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# Trade Unions and Green Jobs in the post-Fordist Economy:

Just Rhetoric or a Fundamental Shift?

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Erik Kojola

2009 Politics Honors Thesis

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## **Intro**

Green jobs provide a chance to kill two birds with one stone- climate change and economic recession. A green economy that creates manufacturing and construction jobs while advancing environmental sustainability and mitigating climate change is a win-win situation for both the economy and the environment. Green jobs could be a solution to two of the most pressing political and social issues facing America and the world: global climate change and global economic downturn. Investing in renewable energy, public transportation and green construction would reduce carbon emissions and kick start the American economy by providing a source of good jobs and stable economic growth, not risky financial speculation. Economic growth would no longer be a trade-off with environmental protection, as the assembly lines of American factories could begin churning again to make products that help preserve the environment. A domestic source of renewable energy would also be a security issue as the U.S. would no longer depend on foreign oil and be subject to the fluctuations in oil prices. The calamity of climate change and environmental destruction creates an impetus to transform the dominance of neoliberalism and provides an issue around which a new progressive movement between unions, environmentalist and social justice activists can be built. The current moment of economic and environmental crisis creates an opportunity for political and economic change not seen since the 1970s.

Given the vast potential of a sustainable economy, green jobs has emerged as a popular buzzword with politicians, organizations and corporations all promoting the benefits of green jobs. Green jobs issues appear in newspaper headlines and magazine covers, as green jobs have become one of the latest hot issues. President Obama has been

speaking about green jobs and the economic stimulus package includes funding for green job training and green infrastructure and energy projects. So, if green jobs are so great, why are they not here? What will it take to develop a green economy with good jobs?

Despite all the rhetoric and potential for green jobs there has been limited analysis of what green jobs mean and how they fit into the larger American political economy and the study of politics and economics. In this paper I will seek to place green jobs within the larger study of political economy and the shifts in industrial capitalism, while raising the potential for green jobs to be a catalyst for change in the American regime of accumulation. Critically analyzing claims about green jobs requires determining the implications of green jobs and the impacts on organized labor, government policy and business strategy. This paper will explore how unions are mobilizing around green jobs and shifting their perceptions of environmental issues and building new progressive coalitions with environmental organizations. Green jobs could be used to promote reindustrialization, create decent employment, strengthen unions and develop alternatives to neoliberalism, but the positive rhetoric about green jobs also needs to be problematized as a green economy could continue to create exploitative jobs and enhance corporate power. Thus, it is important to determine what factors, conditions and actions are needed if a high road to green development is to be realized.

The paper begins with a look at the broader political economic climate, particularly the transition out of Fordism, theories about post-Fordism and the possibility of a new green direction for the economy. In the second chapter I try to define green jobs and determine which sectors have potential for green job growth. The third chapter provides a brief history of the relationship between unions and environmentalists and the

emerging blue-green alliances around green jobs. In the fourth chapter, I explore what unions hope to gain from a green economy, including job creation and union revitalization. In the fifth chapter, Ohio is used as an example of the potential benefits from a green economy for manufacturing in the former rustbelt. The sixth chapter provides some case studies of green jobs in manufacturing and renewable energy that have taken both high and low roads to development. The seventh chapter includes a discussion of government and union strategies for developing good green jobs. In the final chapter I conclude my analysis by positing if green jobs can be part of a high road post-Fordism and the potential for renewed American industrial policy and neo-corporatism.

## **1. Green Jobs within the American Political Economy**

### **I. Economic Shifts Since the 1970s**

Green jobs are not an isolated aspect of the American economy, but are embedded within the institutions and trends of the larger political economy. The production processes, working conditions and wages of green employment will be determined by political and economic factors beyond the job being green. Thus, understanding and analyzing the potential for green jobs, how they might be created and if they could be good jobs, will require looking at the wider context. One framework for understanding shifts in the political economy is the regulation school, including the work of David Harvey, which looks at long-term cycles of crisis and stability in the political economy through the role of institutions and norms in regulating the economy and containing contradictions in capitalism. Two key concepts are used: the regime of accumulation

which is the larger organization of the economy in a stable process of capital accumulation and the mode of regulation which are the norms, institutions and laws that help reproduce the accumulation regime.<sup>1</sup> This approach is useful for understanding the large-scale shifts since the 1970s as the American economy has undergone a shift away from the Fordist regime of accumulation of the post WWII era that was based upon mass production and mass consumption, large trade unions, Keynesian economic policies and fixed exchange rates. What has emerged is a political economy with flexible work arrangements, production for niche markets, increased focus on finance and neo-liberal government policies.<sup>2</sup> This shift has involved an increasing number of service jobs, declining real wages and the weakening of the American labor movement.

### The End of Fordism

The regulation school approach sees the economy as entering a crisis of underconsumption in the early 1970s, as the old regime could no longer provide a stable process for accumulating capital. The system of Fordism hit a crisis as international competition increased, markets became saturated, profits of American firms declined and the international financial order shifted, leading to rising inflation and unemployment. The American economy became internationalized and domestic business strategies became unprofitable. The financial system based on the Bretton Woods agreement came under increasing pressure and collapsed in the early 1970s, devaluing the dollar and

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<sup>1</sup> Ash Amin, "Post-Fordism: Models, Fantasies and Phantoms of Transition," in *Post-Fordism: A Reader*, ed. Ash Amin (Cambridge: Blackwell Publishers, 1995), 7-9.

<sup>2</sup> David Harvey, *A Brief History of Neoliberalism* (New York: Oxford University Press, 2007), 32, 33.



leading to more volatile exchange rates.<sup>3</sup> International competition increased as global capital became more mobile through deregulation and elimination of trade barriers, while rebuilding industrial economies, like Germany and Japan, rapidly adopted innovative production processes and competed with American companies.<sup>4</sup> In the post-war era production had become increasingly mechanized and uniform, which also allowed developing countries to catch-up with American manufacturers and compete with American produced goods.<sup>5</sup> Internally, domestic consumer demand was saturated with mass-produced goods and large companies with organized labor forces were losing profits to wages that outstripped productivity increases. Beginning in the mid 1960s returns on investment began to decline; the average real rate of return on investment was 15.5% in the early 1960s and by the beginning of the 1970s was 10.1%.<sup>6</sup> Harvey describes capitalism entering a crisis of over accumulation that lead to attempts at geographic, temporal and organizational fixes.<sup>7</sup>

### Rise of Neoliberalism

Out of the period of turmoil and global recession in the early 1970s, emerged a new economic regime dominated by neoliberalism, the decline of the welfare state and an increase in flexibility. Harvey argues that the capitalist system responded to crisis with

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<sup>3</sup> David Harvey, *The Condition of Post-Modernity* (Cambridge, MA: Basil Blackwell, 1990), 141.

<sup>4</sup> Jamie Peck and Adam Tickell, "Searching for a New Institutional Fix: the After-Fordist Crisis and the Global-Local Disorder," in *Post-Fordism: A Reader*, ed. Ash Amin (Cambridge: Blackwell Publishers, 1995), 290-1.

<sup>5</sup> Charles Sabel, *Work and Politics: The Division of Labor in Industry* (New York: Cambridge University Press, 1989), 194.

<sup>6</sup> Barry Bluestone and Bennett Harrison, *The Deindustrialization of America: Plant Closings, Community Abandonment and the Dismantling of Basic Industry* (New York: HarperCollins, 1982), 17.

<sup>7</sup> Harvey, *The Condition of Postmodernity*, 186.

increased debt and credit spending and a spatial expansion of global capitalism. The ideas of state intervention to regulate and stimulate the economy were replaced by deregulation and liberalization of trade and finance. The economy increasingly relied on finance as markets were deregulated and more companies turned to speculation, mergers and investments to accumulate capital rather than the actual production of goods and upgrading industrial infrastructure.<sup>8</sup> During the 1970s between 450,000 to 650,000 jobs in the private sector may have been lost due to “runaway shops.”<sup>9</sup> Meanwhile, countries like Germany and Japan continued to innovate with new technologies and work arrangements, like high-tech craft production.<sup>10</sup> Bluestone and Harrison argue that many U.S. companies responded to increased competition in the 1970s by trying to cut costs from wages and regulations rather than innovating.<sup>11</sup> Graham and Krugman argue that the increase in foreign direct investment in the U.S. over the last 30 years reflects industrial organization decisions and the erosion of U.S. superiority as foreign firms have technical and managerial advantages.<sup>12</sup> The state did little to intervene and protect domestic industry or manage development as the economy was increasingly left up to market forces.

The “new economy” is marked by decreased U.S. manufacturing, expanded use of information technology (IT), increased service employment and increased debt alongside lower wages and elevated insecurity. The American economy has shifted away from manufacturing; currently 1 in 10 workers are employed in manufacturing, down from 1 in

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<sup>8</sup> Harvey, *A Brief History*, 33.

<sup>9</sup> Bluestone and Harrison, 25, 41.

<sup>10</sup> Cohen and Zysman, 74.

<sup>11</sup> Bluestone and Harrison, 11.

<sup>12</sup> Edward M. Graham and Paul R. Krugman, *Foreign Direct Investment in the United States* (Washington, D.C.: Institute for International Economics, 1995), 41.

2 in the mid 20<sup>th</sup> century.<sup>13</sup> As plants closed and moved to areas with lower labor costs and lower taxes and regulations, both domestically and internationally, entire communities were left devastated and industry never returned. For workers who lose jobs to closing factories it often takes years to recover lost earnings and they often don't find comparable work<sup>14</sup> Meanwhile, there has been a rise in the number of service sector jobs, which have undergone the most rapid growth.<sup>15</sup> From 1996 to 2006 service employment increased 1.7% annually, with the largest gains in business, professional and education services, while goods-producing jobs fell by 0.4% annually.<sup>16</sup> IT and microelectronics have played an increasingly important role in the economy, helping create jobs in the growing fields of communications and business services and transforming production processes through the use of computer technology.

The manufacturing jobs that are left tend to be lower paying and fewer are represented by collective bargaining agreements.<sup>17</sup> Although productivity continues to increase, wages have not kept pace. From 1973 to 1995 productivity grew 1.4% annually and from 1995 to 2000 rose by 2.9% annually, but the benefits were not distributed equally.<sup>18</sup> Between 1947 and 1973 productivity and median family income grew together, but from 1973 to 2005 median family income grew at less than 1/3 the rate of

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<sup>13</sup> Stephen A. Sweet and Peter Meiksin, *Changing Contours of Work: Jobs and Opportunities in the New Economy* (Thousand Oaks, CA: Pine Forge Press, 2008), 25.

<sup>14</sup> Bluestone and Harrison, 10.

<sup>15</sup> Fred Zimmerman, *Manufacturing Works: The Vital Link Between Production and Prosperity* (Chicago: Dearborn Financial Pub., 2002), 8.

<sup>16</sup> U.S. Bureau of Labor Statistics, "Table 1. Employment by Major Industry Sector, 1996, 2006, and Projected 2016," <http://www.bls.gov/news.release/ecopro.t01.htm>.

<sup>17</sup> Michael D. Yates, "Economic Crisis, The Working Class and Organized Labor," ed. Michael Zweig, *What's Class Got to Do With it? American Society in the Twenty-First Century* (Ithaca: Cornell University Press, 2004), 128.

<sup>18</sup> Lawrence Mishel, Jared Bernstein and Sylvia Allegretto, *The State of Working America 2006/2007* (Ithaca, NY: Cornell University Press, 2007), 39.

productivity, meanwhile those at the top of the income scale received most of the benefits from growth.<sup>19</sup> Wages for working families have stagnated, the real median family income increased 103.9% between 1947 and 1973 but only 21.8% from 1973 to 2004.<sup>20</sup>

The new order has brought a shift in work arrangements with an increase in part-time and contingent work, along with elevated job insecurity. The work that is available is less secure with the amount of contingent work on the rise, less internal mobility within firms and more frequent lay-offs.<sup>21</sup> Shorter job tenure and quicker turnover has caused heightened job insecurity, which is especially difficult for workers with less education and skill. Between 1983 and 1998 there was a sharp decline in job tenure for men.<sup>22</sup> Elimination of internal career ladders has meant workers can no longer expect and rely upon careers and mobility within a single manufacturing company. Temporary work has also become more common, from 1982 to 1998 the number of jobs in the temporary help industry increased 6-fold to around three million, an increase greater than the total growth in employment of 40% during the same time period.<sup>23</sup> Currently, firms will lay-off workers even in good economic conditions and tend to implement more permanent layoffs. According to an analysis conducted by Paul Osterman, during 1972 there was a larger proportion of lay-offs due to weak performance compared to 1992, which suggests firms are now using lay-offs for reasons beyond poor economic performance.

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<sup>19</sup> Mishel, Bernstein and Allegreto, 46.

<sup>20</sup> *Ibid*, 46.

<sup>21</sup> Paul Osterman, *Securing Prosperity: The American Labor Market: How it has Changed and What to do About It* (Princeton, NJ: Princeton University Press, 1999), 55.

<sup>22</sup> Osterman, 43.

<sup>23</sup> Linda Levine, Congressional Research Service Report for Congress: *Temporary Workers as Members of the Contingent Labor Force* (Washington, DC: The Library of Congress, Congressional Research Service, 1999).

The past 30 years have been a period of rising inequality and insecurity. The increase in finance has led to a more unequal economy where wealth is not based upon material production and instead relies on providing services and paper transactions subject to speculative bursts.<sup>24</sup> As wage growth has slowed down and even declined for some, welfare benefits have been cut and the market for decent jobs has shrunk. People are more likely to be laid-off, switch jobs and struggle to find equivalent employment. Harvey argues that the neo-liberal agenda has sought to break welfare as a barrier to investment and shift the burden of responsibility onto individuals.<sup>25</sup> Americans have taken on more debt in order to finance consumer lifestyles given a shrinking income, which has been aided by easier credit that has helped business find a way to increase demand and in turn capital accumulation. Meanwhile, economic expansion in the past 20 years has provided benefits to the wealthiest rather than all of society. In 1965 U.S. CEOs in major companies earned 24 times more than an average worker, while in 2005 average CEO pay jumped to 262 times that of the average worker.

#### Weakening of Unions

A key element of the political economic shift has been the declining power of the U.S. labor movement driven by structural changes as well as direct government policy and corporate strategies to shrink the number of unionized workers. Unions represented 24% of the labor force in 1973 but that percentage dropped to 12.1% in 2007.<sup>26</sup> Changes in the structure of the economy led companies to break their agreement with unions and bring an end to pattern wage bargaining and regular wage increases. Heightened

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<sup>24</sup> Mishel, Bernstein and Allegreto, 200.

<sup>25</sup> Harvey, *A Brief History*, 65.

<sup>26</sup> Mishel, Bernstein and Allegreto, 216.

competition led to the breakdown of monopoly prices in the 1970s which compelled firms to compete over reducing costs, particularly wages.<sup>27</sup> Increased competition and demands for flexibility meant business did not want the rigidity of union work controls or high wages. At the same time the sacrifice in autonomy on the shop floor led workers to rebel against employers, union bureaucrats and the model of business unionism in the 1970s and early 1980s. Under the labor compromises of the post-War era, unions gave up authority issues and sacrificed shop-floor militancy for regular wage increases. However, the monotony of Fordist production lines and worker anger over a stagnating economy led to a renewal of labor strife in the late 1960s and 1970s, which ruptured union control and their ability to deliver peaceful labor-relations to management.

Companies have increasingly used viscous anti-union tactics to prevent union organizing, like hiring union busting law firms and intimidating and firing pro-union workers. The state also played an active a role in attacking unions, marked by Reagan breaking the white-collar air traffic controllers union, PATCO, in 1981 and authorizing the use of permanent replacements.<sup>28</sup> The existing labor laws under the National Labor Relations Board have been a hindrance to union organizing and regenerating the labor movement as employers have significantly more power than unions in the election process and have used the system to stall and prevent unionization.

## **II. Theories of Post-Fordism**

If the regime of Fordism has collapsed, what is emerging in its place? There are signs pointing to economic restructuring, changing work regimes and rising inequality, but what are the new institutions, practices and norms that are defining a new era of

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<sup>27</sup> Peck and Tickell, 289.

<sup>28</sup> Harvey, *A Brief History*, 23-25.

capital accumulation and what factors are driving their formation? Many academics and writers have theorized about the post-Fordist regime looking at the changes in production processes, work conditions and use of technology. According to both the regulation and flexible specialization perspective, beginning in the mid 1970s some manufacturers began to shift towards more specialized production for niche markets in response to competitive pressures, which required making smaller batches of products and more flexible use of labor and capital. The theorizing has ranged from celebrating the emancipatory potential of computer technology and craft production to condemning new production methods as further attempts at managerial control and exploitation. Yet other theorists contend that a new hegemonic order has not been established and highlight companies that still rely on older Fordist and Taylorist forms of work organization.

#### Flexible Specialization

Charles Sabel in *Work and Politics* argues that Fordism came to an end as mass markets were broken up by environmental constraints, changes in consumer demand and increased competition. In response to the end of mass production a system of flexibility has developed. Companies have experimented with flexible production that utilizes skilled labor and special-purpose machines to manufacture specialized products to meet and influence shifting consumer demands.<sup>29</sup> Other firms have turned to neo-Fordism that combines automation with more flexible work. Post-Fordist forms of production have allowed an emergence of high-tech cottage production. This craft production is exemplified by the “Third Italy”, the region between the industrialized North and rural South, where a cluster of small innovative firms using high-tech production processes

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<sup>29</sup> Sabel, 194.

and highly skilled labor has arisen.<sup>30</sup> These firms initially expanded as subcontractors to the larger core Fordist firms that were unable to meet the changing market demands for flexibility and were constrained by the rigidity of the militant labor movement. As these small firms innovated and attracted skilled labor, some were able to become independent from the large core firms.<sup>31</sup> Sabel sees the potential for cottage production to re-link conception and execution in manufacturing work and the example of Italy shows the potential for regional collaboration between labor, capital and the state.

Michael Piore and Charles Sabel's book *The Second Industrial Divide* attempts to identify emerging modes of production in the wake of the breakdown of mass production. Piore and Sabel point out two paths to solving the disruptions of the 1970s, one is multinational Keynesianism and the other is flexible specialization. Multi-national Keynesianism would turn to macroeconomic strategies to solve underconsumption, like ensuring global demand keeps up with productivity, creating mechanisms to stabilize business decisions and allocating productive potential between countries.<sup>32</sup> Piore and Sabel see an alternative to expanding the principles of Keynesian, which is flexible specialization based upon the re-emergence of craft production with more flexible and batch production, like steel mini-mills. Flexible specialization would respond to market demands by developing more flexible craft production that uses technology and computers.<sup>33</sup> On the shop floor this shift means more emphasis on job training, general use machines, just in time production and profit sharing schemes. Included in this model

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<sup>30</sup> *Ibid*, 220-223.

<sup>31</sup> *Ibid*, 228-230.

<sup>32</sup> Piore and Sabel, 253.

<sup>33</sup> *Ibid*, 260-62.



are regional conglomerations, like Silicon Valley, and more small interconnected firms.<sup>34</sup> Flexibility has also meant a decline in unions, especially in the U.S., because of a reaction against rigid work rules, thus new firms are often not unionized, which means no protection of wages and working conditions.<sup>35</sup>

### Alternative Interpretations of Post-Fordism

The theories of Sabel and Piore have been met with criticism and alternative perspectives that raise the negative aspects of flexible specialization and doubt the dominance of flexible production. From this perspective flexibility can also be a low road that leads to increased exploitation and increased managerial control, not the return of creative work. Fergus Murray takes a different angle on Sabel's analysis of the "Third Italy" saying that a wide range of firms are present in the region and many are still large Fordist enterprises. Additionally, he contends that the working conditions in artisan factories vary widely and that many of the workers are not organized which means the emergence of small non-union shops has undercut working class solidarity and the solidaristic wage bargaining of the strong Italian labor movement.<sup>36</sup> A survey in the early 1980s of Bologna showed that 32% of workers in engineering industries were in artisan firms, but only a scarce number were in unions.<sup>37</sup> Murray does not see examples of craft production in the region as evidence for a wider post-Fordism and problematizes the working conditions in these small firms that are difficult to unionize and leave non-skilled workers vulnerable to market fluctuations.

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<sup>34</sup> *Ibid*, 265-67.

<sup>35</sup> *Ibid*, 293.

<sup>36</sup> Fergus Murray, "Flexible Specialisation in the 'Third Italy,'" *Capital and Class*, 33 (1987): 84-95, 91.

<sup>37</sup> Murray, 89.

Harvey presents a deeper analysis of the post-1970 era and sees developments in flexibility as capitalism's response to crisis, particularly over accumulation, which has led to the breakdown of the old Fordist regime of accumulation and renewed attempts to solve the crisis through spatial and temporal fixes. Harvey posits that a new regime of flexible accumulation might be forming as capitalist economies have responded by trying to overcome the rigidities of the old system. This new institutional arrangement is signified by intensified technological and organizational innovation along with increased flexibility in the labor process, labor market and patterns of consumption.<sup>38</sup> Business has turned to manufacturing a variety of goods cheaply and in small batches for niche markets. However, Harvey argues that flexible accumulation has not become hegemonic and instead continues to exist alongside Fordist and more traditional forms of production. The new regime is unique because of its dependence on new financial instruments and markets, while the turn to flexibility resembles a traditional response of capitalism to its crisis tendencies.<sup>39</sup> Harvey also problematizes the use of new technologies and flexible work arrangements as being ways to increase the rate of exploitation by extracting greater absolute surplus value through longer working hours and increased relative surplus value through innovations and reducing the cost of products while expanding consumer demands.<sup>40</sup>

John Tomaney questions the dominance of flexible specialization and the re-birth of craft production. He argues that new technologies and flexible work arrangements can

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<sup>38</sup> Harvey, *The Condition of Postmodernity*, 147.

<sup>39</sup> *Ibid*, 191-92.

<sup>40</sup> *Ibid*, 186.

enhance the control of managers and augment work intensity.<sup>41</sup> Some of the new computer based technologies have allowed managers to exercise more control and higher degrees of supervision, while the rising cost of capital has meant capitalists want to use the new machines more intensely, leading to longer working hours.<sup>42</sup> Some work in emerging industries might require more skill, but IT has also meant workers have more responsibilities in the same limited time and that non-mass production now has the potential to be automated.<sup>43</sup> Tomaney does not see a radical break in work organization or that technology alone has been driving the changes, but rather that shifts have been driven by the balance of power between employers and employees and national variations in industrial tradition.<sup>44</sup>

### **III. Can Something New Emerge**

The prospect of green jobs raises the possibility of a new path for economic development and labor-management relations. Expanding green industries could provide an impetus to revitalize domestic manufacturing and empower the labor movement, while being part of a post-Fordist economy that provides decent conditions for workers and combines innovative technology with green principles. A green economy could also provide a path towards social democracy with an active state, greater equality and increased coordination between labor, capital and the state. The direction of the green economy will depend on the dynamics of green markets, firm organization, union and environmentalist action and government policy. With the new Obama administration and

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<sup>41</sup> John Tomaney, "A New Paradigm of Work Organization and Technology," in *Post-Fordism: A Reader*, ed. Ash Amin (Cambridge: Blackwell Publishers, 1995), 157-8.

<sup>42</sup> Tomaney, 171.

<sup>43</sup> *Ibid*, 176, 179.

<sup>44</sup> *Ibid*, 158.

the simultaneous problems of the financial crisis and global warming a political opening is possible. However, green jobs have also been a simple public relations tool and often focused on narrow legislative and technological goals. The institutions and historical legacies of the American political economy will constrain the direction of the green economy and the ability of unions to play a role. For green jobs to be part of a larger renaissance in industry and good working conditions, the balance of power in the workplace and society will have to shift towards workers and away from the dominance of business, which will also require the state taking a more active role in the economy.

## **II. Green Jobs: Towards a Working Definition**

### **1. Problems in Defining**

Despite all the talk about green jobs there is no clear definition of what makes a job green. So, just what is a “green” job? An analysis of green jobs first requires a comprehensive and clear definition that identifies the distinctive elements of a green job. The definition has implications for how jobs are measured, tracked and created, as policies to develop these jobs depend on some form of classification. The definition will also reflect particular principles and values about a green economy, like what constitutes “green” and particulars like the inclusion of clean coal. Without a concrete definition the term can be empty rhetoric and be open to manipulation by special interests. A very loose definition could allow businesses with harmful environmental practices to claim to be creating green jobs, while a very narrow definition may leave out workers and union members who are engaged in jobs that are contributing to a sustainable economy.

Creating a definition is difficult because green jobs could extend across nearly

every sector of the economy and depend on a subjective interpretation of environmental impact. Jobs are traditionally defined by the industry, sector and work duties- thus a job manufacturing axles for automobiles is fairly straightforward to classify. The North American Industry Classification System (NAICS) was created under the Office of Management and Budget in 1997 to establish a standard for industry classification to use in federal data collection and analysis.<sup>45</sup> The NAICS created a detailed system for defining industries, which begins with broad sectors and then gets progressively more detailed. Green jobs as a whole do not fit into this system of classification because they extend across so many sectors and depend on environmental impacts, which are outside of the standard job definition. Yet specific jobs like manufacturing parts for renewable energy technology could become a category. Defining green jobs requires some evaluation of the environmental impact, which depends on both the work process itself and the use of the product created or service provided. An assembly line building Hummers could be made more energy efficient and use less toxic materials while an inefficient and polluting factory could make compact florescent light bulbs. Which of these is a green job? Are they both?

## **2. A Working Definition**

A useful framework for characterizing green jobs was created by the United Nations Environmental Program (UNEP) along with the International Labor Organization (ILO), International Trade Union Council, International Organization of Employers and the World Health Organization in a 2008 report. Green jobs are defined as “work in agriculture, manufacturing, research and development, administrative and service

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<sup>45</sup> U.S. Census Bureau, “North American Industry Classification System,” <http://www.census.gov/eos/www/naics/>.

activities that contribute substantially to preserving or restoring environmental quality. Specifically, but not exclusively, this includes jobs that help to protect ecosystems and biodiversity; reduce energy, materials, and water consumption through high-efficiency strategies; de-carbonize the economy; and minimize or altogether avoid generation of all forms of waste and pollution.”<sup>46</sup> This includes occupations in basic industry and recycling, renewable energy, building, transportation, food and agriculture and forestry. This definition is comprehensive and specific, indicating the job categories, activities and industries that will be included in green jobs as well as considering how the job impacts the environment. The environmental impacts of the labor process and the impact of the products or services on the environment are included in the framework. However, quantifying a “substantial contribution to preserving the environment” is difficult. The definition does not include any mention of working conditions and wages, which are central to union concerns.

For this paper I will build on the definition developed by the UNEP, but will focus on jobs that de-carbonize the economy, improve efficiency and reduce pollution, particularly in blue-collar occupations related to renewable energy, green building and transportation. Mitigating climate change is a large aspect of the green jobs debate, which puts a focus on jobs that are involved in a post-carbon economy, many of which will be in manufacturing components for green energy, sustainable building and efficient automobiles, installation of renewable energy technology and construction of green buildings. I am emphasizing jobs that make products that are more efficient, less

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<sup>46</sup> Michael Renner, Sean Sweeney and Jill Kubit, *Green Jobs: Towards Decent Work in a Sustainable Low-Carbon World* (Washington, D.C.: UNE, ILO, IOE, ITUC, September 2008), 3.

polluting and contribute to a green infrastructure. Since nearly all jobs can be made more environmentally friendly by reducing waste and pollution, I will not focus on making labor processes cleaner, except when changes reduce carbon emissions and protect worker health and safety. Blue-collar jobs are the focus because they have a greater tension with the environment, have declined more than white-collar and will be more impacted by a green transition. However, the creation of green white-collar jobs, particularly in the service sector, will be important for unions given the changing make-up of their membership and direction of the U.S. economy. I will also use the term green economy to refer to an economic system that is part of reducing carbon emissions, developing a clean energy system, eliminating pollution, increasing resource and energy efficiency and generally moving towards sustainability.

#### Alternative Definitions

Other organizations have developed the concept of green collar jobs that focuses on well paying career-oriented employment in blue-collar occupations. The Apollo Alliance and Green for All define green-collar jobs as “ family-supporting jobs that contribute significantly to preserving or enhancing environmental quality.” Green-collar jobs include concerns for safe working conditions, job security, organizing rights and pathways to career advancement. Although this definition is useful because it includes the working conditions and social impacts of a job, it is not practical for analyzing job creation since it is so specific and excludes many types of employment, including low-wage work. The American economy has increasingly been characterized by flexible work arrangements and low-wage jobs. Green-collar jobs are an important goal and way to connect green jobs with decent forms of employment, but this is more of a descriptive

definition than an analytical concept. Union priorities are in creating good jobs, but this should not serve as the basis for a definition. Developing jobs in green industries and sectors is one step, creating jobs with good wages, benefits and career advancement is the next step.

Unions are interested in a broad definition of green jobs that is inclusive to all the work of their members. According to Bob Baugh, executive director of the AFL-CIO Industrial Union Council and Co-Chair of the AFL-CIO Energy Task Force, green jobs should be characterized as jobs that lower carbon levels and contribute to greening the economy. He points out that most of these jobs will build on existing skills.<sup>47</sup> Building support and easing fear about green jobs will require demonstrating to union members that green skills are not new and that their current jobs can become green.<sup>48</sup> Neal Gladstein, the director of strategic resources at the International Association of Machinists and Aerospace Workers (IAMAW), says that the IAMAW wants a broad definition that captures the wide range of work being done, not just focusing on windmills and solar panels, and includes work that reduces consumption, reduces energy use and promotes energy independence.<sup>49</sup> The AFL-CIO Executive Council states: “The greening of the economy means that every job that contributes to a low-carbon future is a green job.”<sup>50</sup> Unions want to make sure that the work their members are doing is included for purposes of publicity, but more importantly so that they benefit from government programs, like money for research and development and tax incentives.

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<sup>47</sup> Bob Baugh, interview by author, Washington, DC, 21 October 2008.

<sup>48</sup> Dave Foster, (Keynote Address at 2009 Good Jobs Green Jobs Conference, Washington, DC, February 4, 2009).

<sup>49</sup> Neil Gladstein, interview by author, Oberlin, OH, 6 November 2008.

<sup>50</sup> AFL-CIO Executive Council Statement, *Greening the Economy: A Climate Change and Jobs Strategy that Works for All* (San Diego, CA: March 4, 2008), 3.



### 3. Where are the Jobs?

Green jobs will be in both old and new sectors and will require new skills as well as traditional skills. New occupations will be created in alternative energy technology and building retrofitting, like energy auditors, wind technicians and engineers and solar installers and technicians.<sup>51</sup> However, much of the employment will utilize conventional skills and trades and be located in traditional industries.<sup>52</sup> Solar and wind energy will require occupations involved in manufacturing and installation, like machinists, production and planning clerks, machine tool operators and welders.<sup>53</sup> Wind power alone will need meteorologists, surveyors, engineers, assembly-line workers and mechanics, to name a few.<sup>54</sup> Jobs in energy efficiency will involve constructing green buildings that follow Leadership in Energy and Environmental Design (LEED) standards, retrofitting buildings and manufacturing components for green construction, which will require occupations like electricians, carpenters, laborers and plumbers.<sup>55</sup> The transportation sector will include jobs manufacturing efficient automobiles, building rail cars and constructing public transportation infrastructure. High and low skill jobs will be needed, but the development of middle-skill occupations will be important for creating decent jobs and could potentially be a large proportion of new jobs.<sup>56</sup>

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<sup>51</sup> Sarah White and Jason Walsh, *Greener Pathways: Jobs and Workforce Development in the Clean Economy* (Madison, WI: Center on Wisconsin Strategy, The Workforce Alliance and the Apollo Alliance, 2008), 16.

<sup>52</sup> White and Walsh, 3.

<sup>53</sup> *Ibid*, 26.

<sup>54</sup> Michael Renner, *Going to Work for Wind Power* (Washington, D.C.: World Watch Institute, January/February 2001), 26.

<sup>55</sup> Robert Pollin and Jeanette Wicks-Lim, *Job Opportunities for the Green Economy: A State by State Picture of Occupations That Can Come From Green Investments*, (Amherst, MA: University of Massachusetts, Amherst, June 2008), 7.

<sup>56</sup> White and Walsh, 25.

Germany is a useful example for how to define and track green jobs because Germany is a world leader in green jobs with expanding industries in renewable energy, efficient cars and green building. Subsequently, Germany has gone through one of the most detailed efforts to quantify the number and types of jobs in green industries.<sup>57</sup> In the sector of renewable energy, Germany has created jobs in manufacturing component parts and installing energy production facilities. The German Environment Ministry has calculated that 20,000 companies are involved in renewable energy with nearly a half in solar, 5,000 in biomass and 3,500 in wind. In 2004, Germany had 144,000 jobs related to renewable energy.<sup>58</sup> Germany has come to dominate the world market for green products, producing half of the supply of wind rotors and one third of the photovoltaic (PV) panels. Employment in renewable energy has been growing, with an estimated expansion of 36% from 2004 to 2006.<sup>59</sup> Germany displays the green job potential in the specific sector of renewable energy and highlights the need for the U.S. government to actively quantify and track green jobs in a systematic manner. Currently, U.S. green employment growth estimates are from policy organizations and various think tanks that use a wide-range of standards and methodologies to track employment.

In looking at the employment impacts of green jobs in the U.S. it is helpful to compare sectors that are currently experiencing job growth and sectors in which green jobs will be concentrated. The Bureau of Labor Statistics predicts that from 2006 to 2016 employment in goods producing industries, which includes construction but not agriculture, will decrease by 732,000 jobs, while service providing employment will

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<sup>57</sup> Renner, Michael, Sean Sweeney and Jill Kubit, 97.

<sup>58</sup> *Ibid*, 97.

<sup>59</sup> Roger Bezdek, *Renewable Energy and Energy Efficiency: Economic Drivers for the 21<sup>st</sup> Century* (Boulder, CO: American Solar Energy Society, 2007), 49.

increase by 15,782,000. Manufacturing has the largest predicted losses of 1,503,000, however this is smaller than the 3 million jobs lost in the previous decade. Mining is slated to shed 10,000 jobs. Construction however is expected to expand by 781,000. In the service industry, the sectors with the highest projected growth are professional and business services, healthcare and social assistance, financial activities and leisure and hospitality, while utilities are expected to drop by 31,000.<sup>60</sup>

In industries that are already growing, the green jobs emphasis will be to make those workplaces less polluting and make sure new jobs are related to a green economy. Construction is a sector with increasing employment that holds significant opportunity to generate green jobs related to sustainable building and retrofitting. According to White and Walsh, of the 10 middle-skill occupations in the construction industry that will be involved in energy efficiency improvements, two show faster than average growth and all 10 are listed as in-demand because they are important for high-growth industries.<sup>61</sup>

The job prospects in manufacturing look very bleak, so new green manufacturing jobs will have to be in the specific areas that are not losing employment or create job expansion that counters the predictions. Some of the fastest declining manufacturing subsectors are in apparel, textiles and paper production, which are not important for creating products for a green infrastructure. On the other hand, expanding areas are in computers, electronics and semiconductors, which are not key sectors for green employment because they are not essential to building a green infrastructure or

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<sup>60</sup> U.S. Bureau of Labor Statistics, "Table 1. Employment by Major Industry Sector, 1996, 2006, and Projected 2016," <http://www.bls.gov/news.release/ecopro.t01.htm>.

<sup>61</sup> White and Walsh, 16-7.

generating renewable energy.<sup>62</sup> The subsector with the largest percentage of manufacturing employment is transportation equipment manufacturing which could have green jobs in producing efficient cars and public transportation vehicles. Yet, the subsector is expected to drop 114,100 jobs from 2006 to 2016, even while increasing output.<sup>63</sup> Other subsectors that will be important for green manufacturing, like fabricated metal product manufacturing is expected to decline by an annual average of 1.3%, as is machinery manufacturing.<sup>64</sup> Even when production is predicted to increase jobs won't necessarily be created, 64 manufacturing industries are predicted to increase output but 49 will decrease employment because of advances in production processes that improve labor productivity.<sup>65</sup>

#### Stimulating New Job Demands

Still, there is some potential for renewable energies to stimulate new demand and jobs. White and Walsh show that of 10 occupations involved in the wind turbine industry, six are in-demand because they are linked to high-growth industries, but none of the manufacturing occupations are experiencing faster than average growth.<sup>66</sup> If markets for green technologies can stimulate new domestic investment some of the negative job projections could be slowed down. For example, increased demand for wind turbines could attract new steel factories to make turbines.<sup>67</sup> Renewable energy could create

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<sup>62</sup> Eric B. Figueroa and Rose A. Woods, "Industry Output and Employment Projections to 2016," *Monthly Labor Review*, 53 (November 2007): 53-85, 71.

<sup>63</sup> Figueroa and Woods, 72.

<sup>64</sup> *Ibid*, 73.

<sup>65</sup> *Ibid*, 70.

<sup>66</sup> White and Walsh, 20.

<sup>67</sup> Erin Bowser and Amy Gomberg, *Energizing Ohio's Economy: Creating Jobs and Reducing Pollution with Wind Power* (Columbus, OH: Environment Ohio Research and Policy Center, August 2007), 11.

demand for declining jobs in sectors like machine shops, metalworking, steel mills and fabricated metal manufacturing. A report by the University of Massachusetts in conjunction with the Center for American Progress, estimates that a \$100 billion investment in green infrastructure over the next two years will create 2 million new jobs, including jobs in heavy manufacturing.<sup>68</sup> However, if job loss in manufacturing is being driven by automation and production being shifting overseas, changes in trade policy and labor processes will also be required to alter this trend.

#### **4. Conclusion**

Defining green jobs is a complex process and there is not yet an agreed upon definition, which makes analysis and tracking difficult. For this paper the definition I will focus on is jobs that de-carbonize the economy, improve efficiency and reduce pollution, particularly in blue-collar occupations related to renewable energy, green building and transportation. Building from this definition will help facilitate analysis of the potential for green jobs and what conditions will determine the direction of a green economy and the impact for unions. The relationship between jobs and the environment has a tenuous history going back to the very beginning of industrialization, thus understanding the political implications of green jobs definitions and evolving union thinking about green jobs necessitates a look at the history between unions and environmentalists.

### **III. Labor Unions and Environmentalists**

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<sup>68</sup> Robert Pollin, Heidi Garrett-Peltier, James Heintz and Helen Scharber, *Green Recovery: A Program to Create Good Jobs and Start Building a Low-Carbon Economy*, (Amherst, MA: Political Economy Research Institute at University of Massachusetts Amherst and Center for American Progress, September 2008), 1, 2.

This chapter will explore the relationship between labor unions and the environmental movement in the U.S. and look at the development of union positions on climate change and burgeoning blue-green coalitions, the Apollo Alliance and the Blue Green Alliance. Unions and environmentalists have at times been pitted against each other, but underneath this dominant narrative have been moments of significant collaboration. Green jobs provides a framework for solidifying the link between labor and environmental interests and overcoming the jobs verse environmental protection dichotomy to build of a strong progressive coalition of unions and environmental organizations. Looking at shifting union positions on the environment provides a way to analyze union interests while coalition formation has been one of the main actions taken by unions around green jobs. The relationship between labor and environmentalists is important because a strong social movement for green jobs will be essential for creating the political space for aggressive green jobs policies.

### **1. Dynamics of the Relationship**

The labor and environmental movements in the U.S. have a mixed history, with moments of devoted cooperation as well as harsh conflict. Tensions have historically evolved around fears of job loss because of a supposed dichotomy between preserving jobs and protecting the environment.<sup>69</sup> At times unions have perceived environmental regulation as a potential threat to jobs because regulations would raise production costs that would lead to lay-offs and outsourcing to areas with weaker regulations. This fear has been particularly strong in polluting industries, where unions have also been strongest

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<sup>69</sup> Kenneth A. Gould, Tammy L. Lewis and Timmons J. Roberts, “Blue-Green Coalitions: Constraints and Possibilities in the Post 9-11 Political Environment,” *Journal of World-Systems Research*, 10.1 (Winter 2004): 91-116, 96.

and achieved greater degrees of unionization and higher wages.<sup>70</sup> The interests of labor and environment groups also diverge because of the nature of the organizations and their membership. Unions have supported economic expansion in order to create jobs and generate demand for workers, while environmentalists have opposed growth because it requires increased resource consumption that is potentially harmful to the ecosystem.<sup>71</sup> Additionally, members of the two movements tend to be from different classes, as members of the traditional environmental groups tended to be middle or upper class.<sup>72</sup> This can create divisions in material and cultural interests, especially when environmentalists are concerned with conservation and consumption issues that do not consider the material concerns of the working class.<sup>73</sup> Historically some environmental groups have neglected issues of social justice and not focused on the need to provide transition benefits for workers hurt by environmental protection.<sup>74</sup>

However, most labor-environment divisions are unfounded, particularly the jobs versus the environment trade-off, and have been propagated by corporate campaigns and conservative interests. Moments of conflict between the two groups have often been the result of business tactics, conservative leadership and poor economic conditions. Corporations have used job loss as a wedge between environmental and labor groups on issues of environmental regulation, especially during periods of economic downturn.<sup>75</sup> Gladstein argues that conservative politicians, particularly Reagan, were able to play

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<sup>70</sup> Renner, Sweeney and Kubit, 35.

<sup>71</sup> Gould, Lews and Roberts, 95.

<sup>72</sup> Robert Gottlieb, *Forcing the Spring: The Transformation of the American Environmental Movement* (Washington, DC: The Island Press, 2005), 270.

<sup>73</sup> Robert Gordon, "'Shell No!' OCAW and The Labor-Environmental Alliance," *Environmental History*, 3 (October 1998): 460-487, 460.

<sup>74</sup> Chris Lehman, "What About the Dirty Jobs?" *Mother Jones*, December 2008, 55, 99.

<sup>75</sup> Gould, 98-99.

environmentalists and labor off each other, which prevented them from focusing on their common interests and the corporations that caused both job loss and environmental destruction.<sup>76</sup> In fact, on an economy wide scale Eban Goodstein shows that environmental regulations actually have a positive effect on employment rates because spending on environmental clean up can stimulate jobs.<sup>77</sup> Additionally, businesses do not regularly re-locate to areas with weaker environmental regulations because these rules are a small proportion of overall costs and a minor factor in determining business location.<sup>78</sup> Still, environmental regulations can have negative effects on particular regions or industries, mostly mining, timber, chemical and paper industries, which helps explain why some unions have resisted certain regulations.<sup>79</sup> Transition assistance to offset losses does not always occur and is often inadequate, especially when job loss is concentrated in isolated communities lacking other sources of employment. Environmental groups have not always been strong supporters of negatively affected workers.<sup>80</sup>

The supposed class divide between the labor and environmental movements might influence material interests and organizational culture but might be less significant in regards to environmental awareness. A 1995 Gallup Poll Monthly survey showed that lower income people are more willing to sacrifice economic expansion in favor of

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<sup>76</sup> Gladstein, 6 November 2008.

<sup>77</sup> Brian K. Obach, *Labor and the Environmental Movement: The Quest for Common Ground* (Cambridge, MA: MIT Press, 2004), 33.

<sup>78</sup> Eban Goodstein, *The Trade-Off Myth: Fact and Fiction about Jobs and the Environment* (Washington, DC: Island Press, 1999), 31, 55.

<sup>79</sup> Brian K. Obach, "Labor-Environmental Relations: An Analysis of the Relationship between Labor Unions and Environmentalists," *Social Science Quarterly*, 83 (March 2002): 82-100, 85.

<sup>80</sup> Obach, *Labor and the Environmental Movement*, 36-37.



environmental protection<sup>81</sup> Environmental protection is in the self-interest of the working-class who often has more direct contact with environmental and industrial pollution.<sup>82</sup> Labor unions have developed a strong connection between workplace health and safety and environmental pollution in order to protect workers on the job and in their communities.<sup>83</sup>

## 2. Blue-Green History

A brief history of the relationship between the labor and environmental movements shows a record of collaboration, but the lack of a long-term powerful coalition, as well as moments of sporadic conflict. Unions and environmentalists have worked together over issues of safety and health, community environmental health, trade and campaigns against corporations. Yet Robert Gordon argues that lasting coalitions have not been able to form because of corporate resistance, race and class divisions and importantly the lack of deeper rank and file involvement.<sup>84</sup>

Before the mass environmental movements of the late 1960s, labor was one of the strongest supporters of pollution control because of occupational and public health concerns.<sup>85</sup> In the early 20<sup>th</sup> century, unions and environmental groups began to make connections between hazardous materials in the workplace and in the environment.<sup>86</sup> By the 1970's labor support helped pass The Clean Air Act (1970) and The Clean Water Act (1972) and create the Environmental Protection Agency and Occupational Safety and

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<sup>81</sup> *Ibid*, 31.

<sup>82</sup> *Ibid*, 31.

<sup>83</sup> Lene Olsen, "Participating at All Levels," in *Labour and Environment a Natural Synergy* ed. Gerd Albracht, et. al. (Nairobi, Kenya: UNEP, WHO and ILO, 2007), 9-23, 10.

<sup>84</sup> Gordon, 463.

<sup>85</sup> Obach, *Labor and the Environmental Movement*, 47.

<sup>86</sup> Gordon, 461.

Health Administration.<sup>87</sup> Environmentalists also showed support for labor issues, highlighted by the 1973 strike against Shell by the Oil, Chemical and Atomic Workers, in which eleven of the largest environmental groups backed a boycott and were actively involved in the strike.<sup>88</sup> Environmentalists for Full Employment was formed in the 1970s and organized several conferences with unions and garnered support for the Humphrey-Hawking full employment bill. However, divisions over nuclear energy and continuing fear of job loss prohibited a lasting alliance.<sup>89</sup> The economic crisis that began in 1973 with the OPEC Oil Embargo led environmental groups and unions to be more defensive and some unions even began to side with business on environmental issues.<sup>90</sup> Potential for a coalition around energy policy was also stunted by the conservative Reagan administration coming to power.<sup>91</sup>

In the 1980s, economic recession, a hostile political climate and defensive leadership were barriers to broad cooperation. However, the AFL-CIO and leading environmental groups developed statewide networks to defend against the regulatory rollbacks directed by the Reagan administration.<sup>92</sup> The 1990s began with visible tension between labor and environmentalists over the “spotted-owl controversies” that emerged over proposals by environmentalists to protect segments of the old-growth forests in the Pacific Northwest for endangered owl species. Unions interpreted this as a threat to logging jobs, partially because of corporate campaigning, and some conflict arose

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<sup>87</sup> Obach, *Labor and the Environment*, 48.

<sup>88</sup> Gordon, 461-2.

<sup>89</sup> Obach, *Labor and the Environment*, 51.

<sup>90</sup> Scott Dewey, “Working for the Environment: Organized Labor and the Origins of the United States, 1948-1970,” *Environmental History*, 3 (Jan. 1998): 45-63, 46.

<sup>91</sup> Bob Baugh (Lecture at the Midwest Conference on Labor in the New Energy Economy, Cleveland, OH, October 22-23, 2007).

<sup>92</sup> Obach, *Labor and the Environment*, 51.

between individual union members and environmental activists. The negative impact of preservation was amplified, but about 10,000 workers in the region lost jobs, although an economic boom in the region helped offset much of the loss.<sup>93</sup>

Recently, unions and environmental groups have rallied together around trade issues. They have collaborated in opposing free trade and mobilized against NAFTA because of its lack of environmental and labor protections. This blue-green coalition was able to prevent president Clinton from gaining authority for fast-track trade negotiations.<sup>94</sup> During the 1999 WTO protests in Seattle, union members and environmentalists organized and demonstrated together, including the famous teamsters and turtles alliance between Sierra Club activists and the Teamsters. This visual moment helped link issues of labor rights and environmental protection in a broad critique of neoliberalism.<sup>95</sup>

### **3. Division Over Climate Change and A Way Forward**

Despite recent collaboration, organized labor's failure to support climate change policy in the mid 1990s created a major rift with the environmental movement. The high point in this disagreement was the AFL-CIO rejecting the Kyoto protocol in 1997.<sup>96</sup> Labor's opposition extended from fears that developing countries would not have to meet the same carbon emission reductions, which would lead to offshoring of jobs to "pollution havens." Organized labor's lack of support on climate, one of the largest environmental issues, was a significant wedge in a potential blue-green coalition. The United Mine Workers (UMW) even formed a group, Unions for Jobs and the

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<sup>93</sup> *Ibid*, 54-56.

<sup>94</sup> David Moberg, "For Unions, Green's Not Easy," *The Nation*, February 21, 2000, 18.

<sup>95</sup> *Ibid*, 17.

<sup>96</sup> Jill Kubit, interview by author, Oberlin, OH, 2 October 2008.

Environment, which accepted some of the most extreme predictions of job loss from climate change policies and questioned some of the basic science.<sup>97</sup> Jill Kubit, assistant director of the Cornell Global Labor Institute, says that a few unions in energy intensive industries, who have been very defensive, had dominated the climate change debate within the labor movement and prevented a more progressive position.<sup>98</sup>

However, the labor movement's stance on climate change has evolved in the past eight years, as unions are beginning to recognize the job benefits from a green economy and reconsider their stance on clean energy, the environment and climate change. In the late 1990s the national AFL-CIO began a process of dialogue around climate change highlighted by John Sweeney appointing Jane Perkins, former president of Friends of the Earth, as environmental liaison to facilitate discussion and work with environmental groups. However, an agreement was not obtained in this initial attempt, although some unions, like the USW, continued efforts to develop an acceptable stance on climate change.<sup>99</sup> Unions wanted climate change linked to sustainable development and just transition, like unemployment insurance and re-training, for negatively impacted workers, issues that began to emerge in conferences like the 2002 World Summit on Sustainable Development.<sup>100</sup> Union delegates attended the 2007 international climate talks in Bali where discussion arose around social justice issues related to climate, as well as putting demands on developing countries to cut emissions. The shift in dialogue towards economic justice and the increasing awareness of the magnitude of climate change

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<sup>97</sup> Moberg, 20.

<sup>98</sup> Kubit, 2 October 2008.

<sup>99</sup> Obach, *Labor and the Environment*, 76-8.

<sup>100</sup> UN Environmental Program and International Labour Organization, *Trade Union Assembly on Labour and the Environment: The Workbook* (Nairobi, Kenya: Workers Initiative for a Lasting Legacy, 2006), 9,10.

pushed labor to take a more active position.<sup>101</sup> In March 2008 the AFL-CIO Executive Council issued a statement saying, “It is time for our nation to take bold steps to meet the 21<sup>st</sup> century challenges related to climate change. Scientific evidence has confirmed that human use of fossil fuels is undisputedly contributing to global warming, causing rising sea levels, changes in climate patterns and threats to coastal areas.” The Federation now backs a cap and trade policy, along with investment incentives for clean energy.<sup>102</sup>

The leaders of the labor movement have realized the job potential in preventing climate change. Unions have voiced support for a new sustainable energy infrastructure that creates good jobs, revitalizes domestic manufacturing and stabilizes energy prices, while mitigating climate change.<sup>103</sup> The AFL-CIO is publicly supporting investment that promotes emerging green markets and technologies, including clean coal and nuclear energy, which can be used and produced in the U.S. In February of 2009 the AFL-CIO announced the creation of the Center for Green Jobs, which according to director Jeffrey Rickert is going to integrate the AFL-CIO position on green jobs and cover internal coordination, lobbying and connections to organizing. Rickert sees the commitment to green jobs coming from the large number of potential jobs, many of which are in areas that unions are already involved, and the positive political climate.<sup>104</sup> According to Baugh, there has been a shift in consciousness driven by rising energy costs, increased attention about global warming and framing climate change as a social justice issue that has led the AFL-CIO to begin thinking seriously about energy and climate change.<sup>105</sup>

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<sup>101</sup> Baugh, interview by author.

<sup>102</sup> AFL-CIO Executive Council Statement.

<sup>103</sup> *Ibid.*

<sup>104</sup> Jeffrey Rickert, interview by author, Oberlin, OH, 9 January, 2009.

<sup>105</sup> Baugh, interview by author.

The labor movement is also reacting to material changes in the economy, as markets in green energy and sustainable products are expanding. Kubit contends that unions have responded to the reality of old industries beginning to change and businesses shifting towards sustainability.<sup>106</sup> Accelerating climate change and finite fossil fuels demands an eventual shift in energy production.

Green jobs offer a way for unions and environmentalists to build on agreements over trade policy, collaborate on climate change and eliminate fears about job loss. Labor support for environmental issues is often lowest during tough economic times, but green jobs is a strong positive message in the current period of stagnating wages and rising unemployment. Environmental measures are framed in terms of positive job creation and active benefits for workers. However, environmentalists still need to take steps to address union concerns, like supporting carbon reduction policies that are linked to job development and transition services, like job-training, job placement and compensation, for workers in energy-intensive industries. Joel Yudken, a former AFL-CIO employee now a consultant with High Road Strategies, points out that groups working with unions need to be aware of their interests. “Those who want union involvement need to be sensitive to how unions operate and be aware that unions will extend support only if they think they will maintain their base and not lose out. Unions do not want things that will threaten industrial civilization and standards of living.”<sup>107</sup> Environmental groups need to actively address the concerns of unions in order to get active support on climate change and clean energy, while unions need to facilitate engagement on green jobs within the rank and file membership.

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<sup>106</sup> Kubit, interview by author.

<sup>107</sup> Joel Yudken, interview by author, Washington, D.C., 23 October 2008.

#### 4. Hesitancy about Green Jobs

Commitment to green jobs is not uniform across the labor movement, as some unions are not actively engaged in green jobs and others are still hostile to climate change and notions of environmental sustainability. AFL-CIO statements are made through consensus and thus usually represent the lowest level of agreement, so the progressive statements on climate change and green jobs are a strong indicator of fairly widespread support at the national level. The USW, CWA, IBEW, SEIU, and LIUNA have started thinking innovatively about green jobs and the relationship between social justice, economics and environmental sustainability.<sup>108</sup> However, other unions, like the UMW and the Building Trades have been more hesitant and slow to take action.

Within the labor movement there is significant concern about the impact of carbon reduction policies on coal mining and energy intensive industries, like cement and steel. From the union perspective, policies must not unfairly damage particular sectors and that any job losses need to be compensated through a system of just transition.<sup>109</sup> In a presentation by Yudken at the Midwest Conference on Labor in the New Energy Economy, he highlighted the potential for isolated yet concentrated job loss from carbon reduction legislation and the need to minimize these impacts while creating new opportunities and adequate assistance for impacted workers.<sup>110</sup> A region like Appalachia that depends on coal mining could suffer highly concentrated job losses. Thus, unions are extremely concerned about just transition that provides compensation, training and job

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<sup>108</sup> Based upon interviews with leaders at respective unions.

<sup>109</sup> Canadian Labor Congress, *Just Transition for Workers During Environmental Change* (Canada: Canadian Labor Congress, April, 2000).

<sup>110</sup> Joel Yudken, "Job Security in the New Energy Economy," (PowerPoint presentation at Midwest Conference on Labor in the New Energy Economy, Cleveland, OH. October 22-23, 2007).

placement for impacted workers. Yudken says that by making green jobs part of a larger paradigm shift about energy, work and unions, green jobs could move beyond transition that is simply defensive and make energy issues an active benefit to workers.<sup>111</sup> Green economic development policy could ensure that new factories are located near communities that have suffered and help revitalize those local economies.

Variation in union attitudes reflects differences in union politics and membership. Unions with membership who stand to gain directly from a green economy are likely to be supportive. The Communications Workers of America (CWA) and USW have members in a wide range of occupations, including large numbers in manufacturing who would benefit from producing clean energy technologies, like wind turbines and solar PV panels. IBEW and LIUNA members will also be engaged in much of the direct work of building a new energy infrastructure and improving efficiency. However, unions like the UMW see less potential benefit because their membership is concentrated in a fossil fuel based industry and have a legitimate fear of job loss from dramatic decreases in coal use. Still, the UMW is showing signs of new thinking, like signing on to a report by the Center on Globalization, Governance and Competitiveness about carbon-reducing technologies and jobs.<sup>112</sup>

The dynamics of membership composition do not entirely explain union attitudes. A study by Brian Obach found the significant factors in determining the viability of relationships between unions and environmentalists at the state level to be which party controlled the state government and labor's history of working with industry on

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<sup>111</sup> Yudken, interview by author.

<sup>112</sup> Gary Gereffi, Kristen Dubay and Marcy Lowe, *Manufacturing Climate Solutions: Carbon-Reducing Technologies and U.S. Jobs* (Chapel Hill, NC: Center on Globalization, Governance and Competitiveness, Duke University, November 2008).



environmental issues. State-level coalitions were strongest when Democrats were in power and unions did not have a history of working with business.<sup>113</sup> A concentration of workers in timber was the only industry that had a significant impact on relationships.<sup>114</sup> Thus, the local political climate and history of union involvement on the environment are likely to impact engagement on green jobs. Union leadership and history have a large influence as well, as unions with forward-thinking leaders and progressive legacies have been at the forefront of green jobs, like the USW.<sup>115</sup> SEIU represents mostly service workers, but has joined the Blue-Green Alliance, a reflection of the union's larger stance on coalition and social movement building.

Divisions over green jobs have also arisen within unions between the international and local levels. Locals are not as focused on larger policy issues and are unlikely to be supportive of green jobs until there are real signs of job growth and shifts to green industries. Yudken says that the AFL-CIO has struggled with its affiliates about what they should be doing around green jobs. Although the national federation articulates a positive message, each affiliate union interprets green jobs differently and many locals are still uncertain and are waiting to see the actual jobs.<sup>116</sup> Elena Foshay, a research associate with the Apollo Alliance, observes, "At the local level there is more struggle and it is still unusual to see environmental groups and labor working together."<sup>117</sup> Historically, some of the greatest labor-environment tensions have arisen between rank and file members and environmental activists. However, Yudken contends that green

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<sup>113</sup> Obach, *Labor-Environment Relations*, 94-5.

<sup>114</sup> *Ibid.*, 91.

<sup>115</sup> Tony Daley, interview by author, Washington, DC, 24 October 2008.

<sup>116</sup> Yudken, interview by author.

<sup>117</sup> Elena Foshay, interview by author, Oberlin, OH, 5 November 2008.

jobs can be a bridge between environment and labor at the local level when traditional union concerns are linked to sustainability. “Large issues needed to be combined with bread and butter issues, which the green jobs discussion is trying to do.”<sup>118</sup>

## **5. Forming Alliances**

Building coalitions around clean energy, climate change and green jobs has been the most visible and concrete action taken by organized labor. The change in AFL-CIO leadership with the election of Sweeney in 1995 facilitated a renewed emphasis on coalition building and activism.<sup>119</sup> Although, Sweeney initially opposed Kyoto, he has encouraged more active social movement initiatives and organizing, which has helped the labor movement advance on climate issues and seek alliances with other social actors. A blue green dialogue began to develop in the late 1990s and early 2000s around climate change as segments of the labor movement sought to support mitigation strategies, which has now led to formal coalitions around green jobs.<sup>120</sup>

### Blue Green Alliance

One of the main coalitions is the Blue-Green Alliance (BGA), which is a partnership of several unions and major environmental groups that is working to implement strategies that reduce climate change and promote green job development. The BGA was originally formed in 2006 between the USW and the Sierra Club to address global warming and clean energy, fair trade and reducing toxics, with a concentration in six states; Michigan, Minnesota, Ohio, Pennsylvania, Washington and

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<sup>118</sup> Yudken, interview by author.

<sup>119</sup> Peter L. Francia, *The Future of Organized Labor in American Politics* (New York: Columbia University Press, 2006), viii.

<sup>120</sup> Yudken, interview by author.

Wisconsin.<sup>121</sup> In the fall of 2008 the CWA and the National Resource Defense Council (NRDC) signed onto the alliance and then in December SEIU and LIUNA joined. The BGA marks a new step in coalitions between labor and environmentalists because both sides have agreed to support each other's issues. The unions are backing passage of carbon-trading legislation, which is a key goal of the environmental movement but has failed partially because of a lack of labor support. As part of the coalition, the environmental groups must actively support the Employee Free Choice ACT (EFCA), a top legislative priority of the labor movement that will make it easier for workers to form unions through card-check unionization.<sup>122</sup> Making concessions to labor is a new step for environmental groups, but they are still trying to figure out how they can support an issue outside of their usual interests. According to Michelle Quibell, campaign coordinator for NRDC's climate center, support for EFCA has been controversial and complicated for the NRDC because it is largely unrelated to their work. The organization is still in the process of determining how they should become engaged on the issue.<sup>123</sup> Peter Lehner, Executive Director of the NRDC, said at the 2009 Good Jobs Green Jobs Conference that the BGA is a new level of collaboration between labor and environmentalists and that they share common values and will only make change by working together.<sup>124</sup> Although the NRDC has joined the coalition to create a progressive movement linking a wide range of issues, they are ultimately focused on getting organized labor's resources behind

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<sup>121</sup> The Blue Green Alliance, "About BGA," [www.bluegreenalliance.org/site/c.enKIITNpEiG/b.3416603/k.DD10/About\\_BGA.htm](http://www.bluegreenalliance.org/site/c.enKIITNpEiG/b.3416603/k.DD10/About_BGA.htm).

<sup>122</sup> AFL-CIO, "The Employee Free Choice Act-Summary," [www.aflcio.org/joinaunion/voiceatwork/efca/upload/EFCA\\_Summary.pdf](http://www.aflcio.org/joinaunion/voiceatwork/efca/upload/EFCA_Summary.pdf)

<sup>123</sup> Michelle Quibell, interview by author, Washington, DC, 24 October 2008.

<sup>124</sup> Peter Lehner (Keynote address at 2009 Goods Jobs Green Jobs Conference, Washington DC, February 4, 2009).

passing a climate change bill.<sup>125</sup>

The BGA is the product of initiatives by the USW who have been on the forefront of environmental issues, which is partially a reflection of the union's diverse membership across many different industries, its progressive history and forward-thinking leadership.<sup>126</sup> The USW have a long history of environmental activism. In the 1948 "Killer Smog" incident in Donora, Pennsylvania an air pollution disaster killed 20 people, including USW members. When the government failed to investigate, the union led its own investigation and drew the attention of other unions to their efforts.<sup>127</sup> USW rank and file has been militant on environmental issues, opposing compromises over air quality regulations in the 1970s, even if it meant job loss.<sup>128</sup> The legacy of safety and health pioneer Tony Mazzocchi from the Oil, Chemical and Atomic Workers, which merged with the USW in 1999, continues to influence the union and foster a culture of innovative thinking about the environment and health.<sup>129</sup> Current President Leo Gerard has promoted activism, populism and internationalism, which has pushed the USW into new coalitions and encouraged work with environmentalists to make a more democratic and less environmentally damaging economy.<sup>130</sup> Gerard is a key figure in encouraging unions to work with environmentalists and has used his credibility to help hold the coalitions together.<sup>131</sup>

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<sup>125</sup> Quibell, interview by author.

<sup>126</sup> Kubit, interview by author.

<sup>127</sup> Dewey, 47.

<sup>128</sup> *Ibid*, 54.

<sup>129</sup> Kubit, interview by author.

<sup>130</sup> Jim Grossfeld, "Leo the Linchpin: Steelworker President Leo Gerard looks like an old-time union leader, but he's put together a labor-environmentalist alliance that bridges some growing democratic fissures," *The American Prospect*, September 24, 2007.

<sup>131</sup> *Ibid*.

## Apollo Alliance

The Apollo Alliance is another blue-green partnership that started in 2003 as a coalition of unions, environmentalists and businesses around building a clean energy infrastructure and shaping the economy to create jobs while protecting the environment.<sup>132</sup> The Alliance has a stated mission to “reduce our nation’s dependence on foreign oil, cut the carbon emissions that are destabilizing our climate, and expand opportunities for American businesses and workers.”<sup>133</sup> Apollo began as a project between the Center for American Progress and the Center of Wisconsin Strategy and in 2006 greatly expanded membership and restructured the organization.<sup>134</sup> Apollo has a wider base than the BGA and a larger national network. The national AFL-CIO, nine state labor federations and many other unions, including the BGA partners, UMW, IBEW, IAMAW and Transportation Workers have endorsed Apollo. Many environmental organizations have endorsed Apollo, including the NRDC, Sierra, Rainforest Action Network, Union of Concerned Scientists, Greenpeace and National Wildlife Federation.<sup>135</sup> Apollo has affiliate organizations and programs across the country at the state and local levels that are engaged in many different roles from lobbying and legislative work to state-level think tanks to community organizing.<sup>136</sup> Unions have a less direct role in Apollo, but the board includes several union representatives who have an equal voice to business and environmental groups. Apollo provides a forum for labor, environmentalists and business to work together and find common ground, while

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<sup>132</sup> Foshay, interview by author.

<sup>133</sup> Apollo Alliance, “About the Alliance,” <http://apolloalliance.org/about.php>.

<sup>134</sup> *Ibid.*

<sup>135</sup> Apollo Alliance, “Endorsers,” <http://apolloalliance.org/about/endorsers/>

<sup>136</sup> Foshay, interview by author.

promoting green jobs at multiple levels.

### Progressive Movement

Alliances between unions and environmental organizations are part of a broad strategy to build a social movement around progressive issues. Both sides have realized that they are unlikely to achieve their goals by working alone and have come to understand the inter-relation between their issues. Tony Daley, research economist with the CWA, speaks of green jobs as becoming a venue for progressive cooperation and potentially creating a social movement to alter the direction of the economy.<sup>137</sup> These coalitions seem to represent a new level of cooperation and have potential to build a larger social movement, but the alliances also have narrow policy goals, particularly on the environmental side, and have not demonstrated ability or desire to utilize mass tactics. Tom Conway, International Vice President of the USW, contends that it is dangerous if alliances are based upon a single issue; instead the BGA is trying to build an institution and a long-lasting partnership around broad concerns.<sup>138</sup>

However, connections between labor and the environment at the grassroots level appear to be less solid. According to Lauren Asplen, Assistant to the President for the IUE-CWA, many members don't even know that their union is part of the BGA, but the union has put \$1 million into an effort to educate members about climate change.<sup>139</sup> The USW also launched an initiative for member education in which fifteen members were

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<sup>137</sup> Daley, interview by author.

<sup>138</sup> Tom Conway, "Workshop: Building a Blue-Green Movement on Climate, Jobs and Trade," (Lecture at 2009 Good Jobs Green Jobs Conference, Washington, DC, February 6, 2009).

<sup>139</sup> Lauren Asplen, "Workshop: Building a Blue-Green Movement on Climate, Jobs and Trade," (Lecture at 2009 Good Jobs Green Jobs Conference, Washington, DC: February 6, 2009).

taken off the job and trained in climate science, environmental economics and green jobs. They then recruited another 350 volunteer members to become organizers who would be trained to give talks to fellow union members, with the goal of talking to 185,000 members five times each over a three-month period.<sup>140</sup> The BGA is planning a similar union member education drive that will extend to all the union affiliates.<sup>141</sup> Local and state level alliances will also be important for directing policy at the sub-national level and building connections, as well as directing and securing funds that might be allocated under the Obama stimulus package. If these coalitions extend beyond the national leadership and involve rank and file members their longevity and capacity could be greatly improved.

## **6. Conclusion**

Green jobs issues could build on past solidarity between labor and the environment and provide a defense against conservative attacks and attempts at division. Dispute over climate change has been largely driven by job loss fears, but as union perceptions have changed, the possibility for a progressive solution to climate and the economy becomes more possible. However, the strength of the coalition around green jobs depends on how committed unions are to green issues and how much unions will gain from greening industry. Therefore, the next chapter examines what unions are looking for from a sustainable economy and what is motivating labor's involvement in the blue green movement.

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<sup>140</sup> Dave Foster, interview by author, Oberlin, OH, 19 January 2009.

<sup>141</sup> Chuck Geiger, "Workshop: Building a Blue-Green Movement on Climate, Jobs and Trade," (Lecture at 2009 Good Jobs Green Jobs Conference, Washington, DC: February 6, 2009).

## **IV. What Unions Want from a Green Economy**

Why do trade unions have an interest in a green economy? What do unions stand to gain from reducing carbon emissions and generating renewable energy? This chapter will address what unions hope to gain from a green economy and why they are embracing the issue of green jobs and joining coalitions with environmentalists. Unions do not simply want to create jobs, but to strengthen domestic manufacturing and create jobs in sectors with potential to be organized. However, many green jobs might be hard to organize because they are low skilled and labor intensive. Union support for green jobs is at one level a rhetorical and public relations tool, but also reflects deeper interests and goals and is being incorporated into many facets of labor's agenda. Green jobs can be understood within the context of union revitalization and a strategy to rebuild the political and economic clout of organized labor. I contend that unions want job growth, but that the driving force behind union support for green jobs is the hope for wider political and economic change, renewed prosperity and a strengthened labor movement.

### **1. Support for Job Creation**

Job creation is a powerful public message to generate support for green policies, particularly during a period of rising unemployment and poor job prospects. Baugh admits that green jobs is a branding term but that the AFL-CIO wants it to mean more and expand it to give substance to environmental policy.<sup>142</sup> Action on climate change and investment in renewables and efficiency can create jobs. Cutting carbon emissions might be beneficial for union jobs: an Economic Policy Institute study found that 133 million workers, including 13 million union members, are in industries where costs would go

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<sup>142</sup> Baugh, interview by author.



down as the result of a carbon-tax policy. Union job increases from this policy would be greater than union jobs lost, but at a lower rate than for non-union jobs.<sup>143</sup> Green sectors are already sources of employment and have potential for expansion. According to a 2007 study by the American Solar Energy Society, renewables generated \$39 billion in revenue and employed 200,000 people directly and 246,000 indirectly in 2006.<sup>144</sup> Employment will expand with increased investment, a 2008 study by the Blue-Green Alliance showed that a strong investment in renewables would create 820,000 new jobs.<sup>145</sup> The higher levels of employment in renewables and energy efficiency are due to more labor-intensive production processes and higher levels of domestic content.<sup>146</sup> A study in California shows that saving enough energy to avoid 100 MW of power plant capacity creates 39 jobs, while 15-20 jobs would be required for an equivalent level of energy produced by a coal or gas burning power plant.<sup>147</sup> Increasing energy efficiency tends to be a low-capital and less automated process that requires more labor.

However, raw job growth alone might not be particularly beneficial for unions, especially if it relies on labor-intensive industries that do not generate good jobs. Unions are interested in creating decent jobs and making sure their members remained employed during the transition to a green economy, rather than simply aggregate job increases. In a speech at the 2009 Good Jobs, Green Jobs Conference, Larry Cohen, President of the CWA, said that green jobs need to be linked with good jobs that pay family wages and

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<sup>143</sup> James Barret and Andrew J. Hoerner, *Making Green Policies Pay Off: Responsible Climate Change Package can Benefit Environment, Workforce*, EPI Issue Brief #143, (Washington, DC: Economic Policy Institute, April 21, 2000), 2, 4.

<sup>144</sup> Renner, Sweeney and Kubit, 100.

<sup>145</sup> *Ibid*, 99.

<sup>146</sup> Goodstein, 31-2.

<sup>147</sup> Michael Renner, *Working for the Environment: World Watch Paper 152* (Washington, DC: Worldwatch Institute, September 2000), 23.

that these need to be union jobs.<sup>148</sup> If job growth relies on more labor-intensive industries, unions might not benefit because less capital-intensive production often pays lower wages due to lower rates of unionization and less capital that makes each individual worker less productive.<sup>149</sup> For example, the average pay for employees in areas of green investment is around 20% less than for workers in the oil industry. Yet, green investment creates more jobs across a wider range of pay levels.<sup>150</sup> This creates a tension for unions between developing jobs that are capital-intensive with high-wages versus creating a greater total number of jobs in more diverse pay ranges. If labor-intensive production also requires high-levels of skill, then wages might be higher and unions could have more potential to represent those workers. For example, a union represented wind turbine technician at a wind farm in Eden, Wisconsin requires two-years of training and has a starting wage of \$29.54 per hour.<sup>151</sup> Additionally, if green production is linked with making more durable and longer-lasting products, this might require more highly skilled labor in craft oriented production.<sup>152</sup>

Unions are enthusiastic about green jobs because development of renewable energy and green building could provide a path to reinvigorating domestic manufacturing and developing jobs for traditional union industries and occupations. A service economy built on profits from financial transactions is unstable and does not create quality jobs for workers. The manufacturing industry has historically provided high-paying and union employment, particularly for people without college degrees. A range of high-quality and

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<sup>148</sup> Larry Cohen (Keynote address at 2009 Good Jobs Green Jobs Conference, Washington, DC, February 4, 2009).

<sup>149</sup> Goodstein, 117.

<sup>150</sup> Pollin and Wicks-Lim, 11-12.

<sup>151</sup> Traci Hohn of Alliant Energy, letter to Mike Pyne, October 18, 2007.

<sup>152</sup> Renner, *Going to Work for Wind Power*, 76.

well paying jobs at various skill levels will not be created by a service economy. An economy with high-tech and high-value added production can provide jobs with higher pay, better working conditions and more diverse employment. Gladstein views green energy as a way to drive modernization and attract new technologies, which could spur a renaissance in American manufacturing.<sup>153</sup> Unions want job creation in particular sectors where union density is high because this will allow them to fight for good jobs, secure jobs for members and create areas for membership expansion. In 2007 unions represented 8.2% of the private workforce, but 12.2% of workers in construction, 12% in manufacturing, 23.4% in transportation and utilities and 18% of installation, maintenance and repair occupations.<sup>154</sup> Daley says that in the context of huge losses in manufacturing jobs, organized labor has to consider how to get policy enacted that will retain and create industrial jobs because manufacturing serves as the backbone of the American middle-class.<sup>155</sup> New manufacturing jobs have potential to be higher paying, as hourly earnings for goods-producing industries averaged \$20.06 in 2006 while service industries averaged \$18.09.<sup>156</sup> The potential to re-industrialize around green technology is exemplified by the Gamesa plant in Pennsylvania that reopened the site of a former steel foundry to build blades for wind turbines with a workforce represented by the USW.<sup>157</sup>

Developing a green public infrastructure and an expanded and more efficient

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<sup>153</sup> Gladstein, interview by author.

<sup>154</sup> U.S. Bureau of Labor Statistics, "Table 3. Union affiliation of employed wage and salary workers by occupation and industry," <http://www.bls.gov/news.release/union2.t03.htm>

<sup>155</sup> Daley, interview by author.

<sup>156</sup> U.S. Department of Labor and U.S. Bureau of Labor Statistics "National Compensation Survey: Occupational Wages in the United States, June 2006," (June 2007), 1.

<sup>157</sup> Jay Inslee and Bracken Hendricks, *Apollo's Fire: Igniting America's Clean-Energy Economy* (Washington, DC: Island Press, 2008), 18-19.

electrical grid could be a source of jobs in a heavily unionized industry. Employment in utilities is projected to decrease by 31,000 jobs from 2006 to 2016, however an increase in public funding to develop a clean energy infrastructure could prevent some of this loss.<sup>158</sup> Expansion in utilities could be very beneficial to unions who in 2007 represented 29.4% of the workforce in utilities.<sup>159</sup> In Wisconsin, Alliant, an energy utility company, decided to open and manage wind farms to meet the state's renewable energy standard and has worked with IBEW Local 965 to operate a 65-megawatt wind farm.<sup>160</sup> The project has created well-paying job opportunities in both constructing and operating the facility. Daley sees green jobs as part of the push to modernize American infrastructure. "Green jobs should be seen through the prism of infrastructure and that money in green jobs will not just be a throw away but provide long-lasting and sustainable benefits for society."<sup>161</sup>

## **2. Protecting and Improving Jobs**

Green jobs are about shifting and re-defining work to protect current jobs as much as creating entirely new employment. Converting union workplaces to be part of the green economy can make union jobs more secure by putting members in growing sectors rather than old industries that have a limited future. A study by the Political Economy Research Institute found potential for greater job security in sectors that become part of

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<sup>158</sup> U.S. Bureau of Labor Statistics, "Table 1. Employment by major industry sector, 1996, 2006, and projected 2016," <http://www.bls.gov/news.release/ecopro.t01.htm>.

<sup>159</sup> U.S. Bureau of Labor Statistics, "Table 3. Union affiliation of employed wage and salary workers by occupation and industry," <http://www.bls.gov/news.release/union2.t03.htm>.

<sup>160</sup> Mike Pyne, interview by author, Oberlin, OH, 10 December 2008.

<sup>161</sup> Daley, interview by author.

the green economy.<sup>162</sup> For example in the auto industry, increasing production of efficient vehicles could help boost the competitiveness of American auto-manufacturers and in turn protect the jobs of UAW members. In Michigan 15 plants are producing technology that improves fuel efficiency of cars, which has created and preserved 2,300 jobs.<sup>163</sup>

Switching to green products and cleaner methods of production can actually help firms reduce costs, increase competitiveness and enlarge demand for their products.<sup>164</sup> When Magna Machine Co. in Cincinnati received a multi-million dollar contract to produce machine components for wind turbines they increased their workforce from 75 to 100 to meet the growing demand.<sup>165</sup> Efficiency measures and cheaper renewable energy can help reduce energy costs in manufacturing, particularly in energy-intensive industries like metal casting and steel, while increasing competitiveness.<sup>166</sup> Businesses have an interest in cutting energy use because it helps reduce input expenditures. Unions are beginning to consider traditional polluting industries as a thing of the past and want to move their members into more secure sustainable industries. According to a USW report, dirty jobs that destroy the environment will eventually disappear and future growth depends on a sustainable economy.<sup>167</sup>

Offshoring of green manufacturing jobs is a potential problem, but certain industries like manufacturing turbines and maintenance of wind farms will not be easily outsourced. Jobs installing and maintaining green infrastructure, as well as retrofitting

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<sup>162</sup> Pollin and Wicks-Lim, 4.

<sup>163</sup> Inslee and Hendricks, 51.

<sup>164</sup> United Steelworkers, *Securing Our Children's World: Our Union and the Environment* (Pittsburgh, PA: United Steelworkers, February 28, 2006).

<sup>165</sup> Boyer, 3.

<sup>166</sup> Apollo Alliance, "Clean Energy Strategies for the Manufacturing Sector," [http://apolloalliance.org/resources\\_manufacturing.php](http://apolloalliance.org/resources_manufacturing.php)

<sup>167</sup> United Steelworkers, *Securing Our Children's World*.

and constructing sustainable buildings, will remain local.<sup>168</sup> Some of these jobs will be temporary, like installation of solar panels, but others like running a wind farm will be permanent. According to Daley, some high-tech manufacturing could remain in the U.S. “The jobs of the future will be green and the U.S. has the sophisticated technology which will allow jobs to be retained in the U.S. for some time, especially for high-value added products.”<sup>169</sup> Blades for wind turbines are massive, which makes them difficult and costly to ship around the world.<sup>170</sup> However the smaller component parts, particularly ones that are non-specific and easy to produce, will face pressures to move offshore.<sup>171</sup> Small and light objects are likely to be produced abroad, for example GE moved production of compact fluorescent light bulbs to China, rather than converting their Ohio plants to make the new bulbs.<sup>172</sup> However, shipping products all over the world is very fossil fuel and carbon-dioxide intensive. Kubit says that the impact of transporting goods is not fully understood but that shipping parts from abroad contradicts the larger goal of reducing carbon emissions. To create truly “green” industries there will have to be local supply-chains, domestic manufacturing and regional economic development.<sup>173</sup>

### Creating Decent Jobs

Unions want green employment to provide decent jobs that offer career pathways and include livable wages and full benefits, which break the trend towards low-wage, dead-end jobs. The ILO defines decent work as being productive and secure, respecting

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<sup>168</sup> White and Walsh, 10.

<sup>169</sup> Daley, interview by author.

<sup>170</sup> Rickert, interview by author.

<sup>171</sup> White and Walsh, 22.

<sup>172</sup> Zach Schiller, *Good Bulbs, Bad Jobs: Workers and Conditions Behind Your New Compact Fluorescent* (Columbus, OH: Policy Matters Ohio, March 25, 2008), 1.

<sup>173</sup> Kubit, interview by author.

labor rights, providing adequate income, offering social protection and including social dialogue, union freedom, collective bargaining and worker participation.<sup>174</sup> Unions have to provide benefits for their members, which means raising wages, improving working conditions and giving workers more control. Thus, organized labor is mainly interested in jobs that can become organized and are part of high-road development. Richard Trumka, Secretary-Treasurer of the AFL-CIO, spoke of the need to ensure that the move towards green increases wages and benefits and provides career paths.<sup>175</sup> Potential for career development is important; in the USW deal with Gamesa the union wanted to create career pathways for production workers that lead to higher skilled and higher paid positions.<sup>176</sup> In a speech at the Midwest Conference on the New Energy Economy, Baugh commented on the need to design an economy that works for everyone and reverses the trend of stagnating wages and declining living standards.<sup>177</sup> Green investment can be a tool in this process because it can stimulate manufacturing, modernization of American infrastructure and restoration of union organizing rights. Green jobs can be just as exploitive as other work, thus labor wants to make sure these jobs are part of a trend towards decent employment that respects worker's rights and collective bargaining.

Extending green principles to the production process can also improve working conditions by enhancing occupational health and safety through cleaner production techniques that reduce pollution and hazardous materials. If the green transition includes transforming the nature of production to eliminate waste and hazardous chemicals, it

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<sup>174</sup> Olsen, 17.

<sup>175</sup> Richard Trumka (Keynote address at 2009 Good Jobs Green Jobs Conference, Washington, DC: February 5, 2009).

<sup>176</sup> White and Walsh, 30.

<sup>177</sup> Baugh, Midwest Conference on Labor in the New Energy Economy.

could lead to safer workplaces. Unions are advancing the connection between a green economy that protects jobs and improves workplace safety while reducing carbon emissions and pollution. The USW and the BGA are promoting the concept of green chemistry that involves the design and use of chemicals that are safe for humans and ecosystems. Environmentally safe chemicals will help protect workers who are confronted daily with hazardous materials and improve competitiveness in the chemical industry by moving into emerging markets in green products.

Green jobs are not guaranteed to stay in the U.S. or to be decent jobs, thus creating good American jobs will require struggle and union involvement. Without unions jobs are less likely to be good paying and provide benefits because workers will lack collective bargaining rights, political leverage, and voice and power in the workplace. Unions provide comparable workers with a 14.7% wage premium and union members are 53.9% more likely to have pension coverage. Union workers also receive on average three more days of paid time-off per year.<sup>178</sup> As with all employment, collective representation is essential to protecting worker's rights and counteracting the power of employers.

### **3. Industrial Policy**

Green jobs can be understood as part of the labor movement's larger desire for industrial policy and as providing a vehicle for advancing an active government role in the economy since the market is unlikely to facilitate the transition to a green economy without government intervention. Some union leaders view green jobs as a path to creating an industrial policy that has been weak to non-existent in the U.S. According to

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<sup>178</sup> Mishel, Bernstein and Allegretto, 182-3.



Baugh, the dominance of neoliberalism and the short-term profit focus of Wall Street have prevented a coherent economic and energy strategy, while green jobs could help initiate a dialogue about planned development. “The Industrial Union Council of the AFL-CIO has pushed green jobs because of the need for an industrial policy that will link the environment, climate change and industry.”<sup>179</sup> Unions want government, in coordination with labor, actively supporting particular industries and coordinating the economy, which would allow environmental, labor and societal concerns to influence the direction of the American economy.

#### **4. Conclusion**

Union support for green jobs involves tensions and contradictions and will not be a panacea for all the ills of the labor movement. Job growth alone will not necessarily benefit unions; thus organized labor wants particular types of jobs and strengthening of current employment. When green jobs are seen in the context of broader goals of the labor movement, like influencing government policy and expanding membership, support for green jobs makes sense. Regardless of whether unions are intrinsically interested in protecting the environment, green jobs is a way to further union objectives. This does not suggest that union support for a green economy is purely rhetorical, self-serving or insignificant; rather this implies that unions have a concrete and material interest in green jobs beyond moral commitment to the environment. Unions have wanted increased membership, government industrial policy and safer workplaces for years and now green jobs creates another strategy for achieving those objectives. The next step is to assess the potential for green manufacturing jobs and the strategies and conditions needed if a high

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<sup>179</sup> Baugh, interview by author.

road green post-Fordism is possible.

## **V. Potential and Benefits of Green Jobs in Ohio**

This chapter uses Ohio as an example for the impacts of green jobs at the state level and for a region that was once the center of American manufacturing. The ability for green jobs to revamp the American economy will depend on success in places like Ohio that have suffered from deindustrialization over the past 30 years and the recent financial and home foreclosure crises. This chapter looks at the potential for green jobs in renewable energy in Ohio and what policies and conditions will be needed to make those jobs a reality. There are some examples of green manufacturing in Ohio, but green development in the state is fairly limited and is still a matter of speculation that relies on increased investment to utilize the existing industrial infrastructure.

### **1. Potential for Green Manufacturing**

#### Wider Economic Condition

Ohio has been devastated by the decline in domestic manufacturing, but the state has significant potential to gain jobs from an increase in manufacturing products for renewable energy, green building and efficient automobiles. Throughout the state manufacturing plants have shut their doors and reduced production, which has created depressed communities that once relied on employment from nearby factories. From the start of the economic recession in 2001 to 2007 Ohio lost 21% of its manufacturing jobs, some 222,500 jobs.<sup>180</sup> Manufacturing jobs are a less significant proportion of jobs in

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<sup>180</sup> Policy Matters Ohio, *State of Working Ohio 2007: Executive Summary* (Columbus, OH: Policy Matters Ohio, 2007), 1.

Ohio, declining from 21.7% of employment in 1990 to 15.4% in 2004.<sup>181</sup> New employment opportunities have not developed, particularly in industrial towns and the urban centers of Cleveland and Cincinnati. Ohio's unemployment rate reached 7.8% in December of 2008, which exceeded the national average of 7.2%, and was a product of the wider economic downturn.<sup>182</sup> In November of 2008 the city of Lorain had an 8.5% jobless rate, while Toledo's hit 10.3%, very high figures in traditional manufacturing cities.<sup>183</sup>

Despite the grim economic outlook, there are emerging sectors of green manufacturing in Ohio that are creating jobs and securing existing employment. Erin Bowser and Amy Gomberg of the Environment Ohio Research and Policy Center report that 60 firms in Ohio are currently involved in the wind energy industry, most of which are smaller companies, but there are some larger companies like Timken that has 6,000 employees.<sup>184</sup> Advance, a company based near Cleveland, is making gear boxes for wind turbines and has invested \$6 million into upgrades and doubled their workforce to accommodate the growing demand for windmill parts that now account for one quarter of their output.<sup>185</sup> Cast-Fab Technologies, a traditional foundry, now casts components for

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<sup>181</sup> Policy Matters Ohio, *State of Working Ohio 2004: Executive Summary* (Columbus, OH: Policy Matters Ohio, 2004), 1.

<sup>182</sup> Ohio Department of Job and Family Services, *Press Release- Ohio and U.S. Employment Situation (Seasonally Adjusted)*, January 23, 2009, <http://jfs.ohio.gov/releases/unemp/200901/UnempPressRelease.asp>

<sup>183</sup> Ohio Department of Job and Family Services, *Civilian Labor Force Estimates For Counties and Cities with Populations Over 50,000*, November 2008, <http://lmi.state.oh.us/laus/OhioCivilianLaborForceEstimates.pdf>, 2.

<sup>184</sup> Bowser and Gomberg, 9.

<sup>185</sup> John Funk, "Strickland Tours Advance Manufacturing To See Environment-Economy Link," *Cleveland Plain Dealer*, 25 Oct. 2007.

wind turbines, which accounted for a quarter of their business in 2006.<sup>186</sup> Wind farms are also beginning to be constructed in Ohio, although Ohio does not have exceptional wind capacity. Currently, there are at least five wind farms in the state, which create permanent high-quality jobs in operation and maintenance of the facilities.<sup>187</sup> A wind farm near Bloomington, OH has created 250 yearlong construction jobs and 40 permanent positions.<sup>188</sup>

Toledo has emerged as a national leader in solar panel manufacturing, as facilities that once made glass for car windshields are beginning to switch into solar panels.<sup>189</sup> Joan Fitzgerald, Director of the Law, Policy and Society Program at Northeastern University, explains that Toledo has been able to use existing expertise and technology in windshield manufacturing to produce thin film solar panels. With the help of an \$8 million state investment into research institutions, several spin-off companies, including First Solar one of the largest solar companies in the U.S., were created and now 15 solar industry companies employ an estimated 6,000 people.<sup>190</sup> The State of Ohio provided funding to the Regional Grow Partnership, a private economic development company working on high technology, which has been working with The University of Toledo to develop solar energy technology.<sup>191</sup> However, none of the employees at the solar panel plants are unionized. The only evidence of unionized green manufacturing in Ohio is at Cobasys,

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<sup>186</sup> White and Walsh, 25.

<sup>187</sup> Bowser and Gomberg, 12.

<sup>188</sup> *Ibid*, 15.

<sup>189</sup> Renner, Michael, Sean Sweeney and Jill Kubit, 51.

<sup>190</sup> Joan Fitzgerald, "Workshop- Renewable Energy: Beyond RPS and Manufacturing Renewal," (Lecture at 2009 Good Jobs Green Jobs Conference, Washington, DC, Feb. 5, 2009).

<sup>191</sup> Daniel McGinn, "The Power of the Sun: The Search for renewable energy sources in making clean-tech jobs hot," *Newsweek*, 8 Oct. 2007, 56.

which has a 186-person IUE-CWA represented workforce that produces batteries for hybrid cars.<sup>192</sup>

### Growth Potential

Green manufacturing jobs in Ohio are still largely a matter of potential, not reality. The lack of stable demand has been a deterrent to investment, particularly in capital-intensive production facilities, which has stalled the expansion of green manufacturing.<sup>193</sup> However, Ohio has some of the highest levels of predicted job gains from an expansion in manufacturing component parts for renewable energy. Ohio has an extensive industrial infrastructure and skilled workforce that could rapidly begin producing parts for wind turbines and PV panels. New green products are similar to traditional ones and could be built using the existing infrastructure.<sup>194</sup>

Some estimates for job creation and protection are significant and present a path for reinvigorating Ohio's manufacturing base and attracting new investment. Expansion of renewable energy could be an effective strategy for job creation because renewable energy tends to create more jobs than other sources. By some estimates renewable energy creates four times as many jobs per megawatt of energy generated than natural gas.<sup>195</sup> However, most of those job gains are because generating renewable energy is more labor intensive. Ohio holds the greatest potential not in directly generating solar and wind energy, but in manufacturing the component parts. Ohio is estimated to be only

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<sup>192</sup> Larry Cohen (Keynote address at 2009 Good Jobs Green Jobs Conference, Washington, DC, Feb. 5, 2009).

<sup>193</sup> White and Walsh, 23.

<sup>194</sup> Amanda Woodrum, *Investing to Re-energize Ohio* (Columbus, OH: Policy Matters Ohio and Apollo Alliance, October 2007), 8.

<sup>195</sup> Amy Hanauer, *Generating Energy, Generating Jobs* (Columbus, OH: Policy Matters Ohio, October 2005), 4.

second to California in capacity to manufacture wind turbines.<sup>196</sup> A Renewable Energy Policy Project (REEP) report looked at 20 of the main components needed for wind turbines and then determined which industries, based on NAICS codes, could potentially produce those parts. The report estimated that Ohio has 80,511 employees at 1,045 companies with potential in wind, including 5,863 employees in Cuyahoga County.<sup>197</sup>

Most job estimates are based upon increased public investment and renewable energy standards. Environment Ohio estimates that requiring wind energy to contribute 20% of Ohio's energy by 2020 would create 40,000 jobs including 3,100 permanent full-time positions and generate \$3.7 billion in wages.<sup>198</sup> The REEP developed a model for estimating the impact of a national renewable energy production target of 74,000 megawatts, with 50,000 megawatts from wind energy, 9,260 megawatts from solar energy, 8,700 megawatts from biomass energy, and 6,077 megawatts from geothermal energy, which would generate an estimated \$71.8 billion national investment. Ohio was estimated to receive \$3.64 billion in investment, which would create nearly 23,000 new full-time jobs.<sup>199</sup> The Center for American Progress (CAP) has called for a \$100 billion national investment over the next two years in green infrastructure, including retrofitting buildings, increasing mass transit, building a smart electric grid and expanding renewable energy. CAP estimates that Ohio would receive \$3.7 billion dollars in this plan, which would create 80,360 jobs and possibly drop the unemployment rate by more than 1

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<sup>196</sup> Hanauer, 5.

<sup>197</sup> George Sterzinger and Matt Svreck, *Wind Turbine Development: Location of Manufacturing Activity* (Washington, DC: Renewable Policy Energy Project, September 2004), 60.

<sup>198</sup> Bowser and Gomberg, 7.

<sup>199</sup> Sterzinger and Svreck, 5.

percentage point.<sup>200</sup> In CAP's estimate Ohio would only get \$3.7 billion of a \$100 billion plan, while in the REEP's estimate Ohio would get \$3.64 billion from a smaller total investment of \$72 billion. This discrepancy might result from different prediction methods and models. CAP estimated the amount of investment based on the state's share of national GDP and population and was looking at the impact of a particular level of federal funding on a range of green industries and projects. The REEP based their estimates on a level of renewable energy generation, assumptions of government policy and a detailed analysis of companies in 43 different NAICS codes that have the potential to manufacture the major component parts for renewable energy. Given the detail and specificity of the REEP report it seems to provide a better guide for Ohio's capacity, but the takeaway lesson is that Ohio has potential because of an existing industrial infrastructure and trained workforce, but that policy is required to realize that potential.

These predictions are mainly from policy organizations that have an agenda to promote and use a variety of models and assumptions. Still, these figures point out the potential for green manufacturing jobs in Ohio and most national policy proposals predict Ohio to be a leading beneficiary and amongst the states with the greatest potential for expansion. However, these estimates largely leave out analysis of job quality and the larger policy framework and actions needed to translate investments and tax incentives into jobs.

#### Broader Economic Benefits

The development of a green economy in Ohio could have broader economic, social and environmental benefits beyond just creating jobs. Economically, renewable

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<sup>200</sup>Pollin, Garrett-Peltier, Heintz and Scharber, 27.

energy could increase the overall economic output of the state, increase employment and increase family incomes. Investing in renewable energy increases money invested in the local economy as every dollar invested in the Ohio electric utility sector creates \$.775 of economic output, while an equivalent investment in coal mining and oil and gas extraction create \$.637 and \$.549.<sup>201</sup> Also, high-wage employment in research and development and high-tech manufacturing can create dispersion effects through increased spending and prosperity that will lead to development in other sectors and industries. The expansion of green manufacturing could also help strengthen Ohio's unions and help reverse the several decade long decline of the metropolitan centers in Ohio. Green jobs will also improve the Ohio and global environment and reduce the risks of climate change, resource depletion and pollution.

## **2. Existing Policies and Potential Initiatives**

The state of Ohio can take measures to facilitate the growth of green jobs through expanding renewable energy requirements, providing R&D funding, improving worker training and helping coordinate regional economic development. Currently, there are state-level policies and initiatives in place and in the planning stages that can help boost renewable energy in Ohio. Ohio's Advanced Energy Fund has potential to amplify the market for renewable energy, but currently only has \$5 million for green energy incentives. The Fund has shown some success providing grants for the Ohio Wind Production and Manufacturing Incentive Program, which helped fund the construction of two large wind projects.<sup>202</sup> Governor Ted Strickland has taken action to support renewable energies and is beginning to advance policies that could expand green energy.

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<sup>201</sup> Bowser and Gomberg, 14.

<sup>202</sup> Woodrum, 1-3.



Strickland helped pass a bill that would require 12.5% of energy from utilities to be from renewable sources by 2025. This is not a very large percentage and the bill has many weaknesses, like a lack of enforcement and benchmarks, but is a step in the right direction.

Requiring more renewable energy does not guarantee new manufacturing jobs or economic expansion in Ohio, unless there is related policy that promotes local supply-chains. These policies could come in the form of protectionist measures like domestic content requirements modeled after federal procurement procedures that require government funds to be spent on products made in the U.S. However “buy American” provisions, especially on a wide-scale, might be a blunt tool for a complex issue.

Ensuring Ohio manufacturing could be part of a strategic industrial policy that provides investment and resources for domestic production and coordinates the development of local supply chains through R&D and training. Workforce training programs can be combined with these policies to facilitate coordination between employer’s needs and employee’s skills. Stabilizing of demand for renewable energy technologies and creating regional development strategies could help facilitate reindustrialization. Additionally, expanded renewable energy installation might not create significant local employment benefits, as the initial construction process is the most labor intensive and companies that build large projects often bring in outside workers for the most high-skilled and specialized positions. Some of the lower skilled positions might be sourced locally, but the economic benefits may leak outside of the local economy if the highest wages go to

employees who are imported to assist on temporary projects.<sup>203</sup> Legislation and state contracting could require local hire and prevailing wage provisions to ensure jobs in constructing the renewable energy infrastructure are decent jobs and potentially unionized.

### **3. Conclusion**

Ohio, like the rest of the U.S., would benefit from green jobs and has potential to shift into renewable energy and related manufacturing, but despite all the hype around green jobs, few Ohio workers are making green products. Green industries are still in the developing stage and represent a potential that depends on further government action and investment. Reversing the trends of declining industry, rising unemployment and growing inequality will require comprehensive policy to facilitate economic renewal. Thus, the subsequent chapters will deal with examples of high and low road green development and strategies and conditions for good green jobs. However, policy options are constrained by institutional capacities and political conditions and will be influenced by the balance of power in society.

## **VI. Green Job Reality: Case Studies of High and Low Road Development**

This chapter develops several case studies of green manufacturing and renewable energy installation in the U.S. The examples include union made wind turbines in Pennsylvania, outsourcing of light bulb production from Ohio, union operated windmills in Wisconsin, non-union solar power in Nevada and a union apprenticeship program in

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<sup>203</sup> Labor Market and Career Information Department, Texas Workforce Commission, *Green Collar Workers and Other Mythical Creatures* (Texas: Texas Workforce Commission, August 1, 2008), 8.

Ohio. These case studies provide examples of high road and low road green development and the ways unions have been involved in green jobs. The ability to generate high road green development seems to depend on effective government policy and active trade unions that are able to influence government and business decisions. When the state and Federal governments failed to ensure job protections and labor rights, green development followed the low road, but when government developed strong policies and coordinated with labor and management, projects were more able to succeed in creating good green jobs. The apprenticeship training facility points to the importance of expanding markets for green products to encourage devoting further resources to green job training.

### **1. Union Made Wind Turbines in Pennsylvania**

Based on conversations with union and environmental leaders, the Gamesa wind turbine plants in Pennsylvania are the leading models of the promise for renewable energy to generate union manufacturing jobs and reindustrialize the U.S. The case of the Spanish company Gamesa, a global leader in wind energy manufacturing, in Pennsylvania shows the potential of business, government and unions working together to coordinate economic development that creates decent jobs. Gamesa currently operates four manufacturing facilities at two Pennsylvania locations, houses its U.S. headquarters in Philadelphia and employs 1,160 people in the state, including 1,000 USW members.<sup>204</sup> The company began its American operations in 2005 by investing \$175 million into a production facility in Edensburg, Pennsylvania and hiring an initial 30 employees who were sent to Spain for training on building wind turbines. By March of 2006 the first

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<sup>204</sup>American Rights at Work, “Gamesa Technology Corporation, Inc,” <http://www.americanrightsatwork.org/labor-day-list/2008-companies/gamesa-technology-corporation-inc-20080819-623-365-365.html>.

wind turbine blade was produced in the 276-employee factory. The company then opened a second location at the site of a former U.S. Steel mill in Fairless Hills, near Philadelphia.<sup>205</sup> Since then, Gamesa has continued to expand production, building rotor blades, nacelles and towers for wind energy, and increase employment. The Pennsylvania plants produce enough turbines to generate power for 270,000 households a year.<sup>206</sup> Gamesa has stimulated economic development by generating decent paying unionized manufacturing jobs and attracting other renewable energy companies who are planning to locate in the region to gain from an expanding cluster of renewable energy firms.<sup>207</sup> Governor Edward G. Rendell of Pennsylvania is working to develop an industrial cluster throughout eight counties in south-central Pennsylvania, which will allow firms to share on R&D and create a regional supply-chain of renewable energy components.<sup>208</sup> Arcelor Mittal Steel in Burns Harbor, Indiana is one of the nations largest steel mill producers and has begun supplying Gamesa, which expanded their demand and helped prompt the company to recall 250 USW members back to work.<sup>209</sup>

The USW have been able to secure decent wages and benefits for employees at Gamesa while creating career pathways and building effective labor-management relations. The USW quickly organized the facilities, as both the company and the state government were receptive to unionization and even consulted the union during the development process on training and workforce issues. Gamesa accepted a neutrality

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<sup>205</sup> White and Walsh, 30.

<sup>206</sup> *Ibid*, 223.

<sup>207</sup> Inslee and Hendricks, 18.

<sup>208</sup> White and Walsh, 24.

<sup>209</sup> House Select Committee on Energy Independence and Global Warming, *The Green Road to Economic Recovery*, Testimony of Fred Redmond, International Vice President USW, 110<sup>th</sup> Cong., September 18, 2008, 3.

agreement and did not launch an anti-union campaign and then recognized the worker's decision to organize with the USW through majority sign-up.<sup>210</sup> In fall of 2006 the USW notified Gamesa that a majority of the workers at both plants had signed union cards and by June 1st the initial contract was ratified.<sup>211</sup> Under the contract, wages were to increase 10% over three years and family health insurance premiums would be lowered. Starting wages at the Edensburg plant for blade production workers are \$12.73 per hour and blade maintenance workers make \$20.09 per hour, while at the Fairless Hills site, blade production workers start at \$13.65 an hour and tower welders make \$20 an hour.<sup>212</sup> The union contract provides workers with good healthcare benefits, a matched 401(k) retirement plan and 13 days of paid-vacation in the first year of employment, prompting American Rights at Work to name Gamesa to the 2008 Labor Day List of Partnerships that Work.<sup>213</sup> Gamesa initially utilized temporary and sub-contracted workers, but has shifted away from this practice towards hiring full-time employees. Additionally, the union and management have set up monthly joint committee meetings to discuss safety, health and environment issues.<sup>214</sup> For future contracts the union is pushing for wage incentives tied to incumbent worker training, cross training in different departments and a defined internal career pathway.<sup>215</sup>

The USW efforts at Gamesa are unique because the organizing drive was at a foreign-owned company that did not put up active resistance to unionization. Gamesa has a history of working with unions in Europe and seems to have extended this tradition

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<sup>210</sup> American Rights at Work, "Gamesa Technology Corporation, Inc."

<sup>211</sup> White and Walsh, 30.

<sup>212</sup> Mattera, 18.

<sup>213</sup> American Rights at Work, "Gamesa Technology Corporation, Inc."

<sup>214</sup> *Ibid.*

<sup>215</sup> White and Walsh, 30.

to their American facilities.<sup>216</sup> The company agreed to a neutrality agreement with the union and allowed the USW to openly organize the facilities. “We voluntarily recognized the Steelworkers union. There is no downside. There simply isn’t,” says Julius Steiner, CEO of Gamesa Energy USA.<sup>217</sup> This stance might extend from the company’s history of working with unions, but also the benefits of working with organized labor, like the ability of the USW to recruit a skilled workforce from former steelworkers who had lost jobs to plant closings. Comparing Gamesa’s labor-management relations in different countries and future sites in the U.S. might help explain what factors led to cooperation with unions. Company neutrality towards the USW is not likely the result of Gamesa being especially concerned with its workers, but because the company has developed a business model that is amenable to unions and under certain conditions has found ways to profit from a unionized workforce.

The case of Gamesa shows the potential for collaboration between government, business and unions around economic development and green jobs. Pennsylvania was able to attract Gamesa because of a strong business climate that included a skilled workforce, stable demand and financial incentives. Pennsylvania did not attract development through low road strategies like low labor costs, lax environmental regulations or corporate handouts. Governor Rendell of Pennsylvania helped to pass an aggressive renewable energy portfolio standard, along with creating tax incentives and using state purchasing power to boost the market for renewables.<sup>218</sup> The state provided an \$11.3 million incentive package, including grants from economic development

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<sup>216</sup> American Rights at Work, “Gamesa Technology Corporation, Inc.”

<sup>217</sup> Ann Belser, “Workers Group Praises Gamesa, Other Firms,” *Pittsburgh Post-Gazette*, 26 August 2008.

<sup>218</sup> White and Walsh, 28-9.

agencies and job creation tax credits, for Gamesa's initial site in Edensburg, which provided funding attached to labor standards.<sup>219</sup> Rendell also collaborated with the USW around Gamesa. Baugh says that Rendell sought to work with the union to encourage Gamesa's location in Pennsylvania because both the governor and the union wanted renewable energy and job creation.<sup>220</sup> Gamesa chose the Edensburg location in part because of a regional partnership around workforce and economic development, the Johnstown Area Regional Industries, which identified skills of workers in the region particularly those dislocated from the collapse of the steel industry.<sup>221</sup> The location of Gamesa facilities in the state provides a model for state level tripartism that fosters publicly beneficial economic development and creates effective labor management relations.

## **2. When Environmental Policy Hurts Manufacturing and Unions: GE and CFLs**

The case of compact fluorescent light bulbs (CFLs) provides a negative contrast to the Gamesa story; in which policy designed to increase energy efficiency and slow climate change led to harmful impacts on domestic manufacturing. As the market for CFLs has grown, American lighting manufacturers have closed domestic factories and outsourced CFL production overseas, particularly to China. A 2007 federal energy bill that eliminates the use of incandescent light bulbs by 2012 and heightened public awareness has meant an increased demand for more efficient lighting, of which CFLs are the most developed and use 75% less energy than incandescent bulbs.<sup>222</sup> The growth in

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<sup>219</sup> Mattera, 18.

<sup>220</sup> Bob Baugh, interview by author.

<sup>221</sup> White and Walsh, 29.

<sup>222</sup> Zach Schiller, *Good Bulbs, Bad Jobs: Workers and Conditions Behind Your New Compact Fluorescent* (Columbus, OH: Policy Matters Ohio, March 25, 2008), 1.

the CFL market could have been a boost to domestic producers; instead companies like GE, a leading light bulb producer, have closed down incandescent bulb factories in the U.S. and opened up CFL factories overseas. The closure of light bulb factories has been acutely felt in Ohio where several GE plants have shutdown. In October of 2008 GE announced the closing of six plants in Ohio that employed 425 workers, meanwhile GE opened up new CFL production facilities in China.<sup>223</sup> A Policy Matters Ohio analysis of GE's China factories found violations of labor law, including dangerous working conditions, unpaid overtime and a lack of pay stubs for employees.<sup>224</sup> Although lighting has become a smaller segment of GE's production, CFLs have helped make lighting a growing sector for the company.<sup>225</sup> Instead of using this expanding and shifting market to create and protect domestic jobs, companies have outsourced production and eliminated the jobs of American workers.

Although the decision by GE to produce CFLs in foreign plants reflects larger business strategies and shifting global dynamics of capitalism, it is also part of weakening organized labor and eliminating unionized employees. GE is one of the largest companies with IUE-CWA members, including 2,000 members in light bulb manufacturing, some of who will be dislocated by plant closures.<sup>226</sup> The union wanted GE to shift into making CFLs, but the company was not interested and argued that it could not afford to produce CFLs in the U.S.<sup>227</sup> Thus, the switch to CFLs meant that union members lost their jobs. In response the CWA launched the "Screw That Bulb" campaign to draw attention to

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<sup>223</sup> Schiller, 2.

<sup>224</sup> *Ibid*, 3.

<sup>225</sup> *Ibid*, 2.

<sup>226</sup> Daley, interview by author.

<sup>227</sup> Baugh, interview by author.



outsourcing of CFL manufacturing and the potential health and safety issues related to mercury in CFL bulbs. The closure of union light bulb plants is part of GE's larger anti-union policies and strategies to reduce the number of union members in its workforce. The number of GE members represented by the CWA has dropped from around 90,000 in 1971 to 15,000 currently and in recent years the CWA has struggled to win union elections at GE plants.<sup>228</sup>

The transition to more energy efficient light bulbs does not have to hurt workers and unions and could actually be a boost for manufacturing. Europe's experience with CFLs has been much different, as EU laws have banned imports of Chinese CFLs, which has forced companies to produce bulbs in Europe to meet the large European market.<sup>229</sup> Germany has been able to include CFL production under a high road to economic development and expansion of green industry, with Germany significant quantities of CFLs being produced domestically under decent working conditions with good wages.<sup>230</sup> In Europe policy to encourage energy efficiency and promote environmental protection has coincided with industrial and trade policy that means both workers and the environment benefit.

Light Emitting Diode (LED) is an emerging energy efficient lighting technology, which provides an opportunity for a better path for domestic industry and workers. Steve Lipster, director of the Electrical Trades Center of Central Ohio, thinks that LED technology has the potential to completely change the lighting industry and is a much

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<sup>228</sup> Daley, interview by author.

<sup>229</sup> Communications Workers of America, "Screw That Bulb: How GE Is Plugging Into the Green Movement to Move Jobs and Advanced Technology to China," Screw that Bulb, <http://screwthatbulb.org/articles/page.jsp?itemID=28389431>

<sup>230</sup> Schiller, 3.

better technology than CFL.<sup>231</sup> GE is one of the three largest companies involved in producing components for LED lighting. Thus, U.S. companies stand to benefit from improvements in LED technology and expansion of the LED lighting market. Just like CFLs this could mean a renewal for American manufacturing or job losses from offshoring. Ohio could benefit from expanded LED production as several plants in the state are involved in the industry; the GE subsidiary Lumination is manufacturing LED components and has 84 employees in LED component production and another 230 in making LED lighting products and fixtures.<sup>232</sup> LSI Industries is another LED company in Ohio and has 1,400 employees and \$305 million in sales. Yet, American companies are facing competition from Asian firms that are pushing on innovation. If LED technologies are able to create a green manufacturing renewal it will require government policy to ensure domestic production, investment into R&D and trade laws that constrain the mobility of capital.

### **3. Union Jobs in Renewable Energy Installation: Alliant and the IBEW**

Union involvement and business decisions were able to facilitate a positive outcome for workers and create decent employment at Alliant Energy, a utility company in Wisconsin. Alliant recently decided to expand into being an operator of wind farms and worked with IBEW local 965 to construct and operate their wind energy facilities. Alliant collaborated with the union to coordinate the development of wind energy production facilities and created new IBEW represented jobs because Local 965 secured an agreement that their members would operate the facility. During the construction process, Local 965 worked with Alliant to promote local and union hiring and was able to

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<sup>231</sup> Lipster, interview by author.

<sup>232</sup> Gereffi, Dubay and Lowe, 18-19.

ensure that union contractors did a significant portion of the construction work. Alliant gave preference to contracting union labor and used a Project Labor Agreement, in which wages and other conditions were negotiated in advance. Of the estimated 365 workers employed during peak time construction, 239 were union including 26 union jobs in road building/earth work, 70 in turbine erection and 46 doing various aspects of electrical work.<sup>233</sup> Initially two technicians were hired to operate the turbines and Local 965 negotiated the job description, wages, benefits, qualifications and safety rules. However, most of wind turbine materials and components parts were from overseas, the turbine blades were shipped from Europe across the Great Lakes.<sup>234</sup>

According to Local 965 Business Manager Mike Pyne, the wind farm agreement extended from a history of cooperation between the union and Alliant and an earlier agreement that Local 965 would be involved in any expansion. Both the company and the union wanted the wind farm and were able to improve their already peaceful relationship through collaboration over the new facility. The two sides had agreed that any new power generation facilities would be operated with union labor and that the union would be consulted in the development process, which created an opportunity to avoid fighting between labor and management. Alliant benefited from using union contractors because it meant a skilled and reliable workforce and avoided struggles with the IBEW over contracting disputes.<sup>235</sup>

Although the new wind-farm facilitated skill development for workers, it also highlighted the lack of adequate training for green jobs. Hiring wind turbine technicians

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<sup>233</sup> IBEW Local 965, Mike Pyne, “Positions at Peak Time,” Spreadsheet.

<sup>234</sup> Pyne, interview by author.

<sup>235</sup> *Ibid.*

required training the new workers, but neither the company nor the union had experience in wind energy. Thus, the technicians were sent to a training school run by Vesta, a large Danish wind turbine company. According to Pyne, large companies have a hold on the wind industry and business-run programs dominate the training. Pyne thinks there is a need for more training in wind energy through improved and expanded workforce development and vocational programs run by unions and community colleges. Much of the current education for electrical skills focuses on residential electrical wiring, while there is a lack of training for green skills.

#### **4. Failed Development of Renewable Energy: Solar in Nevada**

An alternative example to the success of Alliant in Wisconsin is the Nevada Solar One concentrated solar power plant in Boulder City, Nevada where the construction of a renewable energy production facility undercut union wages and failed to create decent jobs.<sup>236</sup> Unlike the wind farm in Wisconsin, the solar plant in Nevada began with cooperative efforts between the company and local unions but collaboration fell apart because of weak government policy and anti-union companies. After Nevada passed a renewable energy standard, the state wanted to expand production of renewable energy. Plans were developed to build a 64 megawatt concentrated solar facility in Boulder City, but when the original developer, Duke Solar, was sold to SolarGenix Energy, which is owned by the Spanish company Accion SA, promises to use union and local labor were broken. Instead, construction contracting was not subject to prevailing wage requirements and most of the workers were brought from outside of Nevada, with many

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<sup>236</sup> John G. Edwards, “Solar Project Stirs Storm with Union,” *Las Vegas Review Journal*, 23 December 2006.

from Mexico and Central America.<sup>237</sup> In the aftermath of this project, the union attempted to sue the developer, but eventually lost the claim. The failure of the project in the eyes of local unions led some in the labor movement to support energy from coal, rather than renewable energy that was owned by an anti-union foreign company.<sup>238</sup>

The Nevada example highlights the need for better government policy to ensure good green jobs and that benefits of green development remain in the community. Nevada provided incentives and perks for SolarGenix but did not make strong and explicit requirements for decent working conditions and public benefits, which led to a low road of green development. The state of Nevada gave SolarGenix \$15 million in tax rebates, but in return the company sought low-cost and non-local labor.<sup>239</sup> The Public Utilities Commission also gave the company a preferential \$.16 per kWh rate, which is substantially higher than the usual \$.05 rate.<sup>240</sup> Once the project began, the local government did not have enough authority to demand local hiring. Government power had also been weakened when the Nevada Commission on Economic Development eased requirements on companies seeking tax breaks.<sup>241</sup> Baugh argues that the Nevada case shows that local hire, union contracting and prevailing wage requirements need to be made explicit and that collective bargaining needs to play a role in new green projects.<sup>242</sup>

## **5. Work Force Development- IBEW Apprenticeship Program**

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<sup>237</sup> Edwards.

<sup>238</sup> Sterzinger, *Energizing Prosperity: Renewable Energy and Reindustrialization*, 1, 2.

<sup>239</sup> Edwards.

<sup>240</sup> Frank Armand Albano, "Disgruntled Unions Drop Solar Lawsuit," *Las Vegas Business Press*, 5 Feb. 2007.

<sup>241</sup> Edwards.

<sup>242</sup> Baugh, interview by author.

The Electrical Trades Center Of Central Ohio (ETC) in Columbus, OH provides an example of a union training program that is beginning to respond to the emphasis on green jobs, but has not fully incorporated green aspects because of a lack of demand and strong government policies. The ETC is an electrician apprenticeship program run jointly by the IBEW and the National Electrical Contractors Association (NECA).<sup>243</sup> The Center offers a five-year apprenticeship program that trains participants to become journeymen electricians and IBEW members. Graduates then work predominantly in industrial and commercial construction. The apprenticeship program is an essential method for developing highly skilled workers and ensuring high standards of education and experience in the electrical trade. Participants receive training through on the job experience under the supervision of a journeyman electrician, combined with classroom training in college-accredited courses at the ETC. The ETC emerged out of the collective bargaining agreement between the IBEW and the NECA, which stipulates the creation of a jointly run training and apprenticeship program. The ETC governing board is run jointly by labor and management with three labor and three business representatives. For every hour worked by an electrician represented by the collective bargaining agreement, \$.70 is contributed to the ETC's trust while additional funding has come from grants and loans.<sup>244</sup>

The ETC provides a mechanism for developing highly skilled workers, ensuring a high standard of education in the electrical trade and responding to the skill demands of the construction industry. The combination of experiential and classroom learning provides a mix of practical and more theoretical knowledge. The classroom training

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<sup>243</sup> This section is based on a visit to the ETC by the author on January 26, 2009.

<sup>244</sup> Steve Lipster, interview by author, Columbus, OH, 26 January 2009.

provides core courses in advanced skills, physics, engineering and electrical and circuit theory, along with several elective courses. The classroom technical training provides a base of knowledge that can be applied to many different situations, technologies and processes. According to Steve Lipster, director of the ETC, this broad knowledge base is more flexible than teaching just narrow and specific skills. Through a combination of high-skills, limited supply of labor and collective bargaining, participants who become journeymen and union members are well paid and receive decent benefits. There are also opportunities for career advancement and mobility, as the ETC provides re-training for current journeymen to update them on new technologies and help them move into higher positions.

Lipster admits that apprenticeships have received a negative reputation partially because the technical training was often poor, but he contends that the ETC is committed to a rigorous training program and strives to produce the best electricians in order to outdo non-union competition. According to Lipster, IBEW members have limited fears about long-term unemployment because contractors hire through the union hiring hall, so when someone is out of work they are put back onto the list of potential hires. Thus, members are not subject to plant closing, downsizing or relocations, instead employment fluctuates with changes in the construction industry, which is prone to booms and busts.<sup>245</sup>

The ETC provides career opportunities to individuals who do not pursue a college degree, however the program can also be exclusive and has struggled to attract underserved communities. Apprenticeships are good ways to pass down skills, but are

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<sup>245</sup> *Ibid.*

also exclusionary. The apprenticeship system itself dates back to medieval guilds and in many ways the system has not changed dramatically. A trade or craft is based on a monopoly over the skills; the union does not want to diminish its bargaining and market power by having an abundance of trained electricians, thus it attempts to control and regulate the number of trained electricians. The ETC does create an opportunity for high school graduates and other young low-skilled workers to receive free training and a near guarantee of employment upon completion of the apprenticeship. Also, the 40 hours a week of on-the job training provides income while participants are completing the program. The ETC has tried working with community groups and the local workforce development board to encourage applicants from underserved poor, urban and minority communities, but the attempts have not been very successful. The application process can be a barrier to some, like the aptitude test, high school diploma or GED and one academic credit of algebra requirements.<sup>246</sup>

### Green Jobs Training

The ETC has begun to think about green jobs and is engaged in determining what skills will be required for green projects. The ETC considered several green technologies and sectors to incorporate into the training program and has concluded that the sector with the most potential in Ohio is building retrofitting and energy efficiency. Lipster says that solar panels do not have a fast enough return on investment and that wind energy is not very promising in Ohio, so the ETC has decided not to invest resources in those fields. Instead the ETC sees building efficiency as an area with potential because it has usable technology, good returns on investment and requires a minimal amount of re-

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<sup>246</sup> *Ibid.*



training. IBEW members are beginning to get projects that require building more efficient buildings, particularly LAN control systems that allow buildings to be more responsive and use less electricity. LAN systems that use computer chips to connect lighting and heating controls to monitors and sensors have greatly expanded in the past several years and allow for increased efficiency and reductions in energy consumption.<sup>247</sup> IBEW members are already learning about and installing these systems, however they are not taught as an overtly “green” skill.

Most building efficiency work can be done with current knowledge and skills, just with slightly different applications. Thus, the apprenticeship program has not adopted any green specific courses or materials into the curriculum. The ETC has not invested resources specifically into green programs because most of the skills in building efficiency are already being taught and the ETC does not want to invest training money into uncertain fields. Although the international level IBEW has developed strong green training programs, especially for solar panel installation, there is little talk of incorporating them at the ETC because there is not a large demand in Ohio.<sup>248</sup> Lipster is confident that as new and improved technologies emerge, like better PV panels and LED lighting, that IBEW members will be able to keep up, partially because of the strong foundation of knowledge fostered through the classroom training. Still, the ETC is scheduled to undergo a curriculum revision in 2011, which could include more green.

The ETC itself cannot increase the number of apprenticeships or create new jobs; growth instead depends upon increased demand and advances in green technology. The number of apprentices accepted is determined monthly based upon the current economic

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<sup>247</sup> *Ibid.*

<sup>248</sup> *Ibid.*

climate. The ETC mostly provides training for skills and technologies that have an existing market and demand from contractors and consumers. An expansion in building retrofits and green building could lead to a boom in the construction industry and in turn enable the program to accept more applicants. According to Lipster, building retrofitting currently has a fairly long return on investment and there are limited incentives, but despite those barriers it still has potential to be a growing market. The ETC is waiting for new developments in technology, especially in wind and solar, before they commit resources. Lipster sees potential in helical wind turbine technology that would enable turbines to be placed in residential locations and in areas with lower wind levels.

Green-collar jobs and green skills do not fit neatly into the ETC's framework and model of training. Lipster admits that the notion of a green job gives the ETC some anxiety because it does not incorporate their traditional parameters, encroaches on their work and does not have an adequately precise definition. A journeyman may spend three months working on a project for a LEED certified building, but then for the next six months work on another project constructing a traditional building that has no green aspects. How is that worker then qualified? This creates some tension for the IBEW. Lipster says that there is a lot of talk about green jobs, but not sufficient action and concrete developments to warrant investing resources in green areas. The training curriculum at the ETC also highlights that green jobs won't be necessarily be brand new, but rather jobs will begin to shift as more projects incorporate green principles and old skills are used for new green applications. This more gradual transition may actually be more attractive to current workers because they are not confronted with the prospect of significant re-training. Knowing that current skills and knowledge will apply to green

jobs helps to reduce anxiety amongst workers about shifting to a green economy. Still, there has been insufficient work done to actually assess the specific skills needed for green construction and technologies. In order to adjust training programs, the skills needed for green industries will need to be determined and the market for green products and services will have to expand.

## **6. Conclusion**

As these case studies shows, green development does not inherently create decent employment. However, when unions are involved in planning, government policy supports labor protections and the work requires skilled labor, green jobs can be good jobs. At Alliant in Wisconsin and Gamesa in Pennsylvania trade unions were involved in the planning process and employers were receptive to unionized labor. In both examples the work also demanded fairly high-skilled labor, which is more heavily unionized and harder to outsource. At Alliant the employer needed to work with the union to train windmill technicians, while at Gamesa the manufacturing of wind turbines required skilled workers and a fairly capital-intensive production process. However, the success at Alliant was contingent on a history of collaboration between labor and management and less on government actions, which might not be reproducible in other settings. Pennsylvania on the other hand depended on a comprehensive government strategy to attract and develop renewable energy, which might be more easily replicated in other regions. Failed development in the case studies was the result of inadequate government action and anti-union employers. In Nevada state policy essentially subsidized poor labor practices and the lack of a working relationship between the unions and the company hampered high road development. The example of CFLS and GE points to the

difficulties in preserving manufacturing in easily transportable and low-skill goods, especially when there is not wider government industrial or trade policy to assist domestic manufacturing. The next chapters will propose actions that unions and governments can take to ensure decent employment and explore the factors that could determine the direction of a green economy.

## **VII. Creating Good Green Jobs- Policies and Strategies**

Building on the case studies, this chapter begins by examining government policies that can develop green industries, specifically renewable energy and building efficiency, train workers on green skills and promote good jobs. Protecting worker's rights and pushing for pro-labor legislation depends on trade union involvement, thus the second part of this chapter addresses strategies unions can take to push for green job development that considers the impact on workers and also helps to strengthen the labor movement. Union tactics range from traditional collective bargaining to incorporating green principles into broader union revitalization strategies, like coalition building.

### **1. Government Policies and Actions**

Developing green industries, transitioning to clean energy and creating good green jobs will depend on an active role for the state. Without strategic government policy, markets for renewable energy, green building and electrical efficiency will be slow to develop and the technologies will be less likely to be developed and manufactured domestically. The market alone will not be able to shift towards a sustainable green economy, especially when pollution and carbon emissions remain externalized costs. Additionally, green jobs can be just as exploitative as any other form

of employment, thus the government will need to ensure labor standards and create a friendlier environment for union organizing.

### Green Specific Policies

A wide range of policy options exists for increasing renewable energy, energy efficiency and green building. Many of these policies will have to come at the federal level to change market signals, spur investment in national public goods and standardize state regulations and laws. The broadest option for increasing clean energy is to set a renewable energy standard that mandates a certain level of energy come from renewable sources. The Apollo Alliance is proposing a national standard of 25% by 2025.<sup>249</sup> So far, the federal government has not passed a national standard, although many states, like California and Pennsylvania, have passed standards, which have helped boost installation and manufacturing of renewable energy. However, simply setting standards is insufficient without the necessary infrastructure for generating and transmitting the energy. Subsidies and incentives can help promote construction and installation of clean energy. These policies range from tax credits for individuals who install solar and wind energy generation on their property to tax rebates and incentives for utility companies to build power generation facilities, like the Alliant wind farm in Wisconsin. Direct public spending on an expanded and smarter electric grid will be needed to transport energy from regions with greater renewable energy resources to areas with fewer resources as well as increasing grid efficiency and allowing more user control.<sup>250</sup>

Increasing demand for renewable energy will help develop component part manufacturing, but more active government policy can ensure adequate supply and

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<sup>249</sup> Inslee and Hendricks, 279.

<sup>250</sup> *Ibid*, 282.

expansion of domestic manufacturing. The renewable energy market has been shaky partially because Congress has allowed the federal renewable energy production tax credit to expire and renewed it only on a two-year basis, which has led to an uncertain investment climate.<sup>251</sup> Businesses in the renewable energy sector are calling for increased government policies to promote the use and manufacturing of renewables. Denis Bode, CEO of the American Wind Energy Association, highlighted the need for a federal agenda around renewables, particularly for renewable energy production tax credits and a national renewable energy standard.<sup>252</sup> Another policy tool is loan guarantees that reduce investment risk and encourage development in clean energy sectors. There is a proposed federal loan guarantee program but it has yet to release any guarantees.<sup>253</sup> The government can provide direct public funding through grants for manufacturing and construction of renewable energy. Grants allow the government to have more control over spending and not rely on the whims of the market, however this can also mean public money that subsidizes private profits. If market forces alone determine the supply-chain, then a large amount will come from overseas and will not generate growth for local economies.

Government at the national, state and local level can also help spur research and development and coordinate re-tooling for renewable energy component manufacturing. Governments can fund R&D and help connect research institutions and manufacturers in

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<sup>251</sup> Renner, Sweeney and Kubit, 71.

<sup>252</sup> Denis Bode (Keynote address at 2009 Good Jobs Green Jobs Conference, Washington, DC, Feb. 4, 2009).

<sup>253</sup> George Sterzinger, "Workshop- Renewable Energy: Beyond RPS and Manufacturing Renewal," (Lecture at 2009 Goods Green Jobs Conference, Washington, DC, Feb. 5, 2009).

order to ensure that new technologies are both developed and capitalized in the U.S.<sup>254</sup> Toledo's dominance in PV provides a good example of the government coordinating with business and research institutions to develop green technology. Although states are beginning progressive initiatives, national level policy is ultimately needed to reinvigorate manufacturing, fund research and development and stimulate demand for emerging technologies. The Renewable Energy Policy Project suggests creating a government agency to manage and direct research and loan guarantees for new clean technology.<sup>255</sup> Both the labor community and the Apollo Alliance advocate expanding Manufacturing Extension Projects (MEP) for energy efficiency, which can help organize the supply-chain and connect companies. MEPs can also provide technical assistance, advise on energy efficiency and set standards for the industry.<sup>256</sup> These projects can also help small and medium size firms remain competitive and provide factories with energy assessments and ways to be more efficient.<sup>257</sup>

A mix of direct spending, tax incentives and building codes and regulations could help encourage green construction and building retrofits. Providing residents and companies with tax incentives to weatherize their buildings can expand retrofitting, which will raise energy efficiency, reduce energy costs and create jobs. There are existing models for expanding housing efficiency, like the Weatherization Assistance Program that was developed to help low-income people retrofit their homes. The federal government is lagging behind in implementing efficiency plans, but states can set energy

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<sup>254</sup> Sterzinger, 2009 Good Jobs Green Jobs Conference.

<sup>255</sup> Sterzinger, *Energizing Prosperity: Renewable Energy and Reindustrialization*, 9.

<sup>256</sup> Baugh, interview by author.

<sup>257</sup> Apollo Alliance. "Clean Energy Strategies for the Manufacturing Sector," available [http://apolloalliance.org/resources\\_manufacturing.php](http://apolloalliance.org/resources_manufacturing.php).

saving targets before national standards are implemented.<sup>258</sup> Ohio passed a bill in 2007 requiring new public school buildings to meet the LEED silver standard, which has led to funding for 180 green school construction projects.<sup>259</sup> This means jobs for design and construction firms as well as demand for green building products like insulation and double-paned windows. Elaine Barnes, the Energy & Environment Administrator for the Ohio Facilities Commission, says this has the potential to drive demand for green buildings initiatives and is beginning to increase the scale for green building and develop public knowledge about sustainability.<sup>260</sup>

German policy strategies can be useful models for the U.S. Germany has had success developing green manufacturing and increasing building efficiency, doing so with a high-cost labor market and strong unions. Germany used incentives and subsidies to spark the renewable energy sector. In 1990 Germany implemented an electricity feed-in law that required utilities to purchase renewable energy and established a minimum price for renewable electricity, which created certainty for investors and economies of scale.<sup>261</sup> Germany also used low-interest loans for energy efficiency projects, renewable energy production and component part manufacturing.

#### Training and Workforce Development

Government can assist in training workers for green jobs and developing a high-skilled workforce for the green economy. Government funding of community colleges, technical schools and union apprenticeship programs can help improve and expand education needed to create a skilled workforce. The Green Jobs Act of 2007 was passed

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<sup>258</sup> White and Walsh, 11-12.

<sup>259</sup> Elaine Barnes, interview by author, Oberlin, OH, 3 December, 2008.

<sup>260</sup> *Ibid.*

<sup>261</sup> Renner, Sweeney and Kubit, 69.



by the U.S. Congress as an attachment to the Energy Independence and Security Act, and provided \$125 million to establish national and state training programs to address job shortages in green building, renewable energy and energy efficiency.<sup>262</sup> The Green Jobs Act was modeled after programs designed to create pathways out of poverty and would provide training partnership grants and seek equal participation between labor and industry.<sup>263</sup> Yet, funds for the Act have not been appropriated and the stipulated amount is rather small.<sup>264</sup> Other federal programs have funded green training and can provide models for future initiatives, like the 1998 Workforce Investment Act that provided grants for regional workforce development related to renewable energy and the Department of Labor's Workforce Innovation Through Regional Economic Development that promotes regional partnerships focused around energy.<sup>265</sup> Yet, green training will not grow unless there are jobs, as shown by union apprenticeship programs that are hesitant to fully invest in green skills because the jobs have not become a reality.

#### Policies Linked to Good Jobs

The limited evidence does not show green jobs to be significantly better paying or have better labor standards than non-green jobs. A report by Good Jobs First analyzed firms in solar and wind manufacturing and found the majority paid below the average wage rate for production workers in the durable goods industries.<sup>266</sup> All of the firms surveyed also received significant amounts of tax incentives and direct subsidies, but the government rarely requires high labor standards but when government did workers

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<sup>262</sup> Labor Market and Career Information Department, Texas Workforce Commission, *Green Collar Workers and Other Mythical Creatures*, 16.

<sup>263</sup> White and Walsh, 45.

<sup>264</sup> *Ibid.*

<sup>265</sup> *Ibid.*, 42.

<sup>266</sup> Mattera, 14.

earned higher wages. In Ohio, Xunlight employs 160 workers and pays an average wage of \$15.50 and is not subject to any wage or labor standards. First Solar employs 834 workers with an average wage of \$17, but is subject to some job quality standards in connection with government funding.<sup>267</sup>

If subsidies are simply given to business, then public money can fund poor business practices and exploitative jobs. Businesses often extract large incentives from governments but then do not provide community benefits, decent wages and tax revenues. Tax rebates and public investments could instead be linked to labor standards that demand safe working conditions, high wages and strong benefits. Andrea Buffa at the UC Berkeley Labor Center says that governments can attach job creation requirements to tax incentives, provide additional incentives for paying prevailing wages, link tax rebates to remaining local and mandate job standards.<sup>268</sup> According to Phil Mattera, Research Director of Good Jobs First, governments should leverage companies to adhere to wage and benefit standards and first-source hiring if they receive government monies, especially in renewable energy manufacturing where many firms receive some form of government support.<sup>269</sup> Ensuring prevailing wages, local hiring and union contracting depends on specific agreements and policy language that mandates employer actions. Baugh argues that if standards are just based on assumptions, they will be

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<sup>267</sup> *Ibid*, 13, 15.

<sup>268</sup> Andrea Buffa, “Workshop- Renewable Energy: Beyond RPS and Manufacturing Renewal,” (Lecture at 2009 Good Jobs Green Jobs Conference, Washington, DC, Feb. 5, 2009).

<sup>269</sup> Phil Mattera, “Workshop- Green Recovery: Creating Good Jobs that Build a Low-Carbon Economy,” (Lecture at 2009 Good Jobs Green Jobs Conference, Washington, DC, Feb. 5, 2009).

broken and instead there needs to be concrete and specific language.<sup>270</sup> Failed government policy is exemplified by the Nevada Solar One project where specific hiring requirements were not written into the policy. Bama Athreya, Executive Director of the International Labor Rights Forum, contends that the market alone will not be able to generate good green jobs and that companies need to be forced through law to adapt high road strategies while the option for low road competitive advantage needs to be eliminated.<sup>271</sup>

### Trade and Tax Policy Changes

Developing decent green manufacturing jobs is not simply a matter of creating incentives and renewable energy standards, but will require a significant shift in U.S. trade and tax policy that currently allows for capital mobility and offshoring of production. The “race to the bottom” that is embedded within trade and tax policy will have to be altered if renewed domestic manufacturing is possible. The U.S. tax code currently subsidizes foreign investments partially because taxes on overseas investments are so low.<sup>272</sup> The American free trade regime created through agreements like NAFTA and the World Trade Organization facilitates the free movement of capital without protecting labor, environmental and human rights concerns. This model of trade allows companies to move production out of high-cost labor markets to areas with lower labor costs and then use this threat to leverage power against workers. Trade policy could be shifted to encourage domestic production by providing tax incentives to maintain

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<sup>270</sup> Bob Baugh, “Workshop- Green Recovery: Creating Good Jobs that Build a Low-Carbon Economy,” (Lecture at 2009 Good Jobs Green Jobs Conference, Washington, DC, Feb. 5, 2009).

<sup>271</sup> Bama Athreya, “Workshop- Sustainable Supply Chain 101,” (Lecture at 2009 Good Jobs Green Jobs Conference, Washington, DC, Feb. 4, 2009).

<sup>272</sup> Bluestone and Harrison, 46.

production facilities domestically and penalties for closing shops. International trade agreements that stipulate labor and environmental standards could work towards eliminating the low labor-cost option.

The push to create green jobs could motivate changes in tax code and trade agreements to promote domestic industry, but reversing the trend of increasing globalization and world trade is a difficult and potentially impossible task. Multi-national corporations will continue to operate outside of the bounds of a single nation-state and capital holds immense power over government policy and does not show much interest or potential benefit from restricting the international flow of capital. Thus, areas of localized development might occur, but alongside international trade and investment. For example, First Solar, the large PV producer in Toledo, also has large factories overseas, yet it still invests in its U.S. plants. Simply making green products will struggle to limit the mobility of capital, which Cowie shows has been a strategy of business since the 1930s and results from capital's drive to reduce costs of production and find new areas for accumulation.<sup>273</sup>

### Labor Law Reform

Reducing inequality and restoring job security will require a strengthened labor movement. Unions were a key reason for the rising wages in the Fordist era and fought to win protections, like the minimum wage and health and safety standards, that protect all workers. A large unionized workforce also elevated wages for non-union workers through union spillover effects. Unions have been essential in improving working conditions and building the “American middle-class” through collective bargaining and

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<sup>273</sup> Jefferson Cowie, *Capital Moves: RCA's Seventy-Year Quest for Cheap Labor* (New York: The New Press, 1999), 2.

collective action. Today an increase in union membership and a revitalized labor movement could empower the working class and provide an economic and political counterweight to business. Without an increase in worker power there is unlikely to be a downward shift in wealth or strong government action to restrain business and create policies that promote economic development that benefits the public and the environment.

When workers are organized they have more power to leverage against employers in order to raise wages and benefits, improve working conditions and have a voice in the workplace. Thus, supporting the right of workers to form unions is one of the most effective strategies for securing good jobs because without union representation wages, benefits and working conditions are likely to deteriorate. Yet, the current union organizing laws under the Taft-Hartley Act create an imbalance of power towards employers, which has meant unions have struggled to gain certification victories in the past 30 years. Legal changes that level the playing field between employees and employers and can make it easier for workers to organize can help expand unionization. Passage of the Employee Free Choice Act (EFCA), which is being promoted by organized labor, would reform the system of union recognition allowing workers to join unions through majority sign-up and increase penalties on employers for using coercive tactics. If politicians want green jobs to be decent jobs, unions will have to be involved.

## **2. Union Strategies**

Organized labor has many strategies for promoting green job creation, making existing jobs greener and expanding union membership in green jobs. The green jobs framework fits with many of the other union revitalization strategies that have emerged

since the mid 1990s. Many of the leading green unions, the USW, CWA, SEIU, and LIUNA, have also been leading the way on innovative strategies, like organizing new workers, forming labor-management partnerships, rank and file activism and corporate campaigns. Green jobs provide a new angle and energy to other revitalization strategies, particularly in developing new relationships with government and business.

### Collective Bargaining

Trade union's traditional tool of collective bargaining can be utilized to secure agreements with employers about improving environmental practices at the firm level and stipulations that require new projects to employ union labor. Environmental issues can be used in corporate or strategic campaigns to leverage resistant employers by publicizing environmentally destructive practices.<sup>274</sup> "Green clauses" can be included in contracts that specify commitments on environmental issues, like pollution levels, energy efficiency or waste and recycling.<sup>275</sup> SEIU has published a booklet detailing methods for using collective bargaining power to secure provisions like greener cleaning products, alternative transportation, recycling and environmental labor-management committees.<sup>276</sup> Collective bargaining tools will be especially useful in implementing greener production processes and incorporating safer chemicals into the workplace. Plant level bargaining can help members get involved in green issues and provide worker insight into making

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<sup>274</sup> Kate Bronfenbrenner and Tom Juravich, "The Evolution of Strategic and Coordinated Bargaining Campaigns in the 1990s," in *Rekindling the Movement: Labor's Quest for Relevance in the Twenty-First Century*, ed. Lowell Turner, Harry C. Katz, Richard W. Hurd (Ithaca: NY: ILR Press, Frank W. Pierce Memorial Lectureship and Conference Series. Vol. 11, 2001), 24.

<sup>275</sup> Olsen, 11.

<sup>276</sup> Service Employees International Union, *Negotiating Green: Using SEIU Bargaining Power to Secure Benefits to Our Members, Our Children and Our Environment* (Washington, DC: SEIU, May 2008).

decisions that promote a sustainable economy and potentially create greener and more secure work.<sup>277</sup>

Employers and unions can also reach agreements about future expansion, like IBEW Local 965 and the utility company Alliant in Wisconsin. The two sides had a working relationship and formed an agreement that Local 965 would be consulted on new developments. Thus, when Alliant opened a wind farm, Local 965 was able to secure bargaining rights for the employees and encourage the company to contract union labor for the construction process.<sup>278</sup> Still, collective bargaining is not an effective tool for creating new jobs and directing the larger trends in the economy influenced by trade, finance and tax policies.

#### Training and Apprenticeships

Unions are actively engaged in green job creation through apprenticeship training programs that provide workforce development designed for a green economy and form linkages between skilled workers and companies. Union apprenticeship programs help propel new members into green occupations and upgrade the skills of existing members to meet the needs of a green economy.<sup>279</sup> Rickert sees union training capacity as one of the best ways to guarantee good wages and benefits by improving workers position in the labor market and that unions are in a good position to use federal money to expand green training.<sup>280</sup> Training is an especially important function for unions at the state and local level where unions can work with businesses, government and colleges to create training programs that are integrated with economic development and create pathways to green-

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<sup>277</sup> *Ibid*, 18.

<sup>278</sup> Pyne, interview by author.

<sup>279</sup> Foshay, interview by author.

<sup>280</sup> Rickert, interview by author.

collar jobs.<sup>281</sup> Through cooperation unions can incorporate education programs with business demands and help secure skilled workers for new business investments; the USW assisted Gamesa in finding a labor force for their wind turbine manufacturing plants.<sup>282</sup> Even in the face of anti-union politicians and corporations, unions can utilize their ability to train workers, which will be needed for a rapid green transition, as leverage to be involved in policy and economic development decisions.<sup>283</sup> In order for unions to have an active voice in economic planning, organized labor will have to provide something that business and government want, like securing a stable and experienced workforce.

### Social Partnerships

Social partnerships between unions and employers created around green jobs can help foster more cooperative relationships. Unions can work with management to develop a workforce with green skills, manage the transition to green production and promote supportive government policy. Daley sees green jobs as having the potential to transform labor-management relations. “For too long labor relations have been adversarial and zero-sum when the tools used to mobilize members can actually benefit the employer, like education and developing trust. Green jobs can be part of working with employers and seen as a parallel to the collaboration around lean manufacturing.”<sup>284</sup> Areas of collaboration can be in opening new plants and redesigning production processes to be more environmentally friendly and energy efficient. Joint environmental committees can function like existing health and safety committees and address issues

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<sup>281</sup> White and Walsh, 8, 9.

<sup>282</sup> *Ibid*, 30.

<sup>283</sup> Yudken, interview by author.

<sup>284</sup> Daley, interview by author.



like carbon emission reductions and energy efficiency at the workplace.<sup>285</sup> Green jobs can be an impetus for transforming labor-management relations and advocating for safer and more secure jobs.

### Influencing Government Policy

Unions can use their lobbying apparatus to push for legislation while utilizing green jobs as political messaging and using green issues to create a venue for having a voice in public policy. Unions have expanded their political voice in the past 10-15 years as evidenced by the AFL-CIO's increase in political funding and political activity.<sup>286</sup> The political power of organized labor can be mobilized at the national and state level through lobbying and campaigning for particular legislation and candidates. "Green" is a powerful branding term, one that even Republican presidential candidate John McCain used, and can help unions develop a positive public image and create space for politicians to support their green initiatives. In order for unions to be on the forefront of the green economy and ensure benefits for workers, they need to be engaged in the discussions about green jobs and involved in policymaking. State and local level efforts might provide ways for unions to influence policy and begin working with government and employers. Foshay sees potential for state and local governments to help labor and business build better relationships.<sup>287</sup> The important role for union training programs provides a rationale for organized labor being at the discussion table.

### Coalitions and Social Movements

In order for organized labor to achieve its political goals it will have to build

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<sup>285</sup> SEIU, *Negotiating Green*, 9.

<sup>286</sup> Turner and Hurd, 24.

<sup>287</sup> Foshay, interview by author.

coalitions and a larger social movement to push for a green economy. Obach argues that coalitions have become increasingly important in policymaking and require broader and larger alliances.<sup>288</sup> In the past 30 years unions have not had particular success getting their legislative priorities passed, particularly reforms to union organizing laws, and most accomplishments have been defensive.<sup>289</sup> Even under Clinton labor was unable to get important pieces of legislation passed, while initiatives like NAFTA and welfare reform were enacted that hurt the American working class. Green jobs can be a way for unions to create greater momentum, bring more resources to political lobbying and build political pressure to push the government to stimulate the green transition. Blue-green coalitions could make substantive change beyond single pieces of legislation and individual politicians if they become part of a broad movement and develop substantive connections. According to Obach, unions and environmental organizations are capable of dramatic social change when they form long lasting and comprehensive alliances.<sup>290</sup> David Reynolds sees potential for progressive labor and community alliances that build power in order to develop the capacity to govern and transform the political environment.<sup>291</sup> At the 2009 Good Jobs Green Jobs Conference, union and environmental leaders spoke of developing a comprehensive movement that was based

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<sup>288</sup> Obach, *Labor and the Environmental Movement*, 115.

<sup>289</sup> Lowell Turner and Richard W. Hurd, "Building Social Movement Unionism: The Transformation of the American Labor Movement," in *Rekindling the Movement: Labor's Quest for Relevance in the Twenty-First Century*, ed. Lowell Turner, Harry C. Katz, Richard W. Hurd (Ithaca: NY: ILR Press, Frank W. Pierce Memorial Lectureship and Conference Series. Vol. 11, 2001), 24.

<sup>290</sup> Obach, *Labor and the Environmental Movement*, 301.

<sup>291</sup> David Reynolds, "Building coalitions for regional power: labor's emerging urban strategy," in *Labor in the New Urban Battlegrounds: Local Solidarity in a Global Economy*, ed. Lowell Turner and Daniel B. Cornfield (Ithaca, NY: ILR Press/Cornell University Press, 2007), 83.

on more than just passing a single bill, but the level of commitment remains to be seen.<sup>292</sup>

Unions also need to activate their rank and file members and promote grassroots political action in order to make institutional change and lay the groundwork for an expansive social movement. Developing a broader movement depends on new models of unionism based on social movements rather than the often-conservative system of business unionism that developed under Fordism.<sup>293</sup> Turner and Hurd contend that American unions missed the wave of social movements in the 1960s, but by turning to a more activist form of unionism, organized labor can be part of emerging social movements.<sup>294</sup> The labor movement is beginning to move in this direction with a renewed commitment to organizing, larger community campaigns and more innovative leadership. Getting rank and file engagement is essential to breaking down union and environmentalist barriers and developing the collective power to offset corporate interests and mobilize for structural change.

Some unions, particularly the BGA members, appear committed to broad coalitions built around social movement unionism and activism. The BGA has its own staff, although small, that is beginning to lead organizing drives and is institutionalizing the green jobs efforts of the partnership organizations. The unions leading the blue green agenda have combined green jobs with wider union revitalization strategies of coalition building, grassroots political action and labor management partnerships.<sup>295</sup> The USW have begun actively educating their members about climate change by taking workers off the job to be trained in environmental activism, while the Sierra Club is reaching out to

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<sup>292</sup> 2009 Good Jobs Green Jobs Conference, Washington, DC, Feb. 4-6, 2009.

<sup>293</sup> Turner and Hurd, 11.

<sup>294</sup> *Ibid*, 22.

<sup>295</sup> *Ibid*, 10.

educate their members on labor issues. These efforts display a process of organizational learning that Obach says is necessary for developing enlightened cooperation in which organizations internalize their partner's interests and expand their goals, a process that is especially important for labor and environmental coalitions.<sup>296</sup> However, most of the attention around green jobs involves the national leadership and the level of commitment and grassroots participation remains limited within the larger labor movement.

### **3. Conclusion**

The role of unions will be an essential factor in determining the direction of a future green economy and the possibility for creating an equitable economy and protecting workers. Unions can make direct demands on employers, pressure the government on environmental issues and build coalitions. The government has many policy tools to expand renewable energy and building efficiency and ensure good jobs, but enacting these policies depends on political support and economic conditions. The degree to which government initiatives benefits workers will be determined partially by the success of union revitalization and the strength of blue green coalitions. Green jobs is not just a debate for policy wonks but represents the potential to transform the American political economy and impact the lives of working Americans. The final chapter of the paper looks at possibilities for a future green economy and what factors will determine if a high road post-Fordist green economy is possible.

## **VIII. A New or Old Pattern for Economic Development and Labor Relations?**

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<sup>296</sup> Obach, *Labor and the Environmental Movement*, 134.

There is currently a greater possibility for a shift in the political economy than there has been in the past 25 years, as the combination of economic crisis, environmental pressures and a favorable political climate has created an opening for change. So, to what extent can green industries create good jobs, develop flexible specialization and lead the transition to an active government role in the economy and labor-management cooperation? Can environmental concerns bring together technological innovation, new production processes and good union jobs in a high road path to a green economy? Some speculation is needed about the potential for green jobs to transform the political economy and what factors will determine the direction of green economic development. Green jobs could be post-Fordist or Fordist, vary in the degree of green and follow a high or low path. The degree and direction of change will be influenced by the actions of labor, capital and the state and will be constrained by balances of power, institutional capacity and historical circumstances. This chapter first provides Germany as an example of high road green manufacturing and then looks at the possibility for post-Fordist or Fordist production methods in the U.S. along with the impact on workers and the influence of the degree of sustainability. The chapter concludes with speculation about the potential for green jobs to facilitate a realignment of the political economy by transforming relations between labor, capital and the state.

Although unions might hope that green jobs facilitate a return to the post-WW II era through a Green New Deal with Keynesian economic tools, public infrastructure projects and mass production that utilizes organized labor; the constantly advancing nature of capitalism and the fundamental shifts towards globalization, information technology and financialization mean a return to Fordism is unlikely. At the 2009

National Good Jobs Green Jobs Conference, all of speakers in the opening plenary session referenced Franklin Roosevelt and a Green New Deal, but this rhetoric overlooks the structural barriers to restoring the New Deal and misses the negative undersides of Fordism, like monotonous and alienating work, the growth of corporate power and the exclusion of people of color. More government intervention, Keynesian economic strategies and expanded role of unions would help reverse the trend of stagnating wages and growing inequality, but a new vision that builds upon the past is also necessary.

So could the U.S. develop a labor-friendly green post-Fordism? The issues of sustainability and climate change raise new areas for labor, management and government cooperation, as well as incentives for interventionist government policy. A green economy has the potential to facilitate a high road to development that stimulates a renewed government role in the economy and development of new partnerships between workers and employers. If green jobs follow a high road of post-Fordism it could mean high-tech and lean manufacturing done by skilled and autonomous workers along with economic development in regional clusters that coordinate research and training. New social partnerships could transform labor management relations and a greater level of corporatism could offset the neoliberal and anti-union aspects of post-Fordism by dictating a coherent industrial policy and strengthening the power of unions. However green jobs could easily follow a low road with exploitative working conditions, low wages, nonunionized workforces and an emphasis on flexibility that means insecurity and stress for workers. The emphasis on flexibility has often undercut unions, while neoliberalism has shrunk government regulation and intervention, all of which are barriers to new social partnerships and corporatism. Any movement towards a more

social democratic and pro-union political economy will require workplace and political struggle and simply making green products will not alter the dominance of neoliberalism and the basic dynamics of capital that increase exploitation and degrade work.

### **1. German Example**

Germany provides an example of a country that has undergone a high road of green development with decent jobs and active unions in a high-value added and technologically advanced manufacturing sector. The combination of strategic industrial policy, coordinated training, strong unions and a political will for environmental policy has helped Germany become a leader in green building, renewable energy generation and green manufacturing. Germany has been described as undergoing a “third industrial revolution” with the transition to sustainability, as 250,00 workers are employed in green industries and the government estimates another 150,000 jobs by 2020. This growth has been fueled by large investments of public money through grants and loans.<sup>297</sup> Germany displays that an organized workforce and innovative work arrangements can be utilized in expanding green production.

Germany has a coordinated market economy (CME) with a strong system of tripartism, works councils and union apprenticeship programs. According to the varieties of capitalism approach, Germany has institutions, relationships and legal regimes that are conducive to business strategies that seek to create cooperation through bargaining with unions, forming works councils and using a highly-skilled and more autonomous

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<sup>297</sup>Eric Reguly, “Germany’s Green Example Could Be Revolutionary,” *The Globe and Mail*, 28 Sept., 2007.

workforce.<sup>298</sup> Employers are highly organized at the national level and unions are centralized and organized by industry, which has helped to facilitate a comprehensive industrial relation system that creates peaceful labor-management relations.<sup>299</sup> Economic policy has been shaped by German history and the timing and pace of industrialization, which has favored active economic policy to ensure monetary stability and international competitiveness along with collaborative regulation with business.<sup>300</sup> Germany has not become a leader in green industries simply because the government passed particular legislation, but because the country has the historical legacies, firm behavior and institutions that were conducive to a green transition which relied on the coordination between business and organized labor and industrial policy.

Germany has turned less to deregulation in response to the crisis of the 1970s and instead relied on a comparative institutional advantage in coordinating institutions to continue high-value added and high-wage production.<sup>301</sup> Political forces have pushed the state to address environmental policy while also promoting domestic industry. German unions have been active on the environment, as the German Trade Union Association (DGB) declared in 1994 that environmental policy was one of its key political responsibilities.<sup>302</sup> Unions have utilized the powers of co-determination for

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<sup>298</sup> Peter Hall and David Soskice, *Varieties of capitalism: the institutional foundations of comparative advantage* (Oxford: Oxford University Press, 2001), 22, 24.

<sup>299</sup> Peter J. Katzenstein, *Policy and Politics in West Germany: the growth of a semi-sovereign state*, (Philadelphia: Temple University Press, 1987), 24, 26.

<sup>300</sup> *Ibid*, 83-4.

<sup>301</sup> Kathleen Theilen and Christa Van Wijnbergen, "The Paradox of Globalization: Labor Relations in Germany and Beyond," *Comparative Political Studies*, 36.8 (October 2003), 859-880, 870.

<sup>302</sup> Horst Heuter, "Full-Employment, Social Justice and Sustainable Development: the Environmental Policy of the German Trade Union Association," in *The Green Agenda:*



environmental concerns and have been pushing to extend these institutions to environmental issues. The DGB has pressed for the creation of a national environment committee that would bring together unions, industry, government, environmental organization and scientists.<sup>303</sup> Eckart Hildebrandt argues that for German unions to advance ecological ideas they will need to work through economic and social councils, co-management arrangements and industrial policy. Yet, to effect change in industrial behavior, unions will also have to form alliances with other social groups to pressure industry and the state and extend efforts outside of works councils that lack the broad focus to adequately address environmental policy.<sup>304</sup>

However, Germany also shows the potential pitfalls for a green economy, particularly the powerful impact of the broader context of weakening unions and declining manufacturing. Small and medium firms initially dominated renewable energy component manufacturing but as the market expanded firms have been consolidating. A union funded report found that green companies offer career paths and a range of jobs, but they also have high performance demands and long hours of overtime because of surging demand and a lack of skilled workers.<sup>305</sup> Worker representation has been stronger in the supply industries than in renewable energy companies, particularly in solar.

Around 40% of renewable energy companies have active works councils, with older and larger companies more likely to have work councils. Some companies, especially in the

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*Environmental Politics and Policy in Germany*, ed. Ingolfur Bluhdorn, Frank Krause and Thomas Scharf (Keele, England: Keele University Press, 1995), 102.

<sup>303</sup> Heuter, 103, 106.

<sup>304</sup> Eckart Hildebrandt, "Preconditions and Possibilities for a Trade Union Environmental Policy," in *The Green Agenda: Environmental Politics and Policy in Germany*, ed. Ingolfur Bluhdorn, Frank Krause and Thomas Scharf (Keele, England: Keele University Press, 1995), 122-23.

<sup>305</sup> Renner, Kubit and Sweeney, 97.

East, have opposed unionization and collaborative work strategies and have pursued labor cost cutting strategies.<sup>306</sup> Additionally, firms in renewable energy tend to prefer company level rather than industry level bargaining.<sup>307</sup> The shifting global economy has put pressure on the German system of industry-wide collective bargaining coverage and dual worker representation, thus some green development has not provided a high level of representation for workers and not ensured high wages and other benefits.<sup>308</sup>

## **2. Green Post-Fordism or Neo-Fordism**

The next three sections speculate about the production processes, business strategies and working conditions of green jobs and what path of development is possible for the green economy. The nature of green manufacturing will be determined by three variables: the organization of production, the degree of sustainability and working conditions. Green manufacturing jobs could implement post-Fordist or neo-Fordist production methods, follow a high or low road of post-Fordism and adopt green principles or not integrate sustainability. The ideal outcome would be green high road post-Fordist jobs, but these variables will be influenced by the demands of production, managerial strategies, market characteristics, government policies, union actions and historically contingent institutional arrangements. Formation of post-Fordist work organization may require precision made products, niche markets, small firms, regional development and high-tech demands. However, green manufacturing might follow more neo-Fordist production methods if the market for green jobs is large and stable, dominated by big firms and does not depend on high skill levels.

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<sup>306</sup> *Ibid*, 98.

<sup>307</sup> *Ibid*, 98.

<sup>308</sup> Theilen and Wijnbergen, 865.

## Work Organization

The flexible specialization perspective of post-Fordism posits an emerging paradigm of high-tech craft production carried out by highly skilled and semi-autonomous workers in lean and flexible workplaces, but the possibility for green post-Fordism will be influenced by the dynamics of markets for green products, the type of demand, firm size and regional collaboration. Flexible work organization has developed particularly in high-end products, for example specialty steel that is made in small batches for rush order by skilled workers using computer-controlled equipment.<sup>309</sup> Piore and Sabel contend that some American managers operating in unstable markets have increased flexibility and that there has been some resurgence of craft production, although not to the same degree as parts of Europe.<sup>310</sup> Some scholars have observed high performance work systems, which attempt to eliminate inefficiencies and maximize worker productivity, across many sectors, including traditional manufacturing in the American Midwest.<sup>311</sup>

No studies have been done about the shopfloor dynamics in green production, so evaluating managerial strategies and the degree of worker control in green industries is largely speculation. Yet most green manufacturing will resemble current workplaces and follow larger trends. A large portion of green production, especially for wind turbines, is in traditional workplaces like foundries and machine tool shops, while sectors that use new technology, like PV panels, are similar to the microelectronic industry. Since green

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<sup>309</sup> Piore and Sabel, 209.

<sup>310</sup> *Ibid*, 240-41.

<sup>311</sup> Josh Whitford, *The New Old Economy: networks, institutions, and the organizational transformation of American manufacturing* (Oxford; New York: Oxford University Press, 2005), 2.

jobs are in many different industries, making generalizations about shopfloor experiences, managerial strategies and production processes is difficult. Making a steel tower for a wind turbine may require less specialized skills and technology than producing a microfilm solar panel or new type of battery cell for hybrid cars. I have chosen to focus on manufacturing related to renewable energy, but green jobs could be in many manufacturing sectors ranging from chemicals, paper, food, building materials and clothing. Each of these industries will develop differently depending on the characteristics of production, strength of unions in the sector, market demands, type of employers and government policy.

#### Production Requirements

If the manufacturing processes for green products require precise detail, high quality and variations in demand, then high-tech green cottage industries might be possible. Renewable energy could potentially create craft manufacturing jobs building specialty wind turbines and precision component parts that require advanced machine tools, as well as high-tech solar panels that utilize advances in nano-technology and electronics. If factories have to respond to variable and specified orders there would be more of a push to develop flexible production processes, which might require general use or programmable machinery and more skilled workers. However, the industrial and political institutions in the U.S. are not very conducive for a renaissance in craftwork. High-trust workplaces are difficult to build in the U.S. because of American historical legacies, lack of coordination mechanisms and workplace cultures that have meant companies tend not to invest in new managerial strategies without short-term results.<sup>312</sup>

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<sup>312</sup> Sabel, 219.

The lack of capital coordination has meant firms compete over cost rather than quality. Germany on the other hand has pioneered some of the more flexible and decentralized work regimes, which reflects Germany's coordination mechanisms that favor competition over quality and that the country did not fully adopt Taylorism and maintained some craft production.<sup>313</sup>

### Market Dynamics

The nature of green production will be influenced by whether or not the markets for green products become niche and flexible or mass and stable and if small or large firms dominate the industry. If the market for wind and solar products remains a small sector selling to niche markets, then flexible or craft production by small companies is more likely. So far, the demand for wind and solar has not been stable in the U.S., which has hindered large investments in capital and upgrading of facilities. Yet if clean energy becomes a large source of American electricity, then the market for renewable energy products will be immense and may push large companies to turn towards mass production. It is important to note that there is not a strict binary between mass and flexible production and that some firms may adopt one or the other, or a combination of both strategies. Also, the mass production of green technologies will certainly incorporate some elements of new organizational strategies and reflect the context of a restructured economy.

In the U.S., renewable energy is an emerging industry and most of the related manufacturing firms are small, innovative and operate in competitive markets. Periphery firms, like small companies that make gearboxes for larger core wind turbine companies,

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<sup>313</sup> Tomaney, 175.

do much of the existing green manufacturing which allows large companies to avoid risk and expensive investments by contracting out to periphery companies that are more able to innovate and tweak production to special orders. Sabel argues that small firms may dominate in specialized goods that do not have stable demand and function as subcontractors for larger companies.<sup>314</sup> The dominance of small firms may also reflect the larger restructuring of American manufacturing towards outsourcing production to smaller establishments.<sup>315</sup> The rapidly shifting and competitive nature of green industries might be conducive to more flexible production, but could also mean sweatshop conditions.

If the policy goals of the environment and labor movement get passed, than the organization of green manufacturing may shift towards neo-Fordist models because the demand for green products will become more stable and larger firms will begin green production. Unions and environmentalists want renewable energy, green building and public transport to expand through government spending and become major industries in order to create jobs and reduce carbon emissions and pollution. If the market for green products grows, then green industries will likely shift towards mass production with core firms moving into green sectors utilizing specialized machinery to produce large numbers of uniform products. Markets will be less competitive and more secure because demand will come from utilities and municipalities, rather than consumers and thus not subject to fluctuations in consumer preferences and having to develop new products for shifting niche markets. Pressures of international competition have driven development of flexible specialization, which might not be as strong on green products if most of the

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<sup>314</sup> Sabel, 36, 48.

<sup>315</sup> Whitford, 9.

demand is public and constrained by domestic purchasing agreements. Green manufacturing could emerge with more flexible work processes but as the market grows, production could shift towards neo-Fordism as small firms adopt mass production strategies because innovation stalls and demand becomes more consistent. Companies might also develop more flexible forms of Fordist production, like steel mini-mills that use new processes to produce standard products at a faster rate and in smaller quantities.<sup>316</sup> However, if thinkers like Piore and Sabel are correct, then the greatest potential for craft production in green industries might be when they are in growing markets for innovative products, not when they have become stable.

The green jobs dialogue seems to envision a return to the post-War era, but this vision might be unrealistic or based on incomplete analysis of the political economy. At the 2009 National Good Jobs Green Jobs Conference, all of speakers in the opening plenary session referenced Franklin Roosevelt and many union speakers mentioned a Green New Deal. Cohen also spoke of a return to Henry Ford's concept of paying wages high enough for workers to afford the cars they were making. This rhetoric overlooks the structural barriers to a return to the New Deal, like the lack of business support, and neglects the negative undersides of Fordism. Certainly increasing worker's wages is an ideal goal, but Henry Ford also revolutionized the assembly line and implemented Taylorist work control that was extremely exploitative and heightened the separation of conception and execution in manual labor. The post-War era coincided with monotonous and alienating work, the growth of corporate power and the exclusion of people of color. More government intervention, Keynesian economic strategies and an expanded role for

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<sup>316</sup> Sabel, 204, 209.

unions would help reverse the trend of stagnating wages and growing inequality, but a new vision that builds upon shortcomings of the past is also necessary.

### **3. Flexible Specialization or Exploitative Flexibility**

If the green economy takes a high road of post-Fordism that generates creative work, decent working conditions and regional development rather than green sweatshops and uneven development, it will depend on firm size, managerial strategies, government policy and union representation. The more positive perception of post-Fordism argues that flexible specialization and advanced technology facilitates the re-linking of conception and execution in manufacturing and creates higher-trust work environments that give workers more autonomy.<sup>317</sup> However, other researchers, like Tomaney, are not convinced of the benefits of flexibility and high performance work and have argued that flexibility has meant decreased job security, intensified work and even sweatshop conditions.<sup>318</sup>

The size of green firms will have ramifications for working conditions, wages and the potential for unionization. If green manufacturing companies are mostly small start-ups or supply firms, then they are less likely to be union shops because on average smaller shops pay lower wages and are less likely to be unionized.<sup>319</sup> In Ohio many of the firms in the wind industry are small family-owned factories, although there a few large employers like the Timken Company.<sup>320</sup> Few of these small firms have been receptive to unions, partially because that would mean higher labor costs when demand is unsure and

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<sup>317</sup> Piore and Sabel, 252.

<sup>318</sup> Harvey, *The Condition of Post-Modernity*, 150.

<sup>319</sup> Steven J. Davis and John Haltiwanger, "Employer Size and the Wage Structure in U.S. Manufacturing," NBER Working Paper Series, December 1995.

<sup>320</sup> Bowser and Gomberg, 9.



capital costs are high. If green firms expand or larger companies begin to manufacture green products, then these plants will more likely be targets of union organizing campaigns and possibly use higher-skilled workers. Steven Davis and John Haltiwanger argue that numerous studies have shown that larger plants are more likely to be union and that large non-union firms are more likely to adopt union wage rates to avoid unionization because they are more frequently targets of organizing drives.<sup>321</sup> In firms with over 5,000 employees there are higher mean levels of schooling, experience and tenure, as well as a higher likelihood of union workers.<sup>322</sup> However, jobs in a large green factory are not secure even if workers are unionized, for example GE's light bulb factories in Ohio were moved abroad. Sabel shows that when a strong union exists in a large plant, the company might create smaller factories to build new technologies in order to avoid the higher fixed union labor costs. This is often done by moving to a region beyond the union's control, such as right to work states or over seas- like GE shifting CFL production to China.<sup>323</sup>

### Work Organization and Unions

If green firms implement high performance work regimes to increase efficiency and productivity this could mean more secure employment and improved work conditions, but could also generate stressful work environments and be less receptive to unionization. Flexibility will not necessarily improve work, but rather can be a form of additional managerial control, increased work demands, expanded responsibility without

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<sup>321</sup> Steven J. Davis and John Haltiwanger, *Employer Size and the Wage Structure in U.S. Manufacturing*, National Bureau of Economic Research Working Paper Series, December 1995, available at <http://ssrn.com/abstract=225454>.

<sup>322</sup> Davis and Haltiwanger, 15.

<sup>323</sup> Sabel, 47.

more power and increased exploitation.<sup>324</sup> If companies utilize expensive capital and flexible work organization to make windmill parts for example, this could lead to demands for long hours, increased managerial control and less likelihood of union representation.<sup>325</sup> Lean manufacturing has increased efficiency and competitiveness, but has had potentially negative impacts on worker's health and job experience. The National Institute for Safety and Health raises concerns about the health impact of lean production, particularly around the lack of employee control, work intensification, worker isolation and stress and musculoskeletal disorders.<sup>326</sup> Experiments with flexibility and lean production in the U.S. have often meant creating a union free workplace that is not constrained by union shopfloor control and job distinctions. Piore and Sabel admit that the spread of flexible specialization in the US would likely weaken organized labor.<sup>327</sup>

When labor has a voice in decisions about work organizations there is potential for adjustments to benefit workers and mitigate negative consequences, as lean manufacturing systems have been the least exploitative and caused the fewest layoffs when unions have been involved.<sup>328</sup> In some instances unions have been able to collaborate with employers and reach accommodations to try new production processes, but when unions are not involved workers have less control over scheduling and job

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<sup>324</sup> Tomaney, 176.

<sup>325</sup> *Ibid*, 171.

<sup>326</sup> National Institute for Occupational Safety and Health, *The Changing Organization of Work and the Safety and Health of Working People* (Washington, DC: Department of Health and Human Services, April 2002), 9.

<sup>327</sup> Piore and Sabel, 277.

<sup>328</sup> Whitford, 23.

categories.<sup>329</sup> Daley compares green jobs to lean manufacturing where some unions, particularly the IUE-CWA, have worked with management to develop some of the leading high performance work systems, which have reduced costs, improved competitiveness and protected union manufacturing jobs.<sup>330</sup> If collaboration on the organization of green manufacturing can protect workers there must be adequate research into safety and health impacts, as well as strong unions that can extract provisions from employers and not be forced to make excessive concessions in order to maintain jobs. Unions need to have power and not be forced to use green as a last resort to save jobs and adhere to management interests.

#### Regional Solutions and National Policy

One feature of post-Fordism is clustered economic development around interrelated firms in places like Silicon Valley that focuses on IT and the Third Italy network of craft producers. Green development has potential to follow a similar pattern of clustered development with related firms operating near each other, investing in research, coordinating worker training and creating interdependent supply-chains. Pennsylvania is trying to build a green manufacturing corridor and has successfully attracted Gamesa and additional green and high-tech manufacturing plants through partnerships that coordinate state, labor and business.<sup>331</sup> White and Walsh see the potential for clustered development based on regional strengths that develop connections between workforce training and career opportunities.<sup>332</sup> Buffa points to the promise of building local economic capacity through green clusters based on webs of production and

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<sup>329</sup> Piore and Sabel, 242, 244.

<sup>330</sup> Daley, interview by author.

<sup>331</sup> White and Walsh, 24.

<sup>332</sup> *Ibid*, 9.

technology. However, American clusters will not necessarily resemble the craft production of the Third Italy because of structural differences, like the dominance of large producers in the American economy and lack of coordinated workforce training.<sup>333</sup>

The accelerating interest in green technology is not completely new, but follows other advances in technology, which have often developed unevenly. As Joan Fitzgerald, Director of the Law, Policy and Society Program at Northeastern University, points out, technology has gone in waves from IT to biotech and now the latest is green. She argues that not all regions can get green industries and have expanding green manufacturing.<sup>334</sup> However, different regions could use their particular advantages and attributes to develop different green sectors, thus rustbelt states like Ohio have potential for manufacturing, while states in the Southwest have potential for constructing solar power facilities. Minnesota Senator Amy Klobuchar thinks that energy technology is less geographically limited than IT, which has been concentrated in urban areas and clusters like Silicon Valley.<sup>335</sup>

As regions, states and cities compete to attract green development there is potential for competition through low-road tactics, like cutting labor costs and giving company handouts, but the green paradigm could also encourage competition over beneficial environmental standards and a high road to attracting capital. Localities have been competing to attract development for the history of industrial capitalism and have used incentives to lure business, while low-wage labor markets and non-unionized workforces have compelled companies to relocate. Jefferson Cowie's analysis of the

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<sup>333</sup> Sabel, 227.

<sup>334</sup> Fitzgerald, 2009 Good Jobs Green Jobs Conference.

<sup>335</sup> Amy Klobuchar (Keynote address at 2009 Good Jobs Green Jobs Conference, Washington, DC, Feb. 5, 2009).

RCA Corporation displays that capital has continuously relocated to avoid increasingly empowered labor forces and to find new areas with a malleable workforce and receptive culture.<sup>336</sup> Under post-Fordism there has been a rise in local solutions to the crisis of accumulation, but localities have also been competing with one another and bargaining away living standards and regulatory controls.<sup>337</sup> Fitzgerald describes cities entering into a competition frenzy over green jobs which can mean rising costs of subsidies to attract development and business playing states off each other to leverage the largest incentives.<sup>338</sup> Although initial competition can be over tax breaks for renewable energy and grants for green technology, competition could become over labor costs. If two cities are offering comparable tax incentives and loan guarantees but one city requires a livable wage and local hiring and the other city does not, capital will likely seek the low road.

However, high road post-Fordist clustered economies might be possible with proactive government action that collaborates with labor and capital and implements national level standards that eliminate low road competition. When government uses tripartism to prompt exchanges of knowledge, shared training costs and formation of public-private partnerships, then innovative regionalized economies are more possible. Gamesa was viable in Pennsylvania partially because there was a strong and engaged union and a company willing to cooperate with organized labor, unlike in Nevada with solar power. National level industrial and trade policy are essential for green job creation. As the varieties of capitalism perspective argues, many important regulations, institutions

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<sup>336</sup> Cowie, 4-5.

<sup>337</sup> Jamie Peck and Adam Tickell, "Searching for a New Institutional Fix: the After-Fordist Crisis and the Global-Local Disorder," in *Post-Fordism: A Reader*, ed. Ash Amin (Cambridge: Blackwell, 1994), 280.

<sup>338</sup> Fitzgerald, 2009 Good Jobs Green Jobs Conference.

and norms depend on action at the nation-state level, not just regional level decisions.<sup>339</sup> For example, Germany has expanded wind and solar manufacturing through tax incentives and ensuring a large national market for renewable energy along with strong unions, high wages and worker training programs coordination through national level corporatism. Although Gamesa benefitted from state level policies, CFL production was a failure because of national trade policy that facilitated outsourcing. Peck and Tickell argue that regionalized growth and flexible specialization depend on high-trust regulatory environments where co-operative relationships are possible, but that neoliberalism is a barrier to these collaborative relationships.<sup>340</sup>

## **5. Shades of Green: Regionalism and Safe Working Conditions**

The degree to which deeper green principles are incorporated will impact the working conditions of green jobs and the extent of localized development. Green production may support higher-skilled work; Renner contends that making parts for wind turbines requires high-skill levels in order to ensure quality.<sup>341</sup> If green principles are applied deeply and broadly, then green products might be made more durable and use recycled materials. Remanufactured and durable products would create demand for high-quality products that favor smaller batch and craft oriented production, rather than cheaply, inefficiently and quickly produced mass goods.<sup>342</sup>

Safety and health could be improved by implementing green chemistry principles that reduce toxins and redesign chemicals to have neutral impacts on humans and the environment, but green products can also threaten health and safety. PV panel production

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<sup>339</sup> Hall and Soskice, 4.

<sup>340</sup> Peck and Tickell, 295.

<sup>341</sup> Renner, *Working for the Environment*, 21.

<sup>342</sup> *Ibid*, 26.

raises health and safety concerns from the use of toxic materials and potential waste issues. The Silicon Valley Toxics Coalition warns that much of the technology in PV comes from the microelectronics industry, which has been poorly regulated and developed manufacturing processes and materials that are toxic, corrosive and potentially harmful to workers and communities.<sup>343</sup> The main threats to workers are exposure to silicon dust, cadmium and selenium dioxide, as well as the potential for high-tech sweatshops if workers are not empowered.<sup>344</sup> Yet, if principles of green chemistry are adopted into manufacturing, then less toxic chemicals might be used and new products will be designed to make workplaces greener.

Green jobs could also promote domestic and regional industrialization by preventing offshoring and global trade because of carbon emission constraints. If a price is placed on carbon then global supply chains, in which massive wind turbines are shipped to the U.S. from Germany, will be costly and inefficient. If green principles actually influence how the economy is organized, then more regional and local economies that support regional supply-chains will develop in order to eliminate the pollution impacts of transportation. Building “green” products like energy efficient light bulbs and then shipping them around the world offsets much of carbon and pollution reduction potential. Advances in clean transportation, like biofuels and electric powered vehicles, could eliminate some of the ecological harms of moving goods, but adequate alternative power sources do not currently exist for airplanes and freight shipping and trucking.

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<sup>343</sup> Silicon Valley Toxics Coalition, *Towards a Just and Sustainable Solar Energy Industry* (San Jose, CA: Silicon Valley Toxics Coalition, January 14, 2009), 2-3.

<sup>344</sup> *Ibid*, 28-30.

### Institutional Constraints: More than Demand and Technology

Although market dynamics, technology, government policy and managerial strategies will have a strong impact on the direction of green manufacturing, institutional contexts and historical legacies will constrain the path of change. The varieties of capitalism approach argues that different types of market economies have different arrangements of institutions, laws and roles for the state which influence corporate strategy.<sup>345</sup> Formal and informal institutions develop out of particular histories, which impact relationships and interactions between actors and shape common expectations.<sup>346</sup> This perspective categorizes capitalist economies into liberal market economies (LME) that address coordination problems with hierarchies and competitive markets and coordinated market economies (CME) that utilize more non-market solutions.<sup>347</sup> The U.S., as a LME, is more likely to respond to problems with market solutions. Thus when faced with a transition to a green economy, the U.S. is more likely to rely on market mechanisms, rather than forms of worker representation and cooperation. A CME like Germany has an institutional framework that shapes corporate strategies to seek cooperation and non-market solutions, like works councils and regional collaboration. If green manufacturing depends on the state being active in the economy, collaborative training and highly skilled labor, then countries like Germany might have a comparative institutional advantage in developing green industries. Still, the push to address climate change could facilitate a shift in the American institutional framework towards cooperation.

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<sup>345</sup> Hall and Sockice, 5.

<sup>346</sup> *Ibid*, 13.

<sup>347</sup> *Ibid*, 8.



## 7. Cooperation Between Labor, Capital and the State

### Industrial Policy

The push for green jobs creates the need for an expanded role of government in the economy. The labor movement views the green economy as a way to counter neoliberalism that has driven deregulation and rising inequality. As Dave Foster, Executive Director of the BGA, said in a speech at the 2009 Good Jobs Green Jobs Conference, a green New Deal is needed for the global economy that provides a counteraction to the free-market and corrects imperfections of the market.<sup>348</sup> The failure of the market to fully develop green industries and adjust to climate change highlights the pressing need for government involvement and could provide an impetus for demand management and regulation, but more importantly an American industrial policy in which the state selects industries in green sectors to support. Cohen and Zysman argue that the beginning of a technological transition holds the greatest opportunity and that success depends upon government policy, corporate strategy and social conditions.<sup>349</sup> In order to capture the green transition there will need to be a renewed industrial policy that links research to capitalization of technologies and workforce development. The shift to sustainability could mean a green neo-Keynesianism that uses demand management as well as micro policies to help retool industry and train and secure employment for workers. However, the U.S. does not have a history of industrial planning and lacks the necessary institutions and state capacity.

### Research and Development

Flexible accumulation has created contradictory demands, on the one hand there

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<sup>348</sup> Foster, 2009 Good Jobs Green Jobs Conference

<sup>349</sup> Cohen and Zysman, 94-5.

is an increased premium placed on innovation and knowledge, but on the other, the state's role in providing public goods, like training, has diminished. King and Wood argue that under post-Fordism the state has been constrained in its ability to create growth and redistribute income and instead has focused on increasing competitiveness.<sup>350</sup> If the U.S. is going to manufacture high-tech, high-value added and cutting edge green technologies there will have to be an expansion in research and development, investment in domestic manufacturing and policy to encourage green industries. A return to macroeconomic policies like tax incentives and subsidies to industry can make green products cost effective and stimulate demand, while micro policies can assist with business strategies, retooling of factories and workforce development. Past technological transformations have been driven by government investments, for example the microelectronic revolution was launched by public investments in the military and space program.<sup>351</sup> Thus, the Apollo Alliance makes the analogy between the impact of the Apollo space program on computer science and digital communication and investing in green technologies and infrastructure to mobilize a sustainable economy.<sup>352</sup>

The U.S. has fallen behind in productive capacity and manufacturing infrastructure. Developing countries were able to catch-up to the U.S. in mass production of low-tech goods by the 1970s, while other advanced countries like Germany, Japan and Sweden continued to innovate and surpassed American firms that have placed priority on

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<sup>350</sup> Desmond King and Stewart Wood, "The Political Economy of Neoliberalism: Britain and the U.S. in the 1980s," in *Continuity and Change in Contemporary Capitalism*, ed. Herbert Kitschelt, Peter Lange, Gary Marks and John D. Stephens (Cambridge, UK: Cambridge University Press, 1999), 371-396, 372.

<sup>351</sup> Andre Gorz, *Capitalism, Socialism, Ecology* (New York: Verso, 1994), 80.

<sup>352</sup> Apollo Alliance, *The New Apollo Program: Clean, Good Jobs*, (San Francisco, CA: Apollo Alliance, September, 2008), 3,4.

financial transactions rather than developing technology and producing domestically. Meanwhile, the resources available for developing technology have been channeled to the financial industry rather than manufacturing. According to Harvey, in 1970 American investment in IT was about 25% of the amount that went towards production and physical infrastructure, but by 2000 IT investment expanded to 45%, while production and physical infrastructure declined.<sup>353</sup> Much of the IT investment is related to the finance industry, the driver of the neoliberal economy. Rather than upgrading domestic production facilities after the 1970s, U.S. firms sought mergers and acquisitions and opened up new facilities overseas.<sup>354</sup>

Green technologies have been subject to the same neglect, while foreign companies and countries have pioneered renewable energy production. Although the U.S. initially developed solar technology, it has been capitalized and expanded in Europe, particularly Germany and Denmark, according to Rhone Resch, President and CEO of Solar Energy Industries Association.<sup>355</sup> The U.S. now lags behind in PV panel manufacturing and installation. This reflects logistical difficulties and failures in linking research institutions to manufacturers, but also the larger deindustrialization of America, the strategies of U.S. firms and the growing relative strength and expertise of other countries in manufacturing. Investing more dollars into research and development as well as domestic production facilities can foster a positive cycle of innovation. Cohen and Zysman contend that innovation and the export of high-wage and high-value added

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<sup>353</sup> Harvey, *A Brief History of Neoliberalism*, 157.

<sup>354</sup> Seymour Melman, *Profits Without Production* (Philadelphia: University of Philadelphia Press, 1987), 39.

<sup>355</sup> Rhone Resch (Keynote address at 2009 Good Jobs Green Jobs Conference, Washington, DC, Feb. 5, 2009).

products requires mastering production techniques which depends on domestic manufacturing. When the U.S. stops producing something the technological advantage wanes, for example the U.S. lost its dominance in designing and engineering nuclear energy when domestic production stopped and foreign firms continued to advance.<sup>356</sup> Thus, if the U.S. does not manufacture things like solar panels, wind turbines and advanced batteries, foreign firms will likely lead innovation and dominate the new markets. Robert Kuttner argues that technological development will lack under free-market competition and that government regulation is needed to push innovation and modernization, particularly pollution regulation that prevents companies from externalizing costs.<sup>357</sup> However, given the globalization of the economy and increased fluidity of capital, growth based on technology alone might not be as feasible.<sup>358</sup> Thus, policies that strengthen manufacturing through trade laws, infrastructure projects, coordination between labor and capital and training programs will be needed.

#### Corporatism- Working with Organized Labor

For organized labor, green jobs offers a venue to push for a renewed corporatism in which government works with labor and business. Expansion of corporatist mechanisms could create ways to facilitate working relationships with business and labor, secure decent wages and assist in the logistics of a green transition. In order to quickly make the green transition while creating decent jobs, the government will have to work with labor and capital. The International Labour Organization (ILO) argues that the impacts from climate change policy need to be anticipated and managed, which requires

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<sup>356</sup> Cohen and Zysman, 38-40.

<sup>357</sup> Robert Kuttner, *Everything for Sale* (New York: Alfred A. Knopf, 19997), 296.

<sup>358</sup> Goodstein, 129.

tripartite mechanisms that include union involvement.<sup>359</sup> The ILO tripartite system that involves labor, business and government representatives could be a useful model for creating coordinated and cohesive policy. Government initiatives can help to ensure good jobs by consulting unions and providing stipulations in legislation that require wage and working conditions, as well as contracting with union workers. Additionally, unions have first hand knowledge of industrial capacities and what will be needed to retool factories and retrain workers for the green economy.

Given the weak history of corporatism in the U.S., part of organized labor's task will be to create venues to have a voice and convince other actors of the importance of labor involvement. The decentralized trade union structure and uncoordinated business sector have not been conducive for corporatist arrangements in the U.S.<sup>360</sup> The lack of corporatism stems from structural constraints, as well as political reasons, like the role of conservative political parties, neoliberalism in the 1980s and the failures of earlier efforts at corporatism.<sup>361</sup> Attempts at tripartism, public investment, regional training boards and industrial organization were ineffectual in the mid 1950s to 1970s, which helped give legitimacy to neo-liberal politicians.<sup>362</sup> However, if the green paradigm can build a new political constituency while climate change and financial crisis begin to shift the imperatives of capital, there is potential for a renewed corporatism in the U.S.

As discussed earlier, the state can pursue microeconomic strategies like workforce development, which is a crucial area for unions and the state to work together. Unions

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<sup>359</sup> International Labour Organization, *Decent Work for Sustainable Development: Director-General's Introduction to the International Labour Conference* (Geneva, Switzerland: International Labour Organization, 2007).

<sup>360</sup> Hall and Soskice, 3.

<sup>361</sup> King and Wood, 373, 377.

<sup>362</sup> *Ibid*, 377.

have some of the best training and apprenticeship programs and government can consult organized labor to develop strategies for training. Unions can help catalogue the existing skills and training programs and match them to the needs of green industries. Despite the potential, the U.S. does not have a history of comprehensive job training and the different programs and training institutions are fairly haphazard and uncoordinated. After WWII both conservative Southern politicians and Keynesians, who opposed micro level interventions, resisted the expansion of job training programs.<sup>363</sup> The U.S. does not have an active labor market policy like Europe and the occupational training system has been small. Thus, private companies currently dominate the wind energy schools, which means there is a lack of national standards and that schools reflect the interests of private capital. However, just providing training is inadequate as workers are still left to the will of the market. Osterman argues that an emphasis on training fits with a market-based approach, which has had little positive effect, rather he sees potential for more comprehensive strategies that do not simply try to make workers more appealing to the market.<sup>364</sup> Osterman highlights the need to build labor market institutions that make moving between jobs easier, like a strong social safety net and public intermediaries that help connect employers and employees.<sup>365</sup> Green jobs can be a way for the U.S. to develop and coordinate the training infrastructure, but the job prospects for workers will remain difficult in an economy of growing insecurity and dislocation. Industrial policy

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<sup>363</sup> Osterman, 31,32

<sup>364</sup> *Ibid*, 132.

<sup>365</sup> *Ibid*, 124,132.

can be used to influence firm's micro level decisions, but institutional legacies and lack of state capacity will be barriers to change and increased coordination.<sup>366</sup>

### Just Transition for Impacted Workers

Union collaboration with the state can help direct federal resources to assist workers that are negatively impacted by environmental regulation and carbon emission reductions. Some workers in extractive and energy-intensive industries might lose jobs and some regions, like Appalachia, might suffer from dislocation. A national strategy that provides direct assistance to workers and economic development for communities can mitigate these losses. For individual workers the government can provide unemployment insurance, training and job search assistance. In the past transition programs have been weak and ineffective, which will not change unless labor can put pressure on the government and unions are consulted in developing transition strategies. Transition cannot simply include individualized strategies but must address structural inequities and help bring renewed development and job creation to impacted regions. This will mean doing things like promoting renewable energy production and manufacturing in Appalachia, a level of intervention and action at which the federal government has been ineffective.

## **8. Increased Labor and Management Collaboration**

### Social Partnerships

Green jobs serves as a framework for unions and management see to common ground and work together to achieve joint goals. Companies can do a better job of greening their workplace if they have workers actively involved in reducing waste and

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<sup>366</sup> Whitford, 3.

pollution, as well as helping coordinate retooling and retraining. Workers also benefit from cooperating with management on environmental issues because it can mean a safer and healthier workplace as well as more secure jobs. There are some signs of collaboration in green industries, like the BGA working with representatives from the solar and wind trade associations. My case studies have shown that green jobs have followed a high road when union and management have collaborated.

Works councils have been virtually non-existent in the U.S., but through the auspices of sustainability, workers and employers could begin to develop partnerships and joint-committees. Joint labor-management councils could facilitate discussions over environmental issues and more generally develop beneficial working relationships. Osterman points to new forms of worker representation that are empowering workers and bridging the worker/management divide, like European works councils and single-issue committees.<sup>367</sup> The push for green has not created true works councils in the U.S., but has led to the creation of environmental committees and a push by unions to expand the model of health and safety workplace committees to environmental issues. SEIU talks about forming environmental committees through the collective bargaining process.<sup>368</sup> The USW have been on the leading edge of this trend working with employers in the steel industry to address carbon leakage and make facilities more efficient.<sup>369</sup> USW Local 1010 at Inland Steel in Indiana has set-up a joint environmental committee.<sup>370</sup> Partnerships can be created at the national level between trade associations or large companies and national unions, like the USW's Alliance for American Manufacturing, or

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<sup>367</sup> Osterman, 175-6.

<sup>368</sup> SEIU, *Negotiating Green*.

<sup>369</sup> Conway, 2009 Good Jobs Green Jobs Conference.

<sup>370</sup> USW, *Securing Our Children's Future*, 34.



at the individual plant level. In the American setting it is more likely that partnerships will develop at the firm level because national trade associations are weak and industry wide collective bargaining is rare.

Employers and employees can also collaborate on training for the green economy. This can be in the form of jointly funded apprenticeship programs, like the Electrical Trades Center, or initiatives to provide ongoing training for employees and attracting skilled workers, like at Gamesa. Collaboration can also be around designing curriculums to meet employer's needs and ensuring union's safety and work quality demands. Alliant Energy in Wisconsin helped fund sending wind technicians to a two-year training program and the company also worked with the union to develop safety standards.<sup>371</sup> Upgrading current employees skills will be essential for plants that shift into green production and this process will be most effective if unions and management are able to work together. King and Wood argue that although firms are largely ambivalent to labor in the U.S. at the macro level, they do have an interest in unions at the plant level to overcome problems of industrial coordination.<sup>372</sup> Piet Van Lier of Policy Matters Ohio thinks that union partnerships in green training can benefit employers and help to improve labor-management relations.<sup>373</sup>

However, social partnerships could lead to co-optation of labor and foster a move towards enterprise unionism, which will weaken the labor movement and the ability of workers to oppose the interests of capital. Frege and Kelly argue that social partnerships will help revitalize unions only when they are institutionalized, integrated with other

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<sup>371</sup> Pyne, interview by author

<sup>372</sup> King and Wood, 373.

<sup>373</sup> Piet Van Lier, interview by author, Oberlin, OH, 9 January, 2009.

strategies and pursued in the interest of a broader social agenda.<sup>374</sup> In the U.S. management has historically been able to dictate these relationships, but green jobs does expand the partnership into a broader social agenda and if unions combine partnerships with a variety of other actions there is positive potential. However, narrow plant level partnerships can lead to worker concessions and cooptation of labor, which ultimately deters the emergence of a larger social movement.

## **9. Conclusion- Potential for Good Green Jobs**

Green jobs could follow a high road of development if the government adopts active policies and works with labor and management to forge new relationships, while a strong labor movement is able to organize to protect workers. However, this scenario runs counter to the larger trends in the American political economy towards neoliberalism, deregulation, weakened unions and deindustrialization. The American economy continues to move away from manufacturing and towards service sector jobs, while unemployment rises and wealth disparity increases. Automation and offshoring have eliminated thousands of manufacturing jobs and devastated communities in places like Ohio. Meanwhile, corporate strategies, an unfriendly legal regime and economic restructuring have decimated union ranks. The power of unions to influence politics and the economy has been weakened, which does not bode well for a high road green industries and a new American corporatism. More fundamentally, the U.S. does not have the institutions of corporatism and history of industrial policy and strategic state planning

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<sup>374</sup>Michael Ficheter and Ian Greer, “Analyzing Social Partnerships: A Tool of Union Revitalization?” in *Varieties of Unionism: Strategies for Union Revitalization*, ed. Carola Frege and John Kelly (Oxford; New York: Oxford University Press, 2004), 71.

to direct and manage the green transition, which might leave the U.S. at a comparative disadvantage for developing green industries.

Despite all the barriers to good green jobs, the transition to a green economy represents a unique economic shift that is not driven simply by political desires or advances in new technology, but the immediate threat of climate change and ecological destruction. The combination of climate change and the current economic crisis provide drivers for change because they threaten capital accumulation and present windows for political action and realignment. As was voiced at the 2009 Good Jobs Green Jobs Conference, moving towards a green economy can help address both of these problems. More fundamentally, the credit crisis and the developing crisis of accumulation has meant that capital will need to find new modes of accumulation while the rising uncertainty of fossil fuels has meant business is looking for alternatives and is beginning to profit from investments in clean energy. The mortgage and banking collapse might be the initial signs that the regime of neoliberalism that relies on financial transactions, leveraged investments and paper profits might be entering a crisis. In response to the Great Depression, the American state broke with economic orthodoxy and intervened to stimulate demand and fix the crisis that the market was unable to solve. Yet, the state did not go so far as to plan the economy, make micro-level interventions or socialize the means of production. The current financial crisis has already raised the prospect of nationalizing banks and prompted billions of dollars in government spending, but fundamental changes have yet to occur. Large shifts in capitalism have arisen when the system is in turmoil, but social movements and political action will determine the direction of that change.

Green jobs could spur a new progressive alliance that brings together unions, environmental organizations, community activists and civil rights groups. The degree of positive developments from green jobs will depend on how these forces can mobilize to direct government policy to assist green sectors, ensure decent labor practices and empower unions. The message from the 2009 Good Jobs Green Jobs Conference was of working together to build a movement and seizing the opportunity for change by linking a diverse range of organizations into a social movement. If unions become politicized and active and build strong alliances they can influence the state towards more interventionist and distributive policies. Obama has already given significant federal funding and tax incentives for green energy and building efficiency through the stimulus package, but one bill will not bring about the green revolution and the impact on places like Ohio remains to be seen. The green jobs debate has revived conversations about government economic intervention, new forms of social partnerships and a wider discussion of social democracy. Solving the problems of climate change and economic recession might require a new regime with new institutions, like corporatism, works councils, and government industrial policy.