

GOOD JOBS, GREEN JOBS:

EXPLORING OPPORTUNITIES FOR NEWFOUNDLAND AND LABRADOR

DISCUSSION PAPER



Newfoundland and Labrador Federation of Labour

May 2009

Across our country people are talking about the promise of clean energy and a green economy.

The Newfoundland and Labrador Federation of Labour puts jobs and communities at the heart of this conversation.

Lana Payne, President
Newfoundland and Labrador Federation of Labour

Acknowledgements

The Newfoundland and Labrador Federation of Labour (NLFL) thanks the Atlantic Canada Opportunities Agency for its financial contribution towards the development of this discussion paper. The paper was prepared by Bruce Pearce for the Federation's use in stakeholder consultations across the province during 2009. As we pursue these consultations, we'd like to thank the Federation's 65,000 member workers for their input and engagement as we explore a green jobs strategy that benefits the people and communities of Newfoundland and Labrador.

We Welcome Your Comments

We encourage your comments regarding this paper and the emerging role of the green economy in Newfoundland and Labrador. Please share your ideas with us:

Contact: Kerry Murray
Director of Economic and Social Policy
Newfoundland and Labrador Federation of Labour
330 Portugal Cove Place
St John's, NL A1B 3P2
T: (709) 754-1660
F: (709) 754-1220
E: kmurray@nlfl.nf.ca

Table of Contents

Contents

Purpose / Context of this Paper.....	2
A Vision for the Green Economy	3
Welcome to the Green Economy.....	4
What are Green Jobs?	8
Green Jobs – Opportunities for Newfoundland and Labrador	11
Energy Efficiency - Buildings.....	11
Energy Efficiency – Vehicles, Vessels and Fleets.....	11
Smart Grid.....	12
Renewable Wind, Solar and Ocean Energy	12
Other Energy Generation – Biomass, Peat, Cogeneration.....	13
Environmental Conservation	13
Policy Principles for Green Jobs Initiatives.....	15
Moving Towards a Green Economy	17
Suggested Directions	20
Questions for Discussion.....	21

Purpose of this Paper

This paper is designed to provide an introduction to the green economy and green collar jobs in the context of our changing provincial and global economies, in order to stimulate an informed discussion among workers, civil society organizations, community organizations and all levels of government regarding the opportunity for an emerging green jobs strategy to enhance the economic, social and environmental sustainability of all communities in Newfoundland and Labrador.

Context - Why Green Jobs Now?

While the world's economies are facing recession (with natural resource and manufacturing sectors among the hardest hit), leaders in all sectors in Newfoundland and Labrador are seeking solutions for a sustainable recovery that will provide long-term benefits for the people of our province. The emergence of the green economy provides a key opportunity to achieve this goal by generating high-quality, local jobs that cannot be out-sourced, while addressing a range of public policy and community objectives including greener infrastructure, poverty reduction, labour market development, education & innovation, youth retention, rural renewal, and sound stewardship of our environment and natural resources (including wise use of our vast energy resources).

In Newfoundland and Labrador, the global recession coupled with a resource-dependent economy have contributed to the closure, cancellation, scaling back or deferral of several major forestry, mining and petroleum ventures in recent months. While it is hoped that these initiatives are renewed, there are growing opportunities in the green economy that can add value to and extend the life of these resources and industries, while providing quality, sustainable jobs here at home that cannot be out-sourced or down-sized.

Growing these opportunities not only requires supportive public policy, but support from sectors across the economy willing to seize the opportunities that best suit our province's needs. The Newfoundland and Labrador Federation of Labour (NLFL) offers to play a leadership role in this effort, guided by input from its members and communities across the province about how we should proceed. This discussion flows from the NLFL's longstanding work to promote the interests of workers (both unionized and non-unionized) in labour standards and relations, health and safety, and workers compensation. The Federation is also active in advancing social justice and economic development – we believe that the promise of prosperity can and must be founded on the principle of sharing the wealth with all people.

As you will see in the following pages, the green economy is coming. It's taking root in Europe and North America – spurred by economic stimulus investments coupled with new energy and environmental policies designed to build more sustainable and inclusive economies while tackling climate change. Can a 'green' wave lift all boats? In Newfoundland and Labrador, let's work together to ensure that it does.

A Vision for the Green Economy

By Van Jones, White House Special Advisor for Green Jobs, Enterprise and Innovation

The clean-energy, “green economy” is now exploding into a billion-dollar sector—with more growth predicted.

But the green economy can do more than create business opportunities and consumer choices for the rich. It can also create job opportunities for the poor. It can do more than improve the bottom line for big corporations. It must improve the life prospects for struggling communities.

The effort to curb global warming and oil dependence can simultaneously create good jobs, safer streets and healthier communities. That is the chief moral obligation in the 21st century: to build a green economy strong enough to lift people out of poverty.

We have the technology. Investors are lining up. The only question is: do we have the political will to make government support the transition—and the moral commitment to ensure that the new “green wave” in fact “lifts all boats?”

We have no “throw-away” resources or species. Nor do we have any “throw-away” children. All of creation is sacred, and all our people are precious. And we must act again as if we know this truth.

When we do so, our dying blue-collar towns and neighbourhoods will bloom again—as dignified, “green-collar” meccas. Urban youth, too often fodder for prisons, could instead be trained to create zero-pollution products, heal the land and harvest the sun. Our country can be put back to work, rebuilding our cities for the clean-energy future.

We dream of clear skies over our major port cities. Where idling ships once fouled the air, we see solar-powered energy stations that let docking sea vessels power up cleanly.

We imagine trucks purchasing cleaner bio-diesel blends, to take the fair trade goods off the ships without polluting the neighbourhood.

We envision eco-industrial parks on land once blighted by prisons. We dream of struggling cities blossoming as Silicon Valleys of green capital. We dream of a multi-ethnic, grassroots movement transforming our communities by creating jobs, reducing violence and honouring the Earth.

Some will call this unrealistic. They will advise us to keep our dreams small. But that cynicism is the problem, not the solution.

Those communities that were locked out of the last century’s pollution-based economy must be locked into the new, clean and green economy.¹

¹ *Community Jobs in the Green Economy*. Apollo Alliance & Urban Habitat, 2007.

Welcome to the Green Economy

Our economy is a wholly-owned subsidiary of our environment.

The statement above is increasingly made by environmentalists and economists alike to help re-frame the old 'jobs versus the environment' discussion from one of competing interests, towards one of interdependence.

Indeed, the growing weight of scientific and economic analysis points us towards a fundamental redesign of our economy based on this interdependence – we need to get the balance right, rather than trade off the environment for jobs. The United Nations' 2008 paper on green jobs cites the conclusions of the world's first comprehensive assessment of the economics of climate change. The Stern Review, prepared in 2006 by the former Chief Economist of the World Bank Sir Nicholas Stern, warns that the costs of extreme weather events could reach 1% of gross domestic product (GDP) by the middle of the century; a 2 to 3 degree Celsius rise in temperature could reduce global output by 3% - and if temperatures rise by 5 degrees, up to 10% of global output could be lost. In contrast, stabilizing greenhouse gas emissions to manageable levels would cost 1% of GDP.

The leading scientific body which advises the world's governments (the Intergovernmental Panel on Climate Change) identifies a wide range of benefits from taking concerted action on climate change, including technological innovation, local employment and higher incomes. In Europe, for example, it notes that a 20% savings in energy consumption can potentially create up to one million new jobs.²

Organized labour has been a force for positive change in this direction – and where it has been most successful, it has partnered with other sectors.

In the United States, the Apollo Alliance has brought together labour, business and environmental leaders in a powerful movement that is reshaping America's national, state and local policies to create an economic strategy for prosperity based on clean energy and good jobs. President Barack Obama is implementing many elements of the 'New Apollo Program' by investing \$150 billion to make a down-payment on the green economy.

The New Apollo Program is a comprehensive economic investment strategy to build America's 21st century clean energy economy and dramatically cut energy bills for families and businesses. It will generate and invest \$500 billion over the next ten years and create more than five million high quality green collar jobs. It will accelerate the development of the nation's vast clean energy resources and move us toward energy security, climate

² IPCC Fourth Assessment Report - Report of the Working Group on Climate Change Impact, Adaptation and Vulnerability, 2007.

*stability, and economic prosperity. And it will transform America into the global leader of the new green economy.*³

The White House Task Force on the Middle Class established by President Obama is focusing on green jobs as it pursues its mandate to highlight and implement solutions to the economic challenges facing the American middle class. These solutions must also provide green career pathways out of poverty for those who have been excluded from the labour market. According to Apollo Alliance chair Phil Angelides, the quality of a green job must be emphasized: “it has to pay decent wages and benefits that can support a family. It has to be part of a real career path, with upward mobility. And it needs to reduce waste and pollution and benefit the environment.”⁴

In Canada, the United Steelworkers union is partnering with Environmental Defence to create Blue Green Canada, a new alliance which aims to build a movement similar to the Apollo Alliance and its American cousin, the Blue-Green Alliance.

Through a similar regional alliance, the Alberta Federation of Labour has partnered with environmental groups in announcing a ground-breaking new strategy - Green Jobs: It's Time to Build Alberta's Future – released in April 2009. The paper notes that Alberta's economy is rapidly shedding jobs, but states “there is good news, especially for the many Alberta workers who have recently been laid off: Alberta can create tens of thousands of green jobs right away.”

The Alberta strategy goes on to lay out green jobs opportunities in three key sectors: energy efficiency, renewable energy and transit/high-speed rail, proposing a stimulus investment of \$4.4-5.4 billion to create 35,000-42,000 jobs over the next two years, followed by investments of \$6.9 billion in years 3-7 generating a further 20,000-32,000 jobs. The Alberta strategy would be financed in part by redeploying existing public spending on oil and gas and carbon sequestration (of the 56 sectors in Alberta, oil and gas extraction create the fewest jobs per dollar spent: only 3.5 jobs per million dollars spent - compared with energy efficiency, which produces 216 jobs, and transit, which produces 25 jobs – per million dollars spent).⁵

The 2009 Ontario budget signals a move towards a green economy – making a direct link between green jobs and the province's hopes for sustainable, economic renewal. Aside from Alberta's, Ontario's economy has been among the hardest hit in Canada by the recession. Ontario's new Green Energy and Green Economy Act (2009) is, according to Premier McGuinty, one of the most comprehensive energy policies in the world. The proposed legislation will lead the transition to a cleaner, greener economy and support the creation of an estimated 50,000 jobs in the first three years.

³ *The New Apollo Program: Clean Energy, Good Jobs. An Economic Strategy for American Prosperity.* The Apollo Alliance, September 2008. www.apolloalliance.org.

⁴ *Green Jobs: A Pathway to a Strong Middle Class.* Middle Class Task Force Staff Report - The Vice President of the United States. February 2009.

⁵ *Green Jobs: It's Time Build Alberta's Future,* by David Thompson. Alberta Federation of Labour, Sierra Club Prairie, Greenpeace. April 2009.

In Newfoundland and Labrador, there is likewise a growing opportunity to harness our province's public policies and investments - on climate change, sustainable development, energy, education, employment, innovation, infrastructure, housing, poverty reduction, rural renewal and youth retention - to a new 'green jobs labour market' strategy that will foster sustainable, quality jobs in communities across the province.

Newfoundland and Labrador introduced a Climate Change Action Plan in 2005 and an Energy Plan in 2007 which provide key opportunities to foster the basis of a green economy. Economic stimulus investments provide a further means to ramp up these commitments. And the 2009 transfer of federal labour market funds to the provincial government provides resources and tools for the necessary workforce strategies.

While the climate action plan lacks provincial greenhouse gas emissions (GHG) reduction targets or timelines, it is tied to a regional climate accord of the New England Governors and Eastern Canadian Premiers to bring emissions 10 per cent below 1990 levels by 2020 (this is merely a starting point, as the regional plan notes that "emissions must be reduced to levels that no longer pose a dangerous threat to the climate. The best science available at present indicates that attaining this goal will require reductions in GHG emissions of approximately 75–85% below current levels.")⁶

The 2007 Newfoundland and Labrador Energy Plan includes "sustainability" as its first principle, and "environmental leadership" as its first goal, pledging to invest oil and gas revenues in the province's future, including renewable energy and energy efficiency (subsequent budgets have indeed made new investments in these areas). The Plan's commitments for professional and skilled workers centre around implementation of the recommendations of the Skills Task Force on "current and future energy projects".

While the Energy Plan does not specifically mention green jobs in the wider green economy, this is a subject that has attracted growing interest since the Plan was first announced, and there may be interest within government to explore these opportunities further.

In February 2009, a delegation from Newfoundland and Labrador attended the *Good Jobs, Green Jobs Conference* hosted by the Blue Green Alliance in Washington, DC. More than 2,500 delegates participated from business, labour, governments, environmental and community groups. Days later, the US government announced \$150 billion in new investments in the green economy – weatherizing homes and businesses, upgrading transmission lines, greening public infrastructure, expanding transit and high-speed rail, creating renewable clean energy, manufacturing the products needed for the green economy, and investing in workforce strategies to ensure skilled, high quality jobs for the country's future prosperity. The Newfoundland and Labrador delegates left the conference inspired and committed to exploring related opportunities for our province.⁷

⁶ *New England Governors/Eastern Canadian Premiers Climate Change Action Plan*, 2001.

⁷ NL delegates: NL Federation of Labour, College of the North Atlantic, Carpenters and Millwrights College, Conservation Corps NL, Choices for Youth, Stella Burry Community Services. www.greenjobsconference.org.

In economies everywhere, the link is finally being made between good jobs, clean energy and the environment. What were once modest, even timid, public and private investments in these areas are now being scaled up dramatically, tied to greater expectations and greater results. Indeed, these plans have moved from the periphery to occupy the central ground of economic policy in many jurisdictions, most notably the United States and Europe.

Moreover, Canada may face increasing pressure to align with the US on its new green plans. For example, Prime Minister Stephen Harper may be forced to drop his government's controversial 'intensity-based' approach to reducing greenhouse gas emissions to avoid having to pay US border duties under pending climate change legislation now before Congress, supported by President Obama. The American legislation will set strict limits on the amount of greenhouse gases industries are allowed to emit – a sharp departure from the Bush Administration's policy. Ottawa's plan is in stark contrast with the new US approach, as it would allow companies to cut their carbon emissions in relation to their output rather than to specified levels.⁸

Green economy plans appear to be garnering growing public support and engaging broad-based constituencies as they gather momentum. They are populist strategies that people seem to desire. They are no longer the exclusive domain of green energy experts or a 'green elite'. They are a genuine expression of a shift in societal values. And to be successful, they are designed to engage everyone and share benefits widely.

This is a useful context in which to develop a strategy to maximize Newfoundland and Labrador's opportunities to create sustainable, green jobs. It cannot be a 'flash in the pan' exercise or a fad. We know it can be something much more transformative and enduring. If we explore the realistic potential for green jobs in each of our communities and across all of our province's economic sectors, and if we nurture these opportunities with real public engagement in shaping the public policies and private actions needed to stimulate and sustain quality, green jobs, then we will be on the transformative path now being taken by jurisdictions across North America and Europe. And we will be doing it in a way that makes the most sense for the people of Newfoundland and Labrador.

⁸ *Ottawa faces pressure to align with US on green plans.* Shawn McCarthy. The Globe and Mail, April 9, 2009.

What are Green Jobs?

Green jobs are a broad term that casts a wide net over the emerging green economy.

In its broadest sense, green jobs is not a useful term for policy innovation or workforce training – for it to be meaningful, the term must be distilled further to specific sectors, economies and places. Leading green industries include energy efficiency and renewable energy – and since all sectors of our economy consume (and can potentially generate) energy, there are also widespread green jobs opportunities across these other sectors, too.

While there is no official or even widely-accepted definition of what constitutes a green job, this is not necessarily a disadvantage as we seek to get a “lay of the land”.

Van Jones, the author of the 2008 New York Times best-seller, *The Green-Collar Economy*, offers the following definition:

Family-supporting, career-track, vocational, or trade-level employment in environmentally-friendly fields. Examples: electricians who install solar panels; plumbers who install solar hot water heaters; farmers engaged in organic agriculture and some bio-fuel production; and construction workers who build energy-efficient green buildings, wind power farms, solar farms, and wave energy farms.

Until his recent appointment by President Obama as White House Special Advisor for Green Jobs, Enterprise and Innovation, Van Jones served on the Board of the Apollo Alliance and led the fledgling national organization, Green for All, which seeks to ensure that the green economy is inclusive and strong enough to lift people out of poverty. For Jones and many like him, the green economy will fall short if it does not provide equal access to good jobs, particularly for those who have been excluded from the labour force.

The United Nations’ 2008 Background Paper on Green Jobs offers the following definition:

Green jobs help protect and restore ecosystems and biodiversity, reduce energy consumption, de-carbonize the economy, and minimize or altogether avoid the generation of all forms of waste and pollution.

The UN paper states that a successful strategy to green the economy involves environmental and social full-cost pricing of energy and materials to discourage unsustainable practices. A green economy values both nature and people and creates decent and adequate paid jobs. While greater efficiency in the use of energy, water, and materials is a core objective, the critical question is where to draw the line between efficient and inefficient practices? A low threshold will define a greater number of jobs green, but may yield an illusion of progress. Over time, given the urgency of the need to act on climate change and provide sustainable jobs, the line must be raised.⁹

⁹ *United Nations Environment Programme - Background Paper on Green Jobs*, 2008.

The term green jobs is, therefore, relative and highly dynamic – we must recognize this and acknowledge that there will be “shades of green” in employment.

Who will work in green jobs - and how can we build the career ladders for the green economy? The answer may surprise you.

Greener Pathways, a US roadmap for green jobs and workforce development, asserts that “the new energy economy will be built and sustained by middle class workers in traditional occupations. Indeed, many skills of the greener future are closely related to the skills of today. We do not need to start from scratch.”¹⁰

The roadmap suggests that more energy should be spent embedding green skills training within the current curricula, and less energy inventing new programs. It is true that the new energy economy will create some brand new industries and many brand new jobs. But more of it will involve transforming the industries and jobs we already have, the authors argue.

For example, retrofitting Newfoundland and Labrador’s existing buildings does not require “green construction workers”, but rather workers with traditional construction skills who also have up-to-date training on energy-efficient construction. Leo Gerard, international president of the United Steel Workers, says a green job is a blue-collar job that serves a green purpose.¹¹

*The phrase “green jobs” has been transformed from a vocational option for a small number of ecological specialists to a vision for the future of virtually the entire economy. It can now be argued that nearly every job has the potential to become a green job or at least to be transformed through the rise of the clean energy economy.*¹²

To achieve this outcome, the most efficient and effective way to prepare a green-collar workforce is to build on the existing foundation of provincial and local workforce development systems. These systems must be backed by reinforcing public policies that drive energy efficiency and renewable energy, resource conservation and pollution reduction/prevention, healthy ecosystems and biodiversity.

A practical example of this approach is provided by the Service Employees International Union (SEIU), the largest building service workers union in the US, which represents thousands of cleaners, doormen, porters, maintenance workers, window cleaners, superintendents, theatre and stadium workers. In 2005, the SEIU added green buildings and energy efficiency to its training programs for members, recognizing that the manner in which they perform their work can directly impact the environment.

¹⁰ *Greener Pathways: Jobs and Workforce Development in the Clean Energy Economy*. Sarah White & Jason Walsh. The Centre on Wisconsin Strategy, the Workforce Alliance and the Apollo Alliance. 2008.

¹¹ Presentation to the White House Task Force on the Middle Class. Leo Gerard, International President, United Steel Workers. Philadelphia, PA. February 2009.

¹² *High Road or Low Road: Job Quality in the New Green Economy*. Philip Mattera, Good Jobs First. 2009.

For their part, New York's state and local governments adopted plans in 2007 to cut carbon emissions by 30% by 2030, and approved bills and stimulus investments in 2009 to retrofit buildings, boosting demand for the SEIU's skilled members. These public policy developments go hand in hand with workforce strategies to deliver on the promise of a greener economy.¹³

A number of studies have pointed to the fact that, overall, green jobs are good jobs. That is, they pay more – by 10 to 20 per cent (depending on the definition) – than other jobs. And they are more likely to be union jobs than other jobs.¹⁴

Green jobs also offer pathways out of poverty. This is a critical consideration for communities struggling against high poverty rates and structural unemployment, including those here in Newfoundland and Labrador. In her 2007 case study of Berkeley, California, professor Raquel Pinderhughes found that poverty and unemployment are significant problems in the community – “there is an urgent need for a new source of living wage jobs for low income residents with barriers to employment – a population that includes youth and adults who do not have a high school degree, have been out of the labour market for a long time, were formerly incarcerated, and have limited education and/or labour market skills.”¹⁵

The Berkeley study found that green collar jobs represent an important new category of workforce opportunities because they are relatively high quality jobs, with relatively low barriers to entry, in sectors that are poised for dramatic growth. “Green collar jobs provide workers with meaningful, community serving work, living wages, benefits, and advancement opportunities.”¹⁶

Green jobs also tend to be more widely distributed throughout regions – that is, they are more community-based and clustered in areas where the needs are greatest. This feature would have appeal in Newfoundland and Labrador. “Green jobs are spread across the land. They are located in rural areas and urban areas. They are smaller and more evenly distributed than mega-projects, and they enable workers to stay with their families and live in their communities.”¹⁷

The following section of this discussion paper identifies some representative jobs in key sectors of the emerging green economy.

¹³ The Building Service 32BJ Thomas Shortman Training Program - SEIU. 2009.

¹⁴ *Green Jobs: A Pathway to a Strong Middle Class*. Middle Class Task Force Staff Report - The Vice President of the United States. February 2009.

¹⁵ *Green Collar Jobs: An Analysis of the Capacity of Green Businesses to Provide High Quality Jobs for Men and Women with Barriers to Employment*. Raquel Pinderhughes, Ph.D. San Francisco State University, 2007.

¹⁶ *Ibid.*

¹⁷ *Green Jobs: It's Time Build Alberta's Future*, by David Thompson. Alberta Federation of Labour, Sierra Club Prairie, Greenpeace. April 2009.

Green Jobs – Opportunities for Newfoundland and Labrador

The following are just a few of the representative green jobs activities in key sectors, including a brief overview of potential opportunities for Newfoundland and Labrador.

Strategies for Green Economy Investment	Representative Jobs
Building Retrofitting	Energy Advisors/Auditors, Electricians, Heating & Ventilation Installers, Carpenters, Construction Equipment Operators, Roofers, Insulation Workers, Carpenter Helpers, Industrial Truck Drivers, Construction Managers, Building Inspectors, Plumbers
Efficient Vehicles/Vessels	Engineers, Electricians, Welders, Metal Fabricators, Engine Assemblers, Bus Drivers, Dispatchers
Smart Grid	Computer Software Engineers, Electrical Engineers, Electrical Equipment Assemblers, Electrical Equipment Technicians, Machinists, Team Assemblers, Construction Labourers, Operating Engineers, Electrical Power Line Installers and Repairers
Wind Energy	Environmental Engineers, Iron and Steel Workers, Millwrights, Sheet Metal Workers, Machinists, Electrical Equipment Assemblers, Construction Equipment Operators, Industrial Truck Drivers, Industrial Production Managers, First-Line Production Supervisors
Solar/Ocean Energy	Electrical Engineers, Electricians, Industrial Machinery Mechanics, Welders, Metal Fabricators, Electrical Equipment Assemblers, Construction Equipment Operators, Installation Helpers, Labourers, Construction Managers

From: *Green Recovery*. Pollin, Garrett-Peltier, Heintz and Scharber.

Energy Efficiency - Buildings

Energy efficiency projects are a huge win for local communities, from both an environmental and a jobs perspective – they extend the life of our energy resources, cut energy costs by 30% on average, and keep energy savings in the local economy. Incorporating energy efficiency concepts into new building design and construction and retrofits of existing buildings can reduce energy use – and energy bills – significantly. It also creates jobs in energy efficient product manufacturing and installation, as well as general construction jobs.

Energy efficiency retrofit jobs include: auditing energy use in existing buildings, manufacturing materials and devices, installing efficient lighting, heating and ventilation systems, appliances, water-saving fixtures, windows, insulation and air-sealing.

Energy Efficiency – Vehicles, Vessels and Fleets

Transportation in Newfoundland and Labrador is one of our biggest sources of greenhouse gas emissions, and efforts to curb these emissions and share the benefits of reduced fuel

costs with consumers and fleet operators can translate into green jobs. These jobs include the sale of fuel-efficient vehicles, the installation of efficiency measures, and repair and maintenance of energy efficient vehicles, vessels and fleets.

Smart Grid

A smart grid delivers electricity from suppliers to consumers using digital technology to save energy, reduce cost and increase reliability. Such a modernized electricity network is being promoted by many governments as a way of addressing energy independence or global warming issues. Smart grids will provide jobs for software engineers, computer scientists, equipment installers and testers, line workers, technicians, contractors, project managers and hardware manufacturers.

Renewable Wind, Solar and Ocean Energy

According to Newfoundland and Labrador's 2007 Energy Plan, the amount of wind energy that can be generated into the current Island distribution system is approximately 80 Megawatts (MW). Newfoundland and Labrador Hydro has already awarded contracts to supply 51 MW of wind energy. Natural Resources Minister Kathy Dunderdale notes that Labrador offers even greater wind energy potential: "In addition to the wind on the island, we also commenced a monitoring program in Labrador...to determine a more accurate estimate of the wind potential in that region. Conservative estimates would suggest that we have in the area of 5,000 MW of wind energy capacity in Labrador, so we will certainly be working diligently to strategically develop that clean, renewable energy source in the future."

With its extensive coastlines and access to three different oceans, Canada is exceptionally rich in tidal current and wave energy resources. Recognizing the potential of such capacity, the industry, academia and governments are joining their efforts to ensure that Canada becomes a world leader in providing ocean energy solutions. The ocean holds enough energy sources to meet current global energy consumption levels. There are many forms of ocean energy, including two of the most promising for commercial development: tidal and wave energy. Canada became active in the ocean energy field when it constructed the 20 MW tidal energy plant at Annapolis Royal, on the Bay of Fundy in Nova Scotia. The plant, one of the first of its kind, has been in operation since 1984 and is the only one of its kind in North America.

The solar energy resource in Labrador is approximately 4.0 kilowatt hours per square metre, while the Island's resource is 3.555 kWh/m². This compares with New Brunswick's solar energy resource, which is the highest among Atlantic provinces, at 4.191 kWh/m².¹⁸ Solar energy is increasingly used in many applications in our province – from automated lighthouses to domestic water heating.

¹⁸ *Deploying Solar Energy in Atlantic Canada: Decision Support Tools*. Dr. Alexandre Pavlovski, P. Eng. Nova Scotia's Energy Research and Development Forum St. Francis Xavier University, Antigonish, NS. May 25th, 2006.

Other Energy Generation – Biomass, Peat, Cogeneration

Before the recent economic recession, forest biomass had grown to be one of the major sources of energy in Atlantic Canada, providing 16% of total energy needs (National Energy Board). This process converts waste wood to energy. The development of this energy resource is affected by the closure of pulp and paper operations which supply biomass.

While peat-lands have never played a significant in supplying energy needs in Newfoundland and Labrador, there have been small quantities harvested for home heating and industrial uses.

In 2008, Peat Resources Limited completed design and construction of a small-scale production facility for peat fuel pellets in Stephenville. The facility went into operation in October 2008. After producing peat fuel pellets in November-December, the facility underwent modifications and improvements to effect greater energy and production efficiency. The facility will be operated during 2009 to produce peat fuel pellets for various combustion and marketing trials. For example, a 500 tonne bulk shipment has been requested for a peat co-firing trial at Ontario Power Generation's Atikokan station - one of four OPG facilities that the Ontario government has legislated must cease coal-burning by 2014. Discussions are ongoing with other energy utilities in eastern North America regarding large volume usage of peat fuel and with parties considering home heating applications.

Environmental Conservation

There are many other occupations that serve to reduce our impact on the environment.

Green jobs that help protect and restore ecosystems and biodiversity already exist in Newfoundland and Labrador, and include those working in conservation, environmental sciences, outdoor and environmental education, as well as environmental law, policy and regulation.

People working in parks and open space maintenance and expansion, sustainable landscaping, organic or sustainable rural and urban agriculture and food production, re-use of construction materials, solid waste recycling and green waste composting, non-toxic cleaning, and non-toxic printing – all contribute to a greener economy.

As policies and markets grow to shape the green economy, so too will the demand for these jobs. The Newfoundland and Labrador Federation of Labour is interested in the potential for green jobs to reduce poverty. For workers with barriers to employment, research shows that placements in green collar jobs can be an effective way to provide low income people with access to good jobs that can lift them out of poverty. The following chart shows the career ladders offered by the green businesses surveyed in the US research cited below.

Green Collar Jobs Are Community Serving Work Force Opportunities¹⁹

Green Business Sector	Types of Services Providing Green Collar Jobs	Types of Entry Level Green Collar Jobs Currently Available	More Advanced Green Collar Work
Energy	Energy Retrofits HVAC (Heating, Ventilation, Air Conditioning) Solar Installation Water Conservation Whole Home Performance	Customer Service, Evaluation, Installation, Construction, Maintenance, Repair	Energy Partner Journeyman Solar Electrician Service Technician Project Manager
Water	Water Conservation Adaptive Grey Water Reuse	Installation, Construction, Maintenance, Repair	Journeyman Project Manager
Green Building	Construction Demolition & Removal	Construction, Carpentry Demolition, Hauling, Driving	General Contractor Project Manager
Woodworking	Custom architecture, cabinetry, furniture, repairs	Assembly, Sanding, Finishing, Carpentry, Installation	Journeyman Head Carpenter
Green Space	Parks & Open Space Landscaping	Planting, Maintenance Tree Cutting/Pruning	Project Manager Head Gardener
Food	Urban Agriculture Farmers' Markets Specialty Foods Production Baking	Growing, Packaging, Delivery Set-up/Tear-down, Selling Brewing, Roasting, Packaging Baking, Mixing, Cleaning	Production Manager Market Manager Floor Manager Head Baker
Transportation	Bicycle Delivery Bicycle Repair Bio-Diesel/Veggie Fuels Public Transportation	Dispatch and Delivery Assembly and Repair Fuel Production, Distribution Driving, Maintenance, Repair	Messenger/Owner Shop Manager Production Manager Head Mechanic
Non-Toxic Printing	Commercial Printing Services	Binding, Post-Press, Delivery	Press Op, Pre-Press
Non-Toxic Cleaning	Residential & Commercial Cleaning	Cleaning, Customer Service	Team Leader
Waste Stream Diversion	Materials Recycling, Materials Re-use	Collection, Sorting, Driving, Loading, Salvaging, Warehouse, Packaging and Composting	Warehouse Manager, Floor/Department

¹⁹ *Green Collar Jobs: An Analysis of the Capacity of Green Businesses to Provide High Quality Jobs for Men and Women with Barriers to Employment.* Raquel Pinderhughes, Ph.D. San Francisco State University, 2007.

Policy Principles for Green Jobs Initiatives

We cannot depend solely on the benevolence of green employers or the mechanisms of the labour market to provide the kind of quality green jobs the clean energy economy should be creating. Intervention by governments and labour alongside communities will be necessary to make sure green jobs are good jobs.

There is also a growing recognition by governments that the mere creation of jobs is not adequate: those positions have to be of high quality to be a true boon to the economy. This is especially true for jobs stimulated by public investments.

Good Jobs First – a coalition that brings together the Labourers International Union of North America, the International Brotherhood of Teamsters, Sierra Club and Change to Win – assessed job quality in the new green economy in its 2009 report *High Road or Low Road*, and concludes:

The fact that an employer is engaged in a business that benefits the environment does not necessarily mean that the employees of that enterprise are going to be treated well. While some green companies are model employers, others pay their workers too little and offer them inadequate benefits. In short, the green economy is not always the humane economy.²⁰

Therefore, a set of guiding principles and policy options should underpin the development of green jobs strategies to ensure that good jobs are the result.

The Apollo Alliance offers the following set of guiding principles:

- **Ensure equal opportunity** by providing pathways out of poverty and into green-collar career tracks for underserved people.
- **Provide a level playing field** for energy-intensive industries so carbon regulation does not inadvertently drive jobs to countries with weaker environmental and labour standards.
- **Ensure regional equity** for the parts of the country most dependent on extracting and using fossil fuels and therefore most likely to suffer worker, community, and industrial dislocations in a new energy economy.
- **Respect the dignity of work** by ensuring that we maintain long-held commitments to wage standards and strong labour protection whenever public dollars are invested in the new energy economy.²¹

²⁰ *High Road or Low Road: Job Quality in the New Green Economy*. Philip Mattera, Good Jobs First. 2009.

²¹ *The New Apollo Program: Clean Energy, Good Jobs. An Economic Strategy for American Prosperity*. The Apollo Alliance, September 2008. www.apolloalliance.org.

For green jobs stimulated by public investments, Good Jobs First recommends that job quality standards be used in contracts – drawing from the following menu of options:

- Attach self-sufficiency wage requirements to subsidies
- Apply wage standards to government contractors
- Strengthen prevailing wage requirements
- Adopt best value contracting
- Expand the use of project labour agreements
- Add labour criteria to Leadership in Energy and Environmental Design (LEED) standards
- Build community campaigns
- Promote community benefit agreements
- Use claw backs to enforce job quality standards
- Use web-based disclosure
- Use domestic sourcing

These are proven ways to prevent workplace abuses, and are recommended as cornerstones for a green prosperity that is shared by all. A more detailed description of these tools is contained in the Good Jobs First report.²²

According to Greener Pathways, governments must make every effort to intentionally direct the transition from a petro- to a green economy. Green economic and workforce development efforts should aim to:

- **Spur regional, sector-based economic development** that is locally-sustainable and designed to promote broad-based community development, including the creation of family-supporting jobs with decent benefits
- **Invest in the workforce intermediaries and labour market institutions** that can best guide such development, bringing all players – labour, industry, education, government, and community – to the table and locating all efforts in data-driven strategies; and
- **Develop demand-driven career pathways** to ensure that prospective and incumbent workers have clear and accessible training paths to better jobs with higher wages and benefits, and the least fortunate among us have unobstructed pathways out of poverty.²³

²² *High Road or Low Road: Job Quality in the New Green Economy*. Philip Mattera, Good Jobs First. 2009.

²³ *Greener Pathways: Jobs and Workforce Development in the Clean Energy Economy*. Sarah White & Jason Walsh. The Centre on Wisconsin Strategy, the Workforce Alliance and the Apollo Alliance. 2008.

Moving Towards a Green Economy

The following workforce development policy framework was developed for Greener Pathways to guide US state governments in moving forward with green jobs strategies. The policy framework also provides useful guidance for emerging Canadian strategies, so we have presented it here for your consideration²⁴:

1. Define and target specific green jobs

Any green jobs initiative will need to identify the green jobs on which to focus. Without definition — a list of green industries and/or a list of high-demand occupations — initiatives will be too diffuse and success impossible to determine.

Definition and focus can be established by the province, or determined by local stakeholders within parameters prescribed by current labour market information. Targets might be identified as key occupations that directly respond to climate action plans, or occupations that support the development of new green industry. But remember, there is an enormous range of green industry — from clean tech to renewables and efficiency, to alternative fuels, and beyond. And cutting across these industries, there is research, manufacturing, construction, maintenance, and many other sectors.

Provinces need to determine their comparative advantage, focus their initiatives on clusters that make most sense for a particular region, and use that to guide tightly focused workforce development efforts, keeping in mind not only the economic, but the political dimensions of green jobs.

2. Use good data to drive green jobs initiatives

When targets are defined, the work is just beginning. Successful workforce and economic development demands detailed labour market analysis. Provinces need to understand targeted green industries at the level of regional economies: what are the occupations, wage and benefit structures, and projected job growth? What are the education and skills requirements of these jobs? Further, they need to evaluate the employment and training delivery system at a regional level, identifying training gaps for identified jobs, curriculum development needs, and potential pathways in green careers.

3. Plan up front to measure green jobs programs and make them better

Green job training is new. We need to figure out what works and what does not. And because demonstrated results build both economic success and political credibility, provinces need to build meaningful performance measures and a serious evaluation component into every green jobs initiative.

²⁴ *Greener Pathways: Jobs and Workforce Development in the Clean Energy Economy*. Sarah White & Jason Walsh. The Centre on Wisconsin Strategy, the Workforce Alliance and the Apollo Alliance. 2008.

4. Employ energy standards as green job creation tools

Standards are fundamental to the orderly development of markets for renewable energy and energy efficiency industries. But they cannot single-handedly promote the development of regional green economies, or offer any guarantee of job quality. To nurture the creation of sustainable, high-road jobs, provinces need to pursue the sort of intentional growth strategies outlined below.

5. Maximize green and community benefits by requiring them

The prevailing provincial economic development strategy of firm-by-firm recruitment is well under way for green industries, and it seems unlikely that this policy approach will go away anytime soon. But tax subsidies for new energy industries should be connected to prevailing wage/benefit, job creation, and other labour standards; linked to community benefit agreement provisions, like first-source hiring and funded apprenticeship programs; and contingent on transparency and reporting requirements, with claw-back agreements if necessary.

6. Promote green industry clusters

Beyond subsidies and smokestacks, a complete green jobs strategy will employ a broad range of economic development levers: venture capital funds, business incubators, and loans or grants targeting clean energy clusters. Clusters, as opposed to individual firms, will be the engine of 21st-century economic growth. Provinces can help generate “virtuous circles” of innovation and growth by supporting networks of complementary and competing firms through investments in joint marketing, the commercialization and diffusion of new technologies, and workforce training partnerships.

7. Save existing jobs and create new ones through green innovation

Not all green jobs are new jobs, per se. Current jobs can be saved, and new ones created, by helping industries retool for the new energy economy. Manufacturing conversion underlies a key aspiration of the new energy economy: revitalizing the industrial heartland in a manner both equitable and green, re-extending its promise of worker advancement while reversing its legacy of environmental degradation. Supply chains in declining industries can be realigned to feed green ones. Provinces will need to partner with labour and local intermediaries to determine an appropriate role in this transformation.

8. Link green economic and workforce development

As local leaders step forward to champion green jobs and green economies, it is critical that provinces develop concrete plans to connect the two. Worker training programs for renewable energy and energy efficiency industries must be explicitly linked to economic development and job creation programs. The danger is that communities will rush to create green workforce development programs, producing skilled workers for jobs that do not yet exist in sufficient number or permanence. A green career pathway has a job at the end of the road.

9. Construct green industry partnerships

Green jobs initiatives should create or expand on regional partnerships organized by industry sector. Including management and labour, technical colleges, workforce investment boards, community-based organizations, and economic development agencies, such partnerships can undertake infrastructure and market analyses critical to green industry development and, at the level of regional labour markets, the sorts of workforce capacity analysis called for above. Indeed, green-sector partnerships will be critical in directing scarce training resources to efficiently narrow the substantial and growing gaps between workforce supply and workforce demand.

10. Integrate green jobs initiatives into existing workforce systems

Just as green jobs programs must take close note of the particular economic landscape they inhabit, it is essential that green-collar job training initiatives not develop as stand-alone, “boutique” programs divorced from broader workforce development efforts. The best way to prepare a green-collar workforce is to build on the full breadth of the provincial and local workforce development system through partnerships that leverage and align existing employment and training programs and resources toward green job ends.

11. Build greener career pathways

Working through the industry partnerships mentioned above, green workforce development should seek to develop career pathways — or add green skills to existing ones — whenever possible. Green jobs programs should support workers entering the industry with basic skills, but also serve workers at any stage in their career, helping them advance in pay and skills. This systemic framework is called career ladders or career pathways and, when fully realized, it allows workers with relatively low skills to combine work and learning in an accessible path upward to secure and sustainable employment.

12. Extend green ladders to build real pathways out of poverty

When greening career pathways, provinces should focus explicitly, though not exclusively, on first steps and early bridges from basic skills to better paying jobs. Indeed, an anti-poverty emphasis should be central to any provincial green jobs initiative — one that includes the un- and under-employed, the poor who are dissociated from labour markets, and incumbent low wage workers in need of advancement. This is a high-road approach, at once just and instrumental. Given the nation’s persistent economic inequities, some portion of limited funds should be targeted to those who need assistance the most.

Suggested Directions

Public interest and discussion about green jobs in Newfoundland and Labrador is growing – yet our collective knowledge and understanding of the green economy and its potential role for our workers and communities (opportunities, benefits, and challenges) is still limited. The Newfoundland and Labrador Federation of Labour prepared this discussion paper to build our understanding of the emerging green economy so that we can engage in a discussion with members and other stakeholders about the merits of developing a green jobs strategy for our province. In doing so, we know there is more work to be done:

1. As a next step, we will seek input from our members and other organizations to guide our actions in this area.

Organized labour in other Canadian and US jurisdictions has been a leader in shaping the green economy to ensure that it fosters quality jobs and sustainable communities. Recognizing this fact, and acknowledging that there is an opportunity to better understand and position ourselves for green jobs here at home:

2. We further recommend that the Newfoundland and Labrador Federation of Labour be a catalyst in forming a multi-stakeholder Green Jobs Task Force to develop a green jobs workforce development strategy that supports the workers and the people of our province.

The proposed Newfoundland and Labrador task force draws from the State of Minnesota's successful Green Jobs Task Force, which has actively engaged labour in developing a groundbreaking green jobs strategy for this northern US state which is already generating positive results. (Visit www.mngreenjobs.com for more information). As an early step related to the establishment of a Green Jobs Task Force:

3. We recommend that a Green Jobs Summit be convened here in Newfoundland and Labrador – to draw upon the experience and knowledge of our people, and to learn from other Canadian and US jurisdictions that are well down the road with their green jobs strategies. Such a summit would act as a catalyst to help mobilize the necessary knowledge, partnerships, and action to move our province down a green path of our own making.

Finally, in recognition that energy efficiency is a leading green jobs opportunity in our province:

4. We recommend that the Newfoundland and Labrador Federation of Labour seek membership in the Energy Conservation and Efficiency Partnership (ECEP) announced in Newfoundland and Labrador's 2007 Energy Plan. The ECEP will develop a coordinated, prioritized, 5-year Energy Conservation and Efficiency Plan – and the \$5 million ECEP fund will assist with energy conservation and efficiency initiatives.

Questions for Discussion

Having reviewed this discussion paper on green jobs, the Newfoundland and Labrador Federation of Labour invites you to consider the following questions based on your knowledge and experience.

Your responses to these questions will help us begin the process of growing a greener economy that provides quality jobs and sustainable communities for the people of Newfoundland and Labrador.

1. Can you identify existing green jobs in your community?
2. Are there existing jobs that could become 'green' if changes were made?
3. Overall, what are the key green job growth opportunities in your community? In our province?
4. What strategies are needed to grow the number of quality, green-collar jobs?
5. Who should be involved in a green jobs workforce strategy?
6. Do you support the suggested directions recommended by the NL Federation of Labour?
7. Do you have other recommendations for a NL green jobs strategy?