Green Jobs, Environmental Sustainability & Industrial Relations

David Collins, Mark Bray & John Burgess

All nations need to develop low-carbon economies in order to rescue the planet from climate change and create a sustainable future. There is a strong industrial relations component that to date has largely been overlooked. There are three elements that limit the social actors from reaching a consensus. First is the absence of leadership and an agreed agenda and policy regime for adjustment globally and across many countries as manifested by the failure to reach an agreement at Copenhagen. Second is the lack of detailed policies and institutions in some countries to facilitate adjustment and provide a framework to bring the social partners together. Third, in some countries a neo liberal policy agenda has removed or modified the very institutions that could have supported the attainment of a consensus over structural adjustment.

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Introduction

The forces associated with globalisation were connected with profound changes to jobs, work and workplaces. On the negative side there were job losses, redundant skills, increased industrial disruption, regional downturn and falling living standards. On the plus side there were new jobs, new skills, rising living standards and regional growth. This process of industrial restructuring and disruption was experienced across most of the developed and developing world. Governments attempted to ameliorate and limit the negative side of the process through tariffs, subsidies, tax breaks and adjustment schemes; they also resort to encourage the positive side of the process with a similar mix of incentives and assistance.

Industrial restructuring is central to the process of industrial relations as trade unions seek to maximise employment and wages; employers seek to maintain returns and protect investments; and governments seek to maintain jobs and living standards, and limit the negative side of industrial restructuring. However, a new form and

a new type of restructuring is confronting work, employment and workplaces. It also has its positive and negative sides. This is the restructuring associated with moving towards a green economy that uses renewable energy, reduces carbon emissions and generates green products and processes. Once again social partners are faced with the same major challenges and trade offs as they grapple with the restructuring and adjustment associated with the transition to a green economy. Once again, this adjustment impacts on all economies and all sectors. However, like earlier adjustments its impact across industries, nations and workers will be uneven. In this paper we consider the challenges and opportunities for industrial relations partners that are present in the transition to a green economy.

Global Warming: Persistent & Ubiquitous

Despite strong pockets of climate scepticism, there is no doubt that the planet is warming and that carbon emissions have a role to play in the warming process. The evidence is clear on the direction of change and its consequences. There are doubts over details, the extent of change, the timing, the implications for particular regions and countries and over the appropriate remedial action that should be taken. The Economist (2010a) commented: "the fact that the uncertainties (around climate change) allow you to construct a relatively benign future does not allow you to ignore futures in which climate change is large, and in some of which it is very dangerous indeed. The doubters are right that uncertainties are rife in climate change science. They are wrong when they present that as a reason for inaction."

The scientific consensus is that the process of climate change and global warming is with us and that many parts of the globe are being or will be adversely affected. The failure of the UN Copenhagen summit on climate change demonstrated the difficulties associated with arriving at a global consensus with global action and pre-established targets for all countries. Rather than being a rebuff to the very process of climate change the Copenhagen outcome represented all the difficulties associated with arriving at a binding global agreement on action to address climate change. The key issues were the distribution of the adjustment process: who should be responsible and what should be their contribution; and the timing of the adjustment: what is a realistic and suitable time to achieve targets that are not only attainable but contribute towards a slow down in warming and emissions?

The United Nations Framework Convention on Climate Change (UNFCCC) attributes climate change to the additional impact of anthropogenic activity over natural climatic variables and during the same time period. The IPCC (Inter Governmental Panel on Climate Change) definition however does not differentiate between human and natural activity nor specifies comparable

time periods. The IPCC's Climate Change 2007: Synthesis Report unequivocally confirms global observational data on the warming of the Earth's climate system and refers to observational evidence of the regional impact of climate change on natural systems. Climate change has been evidenced by '...increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level' (Pachauri & Reisinger 2007).

Based on current mitigation policies and sustainable development practices, the Report concludes high agreement and much evidence that GHGs emissions will continue to rise in the 21st century. The impacts in the global climate system would very likely be more extreme, and *likely* more so in particular systems, sectors and regions, than experienced during the 20th century. Regardless of the mitigation measures undertaken in the first half of the 21st century, more extensive and embedded adaptation measures will be required to lessen the consequences of detrimental climate change projections.

Not all countries and regions will be equally affected by climate change. However, it is clear that rising sea levels will endanger the very existence of countries and regions. In addition local ecosystems will be fundamentally altered with knock on effects to agriculture, fisheries and all industries. The dispute at Copenhagen was about the burden of adjustment and how it should be shared across countries, and more specifically how it should be shared between developed and developing countries. At another level the dispute was about how to enforce and monitor binding standards across all countries in the context of uncertainty over the data and uncertainty over the supporting governance systems.

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Since the failure of the UN Copenhagen Conference, national, state and regional governments, local communities, trade unions and businesses of all sizes have and continue to develop programs to meet the challenges of global warming. Programs are emerging that involve improved energy efficiency, green energy sources, green products and new technologies to reduce carbon emissions. The process of industrial restructuring and structural adjustment towards reduced carbon emissions is proceeding across the globe. The process offers new opportunities for jobs, new products, new production processes and improved living standards across all countries. For developing economies the emerging green economy offers opportunities for affordable, accessible and renewable energy; efficient production systems; and new technologies that can reach isolated communities to improve life quality and provide access to credit and markets (UNEP 2008).

Structural Adjustment to Renewable Energy & to Green Jobs

In all industries and in all countries a major process of structural adjustment is taking place. The process involves a shift towards renewable energy sources; increased energy efficiency; the development of new products that are carbon neutral and implantation of new technologies that reduce energy consumption. Manifestations of this process include the development on non coal fired power generation plants, the shift towards hybrid and non petrol engine motor vehicles, the development of public transport infrastructure that reduces motor vehicle use, reduced carbon emissions in production systems and the expansion of mobile and wireless communication networks that improve market access and reduce transaction costs (including travel) for doing business. The process is happening, albeit unevenly, across industries, regions and countries. It is being supported by environmentally conscious consumers and environmental community groups that include businesses and trade unions, and by an array of regulations and codes from product labelling, social reporting codes, product standards and government procurement requirements. These regulations cover building codes, home and office construction codes, sustainable production systems, safety codes, emission standards and the labelling of products from foodstuffs to building materials.

UNEP (2008) defines green jobs as: "positions in agriculture, manufacturing, R&D, administrative, and service activities aimed at alleviating the myriad environmental threats faced by humanity. Specifically, but not exclusively, this includes jobs that help to protect and restore ecosystems and biodiversity, reduce energy consumption, decarbonize the economy, and minimize or altogether avoid the generation of all forms of waste and pollution. A successful strategy to green the economy involves environmental and social full-cost pricing of energy and materials inputs, in order to discourage unsustainable patterns of production and consumption. A green economy is an economy that values both nature and people and creates decent and adequately paid jobs." In our own region of the Hunter Valley of New South Wales, Australia (150 kilometres north of Sydney) we are witnessing these changes taking place at the local level. Local chambers of commerce in rural areas are promoting energy efficiency, improved water use, sustainable production systems and reduced use of chemical fertilisers in grape and wine production in order to raise community profile and attract eco tourism (Grimstad 2009). Moreover, it is clear that for the local region, and for many other regions, eco tourism is forcing producers to change production systems in order to attract tourists and meet the demand for green products. These spontaneous and collective actions take in many small and micro businesses who are voluntarily un

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dertaking a range of local actions from reducing energy consumption, using accredited products that conform to environmental and conservation codes, increasing the recycling of materials, reducing waste and getting consumers to provide their own recycled shopping bags from coffee shops to supermarkets, schools and restaurants. Local manufacturers are being spurred by price and competitive pressures, to improve energy efficiency, seek renewable energy sources and meet contractual obligations to governments and other customers regarding carbon emissions and product standards that embody sustainable production systems (Bray et al 2010). What is emerging is not only a growing consciousness around energy use and reducing carbon footprints, but a recognition that things have to be done differently and that there are not only challenges, but also opportunities for more green products and more green jobs.

The numbers of projected additional green jobs over the coming decade are impressive and the potential is considerable for generating sustainable jobs and renewing regions (ILO 2008b). However, this has to be offset against the adjustment costs and losses associated with a transition from the brown economy; the costs associated with extreme climatic conditions and rising sea levels for some countries and regions; and the underlying systemic problems of high unemployment, mass poverty and poor quality jobs across many developing economies. As in the past the adjustment process has to be managed and facilitated so that labour, capital and communities can be sustained into the future. Without institutional support jobs, industries and communities will disappear.

Challenges Facing Social Partners

Structural adjustment is not a new process. Through international trade, new product development and new technologies structural adjustment challenges have faced all industries and all countries. Labour and capital migrate to sites of employment and investment opportunities and local communities are transformed as industry, investment, employment and trade adjust to new opportunities. ILO Director General Somavia set out the central issues as follows:

"We must also prepare for job losses and support workers and enterprise in shifting to new ways of working that substantially reduces emissions." "Policies which anticipate the need for transitions in labour markets and which seize the opportunities for generating new and sustainable sources of employment and income have the potential to produce better economic and social as well as environmental outcomes" (ILO 2007).

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The key challenges facing the social partners can be summarised under six

main headings. First, there is an absence of a global consensus on global action, the targets for individual countries and how a global agreement should be implemented. Without an overarching agreement there is scope for countries to delay, procrastinate, lower emission goals or wait and see what other countries do. The uncertainty and disagreements at this level flow through to other levels of decision making. Taylor commented: "many leaders are questioning whether the United Nation's negotiating process can ever deliver a result and, if not, how they can work together to hold each nation to the emission reduction pledges made so far" (Taylor 2010a). In Australia's case the failure to reach a global consensus is an excuse for inaction at the national level and for some an indication that climate change is a myth (Taylor 2010b).

Second, some national governments are backing away from climate change actions and programs, in part as a response to the failure to reach a global consensus, and in part as response to national politics. "Policy discussion about how to reduce greenhouse gas emissions has gone silent, domestically and internationally (Taylor 2010 a)". In some cases such as the USA, climate change has been forgotten as the Federal Government deals with health care bills and with the crisis in the banking, finance and auto industries. In other countries, like Australia, there is no financial or auto industry crisis, however, the policy of a carbon trading system has been rejected by the Senate. The consequence has been, despite strong public support for climate change policy action and a belief in global warming, at the moment there is policy inaction.

Employers and trade unions are not unanimous on the policy response.

Third, employers and trade unions are not unanimous on the policy response. This applies both within and between the social partners. Industries with a strong affiliation to the brown economy, especially mining, have in the main been arguing the case for inaction wait and see, any policy will disadvantage investment, jobs and regions. This makes it difficult for the traditional social partners to present a united position but it also makes agreement between them much more difficult. In the case of business there is a strong argument that without strong international and national leadership of the issue that the degree of uncertainty militates against investment decisions. "Business will want answers from both sides of politics in order to invest with certainty. And voters will want answers because it is an issue which the vast majority of them care" (Taylor 2010a).

Fourth, new actors are in part filling the void, taking decisions, but find it difficult to have any significant voice in the policy development process. The voice for climate change policies does not only include environmental and conservation groups; but also consumers, churches, investment fund managers, local councils, chambers of commerce, schools and universities, individual busi

nesses/workplaces, and community NGOs (Evans 2008, Grimstad 2009, Murphy 2010). Their action is often spontaneous, localised and uncoordinated. In any region there are literally hundreds of actors with different programs for addressing climate change. Local actors do not have to wait for action to be taken by international or national actors, however, because they are small, diverse, disjointed and uncoordinated they can be ignored by the national and international actors, and they find it difficult to be accorded any recognition in the process of policy development. However, despite this, local action is proceeding on many fronts and in many industries and communities (sustainable and eco tourism is one example of such local initiatives Grimstad 2009).

Fifth, there is need for a supporting framework of institutions that promote trust, partnership and reconciliation. Just as markets do not operate in an institutional vacuum, also reaching a consensus on policy and action requires institutions to inform, facilitate and promote policy (Waring et al 2007). Some countries have a tradition of institutional support to encourage national, regional and local consensus between social partners. These include active industry, regional development and labour market programs that incorporate the key social partners. In other countries these traditions and supporting mechanisms are largely absent. The Varieties of Capitalism literature highlights that an absence of institutions for reaching and implementing agreements between the social partners is not conducive to enduring and sustainable policies and programs, especially between liberal market economies and co- ordinated market economies (Gough & Ogden 2008). The Anglo Saxon affliction with an emphasis on short term, market and individual actions is not conducive to developing robust and effective mechanisms and institutions for facilitating and managing structural adjustment (Gough & Ogden 2008, Waring et al 2007).

Sixth, to compound the above problem is the legacy of neoliberalism, especially where policies are imposed, without consensus, and supporting institutions are either sidelined or dismantled. Once consensus forming institutions disappear, it is very difficult to re-construct these institutions and even to facilitate consensus building in a context that relied on imposition and authoritarian decision making. The 10 years of neoliberalism in Australia associated with the conservative government of 1996-2007 stripped back many of the consensus building institutions and completely bi passed trade unions in all aspects of industrial relations and policy development (Peetz 2008, Waring et al 2007). This makes it difficult to return to a situation of trust and co-operation (especially for trade unions), made more difficult since many of the institutions of partnership no longer existed. Waring et al (2008) identified a number of barriers that make it difficult for countries to move back to pre-neoliberal conditions and institutions. First, there are the institutional problems associated with wholesale transforma

tion. When union presence has been diminished and collective institutions abolished it is difficult to reinstate a system where the supporting institutions have either disappeared or have been considerably diminished. Second, in Australia there was a strong neoliberal political commitment across all political parties, not only Conservative parties. There was no rush to either reinstate old institutions or to develop new effective institutions in their place (Waring et al 2007). Third, there remained in place major obstacles to change. In Australia the Conservative parties and independents retain control of the upper house (The Senate) and could therefore block reformist legislation.

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The lack of a binding international agreement is an impediment that applies to all countries. However, many countries are developing and implementing emission targets and implementing extensive supporting policies for a greener economy that involves the key social partners. The absence of international targets or leadership is no obstacle to developing and implementing a national policy agenda. This is more the case for those countries, like Denmark and Germany, who have a long tradition of social engagement in national policy development and it is no surprise that they are world leaders in renewable energy, especially wind and solar, and in energy efficiency systems across all industries (The Economist 2009 b). For some countries like Australia and the USA there is an absence of a national agenda, a recent history of division and not consensus building, and there is disagreement within and between the key social partners. However, even in these instances we are witnessing the spontaneous multitude of responses at the local and regional level. Once again inaction at the international, national or key social partner level is no obstacle to taking action on climate change in the home, at the supermarket, at the workplace or through the local council, chamber of commerce or trade union.

Shifting From Brown to Green Economy: an Example

On green jobs UNEP (2008) commented: "Green employment creation is often the result of the conscious decisions of companies to adopt more sustainable business practices….and the recognition by venture capital firms that clean technology development offers significant business opportunities. Many of the companies driving renewable energy solutions forward are small and medium sized enterprises that are highly innovative and dynamic; they prize employees who are skilled, take individual initiative, and are oriented to problem-solving."

UNEP (2008) went on to highlight the vulnerability of local communities dependent on the brown economy: "where industries are highly concentrated in one or a handful of regions, these impacts can have serious conse

quences for the local economy and the viability of communities. These regions will need pro-active assistance in creating alternative jobs and livelihoods, acquiring new skills, and weathering the transition to new industries."

The Hunter valley is located north of Sydney and its main city, Newcastle, is one of the largest export ports in the world for coal. Over the past decade the number of coal mines in the region, the capacity of the port to load coal and the tonnage of coal exported have all expanded (Evans 2008) largely in part as a consequence of the strong demand for coal from a growing Asia, especially China. The region around Newcastle (known as the Hunter Valley) also contains other major industries linked to coal. These include coal fired power stations (the largest concentration in Australia) and energy intensive metals manufacturing including aluminium and steel fabrication. Evans (2008) comments: "Hunter coal is Australia's largest single source of carbon dioxide (CO2) emissions to the atmosphere: directly through the emissions from the coal-fired power stations in the region, and indirectly from combustion of the one hundred million tonnes of Hunter coal burnt annually in power stations in Japan, Taiwan, Korea, and other export markets. The local ecological and social impacts of vast coal mines and power stations on landscapes, water, air, biodiversity, and human health, and the contribution of the region's economy to climate change are causing growing concern among local residents." The expansion in coal mining and coal mining infrastructure (port loading facilities, rail and heavy truck transport) is generating major concern and conflict over the consequences of such activities for other industries that are located in the Hunter Valley including wine making, horse breeding, tourism and farming; and for community health (Evans 2008, O'Malley 2010).

The Hunter Valley is the archetype brown industry region, but with some differences in that it is not all mines, coal fired power stations and heavy industries. First, the region also has many service industries (health and education) and other industries that depend on a clean and sustainable environment wine making, fisheries, tourism and general agriculture. Second, the region is very close to Sydney (less than 2 hours by road). This means that it attracts vast numbers of domestic and international tourists to beaches, vineyards, whale watching, wilderness cabins and other recreational facilities resorts, golf courses (Hunter Region Tourism Organisation 2010). These activities are very dependent on a sustainable and an attractive environment, one that does not mix well with coal mines, power stations and metals processing. In the Hunter Valley the brown economy and the green economy are coming increasingly into collision. In part it captures the contradictions, adjustment and transitional problems confronted by many other regions. For example, not all agriculture is sustainable, and some agricultural activities and upstream processing activities would be adversely affected by a carbon emissions reduction program (especially meat processing, dairying and

beef cattle). The problem of moving away from the brown economy and transitioning towards a more sustainable green economy is not straightforward, nor does it involve a choice between one industry and another. One of the key issues is how individual enterprises and industries adjust towards more sustainable production processes. This may involve energy conservation, renewable energy sources, the redesign of production processes and products and changes in inputs and input use. These processes can be seen in the transformation of the auto industry towards improved fuel consumption, hybrid and electric energy sources, lighter cars and a reduced carbon footprint in the production process. There will continue to be energy generation, however, there will be more diverse energy supplies and all industries will be seeking improved energy efficiency and ways of generating or recycling energy as part of the normal production process.

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A survey of Hunter Valley industries by the Hunter Valley Research Foundation (2008) on behalf of the Hunter Business Chamber identified those industries that would be most affected by a carbon emissions trading scheme. The research found that the industries most affected by a carbon trading scheme were: aluminium, electricity generation, beef and dairy cattle, iron and steel, coal mining, poultry production, road transport, meat processing, milling and cereal products and residential building. In total these industries employed around 30 thousand persons, slightly more than 10 per cent of total employment in the Hunter. Some of the industries were employers of high-skill and high-paid jobs as compared to the average coal mining, electricity generation and aluminium production. A related survey of small businesses in the region found that over half believed that climate change would have a direct impact on their business over the next 25 years. However, the majority of small businesses were not prepared for change with few understanding the details of the proposed emissions trading scheme and very few being prepared for the potential introduction of such a scheme. In contrast, large businesses were better briefed and better prepared for the carbon emissions trading scheme; however, these were the businesses that would be most affected by the scheme in terms of increasing costs of production and potential adjustment costs.

A detailed input-output analysis of the impact of a shift from coal fired to renewable energy generation in the region found that there was the potential for net job generation if restructuring of the energy industry occurred and suitable support and adjustment mechanisms were put in place (Coffee 2008). The report noted the opposition of many sectors within the region to the continued expansion of the coal mining sector and to coal fired energy generation. The required transition and adjustment process outlined in the report included clear po

litical leadership, suitable structural adjustment programs, extensive community consultation, investment in research and training, and investment in supporting infrastructure.

In our own research (Bray et al 2010) into the transition of local manufacturing industry towards more sustainable production systems and products our focus group interviews with manufacturing SMEs found that:

- Small manufacturers have little knowledge of specifics of the then proposed carbon trading scheme except that where it introduces an additional tax impost then that will adversely affect their business.
- Smaller companies do not react until specific compliance details are known and these are usually obtained through industry associations.
- Supplier-customer relationship is a key driver for change. Customer compliance is determined by regulatory controls and local purchasing power factors.
- There is increasing demand by clients for environmental information e.g. carbon footprint data.
- Proactive response and planning by smaller companies was not widespread.
- There was a general lack of understanding about overseas competition, particularly carbon active/inactive economies and potential impact on local business following introduction of any local carbon levy scheme.

The research found that smaller manufacturers were waiting on policy leaderships and were dependent upon industry peak groups to provide leadership and advice. As with the Hunter Valley Research Foundation Survey (2008) the majority of small manufactures felt that their direct energy costs would not greatly affect the business if a carbon reduction scheme were introduced, however, they were under pressure to improve energy efficiency, move to renewable energy and develop new processes and products in response to reporting, compliance, labelling and customer demands.

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In the absence of agreed international targets and a national carbon emissions policy program many regions, like the Hunter, are proceeding in a piecemeal, sporadic and un co-ordinated fashion. Key social partners such as business associations and trade unions are calling for national action and informing members of developments, opportunities and lobbying governments at all levels. Local chambers of commerce (such as the Australian Industry Group) and trade union organisations (such as Newcastle Trades Hall Council) are providing leadership and supporting affiliates. At the same time individual business with the assistance of

industry groups and state and local governments are taking action in anticipation of an eventual carbon emissions reduction program being introduced. Some businesses are responding to market and regulatory pressures improving product design, improving energy efficiency, meeting product and tender specifications, and developing new products. However, there is a long way to go in the transition to a green economy and to more green jobs, and the supporting policy and institutional mechanisms remain under developed.

New Actors, Coalitions & Partnerships

Industrial relations will have to embrace a wider range of non-traditional actors if the field is to explain the changes affecting the regulation and experience of employment. As Kochan (2004:13) argued, expanding the range of actors in employment relations analysis should include those groups and agencies at both the community/societal level as well as the international level. Developments occurring at the international level may influence or be influenced by employment-related changes at the national level. Michelson et al (2007) identify actors located outside of the traditional framework. In OECD economies there has been a shift away from manufacturing to services; a gradual feminisation of the workforce; a declining trade union density; a shift towards decentralised and individual bargaining; growing non-standard employment arrangements and growing ambiguity in employment arrangements. What this means is that more

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workers and more industrial relations arrangements are falling outside of the traditional system. As a consequence gaps and opportunities arise for new and different forms of voice, representation and bargaining. This is captured in the legislation where many of the voice and representation functions are no longer the exclusive domain of employer groups and trade unions. These new actors include: consumers, bargaining agents, women's groups, social reporting agents, churches and migrant advocacy groups. With the participation of new actors will come the opportunities for coalitions and alliances between the new and the traditional actors. Into the void of the representation gap associated with individual bargaining and non union agreements, new actors are emerging to give voice to those workers who lack formal voice. Over the past decade community action groups have played an important role in a number of well publicised Australian industrial relations disputes from the iron ore mining towns of the Pilbara, to the development of codes of protection for clothing outworkers and to the attempts to de unionise the waterfront (Peetz 2006). These cases illustrate coalitions emerging between community groups, broader social justice NGOs, and trade unions.

Outside of developed countries there is an absence of formal voice mecha

nisms and collective institutions across the developing world. Micro businesses, day labourers, agricultural workers and contractors will all be affected by global climate change (ILO 2007b). In these instances the role of NGOs and local communities is important in the process of effectively managing change.

When we consider the transition to a greener economy and the reduction in carbon emissions it is clear that there is considerable scope for new partnerships and for the traditional industrial relations actors to play a pivotal part in this process. ILO (2007) commented: "tripartite social dialogue between employers and workers organisations and governments holds the key to the development of the ILO Green Jobs Initiative. Our aim is to support workers and enterprises through the transition to a much more environmentally sustainable process of development." IPCC (2007) argued that the most of the adjustments and transitions will be best managed if these transitions are anticipated and managed with the active participation of employers and workers.

In the USA, the blue-green alliance has been influential in promoting and developing green industry. The Blue Green Alliance (BGA) is a national partnership of labour unions and environmental organizations that includes the United Steelworkers, the Sierra Club, the Communications Workers of America, Natural Resources Defence Council, Labourers' International Union of North America and Service Employees International Union. The Alliance releases regular policy briefings that are designed to highlight how the shift to renewable energy can both generate jobs and renew "brown" regions (Blue Green Alliance 2009).

A similar type of partnership in the Australian context was the Australian Conservation Foundation (ACF), and the Australian Council of Trade Unions (ACTU), jointly commissioned research (Green Gold Rush), to support their *passionate* belief that contrary to popular [mis]understanding, strong cross-sectoral intervention on climate change can result in both environmental protection and long-term economic security. Following research and industry round tables held in mid-2008, Green Gold Rush contends that turbulent environmental and economic conditions need not create adverse structural adjustment to Australian industry sectors and traditional jobs, including the relocation of new green businesses offshore. Rather, Green Gold Rush encourages the creation of a green policy framework to energise the domestic market opportunities accompanying environmental challenges such as renewable energy resources and innovative and sustainable energy efficient technologies.

In Australia the peak union organisation, the ACTU, and unions across all sectors, including the brown economy, have been strong advocates of shifting towards sustainable production systems and green jobs. For example, the Australian Manufacturing Workers' Union (AMWU) and The Australian Workers' Union (AWU) have agreed to jointly promote Australian manufacturing industry: the Manufacturing Alliance. Accentuated by the impact of the Global Financial Crisis,

particularly in vulnerable manufacturing sectors, the Manufacturing Alliance reiterated the need to address a sustainable high growth strategy for manufacturing infrastructure, skills and innovation. Consequently, the focus of the Manufacturing Alliance is the future of Australian manufacturing in the decade 2010-2020 and beyond. Building upon two past decades of neoliberalism represented by a political withdrawal from effective trade and industry policy while at the same time an improved '…collaboration and co-operation rather than an adversarial approach…' (Oliver & Howes 2009:13), between industry and unions, a national round table was convened in late 2009 with key industry, union, government and academic representatives.

New coalitions are emerging as the need to take action is recognised across regions and countries.

The traditional social partners still have a central and a pivotal role to play in the adjustment processes associated with addressing climate change. However, it is also apparent that new actors, especially at the community level, have an important role to play in the process and that new coalitions are emerging as the need to take action is recognised across regions and countries.

Conclusions: A Key Role for Industrial Relations

The ILO commented that "climate change debate and negotiations still tend to be dominated by environment and energy specialists. Employment, growth and income generation, poverty reduction and better health are often secondary to discussion rather than recognised as essential for sustainable development" (ILO 2007b: 8). Climate change represents a challenge and an opportunity. There will be a challenge as jobs are lost and production systems modified. There will be an opportunity for new jobs, new technology and local renewal. As in the past instances of industrial and regional restructuring the social partners still have a central role to play in the process.

In Australia, the peak union body, the ACTU has been active in calling for policy change and extensive consultative mechanisms for dealing with climate change. In 2009 the ACTU Congress acknowledged through the Environment and Climate Change Policy (the Policy), the damaging effects of anthropogenic climate change and the impending undesirable consequences that are likely to arise within the environmental, economic and social fabric of Australia. The Policy called for the development of cohesive cross-sector policies; a combination of market measures, government policy and regulation. These initiatives, supplemented by a commitment from the ACTU and affiliates to exert constructive influence though engagement with broader civil society, and industry-wide campaigns, would effectively catalyse economy-wide structural adjustments necessary to transition Australia to a low carbon economy (Environment & Climate Change Policy 2009).

In line with the United Nations, at a workplace level, the ACTU Policy affirms the right of workers to engage on various levels on environmental issues: decision-making; communication and awareness; whistleblower protection; and refusal to undertake dangerous and/or harmful work that may threaten on an individual or environmental level. The Policy further confirms the ACTU and affiliates' commitment to: reducing their own workplace carbon footprint; embedding sustainability issues within branch council/executive meetings agenda; identifying green job opportunities; and promoting participation by workers in climate change forums. The Policy directs that the engagement of workers on issues of energy efficiency and waste minimisation targets '…can and should be the subject of collective bargaining.' (Environment & Climate Change Policy 2009:7). That is, addressing climate change should directly enter into the bargaining process, not be hidden or left outside of the traditional collective mechanisms. As we have seen, these issues have to date not been included in the bargaining agenda in Australia.

The UN and the ILO recognise the major challenges and the major opportunities linked to addressing climate change.

The UN and the ILO recognise the major challenges and the major opportunities linked to addressing climate change. They also see that it is directly linked to issues of social justice, job quality, equal employment opportunity and sustainable living standards. Enterprises, workplaces, managers, workers and communities everywhere are directly or indirectly addressing climate change with or without national leadership and national policies to support the process. This is one of the most significant structural adjustment programs to be confronted globally and as such it requires the traditional social partners to fully participate, facilitate and negotiate the process of structural adjustment. As such it is clearly an issue that should be on the industrial relations agenda. However, there are problems with realising the agenda that are linked to a lack of an international consensus and in some countries a lack of leadership or an absence of institutions that can support agreement making, consensus building and adjustment.

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