

Profitwise

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Goes Green!

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Profitwise

News and Views

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Goes Green!

An Introduction to the September 2009 Special Edition

The theme of this edition of *Profitwise News and Views* (PNV) is the “green economy” and the ramifications of new trends in renewable energy and environmentally focused development for the Midwest region.

Our first article, by Dan DiFranco, “From Pathways to Policy: An Overview of Green Collar Jobs Advocacy,” discusses the outlook for environmentally friendly renewable energy industries from the standpoint of job creation and career paths. A great deal of study and infrastructure development is taking place among government agencies, at universities, and organizations devoted to workforce development, and this article probes some of these efforts.

The second article, by Britton Lombardi and Martin Lavelle,



summarizes a November conference that explored the economic value of fresh water in the Great Lakes region, and the importance of ensuring that these bodies of water are clean and preserved for future generations. The relative scarcity of fresh water in many regions of the country may lead to economic resurgence near the Great Lakes, and there is strong potential for industries involved in developing water

treatment technologies in particular, but fresh water demand may deplete the lakes, and compromise economic growth. This article considers some of these competing factors.

Finally, our Around the District section provides some brief snapshots of policy and market responses to calls to foster environmentally sound industries (most notably renewable energy) in the Reserve District’s five states.

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From Pathways to Policy: An Overview of Green Collar Jobs Advocacy

by Daniel DiFranco

Introduction

The term “Green Collar Job,” for many of those who use it, represents more than a label describing environmentally friendly occupations. In particular, the expression tends to evoke a hopeful vision of economic development that combines inclusive prosperity and environmental stewardship in complementary ways. Yet even supporters who admire the term’s ability to inspire acknowledge its ambiguity and unwieldiness from a technical perspective.¹ Others have even wondered whether the phrase is anything more than a “trendy term for politicians and others to bandy about.”²

While a precise definition of the term is difficult, the ways that workforce development professionals and environmental advocates respond to its call are nevertheless worth exploring. As such, this article presents the key aspects of “Green Collar Jobs Advocacy.” Specifically, this article illustrates why and how advocates strive to promote a low-carbon energy infrastructure through legislation, and create programs that link workers to careers with future growth potential in the process.

Underpinnings of the green collar job vision

The notion that inclusive prosperity and environmental protection in the form of reduced greenhouse gases (GHGs) are compatible goals rests on the idea that the renewable energy and energy efficiency (RE/EE) industries are highly capable of generating middle-skilled, family-supporting jobs

with career pathways. The authors of a joint report by the Center on Wisconsin Strategy, Workforce Alliance, and Apollo Alliance, for instance, suggest that jobs in the retrofitting industry are comparable to those found in the residential building construction industry, and thus offer “ample opportunity for entry-level labor with potential advancement into solid middle-skill employment.”³ Accordingly, one might expect 75 percent of retrofitting jobs to pay at least \$10 per hour, based on an overview of a representative set of construction jobs (see figure 1).⁴

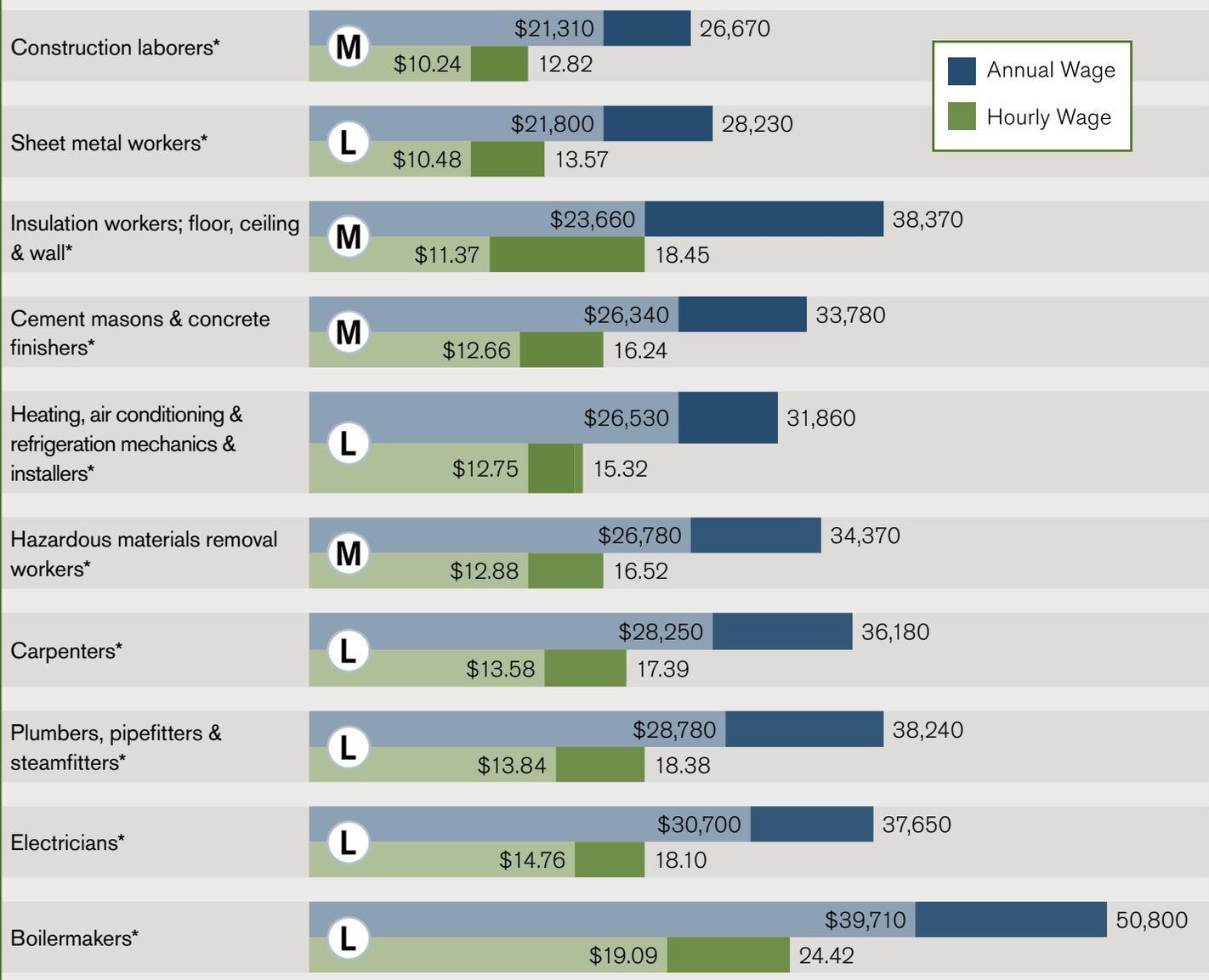
In addition to family-supporting, middle-skilled jobs, advocates also point to green industries as a viable way to create entry-level opportunities accessible to persons with barriers to employment. Raquel Pinderhughes, director of San Francisco State University’s Urban Studies program, supports this notion in a case study that examines 22 clean-environment industries in the San Francisco Bay area. Of the employers she surveyed, 86 percent indicated hiring workers without direct experience, and 94 percent said that they provided on-the-job training, which could lead to more highly-skilled opportunities. Moreover, several of these employers did not require background checks or a high school diploma, instead citing practical soft skills (e.g., dependability,

conscientiousness), and a positive attitude towards work as important factors for success.⁵

According to some reports, RE/EE industries are – under the right set of policies – capable of producing high quality jobs in large numbers. An industry-by-industry overview prepared for the United States Conference of Mayors and the Mayors Climate Protection Center, for example, predicts that the number of jobs related directly and indirectly to renewable power generation, renewable transportation fuels, and residential and commercial retrofitting could increase from 750,000 in 2006 to 4,214,700 by 2038, if the U.S. were to adopt a 40 percent Renewable Portfolio Standard (see figure 2A and 2B, page 4). The authors of the study highlighted wind power in particular as a largely untapped resource. Specifically, the American Wind Energy Association indicates that wind – which accounted for only 10 percent of renewable energy in 2006, but which has



Figure 1: Potential New Green Jobs 2038 – U.S. Total



Source: *Greener Pathways*, based on data from the U.S. Bureau of Labor Statistics.

Notes: This chart depicts national wage data for selected middle-skill occupations in the residential building construction industry.

- The 25th percentile describes wages at the lower end of the labor market.
- Median wage marks the center of the wage distribution in a given occupation.

Italics indicate that BLS projects faster than average growth for this occupation across all industries over the next decade.

* In-Demand occupation per DOL, regardless of overall occupational growth levels, because the work is central to a high-growth industry, like energy or construction.

Regional wage ranges and more precise occupational projections by industry can be run on a state-by-state basis.

Typical education and training path:

- (M) Moderate-term on-the-job training:** Requires from one to twelve months of training, which typically occurs at the workplace.
- (L) Long-term on-the-job training:** Requires more than one year of on-the-job training, or combined work experience and classroom instruction, and may include apprenticeships of up to five years.

These are general indicators; there may be other pathways into the occupation, as well as additional educational, training or licensing requirements.

Figure 2A: Green Jobs by Major Category – U.S. Total

Renewable Power Generation	127,246
Agriculture and Forestry	57,546
Construction & Systems Installation	8,741
Manufacturing	60,699
Equipment Dealers & Wholesalers	6,205
Engineering, Legal, Research & Consulting	418,715
Government Administration	71,900
Total	751,051

Source: U.S. Metro Economies—Current and Potential Green Jobs in the U.S. Economy.

Figure 2B: Potential New Green Jobs 2038 – U.S. Total

	2018	2028	2038
Renewable Power Generation	407,200	802,000	1,236,800
Residential & Commercial Retrofitting	81,000	81,000	81,000
Renewable Transportation Fuels	1,205,700	1,437,700	1,492,000
Engineering, Legal, Research & Consulting	846,900	1,160,300	1,404,900
Total	2,540,800	3,481,000	4,214,700

Source: U.S. Metro Economies—Current and Potential Green Jobs in the U.S. Economy.

quintupled in size over the past decade – currently generates less than .5 percent of its full 10,777 billion kW-h estimated potential (see figure 3, page 5). Moreover, the Department of Energy also suggests that hydropower generation, which as a more established energy source produced 77 percent of alternative electricity in 2007, could roughly double by investing in “Small Hydro” projects.⁶

Green collar jobs advocacy and workforce development

While the success green collar jobs enthusiasts have had with bringing national attention to their cause is relatively recent, the actual practices, which they are working to promote, are already taking place, to some degree, at the local and state level. With

respect to that component of green collar job advocacy that focuses on linking middle-skilled workers with rewarding careers in low-carbon industries, for example, Columbia Gorge Community College in Oregon has been experimenting with curricula intended to prepare wind turbine technicians for work in the State’s Windy Columbia Valley Gorge. Their six-month pilot program, which grew out of a 2006 partnership between local employers, educators, and community development intermediaries, and which has led to the development of a one-year certification program in Renewable Energy Technologies, placed 22 of its 24 graduates – nine of whom were displaced workers from the local aluminum industry – into jobs that paid \$20-24 per hour.⁷

Complementing programs aimed at providing seasoned workers with advanced skills, programs like Greencorps Chicago focus on connecting less experienced persons with entry-level positions. Admission to the program, which trains approximately 50 individuals as community gardeners for projects that it also helps to facilitate, is officially open to Chicago residents 18 and over, but is in particularly high demand among under- and unemployed persons. Patricia Lee, a project coordinator with a background in horticulture, notes that helping individuals acquire the communication and other soft-skills necessary to adapt to the day-to-day demands of employment can be a challenge, especially for those who have limited work histories or have been out of work for extended periods of time. While attrition is significant, Lee cites the program as an overall success insofar as it gives “people a chance who perhaps have not been given chances before,” and “helps them learn technical skills as well as professional skills that they can take on to whatever industry or field that they’re interest in.”⁸

While Greencorps and other entry-level oriented programs tend to prioritize soft-skill development as a means for entering the overall workforce, what stands out most within the technical skill development literature are the importance of career-ladders, as well as the partnerships essential for forming them. For many workforce development professionals, a well-defined career ladder – an ordered sequence of jobs that utilize skills which build upon each other, ideally within a well-structured educational and support system – is key for ensuring growth opportunities. In order for this to occur, however, program architects require detailed knowledge of the industries for which they are preparing prospective workers. Therefore, green collar job advocates also tend to emphasize the role of public-private partnerships, through which employers may communicate to educators the skills necessary to

advance in a given field, as well as insight into how those skills interrelate.

It is interesting to note that these themes, while certainly a prominent feature of green workforce development, do not necessarily set clean-energy training strategies apart from educational approaches in other industries. Indeed, many of the panelists who attended the Chicago Federal Reserve's 2007 Worker Mobility conference repeatedly identified partnerships as a way to "help leverage resources, build capacity, improve flexibility, foster creativity, and improve outcomes."⁹ Thus, as demonstrated by the Washington State Workforce Training and Education Coordinating Board's plan to add a Green Skill Industry Panel to its already existing array of Skill Panels, developing RE/EE training programs is often a matter of adapting training methods used in different industries.¹⁰

Perhaps what does distinguish green collar workforce development from efforts in other industries is the gap between the training infrastructure's current state and its full potential. Dr. Victoria Cooper, director of the Environmental Technology Program at Wilbur Wright City College in Chicago, for example, believes much work needs to be done from a career-ladder perspective. In contrast to other fields, like nursing, in which the ladder "is really spelled out and has been researched and documented," she says, "...we really don't have that model yet for green collar jobs, and that's exactly what we're working on right now."¹¹

In addition to the need to flesh out career ladders that connect entry-level workers with more highly skilled opportunities, advocates also cite as a major challenge the need to bring current training efforts to a scale capable of meeting employer demand. A widely referenced review of technical literature by the National Renewable Energy Laboratory, for example,

Figure 3: U.S. Wind Energy Potential - Top 20 States (Billions of Kilowatt Hours Annually)

North Dakota	1,210	Colorado	481
Texas	1,190	New Mexico	435
Kansas	1,070	Idaho	73
South Dakota	1,030	Michigan	65
Montana	1,020	New York	62
Nebraska	868	Illinois	61
Wyoming	747	California	59
Oklahoma	725	Wisconsin	58
Minnesota	657	Maine	56
Iowa	551	Missouri	52

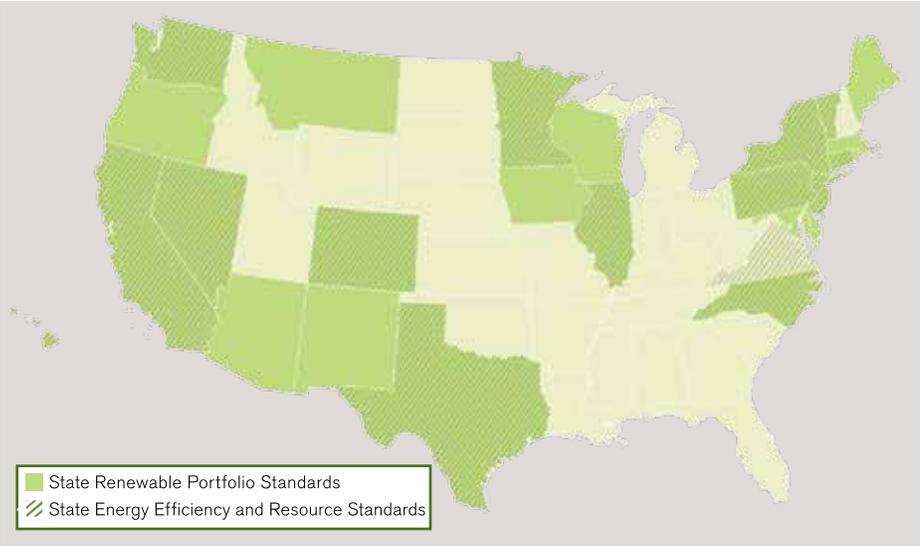
Source: *U.S. Metro Economies—Current and Potential Green Jobs in the U.S. Economy*, based on data from the American Wind Energy Association.

identifies the "lack in the workforce of adequate scientific, technical, and manufacturing skills required for RE/EE" as a recurring concern among energy policy experts,¹² a problem which advocates say will only get worse as baby boomers exit the workforce en masse.¹³ As a result, rather than starting from scratch, advocates advise placing special focus on equipping incumbent workers with green skills, and updating existing educational programs to include RE/EE coursework. Funding strategies are often aligned with this principle; the wind industry partnership mentioned earlier, for example, was financed in part by the state's Employer Workforce Training Fund for incumbent workers.¹⁴

Green collar job advocacy and energy policy

There is general agreement among practitioners that successful training partnerships must address market demand, and green workforce development is no exception. However, the full scope of green collar job activism includes not only an effort to promote programs that respond to the demand for green skills, but also an attempt to shape and catalyze demand through policies that encourage the growth of low-carbon industries.

While the legislative proposals currently in circulation among green job sympathizers are too numerous and technical to explore here, two of the more prominent ones bear mention. Renewable Portfolio Standards (RPS), for example, are market-based mechanisms through which states have been reducing greenhouse gases and supporting the growth of the renewable energy sector. These policies, which already exist in 30 states in various forms (see figure 4), work by first setting a jurisdiction-wide minimum percentage of energy that must be derived from green sources by a specified date. The subsequent targets are then achieved by requiring major utility suppliers to purchase credits – in this case, proofs of renewable energy production which may be sold separately from the actual underlying energy – in a quantity proportionate to their overall sales.¹⁵ In order to moderate the price of these credits and thereby increase the targets' achievability, RPSs are often implemented in conjunction with Energy Efficiency and Resource Standards (EERS) – which aim to decrease overall energy consumption through a similar commoditization of end-user energy savings – as well as Production Tax Credits, which seek to expand renewable energy capacity.¹⁶

Figure 4: Energy Efficiency Resource Standards

Source: *Greener Pathways*, based on data from the American Council for an Energy-Efficient Economy.

Furthermore, organizations like the Center for American Progress (CAP), a Washington-based liberal think tank, are working to enact a national GHG “cap-and-trade” policy similar to the one that exists for sulfur emissions. Cap-and-trade systems bear resemblance to RPSs insofar as both rely on the trading of credits to achieve an aggregate target; however, there are several important ways in which the two systems differ. In particular, whereas credits under the RPS model correspond to a variable supply of kilowatt hours of electricity derived from renewable methods, credits under the cap-and-trade model relate to CO₂ emissions permits (in metric tons), the supply of which is predetermined by the governing policy. The systems also differ in terms of who participates in each market: while RPS credits are purchased by utilities and sold by qualified renewable energy providers, cap-and-trade credits are purchased by major GHG emitters, and are sold by a central authority to the highest bidder.¹⁷

Proponents argue that implementing systems like RPSs and cap-and-trade on an economy-wide basis, along with direct assistance in the form of

subsidies and tax breaks, would encourage investment in RE/EE technology by allowing green businesses to compete more effectively against “brown” energy providers in the short term, and thereby increase the pace of innovation necessary for lowering energy costs in the long term. Several reports indicate that such investment would in turn translate into significant job creation: the Apollo Alliance, for instance, claims that \$300 billion in federal investment spent over 10 years would add 3.3 million jobs to the economy, increase the Gross Domestic Product by \$1.4 trillion, and would more than pay for itself through increased tax revenue.¹⁸ Similarly, the University of Massachusetts Political Economy Research Institute issued a report that frames the CAP’s 10 point GHG reduction proposal – the centerpiece of which is a national cap-and-trade policy – in terms of a stimulus plan. According to the study, 2 million jobs could be created in two years by using the proceeds from permit sales to fund \$100 billion in tax credits, direct spending, and loan guarantees for six RE/EE industries.¹⁹

Skeptics of the movement

In contrast to the view that policies which enhance the competitiveness of low-carbon industries go hand-in-hand with improving opportunities for middle-skilled workers and persons with barriers to employment, some skeptics have voiced concerns that the benefits of such measures would be more than offset by job losses to other industries. For instance, William Yeatman, an energy policy analyst at the Competitive Enterprise Institute, a Washington based free market think tank, claims that RE/EE-friendly plans like the one proposed by New Jersey Governor Jon Corzine – which includes a proposal to implement a state-wide 20 percent RPS by 2020 – “would create some jobs constructing wind turbines, but it would also drive away employers by making electricity more expensive.”²⁰ A critique of the Lieberman-Warner Climate Security Act – a bill designed to reduce GHG emissions by as much as 19 percent below the 2005 level by 2020 and 63 percent below the 2005 level in 2050 vis-à-vis a cap-and-trade mechanism²¹ – lays out a scenario consistent with these concerns. According to the Charles River Associates assessment, a mismatch between the timing of the bill’s provisions and the pace of technological improvement would lead to spikes in energy prices as well stunted job growth – nearly 4 million fewer net jobs in 2015 compared to a baseline scenario which includes only existing policy – even after taking into account the creation of green jobs.²²

Further, while the notion of global warming is widely accepted, some critics of GHG regulation question the plausibility of reversing the trend. According to a letter sent to the United Nations Intergovernmental Panel on Climate Change, the answer to this question is an unqualified “no”: the letter’s signatories – which include the late Reid Bryson, an influential University of Wisconsin-Madison climatologist well-known for his skepticism of anthropogenic global

warming – explicitly state that “It is not possible to stop climate change, a natural phenomenon that has affected humanity through the ages,” and that “the current UN approach of CO² reduction is likely to increase human suffering from future climate change rather than to decrease it.”²³ Rather than pursue a costly path aimed at preventing “inevitable natural climate changes,” the letter continues, “National and international planning for such changes is needed, with a focus on helping our most vulnerable citizens adapt to conditions that lie ahead.”²⁴

In testimony before the Senate Committee on Environment and Public Works, Kenneth Green – a resident scholar for the American Enterprise Institute – elaborated upon what he believes such an “adaptation” approach should entail. Specifically, adaptation would mean making cities more tolerant of extreme weather conditions, ending insurance “subsidies,” which make it financially viable for people to live in flood-prone and hurricane-prone areas, and encouraging wealth growth abroad in a way that would allow foreign countries to put less strain on their own ecosystems, among other things. While Green may be in favor of implementing a “modest, revenue-neutral carbon tax,” his version of adaptation otherwise steers away from the large-scale proposals favored by green jobs proponents.²⁵

Conclusion

The optimistic message underlying green job activism has certainly resonated among Americans in a way that defies traditional divisions. To illustrate, September 27, 2008, marked a day in which more than 100,000 individuals from all walks of life signaled to lawmakers their readiness for “green jobs now” by participating in 650 local rallies across all 50 states.²⁶ Interest in green collar jobs has also impacted the national legislative agenda: in December 2007, for example, former president George W. Bush signed into law the Green Jobs

Act, which allocates \$125 million per year for green skills pilot programs, 20 percent of which is dedicated to creating “green pathways out of poverty” for disadvantaged workers.²⁷ Likewise, lawmakers were in part motivated by employment considerations when they modified last October’s Emergency Economic Stabilization Act to include provisions that extended a series of renewable energy production and investment tax credits that would have otherwise expired this year.²⁸ Though green collar job advocacy certainly has its critics, this momentum seems likely to grow, as it becomes increasingly clear that efforts to stimulate low carbon industries will play a major role in the Obama administration’s plan to revive the economy.

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Biography

Daniel DiFranco is an associate economist in the Consumer and Community Affairs department of the Federal Reserve Bank of Chicago. He is responsible for providing statistical analysis, and research assistance for projects that support CCA's core mission: promoting community development through fair access to credit and financial services. Mr. DiFranco holds a B.A. in sociology from the College of the Holy Cross, and an M.A. in applied economics from the University of Michigan.

Fresh Water and the Great Lakes Economic Future: *A Conference Summary*

by Martin Lavelle and Britton Lombardi

On November 10, 2008, the Federal Reserve Bank of Chicago's Detroit Branch hosted a conference to examine fresh water's role in the economic future of the Great Lakes region. Participants discussed policy, development, and restoration issues involving the region's abundant freshwater resources.

The conference had three main objectives. One was to look at the key drivers of growth in the Great Lakes region,¹ particularly the attractiveness of its natural amenities such as fresh water and forests. The second was to debate the costs and benefits associated with cleaning up the region's abundant open waters and with building residences and businesses near them. The third goal was to discuss how industries, especially those based on water treatment technologies, might be able to further transform the region.

To start the conference, William Testa, Federal Reserve Bank of Chicago, discussed different opinions about fresh water's role in the future of the Great Lakes economy. Many believe there will be an economic resurgence in the Great Lakes region because of water's scarcity in other parts of the country. However, others fear that such water demand will lead to the diversion and depletion of the region's freshwater resources.

The recently finalized Great Lakes–St. Lawrence River Basin Water Resources Compact, signed by President George W. Bush in October 2008, imposes rules on further water withdrawals while requiring states to take up new management and conservation programs. Testa said the compact “gives the region some assurance that it can plan to preserve and develop its natural advantages of abundant water in ways that secure a brighter future.” Testa went on to explain that the Great Lakes region has multiple (though sometimes competing) sets of policy options. One set focuses on the preservation and cleanup of the Great Lakes; this set includes all related regulations and land use and water consumption policies. Another set involves infrastructure and economic development programs originated by communities to promote the recreational and residential uses of Great Lakes waters. An additional set includes the region's strength in freshwater treatment technology, generated in many instances by strict regulations intended to improve the water's quality. These regulations, Testa noted, have spawned an increase of water treatment firms, as well as university-level research in related fields, throughout the region; such businesses and intellectual capital could put the Great Lakes region at the forefront of freshwater technology.

Growth driven by natural amenities

Mark Partridge, Ohio State University, kicked off the first session by focusing on the effects of natural amenities (e.g., climate, water, and landscape) on U.S. migration patterns. Partridge noted that, although about 50 percent of those who migrate do so because of good job opportunities, the other 50 percent move because they are drawn to certain natural amenities. In his research, Partridge found that weather is a key factor in “amenity-led migration.” (Water played a significant role only in migration to rural areas, he stated.) Between 1950 and 2000, the fastest population growth occurred in warm weather locations, i.e., the Sun Belt. However, between 2000 and 2007, amenity-led growth in the U.S. also occurred in colder areas, which seems to show that some people prefer colder climates and the associated winter recreation. This trend was evident in the upper Great Lakes region. As places with warmer climates started to get crowded and their housing prices increased, some people looked to other areas with alternative types of natural amenities and lower housing costs. For the Great Lakes region, fresh water and the surrounding natural environment may support population growth and attract businesses that require significant

amounts of water as an input (e.g., those in the food industry). Therefore, Partridge recommended that the Great Lakes region focus on maintaining and improving the natural amenities, as well as creating job opportunities, to best leverage the recent migration trends toward colder and less crowded areas with less expensive housing.

Cost-benefit analysis of Great Lakes restoration

John C. Austin, New Economy Initiative for Southeast Michigan, argued that fresh water could play a critical role in the Midwest's emerging knowledge-based economy. Austin pointed out that the Midwest has contributed much talent and many new ideas (observed in the number of patents awarded to the region), but it has the resources to do even more. With its network of research universities and associated firms, he argued, the Great Lakes region could become the education center for water conservation techniques and sustainable methods using water as an energy source.

Austin alluded to the “magic” appeal of water, by which he meant that water has some undefinable quality that attracts people. Because of this factor, Austin contended that water can be an economic good for the region through such various avenues as recreation and tourism, waterfront development, and freshwater technology research. To support this idea, Austin referenced a Brookings Institution report² that found a \$25 billion cleanup of the Great Lakes region would yield an \$80 billion to \$100 billion payoff. The Great Lakes restoration can have a real economic impact by helping the region become a “special” place where individuals want to live and compete globally, but transforming this region into the “Freshwater Coast” requires a cleanup of its environment and natural resources and significant improvements in infrastructure.

John Braden, University of Illinois at Urbana-Champaign, also talked about

the costs and benefits of a Great Lakes restoration. In the Great Lakes–St. Lawrence River Basin, which lies in both the U.S. and Canada, 40 areas of concern (AOCs) require significant investment to be restored. Of the \$250 million authorized in the Great Lakes Legacy Act, 50 percent has been appropriated for cleanup purposes. Yet, some question whether the attendant restoration efforts will fully offset the losses in economic value from the accumulated contamination to the Great Lakes region. Braden studied the costs of contamination by measuring the losses in the value of homes in and around the contaminated areas as an indicator. For 23 U.S. AOCs,³ Braden estimated that the homes' cumulative loss in value was \$1.7 billion.⁴ Although the costs of cleanup range from \$1.5 billion to \$4.5 billion, remediation alone may not fully recover all the value lost. The restoration effort will ultimately be of little consequence if the additional policies to reverse the negative effects of contamination are administered poorly. Braden stated that the value-added features to an AOC turnaround might include the development of recreation, tourism, and commercial properties, as well as ecosystems.

David Albouy, University of Michigan, reminded conference participants in a follow-up discussion segment that, while clean natural amenities remain an important part of economic growth, other aspects of an area need to be enhanced as well. Albouy emphasized the importance of making cities' downtowns vibrant. To create urban vitality in the Great Lakes region, an injection of investment into cities' infrastructure may be needed. According to Albouy, individuals want a combination of a robust economy, natural amenities, and a strong local community—key components that make up an “attractive” place.

Recreation and retirement

In the second session, Steven Deller, University of Wisconsin–Madison, discussed recreation and retirement counties in the Midwest. These days,

more people are choosing to relocate at retirement, often so that they can enjoy a more active and healthier lifestyle. Retirees look for three different things: cultural amenities, warm weather, and natural amenities, such as lakes, forests, and mountains. Therefore, the northern third of Michigan and parts of Wisconsin and Minnesota have become popular retirement destinations for those desiring natural amenities. Older individuals' summer homes in these areas become their full-time homes during retirement. Some retirees choose to purchase lakefront property, while others have turned to buying small farms that no longer produce agriculture. Deller argued against the commonly held view that retirement and recreational areas are associated with poverty, even though they do tend to provide lower wages. Countering the notion of a “gray peril,” he noted that retirees support the local economy through their willingness to pay higher taxes and invest in local schools. Also, retirees do not drain the area's health care, he explained, because many of them relocate closer to their families as their health deteriorates.

Michigan's recreation and tourism

Don Holecek, Michigan State University, stated that Michigan has more miles of coastal water than any other state except Alaska, but Michigan ranked only 44th in state per capita direct travel spending in 1999. As Michigan's economy continues to weaken, Holecek argued, the state needs to look to its other resources, such as its extensive coastline and natural amenities to create a tourism industry like those of Nevada and Hawaii. Currently, the vast majority of Michigan tourism comes from midwestern residents. So, Michigan needs to expand its market to new domestic and international tourists. To successfully expand tourism, Holecek said, Michigan needs to overcome a few issues: Michigan needs to develop and modernize the infrastructure surrounding its natural amenities; allow more access for the public to its waterfront; and enhance water resource

protection. Lastly, Michigan still needs to develop an organizational and product delivery system – with strong political and economic backing – that will enhance and promote Michigan's natural resources for both recreational and environmental ends.

Urban waterfront revitalization

Ann Breen, The Waterfront Center, displayed numerous examples of cities worldwide reclaiming their waterfronts through redevelopment. Breen emphasized it takes a significant amount of time and investment to complete a waterfront project. Hartford, Connecticut, and Providence, Rhode Island, are examples of cities that overcame major obstacles to revitalize their waterfronts after their textile firms, which formed their main industry, moved manufacturing overseas. In general, Breen noted, each redevelopment project must begin by building an extensive awareness among the public to generate energy, interest, and support for the project. For example, one important step for Detroit's waterfront redevelopment was to post signs informing residents that they were, in fact, on the "Detroit Waterfront." In some cities around the world, developers have incorporated into their green spaces several sculptures and other structures that actually monitor the quality of the adjacent body of water. Breen also mentioned the increasing frequency of mixed-use projects, which combine housing and businesses along a waterfront, allowing each to support the other.

David Ullrich, Great Lakes and St. Lawrence Cities Initiative, brought to light the goals and key concepts of the initiative, which is a group of U.S. and Canadian mayors and other local officials who actively work to protect and restore the Great Lakes and St. Lawrence River. The initiative focused first on addressing the region's water quality and quantity, as well as the waterfront's vitality. Currently, over \$15 billion is being invested annually in the Great Lakes basin ecosystem—the majority of which is used to improve the

region's water quality. Doing this requires the removal of invasive species from the water. To improve water quantity, 33 cities have agreed to reduce water usage by 15 percent over the period 2000–2015. Waterfront development that preserves natural habitats, Ullrich said, reacquaints citizens with local natural amenities that in some cases have gone unnoticed because of industrialization.

Responsibilities of the Great Lakes region

John Cherry, Jr., the lieutenant governor of Michigan, delivered the conference keynote speech, noting the special obligations the region has to its economic asset, the Great Lakes. The responsibilities are to clean, protect, and enjoy the Great Lakes waters and teach the world how to "smartly manage a finite and increasingly valuable global resource." Cherry listed four goals the region must achieve in order to capitalize on the "magic" appeal of water. First, there can be no toxic or quarantined areas of water due to pollution or contamination. Second, beaches should remain open and allow public access and enjoyment. Third, the area's native fish should be abundant, safe, and edible. Finally, wetlands, dunes, and beaches should afford public access and enjoyment while filtering damaging sediments. Cherry cited a recent study that found that for every dollar invested in the Great Lakes' restoration, there would be three dollars in return (in terms of jobs and other economic gains) to the region. Research institutions throughout the region should be at the forefront of developing the water conservation, management, cleaning, and treatment technologies needed not only in the U.S. but across the world. Michigan and the rest of the Great Lakes region should lead the development of new freshwater technologies; by doing this, not only will they create new jobs, they will also generate more knowledge on water and sustainability issues that can be shared nationally and globally.

Clean water's industrial legacy

Like Cherry, Sammis B. White, University of Wisconsin–Milwaukee, argued that restoring and improving the Great Lakes will create new jobs. The Milwaukee region formed a regional water cluster called the Milwaukee 7, which helps address water quality and quantity problems. Effective water clusters utilize the experienced talent who work among the regional firms and collaborate with other water researchers to obtain financing for their projects. Milwaukee has firms of all sizes, including five of the world's 11 largest water companies, along with engineering schools and independent freshwater researchers. The Milwaukee 7 has identified some 50 regional water problems, generating momentum to find solutions; however, more public and governmental pressure must be applied.

The Milwaukee 7 faces numerous political, municipal, and technological challenges, White said. One important challenge is to speed the openness to innovation through competitive bidding and have more firms engage in the bidding process. The region can take more steps to build significant water clusters by pushing the U.S. Environmental Protection Agency to toughen water standards, promoting new biofuel initiatives, pressuring a federal decision on ballast water, and selling the solutions to its water problems to other regions and countries. Lastly, White observed that only \$15 million per year is devoted nationally to water research and development; this amount needs to be increased.

Gil Pezza, Michigan Department of Economic Development, spoke about the mission and strategy of the Michigan Economic Development Corporation's Water Technologies Cluster Initiative. The water cluster's mission is to position Michigan as a center of excellence for the development and commercialization of water technologies and management systems by leveraging Michigan's abundance of fresh water. In addition, the cluster will use Michigan's university-based research and development facilities and expertise,

advanced manufacturing capabilities, and environmental leadership and stewardship. The first step of the water cluster's main strategy is to uncover new technology needs. Once needs are established, the cluster identifies technology that is two to four years away from rollout and the associated companies that can fill the technological need. Then, the cluster helps bring together these companies and finds funding to facilitate full-scale project testing and, if this testing is successful, the eventual rollout of the new technology.

Austin, White, and Pezza went on to discuss the future relationship between industry and fresh water. They concurred on several goals that must be attained. First, existing water technologies must be studied and a working supply chain must be employed to complement these technologies. Next, permitting policies that contribute to water technology development should be fashioned. Then, the region must encourage research, development, and learning centers for new and sustainable technologies, which can transform the region's economy by attracting more people and funds. Also, water conservation practices must be built into the regional framework of the manufacturing, construction, and engineering economy. Austin, White, and Pezza concurred that, if competitive firms use their collective interest in freshwater technology and work together, such collaboration would benefit all participants. Lastly, state and local governments need to be on the leading, not lagging, edge of adopting green technologies and new regulatory frameworks for the environment.

Conclusion

This conference explored the policy, development, and restoration issues involving the Great Lakes region's abundant freshwater resources. Conference participants agreed that we must become better stewards of our natural amenities so that we can draw more residents, tourists, and businesses to the Midwest. Many agreed that improvements in infrastructure near our natural amenities would be required to

bring more people and firms here. Finally, there was great urgency and optimism surrounding the prospects for industries based on freshwater technologies, in coordination with universities and public entities, to contribute significantly to the region's economic development.

Notes

- 1 Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio, Pennsylvania, and New York border the five Great Lakes (Superior, Michigan, Huron, Erie, and Ontario), forming the U.S. portion of this region. Only the first six states are considered wholly within the Midwest. The Canadian province of Ontario also borders the lakes.
- 2 Austin, John C., Soren Anderson, Paul N. Courant, and Robert E. Litan. "Healthy Water, Strong Economy: the Benefits of Restoring the Great Lakes Ecosystem," Great Lakes Economic Initiative, Brookings Institution, Metropolitan Policy Program, September 2007.
- 3 There are technically 26 AOCs in the U.S., but Braden only studied 23 of them.
- 4 This loss in value was calculated by Braden for the residential properties in the 23 AOCs (with the exception of very large and overlapping cases), using 2000 median home prices and quantities within a two-mile radius.

Biographies

Martin Lavelle is an associate economist in the Research Department at the Federal Reserve Bank of Chicago's Detroit Branch. His research revolves around the Michigan economy, and its impact on the District and national economies. Specific topics include the auto industry, the U.S.-Canada border, as well as working on the District's contribution to the Beige Book. In addition to his research, he speaks to economics classes at area colleges and high schools. Lavelle received his B.S. in Business and M.A. in Economics from Miami University in Oxford, Ohio.

Britton Lombardi is an associate economist in the Economic Research department of the Federal Reserve Bank of Chicago. Her research focuses primarily on regional economic development topics; such as the migration of young professionals, and manufacturing job trends. Lombardi received a B.A. from Ohio Wesleyan University, graduating Phi Beta Kappa, and is currently pursuing an M.B.A. from the University of Chicago Booth School of Business.



Around the District

ILLINOIS

Partnerships transforming Illinois into a vital center of an emerging green economy

Throughout Illinois, public, private and nonprofit organizations have been working together to transform and meet the demands of the emerging green economy, including new employment opportunities. Below are some links to a few of the reports that could assist you, your local governments, and financial institutions to establish and implement green policies and programs.

The Delta Institute and affiliates' published its 59 page report, *Removing Market Barriers to Green Development: Principles and Action Projects to Promote Widespread Adoption of Green Development Practices*. The report describes six principles for removing market barriers to green development, and recommends action projects and next steps to address these barriers and to further support green development practices. The complete report can be found at www.delta-institute.org/marketbarriers.

Also, the Delta Redevelopment Institute and its partners are developing economic development strategies for the Chicago Metropolitan Agency for Planning (CMAP) for its

long-range plan (GO TO 2040 Plan). Delta's report is focused on green economic growth strategies for both emerging green sectors (e.g., green energy, green building products and services, waste recycling), as well as the greening of existing sectors. Goals, objectives, strategies, and indicators are included in the report to inform decisions throughout the region. The report is expected to be published in Summer 2009, and will be available for download at CMAP's GoTo2040 Web site, www.goto2040.org.

The city of Chicago and its partners have recently released the Guide to Completing an Energy Efficiency & Conservation Strategy. "Chicago's guide will help cities and counties to thoughtfully plan for long-term and sustainable energy efficiency and conservation, and maximize the opportunity the Energy Efficiency and Conservation Block Grant program planning dollars represent." Among other topics, the report covers model plan outlines, a planning process guide, and steps to completing a green jobs and economic development plan. The complete report can be found at www.cnt.org/repository/CHICAGOEECGUIDE4POST.pdf.

Another partnership initiative in Illinois includes the Chicagoland Green Collar Jobs Initiative (Initiative), which was founded with the intent of organizing stakeholders around the opportunities and resources around green collar jobs. The Initiative is a collaboration of partners from labor groups, community organizations, businesses, community colleges, sustainability organizations, and environmental and workforce development nonprofits. The mission of the Initiative is to facilitate the development of a skilled workforce that is ready to meet employer demands in the emerging "green" economy and to capture new employment opportunities for Chicagoland workers.

The Initiative explores and identifies "employment and job training opportunities to prepare workers for emerging green jobs related to sustainability, natural resource conservation and environmental related technology. The target audience for a new green collar jobs program includes: unskilled, unemployed or underemployed individuals, and incumbent workers requiring updated training for new technologies. They follow the philosophy of national program leaders, Green for All and the Apollo Alliance, by concentrating on green collar jobs as a

pathway out of poverty. The Initiative supports the development of green collar jobs that will focus on low-income, disadvantaged communities and developing career paths that lift people into head-of-household jobs." Additional information can be found at www.greencollarchicago.org.

INDIANA

Indiana is now home to Midwest's largest wind farm

After phase I of the Fowler Ridge Wind Farm in Benton County, Indiana is now fully operational. The first 400 megawatts of the project will generate enough carbon-free electricity to power approximately 120,000 average homes. Of the 400-megawatt facility, BP Wind Energy and Dominion are partners on approximately 300 megawatts being produced at what they call the largest wind farm in the Midwest. The two companies could expand the facility to a total of 750 megawatts in the future.

"The commercial operation of the Fowler Ridge I Wind Farm marks an important step for BP in helping Indiana increase its role as a provider of energy to support growing state and national demands. This wind farm will deliver over 1 billion kilowatt hours of clean, renewable electricity every year and brings new revenue streams to rural communities without impact on traditional farming and grazing practices. The cooperation of the landowners, county officials, contractors and sub contractors has been the key to the success of this project" said John Graham, president, BP Wind Energy.

The article above was excerpted and can be found by visiting www.insideindianabusiness.com/newsitem.asp?ID=35066.

IOWA

Alternative energy programs called "most important" by Iowa's governor

Iowa's Governor Culver continues to proclaim his commitment to alternative energy as his "number one priority." Pivotal to that commitment was the creation, in 2007, of the Iowa Power Fund, which was funded by \$100 million to use to stimulate investment in alternative forms of energy over that year and the following three years.

The legislation creating the Iowa Power Fund, which has an 18-member board, also created an Office of Energy Independence to administer the funds. The funds will be used to, "...leverage private investment and federal grants." Governor Culver recently stated that the, "...roughly \$30 million already spent on the Power Fund had leveraged \$190 million in federal funding along with private investment."

Iowa has been involved for almost a decade as a leader in alternative energy, including ethanol research and production, as well as wind energy. Culver hopes to see Iowa become, "...the energy capital of the world." The Consumer and Community Affairs division of the Federal Reserve Bank of Chicago has sponsored or co-sponsored more than eight conferences and symposia in Iowa since 1999 on the rural and agricultural economy in Iowa, culminating in recent years in focusing on alternative energy as a component of that economy.

In April 2009, the Iowa Alliance for Wind Innovation and Novel Development (IAWIND) received a \$3 million, three-year grant from the Iowa Power Fund. IAWIND is a collaborative project led by the University of Iowa College of Engineering, whose purpose is to "...help the state to attract wind energy companies and related industries in an effort to enhance Iowa's already high position as a U.S. leader in wind-generated energy. Last year, Iowa

captured the No. 2 national position in wind energy generation capacity."

The above includes excerpts from whotv.com, siouxcityjournal.com, and uiowa.edu. For more information, contact the Iowa Department of Economic Development at (515) 242-4700 or www.iowalifechanging.com/community/mainstreetiowa.

MICHIGAN

Michigan is No. 10 in clean energy jobs

Michigan is starting from a strong base as it strives to become a leader in alternative energy, according to a recent report. The state has the 10th largest number of clean energy jobs in the nation, with 22,674 jobs at 1,932 businesses in 2007, according to researchers at the Pew Charitable Trusts. Michigan clean technology businesses attracted \$55.1 million in venture capital investment from 2006 through 2008, ranking it 21st among all states.

The preceding was an excerpt from www.freep.com.

WISCONSIN

A culture of sustainability at Milwaukee's Urban Ecology Center

Milwaukee's Riverside Park is located just north of downtown Milwaukee, on the shores of the Milwaukee River, in the shadow of the University of Wisconsin–Milwaukee campus. Designed by the legendary Fredrick Law Olmstead, Riverside Park was once a destination for city residents and tourists alike.

By the mid-1980s, in an all-too-common story in urban America, the river was too polluted to use, and the abandoned park was a source of neighborhood crime that ran at more than double to the crime rate of the city. The story of how Riverside Park was reclaimed and renewed is a replicable

model of how a “culture of sustainability” can thrive in an urban setting.

Today the park is maintained as a nature center in the city. The Neighborhood Environment Education Program that helps students within a two-mile radius of the center improve their science skills and scores is augmented by a community program that encourages safe, unstructured “time in nature” for kids that will help them become life-long environmental stewards.

The 20,000 square foot Urban Ecology Center is a model of environmentally sustainable design and development: “Powered by sun, flushed with rain water, and made of recycled and reused materials, every detail was intended to model environmental behavior not as a demonstration but as a call to action,” according to Ken Leinbach, the Center’s executive director. For a complete history of the Urban Ecology Center and its programs, see Ken Leinbach’s article, *It’s Kind of Fun to Do the Impossible: The Story of Milwaukee’s Urban Ecology Center*, at www.colorado.edu/journals/cye.

For more information on the Urban Ecology Center’s current programs and future plans, which include creating a new Center in Washington Park (another Olmstead-designed park being reclaimed in central Milwaukee), visit the Center’s Web site at <http://urbanecologycenter.org>.

Foreclosures in Wisconsin:

Responses and Resources for Living Beyond the Bubble

This conference is a continuation of a series of events that have been held in Wisconsin to address the issues and concerns surrounding Wisconsin's increasing number of foreclosures. This day-long conference features:

- » An opening address by Milwaukee Mayor Thomas Barrett
- » A luncheon keynote address by U.S. HUD Deputy Secretary Ron Sims and
- » Panel discussions focusing on: the lessons learned from the first round of Neighborhood Stabilization Funds; court appointed foreclosure mediation; the impact of foreclosures on homelessness; and the future of housing finance.
- » \$45.00 (\$35.00 for nonprofit organizations)
- » Register at www.chicagofed.org/community_development/index.cfm

SAVE THE DATE:
November 5, 2009

SAVE THE DATE! November 4-5, 2009

NCIF Annual Development Banking Conference

The National Community Investment Fund (NCIF) invites you to join us again this year to listen in, share experiences and contribute to the future of the community development finance industry. As always, the Annual Development Banking Conference is focused on providing Actionable Strategies for Community Development Banks and Credit Unions that can be replicated to improve financial performance and enhance development impact. We are honored to have the Honorable John Dugan, Comptroller of the Currency and the Honorable Donna Gambrell, Director of the CDFI Fund, as the keynote speakers for this year's event.

For more information, and to register for the event, please visit www.ncif.org, or contact Joseph Schmidt at (312) 881-5817. **Advance registration is required.**

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