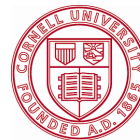




# RESIST, RECLAIM, RESTRUCTURE:

## Unions and the Struggle for Energy Democracy

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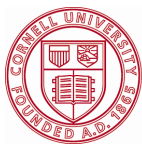


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This discussion document was prepared by Sean Sweeney, Ph.D. for the **Energy Emergency: Developing Trade Union Strategies for a Global Transition** trade union roundtable which took place on October 10-12, 2012 at the New York City District Council of Carpenters.

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Cornell University  
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## EXECUTIVE SUMMARY

The failure to reach a global climate agreement or to establish firm sustainability commitments at Rio+20 is indicative of the political strength of the fossil-fuel agenda and ‘business as usual.’ Meanwhile, a new discourse on sustainability and the green economy has begun to emerge among unions and other social movements. This discourse opposes the idea that the commodification of nature is key to solving the profound ecological crisis we face as a species. It regards the idea of putting a price on ‘natural resources’ in order to make capitalism green and sustainable as plainly false and deeply perverse.

### THERE IS AN ENERGY EMERGENCY

We face an *energy emergency* of global proportions. A massive increase in fossil fuel use is projected in the coming years that will make our efforts to control global warming and climate instability virtually impossible from a practical standpoint.

Fossil fuel corporations are using their growing wealth and power to assert an “extreme energy” agenda; this includes using far riskier energy extraction methods to get to difficult to reach and often highly polluting fossil fuels (tar oil, natural gas through hydraulic fracturing, surface coal mining, etc.). The extreme energy agenda has serious implications for communities, workers, the climate and the environment more broadly. Fossil fuel corporations are also using their wealth and power to oppose or delay efforts to address climate change and to create a more equitable, democratic and sustainable energy system that can protect workers’ rights.

Many workers in the energy sector do not have union representation and lack basic

workers’ rights. In general, neoliberal energy policies have caused working conditions in the energy sector to deteriorate, particularly in relation to wages, health and safety, and employment security. Greater production of fossil fuels has not resulted in concomitant gains in employment in the sector either; new technologies allow companies to produce the same amounts of fossil fuel with fewer workers. Repression of worker organizing in this sector also appears to be on the rise.

The energy emergency encompasses other serious social issues, too; namely, global inequality in access and consumption of energy. Even though every year more energy is being generated and consumed, between 1.4 and 1.6 billion people have no access to electricity or cannot afford to pay their bills. In many countries, privatization of energy has caused price increases, declining quality and service, and underinvestment.

### AN ENERGY TRANSITION IS NOT HAPPENING

An energy transition to a clean, renewables-based, low-carbon system that meets essential social and environmental priorities needs to occur, but it is simply not taking place.

Renewable energy use is not growing fast enough to appreciably slow down the rise in fossil fuel use. The growth in renewable energy merely supplements the use of fossil fuels, which continue to increase at an alarming rate. More than 50 percent of new energy demand is being met by coal.<sup>1</sup> Fossil fuels are still set to meet more than three-fourths of total energy needs in 2035

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<sup>1</sup> United Nations Environment Program (UNEP), Keeping Track of Our Changing Environment: From Rio to Rio + 20, 2011, [www.unep.org/geo/pdfs/keeping\\_track.pdf](http://www.unep.org/geo/pdfs/keeping_track.pdf)

assuming current policies are unchanged.<sup>2</sup> ‘Modern renewables’ like wind and solar contribute just 4.2 percent of global energy consumption and only 0.3 percent of total energy supply.<sup>3</sup>

The current regulatory and market-based approaches to promote renewable energy and energy conservation are totally inadequate, as are measures to develop other low carbon technologies like carbon capture and storage and nuclear power. According to the International Energy Agency, if all government commitments to clean energy were met, and all proposed plans were actually implemented, by 2035 renewable energy will still stand at just 16 percent of all energy consumed globally.<sup>4</sup>

## ENERGY DEMOCRACY IS NEEDED

An energy transition can only occur if there is a decisive shift in power towards workers, communities and the public—*energy democracy*. A transfer of resources, capital and infrastructure from private hands to a democratically controlled public sector will need to occur in order to ensure that a truly sustainable energy system is developed in the decades ahead.

*Energy democracy* offers perhaps the only feasible route to a new energy system that can:

- Protect workers’ rights and generate decent and stable jobs
- Make Just Transition real
- Be responsive to the needs of communities
- Create an energy system based on environmentally sustainable methods of energy extraction, transport and use
- First control and then quickly and dramatically reduce emissions and harmful pollution
- Rapidly scale up renewable energy and other low-carbon energy options
- Aggressively promote energy conservation across all sectors
- Make serious progress towards ending energy poverty globally

## RESIST, RECLAIM AND RESTRUCTURE

A trade union strategy for *energy democracy* can be built around three broad objectives, namely the need to **resist** the agenda of the fossil fuels corporations; the need to **reclaim** to the public sphere parts of the energy economy that have been privatized or marketized; and the need to **restructure** the global energy system in order to massively scale up renewable energy and other safe low-carbon options, implement energy conservation, and ensure job-creation and true sustainability.

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<sup>2</sup> US Department of Energy, International Energy Outlook, 2011, <http://www.eia.gov/forecasts/ieo/index.cfm>

<sup>3</sup> Renewable Energy Policy Network for the 21st Century, Renewables 2012 Global Status Report, p. 21, <http://www.ren21.net/default.aspx?tabid=5434>

<sup>4</sup> International Energy Agency (IEA), World Energy Outlook 2012, p. 83, [www.worldenergyoutlook.org/publications/weo-2012/](http://www.worldenergyoutlook.org/publications/weo-2012/)

# INTRODUCTION

## RESIST, RECLAIM, RESTRUCTURE: UNIONS AND THE STRUGGLE FOR ENERGY DEMOCRACY

This paper served as a discussion document for the 3-day global trade union *Energy Emergency – Energy Transition* roundtable convened by the Cornell Global Labor Institute (GLI) in partnership with the Rosa Luxemburg Foundation and six Global Union Federations. Following discussion and comments, the document was updated on November 6, 2012.

### BACKGROUND: UNIONS AND THE GREEN ECONOMY DEBATE - MODIFICATION AND COMMODIFICATION

For a number of years the strategic approach of many unions has been to support the idea of a green economy and a green transition as a means of responding to the present economic, social and environmental crises.<sup>5</sup> In supporting the green economy, unions have advocated strongly for workers' rights, decent work, 'just transition,' job-centered growth, and a strong role for the government and the public sector. Unions have drawn attention to the need for social dialogue in order to facilitate the green transition and make it more equitable and acceptable.<sup>6</sup> At Rio+20, a number of unions emphasized the need for strong

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<sup>5</sup> European Trade Union Institute (ETUI), *Exiting the Crisis: Towards a Model of More Equitable and Sustainable Growth*, Brussels, 2011, [http://www.ituc-csi.org/IMG/pdf/Exiting\\_from\\_the\\_crisis\\_Washington.pdf](http://www.ituc-csi.org/IMG/pdf/Exiting_from_the_crisis_Washington.pdf)

<sup>6</sup> This perspective has been represented in numerous trade union documents, statements and resolutions. For example, see ITUC, "No Social Justice Without Environmental Protection," June 22, 2012, <http://www.ituc-csi.org/no-social-justice-without.html>

financial regulation, constraints on speculation, and support for the real economy.<sup>7</sup> Overall unions have applauded measures like the carbon price in Australia, the growth pact in South Africa, the green measures in the 2009 Obama stimulus package, and the development of renewable energy in Germany as demonstrating how "policies, regulation and investment can drive investment into the green economy and create jobs."<sup>8</sup> The International Labour Organization's (ILO) *Working Towards Sustainable Development: Opportunities for Decent Work and Social Inclusion in a Green Economy*, released in partnership with the United Nations Environment Programme (UNEP) and the International Trade Union Confederation (ITUC) in early 2012, imagines a role for government whereby "governments can influence the market and encourage the private sector towards a green transition and overcome the problems of missing private price signals. In this sense, public investment plays a complementary role to larger market-based mechanisms."<sup>9</sup>

Trade unions have therefore been engaged in an effort to *modify* the existing unsustainable economy – to make it cleaner, greener, more climate-friendly and better for everyone. However, a significant section of the global corporate elite seeks to *commodify* nature as a

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<sup>7</sup> International Trade Union Confederation (ITUC) submission to Rio+20, Workers and trade unions' consolidated contribution to the United Nations Conference on Sustainable Development RIO + 20, November 2011, <http://www.ituc-csi.org/rio-20-trade-unions-submit-their.html>

<sup>8</sup> International Trade Union Confederation (ITUC), *Growing Green and Decent Jobs*, April 2012, [http://www.ituc-csi.org/IMG/pdf/ituc\\_green\\_jobs\\_summary\\_en\\_final.pdf](http://www.ituc-csi.org/IMG/pdf/ituc_green_jobs_summary_en_final.pdf)

<sup>9</sup> International Labour Organization (ILO)/ United Nations Environment Program (UNEP), *Working Towards Sustainable Development: Opportunities for Decent Work and Social Inclusion in a Green Economy*, 2012, PDF version, p. 165, [http://www.ilo.org/global/publications/books/WCMS\\_181836/ang--en/index.htm](http://www.ilo.org/global/publications/books/WCMS_181836/ang--en/index.htm)

means of giving monetary value to the atmosphere, the forests, the land and the oceans in the hope that putting a price on 'natural capital' will halt the abuse and misuse of nature and promote its preservation. This will require further opening up the natural environment to exploitation and profit-making in the name of 'protecting the planet.' In the pursuit of these different goals, unions and corporations may agree on the need for certain mechanisms and policies – such as carbon pricing. But the commodification agenda of the corporations and trade union attempts to make improvements when and where they can are, in the final analysis, two distinct projects.

## POLITICAL FAILURE

*Words are not enough; a UN process with no targets, no timelines and no serious inclusion of unions and civil society does nothing to alleviate the anxiety of people suffering from unemployment, from poverty or from environmental destruction of their lands and/or livelihoods.*

--International Trade Union Confederation (ITUC). Statement on Rio+20 Outcomes, June 22, 2012<sup>6</sup>

Whatever the strengths and limitations of the trade union approach to the green economy, today it is clear that the kind of global political framework needed to drive a green transition has failed to emerge. Few trade unions expect the UN's climate negotiations (the UNFCCC/Kyoto process) to produce a global climate agreement that is equitable and can drive an energy transition guided by science-based emissions reduction targets.<sup>10</sup> At the Rio+20 talks in June 2012,

<sup>10</sup> The United Nations Framework Convention on Climate Change supports GHG targeting and stabilization whereas the Kyoto Protocol officially committed signatory nations to these targets.

governments made the usual fine speeches but avoided any firm commitments on major issues. Typical of the Rio+20 outcomes as a whole, the *Sustainable Energy For All* (SEFA) proposal was 'noted' but no renewable energy target was referenced or adopted.<sup>11</sup>

The political paralysis in the face of environmental degradation and the climate emergency also extends to the incapacity of most governments to even begin to address the problems of unemployment, precarious work, and persistent poverty in many regions of the world. They are symptoms of the same problem—a clash between the priorities of political elites and corporations on one hand, and the needs of the masses of people for a truly socially and environmentally sustainable society on the other.

When the financial crisis hit in 2008, politicians did not spend years trying to establish "worldwide consensus" on who should shoulder exactly how much of the burden. Instead, they mobilized massive amounts of capital to bail out the financial institutions. The socio-environmental crisis is an even greater emergency, but the response is not even close to being comparable.

<sup>11</sup> United Nations, RIO+20 United Nations Conference on Sustainable Development Agenda Item 10: Outcome of the Conference, *The Future We Want*, p. 25, paragraph 129. "We note the launching of the initiative by the Secretary-General on Sustainable Energy for All, which focuses on access to energy, energy efficiency and renewable energies. We are all determined to act to make sustainable energy for all a reality and, through this, help to eradicate poverty and lead to sustainable development and global prosperity. We recognize that the activities of countries in broader energy-related matters are of great importance and are prioritized according to their specific challenges, capacities and circumstances, including their energy mix." <http://www.earthsummit2012.org/resources/useful-resources/1157-the-future-we-want-rio20-outcome-document>

## ENERGY DEMOCRACY AND THE NEW DISCOURSE

In recent years a new discourse on sustainability and the green economy has begun to emerge among unions and other social movements.<sup>12</sup> This discourse draws attention to the fact that the green transition imagined by some world leaders and large corporations is incapable of getting to the root of the problems we face as a society, problems that are systemic in nature. It opposes the idea that the commodification of nature is key to solving the profound ecological crisis we face as a species. It regards the idea of putting a price on ‘natural resources’ in order to make capitalism green and sustainable as plainly false and deeply perverse. The commodification of nature merely opens up new areas for economic (and therefore social) exploitation, marketization and privatization. The experience of energy shows that this is not a green transition but an extension of the existing unsustainable economy into new areas, a new phase of enclosure. This will not solve the world’s environmental problems and will in many respects make them worse.

This new discourse informs the approach to *energy democracy* proposed here. It shares the view that the economic and environmental crises are two sides of the same coin, and they must be addressed simultaneously, and addressed in ways that can promote real solutions, not false solutions. Regulatory and market-based approaches—including carbon markets and taxes—have failed because they do not confront the power of the corporations and their control over energy resources, infrastructure and markets. These approaches have not been able to

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<sup>12</sup> See, for example, Bolivian Climate Change Platform on Rio + 20 and the Green Economy, April 17, 2012, p. 1, “The proposals of the ‘Green Economy’ expressed [in the draft Rio agreement] are not an answer to the current environmental and climate crisis. Putting a price on nature is not the solution and will only benefit big capital.” [http://www.cambioclimatico.org.bo/derechosmt/052012/100512\\_2.pdf](http://www.cambioclimatico.org.bo/derechosmt/052012/100512_2.pdf)

impede the rush towards rising energy demand, rising fossil fuel use and rising emissions.

This paper therefore builds on the perspectives and analyses of unions in energy and other sectors that are developing system-focused solutions to the environmental, social and economic challenges we presently face. This approach has been developed by the International Transport Workers’ Federation in its effort to address emissions from transport.<sup>13</sup> It was also evident in the statement released by the 2<sup>nd</sup> Trade Union Assembly on Labour and the Environment at Rio+20 that was organized by the ITUC and Sustainlabour.<sup>14</sup> In 2010 the International Federation of Chemical, Energy, Mine and General Workers’ Unions (ICEM – now part of the 50 million member IndustriALL Global Union) called for democratic energy policies and the need to resist corporations who “prioritize profit-making at the expense of the public good.” Similarly, Building Workers International (BWI) has warned that “the current Green Economy concept ...over-emphasizes market-based mechanisms” that could lead to “a green-washing of existing capitalist structures rather than addressing the real causes of the multiple crises.”<sup>15</sup> The Alliance for Progressive Labour in the Philippines has united

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<sup>13</sup> International Transport Workers Federation (ITF), Transport Workers and Climate Change: Towards Sustainable, Low-Carbon Mobility, 2010, [http://www.ilr.cornell.edu/globallaborinstitute/upload/ITF-CLIMATE-CHANGE-CONFERENCE\\_LOW.pdf](http://www.ilr.cornell.edu/globallaborinstitute/upload/ITF-CLIMATE-CHANGE-CONFERENCE_LOW.pdf)

<sup>14</sup> Sustainlabour Foundation and International Trade Union Confederation (ITUC), Rio+20, II Assembly on Labour and Environment, “Climate Change and Energy” discussion document.

<sup>15</sup> International Federation of Chemical, Energy, Mine and General Workers’ Unions (ICEM), World Conference for the Energy Industries, Stavanger, Norway, September 2010. See Also: Building Workers International Conference on sustainable Industries, Fighting Back for Sustainable Development in Construction and Forestry, Declaration on Rio+20 Summit, 11-14 June 2012. Available at: [http://www.ituc-csi.org/IMG/pdf/bwi\\_rio\\_declaration\\_2012\\_-\\_final.pdf](http://www.ituc-csi.org/IMG/pdf/bwi_rio_declaration_2012_-_final.pdf)



with other organizations across Asia calling for “an immediate stop to the commodification, privatization and financialization of nature, and all its components and functions.”<sup>16</sup> Many individual unions around the world share a similar critique and understand the need to promote a new discourse that can unite social movements around a vision of a truly sustainable world.

The specific arguments for *energy democracy* presented here extend logically from these sentiments and perspectives. These arguments are also consistent with the trade union and labor movement tradition of advocating for an economy that is truly democratic and serves the interests of people in ways that are fully aligned with ecological principles.

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<sup>16</sup> Alliance of Progressive Labor- Philippines, Call to Asia Social Movements to Assembly in Manila, <http://www.apl.org.ph/?s=nature>



## PART ONE: THERE IS AN ENERGY EMERGENCY

We face an *energy emergency* of global proportions.

- The unimpeded growth in the demand for energy is mainly being met by fossil fuels, including unconventional fuels like shale gas and tar oil. This is making almost futile our efforts to control global warming and climate instability.
- The negative impacts of fossil fuel generated pollution are enormous. This will only get worse. In the United States alone, the public health costs of fossil fuel use already exceeds \$120 billion per year.<sup>17</sup>
- The economic and political power of fossil fuel corporations is growing and they almost invariably obstruct effective climate protection policies and oppose regulations to fight pollution.
- Working conditions in the energy sector are generally deteriorating, and workers' rights are under attack in many countries and regions.
- Every year more energy is being generated and consumed, but energy poverty remains a chronic problem. An estimated 1.4 billion people either have

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<sup>17</sup> Peter Lehner, Big Oil's Monopoly Money: Ending \$1 Trillion in Fossil Fuel Subsidies Requires Breaking Industry's Political Influence, Switchboard: Natural Resources Defense Council Staff Blog, June 22, 2012, [http://switchboard.nrdc.org/blogs/plehner/what\\_will\\_it\\_take\\_to\\_eliminate.html](http://switchboard.nrdc.org/blogs/plehner/what_will_it_take_to_eliminate.html)

no access to electricity or cannot afford to pay for it.

### GLOBAL ENERGY TRENDS THREATEN HUMAN SURVIVAL

*With our current rate of fossil fuel consumption, the increase in global average temperature will lead to widespread, harmful global impacts over the coming century. Rapid deterioration of ecosystems, large-scale losses of biodiversity, detrimental rising sea levels, significant increases in extreme weather events and a profound disruption to industry and human populations will result.*

– Canadian Labour Congress, *Climate Change*

A massive increase in fossil fuel use is projected in the coming years that will make our ability to control global warming and climate instability virtually impossible from a practical standpoint. According to the International Energy Agency (IEA), more than 50% of new energy demand is being met by coal, and fossil fuels are expected to meet more than three-fourths of total energy needs in 2035 assuming current policies are unchanged.<sup>19</sup>

The idea that fossil fuels are running out has gained a certain acceptance in recent years – but new supplies have been discovered and

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<sup>18</sup> Canadian Labour Congress, Climate Change and Green Jobs: Labour's Challenges and Opportunities, 25th CLC Constitutional Convention, 2008, <http://www.canadianlabour.ca/sites/default/files/pdfs/ClimateChange-amended.pdf>

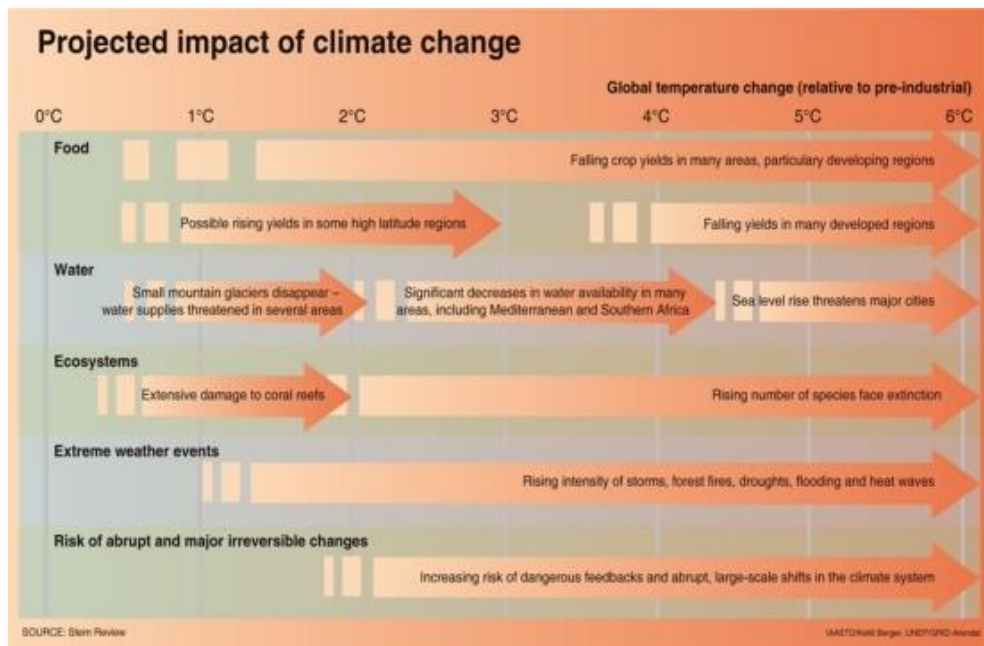
<sup>19</sup> International Energy Agency (IEA), World Energy Outlook, 2011, op cit. See also: Renewable Energy Focus, Global renewable electricity to grow by 3.2% per year, May 27, 2010, <http://www.renewableenergyfocus.com/view/9729/global-renewable-electricity-to-grow-3-2-per-year/>

technologies to extract new types of fossil fuels, such as shale gas, tar sands oil, etc. are being developed. According to the IEA, exploitable coal reserves amount to one trillion tons globally. A recent analysis by The Carbon Tracker Initiative found that the current reserves of oil and gas companies (claims of oil and gas reserves that have not yet been extracted) are worth \$20 trillion.<sup>20</sup> Energy companies are today euphoric about the prospects of a new 'golden age' for fossil fuels.<sup>21</sup>

of where they live or work. The impact on urban air pollution and on the acidification of land and water will also be severe.<sup>22</sup> The economic impact of China's air pollution has risen from \$22 billion in 1975 to \$112 billion in 2005.<sup>23</sup>

Clearly, the world cannot wait for fossil fuels to run out before it transitions to a truly sustainable energy system. Decisive action is needed.

This situation amounts to a planetary emergency. The effects of this emergency will touch the lives of all union members and their families regardless



<sup>20</sup> Carbon Tracker Initiative, Unburnable Carbon – Are the world’s financial markets carrying a carbon bubble? Executive Summary, <http://www.carbontracker.org/carbonbubble>; Bill McKibben, “Global Warming’s Terrifying New Math,” *Rolling Stone*, July 19, 2012, <http://www.rollingstone.com/politics/news/global-warmings-terrifying-new-math-20120719>

<sup>21</sup> International Energy Agency, World Energy Outlook 2011 Special Report, Are We Entering a Golden Age of Gas, 2011, <http://www.worldenergyoutlook.org/goldenageofgas/>

<sup>22</sup> UN Secretary-General’s Advisory Group on Energy and Climate Change (AGECC), Energy for a Sustainable Future, 2010.

<sup>23</sup> Kira Matus et al., “Health Damages from Air Pollution in China,” *Global Environmental Change* 22, 2012, pp. 55-66, [http://globalchange.mit.edu/files/document/MITJPSPGC\\_Report\\_12-3.pdf](http://globalchange.mit.edu/files/document/MITJPSPGC_Report_12-3.pdf); Wendy Koch, MIT: “China’s pollution costs \$112B in annual health care,” *USA Today* website, February 14, 2012, <http://content.usatoday.com/communities/greenhouse/post/2012/02/chinas-growth-worsens-air-pollution-hikes-health-costs/1#.UFzgTWh3Zl>

## ENERGY AND GLOBAL WARMING – NOW AND IN THE FUTURE

The world's weather systems today appear to be in a state of havoc, and there are clear and distressing signs that the climate crisis is unfolding at a rapid pace.<sup>1</sup> The political target of keeping warming under two degrees Celsius—adopted by world leaders and supported by most unions—will require a massive reduction in greenhouse gas (GHG) emissions in the decades ahead. These reductions have to begin immediately.

However, there are clear signs that the two degrees target is far too lenient. The average temperature of the planet has already risen by 0.8 degrees Celsius. This warming has led to the loss of one third of Arctic summer ice and made the oceans 30 percent more acidic. Climate instability is already evident and appears to be becoming more serious and more widespread. According to NASA scientist James Hansen, "The target that has been talked about in international negotiations for two degrees of warming is actually a prescription for long-term disaster."<sup>24</sup>

Whether the appropriate target is two degrees, 1.5 degrees or just one degree is presently immaterial. Climate disaster cannot be averted as long as CO<sub>2</sub> emissions continue to rise as a result of more fossil fuels being burned. Under a 'business as usual' scenario (that is, if present trends continue with current policies in place), CO<sub>2</sub> emissions will increase from 30 GT in 2010 to 43.3 GT in 2035, which is consistent with a catastrophic increase in average global temperature of *six degrees* Celsius, at least.<sup>25</sup>

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<sup>24</sup> James Hansen, quoted in McKibben, *Global Warming's Terrifying New Math*, 2012, op cit.

<sup>25</sup> IEA, *World Energy Outlook 2011*, op. cit., p. 42. "Without these new policies, we are on an even more dangerous track, for a temperature increase of 6°C or more."

The global energy system is already the dominant contributor to climate change, representing around 60–75 percent of total current GHG emissions. The fossil fuel reserves presently held by the top 100 listed coal, oil and gas companies represent potential emissions of 745 GtCO<sub>2</sub>. The reserves of these companies are more than enough to take the world far beyond two degrees Celsius of global warming. This means that governments and global markets are currently treating reserves as assets that, if used, would produce 500% more carbon than is budgeted if the two degrees target is to be met.<sup>26</sup> On top of this 745 Gt CO<sub>2</sub> needs to be added the resources held by state entities that also have plans to extract and sell more fossil fuels.<sup>27</sup>

In addition to the reserves held by the top 100 corporations, almost unlimited reserves of fossil fuels lie in wait for corporate development. The global warming potential of the Earth's known fossil fuel reserves comes to 2,795 GtCO.<sup>28</sup>

## CARBON LOCK-IN

*If stringent new action is not forthcoming by 2017, emissions from the energy-related infrastructure will exceed the 2 °C rise in global warming, thereby exceeding the level of climate change impacts associated with global warming that are still manageable.*

– Discussion document,  
Trade Union Assembly,  
Rio+20, June 2012.

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<sup>26</sup> Leonardo Maugeri, "Oil: The Next Revolution" Discussion Paper 2012-10, Belfer Center for Science and International Affairs, Harvard Kennedy School, June 2012. See also: Carbon Tracker Initiative, *Unburnable Carbon*, op cit.

<sup>27</sup> Carbon Tracker Initiative, *Unburnable Carbon*, op cit.

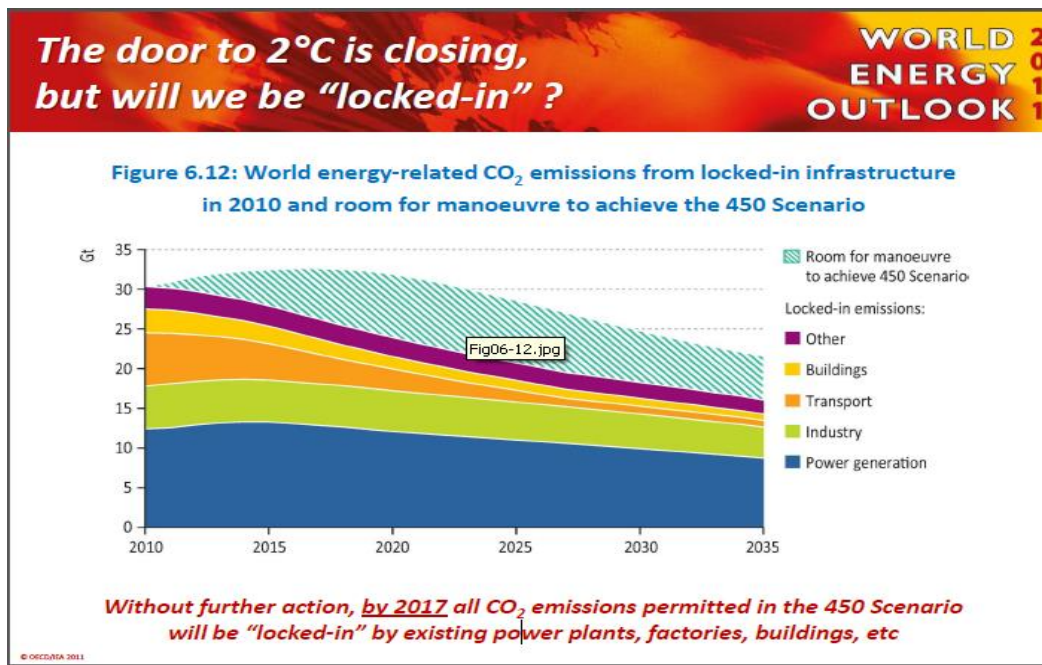
<sup>28</sup> 65% of this is from coal, with oil providing 22% and gas 13%. Ibid, Executive Summary.

The projected use of both conventional and unconventional fossil fuels will be accompanied by the development of new physical infrastructure – such as refinery capacity, pipelines and power stations. In 2011 the IEA issued a dire warning about ‘carbon lock in.’ In plain terms, much of the new infrastructure being developed now at huge cost, will need to be retired early if CO<sub>2</sub> targets are to be met. And this will raise the financial costs of reducing CO<sub>2</sub> dramatically.<sup>29</sup> Decisions made in the next five years will therefore determine whether or not we can prevent runaway climate change.

## RISING DEMAND, EXTREME ENERGY

Demand for energy in all forms is increasing and it is expected to continue to increase until 2035, and probably beyond.<sup>30</sup> And although renewable energy use is growing globally, most of the new demand between now and 2035 will be met by fossil fuels.

The growth in demand for energy is yielding enormous profits for the fossil fuel companies. In the U.S. alone, the top five oil companies amassed almost \$1 trillion dollars in profits over the last decade.<sup>31</sup> Rising demand is also raising the price of energy, which serves as a further incentive to



These extra costs and the waste of resources could be avoided if renewable and low-carbon energy and energy conservation were invested in immediately and scaled up to levels high enough to begin to replace fossil fuels.

<sup>29</sup> IEA, World Energy Outlook 2011 op. cit, Executive Summary and Chapter 6.

<sup>30</sup> IEA, World Energy Outlook 2011, op. cit. Refers to the IEA’s “New Policies Scenario.” IEA notes how the transport sector is driving much of the new demand for oil; in fact all of the net growth in global oil demand will come from the transport sector in the non-OECD countries—with India, China and the Middle East leading the way.

<sup>31</sup> Natural Resources Committee (Democrats), Markey Report: Big Five Oil Companies Approach \$1 Trillion in Profits for the Decade, Yet Still Rely on 100 Year-Old Subsidies to Sell \$100 Oil, February 3, 2011. <http://democrats.naturalresources.house.gov/press-release/big-five-oil-companies-approach-1-trillion-profits-decade-yet-still-rely-100-year-old>

develop even more fossil fuels. This is leading to new supplies of ‘unconventional’ or ‘marginal’ fuels – like tar oil and shale gas.<sup>32</sup> These new fuels have been termed ‘extreme energy’ for good reason. The environmental, social and health-related impacts of extracting, transporting and burning these fuels present serious risks. The impact on workers, communities and the environment has already been severe.

*North America’s oil shale and tar sands resources, alone, far exceed the known remaining proved and undiscovered oil resources of the entire world. They represent some 3.5 trillion barrels of resource in place, of which 1 trillion barrels could be ultimately recovered and produced, with existing and advancing technologies under normal economic conditions.*

–Strategic Unconventional Fuels Task Force. “America’s Strategic Unconventional Fuels” September 2007

chemicals, etc.) and the extremely serious impact it has on the environment and the earth’s climate due to its GHG intensity. For example, there is strong evidence that fugitive methane from ‘fracking’ for shale gas is making a major contribution to greenhouse gas emissions levels. These data have blown apart the argument that natural gas is a ‘bridge’ fuel and emits less global warming pollution than coal per unit of energy generated—although gas companies and some mainstream environmental organizations still present gas as a ‘clean’ form of energy.<sup>33</sup>

*The shale/tight oil boom in the United States is not a temporary bubble, but the most important revolution in the oil sector in decades. It will probably trigger worldwide emulation over the next decades that might bear surprising results – given the fact that most shale/tight oil resources in the world are still unknown and untapped.*

– Belfer Center, Harvard University (see footnote 26)

## SHALE GAS

Following the lead of the United States, the global gas industry is blazing forward with plans to use hydraulic fracturing “fracking” to harvest gas from shale formations. The natural gas industry is now exploring or already extracting shale gas from a number of countries around the world, including South Africa, England, United States, Poland, Australia and others. This is ‘extreme energy’ in two respects—in terms of the extraction methods used (explosives, large supplies of water, toxic

<sup>32</sup> Heinrich Boll Stiftung Foundation, Marginal Oil: What is driving oil companies dirtier and deeper? April 2011, <http://www.boell.de/publications/publications-12097.html>

## TAR SANDS

The high price of oil has also given impetus to massive investment in the Athabasca Oil Sands region of Alberta, Canada, also known as the Tar Sands. This region forms the second-largest deposit of recoverable oil in the world after Saudi

<sup>33</sup> Robert Howarth et al., Methane and the greenhouse-gas footprint of natural gas from shale formations: A letter, April 12, 2011.

<http://www.springerlink.com/content/e384226wr4160653/fulltext.pdf> See also: Boell Foundation, Marginal Oil 2011, op. cit. “In 2009, China produced 48 per cent of the world’s hard coal. The United States is the second largest producer, accounting for 16 per cent of world production in 2009. Other major hard coal producers are India, Australia, Russia, Indonesia and South Africa.”



Arabia—171.8 billion barrels, or roughly 13 percent of the global total (comparable to Iraq and Russia’s combined reserves).<sup>34</sup>

Investment in the tar sands is presently around \$18.5 billion (for 2013). Chinese companies, such as China National Petroleum Corporation (CNPC), China Petroleum & Chemical Corporation (Sinopec) and China National Offshore Oil Corporation (CNOOC) have invested a total of \$18 billion during the 18-month period to September 2011.<sup>35</sup> However, total investment is estimated to be around \$40 billion annually (2010 figures)<sup>36</sup> Other tar sands sites have been located in 23 countries, with Russia and Kazakhstan having the largest deposits.<sup>37</sup>

## ECONOMIC AND POLITICAL POWER OF FOSSIL FUEL CORPORATIONS

Fossil fuel companies continue to dominate the energy economy and in many countries they exert a tight grip on energy policy. Energy and carbon-intensive companies feature prominently on the list of the world’s largest corporations, and fossil fuel corporations’ CEOs are among the richest people on the planet.<sup>38</sup>

The top 100 coal and top 100 oil and gas companies had a combined value of \$7.42 trillion as of February 2011. The countries with the largest GHG potential in reserves on their stock exchanges are Russia (253 Gt CO<sub>2</sub>), the United States (156.5 Gt CO<sub>2</sub>), and the United Kingdom (105.5 Gt CO<sub>2</sub>). The stock exchanges of London, Sao Paulo, Moscow, Australia and Toronto all have an estimated 20–30 percent of their market capitalization connected to fossil fuels.<sup>39</sup>

The size and wealth of fossil companies is shaped in large part by their assets and potential assets—which boils down to the carbon buried under forests, mountains, and oceans to be extracted and used in the future. The carbon may be underground, but in economic terms this carbon is already active and fueling the profits of the fossil fuel companies.<sup>40</sup> Some major companies are state owned, directed or controlled, but many act like private corporations (see below). They too have assets that are physically in the ground, but are above ground economically.

Fossil fuel companies use their tremendous concentration of wealth and power to influence politics, particularly energy and climate policy, and delay the transition to a low-carbon, sustainable energy system. In the US alone, approximately \$3.5 billion is invested annually in lobbying activities at the federal level.<sup>41</sup> In recent years, Royal Dutch Shell, the US Chamber of Commerce, Edison Electric Institute, PG&E,

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<sup>34</sup> Government of Alberta, Oil Sands, <http://www.energy.gov.ab.ca/OilSands/oilsands.asp>

<sup>35</sup> Jennifer Dlouhy, “China invests billions in Canada oil sands,” *Houston Chronicle*, September 19, 2011, <http://www.chron.com/business/article/China-invests-billions-in-Canada-oil-sands-2176114.php>

<sup>36</sup> Canadian Association of Petroleum Producers—Oil Sands Facts website. Accessed on Jun 21, 2010 at: <http://www.capp.ca/avatar/Pages/OilSandsFacts.aspx#bwyTKBcA4fe8>

<sup>37</sup> World Energy Council (Canada), *Survey of Energy Resources*, 2007, [http://www.worldenergy.org/publications/survey\\_of\\_energy\\_resources\\_2007/default.asp](http://www.worldenergy.org/publications/survey_of_energy_resources_2007/default.asp)

<sup>38</sup> International Forum on Globalization, *Outing to Oligarchy: Billionaires Who Benefit from Today’s Climate Crisis*, Dec 2011, <http://ifg.org/programs/plutonomy.html#OTO>

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<sup>39</sup> Carbon Tracker Initiative, *Unburnable Carbon*, op. cit.

<sup>40</sup> *Ibid*, see also: McKibben, *Global Warming’s Terrifying New Math*, 2012, op. cit.

<sup>41</sup> Dana Bash, “Lobbying spending appears to plateau,” *CNN Political Tracker*, February 4, 2011, <http://politicalticker.blogs.cnn.com/2011/02/04/lobbying-spending-appears-to-plateau/> See also: Greenpeace, *Who’s Holding us Back?* November 2011, <http://issuu.com/greenpeaceinternational/docs/391-whosholdingusback/1>; Open Secrets database, *Political Action Committees (PACs)*, <http://www.opensecrets.org/pacs/index.php>

Southern Company, ExxonMobil, Chevron, BP and ConocoPhillips all made the top 20 list of lobbyists.<sup>42</sup> Fossil fuel companies are big spenders when it comes to lobbying elected representatives, and they have a clear agenda – the continuation of fossil fuel use and the defeat of effective regulations to reduce emissions and pollution. These corporations are organized in trade associations such as the American Petroleum Institute, the Canadian Association of Petroleum Producers, the Australian Coal Association, the Energy Intensive Users Group in South Africa, BusinessEurope and the European steel and chemicals associations Cefic and Eurofer.<sup>43</sup>

In the U.S., the brothers Charles and David Koch of Koch Industries have opposed President Obama’s environmental initiatives and have used their \$50 billion fortune to promote climate change denial.<sup>44</sup> The Koch brothers have donated more than \$60 million to climate denial organizations in the U.S. that work to delay policies and regulations to address climate change.<sup>45</sup> They also contributed several million dollars to California’s Proposition 23 campaign in the November 2010 election in a failed attempt to overturn the state’s “Global Warming Solutions Act of 2006.”<sup>46</sup>

As noted above, the IEA has highlighted the

problem of ‘carbon lock-in’.<sup>47</sup> However, the continued unimpeded expansion of fossil fuels also raises the problem of *political* ‘lock in’ – more fossil fuel use means more political power for the energy corporations. In many countries, energy corporations already have determinative power over major political decisions.

## UNDER ATTACK – WORKERS AND COMMUNITIES

The experience of workers in the traditional energy sector is varied. Where unions are strong, workers can earn a decent wage and are relatively well protected. But there are unmistakable signs that workers in the sector are under threat.

## JOB NUMBERS FALLING DUE TO CAPITAL INTENSIFICATION AND PRODUCTIVITY

Firstly, the sector has become more capital intensive and is using less labor. Global coal, oil and gas production has risen significantly over the last several decades, but employment in these sectors has declined.<sup>48</sup> A 2012 ILO report provides useful data on employment in the energy economy and the impact of capital intensification on jobs.<sup>49</sup> The extraction of oil, gas and coal employs more than 10 million people worldwide, and thermal and electricity plants add a substantial number of jobs.<sup>50</sup> However, worldwide employment in coal, oil and gas extraction and production is in decline even as more fossil fuels are used in the global energy system.<sup>51</sup> More than 11 million workers are employed in utilities, but this number includes

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<sup>42</sup> 350.org, The US Chamber Doesn’t Speak for Me website, <http://chamber.350.org/poster/>

<sup>43</sup> Greenpeace, Who’s Holding us Back?, Executive Summary, op. cit

<sup>44</sup> Frederic Morton, The Rothschilds: Portrait of a Dynasty, Kodansha America, Inc., New York, 1998.

<sup>45</sup> Greenpeace, “Koch Industries: Still Funding Climate Denial,” <http://www.greenpeace.org/usa/en/campaigns/global-warming-and-energy/polluterwatch/koch-industries/> (Accessed October 2, 2012).

<sup>46</sup> International Forum on Globalization, Outing the Oligarchy, op.cit. Chapter by Victor Menotti.

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<sup>47</sup> IEA, World Energy Outlook, op. cit.

<sup>48</sup> ILO/UNEP, Working Towards Sustainable Development, 2012, op. cit.

<sup>49</sup> Ibid.

<sup>50</sup> Data from World Coal Institute (2005), cited in *ibid*.

<sup>51</sup> Worldwide workers in coal: 4.65M, down from World Coal Institute estimates of 7M+ according to a 2005 report cited in ILO, Working Towards Sustainable Development, 2012.



gas and water utilities.<sup>52</sup> In most countries, employment in power plants has also declined over the past two decades, following privatization, deregulation and growing automation. In South Africa, 70,000 power sector jobs were lost between 1980 and 2000 even though electricity generation increased by more than 60 percent. In the European Union, an estimated 300,000 jobs in the electricity generation sector were cut between 1997 and 2004.<sup>53</sup> Coal production has increased by one-third in the U.S. since the 1980s but employment has dropped over 50 percent.<sup>54</sup> The US coal mining sector (which is today mostly non-union) employed 87,000 workers in 2011.<sup>55</sup> In China, where coal use is rising dramatically, the closure of inefficient coal plants is expected to lead to 800,000 lost jobs by 2020.<sup>56</sup>

These job losses have little or nothing to do with climate policy. Fossil fuel use is increasing, but the number of jobs, and their quality, is falling. Jobs in renewable energy are rising along with investment levels, but the growth of renewable energy is not a substitute for fossil fuel use, rather it is a supplement to it.<sup>57</sup>

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<sup>52</sup> ILO/UNEP, *Working Towards Sustainable Development*, 2012, op. cit.

<sup>53</sup> ILO/UNEP, *Working Towards Sustainable Development*, 2012, op. cit; ILO, "Social dialogue and industrial relations issues in the oil industry" \*Approximation based on data from [http://www.ilo.org/wcmsp5/groups/public/@ed\\_dialogue/@sector/documents/meetingdocument/wcms\\_161662.pdf](http://www.ilo.org/wcmsp5/groups/public/@ed_dialogue/@sector/documents/meetingdocument/wcms_161662.pdf)

<sup>54</sup> Ibid.

<sup>55</sup> Source Watch, 2011; US Bureau of Labor Statistics, undated.

<sup>56</sup> Data from ILO and the Chinese Academy of Social Sciences, cited in ILO/ UNEP, *Working Towards Sustainable Development* 2012, op cit (see Footnote 9) [http://www.ilo.org/global/publications/books/WCMS\\_181836/lang--en/index.htm](http://www.ilo.org/global/publications/books/WCMS_181836/lang--en/index.htm)

<sup>57</sup> ILO/UNEP, *Working Towards Sustainable Development*, 2012, op. cit. Job loss in the fossil fuel industry has principally been due to rising automation and labour

## FOSSIL FUELS – DANGER ZONE FOR WORKERS AND COMMUNITIES

Secondly, in many parts of the world, workers in the traditional energy sector suffer at the hands of employers who care little about worker health and safety or rights to be represented by a union.<sup>58</sup> Death and serious injuries occur all too frequently. In China, deaths in coal mining claimed the lives of 2,400 workers in 2010, and this appalling figure actually marks a major improvement on the 5,000 annual deaths of a decade or so ago.<sup>59</sup>

For communities situated in close proximity to mines, oil and gas wells, pipelines, railroad tracks that transport fossil fuels and power stations, the impact in terms of health and social disruptions continues to be severe. Today millions suffer from the effects of fossil fuel pollution—and the numbers will increase as more fossil fuels come into the world's energy system. And for the estimated 1.4 to 1.6 billion people without electricity, the chances of them ever being connected to a reliable and safe source of power are very small indeed given the record of recent decades. Under the present system, more energy generation will not solve energy poverty.

Jobs in the booming biofuels industry, which mostly involve the harvesting of feedstock, are physically demanding and often not well paid. In

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productivity. However, the transition from fossil fuels to a more sustainable energy sector, which is necessary to avert a full-blown climate crisis, will eventually have greater impacts.

<sup>58</sup> ICEM (global union federation, now IndustriALL Global Union), "Resolution in Support of ICEM Affiliates in Nigeria," <http://www.icem.org/index.php?id=3&la=EN&doc=4077>

<sup>59</sup> For recent data on Chinese coal mining injuries and fatalities, see: James T. Arredy, "China Coal Sector has Safety Setback," *Wall Street Journal* online, September 3, 2012 <http://online.wsj.com/article/SB10000872396390443847404577628722372680112.html>

Brazil, sugar cane cutting has long been characterized by poor working and living conditions and high rates of job injuries, although there have been “significant improvements in the past several years, including real wage increases, expanded social benefits, increased job formalization and efforts to eliminate child labour.”<sup>60</sup> But conditions in other countries suggest that Brazil is the exception, and the levels of exploitation are high and poor conditions are widespread.<sup>61</sup>

Lastly, incidents of violent repression of worker organizing, as seen recently in the cases of Kazakhstan, Mexico, Nigeria, Spain and South Africa, appear to be growing both more frequent and more intense.<sup>62</sup>

#### UNITED STATES: MASSEY AND BP TRAGEDIES

In the US, the tragedy in the Gulf of Mexico and the Massey mining disaster (which together claimed a total of 40 lives) were the direct result of deregulation and, in the case of the latter, of the employer knowingly putting workers’ lives at risk.<sup>63</sup>

The 2010 explosion of BP’s Deepwater Horizon drilling rig killed 11 crew members and spilled 4.9 million barrels of oil into the Gulf of Mexico, off the coast of Louisiana, Mississippi and Alabama. Despite the oil and gas companies’ claims that the technology for oil drilling is vastly improving, BP’s Deepwater Horizon gushed oil into the Gulf of Mexico for three months, and the spill was by far the largest the world has ever experienced. The immediate effects of the spill had a devastating impact on marine species, although marine scientists believe the full impact on the Gulf’s ecosystem may not be apparent for a decade.<sup>64</sup>

Also in 2010, 29 miners were killed in a massive explosion in Massey Corporation’s Upper Big Branch coal mine in Montcoal, West Virginia. The company argued that a massive release of methane gas caused the explosion, but federal investigators found that the company did not have a functioning ventilation system in the mine, allowing gas to build up dangerously. The investigation also found that, because the company did not properly maintain its emergency

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<sup>60</sup> ILO/UNEP, *Working Towards Sustainable Development*, 2012, op. cit.

<sup>61</sup> Peter Rossman, International Union of Food Workers(IUF), Powerpoint presentation at World of Work Pavilion, Copenhagen, December 14, 2009.

<sup>62</sup> Kolya Abramsky, *Sparking a Worldwide Energy Revolution*, AK Press, 2009. See also IndustriALL online, “Mexican armed forces used against peaceful protest at Excellon mine,” August 30, 2012, <http://www.industriall-union.org/mexican-armed-forces-used-against-peaceful-protest-at-excellon-mine>

<sup>63</sup> Federal investigators reported that Massey Energy repeatedly violated federal rules on ventilation and minimizing coal dust to reduce the risk of explosion. See Governor’s Independent Investigation Panel, *Upper Big Branch: The April 10, 2010 explosion – failure of basic coal mining safety practices*, May 2011,

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<http://nttc.edu/programs%26projects/minesafety/disasterinvestigations/upperbigbranch/toc.asp>

<sup>64</sup> Jason Palmer, “Gulf spill’s effects ‘may not be seen for a decade,” BBC News, February 20, 2011, [www.bbc.co.uk/news/science-environment-12520630](http://www.bbc.co.uk/news/science-environment-12520630); “The oil, coupled with the dispersants designed to break it up, will — at least in the foreseeable future — deal a serious blow to the foundation of this ecosystem: the tiny plants and animals known as phytoplankton and zooplankton,” which other species in the Gulf rely on for food. Shirley, a prominent marine biologist at Texas A & M, “entire generations of shrimp, crab, oysters, and other commercially important marine life may be wiped out and take years to recover. Much of that devastation will remain invisible to us, as creatures from sperm whales to sea turtles may die from the effects of the oil and sink beneath the waves without a trace” from David Biello, “The BP Spill’s Growing Toll on the Sea Life of the Gulf,” *Yale Environment 360*, <http://e360.yale.edu/content/feature.msp?id=2284>.

water system, it did not function as it should have when the explosion occurred.<sup>65</sup>

### THE ATTACK ON THE MEXICAN ELECTRICAL WORKERS' UNION (SME)

The independent union SME has played a crucial role at the center of an alliance of unions fighting privatization in Mexico. In October 2009, the government sent police and soldiers to occupy the facilities of the Light and Power Company of Central Mexico, driving out the electrical workers. At the same time, it liquidated the company and turned over its operations to the Federal Electrical Commission (CFE) whose workers are represented by a different electrical workers union (SUTERM) that is loyal to the government.

Most of the 44,000 workers who lost their jobs accepted their severance pay and went off to search for other jobs, but some 16,599 remained committed to defending their union and fighting for their jobs by means of using direct action, parliamentary proposals, and appeals to the courts.<sup>66</sup>

### ENERGY POVERTY, CLIMATE REFUGEES

The number of people without electrical power today is between 1.4 and 1.6 billion, or 20% of the world's population.<sup>67</sup> Another 1 billion have

unreliable access. The (mostly poor) people around the world whose crops, livestock, and water sources are being disrupted by climate change and environmental degradation often do not have access to electricity. Without electrical power, they are likely to remain stuck in hardship and poverty indefinitely. Today 2.7 billion people rely on traditional biomass for cooking and heating as their primary source of energy.<sup>68</sup> By 2030 it is expected a further 1.4 billion will be at risk of being without access to modern energy services.<sup>69</sup> Meanwhile, tens of thousands died from the East African drought in 2011 and research by the Asian Development Bank calculates 42 million people across Asia were made 'climate refugees' between 2010 and 2011.

What is being done to fight energy poverty? The United Nations declared 2012 to be the "International Year of Sustainable Energy for All" but the Rio+20 'commitments' to fight energy poverty lacked substance. According to the IEA, \$9 billion is invested annually (2009 figures) to provide first access to modern energy, but more than five times this amount, \$48 billion, is needed if universal access is to be achieved by 2030.<sup>70</sup> At the policy level, the World Bank has pushed hard for liberalization and privatization, suggesting that private power producers improve both access and service.<sup>71</sup> The evidence suggests the opposite— where governments have shown a real

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<sup>65</sup> David Kerley and Michael Murray, "Governor Investigation Faults Massey Energy in West Virginia Mine Disaster," ABC News, on line <http://abcnews.go.com/US/massey-energy-fault-upper-big-branch-west-virginia/story?id=13639984#.UBK-Xe1t3zl>

<sup>66</sup> Adapted from United Electrical Workers, "Mexican Labor News and Analysis," [http://www.ueinternational.org/MLNA/mlna\\_articles.php?id=198#1420](http://www.ueinternational.org/MLNA/mlna_articles.php?id=198#1420)

<sup>67</sup> Almost 1.6 billion people have no access to electricity. (IEA data) According to the IEA and 2.7 billion billion rely on traditional biomass for cooking and heating as their primary source of energy (IEA, 2010). By 2030 it is expected a further 1.4 billion will be at risk of being without access to

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modern energy services (IEA, data, for references see IEA data in UNEP Keeping Track, op. cit.

<sup>68</sup> Ibid; See also: World Energy Outlook 2010, <http://www.iea.org/publications/freepublications/publication/name,27324,en.html>

<sup>69</sup> Ibid. Also see UNIDO, Energy Development and Security, [http://www.unido.org/fileadmin/user\\_media/Publications/documents/energy\\_development\\_and\\_security.pdf](http://www.unido.org/fileadmin/user_media/Publications/documents/energy_development_and_security.pdf)

<sup>70</sup> IEA World Energy Outlook 2011, op. cit. p. 45.

<sup>71</sup> Sandra van Niekerk, Overview of energy in Africa, Working Paper Draft 2, Public Services International Research Unit-PSI Africa (PSIRU), October 2012.

commitment to extending access as a public service, the results have been impressive.<sup>72</sup>

## ENERGY TRANSITION?

In 2010, then UNEP Executive Director Achim Steiner said that, “A transition to a green economy is in the end inevitable.”<sup>73</sup> The evidence suggests otherwise. Fossil fuel use is increasing dramatically, as are emissions. There is, therefore, nothing inevitable about the green economy. The present situation amounts to a socio-environmental emergency that is being mostly covered up by political paralysis or defused by lofty rhetoric.

An energy transition to an equitable, low-carbon, sustainable and democratic energy system that strengthens unions is urgently needed. But is it happening? This issue is examined in Part Two.

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<sup>72</sup> David McDonald and Greg Ruiters (eds), *Alternatives to Privatization: Public Options for Essential Services in the Global South*. Available at: <http://www.hsrapress.ac.za/product.php?productid=2287&freedownload=1%20&freedownload=1>

<sup>73</sup> Achim Steiner, presentation available at Business for the Environment Global Summit 2010, *Powering Growth for the Global Green Economy*, 2010, p. 53 [www.globalinitiatives.com/files/B4E\\_Seoul\\_2010\\_summary\\_report.pdf](http://www.globalinitiatives.com/files/B4E_Seoul_2010_summary_report.pdf)

## PART TWO: THE ENERGY TRANSITION WE NEED IS NOT HAPPENING

*When I was in Davos in January (2010), the energy discussion was all about renewables growth in megawatts. Soon after I was in Singapore and the discussion was all about coal and power generation, talked about in gigawatts. It was like living on two different planets.*

– IEA Chief Economist Fatih Birol <sup>74</sup>

*There have been efforts to use more renewable energy and improve energy efficiency....so far the effects have been marginal.*

– Corinne Le Quéré, Tyndall Centre for Climate Change Research.<sup>75</sup>

*It must be said that the clean economy remains at present more of an aspiration than a large center of present-day employment.*

– Brookings Institute, *Sizing the Green Economy*, 2011<sup>76</sup>

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<sup>74</sup> IEA Chief Economist, Fatih Birol, quoted by Reuters, "Coal to remain backbone of energy supply," May 20, 2008. <http://in.reuters.com/article/2008/05/20/energy-coal-update-idINL2065012820080520>

<sup>75</sup> The Guardian, "Carbon dioxide emissions show record jump," December 5, 2011 <http://www.guardian.co.uk/environment/2011/dec/05/carbon-dioxide-emissions-biggest-jump>

<sup>76</sup> Mark Muro, Jonathan Rothwell and Devashree Saha, *Sizing the Green Economy: A National and Regional Green Jobs Assessment*, Brookings Institution, July 2011, p. 31, <http://www.brookings.edu/research/reports/2011/07/13-clean-economy>

An energy transition to a sustainable, renewables-based, low-carbon system that meets essential social and environmental priorities needs to occur. But it is simply not taking place. And it is not going to take place unless there is a radical change in direction, one driven by unions, social movements, and others who want to see a truly sustainable future.

There is an understandable tendency for unions and their allies who advocate for a green and sustainable future to point to instances where policies are working, where renewable energy is growing, jobs are being created, and emissions are being controlled or reduced. There are many positive stories of this nature. Unions in many countries have fought for policies and practices that could green their workplaces, advance fuel and energy efficiency, promote sustainable and low carbon mobility, and develop sustainable agriculture.

But none of this alters the fact that today the political agenda of the fossil fuel companies remains dominant and market-based approaches to promote renewable energy and energy conservation are having only limited success. The current approaches may delay disaster by a few years, but they are certainly not averting it or addressing other fundamental social and environmental problems rooted in the current fossil-based energy system.<sup>77</sup>

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<sup>77</sup> This is happening at a time when 20% of the world population still suffer from "energy poverty" by not having access to reliable electricity or the power grid, and depend entirely on biomass for cooking and lighting. For them, an energy transition would mean having access to clean, affordable and reliable sources of power – something that is unimaginable under present policies. See: UNEP, *Keeping Track 2011*, op. cit.

## **PRIVATIZATION AND MARKET POLICIES HAVE FAILED**

Unions fully understand that privatization and deregulation of energy, particularly in the electricity sector, have led to serious problems— underinvestment, bankruptcies, disruptions in service, disconnections, rising prices, workers being fired and deteriorating conditions on the job. The privatization of oil, coal and gas in countries like Russia and India has seen a new generation of oligarchs emerge, consolidating political power into the hands of a few very rich individuals. Both the legacy and continuation of these neoliberal policies is holding back the kind of energy transition the world desperately needs. The more the system has become profit-driven, the harder it has become to direct energy generation and use in a way that can meet the needs of workers and communities and protect the environment.

As a movement, we need to come to terms with the fact that market-based approaches to driving a transition towards a renewables-based, low-carbon and environmentally sustainable energy system have also failed. This is not a question of allowing more time for the transition to take off, or being patient with policy makers in the hope that the strength of our arguments will soon prevail. Allowing more time to pass when the prospects of meaningful or satisfactory progress are so poor would be irresponsible given the social and environmental implications of ‘business as usual.’

The present policy approach is not impeding the rise in fossil fuel use. There are two possible explanations for this. The first explanation maintains that the existing policies have not been implemented in a consistent manner in all but a few countries, and this in turn reflects a ‘lack of political will.’ This is the most commonly cited explanation,

and it is one that many unions believe to be true. The second explanation points to the fact that the policies themselves are not designed to deal with problems that are far more fundamental – such as the economic and political power of the fossil fuel companies and the current profit-based model of energy production. ‘Lack of political will’ is therefore a superficial expression of a much deeper problem that is systemic in nature.

It is important for unions to continue to debate these two quite different perspectives, because the implications for trade union strategy in both the short and longer terms are serious. If the first explanation is true, then the primary task is to strengthen the existing policies and make sure they are adopted more generally. For trade unions, this requires calling for leaders to show the political will that they have, until now, clearly lacked. If the second explanation is true, then more effort has to be directed towards more fundamental change. We return to this issue below.

## **RENEWABLE ENERGY IS NOT REPLACING FOSSIL FUELS**

In 2012, global investment in renewable energy reached an impressive \$237 billion— almost double the 2007 figure.<sup>78</sup> Because demand for energy is rising, and renewable energy technologies are becoming more competitive, renewable energy has enjoyed spectacular growth in recent years.

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<sup>78</sup> Angus McCrone (ed), *Global Trends in Renewable Energy Investment 2012*, Frankfurt School of Finance & Management gGmbH and United Nations Environment Program, June 2012 <http://fs-unep-centre.org/publications/global-trends-renewable-energy-investment-2012>; REN Global Status Report 2012, op. cit.



The rapid growth of investment in wind and solar power, and the increase in the number of jobs in the sector globally, is often presented as evidence that the future belongs to renewable energy. However, renewable energy use is not growing fast enough to appreciably slow down the rise in fossil fuel use. More than 50% of new energy demand is being met by coal.<sup>79</sup> The growth in renewable energy merely supplements the use of fossil fuels, which continues to increase at an alarming rate. Fossil fuels are still set to meet more than three-fourths of total energy needs in 2035 assuming current policies are unchanged.<sup>80</sup> For example, coal consumption in China grew by 50% between 2005 and 2010 and is projected to continue increasing by another 30% by 2020. Soaring electricity demand is driving the dramatic increase in demand for coal; electricity demand in China has grown about 12% per year since 2000. By comparison, the share of non-fossil-fuel consumption in the primary energy mix is only expected to increase from 8.3% in 2010 to 11.4% in 2015. The end result is that the share of coal in China's total primary energy demand is still over 50% by 2035, from just over 65% in 2009.<sup>81</sup>

It is also important to note that global energy reports often categorize traditional biomass such as wood, charcoal, manure and crop residues, as well as hydroelectric and biofuels, as “renewable energy.” When lumped together, this gives the impression that renewables are making more headway than

they actually are.<sup>82</sup> When ‘modern renewables’ like wind and solar are viewed separately, they contribute just 4.2 percent of global energy consumption and only 0.3 percent of total energy supply.<sup>83</sup> The production and use of traditional biomass generates severe health and environmental problems, including indoor air pollution, forest and woodland degradation, soil erosion and black carbon emissions that actually contribute to global warming.<sup>84</sup> Similarly, there are a number of negative social and environmental implications related to hydroelectric power, biofuels and other traditional forms of biomass energy.

## SOME POLICIES HAVE BEEN SUCCESSFUL

There are some areas of the world where real progress towards an energy transition has been made. The policies that have contributed to this progress cannot be discussed in detail here, but they include feed-in tariffs (FITs) and renewable energy targets or standards.<sup>85</sup> These policies gained considerable momentum with the implementation of various national economic stimulus packages in a number of countries in the wake of the 2008–09 global financial crisis. An estimated \$188 billion was directed towards developing renewable

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<sup>79</sup> UNEP, *Keeping Track 2011*, op. cit.

<sup>80</sup> IEA, *World Energy Outlook 2012*, op. cit.; See also: Renewable Energy Focus, “Global renewable electricity to grow 3.2% per year,” May 27, 2010, <http://www.renewableenergyfocus.com/view/9729/global-renewable-electricity-to-grow-3-2-per-year/>

<sup>81</sup> IEA, *ibid.*

<sup>82</sup> *Ibid.* See also REN Global Status Report 2012, op. cit.

<sup>83</sup> REN Global Status Report 2012, op. cit., p. 21.

<sup>84</sup> United Nations Environment Program (UNEP) website, “Traditional Use of Biomass,” [www.unep.org/climatechange/mitigation/Bioenergy/Issues/TraditionaluseofBiomass/tabid/29473/Default.aspx](http://www.unep.org/climatechange/mitigation/Bioenergy/Issues/TraditionaluseofBiomass/tabid/29473/Default.aspx) (Accessed December 10, 2011).

<sup>85</sup> Information on policies comes from a wide variety of sources, including the International Energy Agency (IEA) and International Renewable Energy Agency (IRENA) Global Renewable Energy Policies and Measures Database, the U.S. Regarding RES’, these targets are usually expressed as a share of total energy supply/use to be attained by a target date.



energy, advancing energy efficiency, and other green investments.<sup>86</sup> Today at least 98 countries and another 20 or so sub-national authorities have adopted renewable energy targets or have put in place grants and incentives to reach these targets.<sup>87</sup> FITs, under which eligible renewable electricity generators are guaranteed a cost-based payment for the electricity they produce, have been adopted in a total of 87 jurisdictions (61 countries and 26 states or provinces) worldwide.<sup>88</sup>

Significantly, renewable energy has made the biggest strides (and created the most jobs) where governments have played a leading role and markets are less liberalized – such as China and Germany. In Germany, locally-run, FIT programs have resulted in a significant increase in wind energy production.

Large renewable energy projects are also being considered, but these are more controversial. Saudi Arabia is hoping to develop 41GW of solar energy (PV and CSP) by 2032.<sup>89</sup> The project known as Desertec seeks to develop CSP solar power in North Africa and deploy ‘supergrids’ to allow the project to meet the energy needs of Europe.<sup>90</sup> Mega-size renewable projects generate headlines but they are unlikely to generate enough power to significantly alter the world’s energy

landscape. And such projects actually soak up public funds that could be directed towards energy conservation and community-level renewable energy generation (see Part 3 for a discussion on distributed generation of renewable energy). These projects are normally privately owned and replicate the existing business model, one based on generating and selling more electrical power in order to make profit. And such projects often inflict damage on both communities and the environment.

However, in many instances policies to promote renewable energy have brought positive outcomes for workers and their unions, and for society in general—especially when the projects are geared towards localized distributed generation. Improved fuel and energy efficiency standards for vehicles have also created a significant number of jobs.<sup>91</sup> In the U.S., the number of jobs in solar PV and solar thermal has been estimated at between 17,000 and 24,000. According to the solar industry’s own figures, the number of solar jobs in the US stands at just under 120,000.<sup>92</sup> For wind energy, the 2011 number is estimated to be 85,000.<sup>93</sup> The Obama stimulus package put almost \$100 billion into green investments in 2009 and, according to one report, created 1 million

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<sup>86</sup> ILO/UNEP, *Working Towards Sustainable Development*, 2012, op. cit. Data from UNEP, 2011

<sup>87</sup> REN Global Status Report 2012, op. cit.

<sup>88</sup> Ibid

<sup>89</sup> PV Magazine (and on-line solar industry website), “Saudi Arabia Targets 41 GW of solar by 2032,” May 9, 2012, [http://www.pv-magazine.com/news/details/beitrag/saudi-arabia-targets-41-gw-of-solar-by-2032\\_100006719/#axzz25yIXdT39](http://www.pv-magazine.com/news/details/beitrag/saudi-arabia-targets-41-gw-of-solar-by-2032_100006719/#axzz25yIXdT39)

<sup>90</sup> Desertec Foundation (website to promote the benefits of the project), <http://www.desertec.org/>

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<sup>91</sup> Brad Markell, United Auto Workers, Powerpoint Presentation to Cornell GLI Labor Leaders Climate Forum, Pocantico, NY, July 18-20, 2012.

<sup>92</sup> REN Global Status Report 2012, op. cit.; See also Brookings Institute, *Sizing the Green Economy*, op. cit. The Brookings study estimates 24,000. The Solar Foundation reported 119,000 jobs in November 2012. See: National Solar Jobs Census 2012. Available at: <http://thesolarfoundation.org/research/national-solar-jobs-census-2012>

<sup>93</sup> UNEP, cited in Brookings Institute, op. cit.

green jobs—roughly 250,000 of them in construction.<sup>94</sup>

But the success of sensible policies here and there should not blind us to the fact that the overall impact of these policies is at this point marginal. Policies to promote renewable energy or greater efficiency are often too weak to significantly expand the scale and scope of renewable energy generation and are surrounded by political uncertainty in all but a few countries. In particular, carbon markets and carbon taxes are not widespread enough, and not aggressive enough, to have a significant impact on emissions.<sup>95</sup> The most developed carbon market – the EU’s European Trading Scheme – has had almost zero impact on emissions levels in the EU in the 7 years it has been in effect. The price of carbon has slumped to lows of around €7; it had been expected to reach around €30 by 2012.<sup>96</sup>

## THE AUSTRALIAN CARBON TAX

Australia provides a good illustration of the

distance between the agenda of the fossil fuel corporations, existing climate policy, and scientific necessity. In 2011 the Australian government introduced a carbon tax set at \$23 Australian dollars per ton. The goal of the tax is to control and reduce domestic emissions. When compared to the efforts of many other major countries, the tax is ambitious and the governing Australian Labor Party has been subjected to relentless criticism from coal corporations, business groups, and the political right for introducing the tax. The measure was supported by the Australian Council of Trade Unions (ACTU), although the ACTU made it clear that the tax should be accompanied by other policies – such as a renewable energy standard and investments in CCS.

Australia has vast reserves of easily accessible and therefore low cost coal. Black and brown coal accounts for about 84% of electricity production in Australia.<sup>97</sup> Not surprisingly, Australia has the highest per capita emissions from energy use in the world. Australia presently exports more energy than it consumes. Coal is Australia’s largest export industry, with export revenues in 2009–10 of almost \$30 billion Australian dollars. Most of this is metallurgical coal for steelmaking, though thermal coal for power generation accounts for over \$11 billion Australian dollars.<sup>98</sup> New coal projects in Australia are expected to generate enough CO<sub>2</sub> to wipe out the gains of the tax eleven times over.<sup>99</sup> Today,

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<sup>94</sup> Jason Walsh, Josh Bivens and Ethan Pollack, *Rebuilding Green: The American Recovery and Reinvestment Act and the Green Economy*, Blue Green Alliance and the Economic Policy Institute, February 2011, See: <http://www.bluegreenalliance.org/news/publications/rebuilding-green-the-american-recovery-and-reinvestment-act-and-the-green-economy>

<sup>95</sup> Responding to the rising emissions from electricity generation, the Australian government introduced a carbon tax at \$23 (Australian) per ton. The price of carbon under the EU’s ETS is around \$10 per ton.

<sup>96</sup> Ewa Krukowska, “EON’s Teyssen Urges Fix to ‘Bust’ EU CO<sub>2</sub> Plan, Energy Rules” *Bloomberg News*, February 7, 2012, <http://www.bloomberg.com/news/2012-02-07/europe-s-emissions-trading-system-is-dead-eon-ceo-teyssen-says.html>; Julian O’Halloran, “Carbon Trade Scheme Is ‘Failing,’” *BBC File on 4*, June 5, 2007; Fred Pearce, “A Most Precious Commodity,” *New Scientist*, January 8, 2005, p. 6; Joseph Dunn, “Green Projects Face Carbon Credit Crunch,” *The Times* (UK), March 8, 2009.

<sup>97</sup> CFMEU (Australia) and WWF, “Power to Change: Carbon Capture and Storage,” 2009, <http://cfmeu.com.au/downloads/power-to-change-carbon-capture-and-storage>

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

<sup>99</sup> Presentation by Guy Pearce, (Woodford, Australia, 2011)

According to Pearce, “the new/expanded coal mines in Australia add about 1.75Gt of CO<sub>2</sub> annually – about 11

Australia's coal companies – such as BHP, Xstrata, Rio Tinto, and Peabody (and Indian and Chinese multinationals operating in Australia<sup>100</sup>) – export around 750 million tons of CO<sub>2</sub> emissions through the burning of Australian coal in power stations and steel mills in countries like China and Japan.<sup>101</sup>

## LEVELING THE PLAYING FIELD?

The mainstream policy discourse surrounding energy transition (particularly in the OECD countries) has been preoccupied with finding ways to 'level the playing field' between fossil fuels and renewable energy. It is believed that renewables must find a way to compete on equal terms with fossil fuels, and this goal can be advanced by removing fossil fuel subsidies, imposing a price on carbon, and other measures. It is argued that renewable energy technologies are improving all the time, causing prices to fall. Renewables' advocates are confident that renewable energy will therefore soon be well positioned to compete with increasingly expensive fossil based power—helped along by some clear policy signals from governments.

This approach is valid enough, but it is hard to imagine how this can happen fast enough to allow renewable energy to scale up to the levels needed to control and then reduce emissions to the levels demanded by science. As noted in Part 1, perhaps the main reason for the weakness of the current set of policies is the resistance of the fossil-fuel corporations

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times what the Australian government estimates will be saved by the carbon tax legislation that recently passed Parliament. See: <http://www.guypearse.com/docs/guypearse.com/Woodford%20Dec%20FINAL%20%202011.pdf>

<sup>100</sup> Australian Coal Association, [www.australiancoal.com.au](http://www.australiancoal.com.au)

<sup>101</sup> Based on 2.7 ton CO<sub>2</sub> per ton of coal exported. See Pearce, *op. cit.*

themselves and their capacity to use their immense power and resources to control the political debate and policy options. The top 20 publicly traded U.S. oil and gas companies were valued at over \$800 billion at the end of 2010 (led by Exxon Mobil), and in 2008 had revenues of over \$1000 billion. Net profits in 2010 stood at \$88 billion.<sup>102</sup> The top 20 non-U.S. companies, led by the state oil companies of OPEC (for which comparable financial data are not available) produced 17 billion barrels of oil and had reserves of over 1,000 billion barrels.<sup>103</sup> If the power of these corporations is not successfully challenged in the years ahead, then the small gains of the recent past are likely to be reversed. In some instances this is already happening.

The largest renewable energy companies are small by comparison, both economically and politically. The world's largest wind turbine manufacturer, Vestas Wind Systems of Denmark, had net worth of just over \$6 billion in 2010.<sup>104</sup> The recent weakness in the wind market has since seen this figure fall to just \$2 billion.<sup>105</sup> At the end of 2010, the world's largest solar panel manufacturer, Suntech Power Holdings (China), was valued at approximately \$3 billion; its value has since fallen to just \$500 million. First Solar, the largest U.S. solar manufacturer was valued at

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<sup>102</sup> Data from Oil and Gas Journal, October 2011 See: <http://www.ogj.com/index.html>

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

<sup>104</sup> My Wind Power System (industry website), "The 10 major wind power companies in the world," October 28, 2011, <http://www.mywindpowersystem.com/2011/10/28/the-10-major-wind-power-companies-in-the-world/>

<sup>105</sup> Reuters online, "Vestas shares jump on report of takeover interest," April 16, 2012, <http://www.reuters.com/article/2012/04/16/vestas-china-idUSL6E8FG0T120120416>

\$11 billion at the end of 2010; its current net worth is \$2 billion.

The size of the fossil fuel companies means they can also absorb low returns or losses far better than renewable energy companies, and investors know this. As noted above, in 2012 global investment in renewable energy reached an impressive \$237 billion.<sup>106</sup> However, gross investment in fossil-fuel capacity in 2011 was \$302 billion. And global upstream investment for oil rose to an all-time high level of over \$550 billion in 2011.<sup>107</sup>

Not only is “leveling the playing field” between renewables and fossil fuels unrealistic given the current political and economic power of fossil fuel corporations, it is unlikely to actually expand the scale and scope of renewable energy in time to address climate change. Significantly increasing the role of renewables in the global energy system will require prioritizing social, environmental and climate needs over profits, which will require democratic, community control over power generation, transmission, and consumption.

## RENEWABLE ENERGY UNDER SIEGE

*Spain’s retroactive reductions in solar feed-in tariffs, Germany’s and France’s decisions to reduce the amount of support for future projects, and the lack of progress on a U.S. energy bill all combined to depress the private sector’s appetite for renewable energy investments in 2010.*

—World Bank, *Green and Inclusive Growth*, 2012

<sup>106</sup> REN Global Status Report 2012, op. cit.; See also: McCrone Global Trends 2012, op. cit.

<sup>107</sup> IEA, World Energy Outlook 2012, op. cit. p. 96.

At a time when the world should be moving decisively towards renewable energy and phasing out dirty fossil fuels, renewable energy companies are facing serious challenges. There has been an influx into world markets of low-priced Chinese solar panels and modules, which caused prices to fall 40% or more in 2011. This has led to the removal of government subsidies in big solar markets such as Germany, Italy, and the United States. The removal of solar subsidies and the glut in production has led to job losses. Vestas recently announced it was scaling back its wind power operations in India.<sup>108</sup>

## SETBACKS FOR WIND AND SOLAR IN THE U.S.

In early 2012, the Japanese solar company Sanyo announced the closure of a 30 MW factory in Carson, California, that makes silicon wafers (the materials contained in solar cells), and laid off 140 employees.<sup>109</sup> Amonix in Las Vegas is also laying off 200 of its 300 workers. Solyndra, Spectra Watt and Evergreen Solar have all filed for bankruptcy.<sup>110</sup> Seven U.S. solar plants in the past 18 months have either closed or downsized, resulting in the elimination of thousands of jobs in Arizona,

<sup>108</sup> M. Ramesh, Vestas to Scale Back India Operations, The Hindu, September 25, 2012, <http://www.thehindubusinessline.com/companies/article3935285.ece>

<sup>109</sup> “Sanyo Moving Silicon Factory to Malaysia,” Laying Off 140 US Workers, Solar Novus Today (industry website), February 6, 2012, [http://www.solarnovus.com/index.php?option=com\\_content&view=article&id=4287:sanyo-to-lay-off-140-us-workers&catid=37:business-news&Itemid=241](http://www.solarnovus.com/index.php?option=com_content&view=article&id=4287:sanyo-to-lay-off-140-us-workers&catid=37:business-news&Itemid=241)

<sup>110</sup> Uclia Wang, “Sanyo to Close Solar Factory in California,” Forbes, February 3, 2012, <http://www.forbes.com/sites/uciliawang/2012/02/03/sanyo-to-close-solar-factory-in-california/>

California, Massachusetts, Maryland, New York and Pennsylvania.<sup>111</sup>

The loss of jobs prompted the U.S. to file anti-dumping trade measures against China. This has led to serious job losses in the Chinese solar industry.<sup>112</sup> The trade disputes have split the solar industry in the U.S. because, while the severe drop in solar panel prices has hurt panel manufacturers, it has helped the solar installation business grow dramatically because solar modules are now cheaper.<sup>113</sup> The largest manufacturing union in the U.S., the United Steelworkers, has supported the manufacturers' position.<sup>114</sup> So at a time when solar production should be storming ahead, it is being impeded by rivalries between countries and industry sub-sectors.

The rise in the development of 'fracking' for shale gas is also having a negative impact on renewable energy in the U.S.<sup>115</sup> Citing gas

prices as a major factor, Siemens announced 945 wind energy lay offs in Iowa, Kansas and Florida in September 2012.<sup>116</sup> A recent study of the state of Ohio found that the development of shale gas has dealt a huge blow to the wind industry in the state; this is despite Ohio being a national leader in the development of wind energy.<sup>117</sup> In 2010, the state had 106 wind power supply chain businesses and 63 solar power supply chain businesses employing 9,000 workers. Since then many of these companies have gone bankrupt and thousands of people have lost their jobs.<sup>118</sup> Proponents of natural gas as a 'bridge fuel' to renewable energy argue that increased availability of natural gas would displace dirtier fuels like coal. Coal use has declined in the U.S. as power stations switch to gas, but natural gas has also displaced wind and solar manufacturing and production. For the wind industry, cheap gas, coupled with the threatened expiration of a government tax credit, have led to 10,000 layoffs since 2009.<sup>119</sup>

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<sup>111</sup> Coalition for American Solar Manufacturing, press release, October 19, 2011, <http://www.americansolarmanufacturing.org/news-releases/10-19-11-casm-files-illegal-dumping-subsidy-petition.htm>

<sup>112</sup> Malcolm Moore, "Dark Clouds Hang Over China's Once Booming Solar Industry," Daily Telegraph (UK), August 29, 2012, <http://www.telegraph.co.uk/finance/newsbysector/energy/9506945/Dark-clouds-gather-over-Chinas-once-booming-solar-industry.html>

<sup>113</sup> As a result, US solar installers and some manufacturers have formed a group Coalition for Affordable Solar Energy (CASE) to oppose the China trade complaint filed by the Coalition for American Solar Manufacturing (CASM).

<sup>114</sup> Coalition for American Solar Manufacturing, US solar manufacturers welcome support of United Steelworkers in landmark trade case, November 7, 2011, <http://www.americansolarmanufacturing.org/news-releases/11-7-11-casm-solar-manufacturers-welcome-support-of-united-steelworkers.htm>. However, the

<sup>115</sup> Environmental Law and Policy Center, Supply Chain in Ohio, January 2011, [http://elpc.org/wp-content/uploads/2011/01/OhioWindSupplyFinal\\_HQ.pdf](http://elpc.org/wp-content/uploads/2011/01/OhioWindSupplyFinal_HQ.pdf)

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<sup>116</sup> CBS News, "Siemens to lay off 615 in Iowa, Kansas, Florida," Sept 18, 2012, [http://www.cbsnews.com/8301-501363\\_162-57515254/siemens-to-lay-off-615-in-iowa-kansas-florida/?tag=mncol;lst;5](http://www.cbsnews.com/8301-501363_162-57515254/siemens-to-lay-off-615-in-iowa-kansas-florida/?tag=mncol;lst;5) "The company blamed difficult market conditions due to lack of congressional action on a wind energy tax credit as well as increased use of natural gas-fired power plants. It said it has worked for the past 10 months to address the uncertainties but needed to adjust its work force until demand for turbines returns."

<sup>117</sup> Keith Schneider, "US Fossil Fuel Boom Dims Glow of Clean Energy," Yale Environment 360, March 29, 2012, [http://e360.yale.edu/feature/us\\_fossil\\_fuel\\_boom\\_dims\\_glow\\_of\\_clean\\_energy/2511/](http://e360.yale.edu/feature/us_fossil_fuel_boom_dims_glow_of_clean_energy/2511/)

<sup>118</sup> John McKenna, "Vestas Slashes Another 1400 Jobs – For Now," Wind Power Monthly, September 1, 2012, <http://www.windpowermonthly.com/news/1147004/Vestas-slashes-1400-jobs-/>

<sup>119</sup> Diane Cardwell, "Tax Credit in Doubt, Wind Power Industry is Withering," New York Times, September 20, 2012, <http://www.nytimes.com/2012/09/21/business/energy-environment/as-a-tax-credit-wanes-jobs-vanish-in-wind->



## THE IEA'S "NEW POLICIES" AND "450 PPM" SCENARIOS

Even if renewable energy companies can overcome their present challenges, there is no avoiding the fact that renewable energy is not growing fast enough to reduce emissions. The IEA's 2011 World Energy Outlook examines a "new policies scenario (NPS)," based on governments' "recently announced [renewable energy] commitments and plans," and its potential to expand renewable energy. The findings of the NPS did not bode well for renewable energy.

Even with very optimistic projections, like improvements in energy efficiency levels that are twice as high as that seen over the last 25 years and a 73 percent increase in nuclear power by 2035, the IEA NPS' predicts that renewable energy will only reach 16 percent of energy consumed by 2035.<sup>120</sup> This would spell disaster for the climate and environment overall.<sup>121</sup> The NPS would actually raise global temperatures by a catastrophic 3.5 degrees Celsius.<sup>122</sup>

Is it possible that renewables could grow faster than the IEA's projections? The IEA's 450 ppm scenario (essentially a 2 degrees Celsius scenario) offers a more ambitious pathway. It lays out what would need to be done to scale up renewable energy and other low-carbon options, including massive deployment of both carbon capture and storage (CCS) and new nuclear power.<sup>123</sup> The

power-  
industry.html?pagewanted=all&\_moc.semityn.www

<sup>120</sup> IEA, World Energy Outlook, 2012 op. cit., p. 40.

<sup>121</sup> Ibid, p. 83.

<sup>122</sup> Ibid, p. 205.

<sup>123</sup> Ibid, Chapter 6 - Climate change and the 450 Scenario.

scenario demands "stringent action" before 2017 to avoid carbon lock-in. If the action does not materialize, "the energy-related infrastructure then in place will generate all the CO<sub>2</sub> emissions allowed in the 450 Scenario up to 2035, leaving no room for additional power plants, factories and other infrastructure post-2035 unless they are zero-carbon."<sup>124</sup>

## POOR PROSPECTS FOR CARBON CAPTURE AND STORAGE AND NUCLEAR POWER

### CARBON CAPTURE AND STORAGE

*The technologies with the greatest potential for energy and carbon dioxide (CO<sub>2</sub>) emissions savings...are making the slowest progress: carbon capture and storage (CCS) is not seeing the necessary rates of investment into full-scale demonstration projects and nearly one-half of new coal-fired power plants are still being built with inefficient technology.*

– International Energy Agency 2012 <sup>125</sup>

The proposed use of CCS to reduce emissions from coal is controversial. Whatever its potential or limitations, the current reality is that it is not being developed even though many mitigation scenarios give a prominent place to CCS and regard it to be a critical technology.<sup>126</sup> In fact, the effort to make

<sup>124</sup> Ibid, p. 40.

<sup>125</sup> IEA, "Tracking Clean Energy Progress: Energy Technology Perspectives 2012" excerpt as IEA input to the Clean Energy Ministerial.  
<http://www.iea.org/etp/trackingcleanenergy/>

<sup>126</sup> Ibid. See also CFMEU, Coal Hard Facts, November 2009, <http://cfmeu.com.au/downloads/coal-hard-facts>, p.

fossil-based power generation 'clean' or low-carbon through the development and deployment CCS is making barely any progress at all.<sup>127</sup> The development of CCS for use in industry (i.e. the manufacturing of steel, cement, iron and chemicals) is also way behind schedule.

According to the IEA a series of actions are required to keep global warming levels below 2 degrees. Thirty-eight large-scale integrated CCS projects will need to be in place by 2020 in the power generation sector, and 82 in industry. This is not going to happen without a radical change in policy. Thus far there are no CCS projects in place for power generation and just 4 in place for industry. Of the 70 proposed large-scale integrated CCS projects around the world, just 10 projects are presently under construction.<sup>128</sup>

The IEA regards this as 'painfully slow' progress. In fact, there were fewer CCS projects being developed in 2011 than there were in 2010 due to several cancelled or mothballed endeavors. According to ICEM (2010),<sup>129</sup> "Although there are a number of

small demonstration CCS projects in Europe and the U.S. at early stages, most have either failed to make progress or face crippling cost overruns... Meanwhile, the greatest environmental concern is that new coal-fired plants are being built every week in India and China, most of which are not constructed in a way that is amenable to CCS."<sup>130</sup>

Why is CCS development essentially frozen when it is apparently a crucial emissions reduction technology that should be developed and deployed as soon as possible? The answer is simple. CCS has thus far been almost totally dependent on public funds. Approximately U.S.\$23.5 billion has been made available to support large-scale CCS demonstration projects, but most of the available public funds have already been spent.<sup>131</sup> The cuts in public budgets in the OECD countries has halted a number of CCS projects, and the fossil fuel corporations—many of them awash with money—are not investing their own capital. So without public funds CCS is presently at a standstill.

Another way of promoting CCS is to put a price on carbon.<sup>132</sup> There have been several studies that have tried to calculate the price level needed to incentivize the deployment of CCS, and the range appears to be between \$60 and \$80 per ton.<sup>133</sup> These same studies show that CCS will increase power generation costs by as much as 30% or more, which could more than wipe out the price advantage enjoyed by fossil

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4. "There is a good future for coal mining in a carbon constrained world – it will be achieved through developing and implementing the technologies that that can transform coal mining and use into low emission industries. Coal companies should stop clamouring for special deals and compensation and get on with the job."

<sup>127</sup> IEA Tracking Clean Energy 2012, op. cit, p. 58.

"Carbon capture and storage contributes a major share of potential CO2 emissions reductions in the 2DS, but progress in building commercial-scale demonstrations has been painfully slow. For CCS to remain an option for curbing CO2 emissions from power and industry – governments must urgently scale-up financial and policy support."

<sup>128</sup> IEA Tracking Clean Energy 2012, op. cit, p. 6, PDF version

<sup>129</sup> ICEM World Conference Report 2010, op. cit.

<sup>130</sup> Ibid.

<sup>131</sup> Global CCS Institute, The Global Status of CCS: 2011, October 4, 2011, <http://www.globalccsinstitute.com/publications/global-status-ccs-2011>

<sup>132</sup> Ibid.

<sup>133</sup> CFMEU, Carbon Capture and Storage: Making it Happen, 2007, <http://cfmeu.com.au/downloads/carbon-capture-and-storage-making-it-happen>



fuels like coal over renewable sources of energy.<sup>134</sup> For-profit energy companies therefore have a strong incentive *not* to support introducing a price on carbon--which explains their active and determined resistance to carbon pricing. Other companies have expressed an interest in developing CCS—as long as the government is paying for the projects.

*Australia's largest company, BHP Billiton, which is also Australia's largest coal exporter, announced in June 2007 that it would spend U.S. \$300 million over 5 years on low emissions technology (i.e. about \$66m per year). The company announced in August 2007 that it had revenues of U.S.\$47.5 billion and net profit of U.S.\$13.7 billion for 2006–07. Its top 10 managers were paid almost US\$40 million.*

– CFMEU, *Carbon Capture and Storage – Making it Happen*.<sup>135</sup>

## NUCLEAR POWER

Nuclear power is considered to be an important option in the fight to control emissions. As with CCS, without large amounts of new nuclear coming on line, the 2 degree target is thought by many to be impossible to reach (and 1.5 degrees would be even harder).

Globally, nuclear power generation has risen slightly in recent years, but the proportion of electrical power supplied by nuclear is

falling.<sup>136</sup> Germany, Switzerland and Belgium have announced a complete phase-out of nuclear power. Following the Fukushima disaster, Japan has closed down 54 nuclear facilities, but has been forced to import more fossil fuels, therefore elevating the country's emissions levels.

Many unions see nuclear power as important in the fight to reduce emissions, while others feel nuclear is too dangerous to be part of an emissions reduction strategy.<sup>137</sup> Either way, nuclear power is presently losing ground to fossil fuels.<sup>138</sup> Nuclear could rise slightly as a result of rising demand for energy, or if a carbon price were introduced at a sufficiently high level and was more or less global in scope. The potential for nuclear to play a much larger role in CO<sub>2</sub> abatement exists, however. But according to the IEA, to keep warming within 2 degrees Celsius, 32 new nuclear plants would need to be constructed every year.<sup>139</sup> China, Russia and India are building new nuclear facilities, and globally 67 are presently under construction (26 in China).

<sup>134</sup> McKinsey & Company, *Reducing Greenhouse Gas Emissions: How Much at What Cost?*, December 2007, [http://www.mckinsey.com/client\\_service/sustainability/latest\\_thinking/reducing\\_us\\_greenhouse\\_gas\\_emissions](http://www.mckinsey.com/client_service/sustainability/latest_thinking/reducing_us_greenhouse_gas_emissions). See also: Northwestern University Kellogg Insight, *The Low Cost of Capturing Carbon*, August 2012, [http://insight.kellogg.northwestern.edu/index.php/Kellogg/article/the\\_low\\_cost\\_of\\_capturing\\_carbon](http://insight.kellogg.northwestern.edu/index.php/Kellogg/article/the_low_cost_of_capturing_carbon)

<sup>135</sup> CFMEU, *Carbon Capture and Storage 2007*, op. cit.

<sup>136</sup> IEA *Tracking Clean Energy 2012*, op. cit, China has 27 plants currently under construction, 10 in Russia, 7 in Japan – 67 under construction globally in 2010.

<sup>137</sup> Power Workers Union (Canada), *Nuclear: Canada's Candu Nuclear Reactor*, <http://www.abetterenergyplan.ca/#/home/cares/article-nuclear>; COSATU Policy Framework on Climate Change: Adopted by the COSATU Central Executive Committee, August 2011, November 18, 2011, <http://www.cosatu.org.za/show.php?ID=5679>

<sup>138</sup> Daphne Wysham, "How Did Coal-Rich India End Up With Power Blackouts?" *The Nation*, August 22, 2012. "In the aftermath of the Fukushima meltdowns, in Kanyakumari Kundakulam, more than a thousand women have been protesting a nuclear power plant proposed for that rich agricultural area with regular hunger strikes." <http://www.thenation.com/article/169505/how-did-coal-rich-india-end-power-blackouts#>

<sup>139</sup> IEA *Tracking Clean Energy 2012*, op. cit.

Ground was broken on 16 new reactors in 2010, the most since 1985. However, given that each plant requires an 8–10 year construction period, the number of new plants coming on line globally is probably less than 10 per year.

Both CCS and nuclear power are among the most controversial issues in the energy and climate change debates. Whatever the real facts may be, it remains the case that neither option is being pursued for reasons that have to do with the imperatives of profit and not because of social or environmental considerations. Energy options should be shaped by their overall impact on society and the environment. Costs, both start up and operating, are a factor – but they cannot be the only factor driving energy choices. A publicly owned and democratically controlled energy system serving the public good opens up possibilities for renewable energy and other low-carbon options (including conservation) that presently do not exist. We return to this issue in Part 3.

## ENERGY POVERTY

Since 1990, 2 billion people have gained access to electrical power.<sup>140</sup> For example, access to electricity in South Africa has risen from approximately one-third of the population in the mid-1990s to over 80% of the population today.<sup>141</sup> In Vietnam, the share surged from less than 5% in the mid-1970s to 98%

currently.<sup>142</sup> Where governments have made access a priority, and have kept power generation under public ownership, considerable progress has been made.

However, in 2010, 1,440 million people globally—20% of the world’s population—were still suffering from “energy poverty”, by not having access to reliable electricity or the power grid, and depending entirely on biomass for cooking and lighting.<sup>143</sup> The UN Advisory Group on Energy and Climate Change estimates that another 1 billion people have unreliable access, which is intermittent or poor quality electricity due to insufficient grid capacity, aging equipment, inadequate management and other reasons.<sup>144</sup>

Seemingly oblivious to the success of the public sector in delivering high quality energy services, the World Bank has argued that the private sector offers the best hope for those who are presently energy poor. Since the early 1990s, the Bank has promoted privatization and liberalization. The effect of this neoliberal approach to energy is clear. After initially unbundling electricity monopolies into several firms, many countries saw those companies vertically and horizontally reintegrated through mergers and acquisitions. In many cases, therefore, power liberalization resulted in the creation of electricity oligarchies. These tend to be dominated by powerful multinational and transnational corporations.

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<sup>140</sup>Department of Energy, Republic of South Africa, Electrification Statistics 2009, [www.energy.gov.za/files/media/explained/statistics\\_electrification\\_2009.pdf](http://www.energy.gov.za/files/media/explained/statistics_electrification_2009.pdf)

<sup>141</sup> Ibid.

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<sup>142</sup> IEA data cited in International Renewable Energy Agency, Renewable Energy Jobs and Access, June 2012, [http://www.irena.org/DocumentDownloads/Publications/Renewable\\_Energy\\_Jobs\\_and\\_Access.pdf](http://www.irena.org/DocumentDownloads/Publications/Renewable_Energy_Jobs_and_Access.pdf)

<sup>143</sup> UNEP, Keeping Track, op.cit., page 75

<sup>144</sup> UN Advisory Group on Energy and Climate Change (AGECC) Cited in ILO/UNEP, Working Towards Sustainable Development, 2012, op. cit.

PSIRU's research has shown how the privatization of energy has led to higher costs to the public and poorer quality energy services.<sup>145</sup> PSIRU's main conclusions regarding energy privatization include, "The state has to protect private investors against risks with guarantees which increase the burden on public finance; private power stations are very vulnerable to corrupt deals which make the state liable for long-term power which is unaffordable to consumers; private distributors do not invest private capital in extensions to the poor; private companies are no more efficient than public operators; and attempts to create competitive 'liberalised' markets in electricity have not worked."<sup>146</sup> This is a prescription for smoke and darkness for most if not all of the roughly 1.5 billion people without electrical power.

## ANOTHER ENERGY TRANSITION IS POSSIBLE

*"We need to move towards sustainable energy, to migrate the economy from one based on a coal to a low carbon or possibly carbon free economy. The renewable energy sector will grow, needing different skills and different locations. We have to make sure that we are in charge of this process and do not become the objects of it."*

– Congress of South African Trade Unions  
(COSATU) Central Executive Committee,  
August 2011<sup>147</sup>

The energy transition we urgently need is not happening, but this need not be the case. A transition to an energy system where renewable energy grows quickly and eventually becomes dominant is not science fiction. If, after careful consideration regarding safety, costs and broader environmental issues, nuclear and CCS are thought to be required in order to fight climate change, then there needs to be bold government interventions under democratic control to ensure this actually occurs. Energy conservation should be a top priority at all points in the system, but this too is not happening in a serious way.<sup>148</sup>

Such a transition is entirely possible from a technical standpoint. Renewable energy and low-carbon technologies, including transmission technologies, are already developed enough to be quickly deployed at scale. The current policies aimed at 'leveling the playing field' between fossil fuels and renewable sources of power, or introducing effective carbon pricing or renewable energy standards, could play an important role in reducing emissions in certain contexts. But the evidence of recent history suggests that these policies are not designed to address the political and economic power of the fossil fuel companies and the existing production and consumption model. Unions will continue to fight for measures that protect and improve the lives of workers however small the impact of those measures may be. But democratic control of energy resources, infrastructure and options is an absolute necessity given what 'business as usual' will mean for the socio-

<sup>145</sup> Niekerk, Overview of energy in Africa 2012, op. cit.

<sup>146</sup> Ibid.

<sup>147</sup> COSATU Policy Framework on Climate Change: Adopted by the COSATU Central Executive Committee, August 2011, <http://www.cosatu.org.za/docs/policy/2011/pol1119.html>

<sup>148</sup> IEA, World Energy Outlook 2011, op. cit. UNDP Human Development Report, 2007/2008. The report deals with climate change and contains good data on energy conservation and the lack of investment taking place. <http://hdr.undp.org/en/reports/global/hdr2007-2008/>

natural world.

Governments and corporations will spend \$19 trillion in the next 10 years on power generation and energy-related infrastructure. This spending threatens to lock the world into an anticipated 6 degrees Celsius of global warming *at least*. The IEA has calculated that, for a net additional \$1 trillion, the world could keep global warming under 2 degrees Celsius. As noted in Part 1, two degrees is too high, so there could be additional expenditures to keep temperatures to the much safer levels of 1 or 1.5 degrees of warming. This is a small price to pay given what is at stake.<sup>149</sup>

The social and economic benefits of a truly sustainable energy system would be immeasurable. Better air quality and lower pollution levels overall would save millions of lives. Such a transition would create stable and useful employment for millions of people. Finally, energy poverty could finally be conquered, thus allowing 20% of the world's population a source of heat and light that does not compromise their health or degrade the natural environment.

Politically, the fight for democratic control over energy is as difficult as anything that can be imagined at this point in time. But is there an alternative? Business as usual is not an option. The trade union movement can work with other social movements to develop a vision for energy that can move people into

action, and show that another energy system is possible. But first the failure of the dominant market-based approach to energy transition needs to be acknowledged, and then the serious work of developing and organizing around an alternative can truly begin.

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<sup>149</sup> IEA Tracking Clean Energy 2012, op. cit, p. 15.

"Long-term temperature rise is likely to be at least 6°C. Energy use will almost double in 2050, compared with 2009, and total GHG gas emissions will rise even more. The current trend of increasing emissions is unbroken with no stabilisation of GHG concentrations in the atmosphere in sight. The 6DS emissions trajectory is consistent with the World Energy Outlook (WEO) Current Policy Scenario through 2035 (IEA, 2011a).

## PART THREE: TOWARDS ENERGY DEMOCRACY

A transition to a truly sustainable energy system can only occur if there is a decisive shift in power away from large profit-driven corporations towards ordinary citizens and communities. Workers must have a real voice in how energy is generated and used. Energy must be recognized as a public good and basic right.

*Energy democracy* will require a transfer of resources, capital and infrastructure from private hands to public entities. It will also require that existing public entities that today behave like private or 'state capitalist' corporations be reoriented in ways that can address the energy emergency as outlined in Part 1. The current business model for energy—based on commodification, profit, and limitless growth—needs to be abolished.

*Energy democracy* must also address global inequalities. In the case of climate change, the international trade union movement has consistently supported the principle of 'common but differentiated responsibilities' (or CBDR). This principle is found in the UNFCCC and in the Kyoto Protocol. There are two considerations in the application of the CBDR principle: (a) the **CUMULATIVE** responsibility of countries for the problem (historical as well as current responsibility); (b) the **ABILITY** of countries to deal with the problem in technical and economic terms.

Developed countries must therefore take the lead in reducing emissions in accordance with the CBDR principle. This must begin immediately. But CBDR should not give a license to the economic and political elites of large developing countries to follow the same

carbon-intensive and environmentally destructive path as the developed world—especially when the wealthy in China, India, Brazil, etc. effectively hide behind the low emissions levels of the working class and the poor in those countries. *Energy democracy* must strive to express the concerns and interests of the working class in all countries within an internationalist framework that aims to transcend economic nationalism.

*Energy democracy* can accomplish a number of key things that will not be achieved under the present business model. It can:

- Replace the anarchy of liberalized energy markets with a comprehensive planned approach that can manage the reduction of energy demand through conservation and new technologies while at the same time decarbonizing supply.
- Ensure public financing that will in turn control and reduce costs, including the costs associated with fossil fuel pollution and climate instability.
- Unlock the potential of renewable energy and other low-carbon sources of power to fight both climate instability and energy poverty.
- Allow for all energy supply options—as well as conservation possibilities—to be considered based on their ability to meet key social and environmental needs.
- Move towards the decommodification of electrical power as a means of taking profit out of the system and asserting a public goods and a rights-based approach to both electrical power and emissions reductions.

- Release the ingenuity, and creativity of people at all levels in tackling the energy emergency in all of its manifestations.

The political obstacles to achieving *energy democracy* are enormous. It is likely to be a long-term struggle but it offers perhaps the only feasible route to a new energy system that can:

- Protect workers' rights and generate decent and stable jobs.
- Be responsive to the needs of communities.
- Create an energy system based on environmentally sustainable methods of energy extraction, transport and use.
- First control and then quickly and dramatically reduce CO<sub>2</sub> emissions and harmful pollution.
- Rapidly scale up renewable energy and other low-carbon energy options.
- Aggressively promote energy conservation across all sectors.
- Make serious progress towards ending energy poverty globally.

## RESIST, RECLAIM AND RESTRUCTURE

A trade union approach to *energy democracy* can be built around three broad and strategic objectives, namely the need to **resist** the dominant agenda of the large energy corporations and their allies; the need to **reclaim** to the public sphere parts of the energy economy that have been privatized or

marketized; and the need to **restructure** the global energy system in order to massively scale up renewable and low-carbon energy, aggressively implement energy conservation, ensure job-creation and local wealth creation, and assert community and democratic control over the energy sector.

This *Resist, Reclaim, Restructure* approach needs to both reflect the different circumstances that individual unions find themselves in based on region, sector, etc., and be cognizant of the different challenges and opportunities unions face based on these unique circumstances. That said, the entire trade union movement must acknowledge that the effort to change the energy system is a *shared responsibility* and not just the responsibility of energy unions or unions representing carbon-intensive sectors like industry, transport and agriculture.

This section does not attempt to propose a detailed program for energy democracy. Rather it attempts to offer a basic framework for discussion and to map out some of the issues, considerations, and possibilities that could lead to a compelling agenda for energy democracy in the years ahead.

## RESIST

What is the *dominant* agenda of the large fossil fuel companies and their political allies?

- Expansion of fossil fuel use to meet rising global demand
- Aggressive development of 'extreme energy' and new supplies of fossil fuels that require extraction methods that put communities, workers and the environment at great risk



- Perpetuation of government and World Bank subsidies and support for privatization and marketization of the energy sector (including back-door privatizations like public-private partnerships, or P3s).
- Outright opposition or (at best) weak commitment to effective climate protection policies

Resistance to this agenda can occur on several fronts and in numerous ways, at the level of policy, in the workplace, by raising consciousness among the membership about the current state of the energy sector and the “energy emergency,” and by building alliances with other groups and social movements. Resisting will mean different things for different unions; there is no rulebook or tried and trusted formula.

Clearly, any effort to resist the plans of the most powerful corporations on earth must set out with realistic expectations. Opposing individual projects that present serious risks to workers, communities and the environment and do not meet basic energy needs is crucially important. This kind of resistance can educate the public and galvanize the movement. But this cannot be the only approach. The energy transition we need will require a policy shift of major proportions, and it will include bold measures to effectively deal with the wealth, assets, and political leverage of the large energy corporations. The fight against fossil fuels is a political fight that must be waged by people mobilized around a clear agenda for change.

Resistance need *not* require unions to oppose fossil fuel projects or fossil fuel companies in all places at all times. It is also not about embracing the agenda of the large companies developing renewable energy and other low-carbon energy options. Private renewable

energy companies usually view renewable energy as a resource to be developed for profit and frequently engage in devastating ‘land grab’ practices to secure land for their large-scale renewable energy developments. For example, in Mexico, communities in Tehuantepec are resisting the plans of large wind companies who understand that the region of Oaxaca has enough wind to supply half of Mexico’s electricity needs.<sup>150</sup> These companies seek to profit from the development of wind energy with little regard for the energy needs or land rights of the communities in the region. In North Africa, the solar project Desertec is being developed by mostly European companies to serve European energy needs, but questions remain as to whether ordinary people in Morocco, Tunisia and other countries in the region will see any benefit.<sup>151</sup> In short, some renewable energy companies’ plans amount to “energy colonialism” or “energy imperialism” because they are exploiting communities and workers and natural resources to secure energy profits.

## POLICY RESISTANCE

Unions can resist the fossil fuel agenda at the level of policy. To have any chance of success, union efforts will need to have a clear target and be able to engage other social movements. In some cases, unions have successfully resisted the privatization of energy, and mobilized members and communities behind these efforts. Unions and

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<sup>150</sup> US National Renewable Energy Laboratory, 33,200 MW of wind generation capacity can be installed in areas with good and excellent wind. If areas with moderate wind resource would also be used, the installed capacity potential is 44,350 MW. (Data August 2003)

<sup>151</sup> Sandra van Niekerk, Desertec: what are the implications for Africa? PSIRU-Africa, October 2010.

their allies can learn from and build on these successes.

### OBSTRUCTING THE TRADE IN EXTREME ENERGY

Rising demand for energy is opening up new areas of the world to fossil fuel extraction, namely the Arctic, the Alberta Tar Sands, and shale rock formations in a number of countries. The mining and drilling for these fuels is transforming countries like Colombia, Mozambique and Kazakhstan.<sup>152</sup> China's demand for energy is, for example, leading to more coal extraction in the Powder River Basin in southeast Montana and northeast Wyoming, U.S. Plans are being made to link this supply with Asian demand through coal terminals such as the Gateway Pacific Terminal at Cherry Point and the Millennium Bulk Terminal at Longview, both in Washington State. The examples are endless. Unions need to be clear that, if completed, these projects will lead to devastating "carbon lock in" as well as horrendous environmental and social impacts. Moreover, they will provide relatively few jobs due to the use of advanced automation technologies in the industry. And an even smaller number of jobs will be union jobs as the fossil fuel corporations continue to push unions out of the energy sector.

Unions can work with allies to impede the development of these projects and thus put an obstacle in the path of the fossil fuel agenda. Resistance is already happening in the case of coal and tar sands exports in North America.

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<sup>152</sup> Reuters on line, "Mozambique coal, gas: boom for all, or just a few?" June 19, 2012, <http://www.reuters.com/article/2012/06/19/mozambique-wealth-idUSL5E8HII9820120619>

In Canada, First Nations, coastal communities and some unions have thus far obstructed the proposed Northern Gateway pipeline that will bring diluted bitumen from the tar sands to the Canadian west coast for export to Asian countries, especially China. Resistance to the west coast coal terminals is growing, led by indigenous people's who have refused to accept monetary offers from coal companies who wish to use their ancestral lands to transport and store millions of tons of coal.<sup>153</sup> Many Canadian unions and several U.S. unions (in transport, retail and domestic care) have opposed the Keystone XL pipeline.<sup>154</sup> If constructed, this proposed pipeline will connect the tar sands in Alberta to heavy crude refineries in Texas (one of which is 50% owned by Saudi Refining) thus opening up the tar sands to global energy markets.<sup>155</sup>

Some workers benefit from this trade in that it provides jobs, some of them good jobs. But the export of these resources in raw form often brings little by way of value back into the community. In Canada, the tar sands in Alberta presently employ 75,000 people.<sup>156</sup> But the export of unrefined tar sands oil

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<sup>153</sup> Floyd McKay, Lummi Tribe joins the opposition to Whatcom coal port, <http://crosscut.com/2012/09/21/coal-ports/110640/lummi/>

<sup>154</sup> Amalgamated Transit Union, ATU and TWU Oppose Approval of the Keystone XL Pipeline and Call for End of Increased Use of Tar Sands Oil," August 19, 2011, <http://www.atu.org/media/releases/atu-twu-oppose-approval-of-the-keystone-xl-pipeline-and-call-for-end-of-increased-use-of-tar-sands-oil> See also: <http://workersrights.twu.org/post/9878914112/opposition-to-keystone-xl-pipeline-grows-as-twu-and>

<sup>155</sup> The Price of Oil website, "Keystone XL benefits from taxpayer subsidies," February 8, 2012. <http://priceofoil.org/2012/02/08/keystone-xl-benefits-from-taxpayer-subsidies/>

<sup>156</sup> Canadian Association of Petroleum Producers, About Canada's Oil Sands, June 2011. <http://www.capp.ca/canadaIndustry/oilSands/Dialogue->

(diluted bitumen) to the U.S. and beyond will lead to a loss of jobs in Canadian refineries.<sup>157</sup> Moreover, the demand for tar sands has raised the value of the Canadian dollar, which has made Canadian manufacturing less competitive – leading to job losses across

Canada.<sup>158</sup> There are many examples other examples to point to. Despite Nigeria's considerable oil wealth, more than 80 percent of the population lives on less than \$2 a day and only 40 percent of Nigerians have access to electricity.<sup>159</sup>

*We need jobs, but not ones based on increasing our reliance on Tar Sands oil. There is no shortage of water and sewage pipelines that need to be fixed or replaced, bridges and tunnels that are in need of emergency repair, transportation infrastructure that needs to be renewed and developed.*

*We therefore call for major “New Deal” type public investments in infrastructure modernization and repair, energy conservation and climate protection as a means of putting people to work and laying the foundations of a green and sustainable economic future for the United States.*

*--Joint Statement by Amalgamated Transit Union and Transport Workers Union opposing the Keystone XL Pipeline. <sup>160</sup>*

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Resources/US/Pages/default.aspx

<sup>157</sup> Alberta Federation of Labour, Lost Down the Pipeline, March 2009, <http://www.afl.org/index.php/Press-Release/new-report-suggests-oil-sands-jobs-wont-return-even-if-alberta-economy-improves.html>

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<sup>158</sup> Matt Price, Canadian Jobs Lost to the Tar Sands, Huffington Post, January 5, 2012 [http://www.huffingtonpost.ca/matt-price/canadian-oil\\_b\\_1180255.html6](http://www.huffingtonpost.ca/matt-price/canadian-oil_b_1180255.html6)

<sup>159</sup> Nigeria Communications Week, “60% Nigerians without Power,” August 7, 2012. <http://www.nigeriacommunicationsweek.com.ng/news/60-nigerians-without-power-electricity-workers>

<sup>160</sup> Amalgamated Transit Union, op. cit.

Today most unions accept the idea that each country is responsible for the emissions it generates. This principle has been embodied in the UNFCCC and the Kyoto process. Therefore a nation can, for example, export as much coal as it wants because the carbon released by burning the coal is attributed to the country importing the coal. Similarly, the burden of responsibility for the carbon imported in steel, cement or consumer goods rests not on the shoulders of the importing country but on the country that manufactured the goods. Thus the emissions generated from the coal imported by China from countries like Australia and Indonesia generates carbon emissions that are China's responsibility, and not those of the exporting country.

This approach to emissions needs to be re-evaluated in light of the collapse of the UN climate talks. Finding ways for unions to fight the global trade in fossil fuels will not be easy, but connecting with the organizations and movements involved in these struggles is an important first step.

#### DEVELOP CCS – BUT BUILD NO NEW COAL-FIRED POWER STATIONS WITHOUT IT

Unions representing workers in coal mining, coal-fired power stations and coal transportation generally support the development of carbon capture and storage (CCS) for coal and gas-fired generation and for use in heavy industry. Strong support for government policies to promote CCS has come from unions in the U.S., the UK, Australia, and elsewhere.<sup>161</sup>

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<sup>161</sup> Trades Union Congress (UK), A Roadmap for Coal, March 2012, <http://www.tuc.org.uk/industrial/tuc-21191-f0.cfm>

But CCS is not happening. Private companies do not want to commit their own money to develop it; governments are cutting their budgets which is making it harder to fund CCS projects that are already approved; and in large parts of the world there is no carbon price (or the price is too low) to serve as an incentive to companies to invest in CCS development.<sup>162</sup>

The efforts of the Australian mining and energy union CFMEU to promote CCS are noteworthy. In April 2009 there were 42 energy projects moving forward in Australia, with a combined value of \$43 billion. According to CFMEU, “The Australian Government has committed \$2.5 billion to CCS projects, including \$2 billion for large-scale “flagship” CCS power plants over nine years from 2009. Right now the public sector is doing more on CCS than the private sector, even though all the profits from coal and gas are made privately.” CFMEU has called for the construction of large-scale CCS facilities leading to large-scale testing of the technology, and for testing of large-scale CCS (greater than 300MW capacity) as soon as possible.<sup>163</sup>

Presently it is hard to imagine a scenario for CCS that does not involve a major increase in the level of government involvement. CCS projects are already dependent on public funds and any serious effort to both develop and then deploy CCS will require more intervention. Greater levels of democratic

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<sup>162</sup> Ibid. Unions in coal have also been concerned that a price on carbon has not been set high enough to really help the development of CCS. Instead, it has led to fuel switching from coal to gas leaving and thus delaying the development of commercial-sized CCS projects. Coal companies seek to avoid the price (or the threat of one) by exporting coal to regions and countries where no price is in place.

<sup>163</sup> CFMEU (Australia) Power to Change, 2009

control must accompany this intervention. COSATU has called for nationalization of the private coalmines in South Africa.<sup>164</sup> Some of the revenues from the sale of coal could be directed towards CCS, developing renewable energy and advancing conservation.

Unions in the coal and carbon-intensive sectors should not be left to fight the battle for a low-carbon, equitable and sustainable energy system alone. If CCS is indeed a critically important technology, it needs to be developed and deployed as quickly as possible—especially in countries like China where new coal-fired power stations are being constructed at a very rapid rate.

The problems with CCS also need to be taken into consideration. CCS will require approximately 10–30 percent more coal to produce the same amount of electrical power.<sup>165</sup> If efforts are not made to reduce the use of coal (by scaling up renewable energy and conservation) then CCS will simply make worse the serious environmental and health-related problems that are caused by coal mining, such as coal sludge, coal ash, coal mining injuries and fatalities, forests being clear-cut and valleys and rivers filled in by mountaintop removal and surface coal

mining. The movement of coal on freight trains over long distances also has serious environmental impacts (coal dust blows on to fields and airborne particulates damage health). CCS, by raising demand, is likely to make these problems worse.

Meanwhile, the energy emergency and the imminent threat of carbon ‘lock in’ highlights the need for a movement to support a global moratorium on new coal-fired power stations until CCS is fully developed and tested. This moratorium is also important because the construction of new coal-fired power stations delays the deployment of renewable energy and energy conservation measures.<sup>166</sup> A global program to retrofit with CCS as many existing power stations as possible is also needed. At the current political juncture, the chances of a moratorium or a global retrofit program are, of course, very slim. However, acknowledging the necessity of both is an important step towards developing and advancing a bold trade union agenda that shifts the political discourse towards recognizing the need for meaningful and urgent action.

## WORKPLACE RESISTANCE

All unions are understandably concerned about policies that will result in members losing their jobs. Those who represent workers in fossil fuels and energy-intensive industries are no different. Furthermore, the expansion of fossil fuels and related infrastructure can offer the promise of new jobs, and the primary role of some unions (especially in construction) is to find new sources of work for their members. These

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<sup>164</sup> COSATU, A just transition to a low-carbon and climate resilient economy: COSATU policy on climate change, 2012, [www.cosatu.org.za/docs/policy/2012/climatechange.pdf](http://www.cosatu.org.za/docs/policy/2012/climatechange.pdf)

<sup>165</sup> IEA and World Coal Association (WCA), “Carbon Capture and Storage Technologies,” According to the WCA, “All the options for capturing CO<sub>2</sub> from power generation have higher capital and operating costs as well as lower efficiencies than conventional power plants without capture. Capture is typically the most expensive part of the CCS chain. Costs are higher than for plants without CCS because more equipment must be built and operated. Around 10-40% more energy is required with CCS than without. <http://www.worldcoal.org/coal-the-environment/carbon-capture-storage/ccs-technologies/>

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<sup>166</sup> This is presently not ITUC policy., but could be presented for consideration by a national trade union centers affiliated to the ITUC. [http://www.ituc-csi.org/IMG/pdf/2CO\\_10\\_Sustainable\\_development\\_and\\_Climate\\_Change\\_03-10-2.pdf](http://www.ituc-csi.org/IMG/pdf/2CO_10_Sustainable_development_and_Climate_Change_03-10-2.pdf)

unions often join with employers and contractors to get new projects approved.

The lack of viable job creation and transition options for workers employed in fossil fuels and fossil fuel infrastructure illustrates a major policy failure. But today the only way this failure can be corrected is if unions find ways to join with others in obstructing the future plans of the energy corporations, plans that will not provide significant employment but will have seriously negative social, environmental and climate implications. At the same time, unions must join with others to fight aggressively for good paying union jobs through the development of low-carbon infrastructure, like repairing roads rather than building new ones, expanding public transport routes, and pursuing serious energy conservation.

Workplace opposition to the fossil fuel agenda can also occur downstream. For example, unions can influence investment decisions around new products. The United Auto Workers (UAW) in the U.S. now support national fuel efficiency standards (something it was reluctant to support for many years) that are changing product design in a way that uses less fossil fuels.<sup>167</sup> Similarly, all unions can support the effort of transport unions in fighting for public transport systems that reduce emissions, improve air quality, and promotes public health and safety. Many unions already support energy conservation initiatives in buildings that reduce the use of heating oil and electricity. Unions in building services, such as the Service Employees International Union (SEIU), are training

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<sup>167</sup> Michael Wayland, "UAW president, environmentalists tout new fuel economy standards as job creator, "incredible victory," MLive (Michigan), August 29, 2012, [http://www.mlive.com/auto/index.ssf/2012/08/uaw\\_president\\_environmentalist.html](http://www.mlive.com/auto/index.ssf/2012/08/uaw_president_environmentalist.html)

building superintendents in energy efficiency.<sup>168</sup>

## MOVEMENT BUILDING

There are many social movements opposing the expansion of fossil fuels and looking for alternative energy models that address important environmental, climate and social issues. As noted above, struggles against the further development of extreme energy are on the increase. In the U.S. and Canada, opposition to the Keystone XL pipeline, deep ocean drilling, Arctic drilling, tar sands exploitation, coal exports, hydraulic fracturing ('fracking'), and new coal-fired power stations is quite visible and has been effective in some cases.<sup>169</sup> However, these movements are mostly reactive and defensive and have only a limited capacity to address broad policy issues. Here unions can play an important role in getting local organizations to take up demands for *energy democracy*, including advocating more strongly for an energy system model that protects workers' rights and strengthens unions.

Similarly, the fight for *energy democracy* needs to engage mainstream environmental groups.<sup>170</sup> Many of these groups once had

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<sup>168</sup> Nick Prigo, A Blueprint for Greening New York City's Buildings, 1 Year: 1000 Green Superintendents, SEIU 32BJ Thomas Shortman Training Fund, September 2009, [http://www.1000supers.com/pdf/Blueprint\\_for\\_Greening\\_NYCs\\_Buildings.pdf](http://www.1000supers.com/pdf/Blueprint_for_Greening_NYCs_Buildings.pdf)

<sup>169</sup> Al Weinrub, Labor's Stake in Decentralized Energy, October 2012, (prepared for the Cornell GLI Trade Union Roundtable Energy Emergency, Energy Transition, Available at: [http://energyemergencyenergytransition.org/wp-content/uploads/2012/10/LaborsStakeinDecentralizedEnergy\\_Weinrub\\_9-20-12.pdf](http://energyemergencyenergytransition.org/wp-content/uploads/2012/10/LaborsStakeinDecentralizedEnergy_Weinrub_9-20-12.pdf)

<sup>170</sup> Mainstream environmental groups are defined here as environmental organizations that typically embrace an "ecological modernization" approach to environmental issues and pursue top-down, electoral,



considerable confidence in the power of private markets and the political process to drive the green economy, and many leaders in the environmental community have been reluctant to advocate for fundamental change. But the rising political power of fossil fuel companies and the deepening climate crisis is opening up possibilities for new and bolder approaches at the level of policy and organizing. In fact, many smaller renewable energy companies would probably prosper under favorable government procurement agreements that strong public sector involvement would require. And jobs created in the public sector also create employment in the private sector.<sup>171</sup>

## RECLAIM

*We believe a just transition must be based in worker-controlled, democratic social ownership of key means of production and means of subsistence...Without this struggle over ownership, and the struggle for a socially owned renewable energy sector, a just transition will become a capitalist concept, building up a capitalist "green economy".*

– Statement by National Union of Metal Workers of South Africa (NUMSA), December 2012<sup>172</sup>

*Public authorities have the responsibility to...set in motion a rights-based transition (to sustainable development) that secures equity between and within countries, between generations and across genders. It must ensure that the Commons, natural and energy resources are brought and kept under public ownership, securing their public preservation and administration with social control.*

– Statement issued by the Trade Union Assembly, Rio de Janeiro, June 2012

The effort to **reclaim** the energy system consists of three parts. Firstly, there is today a need to reclaim parts of the energy sector that were once public but have been privatized and/or marketized. Secondly, there is a need to restore to energy operations that are *currently* publicly owned principles of public service and responsiveness to the needs and wishes of communities and the broader society. Thirdly, there is also the need to reassert the right to develop a new socially owned and fully unionized, renewables-based energy system, one that can begin to seriously address social and environmental challenges.

Thirty years of neoliberal policy has weakened the capacity of the public sector to quickly and effectively rise to these and similar challenges. Nevertheless, unions and their allies are imagining and in some cases creating new models of democratic control and ‘public sector systems of provision’ (PSSOPs) that are responding to these challenges in a serious way.<sup>173</sup>

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legislative and technocratic solutions to the environmental crisis. See Lara Skinner, *State of the U.S. Environmental Movement*, forthcoming at: Rosa Luxemburg Stiftung, New York, <http://www.rosalux-nyc.org/>

<sup>171</sup> Center for American Progress, Washington, August 2008, [http://www.americanprogress.org/wp-content/uploads/issues/2012/08/pdf/supply\\_side\\_update.pdf](http://www.americanprogress.org/wp-content/uploads/issues/2012/08/pdf/supply_side_update.pdf)

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<sup>172</sup> NUMSA central committee meeting (CC), held December 11-14, at Vincent Mabuyakhulu Conference Centre, Newtown, Johannesburg, South Africa.

<sup>173</sup> Ben Fine and David Hall, “Terrains of Neoliberalism: Constraints and Opportunities for alternative Models of Service Delivery,” Chapter 3 in *Alternatives to*

## REVERSING PRIVATIZATION

The fight for *energy democracy* can draw both knowledge and strength from the recent successes of the movement to protect and reclaim public services.

The resistance to privatization has been intense in numerous countries, such as Argentina, India, Indonesia and Ghana. Protests have halted privatization proposals in Peru, Ecuador and Paraguay. In Iraq, the Federation of Oil Unions (once banned under the Saddam regime) led a successful fight to halt the transfer of Iraqi oil operations to foreign multinationals.<sup>174</sup> Even in China, workers protested the sale of a public power plant in Henan.<sup>175</sup> Unions and their allies have been quite successful in their efforts to resist the privatization of basic services like water and sanitation, and there has also been a noticeable trend towards taking back into public ownership operations that had been privatized.

Privatization has almost invariably led to underinvestment, loss of jobs, reductions in

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Privatization, David McDonald and Greg Ruiters, eds., Routledge, New York, 2012.

<sup>174</sup> Greg Muttitt, *Fuel on the Fire: Oil and Politics in Occupied Iraq*, New Press, 2012. See also Greg Muttitt, *Mission Accomplished for Big Oil?* Huffington Post, August 23, 2012, [http://www.huffingtonpost.com/greg-muttitt/iraqi-oil\\_b\\_1824700.html](http://www.huffingtonpost.com/greg-muttitt/iraqi-oil_b_1824700.html) Also: <http://carbonweb.org/showitem.asp?article=252&parent=39>

<sup>175</sup> Sharon Beder, 'Critique of the Global Project to Privatize and Marketize Energy', *Envisioning a Renewable Public Energy System*, Korean Labor Social Network on Energy (KLSNE), Seoul, South Korea, June 2005, pp. 177-185. [http://www.uow.edu.au/~sharonb/critique.html#\\_edn1](http://www.uow.edu.au/~sharonb/critique.html#_edn1)

See also David Hall's chapter on resistance to privatization, in Abramsky, *Sparking a Worldwide Energy Revolution*, op.cit.

wages and union coverage, worsening working conditions, and falling quality of service. And where privatizations have taken place public control has normally been replaced by oligarchies. In the UK, six private corporations – just one of them British – dominate the power generation sector and 57 percent of fuel used to generate electricity is imported.<sup>176</sup> In the Philippines, the neoliberal Electric Power Industry Reform Act (EPIRA) “brought about a transition from government monopoly to an enhanced private monopoly—worse, a hundred percent increase in power rates.”<sup>177</sup> In India, the World Bank's policies have produced disastrous results—including major power cuts and high levels of electricity theft.<sup>178</sup>

The case for reversing privatizations is today stronger than it was in the past. Unions and their allies can draw on the body of knowledge and experience that has been built up over the past 30 years and use this to build public support for reversing privatization. For a number of years, the Public Services International Research Unit (PSIRU) has documented struggles against privatization and forcefully made the case for reclaiming public services. Unions can make good use of PSIRU's studies and analysis. The British rail

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<sup>176</sup> Friends of the Earth (UK), *Clean British Energy*, [http://www.foe.co.uk/what\\_we\\_do/clean\\_british\\_energy\\_switch\\_full\\_35921.html](http://www.foe.co.uk/what_we_do/clean_british_energy_switch_full_35921.html); Juliet Davenport, *From the Power of Six to the Power of Thousands*, *The Guardian*, June 14, 2012, <http://www.guardian.co.uk/sustainable-business/big-six-energy-production-revolution> Caroline Julian and Julian Dobson, *Reenergising Our Communities*, ResPublica, [http://www.respublica.org.uk/documents/rya\\_ResPublica%20Re-energising%20Our%20Communities%20FINAL.pdf](http://www.respublica.org.uk/documents/rya_ResPublica%20Re-energising%20Our%20Communities%20FINAL.pdf)

<sup>177</sup> Newsletter Freedom from Debt Coalition, Philippines, People Against Immoral Debt (PAID), November 2009, [www.fdc.ph](http://www.fdc.ph)

<sup>178</sup> Daphne Wysham, *The Nation*, op. cit.

union's (RMT) campaign in the UK to "Bring Back British Rail" is one example of how reversing privatization can be taken up in a specific industry.<sup>179</sup>

## **WATER WARS AND PUBLIC-PUBLIC PARTNERSHIPS**

While efforts to privatize water continue (usually in the form of so-called public-private partnerships, or P3s), in a number of countries and major municipalities privatized water services have been taken back into public ownership, or 'remunicipalized.'

Most famously, the 'Water War' against Bechtel Corporation in Cochabamba, Bolivia, in year 2000, led to the cancellation of the contract with Suez Corporation in both La Paz and El Alto. In Argentina, water companies in Buenos Aires and Santa Fe were returned to state control following the economic crisis of 2001. Unions have sometimes been important players in reclamation efforts. In Cali, Colombia, and in Montevideo, Uruguay, unions presented rescue plans to keep water under state control. In Uruguay, unions worked to transform the water company in the space of a few years from a corrupt and inefficient institution to one that today runs a surplus budget and may now be considered a model public utility.<sup>180</sup>

In these and other instances the return to public ownership has brought with it a new set of problems and challenges, including

undercapitalization, loss of skills and capacity during the period of privatization, and growing demands for services due to the spread of urban and peri-urban settlements (for example, southern Cochabamba), and sometimes corruption. Nevertheless, unions and communities are developing new forms of public service delivery, such as "public-public partnerships" (PUPs), and principles of operation were adopted in Paso Severino, Uruguay, in 2009.<sup>181</sup> The connections between PUPs extend across international borders (for example the worker-operated water company of Buenos Aires and the public water company in Huancayo, Peru) and PUPs have facilitated the exchange of technical information (best practices) as well as supported each other politically. Public Services International (PSI), the Redvida network<sup>182</sup>, Transnational Institute (TNI) and Food and Water Watch have been active in promoting PUPs as an alternative to privatization and P3s.

PUPs in renewable energy are also possible. In Germany and the U.S., many energy utilities are community controlled (roughly 20 percent of power is generated in the U.S. by municipally owned energy utilities, or 'munis'). Renewable energy technologies lend themselves to the growth of energy cooperatives that can then network together

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<sup>179</sup> Rail, Maritime and Transport Workers (RMT)- UK, Bring Back British Rail Campaign, <http://www.bringbackbritishrail.org/>

<sup>180</sup> Carlos Crespo, Marcela Olivera, Susan Spronk, Struggles for water justice in Latin America: Public and 'social-public' alternatives, Chapter 15 in McDonald and Ruiter, Alternatives to Privatization, op. cit <http://www.hspress.ac.za/product.php?productid=2287&freedownload=1%20&freedownload=1>

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<sup>181</sup> The Platform for Public and Community Partnerships of the Americas, Bulletin No 1, Year 1, December 2011 <http://www.waterjustice.org/uploads/attachments/boletin%20PAPC%20No%201%20%20Version%20INGLES.pdf> See also: Documento Plataforma de "Acuerdo de Cooperación Pública/Comunitaria, April 27-29, 2009, Red Vida, Uruguay, [http://www.aguayvida.org/descargas/doc\\_pup\\_paso\\_severino.pdf](http://www.aguayvida.org/descargas/doc_pup_paso_severino.pdf)

<sup>182</sup> La Red Vida, [http://www.laredvida.org/noticias.php?tipo\\_noticia=Notici](http://www.laredvida.org/noticias.php?tipo_noticia=Notici)

along the same lines as has been witnessed in the case of water. But more needs to be done to explore these possibilities and to build alliances with worker–community organizations working on water rights and service provision.

## RECLAMATIONS IN THE ENERGY SECTOR

Private-to-public reversals in the case of energy are presently rare by comparison to the water sector, but they have occurred in Argentina, Bolivia, and Germany. In Germany, the remunicipalization of energy has moved forward at a steady pace and renewable energy use in Germany is the highest in the European Union in percentage terms.<sup>183</sup> Since 2007, 44 new local, public utilities (stadtwerke) have been set up and more than 100 concessions for energy distribution networks and service delivery have returned to public hands. There are campaigns and referenda initiatives for municipalized energy in major cities like Hamburg, Stuttgart, Bielefeld, Bremen, Frankfurt and Berlin, which are gaining strong support from the German public.<sup>184</sup>

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<sup>183</sup> Germany's Energy Revolution: Energiewende, The Economist, July 28, 2012, <http://www.economist.com/node/21559667>

<sup>184</sup> David Hall, "Re-municipalising municipal services in Europe" A report commissioned by EPSU to Public Services International Research Unit (PSIRU), May 2012 See also: European Federation of Public Sector Unions, <http://www.epsu.org/tr/100>

## REORIENTING PUBLICLY OWNED ENTITIES

*New and renewable power generation from sources such as wind, solar, hydro and waste needs to be cheap. In order to keep it cheap it must be generated and distributed by entities owned and controlled by government.*

– COSATU Policy Framework on Climate Change, 2011

The marketization of publicly owned or controlled entities means that the task of building a democratic and sustainable energy system cannot be reduced to the issue of public versus private ownership. Many energy companies remain publicly owned, especially in the oil sector where national oil companies (NOCs) hold a staggering 77 percent of the world's oil reserves.

However, the marketization of publicly controlled entities has been an enduring feature of the neoliberal period, and today publicly owned companies often behave as if they were private businesses, or along more classical 'state capitalist' or 'resource nationalist' lines.<sup>185</sup> Many publicly owned or part publicly owned companies are focused on maximizing sales and profits and, in many instances, investing overseas. Serving the public or the common good is not their main motivation.

For example, the state-owned South African company Eskom behaves like a private multinational – its operations are spread throughout Southern Africa and in other parts of the world. At the end of March 2010, Eskom

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<sup>185</sup> Mining Weekly (on-line) State capitalism: Is it a rival to market capitalism? March 30, 2012, <http://www.miningweekly.com/article/state-capitalism-is-it-a-rival-to-market-capitalism-2012-03-30>

owned total assets of US\$ 33.1 billion and pays its CEO \$1 million per year.<sup>186</sup> Eskom's new power plants are being financed by a range of foreign banks based in Europe and South Africa, as well as multilateral institutions like the African Development Bank and the World Bank. Unions in South Africa are campaigning for Eskom and other state owned companies to honor the commitments made in the Freedom Charter and serve the public good.<sup>187</sup>

Similarly, the Chinese company Sinopec is a major overseas investor in the Canadian tar sands, shale gas and other forms of extreme energy.<sup>188</sup> In year 2000, Sinopec emerged after the Chinese government invited Morgan Stanley to turn its most promising operations into a company that would be listed on world stock markets.<sup>189</sup>

Sinopec invests overseas as a means of ensuring that China has supplies of energy to meet its rising demand.<sup>190</sup> The world's second largest coal producer is Coal India, a government-owned company that produced 404 million tons of coal in 2009, or 6.6

percent of global hard coal production.<sup>191</sup> The largest company is China's state-owned Shenhua Group; it produced 407 million tons of coal in 2011.<sup>192</sup>

Achieving energy democracy will entail a wholesale reorientation of existing public companies, a redefining of the political economy of energy around truly sustainable principles and a new set of priorities. Some unions have talked in terms of 'resocializing' entities that were once privatized or stayed in public hands but were ceded to a marketized model.<sup>193</sup> But today 'resocialization' is little more than a concept. The fact that governments own or have a major stake in these companies is an important starting point for a trade union strategy that can also engage other organizations and movements who understand the urgent need to assert democratic control and direction over major energy entities—and to put the public back in public ownership.

The effort to demarketize or resocialize government-owned companies is therefore likely to be a fairly long-term effort. Due to social resistance, privatization and marketization took several decades. We may not have the luxury of two or three decades to do what needs to be done, but we can be confident that the movement to reclaim the economy is already underway.

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<sup>186</sup> Boell Foundation 2011, op. cit. See also: Sikonathi Manshantsha, "Eskom Boosts CEO's salary 9.6%", Moneyweb website, June 15, 2012 <http://www.moneyweb.co.za/mw/content/en/moneyweb-eskom-crisis?oid=574410&sn=2009+Detail>

<sup>187</sup> COSATU website, NUMSA condemns Eskom extravagant and opulent parties! July 10, 2012, <http://www.cosatu.org.za/show.php?ID=6278>

<sup>188</sup> Zhou Yan and Chen Limin, "Sinopec to continue overseas investment," China Daily, March 27, 2012, [http://www.chinadaily.com.cn/bizchina/2012-03/27/content\\_14919302.htm](http://www.chinadaily.com.cn/bizchina/2012-03/27/content_14919302.htm)

<sup>189</sup> The Economist, "A lesson in capitalism," April 5, 2001 (article on the marketization of Sinopec), <http://www.economist.com/node/559446>

<sup>190</sup> Jeffrey Jones, "Sinopec to pay \$4.65 billion in oil sands deal," Reuters, April 12, 2010, <http://www.reuters.com/article/2010/04/12/us-conoco-syn-crude-idUSTRE63B4BU20100412>

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<sup>191</sup> Boell Foundation 2011, op. cit. Chapter 3

<sup>192</sup> Company Profile: Shenhua Group Corporation Limited, <http://www.shenhuagroup.com.cn/english/about0us/profile0of0shenhua/index.shtml>

<sup>193</sup> NUMSA, Statement from International Conference on Building a Renewable Energy Sector in South Africa, Johannesburg, February 4-8, 2012.

## GERMANY – MUNICH RECLAIMING ENERGY

*Energy supply was one of the key sectors affected by privatization of formerly public enterprises. Today, energy supply is characterized by oligopolies of private energy suppliers. There is practically no competition on price. The transition to renewable energies is made rather reluctantly and only as a consequence of massive state subsidies and regulatory requirements.*

*The example of Munich shows how the transition process can be sped up if a city owns a utility company. By 2025, our utility company aims to produce so much green energy, that the entire demand of the city can be met. That requires enormous investments – around 9 billion euros by 2025 – and can only be successful if the long-term goal is sustainable economic success rather than short-term profit maximization.*

– Dieter Reiter, Head of the Department of Labour and Economic Development, City of Munich

## RESTRUCTURE

*No worker should be asked to choose between his/her livelihood or the environment.*

--Communication, Energy and Paper Workers Union, Canada <sup>195</sup>

In today's economic policy discourse, international competition is taken as a given. It is a discourse that many unions, both in the global North and the South, accept as the 'real world' – permanent and therefore unchangeable. Part of the fight for energy democracy and economic democracy more generally will consist of a struggle to change ideas about what is real and what is possible—and to assert an internationalist vision that is based on cooperation and sharing. We have seen how unions and social movements are already beginning to practice

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<sup>194</sup> Communication, Energy and Paperworkers Union (Canada), Policy 915 Just Transition to a Sustainable Economy in Energy

technical and 'best practices' cooperation in the case of water provision, especially in Latin America. The same can happen with energy. Energy democracy can be the vehicle for a new set of values and a new sense of purpose – values grounded in solidarity, sufficiency and sustainability.

A truly sustainable and democratically controlled energy system will probably bear little resemblance to the system we have today. However, the transition will take several decades and will need to be carefully planned. Along with power generation, the restructuring of energy will require major changes in other sectors – such as, agriculture, waste management, and buildings and construction. The International Transport Workers Federation has developed a "Reduce, Shift, Improve" framework as guide to advancing sustainable and low-carbon mobility.<sup>195</sup> The South African transport workers' union SATAWU has shown how this

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<sup>195</sup> ITF, Transport Workers and Climate Change 2010, op. cit.



framework can create many thousands of good transport jobs.<sup>196</sup>

To be truly equitable and sustainable, energy-related supply chains will also need to be restructured in order to create local employment. Below we focus mostly on power generation and how to unlock the potential of renewable energy in a way that can benefit workers, communities and the environment.

## UNLOCKING THE POTENTIAL OF RENEWABLE SOURCES OF POWER

*Many renewable energy technologies are not economically competitive with current energy market prices, making them financially unprofitable for investors thereby restricting investment capital.*

--IPCC Special Report on Renewable Energy Sources and Climate Change 2012<sup>198</sup>

A 2012 report by the Intergovernmental Panel on Climate Change (IPCC) shows how renewable energy could account for 43 percent of the world's energy in 2030 and 77 percent in 2050.<sup>198</sup> If nuclear power and CCS play a larger role, then renewable energy may not need to be scaled up so dramatically and quickly. If CCS and nuclear are not pursued,

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<sup>196</sup> Jane Barrett, SATAWU and Transport Climate Jobs, SATAWU (powerpoint presentation at COP 17 ITF conference) Durban, December 1-2, 2011, <http://www.ilr.cornell.edu/globallaborinstitute/projects/TransportationPolicyWorkingGroup.html>

<sup>197</sup> Intergovernmental Panel on Climate Change, Special Report on Renewable Energy Sources and Climate Change, p. 162, <http://srren.ipcc-wg3.de/report>

<sup>198</sup> *Ibid.*, p. 11.

then renewable energy will play a more important role. Either way, renewable energy can become the main source of energy in a relatively short period of time.

But the above quote captures the problem in a nutshell. Renewable energy is not economically competitive and therefore not attractive to investors. In other words, while massive deployment of renewable energy is technically possible, it will never fulfill this potential until energy development is liberated from the laws of profit and competition. As discussed in Part 2, 'leveling the playing field' between the costs of fossil based power and renewables should not determine whether or not we survive or perish as a civilization.

## CENTRALIZED AND DECENTRALIZED POWER GENERATION

There are two models of renewable energy, centralized generation or decentralized generation. Centralized generation somewhat resembles the existing fossil-based system. It consists of, for example, remote central-station solar power plants and similar utility-scale wind farms. Decentralized generation refers to renewable electricity generation located on existing buildings or vacant land close to the point of electricity consumption.

Any trade union effort to build support for the scaling up of renewable power within a democratic framework will need to explore the benefits and limitations of both centralized and decentralized systems. What is best for jobs, stable communities, and the environment? What is most suited to systems of democratic engagement?

In his paper *Labor's Stake in Decentralized Energy*, prepared for this roundtable, Al Weinrub has made an important contribution to this debate, albeit from the U.S. perspective.

He argues that private energy companies mostly prefer the large projects that define the centralized model. These large projects are presently being developed by the same corporate entities for the same purposes as fossil fuel power plants, which is to make money from generating electrical power.<sup>199</sup> Decentralized generation, he argues, is more conducive to local control, can create more jobs than utility-sized projects per million dollars invested, and can redefine the role and purpose of energy in a way that puts social and environmental needs before profit and accumulation. Decentralized generation provides a major opportunity for unions to serve both the needs of union members and working class people for jobs, and it will also put the trade union movement on the side of a truly sustainable system that can balance supply and demand and lower emissions.<sup>200</sup>

However, one obvious challenge facing unions (which Weinrub acknowledges) is that millions of union members work in the current centralized and fossil-based system, and unions are better positioned to establish a presence in centralized renewable energy systems than decentralized systems. The work of constructing new utility-scale remote central-station power is also more likely to be performed by union members, at least in the U.S. and probably other developed countries. In contrast, most community-based, local energy projects involve local contractors that are mostly non-union. This further ties unions to the present centralized system.<sup>201</sup>

Some unions also note that many whom today advocate for distributed generation wish to further liberalize the energy system and

undermine the (in many countries) unionized and regulated public utilities. The idea of opening the door to countless numbers of small energy producers has also attracted the support of key environmental organizations that have traditionally been less concerned with worker issues.<sup>202</sup> And while it is true that large power-station size renewable energy projects are attractive to large private energy companies, this does not automatically mean that projects of this size have no place in a sustainable energy system or that small, local-scale, decentralized energy projects will not be owned and controlled by large private corporations either directly or indirectly.

As presently configured, a rapid growth in distributed energy will also give enormous power to the few private energy companies producing solar PV and wind turbines, in the same way as the internet has brought forth new corporate players like Apple and Microsoft. Small producers will need to buy their hardware from big companies. Some are also skeptical that the energy demands of a modern economy can be met by distributed generation. On this view there is nothing intrinsically good about distributed generation, just as there is nothing intrinsically negative about centralized generation.<sup>203</sup>

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<sup>199</sup> Weinrub, *Labor's Stake*, op. cit.

<sup>200</sup> Ibid.

<sup>201</sup> Ibid.

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<sup>202</sup> Michael Moynihan, *Electricity 2.0 Unlocking the Power of the Open Energy Network (OEN)*, NDN and the New Policy Institute, February 4, 2010, [http://ndn.org/sites/default/files/paper/Electricity2\\_0.pdf](http://ndn.org/sites/default/files/paper/Electricity2_0.pdf)

<sup>203</sup> Interview, Carl Wood, Utility Workers Union of America, August 30, 2012.

## DECENTRALIZED GENERATION AND ENERGY POVERTY

*If solar power, or wind power for that matter, is to have a significant effect on energy generation globally then it is far more likely to be based on a decentralized model than the heavily centralized system we have now. The future really requires solar panels on every roof and windmills in every back garden rather than massive plants taking up dozens of square kilometers. It is unlikely that the industry as presently structured will ever provide this.*

– ICEM World Conference for the Energy Sector, Stavanger, Norway, 6-8 September 2010

*Energy production has to be decentralized, in order to allow both a multiplication of producers and foment experiment. At the same time, the localized production and usage has to be developed. A highly centralized national grid locks the energy path into the set model of production. In contrast the infrastructure and system that support sustainable and affordable energy would have embedded the possibility of local consumption of energy, and decentralization of production.”*

– New Trade Union Initiative (India), 2012 <sup>204</sup>

Some unions in the global South see the potential for distributed generation as a means to promote electricity for all. The New Trade Union Initiative (NTUI) in India is developing a campaign for sustainable, affordable and renewable energy; the NTUI

<sup>204</sup> New Trade Union Initiative, Campaign for a Renewable, Sustainable and Affordable Energy Base, <http://energyemergencyenergytransition.org/wp-content/uploads/2012/10/NTUI-Workshops-on-Energy-1.1.doc>

notes how centralized power in India has served the dominant producers but not served the people. India’s energy consumption is rising dramatically, but still more than 400 million people lack electrical power and over 668 million people depend on traditional biomass for cooking.<sup>205</sup> Unions in the Philippines have put similar arguments forward.<sup>206</sup>

Renewable energy technologies also open up off-grid and mini-grid potential for energy access in poor rural areas. Small hydropower plants, small wind turbines, biogas and other forms of bio-energy, as well as a range of solar technologies are potentially important weapons in the war against energy poverty.<sup>207</sup> While there remain some technical challenges, fulfilling the potential of these technologies will depend on local and national governments’ willingness and capacity to arrange the financing, develop the human skills, and oversee the development and deployment of these technologies. In other words, distributed energy may provide the most likely means of ending energy poverty, but this will only happen if it is developed under public control by public authorities committed to providing affordable access to electrical power.<sup>208</sup>

There is some evidence that distributed generation can be developed within a framework of local ownership and a high level

<sup>205</sup> IEA data on India, Beyond the OECD - India: Energy Poverty in India, [http://www.iea.org/country/country\\_subform.asp](http://www.iea.org/country/country_subform.asp)

<sup>206</sup> Alliance for Progressive Labour, Philippines, Fight for Our Future: No Price on Nature, June 23, 2012. <http://www.apl.org.ph/?s=energy>

<sup>207</sup> REN Global Status Report 2012, op. cit.

<sup>208</sup> David Hall, Electrifying Africa Through the Public Sector, PSIRU, 2007 [www.psir.org/reports/2007-01-E-Africa.doc](http://www.psir.org/reports/2007-01-E-Africa.doc)

of democratic input. For example, Germany has installed over 10,000 MW of distributed solar PV since 2009 – mostly on rooftops. Renewable energy now constitutes 17 percent of overall electricity generation. Half of Germany’ wind power and three-quarters of German solar is locally owned.<sup>209</sup>

## RENEWABLE ENERGY – A NEW JOBS REVOLUTION?

The job-creation potential of the rapid deployment of renewable energy, whether centralized, decentralized, or both -- would appear to be large enough to drive a new jobs revolution if it were combined with radical energy conservation measures and other methods to reduce emissions and fossil-fuel consumption. Jacobsen and Delucchi’s landmark *100% Renewable Energy by 2030* study draws attention to the scale and enormity of the challenge from a deployment perspective. The plan has many components, just one of which is the need to install 1.7 billion rooftop solar PV systems – or 120 system installations every minute between now and 2042. Another component is the construction of 40,000 300 MW solar PV power stations, which adds up to one plant being built every 394 minutes, and 40,000 300 MW solar thermal plants, which is one built every 321 minutes. The 100 percent target would also require the construction of 3.8 million 5 MW wind turbines at the rate of one every four minutes.<sup>210</sup>

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<sup>209</sup> John Farrell, *Democratizing the Electricity System: Vision for a 21<sup>st</sup> Century Grid*, Institute for Local Self Reliance, June 2011, <http://www.ourenergypolicy.org/democratizing-the-electricity-system-a-vision-for-the-21st-century-grid/>

<sup>210</sup> Mark Z. Jacobson and Mark A. Delucchi, *Providing all global energy with wind, water, and solar power*, *Energy Policy* 39 (2011) – 1154-1169 <http://www.sjsu.edu/people/dustin.mulvaney/courses/envs133/s2/JDEnPolicyPt1.pdf>

Studies suggest that such a rapid and large-scale deployment of renewable energy is possible. If 15 percent of present world rooftop surface area were to be used to site photovoltaics (with an assumed conversion efficiency of 20 percent) this would be enough to match current global electricity power capacity.<sup>211</sup> Similarly, a massive deployment of wind turbine infrastructure could deliver several times the present global energy consumption while not closing off most of the land where it is sited to other uses such as farming.<sup>212</sup> And CSP in the Sahara could supply the current global electricity consumption on less than 6 percent of the Saharan land area although, as PSIRU notes, what exploiting the Sahara in such a way would mean for the communities living there is another matter entirely.<sup>213</sup>

The jobs potential of a truly global effort to scale up renewable energy would appear to be large – considerably larger than might be expected through the continued development of fossil fuels.<sup>214</sup> But these jobs will not be created if profits and private markets dominate energy decisions. The only way this job potential can be realized, and done so in a way that is equitable and truly sustainable, is within a democratic framework, through

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<sup>211</sup> Hashem Akbari, Surabi Menon and Arthur Rosenfeld, “Global Cooling: Increasing World-wide Urban Albedos to Offset CO<sub>2</sub>,” *Climatic Change*, Vol. 94, 2009, pp. 275-286.

<sup>212</sup> Xi Lu, Michael B. McElroy, and Juha Kiviluoma, “Global Potential for Wind-generated Electricity,” *Proceedings of the National Academy of Sciences*, Vol. 106, No. 27, 2009, pp. 10933–10938.)

<sup>213</sup> Trans-Mediterranean Renewable Energy Cooperation “TREC” for development, climate stabilisation and good neighbourhood, October 6, 2003, [http://www.desertec.org/fileadmin/downloads/media/TR\\_EC\\_Amman\\_2003.pdf](http://www.desertec.org/fileadmin/downloads/media/TR_EC_Amman_2003.pdf)

<sup>214</sup> ILO/UNEP, *Working Towards Sustainable Development*, 2012, op. cit.

public financing, and with high levels of international cooperation and the sharing of knowledge and expertise.

## CONTROLLING AND REORGANIZING GLOBAL SUPPLY CHAINS

Energy democracy will require taking more control over global supply chains so that developing renewable energy in a country or region leads to job creation and social benefits close to home. Today just a handful of countries and a few dozen companies dominate the global market for solar PV, wind turbines, etc. The scaling-up of distributed generation on a global scale will mean that the bulk of the jobs and the value added will lie in the manufacturing, distribution and installation of renewable energy technologies and infrastructure—and thus a large portion of the economic benefits will be enjoyed by the company with the existing competitive advantage and the company's country of origin—say Germany, Spain or China. Normal competitive dynamics will lead to supply responding to stable and growing demand, and this could lead to renewable energy companies relocating to countries where that demand exists. This is already happening to some extent, and in these instances the economic benefits are more evenly shared. But it remains a fact that an aggressive scale-up of renewable energy in a country or region that does not have the manufacturing or R&D capacity will yield jobs and income to another country.<sup>215</sup>

This problem has been acknowledged by

NUMSA in the case of South Africa. NUMSA's call for social ownership of renewables has been accompanied by calls for South Africa to develop its own solar PV and wind turbine industries rather than relying on imports. This is easier said than done, but China's own model of joint ventures and co-ownership may provide a bridge for developing countries. For-profit renewable energy companies will follow stable demand—which is why U.S. solar PV companies like Evergreen Solar are re-locating to China where demand for solar PV is politically guaranteed.

Controlling supply chains is already a fight in which unions are engaged. In Ontario, Canada, unions like the Canadian Auto Workers, Canadian Union of Public Workers (CUPE), and Communications, Energy and Paperworkers Union of Canada (CEP), are among those also defending domestic content provisions against complaints filed through the World Trade Organization (WTO) by Japan and the European Union (EU). Japan and the EU see domestic content provisions under the Green Energy Act as a violation of so-called global free market competition, whereas unions and their allies regard using procurement in creative ways to address both the environmental and economic crises as a fundamental right.<sup>216</sup>

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<sup>215</sup> International Renewable Energy Agency (IRENA), *Renewable Energy Jobs 2012*, op.cit., p. 57: The literature review and the case studies support the conclusion that little manufacturing of RET equipment takes place in developing countries (with the important exception of China and the partial exception of India and Brazil). Some assembly, however, is taking place in developing countries.

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<sup>216</sup> WTO Challenge to Green Energy Act, The Council of Canadians, May 14, 2012, <http://canadians.org/trade/issues/WTO/WTO-Challenge-GEA.html>

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Through research, education and training and policy development, the GLI works with trade unions in the U.S. and internationally to develop solutions to major social, economic and environmental challenges. The goal of the Institute is to help union officers, staff and activists gain a deeper understanding of the policies and institutions that shape today's world, assist in bringing unionists in different countries into contact with each other for meaningful discussion on strategy and policy, and facilitate dialogue between unions, civil society organizations and movements committed to global justice.

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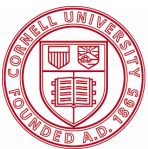
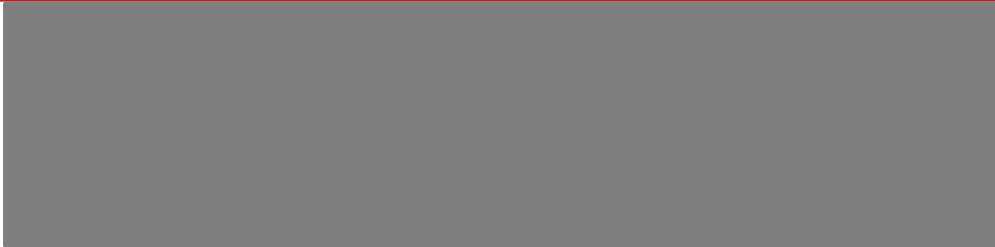
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# RESIST, RECLAIM, RESTRUCTURE: Unions and the Struggle for Energy Democracy



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