advisory Committee will also seek additional funding through grants and partnerships.

Connecticut Green Jobs Partnership Structure



II. State Energy Sector Partnership Grant Overview

The Connecticut Employment and Training Commission (CETC) was awarded \$3.36 million to implement the Connecticut Green Jobs Partnership to develop a workforce prepared for careers in the energy efficiency and renewable energy industries and for jobs that clean and enhance the environment. The initiative has five goals:

- Build the capacity of the statewide education continuum to inspire and prepare students to pursue careers in green industries
- Build the capacity of the statewide workforce development system to upgrade the competencies of incumbent and dislocated workers necessary for employment and advancement in green industry careers
- Ensure training and education programs match the evolving workforce needs of energy sector employers
- Develop a seamless set of career pathways in green industries
- Connect green workforce development efforts to related economic development efforts.

Capital Workforce Partners' Role

Capital Workforce Partners will align regional implementation of all ongoing and proposed green-related workforce investments, including recruitment, training, placement and retention with the state's plan. A Green Jobs Coordinator was hired to manage CWP's green industry sector initiative and coordinate with other efforts in the region and state.

Green Jobs Sector Advisory Committee

Each Workforce Investment Board (WIB) is responsible for forming a regional team. *The committee will be responsible for building on existing collaborative relationships to align the regional implementation of all ongoing and proposed green-related workforce investments.*

Long-Term Goal

The group will oversee the development of an operational plan to lead efforts in the implementation of all regional ongoing and proposed green-related economic and workforce development investments. This will include strategies on job creation, training and placement in the green industry sector, encompassing emerging jobs as well as the ‘greening’ of current occupations. The plan will ensure that the North Central Region’s green industry sector initiatives will enhance and develop a workforce which is equipped with the necessary skills to enter and advance in the state’s growing green economy. The committee will be to guide the region’s ongoing green industry strategies and sustainability.

Short-Term Goal

The short term goal of the advisory committee will be to allocate funds awarded through the grant.

Green Jobs Coordinator

CWP hired a Green Jobs Coordinator in support of the State Energy Sector Partnership grant as well as coordinate the board’s green sector initiative.

Incentive and Supplemental Funds

CWP has been allotted \$174,403 in incentive funds to provide flexible and targeted funding to help new and expanding businesses in the green sector offset training costs for green-related occupations and skills. CWP has committed \$90,000 in training scholarships to green-related training as an in-kind match to the grant.

The Green Jobs Advisory committee will approve a process for awarding the grant’s incentive fund dollars as well as provide guidance in CWP’s own green sector initiative including recommendations for the allocation of board funds. CWP has also been allotted \$24,000 in supplemental funds to be used at the board’s discretion to further serve the goals of the grant.

Funding Sources through State Energy Sector Partnership Funds 2010 - 2012			
	Incentive Funds*	Supplemental Funds*	CWP ITAs (in-kind)
Year 1	--	\$8,000	---
Year 2	\$87,202	\$8,000	\$45,000
Year 3	\$87,201	\$8,000	\$45,000
Total	\$174,403	\$24,000	\$90,000
			Total: \$288,403

**grant funds can roll over to next year through the end of grant*

Outreach/Referral

CWP will promote green-related careers through the Once-Stop Career Centers, industry-focused Career workshops called “Breaking into the High-Tech Workforce,” job fairs and other outreach. The State Energy Sector Partnership (SESP) grant has funding available for clean water management and Building Analysts certificate programs. CWP will refer qualified and interested participants to the designated training providers. CWP will refer interested companies to the CONNSTEP Green Collar Champion

training program and the Council for Adult and Experiential Learning (CAEL) Resource Took Kit which is also funded through the grant.

III. Background

CWP Green Construction/Technology Sector Initiative

As North Central Region's WIB, CWP identifies and supports the development of sustainable career paths for adult and emerging young workers. It also assists employers in targeted industries, helping them grow and remain competitive in the regional, state and global marketplace.

CWP's green construction/technology sector initiatives will enhance and develop a workforce which is equipped with the necessary skills to enter and advance in green and sustainable energy occupations.

Objectives:

1. Equip workers with the skills needed to enter and advance in green construction and sustainable energy careers. Activities include alignment of the Jobs Funnel* programs with green construction career opportunities and continuation of the STEM project with the goal of training and placing 200 participants in green construction career fields in 2010/11.
2. Develop business intelligence expertise in green careers. Activities include development of methodology to gain in depth understanding of current and future trends in green technology with the goal of identifying at least 20 green businesses in the North Central region.
3. Increase job seekers' understanding of green careers in the North Central Region and guide them in retooling themselves to be experts in sustainable technologies. Activities include implementation of Green Coordinator position; identifying renewable and sustainable career opportunities and increasing awareness of ITAs/scholarships targeted to green technology careers.

The Jobs Funnel, CWP's primary program to support green technology and sustainable energy efforts, is a nationally recognized, highly successful grassroots workforce preparation partnership. It is a coordinated system of outreach and recruitment, assessment, case management, pre-employment preparation, job training, placement and retention services for individuals seeking employment in the construction field, and serves as a model "Funnel" for replication in the state. The idea of the funnel stems from the process individuals go through- funneling into the system to gain specific work competencies and trade-related certifications. They then funnel out to embark on a self-sustaining career.

IV. Environmental Scan

Economic Environment

Labor Market Overview

The Labor Market Overview provides an economic backdrop of the current economic environment, and highlights the challenges facing the nation and region.

The domestic labor markets will likely remain weak over the next six to twelve months, keeping unemployment at a relatively high 8-10%. Employers are apt to make do with their existing workforce and not add new hires until growth becomes tangible and uncertainty abates.

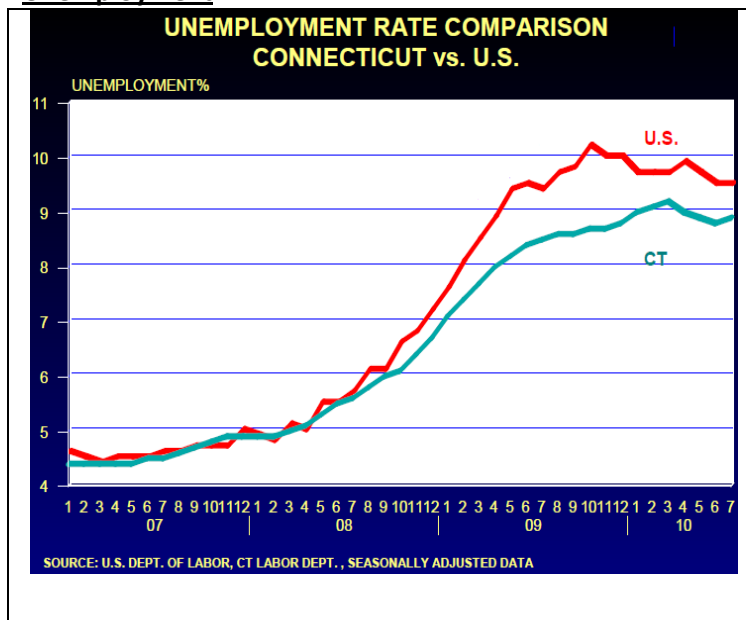
The Connecticut economy continues to face the aftershocks from one of the worst domestic recessions since World War II. Local labor markets are expected to improve modestly heading into 2011. On an average annual basis, Connecticut is now projected to realize 25,000 new jobs between 2010 and 2011, representing average annual growth of less than 1%.

Recent Events

The Connecticut economy has lost 95,400 jobs between March 2008 and August 2010. The peak of the job losses occurred in December 2009 with 103,400 jobs. Although job losses are easing, the job market continues to be unstable. The state lost 900 jobs in August, but has added 8,000 jobs over the since January, 2010. On a seasonally-adjusted basis, the unemployment rate as of August 2010 was 9.1%.

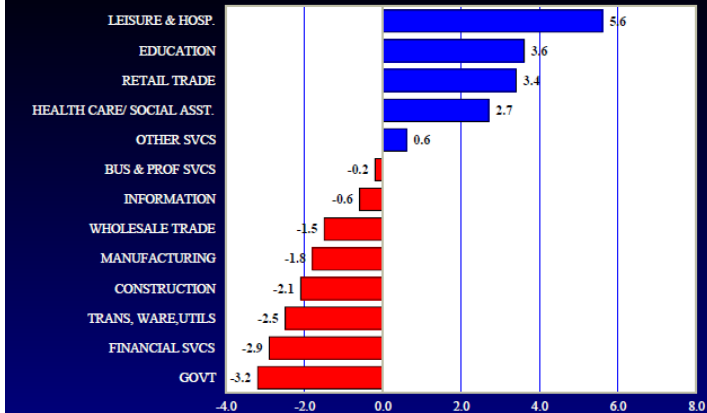
September 2010 data showed that even one of the state’s strongest sectors, educational and health services, showed declines of 3,200. Other sectors which also posted losses include trade, transportation and utilities (2,500), construction (500), manufacturing (300), and financial services (500). A few sectors gained jobs including government (600), professional and business services (600), and information (200). The labor force, which includes those working and those looking for work, fell 4,300 from a year earlier in September.

Unemployment



- The US unemployment rate hit a 26-year high in October 2009 at 10.2%. A lagging indicator, unemployment is apt to remain high through the remainder of 2010 even as the economy improves.
- Connecticut’s unemployment rate as of August 2010 was 9.1% (seasonally adjusted).
- The unemployment rate of the North Central Region as of August 2010 was 9.7% on a non-seasonally adjusted basis.
- There were 51,469 “officially” unemployed workers as of April 2010 on a labor force base of 531,493. The North Central Region’s non-seasonal unemployment rate of 9.7% was higher than the non-seasonal U.S. rate of 9.5% and higher than the state’s non-seasonal rate of 9.3%.

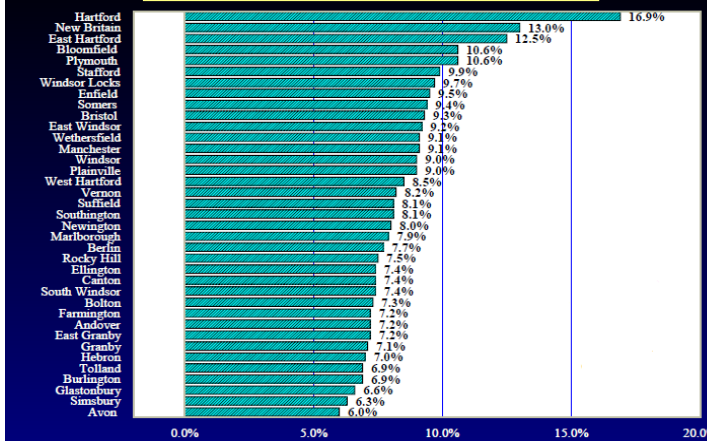
ABSOLUTE CHANGE IN CT. EMPLOYMENT (000) BY SECTOR, AUG 09- AUG 10



Sources: CT Labor Dept, BLS

- Total non-farm employment has dropped by only 1,100 jobs, or 0.1% over the last year in Connecticut.
- However, the Connecticut economy has lost a total of 95,400 jobs between March 2008 and August 2010.
- The peak of the losses occurred in December 2009 when a total of 103,400 jobs had been lost.

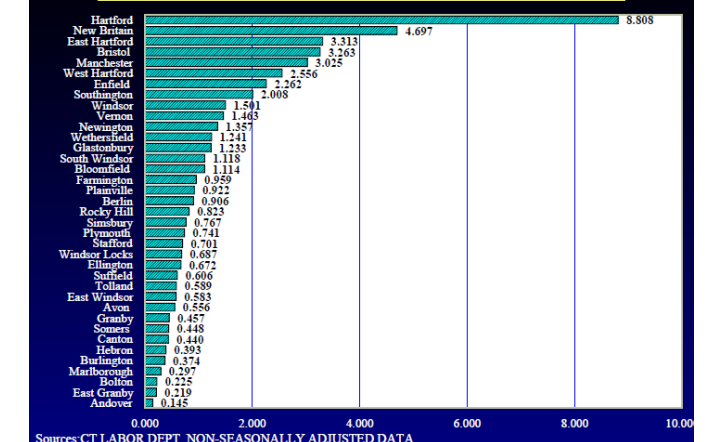
NORTH CENTRAL WIA UNEMPLOYMENT %, AUG 2010 RANKED ORDERED BY MUNICIPALITY



Sources: CT LABOR DEPT, NON-SEASONALLY ADJUSTED DATA

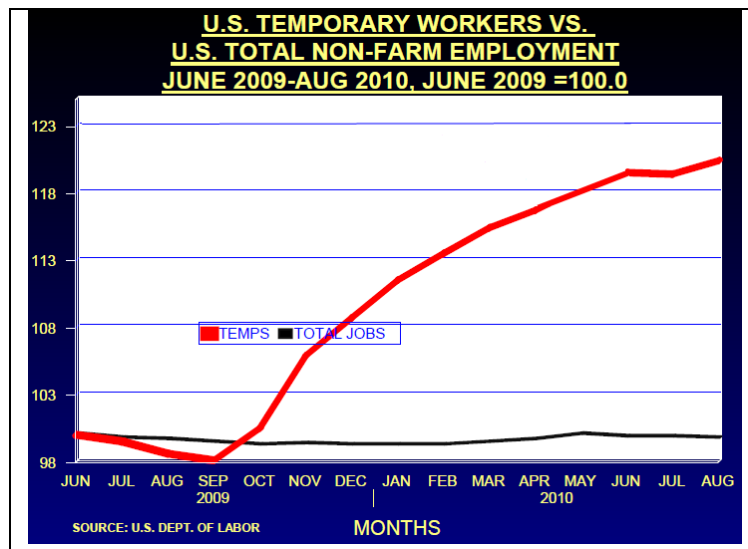
- The highest unemployment rates were recorded in Hartford (16.9%), New Britain (13.0%), and East Hartford (12.5%).
- The North Central Region had five municipalities with unemployment rates which now exceed 10%.

NORTH CENTRAL WIA # OF UNEMPLOYED WORKERS, AUG 2010, (000)



Sources: CT LABOR DEPT, NON-SEASONALLY ADJUSTED DATA

- Of the 51,469 unemployed workers within the North Central Region, the top five of Hartford, the top five of Hartford, New Britain, East Hartford, Bristol, and Manchester accounted for approximately 45% of the region's total.



- The use of temporary workers has been on the rise as employers seek to minimize benefit costs while also screening prospective long-term employees.
- Since June of 2009, temporary employment has surged by 359,000 jobs nationally, representing a 20 percent climb. In sharp contrast, total non-farm employment has dropped by 329,000 total jobs, or 0.3%. Employers continue to be reluctant to commit to permanent new hires.
- The widespread use of “temps” is apt to continue because it provides flexibility to employers in a dynamic economy.

Green Economy

Dwindling natural resources, growing global demand for energy, climate change – these issues are irrevocably altering the global economy. As concerns about the environment, dependency on energy particularly in light of global instability, and a view to growing the economy in new and different ways, continues to encourage continued interest in the “green economy” and “green jobs”.

It is impossible to count the number of “green” jobs because employment in this category does not fit a specific mold. Researchers cannot draw a clear distinction between “green” and “non-green” jobs. Companies and consumers are becoming more environmentally conscious. This will affect the labor market through some job creation, but, to a much greater extent, by changing the nature of existing occupations.

At the “Stimulating Green Markets in Connecticut,” presentation in October 2010 for state and regional green industry stakeholders Gerri Scott of Jobs for the Future stated the following after working with several states and regional organizations on green initiatives:

- A green job is a traditional job with added/new skills
- Fewer jobs created than anticipated by stimulus
- Too few women and minority contractors are being awarded work
- Competition for jobs from ‘benched’ workers

At the same forum, the Connecticut Energy Efficiency Fund concluded:

- Current green industry program operations in the state require more than 2,500 individuals trained in a number of disciplines.
- Green job training is needed to maintain the current workforce.
- Expanded green jobs training should support the existing workforce while at the same time provide for expansion of the workforce and career advancement.

While there is a proven potential to employ thousands in Connecticut in energy efficiency retrofits and renewable, the industry is currently not growing. Until investments, both private and public, are made the industry is stalled.

Market Definition

The following discussion is based largely on O*Net's publication: Greening of the World of Work: Implications for O*NET SOC and New and Emerging Occupations.

To begin to understand the concept of green jobs, the green economy and related topics, it is necessary to come to some consensus definition which encompasses all these areas. For purposes of this plan, the following definition is used:

*Working from O*Net's premise that the green economy encompasses the economic activity related to reducing the use of fossil fuels, decreasing pollution and greenhouse gas emissions, increasing the efficiency of energy usage, recycling materials, and developing and adopting renewable sources of energy there are 12 industries categorized as green (these are listed on the following page).*

The O*NET program is the nation's primary source of occupational information. Central to the project is the O*NET database, containing information on hundreds of standardized and occupation-specific descriptors. The database is continually updated by surveying a broad range of workers from each occupation. Information from this database forms the heart of O*NET OnLine, an interactive application for exploring and searching occupations.

This definition lends itself to three general occupational categories, each describing the differential consequences of green economy activities and technologies on occupational performance.

1. *Green Increased Demand Occupations* are existing occupations where employment demand will increase due to green economy activities. However, this impact does not entail significant changes in the work and worker requirements of the occupation. The work context may change, but the tasks themselves do not. Examples include electricians, carpenters, chemists, and architectural drafters.
2. *Green Enhanced Skills Occupations* are existing occupations where the work or work requirements (such as credentials) may be changed due to green economy activities. The impact of green economy activities and technologies results in a significant change to the work and worker requirements of an existing O*NET-SOC occupation. This impact may or may not result in an increase in employment demand for the occupation. The essential purposes of the occupation remain the same, but tasks, skills, knowledge, and external elements, such as credentials, have been altered.
3. *Green New and Emerging (N&E) Occupations* The impact of green economy activities and technologies is sufficient to create the need for unique work and worker requirements, which results in the generation of a new occupation relative to the O*NET taxonomy. This new occupation could be entirely novel or "born" from an existing occupation.

With definitions of green economy, occupation, and the greening of occupations established, 12 sectors were chosen based on those areas typically discussed in current literature.

- **Renewable Energy Generation**
- **Transportation**
- **Energy Efficiency**
- **Green Construction**

- **Environment Protection**
- **Manufacturing**
- **Recycling and Waste Reduction**
- Governmental and Regulatory Administration
- Energy Trading
- Energy and Carbon Capture
- Research, Design, and Consulting Services
- Agriculture and Forestry

Bolded sectors are those which CWP has determined to focus on for this initiative. Each of the bolded sectors was researched to ascertain general sector activities, recent trends, and workforce implications. More specifically, emphasis was placed on determining the levels of occupational greening within these sectors.

Occupational Implications by Green Sector

CWP-Focused Sectors			
Sector	Overview	Example Job Titles	Workforce Implications
Renewable Energy Generation	Renewable Energy Generation covers activities related to developing and using energy sources such as solar, wind, geothermal, and biomass. Also includes traditional, non-renewable sources of energy undergoing significant green technological changes (e.g., oil, coal, gas, and nuclear).	<ul style="list-style-type: none"> • Certified Energy Manager • Renewable Energy Systems Installer • Geothermal specialist • Fuel cell technician • Ice storage technician • Energy purchaser and carbon trader • Biofuel processing technician • Engineers 	<ul style="list-style-type: none"> • The increased potential for growth in renewable sources of energy can be expected to impact employment and occupational expansion. • On a national basis, it has been estimated that significant investment in the renewable energy segment could result in the creation of more than 650,000 jobs in 10 years and more than 1.4m jobs by 2025.
Transportation	Transportation covers activities related to increasing efficiency and/or reducing environmental impact of various modes of transportation including trucking, mass transit, freight rail, etc.	<ul style="list-style-type: none"> • Transit Operations Supervisor • Auto, Truck and Bus Mechanic • Construction Equipment Service Technician • Biofuel Production Worker • Rail Maintenance Technician • Diesel Retrofit Installer • Mass Transit Service Provider • Advanced Transportation systems technician 	<ul style="list-style-type: none"> • Growing concerns over environmental and conservation issues should increase demands for individuals with specialized knowledge and skills related to eco-friendly transportation assessment, planning, and logistics. • The increased use of alternative transportation fuels in general has been estimated to likely generate 1.5 million jobs directly related to these fuels, as well as roughly 1.4m jobs in associated fields such as engineering, law, and research.
Energy Efficiency	Energy Efficiency covers activities related to making energy demand response more effective, constructing “smart grids,” etc.	<ul style="list-style-type: none"> • Energy Improvement Contractor • Analyst and Weatherization Crew Supervisor • HVAC Technician • Building Maintenance Technician • Weatherization and Envelope Specialist • Building Automation Specialist • Methane Capturing System Engineers/Project Managers 	<ul style="list-style-type: none"> • There will be a growing need for individuals with knowledge and skills related to “energy consulting,” which represents roughly 40% of this sector’s current employment. • In addition, another predominant area of employment is related to manufacturing, design, and sales of energy efficient technologies (e.g., low-wattage or zero-wattage lighting products). • Occupations that pertain to operations and maintenance have particular relevance to this

			sector of the green economy. There is evidence suggesting shortages of skills among the current workforce to meet the future demands of this sector.
Green Construction	Green Construction covers activities related to constructing new green buildings, retrofitting residential and commercial buildings, and installing other green construction technology.	<ul style="list-style-type: none"> • Deconstruction Contractor • Green Home Improvement Contractor • Green Carpenter or Deconstruction Technician • LEED Associate • Analyst and Weatherization Crew Supervisor • Green Building Helper or Apprentice • Weatherization and Envelope Specialist • Electricians • HVAC 	<ul style="list-style-type: none"> • Occupations dealing with the manufacture of retrofitting products and their installation will be in demand as existing commercial and residential buildings are retrofitted over the next three decades • The increased demand for green retrofitting work will simultaneously promote demand for green building materials, thus increasing the need for occupations in manufacturing industries. • Many existing occupations will be classified as green increased demand occupations, with growth in employment demand related to green construction.
Environment Protection/Environment	Environment Protection covers activities related to environmental remediation, climate change adaptation, and ensuring or enhancing air quality.	<ul style="list-style-type: none"> • Environmental engineers • Hazardous materials removal workers • Water conservationists • Urban Garden and Landscape Technician • Water and Waste Management Technician • Brownfield Restoration Technician • Rainwater Runoff Mitigation Technician • Sustainable Landscape Technician • Recycling Technician • Air Quality Control Specialists * 	Federal legislation and regulation have been significant forces in this sector. Below are some examples of such legislation: <i>Clean Air Act of 1990</i> <i>Clean Water Act of 1972</i> <i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i> <i>Superfund Amendments and Reauthorization Act [SARA] of 1986</i>
Manufacturing	This sector covers activities related to industrial manufacturing of green technology as well as energy	<ul style="list-style-type: none"> existing manufacturing occupations such as • Drilling and boring machine tools setters, 	<ul style="list-style-type: none"> • This sector will see an the increased demand for existing manufacturing related occupations. Thus, occupational impact is most likely to be in the forms of green increased demand and green

	efficient manufacturing processes.	<ul style="list-style-type: none"> • Operators and tenders • Separating, filtering, industrial engineering technicians • Electrical engineering technicians • Machinists • occupational health and safety technicians • Engineers 	enhanced skills occupations.
Recycling and Waste Reduction	Recycling and Waste Reduction covers activities related to solid waste and wastewater management, treatment, and reduction, as well as processing recyclable materials.	<ul style="list-style-type: none"> • Plant and systems operators • Refuse and recyclable materials collectors • Sustainable design, recycling and reclamation, and coordinating recycling activities 	Significant investments by state and local government programs to increase recycling have facilitated employment demand. The U.S. Bureau of Labor Statistics forecasts the demand for occupations related to waste management to increase by 14% between 2006 and 2016.

A majority of the aforementioned occupations require a national certification and or degree

Where are the Jobs?

According to research by Dr. Bill Leahy at the Institute for Sustainable Energy at Eastern Connecticut University, current jobs in the green sector in Connecticut are as follows:

- Weatherization and home improvement
- Building auditing and energy system assessment
- Green building construction (including renovation of old buildings)
- Building operations and maintenance
- Manufacturing and selling of energy related products
- Water and waste management (retraining of workforce)
- Landscaping, Brownfield recovery and land use
- Project engineering and management
- Transportation Systems and Services (including maintenance of vehicles)

42,000 direct green jobs are projected for Connecticut, including weatherization, efficiency, renewable energy, recycling, Brownfield recovery, green space, transportation, manufacturing and construction.

The Need for Green-Collar Jobs

- Creating new jobs or retaining the underemployed in a time of economic downturn
- Providing opportunities for career advancement in the sustainability fields
- Reducing dependence on foreign oil, and strengthening national security
- Promoting the use of domestic renewable energy resources and advanced technologies
- Reducing the tax burdens of inefficient public buildings and public housing
- Mitigating pollution and climate change by cutting emissions including green house gas

Number of Jobs

The table below contains lists of occupations and industries, along with their associated employment levels, that are believed to be directly influenced by green jobs focus. It is based on actual figures and estimates from Connecticut's Department of Labor. This is a much more narrow focus than the more broad interpretation of the NAICS approach shown on the following page.

**Connecticut's Green Occupations
Employment Projections
2008 - 2018**

Occupation	Employment		
	2008	2018	% Chg
Agricultural Engineers	D	D	D
Conservation Scientists	97	104	7.2%
Environ. Science & Protection Tech., Incl. Health	298	317	6.4%
Environ. Scientists & Specialists, Incl. Health	814	876	7.6%
Environmental Engineering Technicians	291	335	15.1%
Environmental Engineers	647	725	12.1%
Environmental Science Teachers,	111	134	20.7%

Postsecondary			
Forest and Conservation Technicians	75	74	-1.3%
Forest and Conservation Workers	D	D	D
Forest Fire Inspectors and Prevention Specialists	D	D	D
Foresters	D	D	D
Forestry & Conser. Science Teachers, Postsec.	D	D	D
Geographers	D	D	D
Geography Teachers, Postsecondary	51	61	19.6%
Geoscientists, Except Hydrologists & Geographers	174	209	20.1%
Hydrologists	98	104	6.1%
Natural Sciences Managers	1,106	1,126	1.8%
Nuclear Engineers	384	438	14.1%
Nuclear Power Reactor Operators	108	113	4.6%
Nuclear Technicians	195	197	1.0%
Power Distributors and Dispatchers	D	D	D
Power Plant Operators	216	238	10.2%
Soil and Plant Scientists	93	97	4.3%
Water & Liquid Waste Treat. Plant & System Oper.	601	640	6.5%
Zoologists and Wildlife Biologists	63	61	-3.2%
Total	5,422	5,849	7.9%

D: non-disclosure

Source: CT Department of Labor

The following table shows an example of one sector (Energy Efficiency) where there is a potential direct impact on green occupations. It is based on the Bureau of Labor Statistics NAICS job classifications, and is, therefore, not strictly in line with O*NET's interpretation. It does, however, help identify potential green-related industries and occupations as a means of sorting data.

Connecticut and North Central WIA Industries with at least some Jobs in Direct Green Goods and Services in the Energy Efficiency Category
2009 Average

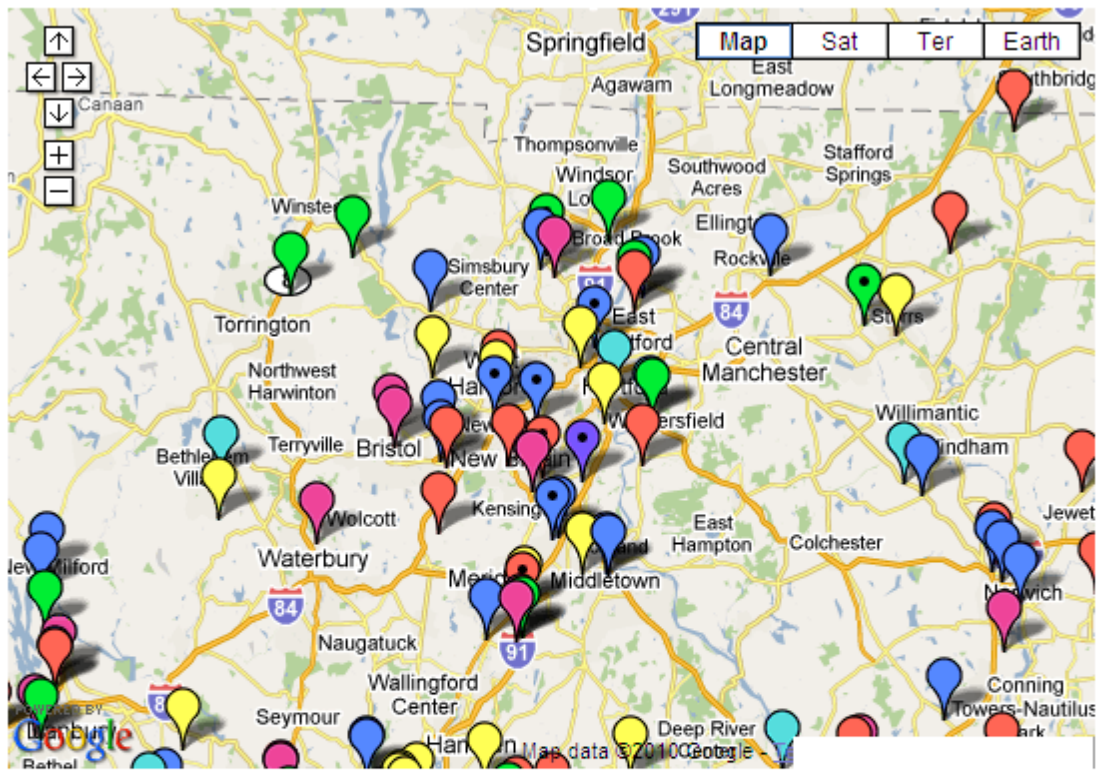
	CT	North Central WIA	
NAICS Title	Jobs		Example
School and Employee Bus Transportation	6,918	1730	School bus transportation
Residential Remodelers	3,058	745	Weatherization
Industrial Process Variable Instruments	2,025	473	Water quality monitoring and control systems
Software Publishers	2,022	941	Training software, software used to reduce or monitor energy usage, pollution
Bus/Other Motor Vehicle Transit Systems	1,071	NA	Mass transit systems

Special Needs Transportation	675	278	Commuter-based transportation
Land Subdivision	334	109	Smart growth developments, power site development
Fluid Meters and Counting Devices	316	134	Water meters, consumption registering
Coastal/Great Lakes Passenger Transport	287	NA	Great Lakes or coastal ferry commuter services
All Other Ground Passenger Transport	215	103	Vanpools
Electricity & Signal Testing Instruments	197	NA	Energy measuring equipment, electrical
Mixed Mode Transit Systems	153	652	Mass transit systems
Total	17,271	5,195	

Source: CT Department of Labor

The following map shows locations in the North Central Region of companies and employers which have an association and/or focus on green energy. This is based on survey data collected by the Connecticut Fund for the environment (January 2010).

CONNECTICUT GREEN ENERGY INDUSTRY



Green Energy Industry Map Key

- Red:** Solar (design, installation, supply)
- Aqua:** Alternative Energy (geothermal, wind, other)
- Yellow:** Architecture, Green Building Design
- Blue:** Weatherization & Efficiency Retrofit, Builders
- Pink:** Electrical Efficiency & Lighting (consulting, installation, supply)
- Green:** Fuel cell, Research, Manufacturing
- Purple:** Development, Finance

Source: Connecticut Fund for the Environment

V. Resource Mapping

Public Investments in the Green Economy

Stimulus Funding

Approximately \$60 billion of the \$787 billion stimulus package passed by Congress in 2009 was devoted to green activities. Data available on the Governor's website shows over \$200 million in grants to state agencies and another \$200 million in tax credits and grants to other entities in Connecticut in the areas of energy and the environment from the stimulus legislation.

The Department of Labor's fiscal 2010 budget provided \$40 million for a Green Jobs Innovation Fund to help workers receive job training in green industry sectors and occupations, including pre-apprenticeship and registered apprenticeship. Requests for Proposals for this funding will be released at the end of 2010/beginning of 2011. The budget also provided \$125 million for the Career Pathways Innovation Fund to support community colleges developing or expanding career pathways programs in partnership with education and training providers, employers and the workforce system.

Labor Market Information – Green Focus

The Connecticut Department of Labor received a grant under American Recovery and Reinvestment Act (ARRA) to support the research and analysis of labor market data to assess economic activity in energy efficiency and renewable energy industries, and identify occupations within those industries.

Connecticut is also part of an eight-state consortium of Northeast states awarded funding from the US Department of Labor to develop a new approach to identifying green jobs. This approach goes beyond job titles and keywords by also examining the job descriptions of job openings for skills and knowledge associated with green activities. Information about the skills and knowledge needed by the green economy can then be used in designing educational and training programs to ensure that the workforce is ready to meet the demands of the green economy.

Legislation

In February 2009, Governor Rell released Executive Order 23 (EO 23), creating a Green Jobs Council (now the Green Jobs Partnership) charged with developing green job opportunities, partnerships and training programs. EO23 also mandated unification of the state's green workforce efforts.

Senate Energy Bill 493, An Act Reducing Electricity Costs and Promoting Renewable Energy

Senate Energy Bill 493 was vetoed in May, 2010 primarily due to the:

- uncertain impact on the energy market, the state's economy and ratepayer bills
- perceived to increase the size and scope of state government
- lack of transparency and input from stakeholders leading up to the passage of the bill.

There is hope that this Bill will be reintroduced in the upcoming session following the election.

Connecticut's Blueprint for Green Collar Job Creation House Bill. No. 5435

Bill No. 5435 establishes a Connecticut green technology, life science and health information technology loan forgiveness program for students who graduate with bachelors degree in fields relating to green technology, and have been employed in Connecticut for at least two years after graduation in a job relating to green technology.

There are currently several energy and green industry related initiatives in the state and North Central Region that offer information, training, and resources to develop and expand the green workforce and economy in Connecticut and local area.

State Level Initiatives	
Organization	Initiatives
<p><u>CT Green Jobs Partnership (OWC)</u> Awarded a three-year, \$3,360,000, SESP grant, the partnership continues the work of the Green Collar Jobs Council while expanding to include Energy Efficiency and Renewable Energy industry employers from the CT Energy Workforce Development Consortium. The Partnership oversees a variety of ARRA-funded green workforce development initiatives while aligning with existing initiatives.</p>	<p><u>Focus: All Green related occupations</u> State Energy Sector Partnership Grant (3.36 million)</p> <ul style="list-style-type: none"> • One State Project Director • 5 Regional Coordinators • Training for Water Management, Building Analysts and Building Municipalities • CONNSTEP lean manufacturing program • Additional funding for each WIB for IWT and ITA green related trainings
<p><u>CT Energy Workforce Development Consortium</u> Managed by Connecticut Business & Industry Association’s Education Foundation, the CT Energy and Workforce Development Consortium is a public-private consortium of energy related business, academic and government representatives which develops solutions to meet the workforce needs of energy and energy-related companies.</p>	<p><u>Focus: Energy</u></p> <ul style="list-style-type: none"> • Career Awareness program for HS students • TANF Funds: Electric/Gas Utility program/Solar program • Energy and Green Technology DVD/Career Pathways –
<p><u>Connecticut Center for Advanced Technology</u> CCAT promotes the development, manufacturing and utilization of renewable energy and hydrogen/fuel cell technology and administers the Hydrogen Fuel Cell Coalition and the Green Science & Engineering Advisory Group</p>	<p><u>Focus: Advanced Manufacturing</u></p> <ul style="list-style-type: none"> • Green Science & Engineering Advisory Group • SOAR partner – curriculum development, employer engagement • Incubator
<p><u>CT Clean Energy Fund</u> The Connecticut Clean Energy Fund, administered by Connecticut Innovations, promotes, develops and invests in clean energy sources for the benefit of CT taxpayers. The Fund was created in 2000 by the state Legislature and has a long track record of making successful investments to advance emerging technologies and has funded more than \$100 million in projects, commitments and program allocations statewide. The state legislature requires the Connecticut Clean Energy Fund Board to develop a comprehensive plan that outlines strategies to support renewable energy sources and related enterprises, and to stimulate demand for renewable energy.</p>	<p><u>Focus: Energy</u></p> <ul style="list-style-type: none"> • School/workforce initiatives –STEM based Learning for Clean Energy Innovations - Professional development, curriculum materials and classroom toolkits on solar & wind energy (9th grade) • Clean Energy Climate Solutions (Grades 3-12) • CT Science Center partnership- Energy City Gallery (Grades 4-9) • Learning for Clean Energy Innovation CT Technical High Schools, Electrical, Plumbing and Heating trades, Solar PV and Solar Thermal Professional development and curriculum Training for inspectors, ongoing training for professionals

<p><u>SOAR</u> The Connecticut Community College System’s Sustainable Operations: Alternative and Renewable (SOAR) Energy Initiative was funded by a three-year, \$2 million U.S. Department of Labor Community-Based Job Training Grant in 2009.</p>	<p><u>Focus: Alternative and Renewable Energy Occupations</u></p> <ul style="list-style-type: none"> • Eight certificate programs focusing on sustainable operations in different subject areas • Five SOAR Regional Coordinators provide academic and career counseling and train state One-Stop Career Center staff and high school counselors about SOAR programs. Goal: 320 students will graduate from a SOAR program
<p><u>Department of Social Services (DSS) Weatherization</u> DSS administers the state’s weatherization plan with funding provided by the US Department of Energy. The state contracts with CAP agencies to operate the program. There are five CAP agencies statewide in collaboration with other partners and leveraged sources to assist low-income families make homes more energy efficient. With the influx of additional ARRA and TANF funds the program was expanded to include job training.</p>	<p><u>Focus: Energy Efficiency</u></p> <ul style="list-style-type: none"> • Awarded Community Action Partnership agencies and other organizations funding to create job training programs in weatherization for low-income housing, solar, and utilities.
<p><u>The Connecticut Green Building Council (CTGBC)</u> A chapter of the US Green Building Council, CTGBC is a non-profit 501(c3) organization that seeks to improve the quality of life in Connecticut through the promotion of intelligently designed and constructed high performance energy efficient buildings. The CTGBC also monitors activities in Connecticut related to high performance green buildings.</p>	<p><u>Focus: Green construction</u></p> <ul style="list-style-type: none"> • Series of workshops on green building topics • Networking opportunities • Educational forums • Seminars on green buildings • Connecticut-based LEED training in connection with the US Green Building Council • Speakers’ bureau
<p><u>The Institute for Sustainable Energy</u> Focuses on matters relating to energy education, energy policy, energy efficiency, energy conservation and load management, renewable energy, distributed generation, protection of environmental resources, and the dissemination of useful information on energy alternatives and sustainability to users and providers of energy. The Institute adds an unbiased focus on practical applications and dissemination of information about how to improve the energy profile and sustainability of Connecticut and the region.</p>	<p><u>Focus: Energy</u></p> <ul style="list-style-type: none"> • Provide Educational Outreach • Clearinghouse and Resource for Energy Sustainability Information • Assist in the development of Public Policy • Provide Assistance in developing Energy solutions
<p><u>Solar Connecticut</u> Solar Connecticut’s mission is to facilitate the building of a state-wide community of stakeholders including industry, customers, educators, community organizations</p>	<p><u>Focus: Solar Energy</u></p> <ul style="list-style-type: none"> • Outreach • Advocacy • Training coordination

Regional Initiatives	
Organization	Initiatives
<p><u>Capital Workforce Partners</u> CWP has designated green as one of three Business Sector Initiatives with the goal of enhancing and developing a workforce which is equipped with the necessary skills to enter and advance in green and sustainable energy occupations.</p>	<p><u>Focus: All Green related occupations</u></p> <ul style="list-style-type: none"> • Energy grant • STEM • Advanced Manufacturing Sector Initiative • Jobs Funnel – Green construction
<p><u>Jobs Funnel</u> The Jobs Funnel, CWP’s primary program to support green technology and sustainable energy efforts, is a nationally recognized, highly successful grassroots workforce preparation partnership. It is a coordinated system of outreach and recruitment, assessment, case management, pre-employment preparation, job training, placement and retention services for individuals seeking employment in the construction field, and serves as a model “Funnel” for replication in the state. The idea of the funnel stems from the process individuals go through- funneling into the system to gain specific work competencies and trade-related certifications. They then funnel out to embark on a self-sustaining career.</p>	<p><u>Focus: Green Construction</u> Trades that Individuals can train for include; Bricklayers/Masons, Carpenters, Drywall Finishers, Electricians, Elevator Constructors, Energy Auditor, Environmental Technicians (Asbestos and Lead Abatement), Glaziers, Iron Workers, Laborers, Operating Engineers, Painters, Plumbers/Pipefitters, Roofers/Waterproofers, Sheet metal Workers, Sprinkler Fitters, Weatherization Installers</p> <p>Through a Workforce Competitiveness grant, CWP, in partnership with Community Renewal Team, trains participants in green jobs in areas such as energy efficiency, weatherization and clean water. CRT procures contractors to conduct energy audits and weatherized affordable housing units, while CWP coordinates with the Jobs Funnel to recruit and train workers who are referred to the CRT contractors to be hired for this effort. This initiative directly supports the states weatherization grant from the ARRA, which targets low-income residents and focuses on job creation</p>
<p><u>Community Renewal Team</u> The Community Renewal Team Inc. is an anti-poverty agency serving people and families throughout the Connecticut River Valley. Head Start, Meals on Wheels, alternatives to incarceration, supportive housing and shelter, and many other CRT programs give people the skills and the resources to become self-sufficient and to thrive.</p>	<p><u>Focus: Weatherization/Energy Efficiency</u></p> <ul style="list-style-type: none"> • Weatherization programs for low-income residents through DSS funding – DOE and TANF • Procures contractors to conduct energy audits and weatherized affordable housing units using participants from the Jobs Funnel program
<p><u>Workforce Solutions</u> The Workforce Solutions Collaborative of Metro Hartford provides direct financial support to workforce partnerships in health care, manufacturing, and energy/utilities. Each workforce partnership provides career advancement services to lower-skilled adults and assists employers in addressing their needs for workers with mid-level skills</p>	<p><u>Focus: Energy</u></p> <ul style="list-style-type: none"> • Awarded CBIA Education Foundation Planning Grant – Employer/Training Provider Survey

VI. Employer Needs

Through this initiative we will develop a series of strategies to ascertain actual demand in our region. Employers will be engaged in an ongoing dialogue to continually assess their workforce needs. These strategies will include:

- Employer Outreach Session
- Targeted surveys
- Review of recent Employer surveys
 - CBIA (Connecticut Business and Industry Association) for Workforce Solutions (not yet released)
 - CCAT (Connecticut Center for Advanced Technology) Employer and Educator survey (in progress)

Preliminary data from the CBIA employer survey shows that employers have trouble finding entry level workers with the necessary skills and that there is a disconnect between training providers and employers. The Connecticut Center for Advanced Technology is leading the Green Science & Engineering Advisory Group which has been charged with surveying industry and universities to establish their perspectives on present and anticipated future technology development and to identify workforce needs for new or existing jobs requiring new skills for technology development. This study is currently underway.

VII. Green Industry Sector Plan of Action

Mission

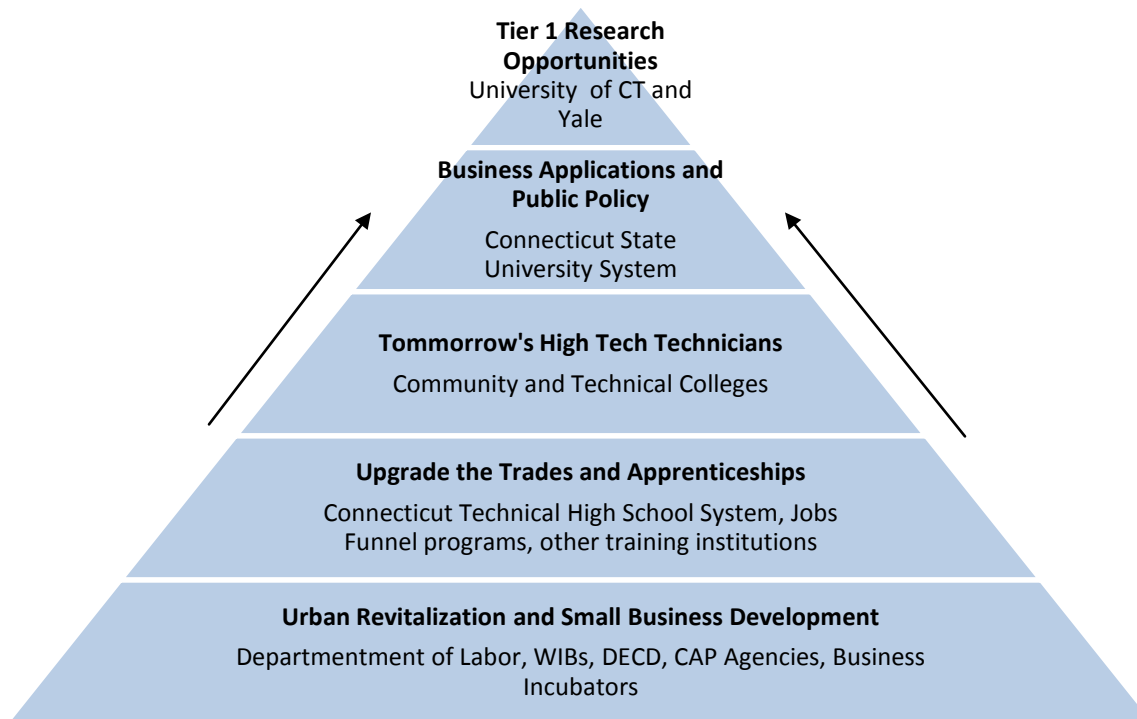
The Green Jobs Advisory Committee through this initiative will serve as a catalyst to grow green related workforce initiatives within the North Central Region of Connecticut.

Need

While Connecticut's workforce boards and educational systems are leading the state's efforts to prepare workers and professionals for the projected green jobs of the future, the current economic environment has slowed down the growth of these industries. As a result, job seekers who have trained for green jobs are finding it difficult to obtain employment. While we need to continue to develop the talent pool for these future jobs, it is also equally important to upgrade the skills of the current workforce so that as jobs become available we have a trained, skilled and vital workforce to meet the demand. This plan proposes to meet this challenge by creating a future talent pool while also upgrading and 'greening' the skills of our current workforce.

Career Pathways

Connecticut's Educational Continuum for "Green Collar" Workforce Development



(Adapted from the Institute for Sustainable Energy)

Basic Skills/Math

One challenge in meeting the demand for a trained and skilled workforce is the math component. Almost all green occupations starting at the entry-level require a strong degree of math comprehension including algebra. This plan addresses the need to remediate and develop the math skills of potential green job seekers.

Green Industry Sector Goals

1. Green and upgrade the skills of our current workforce, making the workers as well as employers more competitive
2. Recruit and Train Dislocated Workers and Adults in green career pathways
3. Create a Pipeline of future green workforce
4. Increase employer Engagement through outreach, Incumbent Worker Training and On-the-Job Training grants.
5. Alignment of all green initiatives in our region to ensure a seamless and cohesive system of delivery.

Goal 1: Green and upgrade the skills of our current workforce, making the workers as well as employers more competitive				
Objective	Target Group	Strategies	Resource(s)	Outcomes
1. Provide Training Opportunities to 'benched' workers	'Benched' Workers	<ul style="list-style-type: none"> Offer program to tradesmen who are on the bench, to upgrade/green current skills to make them more competitive (this will also allow more spots to open up (back fill)) 	<ul style="list-style-type: none"> Discover Jobs Funnel State Apprenticeship program ITAs One-Stop Career Centers 	<ul style="list-style-type: none"> Provide training to ____ benched workers
2. Provide Incumbent Worker Training grants	Green Employers	<ul style="list-style-type: none"> Offer IWT grants to green companies which meet a set criteria to upgrade the skills of their current workforce to help expand/grow their business as well as avert any potential layoffs 	<ul style="list-style-type: none"> CWP IWT funds SESP Incentive Funds 	<ul style="list-style-type: none"> Provide x \$ amount in ITAs or pick a target number of companies or employees who will be trained
	Municipalities and Housing Authorities	<ul style="list-style-type: none"> Provide IWT grants to 'green' facilities and maintenance staff 	<ul style="list-style-type: none"> SESP Incentive funds 	<ul style="list-style-type: none"> ____ municipalities or housing authorities will be awarded funds to train facilities maintenance staff
Goal 2. Recruit and Train Dislocated and Adult Workers				
Objective	Target Group	Strategies	Resource(s)	Outcomes
1. Provide Outreach to Dislocated and Adult Workers	Dislocated Workers/Adults	<ul style="list-style-type: none"> Engage Dislocated Workers and Adults in green careers exploration 	<ul style="list-style-type: none"> One-Stop Career system Discover Green Seminars WIA Counselors, Green Coordinator, STEM and Manufacturing Coaches 	<ul style="list-style-type: none"> ____ job seekers will attend Green seminars
2. Provide Training opportunities	Dislocated workers/Adults	<ul style="list-style-type: none"> Jobs Funnel Outreach – workshop on Careers in Green/High-Tech Industries SESP grant training opportunities SOAR *NU Linesmen program 	<ul style="list-style-type: none"> Green Jobs Coordinator STEM and Manufacturing coaches One-Stop Career Centers SESP grant SOAR ITAs *Northeast Utilities 	<ul style="list-style-type: none"> Provide training to ____ Dislocated Workers Provide training to ____ Adult WIA participants
3. Provide OJT	Green	<ul style="list-style-type: none"> Offer OJT contracts to green employers to fill 	<ul style="list-style-type: none"> CWP OJT funds 	<ul style="list-style-type: none"> ____ OJT contracts will

opportunities	Employers Dislocated Workers, Adults	job openings and help offset cost of training (potential employee participants would need to have completed the 7 core competencies and the math assessment)		be awarded
Goal 3. Create a green workforce pipeline				
Objective	Target Group	Strategies	Resources	Outcomes
1. Increase awareness of careers in green occupations	In-School youth	<ul style="list-style-type: none"> Amended 7 Competencies model to include green career exploration <i>Career Connections</i> - Add green jobs component to CWP's "Work and Learn" model designed to transition high school juniors and seniors to a successful career path. Youth receive mentoring, job readiness workshops, learn how to conduct a job search and secure unsubsidized, private sector employment. <i>Engineering Road Show</i> -Engineers engage middle school or elementary students with experiments and hands-on learning experience to inspire interest in STEM and green education and careers. <i>Breaking into the High-Tech and Emerging workforce/Discover Green seminars</i>- 2-hour interactive workshop on careers in STEM, Advanced manufacturing and green. Presenters will take this directly to schools. Internships/Job Shadowing 	<ul style="list-style-type: none"> Institute for Sustainable Energy (Eastern CT University) Center for Energy Workforce Development (videos, free curriculum) Employer connections 	<ul style="list-style-type: none"> Provide ____ talks or # of schools Do ___ Engineering Road Shows Place ___ # of youth at green companies for summer youth employment
	Out-Of-School Youth	<ul style="list-style-type: none"> Amended 7 Competencies model to include green career exploration <i>Breaking into the High-Tech and Emerging workforce/Discover Green seminars</i>- 2-hour interactive workshop on careers in STEM, Advanced manufacturing and green. Presenters will take this directly to schools. Engage youth in green sector 	<ul style="list-style-type: none"> CWP Youth contractors Employer connections 	<ul style="list-style-type: none"> Place ___ # of youth at green companies for summer youth employment

		<ul style="list-style-type: none"> Brownfield training program (Blue Hill Civic Assn.) graduates – SOAR scholarships, other ITAs around green, connect to Jobs Funnel 		
2. Provide Training Opportunities	In-school Youth	<ul style="list-style-type: none"> Offer ITAs to eligible High School graduating seniors to pursue green certificates – SOAR and others Summer Youth Employment Program 	<ul style="list-style-type: none"> ITAs SESP scholarships SOAR Coordinator Youth contractors Employers 	<ul style="list-style-type: none"> ___ youth in SYEP
	Out-of-School Youth	<ul style="list-style-type: none"> Offer ITAs to interested and successful participants from Brownfield program – put on career pathway to SOAR or other programs Internships/Job Shadowing *Northeast Utilities program OJT 	<ul style="list-style-type: none"> Blue Hill Civic Assn. and other youth contractors ITAs SOAR SESP scholarships 	<ul style="list-style-type: none"> ___ # of ITAs ___ # of OJT contracts to green companies
Goal 4: Employer Engagement				
Objective	Target Group	Strategies	Resource(s)	Outcomes
1. Engage Employers in ongoing dialogue on workforce needs	Employers	<ul style="list-style-type: none"> Work Through existing entities, where appropriate, to understand hiring needs and plans for growth/expansion Supplement LMI with one-on-one interviews with region employers Employer outreach session(s) Engage employers in offering <ul style="list-style-type: none"> Job shadowing/internships SYELP sites Mentors 	<ul style="list-style-type: none"> Employer connections CCAT CBIA Business associations 	<ul style="list-style-type: none"> ___ outreach session held ___ new employers engaged ___ of green SYELP sites
2. Engage Employers in Incumbent Worker Training grants	Green Employers	<ul style="list-style-type: none"> Offer IWT grants to green companies which meet a set criteria to upgrade the skills of their current workforce to help expand/grow their business as well as avert any potential layoffs Refer companies to the CONNSTEP Green Collar Champion Program and CAEL Resource Took Kit program 	<ul style="list-style-type: none"> CWP IWT funds SESP Incentive Funds SESP grant funds 	<ul style="list-style-type: none"> Provide x \$ amount in ITAs or pick a target number of companies or employees who will be trained

3. Engage Employers in OJT opportunities	Green Employers	<ul style="list-style-type: none"> • Offer OJT contracts to green employers to fill job openings and help offset cost of training (potential employee participants would need to have attended the Discover Green seminar and completed the 7 core competencies and the math assessment) 	<ul style="list-style-type: none"> • CWP OJT funds 	<ul style="list-style-type: none"> • ____ OJT contracts will be awarded
Goal 5: Alignment of all green initiatives in our region to ensure a seamless and cohesive system of delivery				
Strategies		Resource(s)		Outcomes
<ol style="list-style-type: none"> 1. Coordinate Quarterly updates on regional stakeholders/Green Jobs Advisory Committee 2. Actively participate in other regional and state green industry sector groups 3. Use Green Industry Business Plan as living document 4. Create an inventory/took kit of regional initiatives to be distributed to stakeholders in our region 		<ul style="list-style-type: none"> • Green Jobs Advisory Council • Regional/state stakeholders • OWC • State Project Director 		<ul style="list-style-type: none"> • Seamless delivery system • Inventory of regional green initiatives

VIII. Budget

Strategy	Year 2	Year 3
Specialized certificate training for 'benched' workers	\$30,000	TBD
Specialized certificate training for Out-of-School Youth participants	\$0	TBD
Incumbent Worker Training for green companies/municipalities who meet established criteria	\$57,200	TBD
Total	\$87,200	\$87,200

CWP will supplement the Plan with additional IWT, ITA and OJT funds

Training Funds

CWP has committed \$90,000 over the three-year grant period for green related trainings. An additional \$45,000 in ITAs was committed to students enrolling into any one of the eight SOAR initiatives. CWP will also refer students to trainings offered through the state grant.

- Special Training Programs
 - Greening of Tradesmen skills – training will be offered through the Jobs Funnel to green the skills of currently benched workers including, carpenters, electricians and HVAC.
 - NU – linesmen program.

Incumbent Worker Training

CWP will allocate a portion of their Incumbent Worker Training funds to the green industry sector in addition to the funds awarded through the State Energy Sector Partnership grant. These funds will be awarded on a competitive basis and applications will have a scoring system which may include:

- Company size
- Number of employees (priority may be given to newer/small businesses)
- Type of training
- Impact of training
- Employer participation in other industry sector initiatives such as OJT, internships, job shadowing, mentoring and summer youth employment sites.

CWP will continue to seek additional funding for green sector initiatives and may allocate additional resources to this targeted industry sector.

IX. Leverages/Linkages

- Office for Workforce Competitiveness
- State Green Energy Partnership
- Connecticut Business Industry Association (CBIA) Education Foundation
- Energy Workforce Development Consortium
- Connecticut Center for Advanced Technology (CCAT)
- CT Community College System
- Hartford Public School system (and others)
- CT State University System
- City of Hartford
- CT Clean Energy Fund
- Solar CT
- Community Renewal Team
- CT Department of Labor
- USDOL Green Community of Practice