ISSUE 13 • WINTER 2008-9

The Commoner

A WEB JOURNAL FOR OTHER VALUES

AN ENERGY CRISIS (AMONG OTHERS) IS IN THE AIR...

In the beginning there is the doing, the social flow of human interaction and creativity, and the doing is imprisoned by the deed, and the deed wants to dominate the doing and life, and the doing is turned into work, and people into things. Thus the world is crazy, and revolts are also practices of hope.

This journal is about living in a world in which the doing is separated from the deed, in which this separation is extended in an increasing numbers of spheres of life, in which the revolt about this separation is ubiquitous. It is not easy to keep deed and doing separated. Struggles are everywhere, because everywhere is the realm of the commoner, and the commoners have just a simple idea in mind: end the enclosures, end the separation between the deeds and the doers, the means of existence must be free for all!

The Commoner
Issue 13
Winter 2008-2009

Editor: Kolya Abramsky and Massimo De Angelis
Print Design: James Lindenschmidt
Cover Design: design@theinktank.net
Web Design: diasporas@gmail.com

www.thecommoner.org
visit the editor's blog: www.thecommoner.org/blog

Table Of Contents

Introduction: Energy Crisis (Among Others) Is In The Air

Kolya Abramsky and Massimo De Angelis

One

There seems to be a general consensus, left and right, that we are in the midst of a new energy crisis. Either, “Peak Oil” is to blame, based on the argument that oil resources are about to peak bringing about serious constraints on future use of energy. Or, climate change is highlighted, warning that the sustained use of fossil fuel is heating up the planet and bringing about catastrophic changes in climate patterns.

With this issue of *The Commoner* we have sought to create a space to discuss the current energy crisis from a perspective that considers technology and energy within the social relations that they are part of, both being shaped by these relations and also shaping them. The editors of this issue do not believe this crisis is simply one of finite resources (“peak oil”), or that there is a technological path out of these crises, despite the indisputable fact that both resource scarcity and technology are nonetheless important factors. Instead, we understand the use, production, and distribution of energy as moments of capitalist social relations of production. As such, energy and technology are both important sites of struggle, and are shaped by these struggles. Like all phenomena, the basis of the current energy crisis does not have one but many converging “causes”. A politically essential one is the many resistances against capital’s appropriation of natural resources, beginning with oil and gas but not limited to these.

This can be seen in numerous examples: the US failure to get its hands on Iraqi oil, in spite of the trillion-dollar war waged on its people; the resistance to global capital's control of oil and gas revenue coming out of Venezuela, Bolivia, and Ecuador; new rural and urban peasants' movements that, using direct action tactics, re-appropriate the lands, the timber, the oil, and resources from which they have been excluded; or the many struggles around climate change that seek to set a limit to capital's boundlessness thirst for energy and correspondent dumping of its carbon-detritus into the atmosphere. We believe that these refusals to comply with global capital's plan for energy is an essential part of the "peak energy" faced by capital today.

In this context, the realignment of economic and social planning following the recent global financial crisis and the consequent world recession will have energy as a fundamental element. To re-launch a new cycle of accumulation capital must tackle this energy crisis. In turn, the broad financial and economic crisis that started in the USA in August 2007 and is reaching global meltdown proportions as we are writing this introduction (November 2008) does create a context in which to promote new attacks on the current composition of the waged and unwaged working class of the planet, on its forms of organization and resistance. A new wave of structural adjustments, expropriations, enclosures, market and state discipline will most likely be attempted together with new forms of capital governance of social conflicts.

The forms and the extent to which these attacks will take place depends on many things, and cannot be anticipated here. We can only say that when framing this crisis in order to provide a solution, economic liberal ideologues are quite open-minded in terms for example of the technologies to promote in order to deal with the energy crisis *and* the socio-economic crisis of capital. All options are left open in order to meet capitalism's need for an ever increasing energy base, a need which will never go away so long as capitalist social relations continue to exist. These options consist of a combination of oil, so called "clean coal", natural gas, nuclear, and a whole host of "renewable" technologies. Whether a new post-petrol regime does in fact crystallize in the face of different struggles is of course open, as are the questions of what kind of new regime will emerge and at what pace it takes shape. The outcome will depend on how and to what extent capital is able to successfully restructure planetary relations and weaken and divide the world-wide circulation of struggles. The combination of financial, energy and climate crises give capital great possibilities to justify its actions under the twin slogans "save the planet" and "save the economy". Hence, the planners' coming pragmatism might help capital to create a common ground

with some sections of the environmental movement. This of course would be a ruin for the environmental and social justice causes. On the other hand, it might helps commoners in struggle to further de-legitimize capital's priorities in the management of these crises, especially if their movements are able to recompose themselves across the planetary wage hierarchy and establish increasing links furthering models of social cooperation and production based on pursuits of values which are alternative to those of capital.

Two

In general however, one thing is without doubt: energy has always performed a number of key functions within the historical process of capitalist expansion (see Tom Keefer article), and it will continue to perform these functions. Conversely, it has also been crucial for the construction of non-capitalist alternatives, and will continue being so.

Five areas stand out:

1. Mechanization has enabled increased productivity of labour—which in the context of capitalist relations means providing the base for what Marx calls relative surplus value strategies and wage hierarchy (see *The Commoner* N. 12).
2. Artificial lighting has lengthened the working day (just as the more recent spread of information technologies) which in context of capitalist relations means providing a material base for what Marx calls absolute surplus value strategies.
3. Transport has enabled an expanded geographical reach for markets in raw materials, labour and commodities, as well as reducing the circulation time of goods, money, and people, etc.
4. Communication technologies have made the working day pervasive.
5. Cheap food, shelter, clothing and consumer goods have lowered the cost of reproducing a planetary workforce, thus buffering reduction in wages, and intensified differences within the planetary wage hierarchies. For example, cheap food has largely been obtained through

> the agro-business model imposed on world farmers, increased food insecurity for many sections of world population expropriated in many ways of their the land to allow land concentration necessary to the energy intensive agro-business model, escalated the ecological crisis due to the fertiliser and pesticides used, and exposed increasingly large section of world population to the swing of world market prices in food.

The history of energy use is thus the history of the enhancement of the productive powers of cooperatively organized human labour. However, the form in which social cooperation is organised by capital is a form which reproduces and amplifies social injustice and environmental catastrophe. And, while it is true that energy has undeniably contributed to making certain tasks easier, paradoxically, in the midst of all the "labour saving" technology which energy inputs have enabled, no one really does any less work than they did before. The wage relation that shaped the factory has not been done away with, nor have the unequal gender roles that shape so many households and kitchens been replaced. Rather than doing away with unequal and exploitative patterns of work, energy-intensive appliances, vehicles, machines, food and materials have simply rearranged people's working patterns and structures. It has simply intensified capitalist accumulation and a tendentially eco-catastrophic growth of the economy (See Abramsky, "Energy and Labor in the World-Economy" in this issue).

A wide range of social struggles are emerging around the many aspects of the question of energy and climate change. The challenge is to develop ways of collectively organizing in such a way as to be able to come through the multiple aspects of the current crisis that puts an end to the collective system of organizing social life and production that is at the basis of both ecological disaster and social injustice. This raises the *political* question as to how struggles can find ways of collectively organizing and struggling that do not pit one struggle against another, but instead gives rise to a social force that is simultaneously able to set limits on capital and also create alternatives. It is vital that movements are able to develop a world-wide dialogue, common analyses, political perspectives and long term collaboration processes between a range of different struggles which are frequently working in isolation from one another, and sometimes actually in antagonism to one another or at least perceived to be so. Furthermore, this process of political recomposition is becoming increasingly urgent as the challenges posed by the socio-economic-environmental apocalypse are becoming ever more pressing.

One of the bases for this political recomposition involves problematising a range of tendencies within the environmental/climate change movement. Whether for pragmatic or ideological reasons it is common to downplay the centrality of capitalist social relations and their role in climate change and energy consumption, and to believe that capital itself does not need to be expansive or a least that it doesn't have to be based on an ever expanding energy consumption. The liberal capitalists' discourse is based on a value judgment (continuous capitalist growth = good) the naturalisation of which takes the form of a pragmatic solution to the material requirement of energy production and consumption in given context of class relations. The closely related "environmental" approach is based on a strong *ethical* desire for "change", but which does not imagine challenging the fundamental value premises of capitalism or the *material* relations behind it. We do not believe that either these premises or the material requirements of their satisfaction can be wished away for the sake of a pragmatic engagement with states and corporations that will do anything in their power to maintain capitalist social relations as *the* fundamental form of reproducing our livelihoods. On the other hand, we are heartened by the fact that there are even some politicians like the indigenous Bolivian president Evo Morales who draw very clear connections between capitalist social relations and ecological catastrophe (see his open letter published here). Also, the experience of capitalist renewable energy regimes of the past (such as the windmills on sugar plantations worked by slaves, or the sailing boats of imperial conquest) stand as a reminder that social relations of production based on enclosures and exploitation are not exclusively associated with oil, coal and nuclear energy.

Another basis for the political recomposition is the creation of a common ground among commoners in struggles across the potentially dividing and contradictory lines of the issues of energy and climate change. Interestingly, some of the most visible struggles today are about the ownership and control of *hydrocarbon* resources, not renewable energies themselves. The last decade has been characterised by intensive struggles within the existing petrol-based energy regime. Such struggles are occurring in Bolivia (gas), Venezuela and Iraq as in other regions such as Nigeria, Ecuador and Colombia. Consequently, the sector has become increasingly difficult to maintain under neoliberal capital's control. This has major implications for wider global class relations and hierarchies within the existing world-wide division of labor in terms of the relation between oil producing and oil consuming workers (waged and unwaged) worldwide, as well as for the continued possibilities for capitalist reproduction. This is discussed by

George Caffentzis (see “A Discourse on Prophetic Method: Oil Crises and Political Economy, Past and Future” in this issue).

It goes without saying that hydrocarbon production when inserted in capital’s circuits, must follow the profit logic of capital and has very few other options. However to shift away from boundless extraction of those fossil fuels requires a collective global process. Consequently, it does not make sense to blame people who happen to live in an area that has an abundance of hydrocarbons which is tantamount to a head on attack on those whose livelihoods currently depend on them. Rather, it is likely that collective ownership of these resources at a local or national level offers a strong basis from which to contribute to the collective global process of shifting away from them. For one thing, it is also at the local level that the downsides of fossil fuel extraction are the most evident. For another, local collective owners would have a very clear incentive to avoid rapid exhaustion of a good whose value can only increase massively over time. And local communities could derive hugely greater revenues out of a fraction of the present production if they controlled it (as the Bolivian example recently highlighted).

However, the struggle over the ownership, control and use of a major revenue source for social programs, land distribution and grassroots community empowerment is largely absent in current debates on the link between energy and climate change. When the issues are discussed, concerns are raised that they can be part of the problem rather than of the solution. Yet, these struggles are fundamental means to generate and distribute wealth in those countries *despite* the fact that the use of these fuels undeniably contributes to carbon emission and climate change. The articulation between these struggles, the aspirations they posit and the general issue of climate change and renewable energy is a relevant problem that urgently needs to be tackled. For this reason we include discussion of the struggle for worker-ownership of Iraqi oil in the context of foreign occupation and corporate plunder within the longer term process of moving away from oil and the crucial role of oil workers in this process (see Ewa Jasiewicz, “Iraqi Oil Workers Movements: Spaces Of Transformation And Transition” in this issue).

We feel that these debates are particularly important at the current moment, since there is a lot of international activity surrounding energy and climate change. As this issue of *The Commoner* is being finalized two important global processes are underway: the grassroots mobilizations around the UN Climate Summit which will take place in Copenhagen next year, and the creation of the International Renewable Energy Agency. We hope that this issue of

The Commoner contributes to critical debate around these two global processes, especially the grassroots mobilizations around Copenhagen.

December 2009 will see the UN COP 15 Climate summit take place in Copenhagen. The aim of this conference is to produce the protocol that will replace the Kyoto protocol. A broad global consensus already exists amongst policy makers that recognizes, at least in rhetoric, that climate change is a major global reality that cannot be denied or ignored any longer. However, increasingly large and organized numbers of people are becoming less and less willing to believe that governments and corporations hold the answers to the problems generated by climate change. The summit will be met by strong grassroots mobilizations in Copenhagen and throughout the world. A first international preparation meeting was held in Copenhagen in September of this year, and several calls to action were issued. One of these has already been translated into over fifteen languages, including Mandarin. And, as if by fate…the date for the start of the summit is November 30th 2009, 10 years on, to the day, from the Seattle anti-World Trade Organization protests (see http://peoplesclimateprotocol.aprnet.org/content/view/13/26/ as well as http://risingtide.org.uk/copenhagen).

Three

One thing which is certain is that we are witnessing the buzz word of climate change shouted to all corners of the wind as a justification for coercive policies that limit freedom of movement and association. Throughout the world “Peak Oil” and “rising energy costs” are already becoming an excuse for imposing austerity on both waged and unwaged workers and their communities. In this context, Patrick Bond asks the questions of who will pay, and who will benefit with regard to different proposed “solutions”, while Ariel Salleh examines the specific gender implications of these proposals.

Yet, despite these strategies of capital, people are not passively sitting back and allowing this to happen. The first half of 2008 saw fuel (and closely associated food) protests and riots spreading rapidly throughout the world, to approximately 30 countries, bringing both urban and rural populations, and waged and unwaged workers into a process of common struggles. People everywhere, relying on energy to

meet their basic subsistence needs, are beginning to question the "inevitability" of rising prices, insisting loudly and clearly that they should not be the ones to pay these rising costs. People are struggling for cheap (or even free) and easy access to energy, claiming it as a human right and not a privilege, rejecting a world in which access to energy is defined by immense hierarchies and inequalities, especially along north-sound and gender lines. A world in which small numbers of people drive loud SUVs, while more than 1.6 billion people have no access to electricity, and over 2 billion rely on wood and dung for fuel consumption that has mainly been collected through the unwaged labour of women and children, is very far from a sustainable world.

And, in the energy sector itself, extraction efforts are being intensified on the backs of the several million workers in the existing, mainly fossil fuel based, energy sector, as well as populations which live in the vicinity of the fuel sources. Meanwhile oil companies go on to reap record profits from the rising prices. A video clip and an article by Shannon Walsh show the rush towards opening the tar sands of Alberta for oil extraction, within the context of the North American regional integration which is taking place under the Security and Prosperity Partnership.

And, then, last but not least, there is the issue of the globally expanding renewable energy sector. The form in which sector is expanding is, seemingly, paradoxical. On the one hand it has until now developed very slowly and in comparatively few places in the world. On the other hand, resources scarcity, climate change, surplus finance capital and militarized conflicts in oil-rich areas of the world all constitute a material push towards a massive global expansion of the sector. The emergency provoked by "peak oil, and especially climate change, are ushering in a new scenario. The end of the "fossil fuel era" can be postponed, but it cannot be avoided. In all probability it cannot even be postponed much longer. This means that a transition away from oil is no longer an ideological choice, but is a necessity which is increasingly being imposed by material constraints. However, the sector's expansion is rapidly taking a form that had not been predicted. Already demand for renewable energy infrastructure far outstrips supply. The renewable energy sector seems set to become a new global growth sector. However, the sector's expansion is taking a different form that the one envisaged by its original self identified "green" promoters: instead of decentralised energy sources empowering communities, we have more centralised mega projects; instead of renewable energy and social justice being synergetic objectives, the capitalist form of renewable energy is increasingly depending on different forms of enclosures.

This is because, instead of seeking to understand the global capitalist relations that shape (and are shaped by) the energy sectors commodity chains of production and exchange for the world-market, the dominant tendency within the renewable energy sector is to focus on a combination of technical solutions and national/international policy mechanisms. A common approach is to promote a "take off" of renewable energy, based on the world-wide dissemination of "national best-practices", especially the German and Danish. This approach to "best practice" technology transfer occurs within the context of an unquestioned world-market. Some of these "best practice" approaches have indeed been "very good" as they show a path of community empowerment, autonomy and energy sovereignty. In particular, the grassroots, farmers led wind energy cooperatives that have been at the root of the Danish renewable energy sector stand out, as described in the article by Jane Kruse and Preben Maegaard. Yet, this "take off" approach, which has been key in shaping policies, both at the national and international level, is eerily reminiscent of earlier (flawed) debates surrounding "industrialization take off."

While some kind of transition to post-petrol energy sources is virtually inevitable, the form it will take is far from a technical inevitability. Rather, any transition will be the result of an uncertain and lengthy process of collective struggle, as will its qualitative aspects. This is discussed by the TRAPESE Collective. As "climate change" becomes the next global buzz word, and as the expansion of the renewable energy sector accelerates and spreads to different areas of the world, so a complex process of world-wide struggle is also intensifying. It is no longer a question of *whether* a transition will occur, but rather what *form* it will take. Which technologies will a transition include and on whose terms and priorities? Who will pay the costs and who will reap the benefits? Who can harness the necessary global flows of capital, raw materials, knowledge and labor? And, above all, will the process be chaotic, reinforcing already existing hierarchies, or will it or will it be part of wider process of world-wide emancipatory social change based in the construction of new social relations?

In particular, the dependency of urban areas on rural ones for the supply of energy is an increasing point of conflict with renewable energy resources. Whereas fossil fuels and nuclear energy resources are located in a small number of locations throughout the world, renewable energy resources are broadly spread throughout much of the world, giving these areas increased strategic importance. Therefore renewable energies represent a new threat for rural communities (especially Indigenous and Afro-descendent), making

them increasingly vulnerable to loss of control over their territories, including displacement. Such territorial conflicts (frequently violent) are already occurring on a large scale with agro-fuels as discussed by Mónica Vargas Collazos who offers a global overviews of these issues. Tatiana Roa Avendaño and Jessica Toloza describe how palm oil production for the world-market in the Colombian Black Communities is intertwined with enclosure and displacement from collective ancestral lands by paramilitary violence, and the resistance that this is giving rise to. To a lesser extent, similar conflicts are emerging in relation to wind energy. Sergio Oceransky documents how in Oaxaca, peasant and indigenous communities are having their land and cultural heritage jeopardized by industrial windpark development which is taking place within the framework of another regional free trade agreement, the Plan Puebla Panama. These are the unavoidable consequences of satisfying the energy requirements of urban based industrialization and a political and economic system which prioritizes profit in the world-market over the satisfaction of the social needs of the world's population. Such conflicts are likely to get much worse in the near future unless appropriate steps are taken.

However, a transition to renewable energy resources also offers rural communities an opportunity to assume greater control over their territories, resources and lives. The collective and democratic harnessing of renewable energies can contribute substantially to communities' ability to create new and autonomous relations of production, exchange and livelihood that are substantially more egalitarian, decentralized, diverse and ecologically sensitive than currently existing social relations. For this reason, it is very important that the communities living in rural regions rich in renewable energy resources have access to the necessary tools in order to be able to collectively decide on the use of the resources in their territories. As Jane Kruse describes, it is also vital that community owned renewable energies are able to defend themselves against predatory investors in the long run. It is also crucial that urban communities are able to understand the relation between their high levels of energy consumption and rural dispossession in order to be able to collectively develop solutions to these problems on the basis of collaboration and cooperation between rural communities in order to satisfy peoples' basic needs rather than through a conflictive process which pits rural and urban inhabitants against one another.

Four

We believe that these contributions point to the fact that, in order to get to the roots of the problems, struggles in the North and South have to develop a collective global process to take decisions concerning energy. In addition to the crucial question as to which energy sources are the most suitable, there is also the question of the way in which it is used, in what quantities, and for which purposes. *If we make these decisions through capitalist markets, we end up stressed out overworked and murdered, divided and pitted one against another, while the planet goes to hell. If we make these decisions through the capitalist state, we end up repressed, silenced and manipulated into believing the sacrifices that are required from us to deal with this "emergency" and "crisis" are worth the suffering, since it will be the final crisis, and there will never be another "crisis" again, while in fact it will merely open up a new cycle of more of the same.*

Within the wider struggle for common control over means of reproduction and production (something which we see as central in emancipatory struggles for long term social, political and economic change) we believe that struggles for some form or other of decommodified common control of energy resources, infrastructures and technologies are becoming increasingly central. The same can be said about their actual production. This is hardly surprising, given that, in addition to being a highly profitable commodity, energy is also one of the key means to sustain human life. Struggles over ownership of energy resources, infrastructures and technologies have been intense in the past, and it is very likely that they will become intense once again in the coming years. In many parts of the world, this is already happening, especially within the oil sector.

An important question is whether a rapid and smooth transition away from fossil fuels and nuclear energy even be possible if this process is left to the market or whether this is an unreachable illusion that will provoke untold human suffering. All over the world there are struggles against privatisation and for common/public ownership of energy resources and technologies, especially in the oil, gas and electrical sectors. What role do these struggles have in building a global collective subject that is strong enough to bring about a rapid and lasting transition towards renewable energy, despite the fact that these fuels and technologies are themselves undoubtedly carbon emitting?

There are three major reasons why common ownership of fossil fuels *might* in fact make an important contribution to a longer term process of shifting away from them:

1. to use the world's remaining fossil fuel resources in a rational, coordinated and collectively planned way, rather than in the wasteful way in which the competitive market logic allocates resources.
2. in order to put the economic revenues from the rent of these resources under common control for common benefit during the period of phase out, either using these revenues for broadly defined collective social needs as described above, or more specifically to finance a rapid transition towards renewable energy (and away from fossil fuels themselves).
3. in order to speed up the transition away from fossil fuels and towards renewable energy, by asserting collective control over the sector in order to intentionally suppress it.

The millions of energy sector workers world-wide is an important social force and have the potential to enormously strengthen the struggles for a more democratic and ecologically sustainable energy system.

We believe that as the renewable energy sector expands globally, it is becoming increasingly clear that the only possible basis for an emancipatory transition towards renewable energy is ensuring that a significant proportion of the sector is held under common or public ownership for non-commercial use. This includes the relevant infrastructures, technologies and knowledge. It is likely that as the sector expands, so too will struggles over its ownership. Of particular importance here is the struggle for non-commercial technology transfer against the iron straitjacket of the international patent regimes. The fact that the renewable energy sector is still very small relative to other energy sectors means that the bulk of the renewable energy infrastructure remains to be built still. As such, the next years offer a window of opportunity to ensure that a significant share of the sector can come under common ownership and benefit emancipatory social processes. However, time is short, and unless appropriate globally reaching interventions are made now the window will be closed.

Common or public ownership of energy sources (be they fossil or renewable) and their associated infrastructures and technologies cannot be understood as blue prints to be implemented from above by policy makers. They are not theoretical models or predictions, but rather, if we are ever to see such ownership structures emerge, they

will be the outcome of lengthy and complex struggles, led by grass roots social movements against capitalist relations within the energy sector (and more generally). Furthermore, common or public ownership of either fossil or renewable energy sources will almost certainly *not* guarantee a wider process of emancipatory social change. Yet, an understanding of the importance of these struggles is vital to assessing both short term priorities for collective action, as well as long term strategic orientation. It can also point to possible commonalities of struggle and help avoid pitting people against one another unnecessarily in order to build the alliances and coalitions which are needed for the difficult tasks ahead, a process that will almost certainly take several years to bear fruit.

Finally, we must realize that we will never "own" those fundamental decisions and choices that give shape to the production of our lives in common and allow to reproduce our livelihoods, through the market-voting as consumers or the poll-voting as citizens. Ownership of our lives and livelihoods passes through a freedom that the pro-market economists *a lá* Hayek would not dare to talk about: the freedom of the commons. This is a rich freedom in which the subjects, in spite of and through the many lines of flights they undertake, in spite of and through the creative forces they give rise to in their efforts to overcome their conditions, nevertheless end up landing in the fundamental recognition of the necessity of nature and the necessity of the other. The freedom of the commons is a creative force that neither asks for banning flights nor for creating a new airport terminal, it neither preaches veganism nor advertises hamburgers with children toys. It is not ideologically committed to either, since from the perspective of the whole of social cooperation, these are silly ideological commitments because they set *a priori* limits to, rather than enhance, the freedom that emerge from the commons. Because, when we reduce the rat race of competition and artificial scarcity on our lives; when we stop the enclosures and start to reclaim commons at every scale; when we implement food sovereignty and localized food production; when we get rid of most superstores and their disgracefully wasteful use of energy just to manipulate us into buying highly processes food; when we build community workshops in any neighborhoods to extend the life of solid appliances, rather than producing and buying new junk; when we have reclaimed our security in health and old age, because we do not allow either capitalist markets nor capitalist state to pit one generation against the other; when we give access to the Internet to all in the world, and provide free digital access to books and journals, to accelerate the creativity in common of six billion people in a multitude of virtual communities;

when we dispose of patenting, and give all the possibility to share our common human knowledge to raise to the challenges of the times wherever is their location; when the infrastructure of global “finance” has been turned into a communication web among planetary commons and a conduit for the allocation of social powers, while hedge fund managers, stock brokers, insurance clerks, and financial operators have retrained to learn skills and engage in activities promoting common sense, rather than praying on the commons; when shipping junk back and forth across the globe is no longer regarded as “economic growth” but “stupidity growth”; when the need to use our planes, cars, trains, busses and bikes are not defined by accelerating commuting rhythms of work and leisure, but purely by desires of mobility, travel, and encounter with the other balanced by a healthy life in our communities; when we are no longer afraid of the other, because we recognize in the same other a brother or sister from commons afar to whom our livelihoods are or could be articulated with common benefit; when we dispose of the millions of CCTV cameras and retrain most of security personal into doing something different for our security, like tilling the land, cleaning environmental dumps, or helping out in the process of elderly or children care; when the junk-mail industry is turned into junk-recycling industry; when commodity advertisers are turned into community organizers; when students of all ages are turned into human beings of all ages, and education is something different than a means to a job in a competitive market; when we all de-stress enormously through big drop of competitive pressures breathing down our necks; when we recognize how stupid we are not to see that even shit (in the form of manure) is on our side when used in moderation to help us out to save the planet as well as lead bountiful lives . . . then what has changed is the *context* of our individual choices. And it is this change in context that will ultimately save the planet, as well as us, and not this or that energy source.

Fossil Fuels, Capitalism, And Class Struggle

Tom Keefer
tomkeefer@gmail.com

The development of the vast non-conventional tar sands in Alberta, Canada are a last-ditch attempt to find a source of fossil fuel energy capable of maintaining and expanding capitalist economic growth in an era when supplies of conventional oil—the energy source which powered 20th-century industrialism—are peaking and entering an irreversible period of decline. Despite massive investments in new technologies of oil discovery and recovery, conventional oil production and non-OPEC countries has been steadily falling for the past decade or more while the large OPEC producers have been unable in recent years to significantly boost their own production. The shift to non-conventional "alternatives" such as the Alberta tar sands bring with them a host of problems—including dramatically increased greenhouse gas emissions, the poisoning of the water and the destruction of the land, the dispossession of indigenous peoples, and the exploitation of the vast and ever-growing pool of domestic and foreign labor—all of which sharpen the contradictions of class struggle and fossil fuel use in 21st-century capitalism.

This article will seek to put the development of the tar sands in a much larger historical context—that of the process of capitalist growth and development over the past 500 years. I will suggest that in order for us to truly understand and successfully oppose the growth of the tar sands into what has been dubbed the largest industrial project in the history of humanity, we need to develop theoretical perspectives which address the weaknesses at the core of the divide between most environmental and class struggle politics today. Our ecological framework has to gain a class analysis of the historically specific

dynamics of capitalism and its reliance on energy sources, and our class struggle politics has to integrate an analysis of the importance of the flow of energy and materials to continued capitalist growth and development.

This paper will argue that over the course of its history, capitalism has faced a number of potentially terminal crises that have arisen from the consequences of ecological disequilibrium, the resistance of the exploited and dispossessed, and the way in which particular energy regimes have constrained or enabled capitalist expansion. I am going to suggest that today the global capitalist system stands on the threshold of another such moment of crisis, one which is intersected by the fault lines of ecological collapse, thermodynamic limits and the intensification of class struggle caused by these conditions.

In focusing particularly on developing a theory of how capitalism as an economic system uses energy, we have to clarify not only what we understand capitalism to be, but understand how it evolved. I am building on the Marxist influenced work of Robert Brenner which draws on Marx's insight that the economic "laws of motion" of capitalism and other class societies can be best understood by looking at the concrete social relations that govern the dynamics between those who produce society's wealth and those who appropriate it.[1] In the 1970s, Robert Brenner developed a convincing thesis that capitalism had its origins in the English countryside, when after the devastation of the black plague in the 14th century the English landed class, consolidated and united by the Norman invasion of 1066, pioneered a new economic model fundamentally different than the tradition bound feudal system that it replaced. In this new system landowners enclosed common fields and pushed off peasant laborers, and then rented the land to capitalist farmers who in turn hired the displaced peasants as wage laborers to work the land.

Capitalism, Brenner convincingly argues, was thus in its origins, an agricultural system which drew its profits and surplus value from the agricultural working-class it exploited. As agricultural productivity expanded in England and peasants were displaced from their lands, capitalist relations shifted to new industries—textiles and handicraft production—in which new norms of work discipline and management were enforced and which laid the framework for industrial capitalism.

While this may seem like ancient history to many activists today, the constraints the capitalism faced in its infancy can provide insights

1 See Robert Brenner "Agrarian Class Structure and Economic Development in Pre-Industrial Europe" in Aston, T.H. and C. H. E. Philp, *The Brenner Debate: Agrarian Class Structure and Economic Development in Pre-Industrial Europe*. Cambridge: Cambridge University Press, 1995.

to its present contradictions as it faces a future of declining fossil fuel availability. Early capitalism—while it was still an agrarian system and before it become firmly established in the rest of Europe—faced seemingly insurmountable obstacles to its further development. The first and most obvious of these barriers arose from the disruption of the old feudal and subsistence modes of production capitalism replaced and the ever larger numbers of people it dispossessed and exploited. Although forced migration to colonies absorbed a significant share of this "surplus" population, the fact remains that resistance to capitalist exploitation was very real and repeatedly took the shape of armed uprising—we can think here for example of the Beggars' Christmas Riot of 1582, the Plaisterers' Insurrection of 1586, the Felt-Makers' Riot of 1591, the Southwark Candle-Makers' Riot of 1592 to name but a few. The openly revolutionary perspectives of the Levelers and Diggers in the English Revolution of 1648 took this to an even higher level in an attempt to overthrow agrarian capitalism itself.

The other major problem for early capitalism was that it was creating an ecological crisis that threatened to destroy it. As the economy boomed, England's forests were devastated as they were the primary source of both heating fuel and energy for smelting iron. By the 1600s so much of England's forests had been cleared that capitalists were forced to ship English iron ore to Ireland where a plentiful supply of wood still remained. The second major ecological crisis arose from the intensive agricultural nature of early capitalism, which led to the declining fertility of the soil. A "metabolic rift" was created due to the fact that while city dwellers were fed with the fruits, vegetables and meat produced in the countryside, the nutrients contained in these foods were not returned to the fields, and this created a serious and increasing problem of soil depletion.[2] In an era before synthetic fertilizers, the failure to recycle nutrients represented a steadily advancing ecological disaster that was so serious that the British dug up human remains from Napoleonic battlefields to spread the bones of the dead on their fields as fertilizer and also initiated a global search for bird guano which was transported in the millions of tons to use as fertilizer.

At a point when capitalism faced serious ecological limits and when working-class resistance threatened to overthrow the system altogether, capitalism was saved by the discovery of widespread and accessible fossil fuel resources within England. England had huge reserves of high-quality coal that were located near the surface and near to river systems which facilitated its transport. This use of coal

2 John Bellamy Foster, *Marx's Ecology: Materialism and Nature* (New York: Monthly Review Press, 2000).

not only solved the problem of household heating and iron production, but also encouraged the development of fossil fueled machinery in the form of steam engines in order to drain the coal mines. These new machines became the basis of the industrial revolution as they produced significant amounts of power and were capable of operating around the clock. The construction of steam ships and steel hulled vessels enabled the projection of imperial might across the globe, the conquest of indigenous people, and allowed the import of foodstuffs and fertilizers necessary to take the pressure off of English agriculture until fossil fuels themselves could be used to create the synthetic fertilizers necessary for modern agriculture to overcome the problems of declining soil fertility.

The capturing and unlocking of fossil fuel energy made it possible for capitalism to go beyond the limitations of "biotic energies" dependent upon solar flows of energy. This in turn made possible the development of capitalist globalization by unifying national economies and enabling the projection of economic and military power on a global scale. As Elmar Altvater argued:

> As long as as 'the societal relationship with nature' was based on biotic energies, on the soil and the fruit it bore, on the speed and range of an ox or horse drawn cart, on the tonnage, maneuverability and speed of a sailing vessel and on the art of navigation, the material possibility of overcoming these limits of space and time was slight and the capacity of creating a world order remained restricted."[3]

Altvater suggests that this appropriation of fossil fuel energy made possible for the first time a true "world order" in which "the 'metabolism' of humankind, society and nature reached a global scale."[4] Altvater goes so far as to argue that "without fossil energies neither the process of capitalist production and accumulation nor the modern monetary world market could exist."[5]

In addition to resolving early ecological crises the integration of fossil fuels with capitalist production has played a key role in containing working-class resistance. Capitalism produces surplus value from the exploitation of human labor in two ways—in absolute and in relative terms. Absolute surplus value extraction comes from making workers work harder, faster, for longer hours a day, and for less pay. Relative surplus value extraction involves increasing the productivity of workers so that they are able to produce more per hour that they work.

3 Elmar Altvater, "Global Order and Nature" in *Political Ecology: Global and Local*, ed. Roger Keil, David V.J. Bell, Peter Penz, and Leesa Fawcett (New York: Routledge, 1998) p. 20.
4 Altvater, p. 21.
5 Altvater, p. 21.

Increasing relative surplus value through the introduction of machinery in the production process has been the preferred strategy of capitalists, because it means that since the total economic output grows, capitalists can afford to increase wages at the same time as continuing to reap increased profits. The key to increasing relative surplus value lies in machine-based production, and the building of a machine based society was impossible prior to the development of a fossil fuel energy regime.

Under capitalism, Marx argued, machinery is not just a "superior competitor to the worker" but a "power inimical to him. It is the most powerful weapon for suppressing a strike, those periodic revolts of the working class against the autocracy of capital."[6] Indeed, he added, "it would be possible to write a whole history of the inventions made since 1830 for the sole purpose of providing capital with weapons against working-class revolt."[7] Machinery was thus a crucial aspect of the process of primitive accumulation and dispossession as capitalists struggled to overcome and discipline a new industrial workforce against the old habits of communal solidarity and village living. And key to the proliferation of machinery as an antagonist to working class self-organization, is the exosomatic energy source required to power it.

When we step back and look over the long-term on the growth of the capitalist system from a thermodynamic perspective, we see that capitalism as a system has always been able to bring online more and more energy with every passing year. Capitalism is geared towards constant growth, and this growth requires increasing energy inputs to power the continual expansion of machinery used to discipline and displace living human labour from the production process. This dynamic becomes particularly clear when we consider the rapid and dynamic industrialization now taking place in China, India and Brazil.

Marx distinguished between dead labor (the machines, computers, fixed capital or factories etc.) and living labor (people) in the production process. As capitalism has grown and created an ever larger and more massive apparatus of dead labor, global energy inputs play an absolutely key role in keeping this vast array of machinery, transport systems, computers, lights and electricity grids going. Without a constant flow of such energy capitalist accumulation would grind to a halt.

The reason that the tar sands and other non-conventional sources of oil is are now being developed is that we are at a turning point in capital's fossil fuel energy regime. With conventional supplies of crude oil having been steadily depleted over the course of the 20th century,

6 Karl Marx, *Capital Vol. 1*, p. 562.
7 Marx, p. 563.

the tar sands of Alberta and Venezuela are the most significant remaining energy reserves on the planet. They may be messy, dirty, toxic, and disruptive of human life and the natural environment, but capitalism only cares about making profits and keeping its economic system functioning. But unfortunately for capitalism, its conquest of the world and its domination of the global working class it created have been largely predicated on the availability of cheap energy sources that are now beginning to peak. Capitalism, in order to maintain its growth has to transition to a new energy regime to replace declining fossil fuels. But it not only needs a new energy regime, it needs one with a high energy return on the energy invested. If it fails to do this, rising energy costs and a terminal decline in fossil fuel availability will lead to intensification of class struggle and resistance against capitalism.

The consequences of rising oil and natural gas prices are most immediately felt by workers and low income people as their costs of subsistence are directly increased. As oil prices rise, the cost of transport to and from work increases, as does the cost of basic food products produced with synthetic fertilizers derived from fossil fuels and formed and transported by oil driven machinery. Oil and natural gas byproducts are used as a feedstock in a wide variety of consumer goods, including synthetic clothing and plastic household goods, and also for a range of industrial applications as well as for power generation. Consistently, where ever there has been a serious interruption of fossil fuel supply or a sharp rise in the costs of fossil fuels, the effects have been felt by the working class and have often resulted in protest and resistance.

In a very real sense then, capitalism has turned full circle from the point at which some 500 years ago it arose as an exploitative, ecologically destructive, but incredibly dynamic economic system in a small island backwater of the world system. Only now, after capitalism has conquered the globe, aided in large part due to its appropriation of fossil fuel energies, the ecological crisis that it has created is now global in scope, and will affect the entirety of the human race and the natural environment.

With the peaking of world oil production capitalism will face a historic turning point. Its new short-term strategies of accumulation will be based upon securing the declining high quality sources of energy, most of which remain within the Middle East, as well as by making massive investments into tar sands in the desperate hopes of finding some technological breakthrough that will relieve thermodynamic constrictions and allow for continued global economic growth. Capitalism, if it is to survive, must shift to some alternative energy

source in a manner every bit as transformative and revolutionary as its move from biotic energies to fossil fuel was. This source of non-carbon based energy must be cheap, nonpolluting, avoid contributing to global climate change, and be capable of integration within existing energy distribution infrastructures. Should capitalism not develop such a source of alternative energy in time, we can expect that the climate change feedback loop will be accelerated as tar sands oil, coal and biomass are increasingly used to replace declining stores of oil and natural gas. At the same time, international competition for remaining stores of conventional oil will be accelerated, and dramatic increases to the cost of living will almost certainly lead to a global intensification of local, national and international class struggles.

As industrial capitalism matures and its machines devour ever increasing amounts of non-renewable fossil fuels, a point of crisis will be reached when capital will no longer be able to externalize its contradictions. Rosa Luxemburg's famous posing of the choice between "socialism or barbarism" serves to remind us that the failure of the great revolutionary wave of her generation was perhaps even more of a historic failure to transform capitalism and the fate of the human species than is commonly recognized. Capitalism, should it now be overthrown and replaced by some kind of socialist system, will leave its inheritors with ecosystems potentially stressed beyond recovery, and with little left in terms of viable low-entropy energy resources. If any future socialist society is required to build socialism under conditions of declining labor productivity and under the energy constraints bequeathed by an exhausted 20th century industrial capitalism, the implications for revolutionary theory and practice are significant, and deserve to be put at the center of a reconstitution of the socialist project. Ultimately, doing so will be necessary if humanity is to avoid a kind of barbarism far worse than the fascism which destroyed the revolutionary hopes of Rosa Luxemburg's generation.

Energy And Labor In The World-Economy

Kolya Abramsky

> This ship is a floating transporter of labor… about 5 million emigrate to find work… it's got 750 passengers… you can tell by looking at faces and hands that many are farmers, country people… the same poor sods who spent last night out on the sidewalk… the same people who are pushed and shouted at… who wait in huddled groups, for some official to deign to notice their existence… Their faces and their clothes are the color of the earth. Dark and Brown.[1]

> Dynamics of social conflict had far-reaching impacts on the historical evolution of large-scale energy industries…Given the pervasive influence of social movements in the evolution of modern energy systems, it is surprising that mainstream energy literatures have so often treated workers and activists as irrelevant or passive agents. The inattention to social dynamics of unrest is why mainstream analysts have been frequently unable to forecast eras of radical change in global energy industries.[2]

Part One: Introduction, Towards Researching Energy and Labor in the World-Economy

This paper aims to lay the basis for a more in depth analysis of energy and labor in the world-economy which I intend to do in the future. I will point to two tasks. These are:

1 Description of a ship transporting migrants for work in the oil industry in the Persian Gulf. Midnight Notes, *Midnight Oil: Work, Energy, War 1973-1992* (New York: Autonomedia, 1992), pp. 67-70.

2 Bruce Podobnik, *Global Energy Shifts: Fostering Sustainability in a Turbulent Age* (Philadelphia: Temple University Press, 2006), p. 21.

1. mapping the world-wide division of labor within the energy sector;
2. tracing the relations that produce and shape this division of labor, and how the different parts relate to one another, within a wider analysis of capitalist relations.

This paper will limit itself to the first task, only very superficially touching on the second one, which I will leave for the future.

This paper will identify, and partially answer, three broad questions.

1. How does energy relate to labor in general?
2. How does labor within the energy sector specifically operate?
3. How can an understanding of energy and labor contribute to understanding current concepts such as “energy crisis” and “transition towards renewable energy”?

Before starting, I will give some general definition of terms used in this paper, regarding both energy and labor.

Throughout history, different energy sources have been used at different times and places and in different combination with one another. There are multiple different energy sectors. These include, or have included, whale fat, wood, peat, coal, oil, nuclear, wind, solar, natural gas, bio-fuels, hydro-electric, cow dung. Each of these sectors has a specific division of labor associated with it. Energy requires technology to transform fuels for use as, for instance, motive force, heat, light etc. Examples of this are petrol and the internal combustion engine, or coal and the thermo-electric power station. Finally, energy may be more or less commodified.

Labor is understood in the broadest sense of the word, including anyone whose labor (or land or other natural resources) needs to be harnessed and/or commodified in order to produce surplus value. It does not prioritize industrial labor in the factory, nor urban labor over agricultural labor, nor waged labor over unwaged, nor “free” over “forced”. Furthermore, it is based on the premise that real material hierarchies and conflicts of interest between workers exist.

In order to show the global dimensions of the division of labor associated with energy production, distribution and consumption, I refer to a map by Brooke Singer.[3] Singer’s map depicts the flows of oil into the USA at the current moment in time, together with a number of social indicators associated with the populations of the countries which supply oil to the USA. This map is used as an example, in order to visualize some of the questions related to energy today and possible future scenarios. As the country with the highest per-capita energy

3 Brooke Singer, “The US Oil Fix,” in Lize Mogel and Alexis Bhagat (eds.), *An Atlas of Radical Cartography* (Los Angeles: The Journal of Aesthetics & Protest Press, 2007). Also accessible at http://www.bsing.net/bsinger_map.jpg.

consumption in the world today, the USA obviously plays a key role in the world-wide division of labor associated with energy. Later in the text, there will be a section devoted to discussing the specific situation of energy in the USA.

Part Two: Energy and Labor

> While machinery does not necessarily need inanimate energy, most modern machinery is totally and increasingly dependent on such energy. Historically, increases in both absolute and relative surplus values have required increased energy inputs.[4]

> [capitalism's] most successful means of containing working class struggle has been to produce technical relationships to make various energy inputs interchangeable in order to reduce dependence on inputs of human labor power as a proportion of the overall energy inputs animating dead labor. In doing this, individual capitals can better compete with each other by increasing the "productivity" of the input of human labor that remains.[5]

This section will examine the question of how energy relates to labor in general.

Throughout the history of the capitalist world-system, energy has impacted on labor in general in four important areas.

1. Mechanization has been used to enhance and/or replace human labor in order to increase productivity and manage class conflict,
2. Artificial lighting has lengthened the working day
3. Cheap food, shelter, clothing and consumer goods have greatly reduced the cost of reproduction of labor.
4. Increasing the speed and reducing the speed of transportation has greatly increased labor mobility, both at a local level and world-wide, and for both forced and voluntary movement.

As such, energy has been a constitutive factor in shaping global class relations as a whole, not just within the energy sector. The replacement of coal with oil as the main global energy source throughout the twentieth century was particularly important for these processes.

---

4 Peter Norre and Terisa Turner, *Oil and Class Struggle* (London: Zed Books, 1980), p. 15.

5 Thomas Keefer, *Of Hand Mills and Heat Engines: Peak Oil, Class Struggle, and the Thermodynamics of Production, unpublished MA Thesis*, York University, Toronto, 2005, p. 22.

Examples of these processes are numerous. The arc lamp was widely introduced in docks throughout the world in order to lengthen the working day of dock workers. Continuous production through shift work would have been impossible without cheap and readily available artificial lighting. Energy inputs have reduced the price of global transport, first through the steam ship and later the airplane to massively facilitate transnational migration, while cars have greatly increased the mobility of workers within countries.

Mechanization is a particularly important process through which energy and human labor impact on each other. It is worth examining the process in considerable detail. Energy is a substitute for human (or animal) work. The history of energy use is, for better or worse, a history of human labor being replaced or supplemented by outside energy sources—wood, coal, gas, oil, nuclear power, windmills.

Paradoxically, in the midst of all this "labor saving" technology, no one really does any less work than they did before. The wage relation that shaped the factory has not been done away with, nor have the unequal gender roles that shape so many households been replaced, nor have unwaged labor forms disappeared. Rather than doing away with unequal and exploitative patterns of work, energy-intensive appliances, vehicles and machines have simply rearranged people's working patterns and structures. In fact, the replacement of human beings by machines and robots has often created huge pools of deskilled and unemployed workers in its wake, and has frequently been met with resistance from workers.

However, it would be wrong to view the replacement of human labor as an unintended side effect of mechanization. Throughout the ages, mechanization has often been introduced *precisely* in order to replace and subvert human labor—that is, organized and rebellious human labor that threatens to escape the control of those who seek to control it, whether they be landlords, factory owners or agricultural companies. The Luddites stand out famously here, for smashing the looms which threatened their livelihoods[6].

> From the capitalist perspective, energy is recognized as the fundamental *technological tool for the international control of the working class*. First of all, *it is a replacement for labor*. Since World War II, capital has increasingly dealt with the working class on a daily basis by replacing labor with energy...In its immediate application to the process of production, energy frees capital from labor. It follows that control over the availability and price of energy means control over the technological conditions of class struggle internationally and also control over economic development.

6 Karl Marx, *Capital Volume 1* (London: Penguin/New Left Review, 1976), p. 554.

> (italics in original).[7]

A more recent example of this can be seen in the South African gold mines. Facing strong resistance from miners in the post-World War II period, the mine owners invested heavily in mechanization, in order to replace workers. This was seen as the most effective way of breaking class struggle. For every 10 kg of gold produced in 1950 ten men were employed, and 99,000 KWh of electricity used. In 1975, five men were employed and 180,000 KWh of electricity were used[8].

In addition to the above examples, important examples of these processes can also be seen in the USA, where energy has made an important contribute to US hegemony. However, these will be dealt with in a later section.

All of the above shows the importance of energy to the capital-labor relation *in general*, not just within the energy sector itself. Hence, a transition to renewable energy is of importance not just to labor within the energy sector but for *all workers*[9].

Part Three: Labor in the Energy Sector

> Listen! We ought to be in a wood choppers union! Chop wood for breakfast! Chop wood, wash his clothes! Chop wood, heat the iron! Chop wood, scrub floors! Chop wood, cook his dinner![10]

The commercial energy sector has always involved the labor of many different people and geographical locations world-wide, relying on global commodity chains that operate within the wider context of capitalist relations, relations which are geographically uneven and hierarchical. Historically, energy sector workers (at least in the waged sector) and their unions have been well organized both within countries, and between countries. In May 2006, the International Federation of Chemical, Energy, Mine and General Workers' Unions (ICEM), represented approximately 20 million workers organized in 379 industrial trade unions in 123 countries[11].

---

7 Midnight Notes, *op. cit.*, p. 124.
8 Norre and Turner, *op. cit.*, p. 18.
9 Keefer, op. cit. See also Thomas Keefer, "Marx, Machinery and Motive Power: the Thermodynamics of Class Struggle." Published online at: http://www.wwei.info/mediafiles/wwei/website-files/Keefer.pdf; George Caffentzis, “No Blood for Oil - Energy, Class Struggle and War 1998-2004." Published online, 2005, at: http:// www.radicalpolYtics.org.
10 Miner’s wife in the film by Herbert Biberman, *Salt of the Earth*. Independent Productions/ International Union of Mine, Mill and Smelter Workers, 1954).

The fact that energy is a strategic raw material means that energy workers (as well as workers in raw materials associated with the sector) are strategically positioned. In addition to being a highly profitable exchange value, energy also has an essential use-value. This has contradictory effects[12].

On the one hand, there is a need to extract a high surplus value from them and to ensure high levels of output. Historically, the energy sector has often involved highly coercive labor forms, especially in periods of intensified inter-firm and inter-state rivalry. Examples are numerous. Nazi Germany, lacking its own source of oil, set about (in addition to attempting to access the oil rich Baku region of the Soviet Union and oil fields in Romania) generating a form of synthetic gasoline. The Nazi state, together with the industrial company I.G Farben sets its armies of forced laborers to the horrendous task of producing this fuel from goal. Synthetic gasoline supplied the Nazi army with over half the fuel that it used throughout the war, and 90% of the Luftwaffe's. Allied bombers bombed the production site in 1944[13]. Other examples of highly coerced labor forms within the energy sector include: coal mines using forced labor in the African colonies, to supply the European imperial powers[14] and convict labor in the post-Reconstruction US South in order to provide for the US industrialization process[15]. The period prior to World War II witnessed a renewed wave of coercion in energy sectors, both in the US New Deal and in Stalin's rapid industrialization drive. During the events preceding the 1979 Iranian revolution striking oil workers were literally pulled out of their houses at the point of a gun to resume production[16]. Contemporary examples include bonded migrant labor in the Persian Gulf oil states[17] and paramilitary repression against oil workers in Colombia[18]. In the renewable energy sector, Brazilian sugar workers

11 International Federation of Chemical, Energy, Mine and General Workers' Unions (ICEM): http://www.icem.org/

12 See Beverly Silver, *Forces of Labor: Workers' Movements and Globalization Since 1870* (Cambridge: Cambridge University Press, 2003); Giovanni Arrighi, and Beverly Silver et al, *Chaos and Governance in the Modern World System* (Minneapolis: University of Minnesota Press, 1999); Podobnik, op. Cit.; Timothy Mitchell, *Carbon Democracy* (Binghamton: Graduate Student Sociology Conference, 2007).

13 Daniel Berman and John O'Connor, *Who Owns the Sun—People, Politics and the Struggle for a Solar Economy* (Vermont: Chelsea Green Publishing Company, 1996).

14 George Padmore, *The Life and Struggles of Negro Toilers* (Hollywood: Sundance Press, 1931).

15 Alex Lichtenstein, *Twice the Work of Free Labor - The Political Economy of Convict Labor in the New South* (London/New York: Verso, 1996), pp. 105-126.

16 Norre and Turner, *op. cit.*, p. 299.

17 *Midnight Notes*, *op. cit.*

18 Colombia Solidarity Campaign, numerous articles about Colombian oil workers, available at: http://www.colombiasolidarity.org.uk/

face conditions akin to slavery as they produce the raw material for US ethanol supplies. This latter example will be discussed in greater detail later in the text.

On a different level, most non-commercial energy use is based upon non-waged labor. Throughout much of the world, especially in rural areas, people do not satisfy their energy needs exclusively, or even predominantly, through the commercial use of energy, but rather through the non-commercial use of dung, wood and other biomass that provide heat, lighting and cooking fuel. More than one third of humanity, 2.4 billion people, currently rely on these fuels for their daily energy needs. Collection of such fuels is most commonly done by women and children, as part of "domestic work" without recourse to wages and the (limited) protection that the so-called "formal economy" and its trade unions, or other organizational forms, may be able to offer.[19]

On the other hand, the strategic positioning of energy sector workers has also given them a robust bargaining power in relation to their employers and governments (as well as other workers). Worker struggles have frequently resulted in improved conditions and wages etc, and have also frequently had a knock on effect on the condition of workers in other sectors. Examples of this phenomenon are also numerous. These include the coal miners in the British general strike of 1926[20] and oil workers in Iranian revolution of 1978-79.[21]

Perhaps the contradictory positioning of energy workers is most visible in oil workers in OPEC countries. Oil workers struggles played an important role in pushing the price of oil up in the 70s:

> In the first place, the motivations of the OPEC governments lay neither in simple greed, as they were popularly depicted in the West, nor even in justified repayment for decades of exploitation as some of their apologists have argued Rather, the need for control over oil production, higher oil prices and balance of payments surpluses was dictated by the growing, uncontainable demands of the workers and peasants in those countries.[22]

The consequent high revenues from oil have on the one hand meant that many social reforms have been granted, such as education and healthcare (paid for by industrialization and "development"), combined with harsh repression.

19 Hugh Warwick and Alison Doig, *Smoke - the Killer in the Kitchen: Indoor Air Pollution in Developing Countries* (London: Intermediate Technology Development Group, 2004).
20 Silver, *op. cit.*
21 Arrighi and Silver, *op. cit.*
22 Harry Cleaver, "Close the IMF, Abolish Debt and End Development: a Class Analysis of the International Debt Crisis," in *Capital & Class*, 39, 1989.

Part Four: The USA—A Country of Cheap Energy and Expensive Labor

Brooke Singer's world-petrol-map[23] graphically illustrates how utterly the USA has subordinated the rest of the world to its energy needs. Two parallel pictures emerge: one of absolute selfishness and insensitivity to the energy needs of the rest of the world, and another of extreme vulnerability and dependence. Why has the US economy and population become so dependent on oil from around the world? What are the effects of this dependency?

"Cheap" energy has been a fundamental pillar of post-World War II economic growth in the USA and US hegemony, an essential part of a strategy aimed at simultaneously controlling unrest at the work place through mechanization, automation and robotization, while ensuring social peace through delivering a high standard of consumerist living. Access to abundant energy sources has also played an important part in ensuring social peace within the USA, both within industrial and agricultural production, and in relation to the reproduction of basic subsistence for the country's workforce.

> Rapidly rising labor costs have met steady oil prices. As a result, by 1970 the manufacturing sector of the US economy used 66% more energy but only 35% more labor than in 1958.[24]
>
> If labor is expensive and hard to control, one of the most successful strategies that landlords, corporations and employers can adopt is to simply replace human beings with machines and robots, and subject workers to controlling and divisive disciplining. Namely, the pursuit of relative surplus value. This was an important factor in the automation of the car factories in Detroit in the 1950s, a process which followed on from a series of major strikes and wild cats in the sector. Automation itself sparked high levels of organized worker struggles (especially amongst Black workers, who bore the brunt of these changes and disparagingly dubbed the process "niggermation"), through organizations such as the Dodge Revolutionary Union Movement (DRUM) and the League of Black Revolutionary Workers.[25]

23 Singer, *op. cit.*
24 Midnight Notes, *op. cit.*, p.124.
25 Dan Georgakas and Marvin Surkin, Detroit, *I do Mind Dying - A Study in Urban Revolution* (Boston: South End Press, 1975); Stewart Bird, Rene Lichtman, and Peter Gessner, in association with the League of Black Revolutionary Workers, *Finally Got the News* (Detroit: 1970); Charles Denby, *Workers Battle Automation* (Detroit: News and Letters Pamphlet, 1960); Charles Denby, *Indignant Heart: A Black Worker's Journal* (Boston: South End Press, 1989).

Cheap energy has also been essential to reducing the costs of living, in terms of food, shelter, clothing and transportation. In other words, it has been essential for reducing the cost of reproducing the labor force. It is possible to get a McDonalds "meal" for less than a dollar. Social unrest has been contained by facilitating high levels of consumerism that directly improve standards of living. These strategies have converted large (and the dominant) sectors of the US working class into consumers (also of energy), channeling post-war labor conflict into safe outlets while simultaneously driving economic growth.

Consequently, in the US, capital´s collective strategies to control labor, through the twin processes of mechanization and high levels of material consumption require abundant sources of cheap energy. Or, more accurately, they at least require the ability to control energy flows and prices. Energy prices, far from being inevitably decided by the so-called “invisible hand” of pure supply-and-demand, are in fact highly political[26]. Expensive energy can, at times, be useful for controlling the terms on which humans work. In the multiple and interconnected crises (political, economic, financial, energy, food…) of the 1970s, when social struggles were strong, a *direct* attack on labor (including wage cuts) would have been very difficult without provoking fierce resistance. A planned hike in energy (and food) prices provided a highly effective *indirect* attack on wages in the US as well as globally, since rising energy costs also meant a rising cost of living.

> In the current inflation this kind of manipulation of money has been joined by another—the administered increases in the prices of oil... have been achieved by restricting the availability of [this] commodity to back up the price increase... The resultant price increases, that is, the increase in the amount of money required to obtain a given amount of commodity value, have acted to undercut working-class wages all over the world and are part of a world-wide counteroffensive by capital to stem the wage offensive.[27]

There are great problems, inequalities, conflicts and vulnerabilities associated with the current US energy system, and in particular Big Oil. In fact, as is graphically shown by Brooke Singer's map,[28] there is no such thing as the “US energy system”. Rather, it is merely a part of a bigger, and highly stratified, *global* energy system. These problems and inequalities are likely to become increasingly visible as global energy prices rise, and as new energy sources start to replace oil.

---

26 An interesting, though unrelated to the USA, discussion of the political nature of prices including energy prices can be found in Bruno Ramirez, “The Working Class Struggle Against the Crisis: Self Reduction of Prices in Italy," *Zerowork,* 1, 1975.

27 Harry Cleaver, *Reading Capital Politically* (Brighton: Harvester Press, 1979).

28 Singer, *op. cit.*

Without preparation, it is likely that labor in the USA will suffer an enormous and rapid assault, which forseeably could result in a resurrection (albeit in new circumstances) of forms of labor that had been virtually abolished in the energy-rich countries of the global north, especially the USA. One has only to look to the streets, fields and kitchens of India, to see the working (waged and unwaged) and living conditions that flourish in a context where commercial energy is expensive and scarce but labor is both abundant and cheap.

As such, it is important to be highly critical of frenzied efforts to "preserve the American way of life" by substituting oil in cars with a range of agro-fuels which rely on a variety of crops including maize, sugar cane, African palm or canola, through rearrangement of the world-wide division of labor. While the majority of such fuel-crops could be produced locally, and combined with a diversification of agricultural crops, the sheer volume needed, in the context of a world-market economy, is already tending towards monoculture production that is rapidly becoming concentrated in the hands of large multinational companies which intend to give the appearance of changing everything related to the current energy system, while in fact changing nothing at all. This will be addressed later in this text.

Part Five: "Energy Crisis" and a Transition to Renewable Energy

Podobnik[29] and Mitchell[30] have both identified the importance of labor struggle within the energy sector (combined with inter-firm and interstate hegemonic rivalry, topics which are beyond the theme of this paper) in provoking rapid globally reaching energy shifts from one dominant energy source to another, particularly in relation to the shift from wood to coal and from coal to oil. Struggles in the energy sector have undermined the profitability, stability and overall competitiveness of old energy sources, favoring the adoption of a new source, in what amounts to a "product fix" as described by Silver.[31]

> Replacing coal with oil had the collateral advantage of destroying the power bases of traditionally militant mineworkers unions, where in many countries, communists occupied leading roles…[32]

29 Podobnik, *op. cit.*
30 Mitchell, *op. cit.*
31 Silver, *op. cit.*
32 Berman and O'Connor, *op. cit*., pp. 52-53.

This raises the question of the relation between different energy sectors to one another, and the role of labor in this process. From the point of view of capital, the bottom line is whether the profitability of the renewable energy sector can compete with the non-renewable sector. This question is not solely related to labor, but labor nonetheless is an important factor. One major factor preventing a wider adoption of renewable energies has been the subsidy which the low cost of labor within the oil and coal sectors offers these sectors. In other words, the cost of Chinese and South African coal miners, and migrant Gulf and Colombian paramilitarily repressed oil workers. China moved from being the 7th biggest exporter of coal on world-markets in 1994 to being the 2nd biggest in 2002. Between 2000 and 2001, the volume of its coal exports rose by a massive 65.2%.[33] As the Chinese coal sector has expanded in recent years, both for domestic use and for export onto the world-market the number of worker casualties has increased. China's State Administration of Production Safety reported that 2,187 miners died in the first five months of 2005, a 9.7 increase over the same period in 2004, involving a total of 23 major accidents. This was a 274% increase over the same period in the previous year.[34] The conditions and rights of Chinese coal miners has been taken up as a major global campaign by ICEM, the International Federation of Chemical, Energy, Mine and General Workers' Unions, and in 2004 a Memorandum of Understanding was reached with the Chinese government in an effort to improve conditions through technological improvements.[35]

However, the struggles of workers and effected communities within coal and oil are also causing increasing disruption and uncertainty within these sectors, making them less attractive options than they were in the past. Over the last years there has been important worker resistance to the privatization of oil throughout the world, a commodity which largely remains outside of the WTO framework. In Colombia the United Oil Workers Union carried out a number of general strikes lasting several weeks in 2004. In Iraq, under conditions of military occupation from outside and barbaric religious strife from within, the Iraqi oil workers, organized within the Iraqi Federation of Oil Unions (IFOU) have been at the forefront of both secular resistance and resistance to privatization of the Iraqi economy (and especially its oil) in violation of the Hague Convention.

33 Lawrence Medroth, "Impact of WTO Entry on the International Trade of Coal International Energy Agency report for China Mining 2002." Published online at: http://www.iea.org/textbase/papers/2002/lmwto.pdf

34 ICEM, "Deaths in China's Mines a Recurring Nightmare." Published online at: http://www.icem.org/?id=76&doc=583

35 ICEM, "Memorandum of understanding." Published online at: http://www.icem.org/index.php?id=76&doc=1396&la=EN

Furthermore, the oil workers have actively engaged in creating international solidarity networks in the UK, USA and other countries. Essentially, they are struggling for worker's control of the oil.[36]

> In the late 1980s and early 1990s workers from Trinidad to Algeria to Nigeria to the Middle East were in revolt against austerity and structural adjustment policies imposed by the IMF and WB. They refused to starve while knowing that the most vital commodity on the planet was being extracted from their land in front of their eyes without equivalent…The oil proletariat's revolt since the early 1990s has moved out of the cities and into the countryside, e.g., in Chiapas in Mexico, Ogoniland in Nigeria, in Chechnya in Russia, and in the Caspian region. These people are demanding a return for the suffering that oil exploration and extraction has and will impose on them. They are beginning to put formidable roadblocks to the oil industry's desperate advance to the last remaining oil areas of the planet.…They are the people who are living on top of the most important commodity in the world and who must be displaced and humiliated in order to make its extraction profitable.[37]

This, combined with other factors, such as resource scarcity, the availability of large quantities of surplus finance capital, climate change and renewed hegemonic rivalry (all of which are beyond the scope of this paper, but which I hope to deal with in the future), all indicated that the renewable energy sector may be poised for a rapid and far reaching expansion.

Renewable Energy and Labor[38]

A rapid global expansion of the renewable energy sector is underway. The division of labor, workforce, and market associated with the renewable energies sector globally is still relatively small and young compared to most other global industries. The long term evolution of the global workforce, market and ownership structures within the industry is still a very open question. While there are no inevitable outcomes, this does not mean that it will be shaped by chance. On the contrary, the outcome will be almost entirely shaped, directly and indirectly, by human action.

Until relatively recently, renewable energies have employed comparatively few people, and production has still been largely

36 General Union of Oil Employees in Basra website: http://www.basraoilunion.org/

37 Caffentzis *op. cit.*, pp. 19, 20.

38 Much of this section relies on data provided in interviews with Preben Maegaard and Jane Kruse, respectively Director and Head of Information at the Nordic Folkecenter for Renewable Energy in Denmark, carried out in August 2006.

motivated by environmental and ethically/ideologically motivated concerns, rather than simply pure profit. Cooperatives, rather than companies, have frequently been the owners of infrastructure, especially in relation to wind energy in Denmark. These factors have meant that working conditions and wages in the sector have generally been quite good, and there has been a broad convergence of interests between those who own renewable energy companies and the workers within these companies. To date there have been very few, if any, cases of industrial unrest within the sector. The renewable energy sector currently employs over 400,000 people world-wide. Until recently, most production has occurred in high wage countries, especially Germany, Denmark, Japan and to a lesser extent the USA. Germany is the single country with the largest number of people directly employed in renewable energies, with approximately 170,000 people. Of these, 35,000 are employed in solar PV, 55,000 in biomass and 75,000 in wind.

The sector is growing rapidly, by between 20-30% each year globally, and is set to continue growing rapidly in the future. As the numbers of workers involved increase, and as companies increase in size, the industry is going through a major restructuring process. As the global market expands, it is also becoming more concentrated. Small companies are being bought up by larger ones in a process of corporate merger, acquisition and joint venture. In the mid 1980s, there were 22 wind turbine manufacturers in Denmark. Now there are only 2. The history of the Danish windmill manufacturer Vestas is a good example of this process. In 1985 the company employed around 800 people. From 1989 the company opted to engage in mergers, buying out Danish Wind Technology, and Micon in 2004. Simultaneously it also entered into transnational joint-ventures, including with the Spanish company Gamesa (which later became independent). The company's website now describes itself as a "global hi-tech market-leading group with more than 10,600 employees (December 2005)". Denmark is also home to the largest wind turbine blade manufacturer in the world, LM. The company supplies blades to turbine manufacturers throughout the world. Major mergers in the sector include the following: Shell-Solar took over Siemens Solar in 2002, only to be taken over itself by SolarWorld from Germany in February 2006.[39] General Electric have been busy in the last years buying up a range of different renewable energy companies. This includes Tacke-Enron wind company, following the bankruptcy of Enron. General Electric USA also bought out Jenbacher, a leading

39 Renewable Energy Access,"SolarWorld Acquires Shell's Solar Business." Published online at http://www.renewableenergyaccess.com/rea/news/story?id=42840

Austrian manufacturer of cogeneration equipment, as well as in 2004 buying out the US solar PV manufacturer, AstroPower.

On the other hand, new companies are emerging throughout the world, bringing new areas of the world's population into the world-wide division of labor associated with renewable energy. This implies a major restructuring of the global workforce associated with renewable energies. Importantly, low wage areas of the world-economy are being drawn into the commodity chains associated with renewable energy. In a space of just a few years, the Indian wind turbine manufacturer Suzlon has become the 5th largest turbine producer in the world. The company is set to benefit enormously from the current expansion of installed wind capacity in the USA, and plans to install 650 MW there in the coming years.[40] China is also becoming a major site for windmill production, with a flourishing of major new companies such as Goldwind that have successfully managed to attract international financial flows. China has also rapidly become a world leader in solar thermal production and use, accounting for 55 percent of global solar heating capacity by the end of 2003.[41] Brazil is becoming one of the key global suppliers of sugar, the raw material for ethanol production for the world market, especially the USA, which is seeking to rapidly expand its ethanol consumption. Sugar is a low wage/low value raw material sector that is produced for export to a high wage consumer country in the world economy, where it will be processed into high value fuels, a division of labor characteristic of core-periphery relations in commodity chains.[42] Heralded as the great success of the renewable energy sector, such a worldwide expansion to low wage zones of the world economy also provides the material basis to be able to compete much more successfully with the fossil and nuclear sectors.

The renewables sector is still a comparatively new and weak sector relative to other sectors. This has meant that different interests within the sector have found common ground, making possible an alliance between producers and consumers, small producers and large producers, small consumers and large consumers, ecological concerns and profit motives, workers and companies/employers, grid connection and stand alone, commercial and non-commercial energy use. All of this has been essential in building up the sector from nothing to the impressive position it is in now. However, as the industry continues to

40 Oliver Lonker, "Wind Bonanza," *New Energy: Magazine for Renewable Energy*, August 4, 2006, p. 22.

41 Zijun Li, "Solar Energy Booming in China." Published online at: http://www.worldwatch.org/node/41

42 Via Campesina,"Full Tanks at the Cost of Empty Stomachs: The Expansion of the Sugarcane Industry in Latin America." Published online at: http://www.viacampesina.org/main_en/index.php?option=com_content&task=view&id=284&Itemid=27

expand globally and to gain strength in relation to other industrial sectors, both in terms of market share and production capacity, this broad alliance is starting to come into question as conflicts of interest reveal themselves.

As companies are in fierce competition with one another globally, so too are their workers (and potential workers) in different parts of the world. While it is too early to really tell, there are some initial indicators that, just as with other energy sources, renewable energies is slowly becoming a site of worker unrest. As the sector expands, so too is the struggle over whether capital or labor should bear the costs. Early rumblings of labor unrest could already be seen in relation to the take over of the Danish wind turbine manufacturer Bonus by the German multinational Siemens. When management attempted to replace all the Bonus Flags at the main entrance to the company headquarters with Siemens flags, workers spontaneously laid down tools, and did not resume work until half of the Siemens flags had been replaced with Bonus flags. This was on the very same day that Siemens officially took over Bonus. Perhaps more significantly, workers in low wage areas of the world have started resisting the role they are being assigned into the new global division of labor associated with the sector. Earlier this year, several hundred peasants, mostly women, belonging the Brazilian Landless Workers Movement, MST, occupied an ethanol sugar plant belonging to the US multinational Cargill.[43] In Colombia, autonomous black communities, themselves descendents of slaves, have been displaced and massacred by paramilitary terror in order to clear land for monoculture plantations of African Palm in order to produce palm oil for the world market. This has been resisted for many years by organizations such as the Process of Black Communities.[44] Resistance is also growing in relation to wind farms that serve industry over subsistence farming. In China 3 peasants were killed by police in the course of their protests.[45] In Mexico, Oaxacan indigenous communities are in an ongoing struggle against wind farm Mega-projects which are being built as part of an industrial corridor to serve the needs of US and Mexican capital, under the free trade agreement

43 Via Campesina "Via Campesina women protest against a Cargill ethanol plant in São Paulo." Published online at: http://www.viacampesina.org/main_en/index.php?option=com_content&task=view&id=283&Itemid=39

44 Claire Hall, "Biodiesel, Palm Oil and Afro-Colombian Communities," Schumacher Institute for Sustainable Systems, December 2006, Challenge Paper 2. Published online at: http://www.schumacherinstitute.org.uk/downloads/challenge_papers/siss_cp2_BioFuels.pdf

45 Liu Yong, "Warnings, jailings reported in China Protest Deaths", Reuters, China Digital Times. Published online at: http://chinadigitaltimes.net/2006/05/warnings_jailings_reported_in_china_protest_deaths_reut.php

Plan Puebla Panama.[46] Interestingly, the Indian wind turbine manufacturer Suzlon, mentioned earlier, has introduced a corporate social responsibility program for workers which includes health care, evidence that the company considers it essential to keep its work force under control.

Another major factor effecting the expansion of the renewable energy sector and a possible transition is the millions of workers throughout the world who are currently employed within the fossil and nuclear energy sectors, and whose livelihoods directly depend on the continuance of these sectors. In recent years, there has been great hostility to the renewable energy sector coming from these (highly organized) workers, especially from many mass labor organizations in the largest energy consuming countries, where energy. workers represent a considerable proportion of the workforce, and where their opinions carry weight with policy makers. Due to extensive political lobby work from fossil and nuclear energy companies that seeks to equate higher levels of energy consumption, and in particular fossil fuel and nuclear, with higher standards of living, jobs and economic growth, a largely false division has been created between labor and renewable energies. Many of the major trade union groupings in these countries, such as the American Federation of Labor and Congress of Industrial Organizations (AFL-CIO) in the USA, or the European Trade Union Confederation (ETUC) within the EU, as well as the International Confederation of Free Trade Unions (ICFTU,) indeed do have a pretty clear record on denying the reality of climate change and the need for a transition to renewables. When they do recognize the need, they frequently are incredibly cautious, subordinating the demands of a transition to the renewable energy to the demands of job security in the existing energy sectors, and fail to clearly come down in favor of only using renewable energy.[47] In Ukraine, site of the Chernobyl disaster, anti-nuclear activists from the organization Rainbow Keepers have been beaten up by workers from the nuclear power stations, with an attack led by over 500 workers headed by a local trade union leader.[48]

46 Al Giordano, “Don Marcos of La Selva vs. The Mega-Windmill of Capitalism,” Narconews. Published online at: http://www.narconews.com/Issue40/article1607.html

47 European Trade Union Confederation (ETUC), *The European Energy Policy, Resolution Adopted by the ETUC Executive Committee in Brussels*, March 14-15, 2006. ICFTU/TUAC/ETUC, *Securing Consensus Through Social & Employment Transition for Climate Change* (Buenos Aires: Trade Union Statement to COP104, December 6-17, 2004).

48 Rainbow Keepers “Environmentalist Camp attacked by Nuclear Power Plant Workers.” Published online at: http://flag.blackened.net/agony/rainbow.html#rk

However, workers (including energy sector workers) organizations have not always show hostility to renewable energy, and there is no reason to assume it has to be this way in the future. Already in the 1950s, the United Auto Workers in the US took the US Atomic Energy Commission to court over the construction of the experimental Fermi nuclear reactor, assuming a leading role in the emerging movement against nuclear power, together with the International Union of Electrical Workers and United Paper Workers of America.[49] As early as the 1970s, organizations such as Environmentalists for Full Employment in the US produced and publicized numerous studies showing how a transition to renewable energy would have far reaching positive impact in terms of job creation. Furthermore, they demonstrated how high energy consuming sectors tended to actually destroy jobs, since energy inputs were used to power machines that made human labor redundant. Several important mass trade unions in the US came down heavily in favor of a rapid shift to publicly controlled renewable energy that would use and build on existing skills and workforces. Amongst those taking this stance were the International Association of Machinists and Aerospace Workers presided by William Winpisinger, the Sheetmetal Workers International Association, presided by Edward Carlaugh, the United Autoworkers Association, and even the Oil, Chemical and Atomic Workers International Union. All of these unions belonged to the major trade union grouping, AFL-CIO.[50]

In recent years there is again a growing movement towards what is becoming known as a “just transition”, with many labor organizations recognizing the urgent need to address climate change and implement a transition to energies. The concept of “just transition” is based around ensuring that the transition is not carried out at the expense of workers in the existing energy sectors, but rather on their terms and utilizing their skills and knowledge, and retraining workers where necessary. Labor organizations which currently have a strong policy statement on just transition include the International Federation of Chemical, Energy, Mine and General Workers' Unions (ICEM), the Canadian Labor Congress (CLC), the Canadian Union, the Communication, Energy and Paper Workers Union of Canada (CEP), and the Environmental Justice and Climate Change Initiative in the USA, and the Transition Alliance in the USA. The multi-stakeholder dialogue in international conference, Bonn Renewables 2004 also included a significant voice from labor, albeit some more favorable to renewable energies than others.[51]

49 John Fuller, We Almost Lost *Detroit (*New York: Ballantine Books, 1975), p. 57.
50 Richard Grossman and Gail Daneker, *Energy, Jobs and the Economy* (Boston: Alyson Publications, 1979).

Conclusion: Transition, Class Struggle and Uncertain Outcomes

The twentieth century, especially in the post-World War II period, has seen "expensive labor" and "cheap energy" go hand in hand with one another. This has been an integral factor in preventing and containing class struggle throughout the world, as well as being an essential component of US hegemony. This begs the question will renewable energies offer the same possibilities for capital as oil has or not?

Some kind of major global energy shift is certain to occur.[52] The question is no longer *whether* a shift will occur, but rather what kind of shift it will be, based on which priorities and technologies, and, above all, who will reap the benefits and who will pay the costs? What might relationship between workers in renewable and non renewable energy sectors be? Who will be able to harness the labor necessary for production? (as well as knowledge, raw materials and money?). How will relations between waged and unwaged labor forms change?

As existing energy supplies becomes more expensive (in monetary, social, political and environmental terms), there is likely to be a corresponding effort on the part of capital to cheapen labor (not just in terms of reducing wages, but also other costs of labor), especially in parts of the world like the US where escalating labor costs have been at least partially kept at bay with cheap energy (unless the costs can be successfully exported to other parts of the world-wide division of labor). Given that cheap energy has been essential for reducing the costs of reproducing labor, who pay the increased costs of reproduction? Will capital be able to shift the increasing costs of reproduction onto labor (especially unwaged domestic and agricultural labor, predominantly carried out by women) or will labor refuse to accept this? And, if energy prices rise suddenly rather than gradually, we can also expect the assault on labor to be equally rapid and sudden, though this is rarely considered when discussing energy transition, and seems set to take people by surprise, especially those who will suffer most from the effects.

---

51 There are several important texts: Canadian Labour Congress, "Just Transition For Workers During Environmental Change." Published online at: http://canadianlabour.ca/updir/justransen.pdf#search=%22Just%20Transition%20For%20Workers%20During%20Environmental%20Change%22; ICEM Labor and Climate Change, an ICEM Position (Brussels); Communication, Energy and Paper Workers Union of Canada (CEP), "Just Transition: A Labour Response to Environmental Problems." Published online at: http://www.cep.ca/policies/policy_915_e.pdf; Bonn Renewables 2004, "Conference Documentation", published online at: http://www.renewables2004.de/en/documentation/default.asp

52 Podobnik, *op. cit.*

Another important area of with regard to labor and renewable energy concerns knowledge workers in the sector. Renewable energy is a highly specialized sector dependent on a still small number of trained personnel.[53] The ability to harness knowledge and inventive power produced through relations of cooperation of knowledge workers is becoming increasingly central to capital accumulation. An important uncertainty exists as to whether knowledge workers will devote their skills to the service of an expansion of the renewable energy sector on the terms of capital accumulation and global intellectual property regimes such as the WTO intellectual property agreement, or whether they will instead dedicate their services to social movements for non-commercial energy use. Who will get trained and for what purposes?

Most of the infrastructure for renewable energies (such as wind turbines, solar panels, ethanol stocks) etc simply do not yet exist on the necessary scale. Given how late transition to these new sources is being left, it will have to occur very rapidly once the existing energy regime suddenly loses its viability, as it almost certainly will in the very near future. The implications of this are that workers in the new energy sectors are going to have to produce energy infrastructure very rapidly and under great pressure, a scenario which in all probability will necessitate very high levels of productivity being forcibly imposed on these workers in order to achieved the desired high levels of output in very short time spans.

On the one hand, these questions are likely to be important contributory factors in determining the outcome of current processes of global inter-state rivalry for control of accumulation processes in the sector, a question identified by Podobnik.

> What is probably most crucial is how ascendant nations like China, India, South Korea, and Brazil respond to contemporary energy challenges. If these nations tap their increasingly skilled working classes to mass produce fuel cells, wind turbines, solar panels, and components for the hydrogen infrastructure, then the transition to a renewable energy system can be greatly accelerated.[54]

However, as the above text has attempted to show, it is far from self-evident that the "industrial peace" that the renewable energy sector has known until now will continue. Indeed, it is quite possible that renewable energy production will become an important site of industrial labor unrest in the coming years, just as most other energy sectors have been in the past. Such unrest is especially likely to increase as the production of renewable energy infrastructure

53 Bonn Renewables, 2004, *op. cit.*
54 Podobnik, *op. cit.*, p.256.

globalizes towards areas of the world with lower labor costs, in particular with India and China, as is clearly already underway in relation to wind and solar energy, or Brazil in the case of ethanol. The possibility of large-scale worker struggle within the sector raises important strategic questions for those struggling for a transition to renewable energies as well as workers within other energy sectors. And, the outcome of such struggles is very likely to play an important role in shaping the course of any future transition towards renewable energies.

On the other hand, there is the question of a renewed round of global class struggle within the world-wide division of labor as a whole, not just within the energy sector.

> The point I want to stress is that the "Peak Oil" hypothesis is now becoming an early 21st century justification for an attack on pensions, wages and workers' guarantees in the so-called advanced capitalist countries… The permanently increased energy costs presaged by the "Peak Oil" hypothesis are now a convenient way for capitalists to invoke the need for "austerity" (for their workers) long before the actual exhaustion of oil… is on the horizon. Thus, this hypothesis is an even more pernicious tool in class struggle than the energy limitation ideology of the 1970s… The hidden assumption…is that increased energy prices (for corporations) inevitably require a reduction of the wage rate instead of a reduction of the profit rate. In other words, Peak Oil politics assumes that the working class will finance the transition from cheap to expensive oil come what may. Given the present configuration of class forces in the US, this assumption is perhaps a good bet, but it is a far from necessary outcome.[55]

Considerations of the capital-labor conflict at which are central to a discussion on energy add a considerable element of uncertainty into any center of the expansion of the renewable energy sector, and the uncertainty to any discussion of transition to renewable energy. This invites cautious speculation about the extent to which renewable energy will provide a material basis for either the continued expanded reproduction of capitalist social relations or for the construction of non-capitalist social relations of production and reproduction, especially in the long term.

> For workers, however, if capital is less able to control them by using machinery, the period of energy price rises presents an opportunity to take advantage of capital's weakness. The "energy crisis"…therefore, promises to be a period of heightened workers' struggles, and the potential exists for working class victory despite, or even because of, depression, unemployment and war.[56]

55 Caffentzis, *op. cit.*, p. 175.
56 Norre and Turner *op. cit.*, p. 23.

There are no obvious or inevitable answers to these questions. They are not technical questions, but rather political ones. And, while there is plenty of room for more research in these questions, the questions are not fundamentally research questions. The answers lie with the concrete historical evolution of the renewable energy sector, the capitalist world-system, and the outcome of the intertwined struggles which shape these processes, struggles which in all probability we are only in the very early phases of in the current moment. There is an urgent need to appreciate the open nature of the "energy crisis" and its "solutions", in order to actively prepare for and participate in the struggles that these entail.

Save The Planet From Capitalism: An Open Letter On Climate Change

Evo Morales

Sisters and brothers:

Today, our Mother Earth is ill. From the beginning of the 21st century we have lived the hottest years of the last thousand years. Global warming is generating abrupt changes in the weather: the retreat of glaciers and the decrease of the polar ice caps; the increase of the sea level and the flooding of coastal areas, where approximately 60% of the world population live; the increase in the processes of desertification and the decrease of fresh water sources; a higher frequency in natural disasters that the communities of the earth suffer[1]; the extinction of animal and vegetal species; and the spread of diseases in areas that before were free from those diseases.

One of the most tragic consequences of the climate change is that some nations and territories are the condemned to disappear by the increase of the sea level.

Everything began with the industrial revolution in 1750, which gave birth to the capitalist system. In two and a half centuries, the so called "developed" countries have consumed a large part of the fossil fuels created over five million centuries.

Competition and the thirst for profit without limits of the capitalist system are destroying the planet. Under Capitalism we are not human beings but consumers. Under Capitalism mother earth does not exist, instead there are raw materials. Capitalism is the source of the asymmetries and imbalances in the world. It generates luxury, ostentation and waste for a few, while millions in the world die from

1 Due to the "Niña" phenomenon, that becomes more frequent as a result of the climate change, Bolivia has lost 4% of its GDP in 2007.

hunger in the world. In the hands of Capitalism everything becomes a commodity: the water, the soil, the human genome, the ancestral cultures, justice, ethics, death… and life itself. Everything, absolutely everything, can be bought and sold and under Capitalism. And even "climate change" itself has become a business.

"Climate change" has placed all humankind before great choice: to continue in the ways of capitalism and death, or to start down the path of harmony with nature and respect for life.

In the 1997 Kyoto Protocol, the developed countries and economies in transition committed to reduce their greenhouse gas emissions by at least 5% below the 1990 levels, through the implementation of different mechanisms among which market mechanisms predominate.

Until 2006, greenhouse effect gases, far from being reduced, have increased by 9.1% in relation to the 1990 levels, demonstrating also in this way the breach of commitments by the developed countries.

The market mechanisms applied in the developing countries[2] have not accomplished a significant reduction of greenhouse effect gas emissions.

Just as well as the market is incapable of regulating global financial and productive system, the market is unable to regulate greenhouse effect gas emissions and will only generate a big business for financial agents and major corporations.

The earth is much more important than stock exchanges of Wall Street and the world.

While the United States and the European Union allocate 4,100 billion dollars to save the bankers from a financial crisis that they themselves have caused, programs on climate change get 313 times less, that is to say, only 13 billion dollars.

The resources for climate change are unfairly distributed. More resources are directed to reduce emissions (mitigation) and less to reduce the effects of climate change that all the countries suffer (adaptation).[3] The vast majority of resources flow to those countries that have contaminated the most, and not to the countries where we have preserved the environment most. Around 80% of the Clean Development Mechanism projects are concentrated in four emerging countries.

2 Known as the Clean Development Mechanism.

3 At the present there is only one Adaptation Fund with approximately 500 million dollars for more than 150 developing countries. According to the UNFCCC Secretary, 171 billion dollars are required for adaptation, and 380 billion dollars are required for mitigation.

Capitalist logic promotes a paradox in which the sectors that have contributed the most to deterioration of the environment are those that benefit the most from climate change programs.

At the same time, technology transfer and the financing for clean and sustainable development of the countries of the South have remained just speeches.

The next summit on Climate Change in Copenhagen must allow us to make a leap forward if we want to save Mother Earth and humanity. For that purpose the following proposals for the process from Poznan to Copenhagen:

Attack the Structural Causes of Climate Change

1. Debate the structural causes of climate change. As long as we do not change the capitalist system for a system based in complementarity, solidarity and harmony between the people and nature, the measures that we adopt will be palliatives that will limited and precarious in character. For us, what has failed is the model of "living better", of unlimited development, industrialisation without frontiers, of modernity that deprecates history, of increasing accumulation of goods at the expense of others and nature. For that reason we promote the idea of Living Well, in harmony with other human beings and with our Mother Earth.
2. Developed countries need to control their patterns of consumption - of luxury and waste - especially the excessive consumption of fossil fuels. Subsidies of fossil fuel, that reach 150-250 billions of dollars[4], must be progressively eliminated. It is fundamental to develop alternative forms of power, such as solar, geothermal, wind and hydroelectric both at small and medium scales.
3. Agrofuels are not an alternative, because they put the production of foodstuffs for transport before the production of food for human beings. Agrofuels expand the agricultural frontier destroying forests and biodiversity, generate monocropping, promote land concentration, deteriorate soils, exhaust water sources, contribute to rises in food prices and, in many cases, result in more consumption of more energy than is produced.

4 Stern report.

Substantial Commitments to Emissions Reduction That Are Met

4. Strict fulfilment by 2012 of the commitments[5] of the developed countries to reduce greenhouse gas emissions by at least by 5% below the 1990 levels. It is unacceptable that the countries that polluted the planet throughout the course of history make statements about larger reductions in the future while not complying with their present commitments.
5. Establish new minimum commitments for the developed countries of greenhouse gas emission reduction of 40% by 2020 and 90% by for 2050, taking as a starting point 1990 emission levels. These minimum commitments must be met internally in developed countries and not through flexible market mechanisms that allow for the purchase of certified emissions reduction certificates to continue polluting in their own country. Likewise, monitoring mechanisms must be established for the measuring, reporting and verifying that are transparent and accessible to the public, to guarantee the compliance of commitments.
6. Developing countries not responsible for the historical pollution must preserve the necessary space to implement an alternative and sustainable form of development that does not repeat the mistakes of savage industrialisation that has brought us to the current situation. To ensure this process, developing countries need, as a prerequisite, finance and technology transfer.

An Integral Financial Mechanism to Address Ecological Debt

7. Acknowledging the historical ecological debt that they owe to the planet, developed countries must create an Integral Financial Mechanism to support developing countries in: implementation of their plans and programmes for adaptation to and mitigation of climate change; the innovation, development and transfer of technology; in the preservation and improvement of the sinks and reservoirs; response actions to the serious natural disasters caused by climate change; and the carrying out of sustainable and eco-friendly development plans.

5 Kyoto Protocol, Art. 3.

8. This Integral Financial Mechanism, in order to be effective, must count on a contribution of at least 1% of the GDP in developed countries[6] and other contributions from taxes on oil and gas, financial transactions, sea and air transport, and the profits of transnational companies.
9. Contributions from developed countries must be additional to Official Development Assistance (ODA), bilateral aid or aid channeled through organisms not part of the United Nations. Any finance outside the UNFCCC cannot be considered as the fulfillment of developed country's commitments under the Convention.
10. Finance has to be directed to the plans or national programmes of the different States and not to projects that follow market logic.
11. Financing must not be concentrated just in some developed countries but has to give priority to the countries that have contributed less to greenhouse gas emissions, those that preserve nature and are suffering the impact of climate change.
12. The Integral Financial Mechanism must be under the coverage of the United Nations, not under the Global Environment Facility (GEF) and other intermediaries such as the World Bank and regional development banks; its management must be collective, transparent and non-bureaucratic. Its decisions must be made by all member countries, especially by developing countries, and not by the donors or bureaucratic administrators.

Technology Transfer to Developing Countries

13. Innovation and technology related to climate changes must be within the public domain, not under any private monopolistic patent regime that obstructs and makes technology transfer more expensive to developing countries.
14. Products that are the fruit of public financing for technology innovation and development of have to be placed within the public domain and not under a private regime of patents[7], so that they can be freely accessed by developing countries.

6 The Stern Review has suggested one percent of global GDP, which represents less than 700 billion dollars per year.

7 According to UNCTAD (1998), Public financing in developing countries contributes with 40% of the resources for innovation and development of technology.

15. Encourage and improve the system of voluntary and compulsory licenses so that all countries can access products already patented quickly and free of cost. Developed countries cannot treat patents and intellectual property rights as something “sacred” that has to be preserved at any cost. The regime of flexibilities available for the intellectual property rights in the cases of serious problems for public health has to be adapted and substantially enlarged to heal Mother Earth.
16. Recover and promote indigenous peoples practices in harmony with nature which have proven to be sustainable through centuries.

Adaptation and Mitigation With the Participation of All the People

17. Promote mitigation actions, programs and plans with the participation of local communities and indigenous people in the framework of full respect for and implementation of the United Nations Declaration on Rights of Indigenous Peoples. The best mechanism to confront the challenge of climate change are not market mechanisms, but conscious, motivated, and well organized human beings endowed with an identity of their own.
18. The reduction of the emissions from deforestation and forest degradation must be based on a mechanism of direct compensation from developed to developing countries, through a sovereign implementation that ensures broad participation of local communities, and a mechanism for monitoring, reporting and verifying that is transparent and public.

A UN for the Environment and Climate Change

19. We need a World Environment and Climate Change Organization to which multilateral trade and financial organizations are subordinated, so as to promote a different model of development that environmentally friendly and resolves the profound problems of impoverishment. This organization must have effective follow-up, verification and

sanctioning mechanisms to ensure that the present and future agreements are complied with.

20. It is fundamental to structurally transform the World Trade Organization, the World Bank, the International Monetary Fund and the international economic system as a whole, in order to guarantee fair and complementary trade, as well as financing without conditions for sustainable development that avoids the waste of natural resources and fossil fuels in the production processes, trade and product transport.

In this negotiation process towards Copenhagen, it is fundamental to guarantee the participation of our people as active stakeholders at a national, regional and worldwide level, especially taking into account those sectors most affected, such as indigenous peoples who have always promoted the defense of Mother Earth.
Humankind is capable of saving the earth if we recover the principles of solidarity, complementarity, and harmony with nature in contraposition to the reign of competition, profits and rampant consumption of natural resources.

November 28, 2008
Evo Morales Ayma
President of Bolivia

A Discourse On Prophetic Method

Oil Crises and Political Economy, Past and Future[1]

George Caffentzis

So Foxy Loxy led Chicken Little, Henny Penny, Ducky Lucky, Goosey Loosey, and Turkey Lurkey across a field and through the woods. He led them straight to his den, and they never saw the king to tell him that the sky is falling. —The Story of Chicken Little

I. Introduction: The Age of Chicken Little

There is definitely a sense of crisis in the air and many a Chicken Little is running down the road to tell the king that the sky is falling. Oil prices have hit a $100+ a barrel and the housing bubble is bursting, followed by the inevitable pain of millions of people whose homes have been foreclosed. Add to this the collapse of dozens of financial corporations and the efforts of thousands of jittery bankers trying to calm the even more jittery anxieties of millions of depositors and stockholders and you get the sense that Nature and Capital are joining forces to write in bold letters across the social skies: THE END IS NEAR.

People like myself, who have lived through a number of crises "real or fancied," are not so easily aroused by the apocalyptic pathos that accompany the Littles' announcement. I think back with a superior

1 This paper was originally a talk given at the Left Forum, Cooper Union, New York, NY, March 16, 2008.

smile at Marx's almost childish rejoicing over the financial crisis of 1857-8 that inspired him to write the glorious midnight notebooks we now call the *Grundrisse*. He often wrote until 4:00 AM in the winter of 1857-58, fortified by "mere lemonade on the one hand but an immense amount of tobacco on the other… so that I at least get the outlines clear before the *deluge*."[2] I treasure the notebooks, but I frown on Marx's expectation that a mere financial panic would bring a world system like capitalism to the brink of catastrophe. The deluge Marx was expecting did not come (at least not for more than a decade). After studying literally dozens of financial bubbles (and their bursting) and of commodity price explosions (and their crashes)—indeed, since the 1857-8 crisis also involved the price of gold, there was a meeting of commodity price and financial bubble then as well—I have become blasé over the prophets of doom (who were often hoping to make some profit on the side!)

The themes I have harped on in my writing is that:

1. capitalism is not only crisis-prone but it is also crisis-creative (so whenever one sees a crisis one should not assume this is a problem for the capitalist class, even though it might be one for individual capitalists, for a crisis might end by putting the capitalist class as a whole in a more powerful position), as Naomi Klein has recently reminded us;[3]
2. the hope to find a short-cut to go beyond capitalism through Natural limits (whether it be "Peak Oil" or "Global Warming") is understandable, but it is misplaced—the only path for a positive "transition" from capitalism is through a political recomposition of the working class internationally.[4]

The problem with the optimists of either variety is that they tend to disarm the anti-capitalist movement and can make us vulnerable to dangerous political assumptions. In other words, I am more concerned about Foxy Loxey's murderous intentions than Chicken Little's inferences from her experiences, even though, eventually, of course, Chicken Little will be right!

For all my insouciance, however, my comrades and I knew that a major crisis of global neoliberalism was on the agenda long ago. The first sign was "the Asian financial crisis" which was ignited by the first wage rebellion in the Eastern Asia (South Korea, Indonesia, Thailand) of

2 Quoted in Francis Wheen, *Karl Marx: A Life* (New York: W. W. Norton & Co., 1999) p. 227.

3 Naomi Klein, *The Shock Doctrine: The Rise of Disaster Capitalism* (New York: Henry Holt and Company, 2007).

4 George Caffentzis, "The Work/Energy Crisis and the Apocalypse," In *Midnight Oil: Work, Energy, War 1973-1992,* Ed. Midnight Notes Collective, (Brooklyn,NY: Autonomedia, 1992).

the globalization era in 1996.[5] The subsequent banking crisis echoes in Russia, Argentina and Brazil and the "dot.com" equities crash in the US called for a new phase of globalization, often called the "war on terrorism." The second crisis was instigated by the military failures of the US invasions of Iraq and Afghanistan, since they bode ill for a world regime that required military dominance to back its financial and ideological dominance (with the dollar the "god of the market" and the universalization of commodification as the practical maxim). When the unity of the series dollar-market-gun collapsed, a situation similar to the period between World War I and World War II opened up... so you see, I too had my prophetic globe tucked somewhere in my pocket. I just did not see this awaited crisis around every corner and did not want to play the role of a jolly "Chicken Little" that Marx played 150 years ago.[6]

It is time, now, for me to take out my prophetic crystal from my pocket. However, I will not join Henny Penny and the others on the road to the king. I make no prophesies in this presentation. I will instead set the stage for the methodological analysis of the many prophesies concerning the coming crises that will come. My main negative maxims in this effort are:

1. the rejection of "oil and energy exceptionalism," i.e., the view that oil and energy are so important for the capitalist system the "rules of the commodity" do not apply to them (basic commodities are *still* commodities);
2. the rejection of the fetishistic view of oil and energy production as being classless and workerless. One can read books and books about the magnates, shahs and sheiks of the oil world, and books and books about oil geology but never learn that oil and energy is produced in a class society by workers (i.e., the oil-producing proletariat) who are involved in a class antagonism with capital at the well head, across the oil regions, along the pipelines, in the tankers, and in the cities of oil producing countries.

Their struggle is crucial for world history, but it is rarely mentioned in these books. Petroleum fumes apparently produce strange abstractions. The avoidance of class struggle that would be impossible with coal (where the struggle of the miners is always front and center) is commonplace for oil!

---

5 Midnight Notes Collective, *Midnight Notes 12: One No and Many Yeses,* Originally Published 1997, Accessed online at http://www.midnightnotes.org/oneno.html.

6 Sergio Bologna, *Money and Crisis: Marx as Correspondent of the New York Daily Tribune, 1856-57*. Translated and printed in *Common Sense*, Nos. 13-14, 1973.

This is a panel on "The Political Economy of Oil, Energy and Environment," but I will reverse the title and examine the impact of "Oil, Energy, and Environment" *on* Political Economy. I will further limit my efforts in "comparative crisisology" today to the impact of oil prices and the relations of production in the oil industry on the political economy of Keynesianism and global neoliberalism. Finally, I will compare the commonalities of and differences between the crisis now developing and the main crisis of capitalism I (and many others in this room) lived through, i.e., the crisis of 1973-1980. In doing so, I will sketch out the role of oil prices and rents in the general situation of the coming crisis.

In fact, there are many aspects of the present that have an eerie resemblance to the "energy crisis" of the 1970s. First there is the oil price: on March 4, 2008 "the highest trading price, $103.95 a barrel on the New York Mercantile Exchange, broke the record set in April 1980 during the second oil shock. That price, $39.50 a barrel, equals $103.76 today, when adjusted for inflation."[7] Second is the war: the US military defeat in Vietnam is echoed in the military quagmire of Iraq and Afghanistan. Third is the ideology of scarcity and apocalypse: the present anxiety expressed by the Peak Oil enthusiasts is reminiscent of the Club of Rome's widely heralded "Limits to Growth." Fourth is the monetary anxiety: the dollar's loss of its hegemonic role in world exchanges (especially oil exchanges) is similar to Nixon's cutting of the connection between the dollar and gold. This last change is further reflected in a golden mirror: the $750 per ounce peak in 1980 is matched (though not in real terms this time) by the return and surpassing of its nominal peak (gold would have to reach about $1850 per ounce to equal its 1980 price adjusted for inflation) in early 2008. I feel I'm in a situation now that is similar to the one in 1980 when I wrote "The Work/Energy Crisis and the Apocalypse," i.e., I knew that a new political economy was on the agenda, but I did not know yet all of its lineaments.

I hope by this methodological investigation in comparative crisisology and the discussion it might provoke that we will be somewhat clearer about these lineaments.

7 Jad Mouawad, "Oil Tops Inflation-Adjusted Record in Set in 1980," *New York Times*, March 4, 2008.

Terminological Reflections: Crisis, Collapse, Catastrophe, Singularity, and My Favorite, Apocalypse

Before I begin my discourse, I should say a few words about the notion of crisis. This is a period when the word "Crisis" is frequently in use and even its astrological and medical roots are making a return to collective awareness. Though it was often deployed to describe social, political and economic affairs in the 19th century, the term suffers from semantic inflation in the 21st. It is widely recognized that it now has a variety of meanings and an ever-growing trail of cognates like "collapse," "catastrophe," "singularity," and my personal favorite "apocalypse."

Let me first turn to "crisis" and attempt to use an old method of categorization that was introduced by Plato, the method of division. There are a variety of dimensions that crisis can be assessed. I will list just four:

1. a crisis can be of capital's or the working class' social reproduction[8];
2. a crisis can be a crisis *of* capitalism or a crisis *within* capitalism[9];
3. a crisis can be planned or unplanned;
4. a crisis can arise from chronic long-term tendencies (the falling rate of profit; overproduction) or be the product of a transient conjuncture.

Of course, the disjunctions are inclusive not exclusive. Not taking the possible inclusivity of the disjunction into account, there are 16 possible crisis types that are available. An application of this framework, for example, would be in the analysis of Antonio Negri's view of the Great Depression. According to my reading of his conclusions, it was capital's crisis of social reproduction and indeed it was a crisis *of* capital, that was unplanned, and it arose from a combination of chronic tendencies and the conjuncture of the Russian Revolution and "the technological path of repression" that was adopted to counter Communist workers.[10]

This framework for the theory of crises, although rather elaborate, does not include a number other terms recently used to

8 George Caffentzis, "On the Notion of a Crisis of Social Reproduction: A Theoretical Review," In *Women, Development and the Labor of Reproduction,* Ed. Maria Rosa Dalla Costa and Giovanna Dalla Costa (Trenton, NJ: Africa World Press, 1999).

9 Michael Lebowitz, Beyond Capital, Second edition (New York: Palgrave-Macmillan, 2003) p. 165.

10 Antonio Negri, "Keynes and the Capitalist Theory of the State," in Michael Hardt and Antonio Negri, *Labor of Dionysus: A Critique of the State-Form (*Minneapolis: University of Minnesota Press, 1994).

describe the transcending of the limits of a social structure like capitalism. They include "collapse," "catastrophe," and "singularity." Each of them had their own genealogy, of course. "Collapse" had its popular root in the peculiar demise of the Soviet Union in the late 1980s. What had been claimed to be the most powerful entrenched political party in the planet, the Communist Party of the Soviet Union, armed with nuclear weapons and in control of an army of millions, somehow peacefully went out of business without a shot being fired. The Communist Party in the Soviet Union was not "pushed" out of power either by an internal working class revolt or by an external agent, it just simply "collapsed" the way that a physical structure like a bridge or a building breaks down with just "normal" usage. Actually existing communism was apparently too heavy for its own foundations.

This term was developed by Joseph Tainter in his timely 1990 book, *The Collapse of Complex Societies,*[11] and then more recently by Jared Diamond in his 2005 book*, Collapse: How Societies Choose to Fail or Succeed*.[12] It has increasingly been used to describe the possibility of the United States economy suffering a similar fate to the Soviet Union's. Dmitry Orlov has ironically deployed the term to describe the fate of the United States in some not-too-distant future that is experiencing the impact of Peak Oil using the Russian experience as a standard.[13]

"Collapse" is an attractive term for those who want to view society as an energy-processing structure, with a given set of rules of social reproduction that increase in complexity in the face of problems. Inexorably, increasing complexity at first brings increasing "energy capture" but eventually it becomes subject to the law of diminishing returns. This leads to collapse, i.e., a sudden return to a lower level of complexity. Some Peak Oil supporters like Richard Heinberg have adopted this notion as a way of describing their vision of the consequences of living on the "other side" of Hubbert's curve.[14] From this perspective, some societies have rules of reproduction that are sustainable and that lead to "success" while others do not and lead to "failure," i.e., collapse, given changing environmental constraints.

The meaning of "collapse" in this context is closest to that of "a crisis of social reproduction" I mentioned above. (If, according to this

11 Joseph Tainter, *The Collapse of Complex Societies* (Cambridge: Cambridge University Press, 1990).

12 Jared Diamond, *Collapse: How Societies Choose to Fail or Succeed* (New York: Viking Books, 2005).

13 Dimitry Orlov, "Closing the 'Collapse Gap': The USSR was better prepared for collapse than the US," *Energy Bulletin*, originally published 2006, accessed at http://www.energybulletin.net/node/23259.

14 Richard Heinberg, *The Party's Over: Oil, War and the Fate of Industrial Societies* (Gabriola Island, BC: New Society Publishers, 2003) pp. 32-36.

reversal of the classical "progressive" stage theory of history scheme, Communism collapsed back into Capitalism, then will Capitalism collapse back into Feudalism?)

Finally, there are terms coming from the field of non-linear mathematics like "catastrophe" and "singularity." They have had a faddish presence in economics and philosophy in the past.[15] In this discontinuous and turbulent climate, they undoubtedly will get re-examined. I should also mention, my personal favorite, a borrowing from theological discourse: Apocalypse. As I wrote of the "end of world" apocalyptic discourse in 1980 when the "Club of Rome" rhetoric was giving way to nuclear "exterminism":

> Whenever the ongoing model of exploitation becomes untenable, capital has intimations of mortality *qua* the world's end. Every period of [capitalism] has had its apocalypses...that mark every change in capitalist development and thought.[16]

We seem to be in a similar situation now. We are waiting for a recession, of course, but not only that. We also awaiting a discontinuous break into a new political economy (both as a model and a strategy) similar to the one experienced after the crisis of 1973-1980.

To begin I present a summary of my comparisons in the following table:

Date	1973-1980	2003-2008
Political Economy in Crisis	Keynesianism	Global Neoliberalism
Locus in *Capital*	Vol. 1: the struggle over the work-day; relative and absolute surplus value	Vol. III: transfer of values into prices (average profit); rent, interest; how does class struggle affect capitalist production as a whole

15 See J. Barkley Rosser, "The rise and fall of catastrophe theory applications in economics: Was the baby thrown out with the bathwater?" *Journal of Economic Dynamics and Control*, vol. 31, issue 10, 2007, pp. 3255-3280; Alain Badiou, *Being and Event (*London: Continuum, 2005).

16 Caffentzis, "The Work/Energy Crisis and the Apocalypse," p. 216.

Oil/Energy	US no longer "swing" producer; nationalization of oil production; OPEC; peaking of oil price; end of "the Golden Age of Oil"	inability to reverse nationalizations and impose neoliberal regimes on oil producing nations; peaking of oil price
Working Class (U.S. and internationally)	One of the highest strike waves in history; peak of real wages in US; US defeat in Vietnam	Long period of real wage decline; zero strikes; US quagmire in Iraq and Afghanistan
Money	The cutting of the dollar's relation to gold; floating exchange rates	Decline of the hegemony of the dollar on the world market

Ideally, I should comment on each of the categories, but that would take us a thousand nights.

II. Oil and the Crises of Two Bourgeois Political Economies: Keynesianism and Global Neoliberalism

My general argument is that the oil industry played a crucial role in the crises of both the political economies of Keynesianism and global neoliberalism. This should not be surprising, for oil and its energy substitutes are basic commodities that are essential in the production of all commodities (including labor power). Consequently, any specific form of capitalism in this era must be able to integrate the energy branches of industry, and the dominant political economy must conceptualize and strategize how this is to be done. Not any kind of integration will do. A particular energy regime must be compatible with and support the prevalent mode of the exploitation of labor. Once this integration breaks down and the ruling political economy confronts too many anomalies and bungles to many struggles, a crisis ensues both on the level of practice and theory. In this section I will sketch, first, how Keynesianism from the 1940s to the early 1970s was in perfect synch with the international oil industry, and then how a revolution in the relations of property in the oil industry played such a central role in the over-turning of Keynesianism. I do this because it can provide reference point for our analysis of the present crisis and, hopefully, of how it can be resolved with greater power for the anti-capitalist forces of the planet.

Keynesianism and Energy

Keynesianism is many things, of course. Like Marxism, it is closely related to the life and thought of its "founder," John Maynard Keynes, and therefore to its founder's political and theoretical situation. This is not the place, however, to deal with these biographical and contextual matters. I will simply refer to a tradition of reading Keynesianism that emphasizes its class characteristics and therefore is most useful in analyzing the crisis of the 1970s.[17] Let me present the key elements of this interpretation:

- Keynes (and his supporters) recognized that since the Russian Revolution the working class had become a crucial *independent variable* in the functioning of capitalism. It was both an antagonist and a motor of capitalist development. No longer could it be relegated to the status of "laboring species" (i.e., defined as a race that works) or a "factor of production;" since it could step out of the system.
- For Keynes, the wage and therefore *the wage struggle has become the center of capitalism*, because it drives effective demand and must be kept in balance with increases in productivity. The state has a vital role in this political economy, i.e., as a homeostatic mechanism interposed between classes to guarantee the productivity deal between the classes.
- Keynes also realized that "the enormous accumulation of fixed capital embodied in the assembly-line factories required a proportionate accumulation of capital in the working class ("human capital" as it was called later)."[18]

This energetic conception of the working class and its reproduction is crucial to recognizing that the main power capital had over workers was in its ability to chart "technological paths of repression." It was crucial therefore for capital to have access to a cheap, dependable source of "counter-energy" that could power the machinery necessary for the production of what Marxists call "relative surplus value." What Renfrew Christie summarized long ago as a general condition of capital was even more true of Keynesianism, "It is only from capital's need for machines so that it can win the class struggle, and from energy's

17 see Caffentzis, "On the Notion of a Crisis of Social Reproduction: A Theoretical Review,"; Antonio Negri, "Keynes and the Capitalist Theory of the State,"; Harry Cleaver, *Reading Capital Politically (*Austin, Tx: University of Texas Press, 1979); Massimo De Angelis, *Keynesianism, Social Conflict, and Political Economy* (London: Macmillan, 2000).

18 Caffentzis, "The Work/Energy Crisis and the Apocalypse," p. 231.

special relation with machines, that energy receives its particular importance [in capitalism]."[19]

The energy regime that was fashioned by the U.S., the U.K. and the "Seven Sisters," the cartel of British and U.S. transnational oil corporations, was typical of the Keynesian period (roughly 1945-1973). The blatant collusion (later tempered into a "systems analysis" approach) among the major oil companies to set the price of oil both in the US and internationally was seen as simply the most extreme of these pricing arrangements found throughout the "monopolized" industries of the US and Europe at the time. The arrangements (which began as openly cartelistic and were then became covert) made for a very predictable price (on average about $20 a barrel in real 2008 dollars according to my rough calculation) for a quarter of a century.[20] There were other, less contractual methods that were used so keep oil "cheap and predictable" in the face of anti-colonial struggles in the oil-producing regions of the planet. First, for most of this period, the U.S. oil industry was the world's "swing" producer, and hence "uppity" countries like Iran in 1953 could be isolated and boycotted out of the market, if need be, with the US making up the difference in supply to support the international price. Second, if any oil-producing nation's working class and/or capitalists decided that they would take control of the oil production on their territory, then they would face a coup (as with Mossadeq's efforts in Iran in 1953) or a direct invasion (as in the case of Roosevelt's deal with King Saud in 1945 that in effect concluded that the U.S. would intervene militarily to defend the Saudi throne).

The Keynesian energy regime which brought together the "Seven Sisters" with the US and Britain military to organize the "stability" of the oil areas of the world, especially the Middle East was a crucial part of the larger Keynesian political economy. This regime—what Leonardo Maugeri calls "The Golden Age of Oil"[21]—guaranteed a steady supply and low price of petroleum that made it possible to substitute machinery for labor at a rapid pace, with the added bonus of eliminating the centrality of obstreperous coal miners in the class struggle of Europe and the US. Maugeri, in the typical fetishized style of oil commentators, writes:

> Oil's success in fuelling modern economic development brought about the fastest process of energy source

19 Renfrew Christie, "Why Does Capital Need Energy?" In *Oil and Class Struggle*, ed. Peter Nore and Terisa Turner (London: Zed Books, 1980) p. 13.

20 See John M. Blair, *The Control of Oil* (New York: Random House, 1976) on the "International Control Mechanism."

21 Leonardo Maugeri, *The Age of Oil: The Mythology, History and Future of the World's Most Controversial Resource (*Guilford, CT: The Lyons Press, 2006).

> substitution in the history of mankind, whose victim was coal. As late as 1950, the chief energy source of the first industrial revolution still reigned over all rivals, supplying about 65 percent of world energy needs. But by the mid-1960s, oil had supplanted coal as energy king.[22]

The Crisis of Keynesianism: 1973-1980

The crisis of 1973-1980 was one of a whole political economy, it was not "just" an "energy crisis." It was a crisis of class strategy and theory as well as of unemployment, rust belts, and austerity budgets. My comrades and I at the time, in trying to express this point, called it a "work/energy crisis."[23] What was at stake in the 1970s was a general relationship between classes that had been built up in the US from the New Deal in the 1930s. True, the dominant theme of the time was focused on oil and energy issues, especially questions of quantity (were the Club of Rome's claims correct?), form (was the nuclear powered or the solar powered economy going to be the alternative to oil?) and price (was there a tendency for the secular increase of oil prices?).

We argued at the time that the key issue was that the working class internationally (in the US and Western Europe as well as in the anti-colonial struggles in the so-called Third World) was imposing wage increases (beyond productivity increases) that put capital's accumulation strategy at risk. The crisis was first and foremost one of work. Its "energy" aspect was due to capital's use of energy prices to overcome the struggles around and against work.

The relation to the "energy crisis" to the "crisis of Keynesianism" is the following: the class struggle in the US and Europe took the form of a direct wage struggle either at the factory proper or the "social factory" (by coalitions of waged and unwaged workers); while the class struggle in the oil-producing areas was an attempt to take control of the rents and transferred profits that were accruing to the "Seven Sisters" since the early 20th century (by coalitions of national capital and the working class waged and unwaged). These two simultaneous rebellions of the early 1970s struck at the heart of the Keynesian universe. The struggle in Europe and North America put into question the wages/productivity equation that was at the center of the accumulation process. The one in the oil-producing parts of the former

22 Maugeri p. 77.

23 See Caffentzis, "The Work/Energy Crisis and the Apocalypse"; Midnight Notes Collective, *Midnight Notes 2: No Future Notes,* originally published in 1979, Accessed online at: http://www.midnightnotes.org/workenergyapoc.html.

colonialized world was demanding back its national resources (especially oil, a commodity that was being produced at a very high level of organic composition, *pace* Emmanuel!) that had been deliberately devalued, and had been turned into super-profits by the corporations of the imperialist powers, especially the US and UK. These two polar rebellions, taking place simultaneously, sabotaged the basic mechanism of Keynesianism, viz., responding to workers' struggle in the factories of Detroit for "more money, less work," by automating the assembly line using cheap energy provided by a compliant oil-producing proletariat a world away.

These simultaneous struggles created the specter of stagnation, the stationary state, and "zero growth" for capital's theorists. Indeed, if there were political forces that could have created some kind of "political recomposition" at this time, world history would definitely have taken a different turn in the 1980s. Certainly, there was no "International" then that could have achieved (or even thought of) such a project.

Instead of recomposition, the crisis of Keynesianism brought decomposition for the working class internationally; the polarity of the very social forces and movements that triggered the crisis of Keynesianism was used against each other. Instead of creating a crisis *of* capital, capital turned the crisis against the working class internationally. The nationalization of the oil-producing companies in many countries took place in the early 1970s and the imposition of steeper oil rents returning to the national coffers led to the oil boycott of 1973. OPEC presented itself as the first commodity trading organization that would realize the dreams of the International Economic Order and reverse the injustices of centuries of colonialism and imperialism. This vision, however, was translated at the other pole of the Keynesian world as a wage nightmare. Unemployment, abandoned factories, austerity budgets, welfare cuts, the prison-industrial complex, began to take shape in the recessions of the middle and late 1970s. These signs of working class defeat were all laid at the door of the "Arabs" or of "OPEC." The tools of vilification and the powers of racism were turned against workers at the other pole of the class struggle.

There was clear evidence that this stage of the crisis (when one crisis-provoking pole was used against the other) was planned, and the Yom Kippur War boycott met with the concealed approval of strategists of capital like Henry Kissinger (the Foxey Loxey *par excellence* of the time). As Mario Montano wrote long ago: "Behind the ritualistic position of diplomatic adversaries that the US and OPEC countries necessarily entertain during international bargaining sessions, stands their Holy

Alliance."[24] This was the time when the Arab oil sheik was projected to be a thief of the US workers' future. Indeed, when the Iranian Revolution in 1979 led to another spike in the oil price, US workers expressed open hostility to Iranian immigrants and students in the streets and campuses of the U.S. What could have meant a major crisis for capitalism, however, became a pretext for cutting of wages of workers in Western Europe and North America while creating an investment flow (then called "petrodollars") that was used to make loans to formerly colonized countries (imposing a flexible interest rate that the "subprime mortgage" was to emulate in the early 21st century!) that in the 1980s forced them to near bankruptcy and then, under the pressure of the World Bank and IMF, to neoliberalize their economies. What a foxey trap!

Global Neoliberalism and Oil

This trap was successfully sprung and it immobilized worker struggles both in the First and Third Worlds. Keynesianism, however, had to be abandoned and the "Chicago Boys" and neoliberalism took over theoretical and practical hegemony throughout the planet. This transformation was politically legitimated in the neoliberal regimes that took power at the end of the oil price crisis in 1979 and 1980, first with Thatcher in Britain, then Reagan in the US, and then through the "debt crisis" of 1982, the IMF/World Bank imposition of neoliberal structural adjustment programs (SAPs) throughout the Third World. These neoliberal regimes both in the "center" and in the "periphery" of the early and mid-1980s made it possible to set up the political arrangements that would make for a successful globalization of neoliberal capitalism on three counts:

1. the working classes of the neoliberalized world gave up on the productivity deal in North America and Western Europe (wages would be correlated to increases in productivity) and the post-colonial developmentalist deal in the Third World (import substitution and the creation of a local market would generate employment);
2. the state was reduced as the place of surplus distribution (with tax cuts and austerity budgets);
3. the complete destruction of the "Chinese walls" against the free flow of capital in the form of money, equities, and physical equipment constructed during the long period from

24 Mario Montano, "Notes on the International Crisis," In Midnight Notes Collective, *Midnight Oil: Work, Energy, War* 1973-*1992 (*Brooklyn, NY: Autonomedia, 1992) p. 127.

WWI to the end of import substitution regimes in the late 1970s.

Let me comment on each of them and determine their relation to the oil and energy industry.

In the Keynesian period the state stopped being the exclusive club of collective capital and was interposed between the classes (and by a law of dialectics, it was divided against itself). In the neoliberal era the state abandoned this mediating role. It had to also abandon its role as the overseer of working class reproduction and regulator of capitalists' exchanges. The dictatorship of the market was to prevail. As Massimo De Angelis nicely put it, the state's job was to impose a practice of "good governance," i.e., "every problem raised by struggles can be addressed on condition that the mode of its addressing is through the market."[25] The "global" path to neoliberalism is indicated by the fact that the formalization of neoliberal policies was the adoption of Structural Adjustment Programs (managed by the central agencies of global collective capital, the IMF and World Bank). Moreover, the rise of the World Trade Organization with its legal system that made it possible for corporations to sue sovereign states as standard procedure symbolized the triumph of this transformation in the 1990s.

The next feature characteristic of global neoliberalism was the totalization of commodification and monetarization (what a Latinate sentence!). The previous barriers to commodification, especially those aspects of life involved in the reproduction of labor power, were to be battered down. Similarly, the barriers to the free flow of capital were to be annihilated, letting a tidal flow of money enter into previously unmonetarized parts of the world economy. "Financialization," not industrialization, became the most obvious feature of global neoliberalism, so that "money (not labor) is the measure of all things."

The class nature of the global neoliberal deal is that the winners—those willing and able to "swim" in the seas of the free market—will received substantial increases of income *not wages*. (Indeed, wages were displaced as the primary class relation in the neoliberal economy by "ownership" income like equity in stocks or real estate.) Workers would be paid either far beyond (if you were neoliberally graced) or far below (for the majority) their "individual productivity." The two "prices to pay" for this opportunity to "play in the field of dreams" is the loss of guarantees (since every worker was in competition with workers around the world) and the increasing division in the working class both nationally and internationally (since most workers were either unwilling

25 Massimo De Angelis, *The Beginning of History: Value Struggles and Global Capital* (London: Pluto Press, 2007) p. 89.

or unable to "swim"). Inevitably, the neoliberal era brought about ever widening wage divisions within the working class (with shining city centers surrounded by miles of poverty), waves of immigrants, and the experience of "new enclosures," both in terms of the direct attack on communal land and other common resources.

For the oil and energy-producing proletariat a corollary of these axioms of a globalized neoliberal political economy is that the collective ownership (through the state or through communal rights) of the energy resources (especially oil and natural gas) of the national territory had to be abrogated. Thus the oil-producing proletariat's rent claims on international capitalism (mediated by the state) were to be declared null and void, i.e., the birthright of millions was to be sold for a bowl of spicy pottage. Under the dictate of the new political economy all moments of the hydrocarbon energy cycle from ownership of the subterranean resource to extraction to refining to shipping producing the most basic of commodities for contemporary capitalism had to be commodified. The rules of the global market had to determine its oil price (especially since its price included a tremendous transfer of surplus value from the rest of the system). Thus the oil and energy regime was to be determined by a commodity market similar to the emerging "spot" market. No longer could the global economy depend upon deals made on the basis of a price structure managed either by the Seven Sisters or by OPEC.

The Crisis of Global Neoliberalism, Its Energy Aspect

These were the dictates of the global neoliberalism. Though many of them were obeyed, those pertinent to the oil and gas industry were not. I.e., the attempt to undo the nationalizations of oil and energy that took place largely in the 1970s and to dismantle OPEC have failed even though the spot market seemed to promise a "neoliberal" solution for the organization of oil and energy corresponding to the "globalization" of other commodities continues to operate. I read the failure to change the property relations in the oil fields of Saudi Arabia,[26] of Russia (2004), of Venezuela (2002), of Iran (2007) and especially of Iraq (since 2003), along with many more "minor" set backs, as crucial "events" in the larger failure of the neoliberal globalization model.[27] For if energy

26 George Caffentzis, "Oil, Globalization, and Islamic Fundamentalism," In *Globalize Liberation: How to Uproot the System and Build a Better World,* Ed. David Solnit (San Francisco: City Lights, 2004).

27 George Caffentzis, "The Petroleum Common," In *No Blood For Oil! Energy, Class Struggle, and War, 1998-2004,* Accessed at http://radicalpolytics.org/caffentzis/no_blood_for_oil-entire_book.pdf.

commodities, the most basic of commodities, cannot be managed by neoliberal globalized means, this mode of accumulation is a dead letter in the long run.

We must remember that the nations listed above are the largest oil producers with the largest oil reserves on the planet. Consequently, the inability to even have Iraq transferred to a new neoliberal oil course, even when it has been occupied by US troops for five years, is a glaring testimony of the inability of the US government to "manage" the political terrain. Add to this gigantic failure, the stalling of the neoliberalization of the Saudi gas industry after 9/11, the inability of the US government to protect Exxon from the Russian state, the failure of the US-supported coup against Chavez, the inability of the campaign against Iran (disguised as an effort to stop the building of a nuclear weapon) to gain concessions in its stance in OPEC, and one gets a dismal picture of the US's capacity to play the rule enforcer of the neoliberal global order.

We must also remember that the so-called "minor" difficulties are not minor at all when added together. Some examples include:

- a long-standing and now armed rebellion of the local inhabitants demanding the rights to the petroleum under their feet in the Niger Delta;
- the "gas war" in Bolivia that pitted indigenous peoples against the expropriation of the hydrocarbons resources of the country;
- the Zapatista rebellion against the extraction of the oil reserves of the state of Chiapas, Mexico.

What we are seeing here are flash-points of the "Fourth World War" that Subcomandante Marcos has so eloquently spoken about. Capital is now driving exploration and extraction of oil to the "margins" of the world (where communalist ethics still prevail among indigenous people) and it is confronting a tremendous communalist resistance. In a hundred different spots of Africa, Latin America and Asia, a "petroleum common" is being defended, often by force of arms. As Steven Colatrella has called it, there is a "political Hubbert's curve" that is taking shape under the pressure of a myriad of "micro-struggles" between the oil companies and the indigenous peoples who are imposing a major barrier to capitalist expansion of the oil industry. The "war of the flea" is so powerful partly because it is not categorized as a "war" at all!

Not accidentally this crisis of the oil industry coincides and interacts with a crisis of the US proletariat, which is seeing its own future in the form of income "outside" the wage being devastated. The dream of wealth beyond work has been the proletariat's since its birth

in the "Land of Cockaigne." With the inability to increase wages through collective struggle beginning in the mid-1970s and the increase in employment of women and children as the only way to maintain the family income, the US proletariat has been trying to find other ways to survive and prosper. These ways have been increasingly individualistic and parasitic on the market. In the 1990s many workers hoped to hit it big in the world of the stock market and in the stock options that were increasingly offered by companies in lieu of wage increases. In the boom, many became millionaires "on paper." When the "dot.com" crash came in 2000-2001, the dream paper became worthless (and workers more than capitalists suffered). Almost immediately after the "dot.com" crash, however, a housing price boom began to take off. This boom was also fueled by the neoliberal reorganization of the credit industry that made swift and unregulated movement of loans for real estate property possible. This boom also has now crashed, this time with millions of workers homeless instead of pensionless.

The "class deal" neoliberalism has offered to the "ambitious" and "energetic" part of the US working class is now beginning to fade. This constitutes a major crisis of neoliberal capitalism *for* the working class in the US, whereas the inability of imposing the neoliberal deal for the oil industry internationally is a crisis *for* capital. That is why one must be very careful in articulating what sense of "crisis" one is using at any moment. The political question of our day is whether capital will be able to turn the crisis from itself into a crisis of the working class internationally. The "war on terrorism" and the "surge in Iraq" have been military/ideological efforts to turn the US working class' catastrophe at home into the basis of a renewed effort to accomplish the goals of neoliberal capitalism abroad. Will capital be able to do what it did in the previous crisis of 1973-1980 again? Certainly the Bolivarian movement in Venezuela has recognized the danger that such a possibility poses and has taken some steps to respond to it through an offer to provide discounted oil to low-income communities in the US. This provides a model for class solidarity between the two poles of global neoliberalism.

If capitalism is able to survive this period, one thing is now clear. The state's role will be decisive. Inevitably, neoliberalism political economy's main effort—to take state power out of the sphere of working class appropriation—will have to be compromised. The sovereign wealth funds that are now proliferating across the planet (arising out of motives that are similar to Alan Greenspan's "surplus nightmare" in the US) are signs that the state's role in investment will be crucial once again in the political economy of the coming period.

Will this huge planetary surplus (represented by the rents and the surplus value transferred into profits that are being appropriated through high oil prices by the states of oil-producing countries) be invested in a new "energy" regime not based upon the exploitation of work? Could the feared high price of oil become the lever for a transformation both of the energy and power problem of the plant? That will depend on whether this time around a relation of solidarity will be forged between the oil-producing and the US proletariat.

This solidarity certainly will not emerge by simply calling for the US proletariat to stop being oil-consuming "hogs" and transform themselves into solar "angels." After all, the "down side" of Hubbert's Curve, in a sense, could be seen as a potential payback for a century of exploitation, forced displacements and enclosures. It appears like the capitalist class is unwilling to pay reparations to the peoples in the oil-producing areas whose land and life has been so ill-used as is suggested by the horror, for example, of paying the Chavez state funds through oil taxes and rents that will go into buying back land that had been expropriated decades ago and giving it to peasants. Capital wants to be able to control the vast transfer of surplus value that is being envisioned in these discussions, and without a neoliberal solution it is not clear that it can. Should the working class be simply echoes to capital concerns? After all, shouldn't the reparations be paid to the people of the Middle East, Indonesia, Mexico, Venezuela and countless other sites of petroleum extraction-based pollution?

I have no prophesies concerning the success of a transition from capitalism to another non-capitalist mode of life, I will leave you, however, with some political queries that might provoke such prophesies:

- Does the energy crisis of this decade prepare for a new, post-neoliberal/globalization deal?
- Will it be possible for capital to transfer the crisis from itself to the working class internationally as it did in the last "energy crisis" of 1973-1980?
- Is the US class "deal" of wages dissociated from productivity, but with easy credit and "cheap" imported commodities over?
- Is the $100+ per barrel price of oil going to be permanent and a vindication of the Peak Oil theory or will there be a huge fall in the oil price as there was in the mid-1980s?
- Is the revalorization of the state an essential aspect of the next form of capitalism, if there will be a "next"?
- Capital's last renewable energy era (filled with windmills and sails) was one marked by slavery, genocide and enclosures, will the "second time around" likely be any better?

- Could the political meaning of the “down side” of Hubbert’s curve have an “up side” for the oil-producing proletariat?
- Are Chicken Little’s apprehensions or are Foxy Loxy’s deceptions more dangerous to the Henny Pennies of the world?

Iraqi Oil Workers Movements: Spaces Of Transformation And Transition

Ewa Jasiewicz

Five years into the war and occupation of Iraq, the US and UK administrations, international oil companies and occupation-installed Iraqi elites are labouring hard to open up Iraq's massive oil reserves to their long-term investment and control.

Possessing 115b barrels of proven reserves, with possibly twice this amount undiscovered, Iraq has the second largest reserves on the planet—approximately 10-20% of the global total. What makes Iraq's oil potential more important is that Iraqi oil is amongst the cheapest to extract ($1.50 per barrel compared to approximately $30 per barrel of tar-sands extracted hydrocarbons) It has a reserves-to-production ration triple that of neighbouring Saudi Arabia—a staggering 173 years. The ratio is calculated at current levels of productivity and demand and the unextracted potential of current producing and discovered fields. The quality of Basra Sweet Light Crude is also of a high purity, meaning a less capital and energy intensive refining process.

Geo-politically, Saudi Arabia as a key ally of the United States has become increasingly volatile. When Al Qaeda attacked Saudi's Abqaiq oil processing facility in 2006, the price of oil leapt by $2 per barrel. The US pulled out most of its troops and military infrastructure in 2003.

Oil is also more than a strategic commodity in its' 'crude' use-value sense. Traded in dollars, it also secures the value of the US Dollar and keeps the US economy financially lubricated, under-writing the currency with each transaction, compelling national treasuries to stash reserves of dollars to pay for it—if US and allied governments and companies control oil supplies that is. If these alliances break

down, as in the case of Iran which has diversified all of its external reserves away from the dollar and is trading with oil-dependent (90% of energy supplies) Japan in Yen, it is the US economy that could be made to 'scream'. Securing Iraqi reserves for US companies and allies to ensure their trade in dollars, has security implications for US currency and the US economy. How much would a state invest to secure the future of its' currency? How do you value currency? Worth trillions?

Post-invasion Iraq was expected by the US and UK authorities to represent a more stable and acquiescent petro-state, given the removal of Saddam Hussein and the establishment of neo-liberal free-market and authoritarian legislation beginning with 100 orders passed by the first pro-consul Paul Bremer in 2003.

Locking-In Neo-liberalism

Bremer's 100th order locked in and re-legitimised the previously passed 99 orders. The Iraqi Constitution, which was written in a matter of weeks under conditions of duress according to some Iraqi law-makers and under the heavy influence of US Ambassador Zallamy Khalilizad who circulated US-drafted copies of a model constitution, also enshrines free-market policies for liberalising the energy sector.

Article 110, frequently quoted by oil executives keen for privatisation deals, decrees:

> the federal government and the governments of the producing regions and provinces together will draw up the necessary strategic policies to develop oil and gas wealth to bring the greatest benefit for the Iraqi people*, relying on the most modern techniques of market principles and encouraging investment* (my Italics).

Opening the door to liberalization of the oil sector in the interests of foreign investors.

Still off the law-books however, is legislation allowing oil companies to effectively own Iraqi reserves and secure long-term investments—the absolute key to raising IOC share price, growing core-business, and gaining competitive advantage in energy markets. Through their allied oil companies, the British and US governments would be able to leverage political and economic influence over competing economies such as India and China, but also to mitigate the risk by having the potential to restrain the developmental capacity of a potentially non-aligned Iraqi government which could be hostile to Israel, the most important strategic ally of the US in the region.

History Repeating Itself

This tactic of stunting economic capacity was deployed during the life-span of the Iraqi Petroleum Company, the consortium of Shell, BP, Total, and Exxon Mobil which originally signed a concession with the British-installed monarchy of King Faisal. At the time, Iraq was occupied under the British mandate, an occupation that became 'Iraqified' with a paid off ruling monarchy and elite, enticed and maintained by oil revenue rents. Meanwhile a restive population mounted insurrection after insurrection until the monarchy was deposed by the coup of Abdel Karim Qasm in 1958.

Under Faisal, the IPC deliberately left fields undeveloped in order to fulfil its own quotas and market agendas and render the Iraqi government relatively weak. These companies had their 75 year concessions axed and were eventually booted out of the country under the nationalisations of the 1970s.

The past thirty years have seen a succession of nationalisations by governments laying claim to common energy sources, meaning the International Oil Companies now own approximately 4% of global oil reserves. For the likes of Shell and BP, Iraq represents a pendulum swing back in their favour after thirty years of declining influence and reserves.

The key to transferring ownership of these resources from state control to International Oil Company control is the ratification of the Iraqi Oil Law.

The Iraqi Oil Law—Breaking and Entering

A document of seismic political and economic power, its signing would have global implications for the growth of the global oil industry—corporate and state—and pave the way for the break-up of Iraq and an economic empowerment of an already politically and militarily empowered Iraqi ruling class.

The Oil Law currently on the table was influenced by nine multinational oil companies, the IMF and the UK and US governments, all of which saw copies of the original draft within weeks of its completion. The law has over-run more than five US administration and IMF deadlines in the past two years, and is currently the top priority for the Bush administration to pass before Bush and Oil industry partner Dick Cheney leave office.

The law, if passed in its current form, would create new facts on the ground by allowing regions to create their own oil industries,

signaling the dismemberment of the Iraqi National Oil Company and potentially the creation of a host of new, regionalised oil and gas companies—private and part state and private owned.

The law establishes an entity known as the Federal Oil and Gas Council—a 15 member, politically appointed body made up of sectarian regional representatives which would have ultimate decision-making power over which contracts were signed, with which companies, on what terms and for how long.

The sectarian conflict fostered by the US and UK occupation has already produced new facts on the ground—namely the movement of millions of internal refugees fleeing sectarian violence and swelling as well as creating new communities, divided along sectarian lines. Baghdad is currently divided up into sectarian cantons, sealed by concrete walls.

The US's "Awakening Councils"—known as the Sawa movement—is a network of paid off tribal militias working in the service of US interests in Iraq. The Sawa councils, located mainly in Anbar province are being groomed for local government under long-term US occupation. Incentivisation for separation has been dressed up in the language of economic and political empowerment, namely the creation of a separate central so-called 'Sunni' state with authority over the development of its oil and gas reserves, of which there is estimated to be a considerable amount in the Western desert where the Akkas Gas Field lies, only a few miles from the Syrian border and currently targeted for control by Shell.

War Zone, Carbon Comfort Zone

The privatisation of Iraqi energy by both the International Oil Companies and regional, occupation-supporting and supported elites represents a win-win situation for the US and UK occupation authorities. Guaranteed security of supply and stability of contract, enshrined with treaty status through the Oil Law and protected on the ground by Iraqi militias, paid by oil revenues, and Private Military Security Companies—US and British, yet employing local staff, all backed up by permanent US military bases under the current 'Status of Forces' and 'Strategic Framework' deals on the table.

The result could be a triple-lockdown preventing local resistance rising up against these "facts on the ground" in the making, fracturing a potential resistance which could have forced a change in government and provoked a possible abdication from contractual responsibilities (known as the "obsolescing bargain"—a state claiming of decisive

power over the use of resources exercised recently by Venezuela and Bolivia). In this context, Iraq's oil industry would become highly militarised, as it has become in Nigeria, Colombia and Saudi Arabia, protected by concentric circles of concrete and aerial and land surveillance.

The financial gains to be made through development of oil and gas reserves risks an entrenched dependency on fossil fuels for the accumulation of capital and growth at the expense of alternative energy sources and development. This is a common process known in the industry as "Dutch Disease," a form of "putting all ones eggs in one basket" which renders the economy at high risk of external market shocks or shifts in the energy market.

The entry and the establishment of IOCs on Iraqi terrain, owning reserves for three decades, would not just entrench sectarian divisions, conflict, repression of the population and peoples' movements, but with it, the military occupation.

As well as the military occupation, the economic occupation of fossil fuel resources by corporations, would entrench a reliance on fossil fuels and both the physical structures and industries they fuel and rely upon for transformation of the energy into fuels and the related market structures, commodities and systems it supports.

In short, Iraq can be seen as a major refuelling zone for free-market corporate capitalism. A war zone but a carbon comfort zone for the dwindling IOCs which seek 'energy security' for their own reserve tallies and energy fiefdoms.

Iraqi Oil Workers – A New Social Movement

Iraq's oil industry was the only industry which kept going during the wars, sanctions and uprisings in Iraq. The prohibitive sanctions regime imposed and enforced by the United Nations Security Council remained in place for 13 years. Barely any spare parts, fertilisers and materials could be imported into the country. Whilst many private sector companies slowly went bust and public sector key business began to mechanically fail and become decrepit, the oil sector, despite also being worn down and partially damaged due to the Iran-Iraq war and subsequent gulf wars, remained onstream and ongoing.

This consistency meant that oil workers in a mass sector such as Oil and Gas, kept coming to work and socialising and working with purpose, whilst many other public sector workers found themselves still paid and going to work but without any actual meaningful work to

engage in, no industrial power or sense of personal fulfillment and usefulness.

The tool of collective bargaining, of strikes to resist oppressive employers or the government, was absent. In the case of the oil sector, it was one probably the most repressed and highly surveillanced industry in the country. Workers talk of union officials carrying guns and issuing threats against workers in the sector. Your union official could have you killed. And your boss really was most probably a fascist. Both in cahoots with one another, the reality of "workplace organisation" was one of state unions acting as a second line of regime defence and surveillance, behind the existing lines of security forces and secret agents.

But repression in the workplace did not impede workers' sense of purposefulness, power and responsibility. Oil was and still is the backbone of the Iraqi economy and oil revenues under the oil for food programme were literally putting food on tables of Iraqi households up and down the country. Oil workers were and still are incredibly highly conscious of their own power and necessity to the economy. This power was underscored by 'heroic' and "mujahedeen"-like (resistance fighter-like) grassroots reconstruction efforts by workers themselves, to paraphrase Iraqi Federation of Oil Unions president Hassan Jumaa Awad.

Workers threw out KBR subcontracted workers and banned military contractors from worksites in the summer of 2003. They knew the company represented "Dick Cheney" and "The American Occupation" and they wanted to retain control of their workplaces and do the reconstruction necessary themselves.

In the Iraqi Drilling Company alone, 12 drilling rigs were reconstructed using black market and cannibalised parts from other equipment to repair rigs which had been damaged and looted following the 2003 war. Celebrations would be held following the completion of autonomous reconstruction. Ingenuity, invention and tenacity flourished under the sanctions.

Management and worker relationships in some sections of the industry became co-operative and mutually respectful—with workers themselves—senior technicians and engineers—managing maintenance and reconstruction processes through and in spite of the wars and sanctions in a "collective war-effort" approach.

The shared experience by Iraqi oil workers, particularly in the South, where the bulk of the industry lies and where a major uprising took place in 1991 has been formative for creating the conditions for a social movement.

The Kurdish uprising in ’91 had some success, in terms of an autonomous zone being created, free-from Ba’ath dictatorship repression yet under the control of the US authorities and the two main Kurdish ruling class parties—the Kurdish Democratic Party and the Patriotic Union of Kurdistan. The South on the other hand, suffered a brutal crackdown and those who fought had to keep their heads down and carry on, under every more precarious and surveillanced and grief-heavy conditions.

Shared Resistance

But the shared experience of resistance, repression and economic responsibility/power, created undercurrents of organised resistance, unspoken and intuitive relationships between people of a depth that was sensual in its most intuitive, mentally and spiritually intimate sense, compounded by religious faith, these unspoken, evident, truths of collective experience created the conditions for trust, self-organisation and a unity of purpose and conviction that has resulted in powerful union organisation which goes beyond workplace issues of wages, health and safety, compensation and managerial repression and into the realms of a spiritual quest to guard Iraq’s resources from tyranny, be it corporate neo-liberal capitalist or dictatorship capitalist.

Nationalism is a major facet of this resistance identity, in the sense of a ‘national good’, and unsectarian agenda. Mature political forces are now trying to steer, hijack and co-opt the union, present since the union’s inception but more pronounced and better armed now.

Even so, the union has even rejected calls for localised compensation for pollution caused by the oil industry for fear of coming across as sectarian – it was Iraqi exile activists which urged union leaders to cover this in their demands as a pre-requisite for improvements of conditions.

Privatisation in Islam

The IFOU has a mixed political leadership including communists and muslims. The membership is overwhelmingly Muslim and the community of the Mosque is an essential relationship of support for the union and a part of members’ community, and collective as well as individual consciousnesses and conscience.

One of the many points of agreements between the two ideological strands of belief is a definition of privatisation and capitalism as inherently anti-human and exploitationist. One union leader—who has recently been ordered out of Basra by the Iraqi Oil Minister and into a different oil company in Baghdad—explained the following to a group of workers some years ago, as an Islamic interpretation of privatisation:

> In any production process of work, you have the following: The human being, energy, the means of production, and capital. In capitalism or privatisation, the pinnacle principle, the most important goal is Capital, in second place of importance the means of production, thirdly energy and in the very last place - the human being. In Islam, as we know, it is the human being that has the most value and is at the top of all priorities.

Some interpretations of Islamic or spiritual principles, as the following is not exclusive to Islam, value meaningful work or education as a means of self-betterment; as a means to evolve and become a better human being. The right to this evolution was cited in a statement of demands against the Oil Law signed up to by all of Iraq's unions in 2006 but which also forms a central tenet of the IFOU's organising principles:

> Since work is the qualitative activity that sets apart the human experience, and it is the source of all production, wealth, and civilization, and the worker is the biggest asset to the means of production (we honour humanity), we demand that this law includes an explicit reference emphasizing the role of all workers in matters of oil wealth and investment, to protect them and build their technical capacity, both in and outside Iraq.

Environmental protection is rooted in Islam. The Quran states that humanity is to act as "caliph" to the rest of nature, co-existing with it rather than dominating it, and working to preserve and maintain global ecology. It states that humanity should make gardens instead of working to satisfy greed.

This is not to say that the IFOU has an environmental policy or that there have been discussion about or an understanding of the contribution the oil industry makes to global warming and the science behind it. Far from it. By and large, oil in Iraq is seen as liberation, an asset which if managed properly, for the collective good, can free Iraqis from poverty, lift up the working class, educate, house, clothe, feed and progress generations ahead to have better lives than they ever have, if the revenues are steered into the public sector and finally out of the hands of dictatorship and private capitalist gain.

Oil and the industry is a source of pride, identity, and advancement. So how can an ecological critique of capitalism and the oil industry evolve under these conditions of consciousness and a culture of dependency and intertwined identity with oil? There may be a social movement dedicated to keeping oil out of the hands of the multinationals, but what if it simply wants to keep it pumping and selling and fuelling catastrophic climate change only under workers control, even under the most egalitarian, and ideally horizontal conditions, this reliance on oil can appear as a brick wall and a death sentence for ecology under different terms and conditions but on with the same ecological and ultimately capitalist facts on the ground.

Or is it?

Joining the Dots After Shock

Do we dismiss social movements in this critical sector because their interests seemingly do not cohere fundamentally with our own? I would argue that there is a coherence, and the space, crucially, a potential of the creation of a space for an eventual coherence and co-operation of sorts.

Who are the “we”? The “we” is the ecological justice and anti-capitalist movement. A movement which at times appears to be converged in its critique of climate change as a consequence of industrialised capitalist expansion and economic growth but in some ways avoids it publicly or does not “join the dots” in a global production and consumption and energy ownership sense.

Focusing on local, domestic carbon emissions, is no bad thing and essential for motivating the personal sense of responsibility necessary for engagement and involvement in social movements. But de-carbonisation in the UK, necessitates a de-carbonisation of UK oil companies, still in the top five of the FTSE 100 and responsible, in the case of BP, for twice the annual carbon emissions of the UK domestic energy use.

“The Carbon Web” of Oil Companies’ inter-dependent relationships with banks, consultancies, law firms, educational and cultural institutions and unions, spins out further than the UK, it is global, and unravelling it and its monopolisation of energy commons, means responding to it where it is strongest, at its front lines, and its point of re-inforcement and also where it is at its weakest and being challenged and contested.

Discourses on climate change have veered at times into changing individual behaviours (aviation, personal responsibility for flying) which

are positive in themselves but can fall short of expanding into an enunciated public articulation of the role of aviation in economic growth ideology. The war on Iraq opened the oil control motive in Iraq in the public imagination. As with the enduring image of the gouged out Canadian tar sands, the war opened up, with mine-like exposure, the possibility for challenging government and IOC ideologies of 'energy security' and a fossil fuelled free-market growth for the next 30 years in this country, and debates of resource sovereignty, oil grab and US imperialism in Iraq.

The moment of war was mined by numerous groups for political advantage precisely because of the psychological shock it dealt to the public imagination and the possibility for new ways of seeing that came with it. The shock may be wearing off here, but militarised energy security policies and their neo-liberal context are still shocking Iraq and need re-exposure and integration into the climate change narrative. We cannot talk about ecological justice/climate justice/just transition without including oil producers—state and grassroots—in energy consumption, ownership and movement.

The ecological movement has steered well clear of the struggle of oil workers in Iraq. Which self-respecting climate change activist wants to throw in their lot with those busy pumping the black-stuff out of the ground? "Oil Workers" are the last workers' taboo, along with "miners" if we see a resurgence of the industry in the UK as planned by government. How can one support those who want to speed up climate change and are at the physical frontier of the raw perpetuation of it? These are some of the questions and contradictions at play when Iraq and oil come together. Why? Because these people are some of the most powerful in the world. As oil is a strategic commodity, those in a position of physically producing are also in a position to influence a change and a shift in its' production.

The Iraqi Federation of Oil Unions is one movement in this strategic position and has proved itself a force that the likes of Shell, BP, Exxon, Indian and Chinese oil companies and oil-addicted governments of the world cannot be ignored.

Alienating Allies?

To ignore the potential in the oil workers movement as a space where conditions to combat the growth of the oil industry at its grassroots, is to lose hope, is to lose one of the most visceral and paradoxically organic relationships in the production of the industry and its power and to close the door on some of the most important people that

ecological liberation and anti-capitalist movements need to be engaging with.

Narratives of a just transition, debates on climate change, and introductions of the concepts of ecological debt, of keeping oil in the ground in return for compensation, whilst problematic alone, are unlikely to be even be attempted or uttered in Iraq, with any impact, if international oil companies gain control of Iraqi oil for the next 30 years. I am not arguing that these debates will happen if big oil and the Iraqi ruling class don't come to control Iraqi oil, nor am I arguing that revolutionary workers control of Iraq's oil is even likely, but our movement is about revolutionary potential and the creation of space and possibilities and about solidarity.

Taboo Today, Turbulence Tomorrow

Despite a close personal relationship with leaders of the Iraqi Federation of Oil Unions, I myself have never had a debate about climate change with them. The subject of fossil-fuel energy and climate change and the contribution of oil to it, is a taboo. Those seeking to tarnish the international solidarity and critiques of the oil grab agenda have labelled activists working on the issue as cynical and self-interested environmentalists who want to keep Iraq's oil in the ground with no interest in supporting Iraqis to develop. Raising these issues now risks feeding into this narrative.

My own support work with the union was and still is based on reinforcing their strategic position as a grassroots resistance force to the occupation and US imperialism and the refuelling of capitalism. I didn't suddenly shed my ecological beliefs, and I still believe that there is hope and a necessity to be able to speak about climate change with workers movements at the crucial point of the production but that this potential and power can only develop if those workers and related popular movements have control of energy. Keeping these spaces open demands solidarity and support.

The Fire Sometime…

The fire in Iraq is the ongoing military occupation and the corporate and state struggle for control of Iraqi oil. Maybe if there were no counter-forces at the grassroots fighting this fire, we would have no space and human relationships to engage with and support, but there are.

Iraq is a tipping point in terms of the control and supply of energy to imperial powers and imperialistic oil companies fading and ascending, vying for power through strategic control of supply and the power to re-produce and perpetuate that power.

As we read, this struggle over the last bastion of easy oil on the planet is ongoing and the outcome undecided. If the major IOCs and their governmental ruling class partners succeed, the space for movements to challenge these interests will be severely restricted and their opposition and organising on the ground in Iraq, severely repressed. There is still everything to fight for, and it is a fight, not for “more oil” or ”an oil industry in workers hands but still for the oil industry” it is a fight with a *long-term* view and its a fight in defence of this strategic space of resistance, energy and *alliance* for an ultimately different world beyond capitalism and one of a shared sustainable energy commons. A world where a narrative and practice of ecological co-existence and a non-exploitative energy commons evolves as a popular narrative of liberation.

The Global Carbon Trade Debate: For Or Against The Privatisation Of The Air?

Patrick Bond

> "I can't understand why there aren't rings of young people blocking bulldozers and preventing them from constructing coal-fired power plants."
> —Al Gore speaking privately, August 2007[1]

What is the state of the strategic debate over climate change?[2] What kinds of reforms are being contested? Are we in danger of seeing the air itself—one of our last commons—become commodified, reflecting not only the core elite strategy to mitigate global warming, but market-environmentalist acquiescence?

As climate change generates destruction and misery, the people and corporations responsible for these problems—especially in the US/EU-centred petro-mineral-military complex and associated financial agencies like the World Bank—are renewing their grip on power, but likewise reasserting their rights to property and to inaction on climate change. And a good many activists once strongly opposed to the corporate elites have bought in, seduced by the idea that we have to

1 Cited in Greenpeace (2007), "Greenpeace climate activists refused bail in India, as Al Gore and IPCC win Nobel Peace Prize for raising global climate awareness", *Kolkata*, 12 October.

2 My earlier reports on the struggle over commodification of the air as a climate change mitigation strategy include the co-edited books with Rehana Dada, *Trouble in the Air* (Durban, Centre for Civil Society and Amsterdam, Transnational Institute, 2005) and with Dada and Graham Erion, *Climate Change, Carbon Trading and Civil Society* (Pietermaritzburg: UKZN Press, 2007) and (Amsterdam: Rozenberg Publishers, 2008); and articles such as Bond and R.Dada "A death in Durban: Capitalist patriarchy, global warming gimmickry and our responsibility for rubbish," *Agenda, 73*; and "Privatization of the air turns lethal: 'Pay to Pollute' principle kills South African activist Sajida Khan", *Capitalism Nature Socialism*, 18, 4.

tackle the climate crisis one step at a time, with reforms that the establishment can live with, that in turn can be used to leverage substantial cuts in emissions through clever market incentives.

In this article, four sets of strategies to combat climate change receive consideration: emissions cap-and-trade options including investments in Clean Development Mechanism (CDM) projects, carbon taxation, command and control of activities responsible for emissions, and alternative grassroots climate change mitigation strategies. The latter two are what, ultimately, will be necessary to save the planet, yet the former two strategies are still ascendant, in part because in 1997 at Kyoto, the idea of a market solution (carbon trading) to a market problem (emissions as an externality) won approval, along with a sigh of relief that this strategy would bring the United States of America to the table. Al Gore, the US vice president, said so, and promised the US Congress would join the fight.

US intransigence notwithstanding, a scientific consensus now appears unshakable: by 2050, the world requires 80% reductions in CO_2 emissions to prevent tipping of the world environment into an unmanageable process and potentially a species-threatening crisis. Yet the options being contemplated in global and national public policy debates to take us to 80% reductions were nowhere near what is required, for several reasons.

The main reason is that the global balance of forces appears adverse to the deep emissions cuts desperately required. As a mid-2008 report from Bonn put it,

> Another round of talks on the road towards a new global deal on climate change was wrapping up in Germany on Friday, battered by criticism that progress had been negligible. The 12-day haggle under the 192-nation United Nations Framework Convention on Climate Change (UNFCCC) was the second since the accord in Bali, Indonesia, last December that set down a "road map" towards a new planetary treaty... India representative Chandrashekar Dasgupta deplored "the lack of any real progress" in Bonn and "a deafening silence" among industrialised countries, save the European Union.[3]

In this context, the state of debate in mid-2008 divides those who would want the world economy to slowly and painlessly adapt to CO_2 abatement strategies, and those who would advocate dramatic emissions cuts in a manner that is both redistributive (from rich to poor and North to South, and in the process male to female), and sufficiently shocking to economic structures and markets that major transformations in production and consumption are compelled.

3 Agence France Press, "Progress falters on road map to new climate deal," Bonn, Germany, 13 June 2008.

Market or Command?

There are some who argue that, along this spectrum, market-based instruments—either a "cap-and-trade" system or carbon tax (or some hybrid)—will have the capacity to rope in the major CO_2 emitters and compel them to reduce greenhouse gases as an economic strategy. A debate has emerged about how to make mitigation more efficient. As the US Congressional Budget Office explains:

> The most efficient approaches to reducing emissions of CO2 involve giving businesses and households an economic incentive for such reductions. Such an incentive could be provided in various ways, including a tax on emissions, a cap on the total annual level of emissions combined with a system of tradable emission allowances, or a modified cap-and-trade program that includes features to constrain the cost of emission reductions that would be undertaken in an effort to meet the cap.[4]

The "cap" means that each major point source of emissions—usually in the form of a country and a firm within a country—would be granted an emissions permit for each tonne of CO_2 released into the atmosphere. The cap would gradually reduce to the point that by 2050, the 80% target is met. The crucial point is that through the "trade", flexibility can be attained so as to achieve more efficient greenhouse gas reduction. Those with the opportunity to make bigger cuts should do so and sell their "hot air"—the emissions saved above and beyond what is required at any given point in time—to those who have a harder time making the required cuts. Such a trading strategy would keep the high-emissions businesses alive until they have time to adapt. Auctioning the permits would give governments a dependable revenue stream which could be used to invest in renewable energy and other innovations. In the US, $300 billion per year is anticipated as feasible income (at $10-15 per metric tone of CO2) by reducing emissions 80% below 1990 levels by 2050.

Another version of a market-based climate change mitigation system—which either enforces underlying economic dynamics or changes them—is a tax on greenhouse gas emissions. Such a tax would take the production system as given and alter the demand structure. According to an assessment by the US Congressional Budget Office,

> A tax on emissions would be the most efficient incentive-based option for reducing emissions and could be relatively easy to implement. If it was coordinated among major

4 US Congressional Budget Office, *Policy Options for Reducing CO_2 Emissions*, Washington DC, February 2008.

> emitting countries, it would help minimize the cost of achieving a global target for emissions by providing consistent incentives for reducing emissions around the world. If other major nations used cap-and-trade programs rather than taxes on emissions, a U.S. tax could still provide roughly comparable incentives for emission reductions if the tax rate each year was set to equal the expected price of allowances under those programs.[5]

The major problems with taxation are tax avoidance capacities of influential industries, and incidence: namely, the question of who pays a disproportionate share of the bill. There are ways to design a tax system with a strongly redistributive outcome, and in the process to incentivize transformative economic strategies. However, a dramatic shift in political power is required for such an outcome. The typical energy taxation strategy, such as British Columbia, excessively penalises those in the working class least able to change behaviour.

> A more equitable version of emissions trading advocacy comes from those who recommend a per capita strategy oriented to social justice along North-South lines, combined with trading. The per capita right-to-emit has been theorised through "Contraction and Convergence" and "Greenhouse Development Rights" strategies. The former, as advocated by Aubrey Meyer, takes as the basic principle the need to share rights to pollute equitably and in the process shrink total CO2 emissions.[6]

The latter, as argued by Tom Athanasiou, accepts equity but also considers ability to finance emissions reductions. Both assume that if the right to pollute is established and distributed, a market system—whereby once allocated, the per capita emissions can then be traded by those who need them less (in the South) to those (in the North) who need them more (due to addiction)—would efficiently ease the burden of transforming economies. Once the system is established, the cap on emissions could be progressively lowered so that global warming stays under 2 degrees.

The non-reformist alternatives to market-based strategies typically fall into state-oriented command-and-control, and activist "direct action." The rationale here is, typically, that the application of market incentives—and in the process, the granting of pollution rights—cannot generate the cuts needed to save our species from severe damage due to climate change. Instead, a variety of strategies and tactics that would explicitly cut greenhouse gas emissions is preferable. Some of the strategies—a switch to renewable energy, changed consumption patterns, new production and consumption

5 US Congressional Budget Office, *Policy Options for Reducing CO2 Emissions*.
6 http://www.gci.org.uk/Animations/BENN_C&C_Animation[Tower&_Ravens].exe

incentives through punitive taxation, and "keep the oil in the soil and the coal in the hole" campaigns—are already being adopted by some activists. Unfortunately, the most important debating sites in the Northern environmental reform circuits do not permit these options to be raised in polite company.

US and European Debates

In mid-2008, the most important single site of debate was the US Congress, where a cap-and-trade law proposed by Senators Joe Lieberman and John Warner was narrowly defeated on June 6. Although there are two committed US Presidential candidates in the November 2008 election who have aggressive, non-reformist positions on climate change—Ralph Nader (Independent) and Cynthia McKinney (Green Party)—their chances of winning are negligible. The two who will set the climate agenda from 2009 onwards are Barack Obama and John McCain, and both support the cap-and-trade concept. The primary difference is that Obama supports an auction for emissions permits, while McCain would give out the permits to large CO_2 polluters for free, at least initially, even though this rewards prior pollution.

The Environmental Defense Fund argues that core support for cap-and-trade in the US Congress represents an opportunity in 2009 for a major legislative initiative. However, there was also quite impressive opposition to Lieberman-Warner by environmentalists and other progressive organisations—including Greenpeace, Friends of the Earth, MoveOn.org, CREDO Mobile and Public Citizen—because the bill included support for nuclear energy, because of its inadequate emissions cap, because of its adverse impact on low-income people, and because of other problems inherent in carbon trading. Increasingly, there are many environmental justice organisations lobbying Congress not for cap-and-trade, but for a robust and fair carbon tax instead.

The other main site of debate is Europe, whose Emissions Trading Scheme (ETS) has been hotly contested. Due to the large reliance upon controversial offsets as well as the ETS price crash in April 2006 once a flood of emissions permits were released to companies on a gift (non-auctioned) basis, there is doubt about the ability of the ETS authority to tackle the challenge of regulating emissions. According to Jutta Kill of Sinkwatch, there are six lessons to be learned from the ETS experience:

1. Over-allocation of permits due to intensive industry lobbying during the allocation process led to price collapse of ETS

permit prices in April 2006 and few permit trades for compliance purposes. Similar price collapse due to over-allocation has been reported for the New South Wales emissions trading scheme. Lack of a stringent cap has undermined the emissions trading scheme. Slight tightening of the cap for the second phase of the ETS from 2008-2012 in the wake of the failure and price collapse during phase 1 has been offset by increasing the hole in the cap: across the board, companies are allowed to use significantly more offset credits from CDM and JI projects during phase 2 compared to phase 1 of the ETS. Several reports have shown that the shortfall of permits resulting from the tightening of the cap in phase 2 will be filled to 88%-100% by increased volume of offset credit influx into the ETS.

2. Free allocation of emission permits has led to record windfall profits to energy utilities and some of the highest emitting industry sectors in the EU. 100% auctioning in the third phase of the ETS increasingly considered as the only remedy to salvage the ETS. Capping emissions without 100% auctioning selects against immediate investment in long-term structural change. Short-term and uncertain price signals discourage structural change, cost-spreading discourages innovation.
3. Any influx of offset credits into the emissions trading scheme will undermine effectiveness due to risk of development of a 'lemons market' as a result of unverifiable quality of offset credits. This is of concern particularly given the increasing evidence that up to 1/3 of CDM projects [either already registered or in the process of CDM registration] are considered 'non-additional' by CDM experts.
4. There is increasing acknowledgement, including from the private sector, that emissions trading will not provide the incentives and price signals required to trigger significant investments and R&D into zero-carbon and low-carbon technologies which is required to be able to achieve the emissions cuts required to avert climate chaos.
5. Increasing signs that more effective approaches to switch to zero-carbon economies are held back for fear of jeopardizing the EU's flagship Emissions Trading Scheme. A leaked UK government internal note for example reveals a deep concern that achieving the 20 per cent renewable energy target itself could present a "major risk" to the EU's emission trading scheme, for which London has become a major centre of exchange. Combined with the EU's drive to greater energy

efficiency, increasing the share of renewable energy could cause a carbon price collapse and make the ETS "redundant", the note says.

6. Effective and economically viable alternatives to cap-and-trade approaches include (1) a cap-and-auction approach under which the cap is reduced annually and will approach zero over mid-term & where auctioned permits are not traded; where a hole in the cap through an influx of carbon offset credits is not permitted and where (2) feed-in-laws ensure long-term minimum price guarantees for and unlimited uptake of renewable energy into the national grid. Such legislation has led to significant increases in renewable energy volumes in the national grid in Germany as well as a booming renewable energy industry, with creation of significant numbers of new employment, esp. in the wind energy and photovoltaic sector; where (3) subsidies promoting further use of fossil fuels are phased out and possibly re-directed towards R&D in the field of zero-carbon technologies, and where (4) energy efficiency potential, esp. in the housing and household appliances sectors, is fully utilized.

A crucial determinant of the impact of market mechanisms, whether carbon trades or taxes, is the problem of our unreliable understanding of carbon price elasticity: i.e., what happens to demand for carbon-related products when their price changes, either in small increments or dramatically. In addition, a series of less publicised alternatives are in continual evolution, including the Contraction-and-Convergence and Greenhouse Development Rights strategies for personal emissions rights, which also involve trading.

In contrast to market-related approaches, command-and-control strategies for emissions reductions have an important history. However, for public policy to evolve in a just and effective way on climate emissions, a much stronger set of measures will be required. These will mix the set of command-and-control strategies associated with prior emissions controls (e.g. ChloroFluoroCarbons in the 1996 Montreal Protocol and many European regulations of emissions) and the national state strategy known as “leave the oil in the soil” (and “leave the coal in the hole”), with direct grassroots action against greenhouse gas emission points (such as coal facilities), as advocated by even Al Gore in 2007. Still, the main point is that market environmentalism's reform strategies are not working.

Market Environmentalism as Reformist Reformism

The most important lessons of environmental politics in recent decades are the failure of market strategies to date. There are intrinsic, deep-level problems in the new emissions markets, both on their own terms and with respect to the climate and peoples most vulnerable. What is required is agreement on the strategic orientation and the kinds of alliances that can move the debate forward. To this end, applied to the debate over market solutions to the climate crisis, consider the late French sociologist Andre Gorz's distinction (in his book Strategy for Labour) between “reformist reforms” and “non-reformist reforms”:

1. Reformist reforms undergird, strengthen and relegitimise the main institutions and dynamics in the system that cause the climate change problem, and thus weaken and demobilise environmental and social justice advocacy communities through co-option
2. Non-reformist reforms undermine, weaken and delegitimise the climate change system's main institutions and dynamics, and consequently strengthen its critics, giving them momentum and further reason to mobilise

This distinction helps us assess four market-based emissions mitigation initiatives along this spectrum:

1. carbon trades without auctions, where pollution permits are grandfathered in, as in the European Trading Scheme, are now so widely delegitimised, that only US Republican Party candidate John McCain supports them
2. carbon trades with auctions will increasingly dominate discussions, especially in the US if Barack Obama is elected President in November, in part because they have the support of many mainstream commentators and large environmental organisations
3. carbon taxes, either aimed to be revenue-neutral, or to raise funds for renewables and socio-economic transformation, will continue to be seen as the main progressive alternative to carbon trading, even though such taxes do not address more fundamental power relations or achieve systematic change required to avert climate disaster
4. Greenhouse Development Rights, Contraction-and-Convergence and other per capita “right to pollute” strategies with a North-South redistributive orientation are also advocated by eloquent environmentalists and some Third World leaders, and entail a trading component and the property right to emit

Each strategy has major disadvantages by virtue of being located within market-based systems, especially during a period of extreme financial volatility during which energy-related securities (including emissions credits) have been amongst the most unreliable measures of value. As a result, we can conclude that the first two are reformist reforms, and the latter two have non-reformist possibilities. There are two further non-reformist alternatives—command-and-control emissions prohibitions and local supply-side strategies (a kind of command-and-control from below) – that bear consideration once the market-based strategies are briefly reviewed.

A central problem is that reformist reforms can be counterproductive to mitigating climate change. In short, it is possible that an exploitative system becomes even stronger in the wake of an eco-social change campaign. If campaigners unwittingly adopt the same logic of the system, and turn for change implementation to the kinds of institutions responsible for exploitative damage, and moreover also restore those institutions' credibility, the reforms may do more harm than good.

To illustrate, if mainstream environmentalists endorse World Bank strategies to commodify forests through the "Reducing Emissions From Deforestation and Degradation" (REDD) programme, their co-optation inevitably strengthens the Bank—responsible for vast climate damage as a major fossil fuel investor—and weakens the work of indigenous people and environmental activists. The reformist-reform logic appears in the case of a Brazilian meat packing plant in the Amazon that coincides with the Bank's investments in forest protection. There are, in such cases, persuasive advocates of reform, such as Dr. Daniel Nepstad of Woods Hole Research Institute, who accept the basic parameters of the system's logic, namely the ongoing exploitation of the Amazon, and who seek to tame that process using World Bank resources:

> The irony is that at the same time the World Bank was launching the Forest Carbon Partnership Facility, the International Finance Corporation [a World Bank agency] was making a loan to the Bertin meat-packing plant in the Brazilian Amazon. The loan aims to set up a sustainable supply of beef for an ecological meat-packing facility in Marab in the state of Para. What upset the protestors was the idea that the same institution would be accelerating deforestation by expanding the capacity to process meat in the Amazon region as it creates this mechanism for compensating nations for reducing their emissions. Our own feeling on this is that there comes a point where we have to acknowledge that the region is undergoing an economic transformation and if we can find a powerful lever for commodifying how this transformation takes place—putting a premium on legal land-use practices, legal deforestation,

> the gradual elimination of the use of fire—we should take it. For me that trumps the negative consequences of setting up increased capacity in the region. In other words, I really do believe that there are many responsible cattle ranchers and soy farmers in the Amazon who are waiting for some sort of recognition through positive incentives. The incentive could be a very small mark up—literally a few cents per pound of beef sold—but it would send a signal to these ranchers that if they want to participate in the new beef economy, they better have their legal forest reserve in order or have compensated for it, maintain or be in the process of restoring their riparian zone forests, control erosion, and get their cows out of the streams and into artificial watering tanks. There is a whole range of positive things that can happen once cattle ranchers see that if they do things right they are rewarded. This means that as Brazil moves forward as the world's leading exporter of beef - with tremendous potential to expand - we have a way to shape that expansion as it takes place to reduce the negative ecological impacts.[7]

Such logic is also evident in efforts to reform carbon trading by advocating the auctioning of emissions permits. In opposition to reformist reforms, a coalition of 32 Indigenous Peoples (and environmental allies) lobbied against the REDD programme:

> Given the threat to Indigenous Peoples' Rights that REDD represents, we call on the United Nations Permanent Forum on Indigenous Issues to recommend strongly to the UNFCCC, the UN Forum of Forests, concerned UN agencies such as UNEP, the World Bank, the Special Rapporteur on Human Rights and Fundamental Freedoms of Indigenous Peoples and nation states that REDD not be considered as a strategy to combat Climate Change but, in fact, is in violation of the UN Declaration on Indigenous Peoples. Moreover, we also urge the Permanent Forum to recommend strongly to the Convention on Biological Diversity that the implementation of the programme of work on Forests and biodiversity prohibit REDD. We also further urge that Paragraph 5 be amended to remove “clean development mechanism, the Clean Energy Investment Framework, and the Global Environment Facility”. These initiatives do not demonstrate good examples of partnership with indigenous peoples. There are many CDM projects that have human rights violations, lack of transparency and have failed to recognize the principles of Free, Prior and Informed Consent.[8]

7 R. Butler, “55% of the Amazon may be lost by 2030 But carbon-for-conservation initiatives could slow deforestation”, *mongabay.com*, 23 January 2008.

8 Signatories include the Indigenous Environmental Network, CORE Manipur, Federation of Indigenous and Tribal Peoples in Asia, Na Koa Ikuiku Kalahui Hawaii, Indigenous World Association, CAPAJ- Parlamento del Pueblo Qollana, International Indian Treaty Council, Amazon Alliance, COICA, Instituto Indigena Brasileno para la Poropiedad Intelctual, The Haudenosaunee Delegation, Agence Kanak de Developpement, Mary Simat-MAWEED, Marcos Terena-Comite Intertribal-ITC-Brasil, Land is Life, ARPI-SC-Peru Amazonia, Asociaciones de Mujeres Waorani de la Amazonia AMWAE, Kus Kura S.C., Indigenous Network on Economic and Trade, Aguomon FEINE, Friends of the Earth International, Amerindian Peoples Association, FIMI North America, L.

From Reformist to Non-Reformist Reforms

Two crucial questions emerge which will help determine whether reforms proposed by advocates of carbon taxes and per capita emissions rights do more harm than good. The first is whether the kinds of reforms proposed—which entail putting a price on carbon and exposing that price (and all manner of related negotiations) to corporate-dominated national and global-scale "governance" initiatives—can be assured of both genuinely addressing the climate crisis and also redistributing energy and economic resources from rich to poor. The "devil is in the details" in relation to both a carbon tax and per capita emissions rights, yet as noted, the presumptions entailed in taxation (which often has a maldistributive impact, as shown in the British Columbia gas tax) and allocations of property rights will make a constructive outcome unlikely.

We are left asking, as a result, whether non-reformist reform opportunities might emerge so that a carbon tax can redistribute resources to both renewable energy investments and to low-income people who, through no fault of their own, are most vulnerable to higher energy prices? Could a per capita rights mechanism be designed and adopted that move forward the agenda of the environmental and social justice movements without falling victim to market distortions? These are not impossible outcomes, but given prevailing power relations are quite unlikely.

The second question is whether pursuing these sorts of reforms will contribute to the expansion and empowerment of the environmental justice movement. Remarked the originator of the Greenhouse Development Rights concept, Tom Athanasiou,

> Global justice activists will also have to shed old skins for larger, more capacious frameworks and approaches. There's much to say here, but the key is that a "radical" movement—which has, to this point, made its mark by exposing the charade of the Clean Development Mechanism and then going on to oppose all market mechanisms—is now visibly confronting a larger challenge in which mere opposition is not enough. If it would speak effectively for the poor and the vulnerable, then it must find a larger frame.[9]

Ole L. Lengai-Sinyati Youth Alliance, Beverly Longid-Cordillera Peoples Alliance Philippines, Red de Mujeres Indigenas sobre Biodiversidad de Abgatala, Fundacion para la Promocion de Conocimiento Indigena, Asociacion Indigena Ambiental, INTI-Intercambio Nativa Tradicional Internacional, Global Forest Coalition, Fuerza de Mujeres Wayuu, Caf' ek

9 T. Athanasiou, "Where do we go from here? The Bali meeting, and the lessons learned," *Grist,* 17 December 2007.

That frame was indeed found at the December 2007 Bali Conference of Parties, when a movement called “Climate Justice Now!” emerged to unite “green” and “red” demands:

- reduced consumption;
- huge financial transfers from North to South based on historical responsibility and ecological debt for adaptation and mitigation costs paid for by redirecting military budgets, innovative taxes and debt cancellation;
- leaving fossil fuels in the ground and investing in appropriate energy-efficiency and safe, clean and community-led renewable energy;
- rights based resource conservation that enforces Indigenous land rights and promotes peoples’ sovereignty over energy, forests, land and water; and
- sustainable family farming and peoples’ food sovereignty.

The alternative strategies proposed above do not rely entirely upon command-and-control, for that in turn requires national and ultimately global state power, which is not likely to be exercised by environmentally-responsible political parties for many years if not decades, notwithstanding encouraging signs from Ecuador. Instead, a new approach to command-and-control-from-below is being adopted which takes forward community, labour and environmental strategies to maintain resources in the ground, especially fossil fuels and especially in cases where “resource curse” economic power relations prevail. It is in such cases where activists have an unprecedented opportunity.

Leave the Oil in the Soil

In contrast to reformist reform initiatives such as REDD, non-reformist reforms are generated by campaigns that explicitly reject the underlying logic of climate change, i.e., fossil fuel exploitation. Such reforms legitimate the opponents of the system, not the system itself, and lead to further mobilisation rather than to the movement's cooptation. An example is the partially-successful struggle to “keep the oil in the soil” in the Yasuní National Park waged for several years by the Quito NGO Accion Ecologia and its Oil Watch allies. The campaign advanced rapidly in 2007, when Ecuadoran president Rafael Correa declared his intent to leave $12 billion worth of oil reserves untouched in perpetuity, in exchange for anticipated payments from international sources - not as a carbon offset, but instead to be considered part of the North's repayment of its “ecological debt” to the South.

The aim of the proposal is to provide a creative solution for the threat posed by the extraction of crude oil in the Ishpingo-Tiputini-Tambococha (ITT) oil fields, which are located in the highly vulnerable area of Yasuní National Park. The proposal would contribute to preserving biodiversity, reducing carbon dioxide emissions, and respecting the rights of indigenous peoples and their way of life.

Ecuadorian President Rafael Correa has stated that the country's first option is to maintain the crude oil in the subsoil. The national and international communities would be called on to help the Ecuadorian government implement this costly decision for the country. The government hopes to recover 50% of the revenues it would obtain by extracting the oil. The procedure involves the issuing of government bonds for the crude oil that will remain "in situ," with the double commitment of never extracting this oil and of protecting Yasuní National Park. It is important to keep in mind that if Ecuador succeeds in receiving the hoped for amount—estimated at 350 million dollars annually—it would only be for a period of ten years beginning after the sixth year, since production and potential revenues would progressively decline at the end of that period.

A more promising alternative would be a strategy to provide the government with the 50% of resources in such a way as to provide a consistent income for an indefinite period of time. This resources would be channelled towards activities that help to free the country from its dependency on exports and imports and to consolidate food sovereignty. The proposal is framed within the national and international contexts based on the following considerations:

1. halt climate change
2. stop destruction of biodiversity
3. protect the huaorani people
4. economic transformation of the country.

The very notion of an "ecological debt" is also a non-reformist reform, because although it asserts the calculation of the monetary value of nature, payment on such an obligation would revise such a range of power relationships that massive structural change would inevitably follow. Such linkages between environmental stewardship and social justice provide the only sure way to generate political principles that can inform lasting climate mitigation.

How, then, do we move the environmental agenda from the reformist reforms that market environmentalists have bogged the debate down in, to non-reformist reforms? The only sure route to any non-reformist outcome is, as ever, via the grassroots.

Elite Inaction, Grassroots Revolt

Because of the failure of elites to properly recognise and address climate change, and because their strategy of commodifying the commons through the Clean Development Mechanism was already a serious threat to numerous local communities across the Third World, the Durban Group for Climate Justice produced a Declaration on Carbon Trading in 2004, which rejected the claim that this strategy could halt the climate crisis. It insisted that the crisis has been caused more than anything else by the mining of fossil fuels and the release of their carbon to the oceans, air, soil and living things.

The Durban Declaration suggested that people need to be made more aware of carbon trading threat, and to actively intervene against it. By August 2005, inspiring citizen activism in Durban's Clare Estate community forced the municipality to withdraw an application to the World Bank for carbon trading finance to include methane extraction from the vast Bisasar Road landfill (instead, the application was for two relatively tiny suburban dumps).

But the battle against Bisasar's CDM status was merely defensive, and the loss of Sajida Khan to cancer in July 2007 was a great blow to the struggle there. Community residents have a proactive agenda, to urgently ensure the safe and environmentally sound extraction of methane from the Bisasar Road landfill, even if that means slightly higher rubbish removal bills for those in Durban who are thoughtlessly filling its landfills, without recycling their waste. Khan's brother Rafiq is one who will pick up Sajida's banner. Clare Estate's apartheid-era dump should now finally be closed, a decade after originally promised. Simultaneously, good jobs and bursaries should be given to the dump's neighbours, especially in the Kennedy Road community, as partial compensation for their long suffering. Their fight for housing and decent services has been equally heroic; the current handful of toilets and standpoints for six thousand people should shame Durban municipal officials, whose reprehensible response was to mislead residents into believing dozens of jobs will materialise through World Bank CDM funding.

At the time the Durban Declaration was drafted in October 2004, only cutting-edge environmental activists and experts understood the dangers of carbon trading. Others—including many well-meaning climate activists—argued that the dangers are not intrinsic in trading, just in the rotting "low hanging fruits" that represent the first and easiest projects to fund, at the cheapest carbon price. Since then, however, numerous voices have been raised against carbon colonialism. These voices oppose the notion that, through carbon

trading, Northern polluters can continue their fossil fuel addiction, drawing down the global atmospheric commons in the process. Rather than foisting destructive schemes like the toxic Bisasar Road dump on the South, the North owes a vast ecological debt. For playing the role of "carbon sink", to illustrate, political ecologist Joan Martinez-Alier and UN climate change commissioner Jyoti Parikh calculate that an annual subsidy of $75 billion is provided from South to North. Many advocates of environmental justice signed the Durban Declaration and sponsored debates within their own organisations and communities.

In October 2004, the Durban Group also noted that the internal weaknesses and contradictions of carbon trading are likely to make global warming worse rather than "mitigate" it. We are ever more convinced of that in South Africa, partly because in mid-2005, a leading official of state-owned Sasol publicly conceded that his own ambitious carbon trading project is merely a gimmick, without technical merit (because he cannot prove what is termed 'additionality'). The 'crony' character of the CDM verification system may allow this travesty to pass into the market, unless our critique is amplified. In October 2004, we worried that 'giving carbon a price' through the emissions market would not prove to be any more effective, democratic, or conducive to human welfare, than giving genes, forests, biodiversity or clean rivers a price. Over the past years, the South African government's own climate change strategy has been increasingly oriented itself to the 'commercial opportunities' associated with carbon.

Conclusion: Direct Action to Protect the Climate Commons

It is here, finally, where the most crucial lesson of the climate debate lies: in confirming the grassroots, coalface and fenceline demand by civil society activists to leave the oil in the soil, the coal in the hole, the resources in the ground. This demand emanated in a systemic way at the Kyoto Protocol negotiations in 1997 from the group OilWatch when it was based in Quito, Ecuador, as heroic activists from Accion Ecologia took on struggles such as halting exploitation of the Yasuni oil.

Within a decade, in January 2007, at the World Social Forum in Nairobi, many other groups became aware of this movement thanks to eloquent activists from the Niger Delta, including the Port Harcourt NGO Environmental Rights Action. (ERA visited Durban in March 2007 to expand the network with excellent allies such as the South Durban Community Environmental Alliance and the Pietermaritzburg NGO

groundWork, and in turn these groups committed in July 2008 to campaign against the proposed pipeline from Durban to Johannesburg which would double petrol product flow).

But the legacy of resisting fossil fuel abuse goes back much further, and includes Alaskan and Californian environmentalists who halted drilling and even exploration. In Norway, the global justice group ATTAC took up the same concerns in an October 2007 conference, and began the hard work of persuading wealthy Norwegian Oil Fund managers that they should use the vast proceeds of their North Sea inheritance to repay Ecuadorans some of the ecological debt owed.

Canada is another Northern site where activists are hard at work to leave the oil in the soil. In a November 2007 conference in Edmonton, the Parkland Institute of the University of Alberta also addressed the need for no further development of tar sand deposits (which require a litre of oil to be burned for every three to be extracted, and which devastate local water, fisheries and air quality). Institute director Gordon Laxer laid out careful arguments for strict limits on the use of water and greenhouse gas emissions in tar sand extraction; realistic land reclamation plans (including a financial deposit large enough to cover full-cost reclamation up-front); no further subsidies for the production of dirty energy; provisions for energy security for Canadians (since so much of the tar sand extract is exported to the US); and much higher economic rents on dirty energy to fund a clean energy industry (currently Alberta has a very low royalty rate). These kinds of provisions would strictly limit the extraction of fossil fuels and permit oil to leave the soil only under conditions in which much greater socio-ecological and economic benefit is retained by the broader society.

(I raised this issue in many sites in 2006-08, enthusiastically commenting on the moral, political, economic and ecological merits of leaving the oil in the soil. Unfortunately, in addition to confessing profound humility about the excessive fossil fuel burned by airplanes which have taken me on this quest, I must report on the only site where the message dropped like a lead balloon: Venezuela. At a July 2007 environmental seminar at the vibrant Centro Internacionale Miranda in Caracas, joined by the brilliant Mexican ecological economist David Barkin, our attempts failed to generate debate on whether petro-socialism might become a contradiction in terms.)

There are many other examples where courageous communities and environmentalists have lobbied successfully to keep nonrenewable resources (not just fossil fuels) in the ground, for the sake of the environment, community stability, disincentivising political corruption

and workforce health and safety. The highest-stake cases in South Africa at present may well be the Limpopo Province platinum fields and Wild Coast titanium finds, where communities are resisting foreign companies. The extraction of these resources is incredibly costly in terms of local land use, water extraction, energy consumption and political corruption, and requires constant surveillance and community solidarity.

Finally, one of the most eloquent climate analysts is George Monbiot, so it was revealing that in December 2007, instead of going to Bali, he stayed home in Britain and caused some trouble, reporting back in his Guardian column:

> Ladies and gentlemen, I have the answer! Incredible as it might seem, I have stumbled across the single technology which will save us from runaway climate change! From the goodness of my heart I offer it to you for free. No patents, no small print, no hidden clauses. Already this technology, a radical new kind of carbon capture and storage, is causing a stir among scientists. It is cheap, it is efficient and it can be deployed straight away. It is called ... leaving fossil fuels in the ground.

On a filthy day last week, as governments gathered in Bali to prevaricate about climate change, a group of us tried to put this policy into effect. We swarmed into the opencast coal mine being dug at Ffos-y-fran in South Wales and occupied the excavators, shutting down the works for the day. We were motivated by a fact which the wise heads in Bali have somehow missed: if fossil fuels are extracted, they will be used... The coal extracted from Ffos-y-fran alone will produce 29.5 million tonnes of carbon dioxide: equivalent, according to the latest figures from the Intergovernmental Panel on Climate Change, to the sustainable emissions of 55 million people for one year...

Before oil peaks, demand is likely to outstrip supply and the price will soar. The result is that the oil firms will have an even greater incentive to extract the stuff.

Already, encouraged by recent prices, the pollutocrats are pouring billions into unconventional oil. Last week BP announced a massive investment in Canadian tar sands. Oil produced from tar sands creates even more carbon emissions than the extraction of petroleum. There’s enough tar and kerogen in North America to cook the planet several times over.

If that runs out they switch to coal, of which there is hundreds of years’ supply. Sasol, the South African company founded during the apartheid period (when supplies of oil were blocked) to turn coal into liquid transport fuel, is conducting feasibility studies for new plants in

India, China and the US. Neither geology nor market forces is going to save us from climate change.

When you review the plans for fossil fuel extraction, the horrible truth dawns that every carbon-cutting programme on earth is a con. Without supply-side policies, runaway climate change is inevitable, however hard we try to cut demand.

Real solutions to the climate crisis are needed, and with its world-leading CO2 emissions, South Africa must be at the cutting-edge of progressive climate activism, not a lead partner in the privatisation of the atmosphere. That, in turn, will require resolution of another vast challenge: the lack of synthesis between the three major citizens' networks that have challenged government policy and corporate practices: environmentalists, community groups and trade unions. More work is required to identify the numerous contradictions within both South African and global energy sector policies/practices, and help to synthesise the emerging critiques and modes of resistance within progressive civil society. Only from that process of praxis can durable knowledge be generated about how to solve the climate and energy crises in a just way.

Climate Change—And The 'Other Footprint'

Ariel Salleh[1]

When governments, corporate think tanks, and multilateral agencies deliberate on strategies for combating climate change, you can be sure they'll bypass one highly salient variable. Global warming causes, effects, and solutions are "sex/gendered." Why for example, is women's ecological footprint negligible in comparison with men's? Why are women and children in every region the main victims of global warming? Why are women under-represented in climate negotiations at local, national, and international levels? Political elites and their media are complicit with this. And even activists reinforce it, since the conventional labelling of social movements disguises the fact that half of all worker, peasant, and Indigenous populations around the world are also women.[2] This is not only a problem for achieving coherent international climate policy. In building a path to the commons, it is important to keep in mind that preconscious gender assumptions will affect how the movement for "another globalisation" theorises itself and what strategies it chooses for getting beyond modernisation.[3]

Modernity, Energy, Sex-Gender

Looking at the here and now, the gender differential (whereby boys and girls across every culture are trained into different adult behaviour

1 Ariel Salleh is in Political Economy at the University of Sydney and an editor of *Capitalism Nature Socialism*. See also www.ArielSalleh.net.

2 In a typical example of this innocent oversight, Anne Peterman of the Global Justice Ecology Project writes: "Indigenous peoples and women are the traditional caretakers of the forest." Accessed 15 June 2008 at www.globalforestcoalition.org.

3 Ariel Salleh, *Ecofeminism as Politics (*London: Zed Books, 1997).

models) is a big determinant of resource consumption patterns. While it is true that individual attitudes vary by class, age, and ethnicity, social norms for "masculinity and femininity" have especially marked structural impacts on energy use in everyday life and in policy formulation, for instance, under the UN Framework Convention on Climate Change (UNFCCC). The claim is well supported in surveys undertaken by the Women's Environment Network (WEN) in London and by the German government funded women's NGO—GENANET - led by Ulrike Roehr.[4] Another way to illustrate this systematic gender difference is through the ecological footprint measure.[5] As ecological feminists point out, there was a time in Africa, when women farmers provided 80 per cent of the continents' food with minimal resource inputs and pollution outputs. Today, in parts of the global South where common land holdings are untouched by war, by neoliberal trade deals, and by technology transfers, many women still practice ecologically sound and self-reliant models of subsistence economics.[6]

It is often assumed that the capitalist division of labour emancipates women. But in fact, high tech economies reveal a more marked distinction between men's and women's time use and access to resources than subsistence economies do. A Swedish Government report shows that class notwithstanding, men's ecological footprint in that nation is remarkably larger than women's.[7] To repeat, there are always individual variations, but on average, Swedish men as a social category, are found to be big consumers of energy expensive manufactures and durable assets like houses, cars, and computers, while Swedish women are mainly purchasing weekly domestic consumption items—nature's perishables. Women's ecological footprint is actually smaller again, if adjusted for the fact that most are shopping for two or more other household members beside themselves.

---

4 Women's Environment Network and National Federation of Women's Institutes, "Women's Manifesto on Climate Change," May 2007: <www.wen.org.uk> (accessed 10 May 2008); GENANET—Focal Point on Gender Justice and Sustainability: www.genanet.de (accessed 1 September 2007). Since the Bali IPCC, action has moved to the international site: Gendercc—Women for Climate Justice: <www.gendercc.net> (accessed 10 May 2008).

5 Mathias Wackernagel and William Rees, *Our Ecological Footprint: Reducing Human Impact on the Earth* (Gabriola Island, BC: New Society, 1996): <www.footprintnetwork.org> (accessed 20 April 2007). This is not to suggest that advocates of the footprint indicator themselves are concerned with gender difference. When I wrote to Rethinking Progress about this in 2004, the reply was—good idea but not on our research agenda.

6 Veronika Bennholdt-Thomsen and Maria Mies, *The Subsistence Perspective* (London: Zed Books, 1999).

7 Gerd Johnsson-Latham, *Initial Study of Lifestyles, Consumption Patterns, Sustainable Development and Gender* (Stockholm: Swedish Ministry of Sustainable Development, 2006).

Energy use in the transport sector also reflects the way in which modern societies are structured by gender. Air travel between cities is predominantly used by men, but the pattern of intra-urban mobility is perhaps even more telling. A 2006 report commissioned by the European Parliament from a transnational consortium of academics, including the University of East London and Wuppertal Institute, points out that men in EU states tend to make trips by car for a single purpose; and over longer distances than women do.[8] A high sense of individualism and low awareness or concern for the environmental costs of private transport is inferred. Conversely, the EU statistics show that it is mainly women who travel by public transport or on foot. When women do use private cars, it is for multiple short journeys meeting several purposes on the one outing. The reason for women's complex activity pattern is that even among those in the waged workforce, most undertake reproductive or domestic labour for husbands, children, or elderly parents. The double shift, as feminists call it.

Meike Spitzner, an author of the European Parliament report observes, that women's days are given over to multi-tasking and so their transport needs are characterised by "spatio-temporal scatter." Moreover, the time spent by women moving between one labour activity and another—say from office to kindergarten to supermarket—adds to their economic exploitation under capitalism as unpaid household care providers. This "spatio-temporal scatter" characterises reproductive labour carried out by women in both developed and "developing" regions; as sociologists say, women are socialised for contingency. But it is important not to overgeneralise sex-gender differences. Around the world, the number of childfree career women is increasing, which in turn, means that environmentally speaking, their transport footprint may become more like that of men in the waged productive sector. Even so, these "liberated" women remain a statistical minority. Generally the pattern in industrialised economies is that men have determinate job hours and simpler schedules than working women. For this reason, men could more easily make good use of public transport options; but they don't—at least in Europe.

Again, this choice is a gendered one, having to do with structural differences in earning capacity. As socialist ecofeminists have argued over many decades now, capitalist and patriarchal systems are interlocked and mutually reinforcing.[9] And gender bias remains so entrenched in the international economy that women tend to be

8 European Parliament, *Women and Transport in Europe,* 2006: <www.europarl.europa.eu/EST/download.do?file=9558> (accessed 10 January 2008).

9 Maria Mies, *Patriarchy and Accumulation on a World Scale* (London: Zed Books, 1986); Salleh, *Ecofeminism as Politics*, op. cit., pp. 69-85, 150-169; Silvia Federici, *Caliban and the Witch* (New York: Autonomedia, 2004)

concentrated in either unpaid or lower salaried work, and even when professional women perform the same jobs as men, their wages are lower. Thus, it is mainly men who have money available for purchasing big status cars, as well as time available for leisure pursuits. Here—in so called developed and "developing" worlds alike—men are seeking high energy consumption recreations involving motorbikes, golf courses, computerised entertainments, or speedboats. Under capitalism, speed, technology, and indeed war, are associated with the psychology of masculine prowess, to such an extent that one might say that the oil crisis is sex-gender driven as much as driven by class interests. Mainstream environmentalist Jeffrey Sachs' inadvertently illustrates this imbalance in gender priorities when he notes that "US government funding for renewable energy technologies (solar, wind, geothermal, ocean, and bio-energy) totaled a meager $239 million, or just three hours of defense spending."[10] But as we shall see, even when renewables do appear on the agenda, the focus on technological solutions, is itself a gendered phenomenon.

Internalising vs. Externalising Responsibility

By contrast, due to the time consuming double shift of work and home, women's leisure footprint is all but non-existent. Today, globalised economic scarcity and ecological stress extract more time than ever from women's lives. But under pressure, they are found to meet their reproductive tasks with fewer resources by using good organisation and time management. This "internalised" response to environmental conditions contrasts with the accepted public political practice of "externalising" or displacing problems on to less powerful sections of the community.[11] For example, governments routinely locate waste disposal sites in poor neighbourhoods or on Indigenous land; or subsidise water use by factories, while taxing householders for it. Again, politicians in the economic North, externalise the costs of their high pollution lifestyle decisions on to countries in the South. There are many ways of doing this, but one is to offer incentives for converting food growing land across to biofuels.

Most neoliberal mitigation options are based on "externalisation": and market based solutions like carbon offsets and emissions trading simply serve private entrepreneurs. They shift costs by social means. But costs can also be displaced "materially" by technology. The EU

10 Jeffrey Sachs, "Reinventing Energy," *The Guardian*, 22 April 2008: <www.guardian.co.uk> (accessed 10 May 2008).

11 For speculation on the deeper psychosexual dynamic of this "othering" or 1/0 logic in Western culture, see: Salleh, *Ecofeminism as Politics*, pp. 35-52.

men interviewed about solutions to environmental problems clearly preferred "end-of-pipe" approaches to countering global warming. However, given that every such engineered remedy requires yet other technologies to manufacture it, and consumes a cradle to grave chain of human and natural resources along the way, the end of pipe solution is ethically—and thermodynamically—another form of "deferred responsibility."

As GENANET notes, while women readily adjust their own energy consumption habits, far too many men across the class divide accept humanly risky responses to climate change like nuclear power, or ecologically untested solutions like ocean sequestration. This high tech tunnel vision is encouraged by the fact that the impacts of industrial growth are often uncounted economic facts, which become "social"—as "externalities" for women to pick up. In the case of nuclear spills, for instance, it is women who cope with the biological and economic costs of nursing deformed babies or relatives with radiation induced leukaemias. Such experiences help to explain why women resist risky technologies, and why they have been quick to recognise the urgency of global warming. As radical feminists have taught us: "the personal is political!"

But women's precautionary attitudes are not only focused on their families. A survey by the Women's Environment Network reveals:

> 80% of women are very concerned about climate change as an important issue and 75% are apprehensive that government action to tackle climate change will not be taken soon enough. Women are also very concerned about the effects of climate change on future generations (85%), the poor (81%), and on plant, marine and animal life (81%), the impact of more flooding, drought and extreme weather (81%), water and food shortages (81%) and habitat destruction (80%).[12]

The asymmetry of learned gender norms and responsibilities and the skills and values that result from gendered labours, are found as much in the "developing" South as in the North. Whether housewives, peasants, or Indigenous gatherers, women are profoundly concerned about ecological degradation. They have a long history of initiating neighbourhood ecology campaigns.[13] Now, a global cohort of women is insisting that international policy planners and activists start thinking about gender justice and environmental sustainability together.

12 WEN Manifesto cites UK public opinion polls by Emap Advertising in 2007; Ipsos MORI Climate Change Survey in 2006; and a Stockholm study "Putting the Environment in Perspective" in 2005, as demonstrating women's greater concern.

13 Miriam Wyman (ed.), *Sweeping the Earth* (Charlottetown, PEI: Gynergy Books, 1999); Salleh, *Ecofeminism as Politics*, pp. 17-32.

A modest liberal feminist start—based on getting an equal voice in the public sphere—has been made by women's groups operating in parallel to UNFCCC meetings. At the Conference of the Parties (COP) held in Milan, 2004, a Gender and Climate Change Network was formed with a view to drawing the UNFCCC and Kyoto Protocol into line with existing international agreements on women's rights. Women expect politico-legal consistency on the part of governments and UN agencies, but this appears to be a tough call. An analysis of policy adopted at the Intergovernmental Panel on Climate Change (IPCC) displays a very androcentric arena indeed. Women are under-represented in all climate relevant decision-making bodies—local, national, and international. In fifteen years of climate negotiations, only one UNFCCC resolution has dealt with gender. And this was about committee participation procedure—not the nitty-gritty socio-economics of "agency"—how accepted "masculine and feminine" behaviour trends are differently implicated in global warming.

Woman, Native, Other

Beyond gender blindness, the androcentric orientation of UNFCCC decision making is compounded by eurocentrism. This means that women in the global South face a double marginalisation. And just as industrial civilisations of the North have been built on the labour and resources of colonised peoples at the periphery of its vision, now the North uses these same regions to mop up its own excessive waste emissions. Since by the Kyoto Protocol, ecosystems are accorded economic value for their photosynthetic capacity to absorb CO2 and convert it back to life giving O2 again, a Third World nation can be readily induced to resolve foreign debt by trading on the ecological cleansing service of its forests.

The case of Costa Rica is telling—and should ring an alarm bell for climate change and global justice activists alike. With encouragement from a solid masculine partnership of Canadian government agencies, international environmental NGOs, mining and logging industries, the Costa Rica Ministry of Environment and Energy has enclosed 25 per cent of the nation's territory as "conservation zones." This land includes national parks, wetlands, biological reserves, and wildlife refuges. But in the process, hundreds of Indigenous and peasant families have been evicted from forested areas, losing their livelihood. Peruvian ecofeminist researcher Ana Isla has followed these "displaced communities" as they migrate to San Jose tourist areas in hope of surviving by the cash economy. Isla finds that the bodies of women

and girls are the sole remaining "asset" of these resource stripped peoples, and it is they who have no choice now but to become family breadwinners by prostitution.[14] Offering up conservation areas as CO2 sinks results in debt cancellation and can be a national boon for foreign exchange through ecotourism. But ecotourism slides into sex tourism and sex tourism means that Costa Rica has now become a thriving destination for paedophiles from the North. The Kyoto Clean Development Mechanism (CDM) is simply another typically masculinist "solution by deferral" on to the lives of others. And ultimately, what is expendable along the line of trade-offs is the material bodies of women. Out of sight, out of mind.

Will the new round of European Environmental Protection Agreements (EPAs) be a party to such thoughtless neocolonialism in African states? What is likely to happen to grassroots communities as a result of the Australian Government's climate change diplomacy in the Asia-Pacific region?[15] The Clean Energy Investment Framework, a World Bank and Global Environment Facility (GEF) response to the 2005 G-8 Summit at Gleneagles, is pushing nuclear energy generation, coal-fired power, and large dam projects. This approach to "mitigation and adaptation" merely substitutes one kind of corporate driven ecosystem degradation for another—and communities displaced by such mega-projects are likely to become environmental refugees. The wind power farm constructed on land of the Wayuu people in Colombia is another case in point. There was no prior informed consent from the community for this "partnership." It trampled over sacred territory. Conflicts over the project resulted in many Indigenous deaths. And finally, this "renewables project" was introduced to power Cerrajon, the world's biggest open coal mine.[16]

As Ahmad Maryudi wrote in a recent issue of the *Jakarta Post*, the affluent consumer world's offshore carbon "trade and hedge" proposals make little scientific sense, since "most GHG emissions come from the use of fossil fuels in transportation, industry, domestic and commercial applications."[17] In cultural, political, and ecological terms, market commodification of air and forests through schemes like Reducing Emissions from Deforestation and Degradation (REDD) contradict both the UN Declaration on the Rights of Indigenous Peoples

14 Ana Isla, "Who Pays for Kyoto Protocol?" in Ariel Salleh (ed.), *Eco-Sufficiency and Global Justice*. London and New York: Pluto Press, 2009.

15 The World Bank anticipates Kyoto mark II and Australia's forges a new Forest Carbon Partnership with Indonesia by investing $30 million in the logged swamps of Central Kalimantan. Belinda Lopez, "When Rudd Sticks," *New Matilda*, 17 June 2008: <www.newmatilda.com> (accessed 18 June 2008).

16 Qollasuyo Declaration, La Paz, March 2008. Thanks to Ian Angus for copy and commentary: <www.climateandcapitalism> (accessed 30 March 2008).

17 Ahmad Maryudi, "Your Climate Change, Not Ours," *Jakarta Post*, 3 June 2008.

and the CBD. An Indigenous petition to the UNPFII points out that too many so called mitigation schemes prevent access and threaten indigenous agriculture practices; destroy biodiversity, cultural diversity, traditional livelihoods and knowledge systems; and cause social conflicts. Under REDD, States and carbon traders will take more control over our forests.[18]

In March 2008, in the Qollasuyo district of La Paz, peoples of the Americas discussed deforestation, protection of bio-cultural diversity, and climate change. The Qollasuyo Declaration states clearly that the current ecological crisis is a result of the Western capitalist model of development and that solutions based on more of the same productivist reasoning will not succeed. From the Indigenous point of view -

> chaotic climatic problems including prolonged rainfall, flooding and droughts, deglaciation, rising sea levels, the expansion of endemic diseases, fires in the tropical rain forest, changes in the growing season ... are breaking the chain of life, threatening the survival of our peoples, and inducing high rates of extreme poverty. Indigenous women are particularly affected.[19]

The Bolivian statement addresses the impacts of neocolonial resource extraction on Indigenous habitats and livelihood; the political marginalisation of Indigenous voices by governments, multilateral agencies, corporate interests, NGOs; and now World Bank sponsored mitigation and adaptation solutions "outrageously assault our way of life."

Getting From Here to There

It is not hard to see why Indigenous peoples reject the World Bank's notion of "good partnership."[20] At the UNFCCC COP 13 negotiations in Bali, January 2008, Indigenous speakers were barred. At meetings of the UN Convention on Biological Diversity (CBD) in February 2008, they were told they could only remain present if backed by another (that is,

18 Petition to the 7th Session of the United Nations Permanent Forum on Indigenous Issues, April 2008: <www.risingtidenorthamerica.org> (accessed 15 June 2008).

19 Qollasuyo: <www.climateandcapitalism> (accessed 30 March 2008).

20 Indigenous Environmental Network, "Indigenous People's Protest Carbon Trading at UN," 3 May 2008 <www.risingtidenorthamerica.org> (accessed 15 June 2008). Also Victoria Tauli-Corpus, *Impact of Climate Change Mitigation Measures on Indigenous Peoples and on their Territories and Lands* (New York: UNFPII, E/C.19/2008/10).

non-indigenous) party.[21] Again, Florina Lopez of the Indigenous Women's Biodiversity Network of Abya Yala reports that the UNPFII in April 2008 ignored grassroots objections to false climate change solutions like carbon trading, which operate in the service of business-as-usual but do nothing for peoples and environments. If women North and South are "othered" in the deeply masculinist culture of international relations and now fight for a voice at climate change negotiations, so too, Indigenous communities have no platform within the UNFCCC for making their views known. Victoria Tauli-Corpus, chair of the UN Permanent Forum on Indigenous Issues (UNPFII) confirms that the UNFCCC has not yet invited them to participate in its deliberations. However, Indigenous peoples worldwide are mobilising to oppose the gross excess of the neoliberal footprint and its self-serving political responses to global warming.

The Qollasuyo Declaration points to the traditional economic knowledge base achieved by Indigenous peoples by means of sound local environmental management. Again, in common with the labour of domestic care givers in the global North, this "other footprint" rests on the internalisation of responsibility. Peoples with finely attuned ecological skills object to being treated as if they are "in transition" to an urban industrial economy; that is, as if their own tried and tested self-sufficient provisioning systems have no validity. In the culturally genocidal context of World Bank and UNFCCC policy, the rhetoric of "indigenous stewardship" is invoked—and at the same time, emptied of all material meaning. It is imperative for collective struggles to turn the industrial juggernaut around, that Indigenous peoples should have full participation rights in the UNFCCC; consultation and informed consent; an expert committee drawn from Indigenous ranks; and financing of projects that are culturally appropriate.

The discussion of alternatives would ground—and bring consistency to the incoherent pragmatism of agencies like the CBD, UNESCO, FAO, UNICEF, GEF, and UNDP. And instruments do exist, which should legitimate the presence of the "other footprint" in the international climate change dialogue. These are the UN Declaration on the Rights of Indigenous Peoples and the International Labour Organisation (ILO) Convention 169. A meeting in Jakarta, June 2008, has now called on the UN establish a new convention covering Peasant Rights.[22] In parallel vein, women workers and householders demand a fresh reading of the historic Declaration of the UN Fourth World

21 Report from Bali by the UK-Indonesia NGO, *Down to Earth*, No. 76-77, May 2008: <www.dte.gn.apc.org/76bcl.htm>; the CBD fiasco is described in the blog: <www.intercontinentalcry.org/indigenous> (both accessed 18 June 2008).

22 Final declaration of International Conference on Peasants' Rights, posting by Via Info En <via-info-en@googlegroups.com> 25 June 2008.

Conference on Women held in Beijing. As early as 1995, this Platform of Action invited governments and multilateral agencies to get their heads around the many structural links between sex-gender and environments; to analyse programs for gender content and include women in decision-making.[23] But to facilitate this "coming out," women in Europe, the Americas, Africa, Asia, and Oceania, will need funds to document gendered energy usage patterns, and funds to travel, lobby, and negotiate as "partners."[24]

In his famous address to the UN General Assembly in September 2007, Bolivian President Evo Morales said: "the Indigenous peoples of Latin America and the world have been called upon by history to convert ourselves into the vanguard of the struggle to defend nature and life."[25] Morales is close to the mark, but his angle of vision needs a small adjustment. At least half of all Indigenous communities (like half of all non-Indigenous worker, carer, and peasant communities) are women, materially skilled in eco-sufficient regenerative labours—biological, ecological, economic, and cultural—and morally committed to the maintenance of living processes. This means that as alter-globalisation activists plan for social transformation, the revolutionary potential of women must be recognised as cutting across worker, peasant, Indigenous, and domestic fractions of the movement. Socially, women are a majority, penetrating every strand of the political spectrum. Ecologically, women's internalising labour on a global scale is what bridges the very metabolism of humanity and nature.

To assimilate the political relevance of these intercultural and sex/gendered rationalities, is to take a first step towards the commons—a global future based on decentralisation, autonomy, and cultural diversity. And in getting "from here to there", demanding sociological coherence and justice in the UNFCCC process, is time well spent in raising consciousness. towards that historical move. It is critical that neoliberal governments everywhere dis-aggregate and discuss consumption statistics by gender and by culture. Unlike the class-based ecological footprint contained and constrained by capitalist patriarchal priorities, the "woman, native, other footprint" already models a just and sustainable alternative. But will the globalising monoculture be deconstructed in time to save life on earth? The

23 UN, *The Official Report of the United Nations Fourth World Conference on Women*, Beijing Declaration and Platform, 1995: <www.un.org/womenwatch/daw/beijing/index.html> (accessed 10 May 2008).

24 For an update on women's UNFCCC representation, see Minu Hemmati, "Gender Perspectives on Climate Change," Emerging Issues Panel, United Nations Commission on the Status of Women, 52nd Session, March 2008. Gendercc—Women for Climate Justice: <www.gendercc.net> (accessed 10 May 2008).

25 Indigenous Environmental Network: <www.risingtidenorthamerica.org> (accessed 15 June 2008).

absence of "gender literacy" and "inter-cultural literacy" among many policy analysts, academic researchers, and even activists, indicates that urgent "capacity building" is wanted, North and South. Without a grasp of basic structural notions like "difference" in relation to resource use, and without an understanding of the socio-political mechanisms of "othering," it will be impossible to carry through any solutions to global warming, let alone clear a pathway to lasting change.

Video Clip: H_2Oil

Directed by Shannon Walsh
Produced by Loaded Pictures

This video can be seen online at http://blip.tv/file/1383323.[1]

1 Note that you can click on the hyperlink from within the PDF document to open the video in your web browser.

The Smell Of Money: Alberta's Tar Sands

Shannon Walsh

> There is no environmental minister on earth who can stop the oil from coming out of the sand, because the money is too big.
> —Stéphane Dion, Canadian Federal Minister of Environment

At Syncrude's Wood Bison Viewpoint 35 km north of Fort McMurray Alberta, visitors usually first stop to take photos of the carbon spewing smoke stacks puffing away at the refinery in the near distance before turning their lenses to the grazing bison on 'reclaimed' Syncrude land. Syncrude Canada Ltd. is the largest producer of synthetic crude oil in the world, and one of the oldest companies in Alberta's oil patch, producing 111 million barrels of oil in 2007 alone. On a cold afternoon in March, I watched visitors from Ontario, California, Edmonton, Newfoundland and India pocket their cameras and tread carefully across the deep snow to catch a glimpse of Syncrude's famous imported bison grazing on reclaimed land a stone's throw from the refineries.

The land is not exactly boreal forest, with commercial trees, long grasses, and maintained animals being fed on hay that a local bus driver laughingly told me was brought by truck up Highway 63. The bison, once endemic to the region, have been re-introduced to this patch of reclaimed land with much fanfare. "That's the deal they made with the natives," proclaims an enthusiastic Newfoundlander to his visiting family as they gaze out over the snow at 4 or 5 bison casting little black shadows on the white fields, "to put this land back the way it was."

"As long as the buffalo can live here, anything can live here," explained the Newfoundlander guide.

This is ground zero of tar sands development and about as soaked in contradiction as could be expected from what has been coined[1] the largest industrial project in human history—and perhaps the largest environmental catastrophe on the planet right now.

You don't have to look much further than Canada's tar sands to see the petroleum economy spiraling out of control. And with oil prices soaring, the boom is booming ever faster.

What Are the Oil Sands?

Alberta sits over one of the largest recoverable oil patches in the world, second only to Saudi Arabia. Covering 149, 000 square kilometers, an area larger than England, the oil patch holds at least 175 billion barrels of recoverable crude bitumen, one of the dirtiest forms of oil production in the world.

Unlike conventional ways to recover oil, the tar sands "bitumen" is locked in sand, clay and silt. The bitumen is a sticky, tar like substance that rests 50 meters or deeper beneath boreal forest, muskeg[2], wetlands and river systems. It has long been a capital intensive, technologically challenging, endeavor to get this oil out of the sand, and it is only in the last number of years that the process has been feasible. Industry has invested billions of dollars to develop a massive infrastructure to extract the bitumen out of the sand with methods that continue to be extremely capital, energy and environmentally intensive. Two extraction processes are the most common: open pit mining, which literally mines the earth for bitumen, and Steam Assisted Gravity Drainage, known as SAGD, which pumps extremely hot steam deep underground to force the gooey bitumen to the surface.

Both processes use large amounts of fresh water and natural gas to extract the bitumen, producing more than three-times the CO2 emissions produced by a conventional barrel of oil, and disrupt thousands of square kilometers of boreal forest, fen and muskeg, creating gigantic toxic dams to contain the post-production waste water. This equates to more carbon emissions than many countries, with the current tar sands emissions outranking 145 out of 207 nations, sitting between the emissions of New Zealand and Denmark. The environmental footprint is huge in relation to water as well: surface-mining operations use between 2 and 4.5 cubic metres of water to produce just one cubic metre of oil.

1 See research on the "gigaproject" by Oil Sands Truth at www.oilsandstruth.org

2 Muskeg is type of bog land, the mossy soil in boreal forest.

While new processes exist that can substantially reduce water usage, at the moment they are either untenably expensive, producing only small amounts of bitumen, or still in experimental phases. Where gains are made to reduce carbon or water usage in one company or another, the total cumulative impacts continue to rise in all areas as a mad rush of new companies and projects come on line.

The cycle is dramatic: on one end an increasingly large amount of water is extracted by an increasingly large industrial appetite, and on the other end cumulative carbon emissions quicken global warming and, in turn, water depletion.

The water used by industry ends up filling enormous toxic 'tailings ponds'; gigantic man-made dams, which store the waste-water collected from the extraction processes. The ponds are recycling vats meant to slowly revert water back to a state of non-toxicity. While some of this water is re-used, a large part of remains standing in the ponds. Current visions imagine that one day the toxins will settle to the bottom of the ponds leaving large artificial lakes speckling the landscape. Visible from space, Syncrude's Southwest Sand Storage (SWSS) Facility is currently one of the largest dams in the world.

Serious environmental worries about the tailings ponds already exist, including the threat of the migration of pollutants into the groundwater and the soil and surface water around the ponds. In Fort Chipewyan, 300 kilometers downstream from the major oil sands plants, rare cancers, leukemia, lumpus and other auto-immune diseases are on a worrying rise. A recent study independent of government and industry commissioned by the community, Dr. Kevin Timoney found increased levels of arsenic, polycyclic aromatic hydrocarbons (PAHs), mercury and other carcinogenic chemicals associated with tar sands development at dangerously high levels in the soil and water. His report confirms what First Nations elders and community members have long been saying that have been seeing on the land and in the water, from fish with skin carcinomas and deformities to water levels decreasing.

With advancing technologies and increased expenditure in infrastructure to extract bitumen over the last decade, Canada has supplanted Middle Eastern sources to become the largest foreign supplier of oil to the US, with over a millon barrels per day flowing south, 72% of which is used for transportation fuels (gas, diesel and jet fuel). The US has been vocal about seeing Canada as a 'friendly' and 'safe ally' in keeping North America afloat with the crude oil from Alberta for perhaps another 50 years.

Peak Oil, Climate Change and Water Scarcity: An Unholy Trinity in the Tar Sands

> Whether or not we are actually at the summit of Hubbert's Peak—that peak oil moment—whether or not the oil-price bubble finally bursts, what we are probably witnessing is the largest transfer of wealth in modern history.
> —Mike Davis

It is increasingly clear that we are living in a time of peak oil. The world consumes 83 million barrels of oil a day – a billion barrels every 12 days. But very few new oil deposits have been found. For every barrel of oil we now discover, we consume three. The connection between peak oil, climate change and the oil rush in Alberta is undeniable. The thing in itself as linked to capital is both an obvious and complex story to tell.

While many mainstream environmentalists have welcomed high oil prices in the hopes that it will force market-led solutions to tackle climate change and petrol-economics, it is increasingly clear that counter to the market rising up to develop solutions to climate change prompted by dwindling oil resources (such as rethinking hyper-consumptive lifestyles), it is advancing in just the opposite direction, attempting to squeeze oil out of the most untenable of regions with gross environmental and human consequences. At the moment we are witnessing what can only be described as the irrational, frantic push of market-forces in their most naked form, precisely at a time where reductions and radical transformation is required.

The tar sands are a case study in way in which the deregulated market-place so completely spirals out of control. Market-based logics depending solely on self-interest will inevitably come in violent opposition with the very ability of humanity to live. All rational logic has been set aside for the steel arm of the market to generate solutions. While government regulations exist as the Assistant Deputy Minister of the Oil Sands Division of Alberta Environment, Jay Nagendren, described, it is the market that directs the Environment Ministry, not the environment. Nagendren explained to me,

> The premier has said that market forces will dictate the pace of development. So our job is, given that labor forces and finance will decide what kind of conditions need to be set in terms of the cumulative effects, to decide what kind of caps we will have to place on emissions, what kind of restrictions on water use, carbon capture storage, reclamation, tailings ponds, water use, etc.

The role of government to create a resistance to the excesses of capital is clearly not at play in the oil patch. The tar sands presents a gruesome yet succinct reflection of David Harvey's (2006) ideas of uneven geographical development, as it activates the conditionalities around "the material embedding of capital accumulation processes in the web of social-ecological life." What we are witnessing here is a capitalist push towards a total separation between the market's abstract and self-sustaining logic, and the social-ecological realities of our own lifeworlds. This disconnect is critically important, I think, at this particular moment in history when the balance between peak oil, climate change, and water shortages hang in a dangerous trinity, effecting the very bare life of most the planet's population (read here the expanded impacts on agriculture, food shortages, mass displacement and migration due to ecological disaster, labour migration to these frontiers of capital, droughts and flooding, effective access to food and safe drinking water, etc).

This material embedding of capital into our ecological life-worlds is crucially important, especially since many of the environmentalist challenges to climate change use 'green capitalist' logics as a frame for post-petrol arguments. When market-utopias take over completely, as we are seeing in the tar sands, its gross excesses become very difficult to curb. The absurdity of reclamation plans in the tar sands currently approved by government actually purport to reconstruct entire ecosystems with technologies that are still being developed (which of course there is faith that the market will succeed in developing in some ever-evolving future). They are market-utopias at their most extreme. Boreal forest is 'reclaimed' in terms of 'equivalent values', which in a recent case has meant that 40% of disturbed must be returned the 'commercial forest capabilities', effectively creating a natural environment of harvestable reconstructed commercial forest and artificial lakes. It's an absurdist creation only possible at this point in market-utopian logics.

The truth is that as the world runs out of oil, fresh water is also quickly drying up. Available fresh water represents less than half of 1 percent of the world's total water stock. By 2025 many analysts from both sides of the fence, from the World Bank to the Polaris institute, believe that we will be living in an era of serious water scarcity and water shortages across the globe. The logical incongruity between the pillage of water through the lust for money cannot be more apt. The realities of an impending water crisis impel us to seriously challenge market-led logics within industry and government before it is too late. Green capitalism is most certainly not going to lead us out of what is, ultimately, a market-driven, capital induced crisis.

The tar sands can only be see as an advanced location of an untenable state of denial and psychoses around a market-based petrol-energy dependence. Some of the many deep cumulative human and environmental impacts deserve a brief recounting here:

1. Pipeline and refinery projects that cut straight through indigenous land throughout the continent, with serious social, ecological, sovereignty, and health implications for indigenous people, including the construction of the MacKenzine Gas Project which will bring natural gas from the Arctic straight through unceded Dehcho First Nation territory;
2. Health and human impacts of those living in the region of the developments, including the appearance of rare forms of cancers;
3. Depleting large amounts of cleaner energy, natural gas, to produce dirty crude, what some call 'turning gold into lead';
4. Intensive carbon production and adding to climate change;
5. Creating new systems of migration of wealth and bodies through trade, resources and labour agreements;
6. Depleting fresh water at a time of increasing fresh water scarcity;
7. Supplying oil for the military industrial project, as the Pentagon consumes about 85 percent of the U.S. government's of oil;
8. Impacts on fish and wildlife, including the destruction of thousands of hectares of boreal forest and muskeg that acts as an essential 'sponge' for water flows throughout the region.

Perhaps most disconcerting is that most of the tar sands oil ends up as dirty crude, and at the other end of its cycle puffs it's way back into the atmosphere out the tailpipes of North Americans planes, cars and military vehicles. As Mike Davis writes, there is a madness to creating a more carbon intensive process at the very moment when we urgently need to reduce emissions:

> Even while higher energy prices are pushing SUVs towards extinction and attracting more venture capital to renewable energy, they are also opening the Pandora's box of the crudest of crude oil production from Canadian tar sands and Venezuelan heavy oil. As one British scientist has warned, the very last thing we should wish for (under the false slogan of "energy independence") is new frontiers in hydrocarbon production that advance "humankind's ability to accelerate global warming" and slow the urgent transition to "non-carbon or closed-carbon energy cycles. (Mike Davis, 2008)

It is starkly clear that there is no just and sustainable way to continue living in a petroleum-based economy. The harsh truth remains that the only alternative is a radical rethink of the way in which we live, including a serious challenge to capitalism itself.

But those realities seem to be totally beyond the political will of the Canadian government. Alberta's Premier Ed Stelmach is currently attempting to counter the increasingly negative view of the tar sands, spending $25-million in a 're-branding' campaign. Just as the campaign was being unveiled earlier this year, hundreds of migrating ducks died after landing on one of the toxic tailings ponds at the Syncrude mine site. Usually water canons shoot into the air around the 'ponds' to keep birds off, but Syncrude claimed there had been a delay in the installation of the canons after the long winter. Workers I met in Fort McMurray said ducks dying on the ponds is not a new phenomenon. A former tailings pond worker who wished to remain anonymous admitted that when she worked on the ponds years ago they were asked to wring the necks of birds who had landed on the ponds and dispose of them in plastic bags.

Continental Market-Based Integration of Energy: SPP and NAFTA

While the environmental and human impacts are impossible to ignore, the industry continues to expand the black gold rush at break neck speed. Corporate interests aimed at integrating North America's economies and resources have become major players in forcing this unprecedented push for development. Industry investment into development of the oil sands now totals $23 billion with $7 billion worth of projects under construction and $30 billion of projects forecast to be completed by 2012. As Harvey writes, "the circulation of money and of capital have to be construed as an ecological variable every bit as important as the circulation of air and water" (Harvey, 88).

Proposals are afoot to build pipelines that will span the continent: Enbridge's pipeline will move 400,000 barrels a day to Illinois by 2011; Kinder Morgan Canada has plans to pipe 300,000 barrels of crude per day from Alberta to Texas and TransCanada Corp's (TSX:TRP) Keystone pipeline will move 600,000 barrels to refineries in Illinois and Oklahoma. At the same time, the corporate arm is moving further and further north to extract natural gas for these processes. Imperial Oil, Exxon and TransCanada's gigantic Mackenzie Valley pipeline is still underway, and BP and ConocoPhillips are said to be planning to spend

$600 million in start up costs for an Alaska pipeline before the end of 2010.

While trade agreements and resource frameworks continue to be a major focus of how this exploitation of natural resources play out in North America, they also signal a disintegration of the State as such, rapidly creating enclaves and borders around a new kind of capital expansion. Dissolving borders for capital while deepening and entrenching mechanisms of security for bodies and labour that is quickly becoming a hallmark of the tar sands.

Market-driven resource agreements, now being combined with the ideas around State energy 'security', make national contestations increasingly difficult. The North American Free Trade Agreement's proportionality clause ensures that an average percentage of Canada's energy resources continue to flow south. This guarantees an increasing export of a finite resource. Mexico was exempted from this clause, but Canada agreed to it in order to gain favorable bargaining chips in other areas of trade. Under the clause, Canada must produce the same percentage of export as over the previous three years, worrisome considering that Canada has increased oil exports to the US by 350% since 1990.

To deepen the irony of a locked-in energy deal with the US, Canada remains one of the only industrialized countries that has not reserved any energy for itself. Gordon Laxer, professor and director of the Parklands Institute at the University of Alberta, argues that Canada lacks a national energy policy that will guarantee energy supplies to some regions of the country in the event of an international energy crisis. Atlantic Canada, Quebec and some parts of Ontario may have to rely on offshore oil imports from Algeria, Saudi Arabia and Iraq in the event of shortages. The clause compromises Canada's energy independence while at the same time using a market-based analysis to determine fossil fuel extraction.

In addition, NAFTA clauses on "national treatment" would confer the same rights over Canada's water resources. The legal, social and technological precedents being set by the oil sands removal and pipeline expansion beg to be repeated with water.

A new agreement called the Security and Prosperity Partnership (SPP), further expands NAFTA, ensuring energy security for the United States. Launched in 2005, the SPP extends and expands some the agreements that were troubling in NAFTA in an opaque, undemocratic forum closed to Parliament. Canadian New Democratic Party leader Jack Layton described the process as not simply unconstitutional, but "non-constitutional," held completely outside the usual mechanisms of oversight.

The SPP recommends a "continental energy and natural resources pact" that would create an integrated market place with "streamlined regulatory processes" and "deregulation in each country for cross-border oil pipelines, including a five-fold increase in Canadian tar sands production, and continuing the privatization of energy industries" (North American Energy sector workers meeting, August 2007). As Tony Clarke identifies, Canada is not an energy superpower, but in fact, it has become an energy colony, or energy satellite of the United States.

The North American Energy Sector workers meeting in August of 2007 stated that:

> Through the SPP and the North American Energy Working Group, the governments of Mexico, United States and Canada have formed an unprecedented collaboration with energy corporations to promote the continental integration of our energy industries and infrastructures. ... While these working groups bring together government, regulators and corporations at the highest level, they have excluded labour, environmentalists and civil society movements and circumvented the oversight of our elected legislatures.

Rapid, scattered and questionable economic gains, a deepened entrenchment of fortress North America, the dissolution of national borders in order for capital and temporary foreign workers to move across, little to no energy security whatsoever for Canada, and a huge environmental and human catastrophe, leaves the balance between the costs and the gains of this project impossible to reconcile. William Marsden had it right when he titled his book on the tar sands: "Stupid to the Last Drop."

While post-petrol energy sources may be inevitable, the "scraping the bottom of the barrel" approach and the almost fundamentalist zeal with which technological and market solutions are being vaunted in the oil patch make it hard to imagine any kind of smooth transition out of the oil crisis. The tar sands represent the crux of where a capitalist madness for oil driven by a market-economy has led us.

Keep the Oil in the Soil: Budding Resistances on the Pathways of Destruction

> This is not only about protecting the environment, it is about protecting my people.
> —Pat Marcel, elder Athabasca Chipewyan First Nation

There's a sickly smell that hangs around Fort McMurray like the plumes of yellow smog, a sadness that stick to your skin, what an Oil Sands Discovery Center tour guide called "the smell of money." During my first trips to the oil patch, I wondered how people did it; how they managed to dampen the way they felt when looking out at the ugly visual scar on the landscape. Talking to people, from riggers to single moms and Tim Horton's employees, it was clear that people just adapt. Like people do everywhere, you become accustomed to a certain level of discomfort, you can close your eyes to terrible things that you know are happening but feel powerless to stop. They are aware of the contradictions in the oil patch, but isn't it impossible, they wonder, to stop this massive machine fueling the planet's oil hunger?

There is a complicity to our collective blindness. The consumptive cycle does not function without our active engagement within it. Capitalism is not an abstract machine, but it is constructed out of the everyday actions of people everywhere. And their resistances. Simultaneously to the tar sands expansion, resistances are moving, forming, being born, and becoming contagious. While at one end of the spectrum there is a sadness, the bubbling of solidarities and the working out of a strategy is emerging all along the pathways of destruction.

What is most striking are the many average people standing up everyday and joining together through a sense of urgency and injustice in the wake of what once may have been the domain of electoral politics or democratic institutions. Joining together as indigenous communities, long standing activists, Environmental NGOs, disgruntled workers, foreign migrants, and many others, a diverse and eclectic movement is being born throughout North America.

All along the pathway of pipelines and refineries are communities that have already started to mobilize against this massive development, from the Dehcho whose rights are being trampled as their unceded territory is under corporate attack, to the Lubicon Cree who will see an enormous gas pipeline straight through their territory en route to Fort McMurray, communities are strategizing and building coalitions for the struggles to come.

Also at the frontlines of this emergent struggle are the residents of Fort Chipewyan, the oldest settlement in Alberta and the home to the Dene, Cree and Métis people. Carbon dating puts indigenous inhabitants here for almost 12,000 years. Almost overnight, the community of Fort Chip has been forced to the forefront of a fight to stop the rapid pace of oil sands development. Over the past year, the community has begun to piece together a government and industry cover-up around the true incidents of toxic contaminants that have

been flowing down the river towards them, complicit in the deaths of an increasing number of people in their community. Mobilized across historic divisions, the community has come out fighting at local, national and international levels. They have no choice. Their lives hang in the balance.

As Athabascan Chipewyan First Nation chief Alan Adam told me:

> What they're doing is wrong. Some of our members are thinking that way back home. We are radical. We were radical before I got elected… We are still radical. Now I have to use it in a different form. Industry and government don't like my approach. But I'm holding them accountable to what is happening to us. The government is going to have to answer our questions.

Chief Adam is one of the many new voices emerging in Fort Chipewyan. He walks slowly back from along the pier, clearly grappling with the road that is set ahead of him. "It's been easy for industry to get approvals for new developments from us in the past, but it won't be any more."

As folks in Fort Chip like to say: the tar sands are downstream from us all. The people of Fort Chip now know what they are up against, but they also know now that they are not alone. They have been the first to step up to the plate -- it is now for us all to follow.

Web Resources

- Alberta Energy Utilities Board. Available at http://www.eub.gov.ab.ca
- Athabasca Regional Infrastructure Working group (RIWG). Available at http://www.oilsands.cc/
- Blue Planet Project. Available at http://www.blueplanetproject.net/
- Canadian Association of Petroleum Producers. Available at http://www.cpp.ca
- Dehcho First Nations. Available at http://www.dehchofirstnations.com/
- Environmental Defense. Canada's Toxic Tar Sands: The Most Destructive Project on Earth, Available at http://www.environmentaldefence.ca/reports/tarsands.htm
- Friends of the Lubicon. Available at http://www.lubicon.ca/
- Government of Alberta, Oil Sands, Available at http://www.energy.gov.ab.ca/89.asp

- Greenpeace Edmonton, Stop the tar sands; end our addiction to oil. Available at http://www.greenpeace.org/canada/en/recent/tarsandsfaq
- Indigenous Environmental Network (IEN). Available at http://www.ienearth.org/energy.html
- Integrate This! Challenging the Security and Prosperity Partnership of North America. Available at http://www.canadians.org/integratethis/energy/2007/Dec-13-2.html
- Last Oil Shock. Available at http://www.lastoilshock.com/
- Mike Davis, Welcome to the Next Epoch. Available at http://www.tomdispatch.com/post/174949/mike_davis_welcome_to_the_next_epoch
- Mikisew Cree First Nation. Available at http://mikisew.org/
- North American Energy sector workers joint solidarity statement, August 2007. Available at http://www.commonfrontiers.ca/Single_Page_Docs/SinglePage_1col_docs/Aug18_07_joint_statement.html
- Oil Crisis. Available at http://www.oilcrisis.com/tarsands/
- Oil Depletion Analysis Centre. Available at http://www.odac-info.org/
- Oil Sands Discovery Center. Available at http://www.oilsandsdiscovery.com/
- Oil Sands Truth. Available at http://oilsandstruth.org/
- Pembina Institute, Available at http://www.pembina.org/
- Sierra Club of Canada. Available at http://www.sierraclub.ca/
- Suncor. Available at http://www.suncor.com
- Syncrude Canada. Available at http://www.syncrude.ca
- Tar Sands Watch. Available at http://www.tarsandswatch.org/
- Tar Sands Timeout. Available at http://www.tarsandstimeout.ca/
- To The Tar Sands. Available at http://www.tothetarsands.ca/
- World Water Council. Available at http://www.worldwatercouncil.org/

An Authentic Story

About how a local community became self-sufficient in pollution-free energy and created a source of income for the citizens

By Jane Kruse and Preben Maegaard
Folkecenter for Renewable Energy
August, 2002

Sydthy Municipality

The municipality of Sydthy is a district of lovely landscapes. The 322 square kilometres between the North Sea and the Fiord offer an unusual variety of landscape, characterized by tracts of blown sands in the West and lush, rolling hills in the East with a large number of tumuli that bear witness that this is an area where people have been cultivating the land for thousands of years. 11.800 people live here.

Sydthy offers more space than most other places. The average population density is as low as 37 persons per square kilometre, compared to 122 in Denmark as a whole. But the households are larger here than in other places, averaging 2,4 persons.

It is a real rural community. Only half the population live in towns or villages, and farming is still of central importance. That means that the independence culture dominates the lives even of those who work for wages.

The average income for those in employment is 26.300€. In Denmark as a whole, it is 28.600€. This part of the country has always been frugal, but perhaps the quality of life is above average. That can hardly be measured, but the frequency of theft and violence is, anyhow, significantly lower than in most other areas in Denmark.

Wind Power in Sydthy—the Story of a Success

The 145 windmills that are harvesting energy out of the almost permanently blowing winds place Sydthy in a class of its own when you talk about energy policy. The majority of the wind energy is coming from 200 to 300 KW units but some of the newest wind mills belong to the 600 KW class. Megawatt-size wind mills have not been installed in Sydthy by 2002 but will appear in the coming years as part of a repowering programme during which small-size wind mills initially up till 150 KW will be replaced by large megawatt wind mills leading to a significant increase in the energy production from the wind.

A large majority of the wind-mills of Sydthy are scattered throughout the agricultural landscape at sites that are well known for good wind resources. Out of the 145 units only 20 windmills are installed in regular wind farms in geometric patterns. This is the preferred solution among the central landscape authorities but in general criticized by the local residents due to the remote placing from the owners and dominance in the landscape compared to the existing more dispersed siting that is supporting the contours of the landscape and the location of the of the farm buildings.

Before installation the wind potential is carefully investigated by means of the wind atlas method. Guaranteed electricity production by the wind mill supplier is often achieved within 5% of the predicted annual production, which in itself provides high confidence in the investment from the side of the owners and the financial institutions.

There are hardly any areas in the world that can show such massive utilization of the power of the winds. The windmills produce more than 100 per cent of the power consumed in the area. This feat is the result of a development that has taken only a few years. It is no more than 20 years since the first modern windmills were built by experimenting master smiths.

The scope of the following account is to offer an overview and give an explanation of this revolutionizing development which not many people would have imagined to be possible.

Sydthy, situated between the sea and the fiord, is one of the most windswept areas in the country. But you could easily point out other

areas favoured by the winds, where the exploitation of the energy is far from equally intensive. Other and more complex explanations are needed.

In order to evaluate them it is necessary to move beyond the horizons of Sydthy. Sydthy may be seen as a focal point for wind energy where the energy policy conducted by the government and Folketing (parliament) joins forces with an unusually high degree of popular activity.

One has to investigate to what degree NIVE (local energy organization) and Folkecenter for Renewable Energy have played a part as initiators and mediators. Add to this the role played by the local power utility as partners and opponents. Finally, the local and regional planning authorities became decisive agents, not least as during the1990es the windmills developed fast as regards their capacity and size.

One might see Sydthy as the future laboratory of wind power which has got its high share of wind energy by exploiting the prevailing natural energy resource. However, this has not caused the local conflicts and rejection of wind mills, which is the lesson learned from many other local communities where the residents have protested strongly against this new form of energy technology and thereby blocked for a future-oriented transition from atomic power and fossil fuels to the clean renewable energy solutions of the future.

In contrast an opinion survey from 1996 based on interviews of almost 1000 residents representative for the local population, clearly demonstrated a massive good-will in favour of wind energy. 80% expressed a positive attitude to the local wind mills. Especially surprising was that people living closest to the wind mills were the most positive. The negative minority primarily consisted of senior and retired citizens in the towns.

The conclusions of the investigation were quite clear: Ownership and direct economical participation in the installed wind mills, create a tolerance to the visual impact of wind mills in the neighbourhood which is significant.

Because the sympathy increases the closer you live to the wind mills, we can observe a clear indication that in order to obtain a high share of wind energy, involvement by joint ownership paves the way for maximum utilisation and thereby transition to renewable energy without causing conflicts in the local community.

However, by the turn of the century the region is fighting against a number of new problems that other areas will also experience when the national targets with regard to wind power capacity is to be realized.

One question in particular becomes urgent: how to resolve the conflict between aesthetic impact on the landscape and the demand for a continued growth in the utilization of renewable energy sources when you demolish relatively small community owned wind mills and replace them by megawatt machines with predominantly single or non-local ownership, which clearly distorts the previous well balanced economical and ecological structure in the neighbourhood.

The Danish Windmill Tradition

> As I rode my bicycle about in Northern Jutland on my lecturing tours before and during the last war, it was impossible to avoid noticing the many windmills on the farms. The farms were self-sufficient in electricity. At that time I did not know that this state of things originated in an idea issuing from the folk high school of Askov, and that it was not only a technical issue, but that a far-reaching social idea behind it: Giant business corporations must never be allowed to monopolize the power production. It should be taken care of in small local communities and on the individual farms.[1]

This is how folk high school professor Richard Andersen saw the landscape of Jutland a little more than half a century ago. A statistical handbook from the beginning of the 20th century tells us that 35.000 “wind engines” were registered on Danish farms, to which number should be added 2.000 grain mills. The classical Danish landscape was very much characterized by mills.

The special Danish windmill tradition originated with scientist and Askov folk high school professor Poul la Cour. From 1891 on he conducted an extensive research and product development in the field of practical utilization of wind energy. The first experimental mill was built - with subsidies from the state - at Askov in 1891, and as early as in 1895 Askov was illuminated by means of wind energy; certainly a breakthrough of world-wide dimensions. In 1897 a new and bigger experimental mill was built; still in the “Dutch” style, like the old one.

From here disseminates.the movement which from the beginning of the 20th century equipped almost all larger farms in the Danish civilized landscape with a “wind engine” or “klapsejler” (a wind mill with the blades consisting of a system of adjustable narrow, horizontal slabs made from wood).

The wind mills delivered mechanical energy for grinding , threshing, pumping of water and also for the production of electricity

1 From the preface to H.C. Hansen: “Forsøgsmøllen i Askov”, 1981.

for lighting and radios resulting in an enormous improvements of the living in rural areas. The wind mills were providing nearly all the conveniences that otherwise could only be satisfied in the cities.

To meet the needs of installation and maintenance of the new energy source, Poul la Cour organized the education of rural electricians who became very valuable in the ongoing modernisation of Danish agriculture. For some decades prosperity and welfare improved and made the rural lifestyle attractive compared to neighbouring countries which did not offer similar opportunities for the rural population. However, the wind mill was a key factor in this development.

After a fire and a re-construction in 1929 the Askov mill worked on until 1968, the year in which so many old things were discarded. It was also in the 1960es that the farmers effectively stopped maintaining the iron constructions of the windmills and pulled them down.

The history of the “klapsejlers” has a special Sydthy angle, as the foundry in the village of Hurup (Hurup Jernstøberi) was one of the country's major producers of these wind mills, producing no less than one thousand of these proud farm mills.

Already in 1929 the writer, Poul Henningsen, wrote in a good-bye poem to the “wind engine”: “No one can avoid the evening of life, the times are changing for the motor power. Everything has its chance, and you have had it.” The power station produced electric power, the petrol engine was triumphant, and few people thought that wind power had any future.

Among the few people who after the second world war went against the spirit of the times was J. Juul, engineer. In 1951 he started full-scale experiments, first with a two bladed 11 kW windmill, in 1953 with a three bladed, 45 kW asynchronic generator for alternating current, Bogø, and in 1957 his research and innovative ideas resulted in an extremely successful experimental wind mill in Gedser of 200 kW. Demonstrating high reliability and efficiency it was in continuous operation until 1968.

Nobody realized that this was building a bridge to the future. His epoch-making principles of construction are in fact the experimental point of departure for the pioneer work in the wind mill area of the 1970s.

The Big Energy Crisis

The historical turning point was the 1973 energy crisis which caused something like a shock to the Danes in their life of affluence. At the same time the debate on utilizing nuclear power in Denmark worked as a forceful stimulant for bringing alternative energy sources unto the agenda. The slogan “sun and wind” made it possible for the many people who were active in the movement against nuclear power to say not only “No,” but also “Yes” to an alternative.

The energy crisis caused the set up of two scenarios. One was the movement “from above” originating from government and legislator initiatives, seconded by research at the atomic power experimental station Risø, mastered by the big central power stations.

But at the same time a movement “from below” arose, rooted in a new popular awareness of energy and environment. Experiments were made and experience was exchanged with a will during the latter half of the 1970es, especially in Central and Western Jutland.

The media favoured in particular the Tvind Schools' giant still operative 2 MW wind mill in Ulfborg with their attention, but many others were also in the run. Around 1978 the first initiatives to a commercial production was taken, and in the following years a quite new, dependable concept with a distinct “Danish design” emerged. During the 1980es the mills came back in the Danish civilized landscape.

Wind power utilization reached a popular level far beyond the calculations of the planners. In 2002 wind power is representing a total capacity of almost 3 000 MW including off-shore wind energy which is going to have increased importance. The goal of the energy plan has more than been fulfilled as the national target originally was 1 500 MW by 2005.

Around 90 per cent of the wind mills were built by private customers in Jutland as distributed generation. So in 2002 nearly 20% of the country's electricity consumption is coming from wind energy, with a much higher proportion west of the Great Belt that is dividing Denmark into 2 separate electricity systems without connecting cables. In the western part of the country independent power producers representing cogeneration, wind energy, biogas etc. delivers 60% of the needs of electricity, replacing coal power from central utilities. The bulk of this share has been achieved in less than 10 year and is of historical significance.

An important cause of this growth which had hardly been anticipated at the end of the 1970es, had been the guaranteed minimum price system of pollution free energy. In the original

legislation the leading principle had been in the first place that the wind mills should be owned by people living in their neighbourhood, and next that private individuals could only own shares in windmills corresponding to their household's private consumption. Farmers were allowed to install one wind mills at their property. The intention had been to create broad popular involvement and local ownership in the development of Danish wind energy.

To-day this perspective may be less striking. The 1993 tax reform favoured mills owned by individuals and gave less favourable conditions to those owned by a community. Furthermore, it became possible to buy a tiny piece of land suitable for wind mill installation and add it to one's own property, resulting in the loosening of the rule saying that you should live near the mill.

The size of shares has been raised from 9.000 kWh per family to 30.000 kWh per person over 18 living in the household. Year 2001 there are no regulation of ownership. Anyone, also investors from abroad may own wind mills in Denmark in accordance to globalisation and liberalization policies. All this has led to a development that is increasingly making windmills a sheer investment projects.

Wind Power and Community Power

In a process running parallel with the government and power utility based initiatives, grassroots, do it yourself people and master smiths joined - after 1973 - in a job, both idealistic and business conscious, to develop mills, and this joint effort came by and by to form the foundation of the present, globally oriented windmill industry.

Seeing the standardized and elegant wind mill concept that we now have become used to, it may be difficult to imagine the diversity and insecurity that reigned in the mid-seventies. A long series of technical options had to be tried out, and many disappointments to be experienced.

A broad exchange of experiences and openness in the field of information were decisive conditions for the gradual narrowing of the field in the direction of functional and efficient mills. Engineer Juul's experimental work during the 1950es contributed strongly towards turning the development in the direction of what came to be the special Danish concept. It was, however, necessary to learn about his experiments from United Nation’s renewable energy conference reports edited 1960.

During the bi-annual windmill sessions, initially arranged by the Organization for Renewable Energy (OVE) lively discussions and

comparisons took place contact were made, strategies and initiatives were decided. It was possible to exchange the experience; harvested by many experimenting wind mill builders, inventors and other creative people contributing to the development of the emerging wind industry.

Here we find the incubator that solved research and development challenges which large professional laboratories and corporations did not have practical and economical solutions to, The early sessions that were to be of decisive importance to the course of the technological development, were co-ordinated by Preben Maegaard, chairman of OVE and later director of the Folkecenter, and his workmate in OVE, Lars Albertsen.

A key question was: how to get a real and professional manufacturers of equipment going? The Tvind school people had stipulated that their findings however important were not to be utilized for profit.

On the other hand, NIVE, (the local development organization), represented by Preben Maegaard and Ian Jordan, was eager to find ways and means of making possible an industrial production of wind mills and in that way stimulate a regular serial production by involving the mechanical industry and organising consortiums covering the required production skills in already existing small and medium size companies especially motivated for entering into the emerging renewable energy sector . Instead of building on a total concept (e.g. the Riisager Mill, produced from 1976), NIVE saw that it might be possible to produce industrially by going in the opposite direction, by seeing the mill as a number of components coming from a variety of industries like tower building, fibre glass, electronic controls, machinery etc.

Especially the Danish Black Smiths' Association showed serious understanding of this manufacturing concept using existing experiences of successful transfer of technology know-how within its membership of 2 000 independent companies. 25 years later the sector is still benefiting strongly from this process as supplier to the wind mill industry.

The Cooperative Wind Mill—A Case

During the mid-eighties people began to form mill cooperatives (guilds) on a shareholder basis. The Helligsø windmill cooperative, "Simonshøj" may be seen as an instance of this bottom-up movement.

The cooperative was formed in March 1988. The initiative came from a local teacher, Bjarne Ubbesen. At that time there were only two

major mills in the area. Bjarne Ubbesen was inspired to start his work by taking part in meetings of people who took an interest in windmills.

The driving force was not a dream of economic gain. The enterprise was quite insecure; what they wanted was to produce pollution free energy. According to calculations, a wind mill could be called “pollution free” when it had operated for one year in the sense that the energy production had by then made up for the consumption of resources necessary for the building of the mill.

Bjarne Ubbesen began to gather people who were interested in the project, concentrating on the local area and limiting himself to families living within a radius of about 5 km. It was very important for him to make the families living nearest to the site to join. Only one refused, he was against mills on principle. But his sons joined the project.

The most important reason for hesitation was the size of the investment in the light of the insecurity of the profit. The guild was formed on March 3 by 51 members as owners of the 200 kW windmill.

At that time it was possible to own eight shares at 1.000 kWh per family. The return from eight shares was approximately 700€ per annum, making an additional income of 270 – 450€ per annum after payment of instalments and interest.

The greatest challenge for the wind mill cooperative was connected with the co-operation with the local power utility, Thy Højspændingsværk. The ruling principle was that the wind mill guild would have to pay the actual costs of connecting the mill to the power utility for making the necessary grid reinforcements.

The cost was 45.000€, and the guild had good reason to be dissatisfied because costs varied very much from one place to another. Several other cooperatives paid only 3.000€ for being connected. Despite much attention from the national television and writings in the press the wind mill guild did not succeed in altering these conditions.

Bjarne Ubbesen was of opinion that the attitude of the power utility was “political” in the sense that the station profited from the connection with the windmill to generally renew its power lines.

The guild had an annual general assembly attended by 40-50 members combined with a social dinner, enjoyed after the results of the year had been presented, accounts approved and the coming year’s budget decided.

In the early phases when the project was being built and while it was new it occasioned many good talks among neighbours, as everybody was eager and curious. During the first years many members visited the wind mill regularly to keep an eye on the energy production meter.

The wind mill guild has strengthened the local community and thus counteracted the tendency towards the closing down of functions within the village culture.

The 200 kW wind mill turned out to be a far better business enterprise than anyone had dared to hope for. The price of the mill was 160.000€, to which came expenses for buying land 3.000€ and expertise 2.000€ and finally the unfortunate 45.000€ for being connected to the power station. The wind mill has proved to run with very great stability. The costs of maintenance have been between 700-1.400€ per annum, primarily the costs of regular servicing.

Economically the mill has been a success. The original expectation of the guild had been an interest return rate of 12-13 per cent, but the actual rate has been more than 25 per cent per annum.

Toward an Ecological Community

We are convinced that the change into an ecological community is less a question of money, subsidies, timetables and diagrams than of talent, co-operation, past experience and perseverance.

It this report we have given a brief sample of what happened when Thy at an early stage engaged in the development of wind power which was to be victorious. The local pioneers contained an extremely active and creative environment for development, involving engineers and enterprises all over the country.

Regrettably this has not resulted in the emergence of a local wind mill industry, which must be put down to mischance. But Thy, and in particular Sydthy, has unusually many windmills contributing strongly to the local economy.

In the late 1990es more than all electric power consumed in Sydthy was produced by privately owned local mills, bringing the citizens an income of 7-8 mio€ per annum through sale of electricity replacing power which would otherwise have had to be produced from coal from Australia and South Africa. This change from fossil fuels to the energy sources of the future is not exclusively a question of technology and planning but also of new ways of organizing and cooperating in the local community.

Renewable energy is by nature de-centralized, and in Thy it has been possible to organize things in a way that makes new technology a part of ordinary people's everyday life, thus not only serving local development and the environment, but also as a manifest instance of how the individuals and the households may play an active part in

changing the social system and create a model reaching out far beyond the borders of the local area and the country.

As almost all the mills are owned by people living in the area this has meant an extra average income of between 1500-1800€ per household. That income did not exist before the coming of the windmills.

This aspect gives rise to much interest to-day because it means that the wind mills are regarded in the same manner as other human activities, while at the same time producing power that holds no future threat to the climate and international conflict to secure the necessary energy. Seen in the long perspective, a very great change has begun.

The Rocky Road To A Real Transition

The Transition Towns Movement and What It Means for Social Change

TRAPESE Collective

> Any sound ecological perspective rests in great part on our social perspectives and interrelationships; hence to draw up an ecological agenda that has no room for social concerns is as obtuse as to draw up a social agenda that has no room for ecological concerns. (Murray Bookchin)

There's been a lot of talk about Transition Towns (TT) lately. In a nutshell, the TT approach offers a permaculture-influenced model for a transition to a low carbon society. The original idea grew out of a full time permaculture degree in Kinsale, Ireland where in 2005 Rob Hopkins and his students developed a town wide Energy Descent Plan for a ten-year period. The idea spread quickly to Totnes and Lewes and now there are neighbourhoods, villages, cities and whole islands embarking on the journey. There are currently over 35 towns and cities who are officially part of the transition network, and more than 600 are considering joining in the UK alone. TT foregrounds the big twin threats as climate change and peak oil, (the point when the maximum rate of global production is reached and begins its terminal decline.) TT argues that these problems, can be tackled only if we develop robust community responses, forming local groups that grapple with issues like food, health, transport, energy, textiles, and waste and working out how they can become less fossil fuel dependent on a local level. There are twelve steps to transition which are laid out in their 'Primer'

document and the aim is to draw up and implement an energy descent plan following this model which involves local businesses, councils and participation by everyone. Local groups can ask to affiliate to a national network, which offers national co-ordination.

We have written this booklet as part of a debate about this movement as it emerges. From the beginning we want to make it clear that we really welcome what the TT initiative is trying to do and that this response is meant as a constructive but critical intervention as to what exactly a 'transition' might mean for social change. We write this as people who fully support and work hard with grass-roots initiatives who are tackling climate change through a whole raft of responses: community food projects, sustainable living through appropriate technologies, autonomous health initiatives, do it yourself bike workshops, social centres for education and debate—you name it! We are not calling for a rejection of the concept of Transition Towns, nor a halt to their expansion. Quite the opposite. We support any transition away from the hugely ecologically unsustainable and socially unjust structures and ways of life that dominate in our towns and cities. But we also believe that we should be prepared to fully engage with and challenge the causes of these problems. As popular educators we believe that asking questions, knowing our collective histories, understanding root causes, encouraging public debate no matter how uncomfortable, and inspiring action are an essential part of this process.

A Transition Initiative is a community that is unleashing its own latent collective genius to look Peak Oil and Climate Change squarely in the eye and to discover and implement ways to address this BIG question:

"For all those aspects of life that this community needs in order to sustain itself and thrive, how do we significantly increase resilience (to mitigate the effects of Peak Oil) and drastically reduce carbon emissions (to mitigate the effects of Climate Change)?"

"If we collectively plan and act early enough there's every likelihood that we can create a way of living that's significantly more connected, more vibrant and more in touch with our environment than the oil-addicted treadmill that we find ourselves on today." — www.transitiontowns.org

Over the past few years there has been an unprecedented level of media coverage and initiatives around climate change. Arguments that environmentalists have been making largely ignored for decades have rapidly moved in to the public debate since Blair chose climate change to top the G8 agenda in 2005. Since then the scale of the problem, media attention and the striking evidence of the rate of

change have left many scared and anxious. People desperately want ideas for positive action, for how we can turn things around and somehow limit the scale of the disaster facing our world. The Transition Town model is, as Rob Hopkins says, “unleashing a spirit and a depth of engagement” with this practical action. While this is clearly a welcome development compared to the total denial of the previous decades, let’s not shy away from asking problematic questions, even when they may not always have clear answers. As thousands of hours of precious human resourcefulness are poured into these projects around the UK, we want to ask: a transition to where, and from what? And what models of organising can help us along the way? As authors, we make no excuses for this. Yes, now is the time to act. But there are powerful forces to confront and it is essential to learn from past experiences and be clear about our aims. TT could be merely the latest fad, a ray of hope in an otherwise despondent world. Or they could offer something to be genuinely excited about. There are no easy ways round these issues. And only by being realistic about the scale of change needed and what change might really mean, as well as feel and look like, can the difficult times ahead be tackled. Putting the transition movement in its historical and political context can help to deepen and strengthen the important conversations happening in Transition meetings all around these islands.

Of course there are many people who are already familiar with the arguments we are making, our intention is not to patronise or thoughtlessly snipe from the sidelines. We also recognise that many of the problems discussed here are not exclusive to TT, and that some of the suggestions could take years to incorporate in to the TT model. But as an open and developing process we hope that this booklet provokes constructive debate and provides some points for reflection for all those who are engaging or not with this exciting new movement.

So TT is about change. But is it about political change?

While preparing a recent workshop with a Transition group about climate change, one of us from Trapese suggested the issue of Rossport as a possible point of discussion and action. For the past five years, the local community in Rossport, County Mayo, Ireland, has been struggling against Shell and a consortium building a high-pressure gas pipeline through their community. People from around Ireland have supported them and their situation has been brought to international attention through many solidarity actions. The people helping to plan the workshop explained that according to the TT model,

this was not an appropriate topic. In order to be as accessible as possible, Transition groups do not support particular campaigns but rather develop a model that forms around what many different people have in common. It's a model about positive responses and not something that takes positions 'against' institutions or projects. While it may seem obvious to try and limit political wrangling in a burgeoning movement, this position raised some serious questions about the effectiveness of a depoliticised movement and was one of the motivations for us to write this booklet. Perhaps in this particular instance it was not relevant to talk about a campaign, but there are many reasons why it is important to be more confident and defiant when calling for transition and actually take a stance against the exploitative and polluting corporate practices that are happening all around us.

How can we talk about climate change and peak oil and not deal with politics or side with communities struggling against the expansion of fossil fuel infrastructure? If we want to avoid catastrophic climate chaos we must leave the majority of remaining fossil fuels where they are—in the ground. Yes, finding ways of dramatically reducing our personal consumption and demand is one part of this, but it is only one side of the equation. It seems naïve to assume that companies such as Shell and Stat Oil, BP or Esso will easily give up and go home or fundamentally change what they do while it is still so enormously profitable. Shell by the way, makes £7 million clear profit, every day! The experience of the communities fighting Shell around Rossport is one of corruption, police collusion and profit hungry multinational companies riding roughshod over every safety and environmental concern. This pipeline project is not about merely meeting expanding consumer demand for energy, but is an aggressive, profit motivated project, which has needed the collusion of malleable politicians. It is also about a grab for the last remaining energy reserves as access to oil fields abroad become more geo-politically unstable. Around the globe, in Wales, Nigeria, Georgia, Mexico and Alaska, to name a few, people are struggling against energy multinational corporations in similar ways. Their lives and livelihoods are directly threatened, not just by future climatic catastrophe but also by pollution, repression and loss of land as the extraction happens. Those who challenge or try to prevent these things are often portrayed as needlessly angry or violent which is a divisive tactic that we should guard against. Providing support for communities who are resisting the efforts of the industries to extract and burn ever-increasing quantities of fossil fuels is one of the most important strategies in dealing with climate change and this

solidarity and exposing the companies and the political systems that facilitate them must surely be a central part of transition.

Being against climate change doesn't have to be political position. But the analysis of how we got into this mess, and the best way to move on, does bring us back to politics. It involves taking on power and those who hold wealth and influence. People could be drawn to TT for a number of different reasons - fear, solidarity, a desire to rebuild communities, looking for direction, or as a platform for their own political pet project. While this is fine and to be expected, problems will occur along the way if big political debates are brushed aside because we only talk about what we already have in common. Communities must face up to issues such as nuclear expansion, market based solutions to climate change such as carbon trading and offsetting, agro-fuels and food scarcity, developments such as airport expansion and resource extraction. These things all occur through active government policies, which try to maintain the economic and political, "business as usual" scenarios. Unfortunately, left unchallenged they could also wipe out the best efforts at local sustainability, like a tsunami in front of a sand castle. In these difficult times, it's not good enough to say that TT doesn't have an opinion on these issues, or does not want to alienate people by discussing them. As well as building local resilience, these struggles are the bread and butter of what our future will look like and therefore these political debates need to be at the heart of TT. This does not have to translate into a 'party line' or other dogma. Information can be presented with space for questions, dialogue and groups can develop their own responses to these issues. But it is fundamentally important to identify and name the enemies in the battle to make a real transition.

Responding to climate change could mean new niche markets for capitalism, greater social inequality, closing borders and strengthening state power. An agreement "not to rock the boat" will not help TTs long term viability, as it would mean not really changing anything. People are generally aware of the bigger political and economic forces influencing their lives and only talking about these issues honestly will build true momentum for change. One major challenge are the enormous budgets and state-of-the-art PR campaigns that have already swung in to action to positively influence the public perception of everything from the coal industry, agro-fuels to nuclear power. This greenwash tries to make an unsustainable, polluting industry appear environmentally friendly to preserve its legitimacy in the eyes of the general public. It's essential that these unsubstantiated arguments are challenged; they do not tackle the root causes of the problem and in many cases make things a lot worse. (E.g. see carbontradewatch.org)

One half of TT is about tackling climate change. So what are its root causes?

Frequently the Transition line, and perhaps the lowest common denominator, is that the problem stems from too high a concentration of carbon dioxide in the atmosphere and this needs to be lowered. But this focuses attention on the 'effect,' not the 'cause' of the problem. Of course high concentrations of atmospheric carbon are a reality that reflects the scientific consensus, but too much carbon is a symptom of a bigger illness that needs a particular cure. The problem boils down to too much production—too much economic activity (simply making things and transporting them, often over thousands of miles) and the energy inputs that go with this. But it's also the WAY we organise production that is the problem—what we can call free market capitalism. This economic set up relies on ceaseless economic growth and many things, including short-term political electoral cycles and the legal duty of large companies to constantly increase profits, underpin this. Those in power are unable to make many of the changes needed, because of an established set of economic "truths", known as the rules of the game that are a real barrier to change, whether from above or below. A chief executive cannot reduce shareholder profit, or not without risking their job. A politician cannot win an election by saying they will make the country poorer by reducing export earnings. Reducing production is presented as leading to a downward spiral that would curb the money supply, increase unemployment and create a deflationary and recessionary situation (and who wants that? Think back to the hunger of the 1930s). So we are seemingly stuck in an economic system, which needs to grow otherwise the whole thing will collapse like a house of cards. This ceaseless need to produce more economic output is the real driver of climate change, and only when the rules of the game are changed can carbon dioxide concentrations and all the associated problems be truly tackled.

There's a strong business case for adopting more sustainable practices, and it's gradually finding its way into mainstream business thinking.
The emphasis on CSR and triple bottom line accounting may be steps in the right direction, and carbon trading could yield substantial cuts in global CO2 emissions.
However, none of these address the way that Peak Oil will make itself felt on businesses that have long supply chains, or serve markets in distant locales. Businesses that have a long term perspective and are aware of the constraints fossil fuel depletion will have on the globalised economy need to be looking in general at oil dependency throughout their organisation and at four specific areas: supply chain, waste, energy usage and markets.
(From the Transition Initiatives Primer.)

But are there different rules to play by? Well the Soviet model of state-planned production and

consumption didn't offer anything progressive—it was a disaster based on corruption and hideous repression. Nor does the vast modern day China or the rapidly growing India seem to offer anything different that can meet people's needs without exploiting them. What is at fault is the wider 'development era' that really got going after the Second World War and was dominated by the USA and its global bully boy ambitions. This unleashed an economic model based on the ideas that 'growth is good' and the 'West is best'—that our way of organising the economy should be rolled out across the globe. The liberalisation of the economy was presented as equating to freedom and democracy and was offered as the only medicine for the illness of the Global South's "under-development." It has now pretty much become all encompassing through what has been called the 'Washington Consensus' where global trade policies are directed through a small number of US controlled institutions—the World Bank, International Monetary Fund and World Trade Organisation. The old colonial way of doing things - 'gunboat diplomacy' - has now morphed very neatly into a sweeter pill of 'neo-colonialism' where big western corporations continue to asset strip and exploit the resources of their majority world neighbours, while telling them that it is the only way their economies can grow. Structures are put in place such as international trade agreements, aid conditionality and intellectual property laws to enforce this regime worldwide. Meanwhile the infamous 'trickle down effect' where everyone will eventually benefit from increased wealth at the top, fails to materialise. In fact the gap between rich and poor continues to grow within the industrialised countries and the richest country on earth, the US, has around 13% of its population living below the poverty line at any one time. So this is the growth paradigm of the development age—a whole way of organising economic activity around the globe that has to expand or die, and every day becomes more and more inter-connected.

Sounds like the only game in town? But there are countless ways to organise economic activity—ultimately all we are trying to do is find an optimal way to allocate the goods and resources we really need. It shouldn't be that difficult and it doesn't have to be done at the expense of exploiting people and our environment. For example, there is really illuminating work coming from thinkers like Michael Albert and his ideas of participatory economies that show us that there are different and appealing ways to organise trade and the economy. These draw upon producer and consumer councils who agree the types and amounts of goods to be produced through work that is meaningful, fair and equally paid. Workers cooperatives like the huge one in Spain

called Mondragon are also inspiring here—they are fully controlled by their workers and produce goods according to need.

New ways to organise the economy will have to take social and environmental sustainability and energy efficiency as central principles. So there will certainly be less production, resource use and extraction, as these are achievable and relatively quick ways of significantly decreasing carbon emissions. Although politicians and business leaders make statements to the contrary, it really isn't possible to decouple economic growth from carbon emissions—to in effect have high growth but a low carbon economy. Continuous technological improvements mean that jobs are lost at about 3% per year, so the economy and output has to grow by this amount just to maintain the current amount of jobs. Contrary to accepted economic logic, this doesn't have to mean that mass unemployment in inevitable, but that jobs will be different—geared more towards local and regional activity and less tied to export industries and consumer goods. This isn't to say that changes to the economy will be small. It will be transformed beyond recognition and there is very little evidence to suggest that it will be able to sustain the lifestyles that many have become accustomed to in the West. It also means moving away from conventional measure like Gross National Output (GNP) towards indicators that measure quality of life and protecting the atmosphere, soil, water and other species. Environmental improvements and protection and rebuilding local economies will also be a huge new area of job growth. Basically, there's a huge amount to be done to prepare our society for the changes it needs to make—a lack of work is the least of our worries. In a low carbon economy there will be less of the unfulfilling or non essential jobs that service the highly connected, mediatised economy, think of all the wasted energy that goes into advertising, free newspapers, shifting throw away goods around the planet or making useless plastic packaging. At the same time there will be more human labour necessary than in previous years to make up the energy input that has come from cheap fossil fuels and we will need to move towards a culture of repairing, reusing, sharing, skill swapping and relearning tools for greater community sufficiency. As well as learning how to meet basic needs communities will also have deal with many different kinds of problems and crises. The impacts of the waste and pollution from high consumption lifestyles have been externalised to other places or ecosystems for years, but the impacts are about to be felt in the form of increased extreme weather events, economic instability etc.

So what does all this mean? While it is clearly important to support projects for sustainability and improve our local communities'

resilience, this should not be confused or conflated with tackling the root causes of climate change or 'peak oil' energy scarcity. Given the reality of the global economy, to what extent can TT initiatives alter the current rules of the global economic game? It is possible that removing a significant proportion of consumers from the equation would ultimately weaken and threaten economic growth. However, it is more likely that low carbon community initiatives could happily exist without challenging causes such as high levels of economic output, highly concentrated ownership in the hands of a few multinationals, lack of democratic control, rampant resource extraction and the search for new areas of profit. The popularity of Corporate Social/Environmental Responsibility (CSR) is also a key part of this debate. Large corporations are certainly being held more accountable, at least on a superficial level, for their effects on people and the planet. But on one level, of course they would be. It's not in their interests for the economy to become too harmful to people and the environment because then who would buy their goods? CSR also allows corporations to give themselves a more human friendly face so they can maintain what they are doing, deflecting arguments about their right to exist, extract resources virtually for free, and take home a huge profit. Responses which focus on individual consumers, market based mechanisms or reinforce the role of business-friendly central governments will not help us to tackle the root causes of climate change.

Peak oil is the other half of TT, and it's all about energy running out isn't it?

Peak oil says that half the world's reserves of oil and gas have been used and that we are about to enter the downside of the energy curve. A report from the US office of petroleum reserves last year stated,

> World oil reserves are being depleted three times as fast as they are being discovered. Oil is being produced from past discoveries, but the reserves are not being fully replaced... The disparity between increasing production and declining discoveries can only have one outcome: a practical supply limit will be reached and future supply to meet conventional oil demand will not be available.

This is true without much doubt. But with half the energy left we can hardly say that the problem is one of scarcity. If, as estimates say, there are roughly a trillion barrels of oil left then the problem we face is about resource allocation and distribution. The problem with peak oil

is that currently we are in a system that demands ever increasing amounts of fossil fuels (for the expanding economy, further industrialisation of agriculture, increasing population etc.) but at some point soon the amounts of available energy will decrease daily. There is still debate about when this point will be; some people believe we have reached this point already. Talking of a peak could be misleading, more likely is a series of price rises and shocks rather than one isolated event. As we write prices of crude oil are increasing daily, breaking previous records and shocks are felt throughout the international financial markets. The current credit crunch could well be linked to the decreasing supply of cheap oil.

The global elite, the really rich people across the globe, will find ways of ensuring access to the remaining supplies of oil. The G8 for example was set up partly as a response to the oil crises of the 1970s and one its main remits is to secure access to energy reserves for the most industrialised economies. Oil wars across the world and recent BP plans to extract oil shale from Canada are two signs of the lengths that the rich will go to preserve their lifestyles for decades to come. In the short term decreasing supply will increase prices and benefit the very rich. At the same time the increasing price of food, home energy bills, etc will be passed on to individuals, hitting the poorest hardest. Whilst this will increase the gap between rich and poor in the UK, these inequalities are more fully understood on a global North-South divide level as billions of people are left with no access to the basics such as land or clean water. The main point is that there is little point in creating a sensible plan for using the remainder of easily available fossil fuel supplies if in the process the environment is pushed over its tipping point of ‘dangerous’ climate change, defined as global warming of 2 Celsius above pre-industrial levels. There is a 50% chance of this kicking in at about 450ppm of carbon in the atmosphere. Energy use at its current rate, globally and in the UK, would bring us head to head with such limits within the next decade or so. This is why energy use based on carbon sources has to pretty much come to a halt in the next couple of decades.

The question of how to ride this energy descent roller coaster on the way down is one key component of TT. As groups grapple with their own energy descent plans, an alternative model which has gained international recognition is ‘Contraction and Convergence’ which provides a model for how all countries can make a move towards a ‘convergence zone’ of lower carbon emissions and then continue to contract downwards to zero carbon use within the next fifty years. ‘C and C’ recognises the enormous disparity between industrialised nations’ contribution to current levels of greenhouse gases and those

of the majority world. However, it proposes this can only be achieved via an austere programme of carbon rationing where individuals have little control and which is regulated through strong state action and large centralised global institutions**.** What is relevant to TT here is that as communities start, of their own accord, to embrace more sustainable living in their food, energy, waste and transport this will compete with models that impose these limits through state coercion. In contrast TT should be a model that fights to preserve freedom, autonomy and rejects top down models that further increase social inequality.

To get to a low carbon future, there will be some tough arguments. One is about how social justice and human rights are protected while also taking global action on climate change. The concept of 'climate justice' is useful here as it recognises that the global poor face a triple whammy—having the smallest carbon footprints but being hit hardest by many of the effects of climate change.) At the same time having been stripped of their natural resources they have no financial means to mitigate against its adverse effects. In the US groups have mobilised around the idea of Environmental Justice. Research revealed that communities of colour were suffering disproportionately high levels of air pollution and associated health problems, as heavy industry was more likely to be located in their localities (See www.ejmatters.com). These movements remind us that corporations will try to locate themselves where social and environmental laws are weakest and where local opposition can be overcome. It is therefore important to guard against pushing problems out of one area and on to another group, who may for structural reasons be less able to resist them.

In the current model it is possible to put a price on everything. As evidence mounts of the number of lives being put at risk through dangerous climate change, grotesque calculations are made that literally compare the financial cost of taking action on reducing emissions with the human cost of not doing so, this was the method used by the high profile 2007 Stern Report. While addressing local energy efficiency is one aspect, it is also important to drastically reduce high levels of consumer goods, cheap flights and unnecessary car journeys that have become second nature to many. Campaigners who are using direct action to shift public opinion and de-legitimise the right to profit from such climate changing business are increasingly targeting sectors such as the aviation industry, which is the most rapidly expanding carbon industry and shows no signs of giving up growth. Challenging new fossil fuel infrastructure is also an important part of work for an effective transition. For example, the new proposed

coal fired power station at Kingsnorth, Kent, will be the site of the Camp for Climate Action, 2008. Resisting a return to coal power in the UK will be a key site of struggle if we are serious about avoiding catastrophic levels of atmospheric carbon. At the root, it is about de-legitimising the right of large corporations and industry to emit carbon into the atmosphere, even if they pay credits to allow them to pollute; life is priceless.

So it's all about transition, then. What will it be like? Will it be peaceful?

We can only hope that we can make a peaceful transition. Using dialogue and non-violence to get what people want is, of course, preferable to slipping into further violence and conflict between groups. However, a look at the history of significant social change gives some clues about the nature of the transition that we might expect. Looking back to look forwards if you like. So what do the experiences of other groups and places tell us? There are countless times when people have tried to make a break, a transition, away form oppression or threatening life conditions, or merely safeguarding what they held dear to them—the Luddites who defended their workplaces during the bloody transition to the factory system in England, the Diggers or True Levellers who demanded equality and land after the English civil war, the indigenous Zapatista communities who have set up autonomous villages in the mountains of south east Mexico in the face of state repression and expropriation of resources, the Paris Communards who didn't give up fighting to defend their gains in the wake of the Franco-Prussian war, or more recently in the UK the poll tax demonstrators, the miners and the Dockers strikers who fought Thatcher's policies. What these examples tell us is that to win concessions, to get what they want, ordinary people have to organise and propose alternatives, but they also have to resist and challenge those who want to preserve the way things are - 'the status quo'. Many of the rights that are nowadays taken for granted in the UK - the 5 day working week, the Factory Acts, the labour movement, the suffragettes and demands for universal suffrage, - all these were born out of struggle, of ordinary people doing extra ordinary things. Meaningful social change comes through political organising, rupture and struggle and a lot of mobilising at the local level. The reality of social change might be difficult to face up to, but it essential if we want to make a root and branch transition, not just a cosmetic one.

There's a saying: at first we were ignored. Then we were ridiculed and laughed at. Then when our ideas started to become really effective, we became a real threat and they defeated us. In other words, there's nothing like the threat of a good example. It's worth remembering that good ideas don't fade away because they weren't good enough. They disappear because they were repressed and defeated or because they became a threat to one power group or another and had to be eliminated. This is a common theme in history. When people start to look effective and organised, they face opposition and oppression and governments turn to direct hostility: surveillance, the crackdown on civil liberties, ID cards, fortress Europe, ASBOs, diminished freedom to protest, a raft of anti-social behaviour laws, the list goes on. Although this may not appear a theme that Transition groups should work around, we argue that it will fundamentally affect TTs ability to organise, respond and be effective. It would be dangerous to assume that the state would not be interested in what seems at face value a pragmatic and sensible project like Transition Towns. To us, taking action to show solidarity with the other people who are resisting fossil fuel corporations is one of the most important ways we can combat climate change and must accompany local attempts at sustainability. While this may mean that we must also deal with repression, surveillance or the courts and legal system, if we are united in this position it will be harder for those who are on the frontline of common struggles to be isolated, made an example of or intimated. Those who benefit from the current system will try to maintain their positions and our only defence is our collective rejection of repressive laws, which try to squash dissent and repeal hard won rights. A diversity of tactics will be used in struggles for transition and this solidarity is key to forming a real grassroots, strong and effective movement.

It is important to remember that millions of people are already suffering from crisis and war around the world due to competition for scarcer and more expensive energy and food, increased migration as environmental and political crises become more frequent, economic instability as well as extreme climate events such as flooding and storms. While these kinds of things mostly seem far away in our country of warm homes and full supermarkets, they are a daily reality for around half of the world's population. And there is an ever-increasing likelihood of the rich West being affected by such problems, as the globe becomes a more connected and more vulnerable place. In such situations, migrants and those seeking asylum are often made scapegoats for a vast range of problems, from increased crime, disease, terrorism, and social cohesion. In times of resource scarcity or

environmental breaking points, perceived newcomers are excluded on the apparently rational grounds that there is not enough to go around. So we can expect a rise in hostility to migrants and policies of exclusion try to gain legitimacy through apparently "environmental" concerns. The BNP (British National Party) have been talking about Peak Oil for years and how it will help them to power (http://www.bnp.org.uk/peakoil/politics.htm). Such right wing arguments often use the idea that a place has a finite environmental carrying capacity. This is false for several reasons. Firstly for hundreds of years the engine of economic growth has been fed by the importation of raw materials, slaves, manufactured goods, food and service labour from the majority world to Western Europe and North America. Our environmental carrying capacity was exceeded when societies started to rely upon imports, non-renewable fuels and to irreversibly pollute the atmosphere, water and soil. Secondly, while there are of course physical limits to any place, climate change makes a mockery of concepts such as national borders. The UK may well try to limit immigration as an attempt to retain a quality of life here. But the many millions of environmental refugees are unable to protect themselves from the increased floods, crop failures and desertification, partly caused by the climate changing emissions from the rich north. Just as those fleeing war over natural resources in Iraq and Afghanistan or the Democratic Republic of Congo had no way to preserve their homes and lives. The struggle against the rise of anti immigrant, extreme right groups will be a key part of making a socially just transition. We can't simply pull up the drawbridge and pretend the problems aren't there or not our responsibility. For this reason it's important to develop a transnational approach to our local community organising that recognises how the UK's current position of wealth and privilege is based on long history of enclosure and exploitation across the globe. This position can be used to fight for equality at the same time as local sustainability.

So what if every town in Britain became a transition town?

Of course, that would be a fantastic thing. But will a day come when the chief executives of multinationals, the millionaires and those in political power would just put their hands up and say well that's that then—let's all make the transition because everyone else has? It's a nice thought, but not very likely! If TT initiatives became numerous enough, divides could open up across our society—separating those

who are making the transition, those who are not—and those who simply aren't interested. While of course it's important to make every effort to persuade people to get on board, some people will see transition as a direct threat to the wealth and resources they have gained from the old model. People talk about these kinds of moments as 'dual power' situations that are full of tensions and conflict between different social groups who struggle to preserve either their new gains or their old ways of life. These kinds of situations happen all the time (Russia 1917, Cuba 1958, France 1871, Venezuela, right now). It's less common in Britain due to its powerful central institutions, which are very effective at keeping the status quo. But there could well be conflict if any kind of transition movement started to threaten the privilege of the wealthy.

The idea of TT is to create a model that everyone could agree to. But if everyone can agree with an idea then what exactly is going to change, and how is it different to what went before? Change comes through argument and debate. This is the basis for our democracies. Our society is made up of different classes with very different interests. It is important to realise the extent to which the groups with more power use this to defend their interests—wealth, property, industry etc. They always have done—Britain is an incredibly stable and conservative country not used to change. And this is not just the old monied classes, but people will fiercely defend their recently acquired wealth—the new money that emerged since Thatcherism. More generally it is important to challenge the idea that everyone has the 'right' to consume in our affluent society. Defending interests of the privileged and property classes is the function and origin of almost all legislation in Britain (the emergence of the police force, armies, legal property law, anti vagrancy laws, acts of enclosure etc.). A real transition is actually a social transition. As the slogan goes: Social change not climate change! It can't just be a set of techno-fixes or plans to use energy rationally or decrease carbon emissions.

There's also much talk of 'win-win' situations, creating initiatives that can please very different groups. But at some point someone has to lose. This might only mean reducing our incredibly abundant consumer society, limiting our use of resources or getting used to a simpler life. But for many people this will feel like losing and will be reacted against like it is a loss. If we are looking for win-win situations, then we are looking for easy victories, which actually may be very little in the way of steps forward. Once we are well on our way to a transition future what will a low energy UK actually look like? A scene from 1950s Heartbeat? MadMax? Or something similar to a very poor city slum? Whatever it actually is (which is impossible to define here

and now) we have to be honest about what we are proposing and what feasibly can and cannot be part of our future. At the same time transition is about being ambitious enough in the light of the scale of change that is required.

What models of organising are being used?

As we mentioned earlier, the Transition initiative has its origins in the permaculture-inspired Kinsale Energy Descent Plan. The three main permaculture principles of earth care, fair share and people care are the guiding lights of a system of design and implementation, which involves designing systems that recycle energy as much as possible and are self-sustaining. As the TT network say: “we used immense amounts of creativity, ingenuity and adaptability on the way up the energy up slope, and that there's no reason for us not to do the same on the down slope.”

This is a really progressive model. The bigger challenge is how this model becomes shared by many rather than by a small number of practitioners or gatekeepers. We need to question models that look to a few experts for the answers, especially when these people are mostly well-educated, white males. What other voices are not represented? The most resilient and durable ways of organising are those where decisions are made, understood and implemented widely, reducing reliance on fixed leaders or fixed ideas. While it is understandable that people look to effective projects and places for inspiration and examples, a reliance on fixed ideas is also a potential weakness as it limits creativity, flexibility to local contexts and does not allow for autonomous decisions. Effective movements have to build in this broad participation from the start. Sure, many people are used to having someone in charge and charismatic strong leaders can be an effective way to mobilise people. But they can also be non-constructive and leave movements exposed to the whims and ideals of a small number of people who could decide to leave at any point. If things don't work out, leaders can easily be blamed, co-opted, and marginalised making the wider group or movement vulnerable. Centralised organising also asks the other participants to trust that leaders remain a benign influence and don’t renegade on promises, or worse create cliques to push their agendas through.

The role for local government that is emerging, favoured by government officials and transition initiatives alike, is "supporting, not driving."
We always knew that local government would play a crucial role in Transition Initiatives in the UK and Ireland. And over the recent months, we're seeing that role emerge from both the existing transitioning communities and from new communities in the earliest stages of contact with us. Our first surprise was just how willing the local councils are to engage meaningfully with existing transition initiatives. Our second is the number of communities where the first person to contact us is from the local council. This is a recent phenomenon, and one that we welcome wholeheartedly. (From the Transition Towns Primer)

At the moment in the national TT network, there are paid staff, who aim to galvanise supporters and encourage new initiatives. In local groups volunteers through working groups push the process forward. In some cases this is through a hub group, where communication between groups occurs and networks develop. Other TT projects have been quick to look for funding for paid positions to do administration roles, pay for office space etc. Setting up an office with paid staff raises questions that have to be addressed. What relationship exists between paid staff and other volunteers, and all the other people who are meant to be part of the transition? Who does the money come from and what restrictions or reciprocal arrangements do funders want? How are the paid people accountable, chosen and democratically representative, if this really is a participatory movement? What happens when the funding runs out? This model is often justified by ideas of efficiency of organising, but there is also a real danger that it will alienate people from feeling responsibility for the process. Another guiding principle of TT that is equally controversial is that of co-operation with the local Council.

Again here, pragmatic arguments can be made for such an approach but there are many lessons to be learned from the experience of environmental charities and NGOs who have been working using a similar model for the last thirty years. Agenda 21 was heralded as the beginning of sustainable planning at a council level, but what happened here is very instructive. As someone involved recalled,

> This global initiative that started at the 1992 Rio World summit for sustainability had so much potential. In one group in Liverpool it transpired that Cargill, (the agro-business giant), were sponsoring the LA21 campaign. Very soon a potentially strong grassroots movement was co-opted and lost within local authority structures and simply became

> a useful greenwash alongside the 'business as usual' economic model.

It is in governments' interest to recuperate and co-opt this kind of initiative as a way to deflect criticisms and to satisfy those calling for real change. Elected representatives also bring resources and 'professionalism' and are trusted to make all the fundamental decisions so generally people can defer responsibility and stay passive. An easy way to neutralise a good idea is to simply employ your critics to work for you - absorb the idea and deradicalise it. So transition towns could become another adjunct of government policy. If we do not guard against it, they will give it an office and it will sit alongside economic growth as one of the shining examples that government can use to say that it is doing all it can, when in fact it cannot do anything of the sort.

It is useful here to remember another context. Back in 2005, a large coalition of NGOs and community groups joined the government under the banner of 'Make Poverty History' during the 2005 meeting of the G8 in Scotland. Despite the hard work by many people to achieve real change, what resulted from this movement was largely a de-radicalisation and clever government co-option of a potentially effective anti-poverty movement. The results are there for us to see. A heady mix of Bono, Sir Bob Geldof and Gordon Brown convinced us that everything possible was being done to tackle global poverty, when looking back we now know that very little was done, especially in relation to the pledge to increase the proportion of GDP (Gross Domestic Product) that is spent on aid. One outcome was that the G8, an unelected global institution, was further legitimised by the positive publicity lent to it, which allowed it to evade criticism and scrutiny even further. Some South African commentators drew the link from Geldof's previous attempts to solve global hunger twenty years ago, which failed because they ignored the countervailing roles of imperial power relations, capital accumulation, unreformable global institutions and venal local elites.

> These problems repeated and indeed amplified in Live 8 and the message became one of handouts and charity, not one of liberation defined by Africans themselves or the reality that we are actually resisting neo-colonialism and neoliberalism ourselves. (Charles Abugre, head of policy for Christian Aid, one of the organisations in the MPH coalition, from the Carbon Neutral Myth.)

The history of the Green Party is also fascinating in this respect. In the UK, a set of really transformatory ideas have emerged from the Green Party based around low carbon, relocalised economies which are

quietly put to one side when they enter the pragmatic negotiations of coalition power in local government. While one of the most progressive Green Parties in the world in Germany has brought many environmental changes, it has stopped being an oppositional force to transform society, and instead has become a useful way to green the capitalist economy. Concessions were made in order to stay in power rather than sticking to the more radical guiding principles, such as dropping the commitment to a nuclear disarmament policy. Other instances include active support for deployment of German troops and the overseeing of repressive policies against those resisting trains transporting nuclear waste. These acts have seriously damaged the very potent German environmental movement.

The TT movement needs to have a serious discussion about its relationship to central and local government, as these might be the biggest obstacles there are to a real transition. In the end, groups will develop models and ways of working which reflect the nature of their town or neighbourhood—each with their own mix of local institutions and individuals. In one place, a progressive council may play a strong role; in another it might not play a role at all, or even be a major block. Whatever happens, local control over how the process evolves should be respected. TT is well placed to fulfil the Government's objectives for 'complimentary government'. In the whole move to 'double devolution' (from White Hall to Town Hall, then to the people), the Government is looking for opportunities to "empower" local communities, as long as they implement government policy that doesn't rock the boat, which normally has little to do with transition, as we understand it. So in the push for community empowerment, TT initiatives could quite quickly find themselves running bits of the welfare state—gardens, community services, local food - absolving the local state even more of its responsibilities. This may be a good thing in terms of getting things running along the lines of a transition, but currently taxes are paid to ensure free access to these services. Would local taxes be accordingly reduced, and would transition initiatives receive their slice of the municipal budget? And where would Government put the savings in public expenditure? Can cycle lanes, allotments and renewable energy contend with surveillance, military spending, subsidies for big business or the public debt in the current model of organising society?

Looking at anti-globalisation, feminist, peace and peasant movements, from around the world, one can see that there many other ways of organising that involve participatory tools to enhance direct democracy. Consensus decision-making, participatory budgeting, spokes councils, group facilitation, skill sharing and popular education are just some of the ways to ensure people genuinely participate

rather than just being consulted on issues. The open source movement (including everything from Indymedia and Wikipedia to Free Software) is also a great example of how peer-to-peer democracy can work, and how many eyes focused on certain problems can come up with more workable solutions that are widely consented upon and collectively owned. What is key here is that deferment of responsibility is one cause of the current situation, people are largely divorced from the effects of their lifestyles. Taking back control and responsibility will not come from a quick fix but will need time for people to learn co-operation, mutual aid and solidarity.

But doesn't the huge threat of climate change mean that this time, people really will change?

All the evidence about the real prospect of 'dangerous' climate change is there, especially through the recent IPCC Fourth Synthesis Report. Climate change does present more striking evidence than ever that a finite planet cannot support infinite growth. Although there are certainly positive signs of action, it is dangerous to assume that knowledge about any particular issue will result in any set of actions, as people's responses will depend on their education, background, family and economic position. We are up against so many problems on a global scale: wars, slavery, the loss of common assets, colonisation, privatisation, environmental devastation, massive social inequality, spiralling debt, neo liberal free trade agreements, racist immigration controls to name a few. One way to understand the lack of real change is that in face of this barrage of problems, a large proportion are often too disempowered, defeated or distracted to respond to, or act upon, climate change. However, focussing on individual action negates the importance of structural change and working on the way we do things collectively. It is not just powerful groups of people who obstruct change but the many complex systems of race, gender, class that maintain social hierarchies.

It is useful here to clarify between two very different types of changes. There are possible environmental improvements in a *place* (recycling or reducing pollution in a local river for example) and environmental improvements to a *system* (stabilising carbon in the global atmosphere for example). The crucial point is that no causal relationship can be assumed between the two types of change. For example making environmental improvements in our communities does not necessarily make improvements of the second type, like protecting global ecosystems. For this we need very different kinds of

changes such as institutional reorganisation, curbing corporate power and drastically shifting the way the economy and consumer society works. These involve confronting all sorts of vested interests and wealthy elites and it is here that we have to be realistic about what kinds of changes we can achieve without some kind of overarching societal change. Many changes to a place can be made, but they don't really add up to a long lasting and substantial transition, not least globally. So while local food or local recycling and sustainable consumption are essential to inspire and galvanise people equally important are the movements that are committed to making more difficult changes which will protect the wider shared global eco systems. Depressingly, what previous struggles would suggest though is that powerful groups will do everything they can to dig themselves in and protect their position rather than give up concessions. Essentially this is because they are protecting and sustaining the current system at whatever cost. Acceptance that it is this system that lays at the root cause is the only way to truly tackle climate change.

So what's the way forward?

This is not a call for a blueprint for change or a purist critique of TT. Instead it is a call to consider transition towns not as existing in their own bubble, however appealing this prospect may be. TTs are ultimately subject to the same order of oppression, class structure, entrenched power, and vested interests as everything else in the UK. Each place and locality is woven together by networks of power, which have been formed over centuries. But if this structural reality is incorporated in to our plans then we can begin to recognise this and use our diversity for strength. TTs are based on the idea that communities can create different systems, but this is only possible if the malignant forces and entrenched power that people have been struggling against for hundreds of years are recognised, challenged and TTs become a political force for change. Putting things in their historical and political context reminds us that transition will be an inherently political and social movement. To make any real policy changes, communities need room for manoeuvre at a local level—they need power and resources. The nature of the relationship with the local council and the position on local economy and business will determine what these kinds of initiatives can achieve. They must not become an appendix to the local state or preserving pockets of sustainability for a privileged few or they will simply be dead in the water.

The state is part of the problem and clearly does not have all the answers nor can it co-ordinate all the responses. Relying on one institution is not a resilient way to adapt to the changes that are needed. At the recent December 2007 UN meeting on Climate Change in Bali leaders showed their lack of political will and ability to deal with and implement the level of change that is needed. The raft of international legislation from Kyoto targets to market-based mechanisms such as carbon trading and offsetting is poorly conceived, inadequate and not extensive enough to deal with the challenges we have only begun to outline here. More relevant is the Durban Group for Climate Justice, an international network of independent organisations, individuals and people's movements who reject free market approaches to dealing with climate change. They are committed to help building a global grassroots movement for climate justice, mobilising communities around the world and acting in solidarity with people opposing carbon trading on the ground (See climatejustice.blogspot.com).

One of the main obstacles to change is that Britain is one of the most politically centralised countries in Europe. Parliament and Whitehall are extremely powerful. Only as genuinely popular power emerges at a local level can each place have a mature debate about what we are up against, what a transition might mean and how best to govern itself. Although Transition Towns have the potential to build momentum and excitement for this to happen, it may only do so if this long-term goal is kept clearly in focus. And this popular power needs to find ways to challenge centralised seats of power. What this would look like or how it would happen is difficult to say but power is not often gained without a struggle. But if groups can become connected, develop strategy, are prepared to win arguments and are not afraid to fight for and defend their gains then a meaningful transition is entirely possible. A sure fire way of creating a movement with little impact or potential to be co-opted is to ignore the bigger challenges, what we are trying to transition away from, and to think that it will all be easy and can be left to others to do it for us. This just gets people’s hopes up, and blinds us to the tasks at hand. If numerous enough, these initiatives could begin to weaken capitalism and provide workable alternative models for the way we organise society.

Throughout the centuries many alternative experiments and communities have existed to show ways of building this popular power. There are countless examples here of groups taking back power to make the decisions that effect them. To give a few examples, the Kenyan People’s Parliament, where for fifteen years people have held meetings, as equals and co-operated to change their material and

social conditions, from the grassroots up, "without selling out, and without giving up'. Ujaama villages in Tanzania, who are experimenting with a new model for settlements and who argue that, 'What we need to develop is people, not things, and that people can only develop themselves.' Venezuelan Land Committees, which are about reclaiming land but also people debating, agreeing, and taking action collectively about things that directly affect every aspect of their daily lives. The unemployed workers movement and occupied factories in Argentina, landless peasant movements from around the world, the list goes on. The Putney Debates that took place in St Mary's Church in London around Cromwell's New Model Armey during the seventeenth century English Civil war should also inspire us. This is a great example of how a broad popular movement in England once challenged the established elite when ordinary soldiers debated about the need for equality and freedom and to turn the unequal social order literally on it's head.

Things could go in many different directions and it's important to be aware of likely changes to come. In this unknown territory of climate change, despite all our scientific knowledge, there are many uncertainties. What is clear though is that we don't want to find ourselves sleepwalking into a green police state as we all rush to find ways to protect the environment. Here we might find a kind of ecological version of the future depicted in the recent film '*Children of Men*'—strict government controlled carbon rationing, fortress Europe to keep out 'foreigners' who might put too many extra stresses on our environment and resources, tight centrally planned forms of production and consumption. This is a familiar vision—people can't be trusted so we need even more discipline and regulation to run Britain. Big business gets what it wants while ordinary people's freedoms and liberties are curtailed even more and gross global inequality is increased. This is a 'khaki green state', the 'invisible hand' of the market with the 'iron fist' of the state, a kind of ecological version of Thomas Hobbes' Leviathan. On the other side, there is a 'transformatory green society'—a radical, locally

March 2008. This booklet was written by members of the Trapese Popular Education Collective, with thanks to all those who have contributed comments and ideas. Original artwork by Stuffit, www.stuffit.org.

Trapese aim to produce accessible and informative interventions and resources that inspire radical and realistic action. More resources can be found at www.trapese.org and in our book "Do It Yourself: A handbook for changing our world," edited by Trapese at www.handbookforchange.org.

accountable and participatory democracy where people are trusted, empowered and active, based around strong notions of equity, autonomy, lower production, participatory localised economies that meet basic needs, with good co-ordination and without a strong centralised, disciplining state.

So what does this mean in practice? How can these ideas be incorporated into the Transition movement in a way that does not alienate, confuse or cause friction and factions? A first step could be the simple recognition that to make a real transition, there will be both creation and resistance. All the local endeavours such as community food projects need to be accompanied by powerful movements, which both defend the gains that these projects can make and also take direct action against whatever problems people identify in their locality, for example the monopoly of supermarkets or the return of GM crops to the UK. Secondly, the 'great re-skilling' that can address practical issues such as how to grow our own food, could be made more powerful if combined with popular education and dialogue about the current economic and political system. Continuing the example of food, we should look at the way that the industrial agricultural model has been developed from a particular worldview that excludes many others. Through such activities, the uniting force of common ground we can find together as a basis to act against symptoms that we identify, reject the false solutions that are being proposed, and act in solidarity with people wherever they are who are also struggling to make a real transition. One reason why transition is so urgent here is to address the fact that rich industrialised societies such as Britain are historically responsible for the vast majority of global emissions. The global wealth gap was built on this 'ecological debt' and the world's poorest are now paying both dubious foreign financial debts and already suffering from the rapidly changing climate. Let's not retreat to a purely localised sphere of action but recognise that not only the Earth's ecosystems but also the majority of its people have been damaged by the structures that have created this imbalance. This is an opportunity to share our global wealth and technological resources and to challenge the underlying economic and political structures that drive the fossil fuel economy.

TT argues that communities can shape things as they like and we support this ethic of doing it ourselves. But this is only realistic if people are also prepared to take on the vested interests in the media, government and business. Rejecting systems of control that only benefit a minority and defending our right to self-organisation are the bedrock of a real transition. There is an enormous amount to do, but the knowledge, resources and commitment do exist and there are

countless examples of grass roots movements that are on this path to learn from and strategise with. We are not suggesting that any of this will be easily achieved - it will be a rocky road. But, we believe this could lead to a real transition that isn't afraid to challenge power. The threats of climate change and peak oil provide opportunities for us to challenge some of the basic assumptions about how our society is organised, ask who are the winners and the losers, and rejuvenate our political processes and communities. There is a lot at stake, and many obstacles along the way but being both ambitious and clear about where we want to go is the first, most important step. And this is the least we owe to ourselves.

Postscript

Since May, there have been some lively debates on-line, within Transition groups, at workshops etc. Issues raised here seem to have tapped into wider questions and debates that crop up as we all try and make sense of the multiple crises we are facing. One thing for sure, that didn't come out in the text is how much diversity exists between Transition Initiatives. Many groups are busy considering these questions and many have welcomed the intervention that we made. Secondly, there seems to be widespread belief that that we need to work using a range of tactics, all that we have available to us. It is key to distinguish between issues of strategy and those of tactics. While we may agree that a tactic of community localisation is appropriate, we may be working towards quite different strategical ends. It is these questions that we believe are they most interesting to consider. What are we trying to save, and for whose benefit?Thirdly, questions of inclusivity. The far right question has arisen many times. To what extent are we open to all? On the other side of the coin, many anti-capitalists have expressed opinions that they themselves are excluded. Fourthly, some very hopeful points have been made. Individuals have expressed relief at being involved in a purely 'positive' project, having felt burned out with years of opposing things through campaigning. We are keen to foster and continue these discussions.

Websites

Carbon Trade Watch
www.carbontradewatch.org

Contraction and convergence
www.gci.org.uk/contconv/cc.html

Corporate Watch, arguments against CSR
www.corporatewatch.org.uk/?lid=2688

Durban Group for Climate Justice
www.carbontradewatch.org/durban

Green Party
www.greenparty.org.uk

Intergovernmental panel on Climate Change
www.ipcc.ch

No Borders UK
noborders.org.uk/Articles/EnvironmentalRefugees

ParEcon
www.zmag.org/parecon

Permaculture Association
www.permaculture.org.uk

Richard Heinberg, author of *The Party's Over: Oil, War and The Fate of Industrial Societies*
www.richardheinberg.com

Rising Tide, taking action on the root causes of climate change
risingtide.org.uk

The Camp for Climate Action
www.climatecamp.org.uk

Transition culture, Rob Hopkins website
transitionculture.org

Transition Town website
www.transitiontowns.org
transitionnetwork.org/Primer/TransitionInitiativesPrimer.pdf

Tyndall Centre for Climate Change

www.tyndall.ac.uk

UK Climate Impact Programme
www.ukcip.org.uk

UN Framework Convention on Climate Change (Bali)
unfccc.int/2860.php

The Ecological Debt Of Agro-Fuels

Mónica Vargas Collazos[1]

> Most of us are food producers and are ready, able and willing to feed all the world's peoples...
> —Declaration of Nyéléni , Forum for Food Sovereignty, Mali, 27 Nov 2007

2007 may well pass into the history books as the year in which agrofuels shot to fame. Not only has the media boosted this "alternative" as way out of the planetary environmental crisis, but it has also received significant incentives from governments of the core countries. The combined effect of this has been an acceleration in the production of these fuels. We seek to consider this issue from a starting point that is based on a comprehensive perspective which takes into account diverse areas, as we feel this is necessary in order to carry out reflection in a responsible manner. We situate our analysis within the paradigm of ecological debt, defined as the debt contracted by the industrialized countries to the rest of the world's countries, due to the ongoing plundering of natural resources which has its roots in a history of plunder, as well as due to the environmental impacts exported and the free use of global environmental space. This debt is closely intertwined with the capitalist mode of consumption and production (Ortega, 2007: 20).

---

1 Social Anthropologist. Researcher at the Observatorio de la Deuda en la Globalización [Debtwatch]], UNESCO Chair in Sustainability (Polytechnic University of Cataluña) monica.vargas@odg.cat. This article was previously published in Spanish in the book *Agrocombustibles. LIenando tanques, vaciando territorios*, 2007, Censat Agua-Viva, Bogotá. Permission for translation and reprinting has been obtained by both the author and Censat. It was translated to English by Kolya Abramsky.

A Miraculous Solution

Perhaps one of the predominant features of contemporary globalisation is the fact that it is generating problems which concern humanity in its entirety and which are now starting to be officially recognized. Two global themes have been reiterated throughout this year, from the meetings of the G8 and the World Economic Forum to United Nations forums: climate change and hunger. After years of intense debate in which scorn was poured on even the minimalist goals established by the Kyoto Protocol, in February 2007 the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) finally formally established that human activities are responsible for 90% of climate change. Meanwhile, the United Nations Food and Agriculture Organization has stated that more than 850 million people in the world are currently suffering from hunger, and they project that by 2015 there will be 100 million more. If we are to take at face value all the talk from all those who are actively promoting the development of agrofuels,[2] it would seem as if therein lies one of the most suitable responses to these twin problems. So, what does this miraculous solution consist of? The production of biomass based fuels is currently concentrated in bioethanol and biodiesel. Bioethanol is obtained from products which are rich in sucrose (sugar cane, molasses from sweet sorghum), from substances which are rich in starch (grains such as maize, wheat or barley), and also through the hydrolysis of substances which contain cellulose (wood and agricultural wastes)[3]. Provide that motors have been previously modified, these fuels can be used to replace gasoline. Biodiesel, on the other hand, is made from vegetable oils (from oil palm, rape, soya and jatropha) or from animal fat. It is destined to replace petrol and can be used either in pure form or as part of a mixture.[4]

Based on the perception that agrofuels would not increase the concentration of CO_2 in the atmosphere, a perception which is currently under fire from many different directions, several countries have legislated in favour of obligatory use of these fuels in the transport sector. However, the necessary production capacity is not yet readily available. Preparations are afoot to make at least 30% of transport fuels in the US come from agrofuels (especially ethanol) by

2 We deliberately avoid using the term “biofuels.” Instead, we adopt the position taken by the hundreds of peasant organizations that met at the Forum for Food Sovereignty in Nyéléni which asserts that we are dealing with an industry which constitutes an aggression towards the environment.

3 Essentially this refers to second generation agro-fuels. These will be discussed later in this article.

4 For example, diesel qualified with the term B30 indicates that it contains 30% biodiesel (GRAIN, 2007).

2030. This would require an annual production of 227 million litres. The percentage of US maize production devoted to bioethanol increased from 6 to 20% between 2000 and 2006. However, it will have to devote virtually all of its crops to fuel production if these fixed targets are to be met.

For its part, the European Union has opted in favour of four types of incentives, all of which rely on public resources. These are: agricultural subsidies within the framework of the Common Agricultural Policy, tax breaks, the obligation that transport fuels must contain at least 5.75% biofuels (biodiesel or bioethanol) in their mix by 2010 and double this figure by 2020 in transport fuels, and finally the undertaking of pilot projects by public transport companies. It is striking that, given the fact that transport constitutes 30% of total energy consumption, the 5.75% target corresponds to a mere 1.8% of total consumption. This gives rise to real savings of 36 million tons of CO2 equivalent, a figure less than 1% of all European emissions (Russi, 2007). Europe currently produces 3 million tons of biodiesel, and aspires to reach 7 million by 2010. This would require 13 million tons of raw materials, and relies on the medium term capacity of second generation lignocellulosic waste-based fuels to supply 30% of these consumption needs. Furthermore, Europe does not have sufficient land to fulfill these goals. This can be seen with the example of Great Britain, which if it is to meet the 2020 target, would have to utilize virtually all of the country's cultivable lands (Redes-AT and Grain, 2007b). Thus, the EU countries will resort to importing either the raw material base or the agrofuels themselves. The European Strategy on Biofuels asserts:

> Biomass productivity is highest in tropical environments and the production costs of biofuels, notably ethanol, are comparatively low in a number of developing countries.... Developing countries such as Malaysia, Indonesia and the Philippines, that currently produce biodiesel for their domestic markets, could well develop export potential.

On top of all this, Free Trade Treaty between the European Union and MERCOSUR which is under negation is being heralded for the favourable impact which it will have in terms of opening up the bioethanol market[5]. In order to meet this demand, production of the required commodities is taking off in countries with an abundance of high quality land. This includes Brazil, Argentina, Colombia, Malaysia and Indonesia.

5 European Strategy on Biofuels, (Brussels, 8.2.2006, COM(2006) 34 final)

Toward Bio-Business

All of this clearly opens up some very juicy business possibilities. This is the only real explanation behind the fact that large transnational companies' are pursuing agrofuels from many different directions (Rulli and Semino, 2007). We are living through a moment of unprecedented convergence between different corporate sectors, including the petrol, automobile, food, biotechnology and financial sectors. And, this is despite the fact that many of these very same companies have obtained profits in the millions through generating climate change.[6] Now they are set to reap even greater profits through its "mitigation." BP has made an agreement with the biotechnology company DuPont in order to provide the British biobutanol market; ConocoPhillips has signed contracts with meat producers to produce biodiesel from animal fat or invest in jatropha crops. Biotechnology companies such as Monsanto or Syngenta are intensifying their production and research into transgenic seeds, at the same time as Ford, Daimler-Chrysler and General Motors are all preparing to sell over two million bioethanol fuelled cars in the coming decade. Wal-Mart plans to sell agro-fuels in its 380 US shops as part of its standard sales, and companies in the food sector are establishing integrated networks in order to control the entire production chain from seeds all the way to transport.[7]

In the Spanish State, Repsol YPF is flirting with the seed company Bunge together with the construction company Acciona in order to establishing a biodiesel plant at the Bilbao port. In addition to this, the Spanish petrol company, together with fourteen other companies including Acciona and Sacyr Vallehermoso, has received 22 million Euros for a research and development project about biodiesel. The money has been provided by the Spanish Ministry of Industry, Tourism and Commerce, by way of the Centre for Industrial Technological Development (Centro para el Desarrollo Tecnológico Industrial (CDTI)). In a similar vein, Abengoa has received 300 million Euros in research and development of new technologies for the production of bioethanol over the next four years, in order to make its costs competitive. Close examination of the agro-fuel production plants in this country also reveals investments by large companies such as the petrol company Cepsa (of which 48% is controlled by the French petrol company Total, 30% by the Banco Santander Central Hispano and 5%

6 According to the magazine *Revista Fortune 2007*, the profits of the ten leading transnational companies exceeded 119. 691 billion Euros (more than 10 times the GDP of the USA). Six of these are petrol companies, three are car companies and one a leading provider of commodities and foodstuffs.

7 For an exhaustive examination of the global companies with the largest investments in agrofuels, see: (GRAIN, 2007)

by Unión Fenosa) and of the food/agribusiness giant Ebro Puleva.) Thus, the five companies with the largest volume of agrofuel production in the Spanish State met in 2006 a combined total of 88% over the total of production (Binimelis, Jurado and Vargas, 2007).

However, while it may be crystal clear that agrofuels are a good business, it is far less clear whether or not these energy crops will contribute effectively to the reduction of emissions and to the improvement of living conditions of the most impoverished populations of the planet. In order to answer this question, let us (without claiming to be exhaustive in our coverage) now turn consider some of the consequences of mass production of these fuels.[8]

Agriculture and Climate Change

Agrofuels are creating a close and peculiar relation between climate change and the world-wide problem of malnutrition at the global level. The large scale production of these fuels in response to the new demand from Centre countries is inevitably resulting in a further industrialization of agriculture, and the consequent advance of the deforestation due to soya cultivation in the Amazonia. A report by NASA in 2006 actually established the correlation between the price of soya and the level of destruction of the Amazon rainforest. Similarly, the last twenty years have witnessed Indonesia lose a quarter of its forest cover to palm oil plantation, which have gone from 600,000 hectares in 1985 to 6.4 million hectares in 2006.[9]

And so, the idea of recommending boosting agroindustry in order to mitigate the effects of climate change resulting from deforestation is ridiculous. Today's agricultural model is petrol-based, from the production of chemical inputs all the way to the transport of goods. Furthermore, as the *Stern Report* drew attention to, agriculture and changes in land use (deforestation) count for 14 and 18% respectively of all greenhouse gas emissions (Stern, 2006). In particular, the conversion of the forests into cultivated lands, the use of nitrate fertilizers, the large scale cultivation leguminous crops such as soya and the decomposition of organic wastes all have been identified as responsible for emissions the third green house gas, nitrous oxide. In

8 For example, here we do not deal with the close relation between agrofuels and the growth in transgenic crops. Detailed analysis of this question can be found at the following websites: http://www.etcgroup.org , http://www.biodiversidadla.org , and http://www.grr.org.ar .

9 For some this expansion has meant excellent business. The Malayan business groups Sinar Mas and Raja Garuad are both major players in palm cultivation, biodiesel production and timber exploitation (*Biofuelwatch*, Carbon Trade Watch/TNI, Corporate Observatory, 2007).

Brazil alone, 80% of the emissions come from deforestation caused by the expansion of soya and sugar cane crops. Additionally, it is estimated that the destruction of peat linked to monocultures will give rise to the release of roughly 40 billion tons of carbon into the atmosphere (GRAIN, 2007). Finally, according to FAO, rice production is the single human activity which generates the largest source of methane. 130 million hectares of rice paddies produce between 50 and 100 million tons of methane per year. Thus, we are trapped in a vicious circle, since the FAO also has expressed its concern over the negative impacts which climate change has on agriculture and access to food in the poorest countries (FAO, 2007).

Rising Grain Prices and Speculation

According to the Coordination of Agricultural and Animal Husbandry Organizations[10] (COAG), public subsidies for energy crops drive grain producers to devote their land to agro-energy crops rather than animal and human food production. In the Core countries, this situation is particularly worrying to the livestock sector. Let us recall, 70% of the planet's agricultural lands are devoted directly or indirectly to rearing animals and the production of animal feed alone requires 33%. Cereals represent 55% of the production of animal feeds. Thus, taking the Spanish State as an example, of the 30.6 million tons of grains consumed, 23 million are for animal feed (pigs in particular). The other side of the coin is that Spanish production represents just 15% of the European total, the European Union being the world's second biggest producer of animal feeds. Cultivable lands are simply not available domestically on a sufficient scale to supply the raw material, and so a large proportion of Europe's grains are being imported from the USA (maize and soya), Brazil and Argentina (soya) (COAG, 2007).

Recent years witnessed a contraction in grain supplies owing to unstable production which was in part tied to adverse weather conditions. However, the demand has not stopped growing, particularly in the United States due to increased production of maize based bioethanol. On the other hand, the continuously rising barrel oil price is having a major impact on the logistical costs related to agricultural production (inputs and transport). In this context, the prices of grains are skyrocketing. This is especially so for maize, which constitutes the grain base in animal feed formulas. At the same time, the production of yellow maize for ethanol use has increased, to the detriment of

10 Coordinadora de Organizaciones de Agricultores y Ganaderos; COAG, Spanish State

white maize which is used for human consumption. This has made the sector an interesting market for speculative capitals. In early 2007, this resulted in the so-called "tortilla crisis." The United States has embarked on a major programme of building bioethanol factories. However, this coincided with a slight reduction of maize production and consequently resulted in a reduction of US stockpiles. These stockpiles represent 40% of the world's reserves.[11] This situation allowed the world's most important grain trader, Cargill, to speculate and sell futures in Maize to energy companies. Alarmingly, this speculation was responsible for a doubling of the price of maize tortillas in Mexico (Llistar, 2007).[12] As far as the oil consuming sectors are concerned, an unequal competition between cars and human beings is also emerging. Indonesia , which is the world's second largest oil palm producer, is a telling example. Henry Saragih, Secretary General of the Federation of Indonesian Peasant Unions (FSPI), asserts that the rise of agro-fuels means that companies such as IndoAgri and London Sumatra now expect to expand their plantations to 250,000 hectares by 2015. Approximately 1.5 million tons of palm are exported to the European Union where they are converted into agrofuels. Meanwhile, people in the producer country are faced with a shortage of palm oil for cooking with. This is one of the dietary staples in Indonesia (Saragih, 2007).

Faced with this reality, the United Nations Special Rapporteur on the Right to Food has observed that "the production of agro-fuels is inadmissable if it brings more hunger and water shortage to developing countries." He went on to recommend a fiver year moratorium on the their production (UN, 2007).

Social Impacts: From Plunder to the Destruction of Quality of Life

By its very nature, the industrialization of agriculture has proved to be a social failure in several countries. Bolivia, Guatemala, Honduras and Paraguay present us with a serious paradox: food crops make up a high percentage of the countries' exports, yet at the same time malnutrition is taking on a structural character (Gudynas, 2007).

11 It is predicted that by 2012 the volume of maize which the US devotes to agro-fuels might be double that going to export. This will mean its maize supplies will be reduced and prices will continue to rise (COAG, 2007).

12 Since the signing of the North American Free Trade Agreement (NAFTA), Mexican consumption of this basic good has been chained to US production. Mexico has increased its maize imports from half a million tons in 1993 to 7.3 million tons (tariff free) in en 2004. 2008 is the year in which the final stages of NAFTA came into effect. This will mean that Mexico will become flooded with millions of tons of US maize and beans, raising the possibility of provoking a major social and political crisis.

Agrofuels have been championed as an alternative source of work which could allow peasants in Core and Periphery countries alike to increase their earnings and achieve social well being. Yet, in reality, nothing appears further from the truth. On the other hand, the situation in the European Union is still far from clear. Some studies have claimed that 1,000 tons of agrofuels can create between 2 and 8 full time jobs, concentrated especially in refineries and ports (Biofuelwatch, Carbon Trade Watch/TNI, Corporate Observatory, 2007). However, in the periphery countries, which are ultimately set to become the major sellers of raw materials for vehicle fuels, the development of this sector is based on establishing economies of scale and an extremely centralized agro-industrial model where transnational capital and local land holding elites have increasingly intimate relations with one another (GRAIN, 2007). The inhabitants of the rural communities are becoming ever more expendable and are left with only two options: either to migrate or become agricultural day labourers. Below we will briefly consider a few examples.

The Rural Reflection Group (El Grupo de Reflexión Rural) (GRR) emphasizes that the Green Revolution that was implemented in Argentina's countryside contributed to the population's impoverishment. Thus, in a country which was known as one of the "world's granaries", the National Survey of Nutrition and Health registered in 2006 that 34% of children below the age of two suffer from malnutrition and anemia. According to GRR, this phenomenon can in part be explained by the fact that Argentina was converted into a producer of transgenic crops and an exporter of animal fodder, based in large scale Roundup Ready soya monocultures. In this context, land ownership became concentrated, ruining 400,000 small producers and provoking a rural exodus which swelled the poverty belts in the large cities (Rulli and Semino, 2007). The reality is not very different in Brazil, the world's largest bioethanol producer. The municipality of Ribeirao Preto (Sao Paulo) is known as the "Brazilian California" due to its technological development in the production of sugar cane. Yet, 30 factories control all the land 100,000 people (20% of the total population) live in *fabelas* (shanty towns), and there are more people in prison (3,813) than there are peasants (2,412) (Vicente, 2007).

During the United Nations Permanent Forum on Indigenous Peoples which was in session in May 2007, attention was drawn to the fact that indigenous populations are being displaced from their land by the expansion of energy crops. This is contributing to the destruction of their cultures and forcing them to migrate to the cities. In one Indonesian province alone, West Kalimantan, 5 million people have already been forced to leave their ancestral territories (Biofuelwatch,

Carbon Trade Watch/TNI, Corporate Observatory, 2007). Thus, the Indonesian peasants stress that the growth of agrofuels threatens to end up eroding their agricultural and food system. Land is concentrated n the hands of a mere handful of large companies, which together own 67% of the cultivable land. Palm monocultures have deepened the marginalization of the small producers. In 2006 alone, these plantations provoked 350 land based conflicts, despite the fact that land reform is enshrined in the Indonesian Constitution and the country's laws. However, this process of concentration of land and marginalization of peasants is by no means a new process. It has been going on since colonial times (Saragih, 2007).

In Paraguay, the advance of transgenic soya and sugar cane monocultures is also giving rise to a frenzied process of investors buying up the best lands. The country devotes 2.4 million hectares to soya production, but is aiming for 4 million in order to fulfill its sale commitments to the European Union. This is a country where 21% of the population lives in extreme poverty, 1% of the land owners own 55% of the land, and 40% of the producers cultivate plots that are between 0.5 and 5 hectares. In September 2006, the Supreme Court confirmed that the National Agrarian Reform Institute had illegally sold land to large soya producers. According to the organization *Sobrevivencia*, approximately 70,000 people abandon the countryside each year after coming under pressure to sell their plots. However, according to various civic organizations, these are not the only ways in which peasant livelihoods and communities are being destroyed. This year five people died and seven were injured by the agro-industry's armed guards in the Paraguayan department of San Pedro. This is one of the zones where the government is promoting ethanol production.[13] In Colombia, the Afro-descendant communities, Jiguamiandó and Curvaradó experienced an even worse fate. Military and paramilitary violence forced them to flee their lands, which were then illegally occupied by the company Urapalma (Redes-AT and GRAIN, 2007b). Those who risked harsh punishment for daring to return were able to see their houses destroyed. The jungle, previously well preserved, had been devastated by oil palm crops extending as far as the eye could see.

And, what became of those who stayed? According to the Brazilian Forum of NGOs and Social Movements for the Environment and Development [Foro Brasileño de ONGs y Movimientos Sociales para el Medio Ambiente y el Desarrollo], the monocultures failed to generate as many jobs as they had promised. If in the tropics 100

13 For more information on this see (Rulli, 2007) and (Biofuelwatch, Carbon Trade Watch/TNI, Corporate Observatory, 2007).

hectares of family farming creates 35 jobs, the same area of land devoted to eucalyptus plantations only represents one job. In the case of soya it is two, and in sugar cane and palm, ten. In many case, the cane cutters are only paid if they manage to produce a certain quota, the amount having been predetermined by the company. Needless to say, working conditions are difficult. This includes the use of agrochemicals without any protective equipment, precarious housing, lack of sanitation services and drinking water, and also even child labour.[14]

The populations who live in the vicinity of the cultivation of palm and soya find their health endangered by the application of powerful herbicides. It is estimated that in Malaysia an agricultural day labourer died every four days due to poisoning from the herbicide Paraquat between 1977 and 1997. In Argentina, urban and rural communities have come together to launch a campaign demanding "Stop Fumigating", in response to the aerial spraying of herbicides on neighbouring soya plantations. The Ministry of Health carried out a study in five cities in the Southern province of Santa Fe discovered an alarming number of cancer cases (Biofuelwatch, Carbon Trade Watch/TNI, Corporate Observatory, 2007).

Megaprojects and Agrofuels

Biodiesel and bioethanol are normally not teletransported from the fields to the petrol tanks. And, in this undeniable fact lies another aspect of the rise of agrofuels which can hardly be described as "bio": the increasing need for integration of infrastructures necessary for their transportation and export. Hence, the need for the, lamentably, resuscitated Plan Puebla Panamá (PPP) and the Initiative for the Integration of South American Infrastructures (Iniciativa para la Integración de las Infraestructuras Sudamericanas) (IIRSA).[15] These megapojects consider Latin America's rebellious geography to be an obstacle to the extraction of raw materials and the transport of goods. Their mission is to get around it by way of motorway corridors, hydroelectric dams, waterways, electric cables, oil pipelines etc. And of course, it goes without saying, these projects will bring lucrative profits to companies such as the Spanish Iberdrola and Gamesa (wind park in Mexico), ACS (management of ports and trawlers in Brazil, and even to

14 See (Biofuelwatch, Carbon Trade Watch/TNI, Corporate Observatory, 2007) and (Holt-Giménez, 2007).

15 For more information about the geopolitical dimension of both plans and their social and environmental impacts, see http://www.odg.cat/es/inicio/enprofunditat/plantilla_1.php?identif=582 .

unknown consultancy firms such as TYPSA or Norcontrol. And, despite the promises of "local development" which are being made (evoking the ideologically bankrupt "trickle down" theory), these megaprojects are in fact harmful because they are situated on indigenous territories and peasant communities, and traverse zones that are rich in biodiversity.

Although there has been no consultation with local populations in designing these megaprojects, there has been participation from the Interamerican Development Bank (BID), which bears considerable responsibility for generating the continent's debt. The BID currently promotes agrofuels in several ways. It estimates that Latin America will need 14 years to convert itself into one of the world's key biodiesel and bioethanol producing zones and that this will require 200 billion dollars. The president of the BID himself, Luís Alberto Moreno, codirects a private sector group, the Interamerican Etanol Comission, together with Jeb Bush (ex-governor of the state of Florida) and Japan´s ex-prime minister, Junichiro Kozumi. Thus, the BID supports the expansion of palm plantations in Colombia and sugar cane and soya in the Brazilian Amazon. In fact, this year the Executive Director of the BID approved the first stage of financing a private sector agro-fuels Project in Brazil to a total of 120 million dollars. This money is for Usina Moema Açucar and Alcohol Ltda. (Sao Paulo). This operation forms part of the bank´s initiative to develop structures to enable priority debt financing for five bioethanol projects, costing 997 million dollars (IDB, 2007).

On the other hand, it is crucial to ensure that commodities are able to flow freely towards the ports, not only the Atlantic ones but also on the Pacific, in order to reach Asian markets. Thus, the bank recommends that Brazil spend one billion dollars each year on infrastructures over the next 15 years. It also strives to speed up the IIRSA projects which have been rejected by civil society, such as for example the Paraguay-Paraná-Plata, the project of improving the navigability of the Río Meta, Ferro Norte (a railway network which would connect the soya states of Paraná, Mato Grosso, Rondonia and Sao Paolo), and the Río Madera complex.

The latter is one of the main projects underway within the IIRSA axis, Perú-Brasil-Bolivia and is located on the Brazilian-Bolivian border. The project currently consists of constructing two mega-hydroelectric dams in Brazilian territory, in San Antonio and in Jirau. Their combined generating capacity would be 6,400 Megawatts, and their cost 10.3 billion dollars. Construction is scheduled to start in 2008. The first will be located 190 kilometres from Bolivia, and the second 84 kilometres. Independent studies have shown that both dams will have serious

social and environmental impacts, not only in Brazil but also in Bolivia. The Banco Santander Central Hispano and the Portuguese bank Banif are both active participants in this problematic megaproject. They are establishing an Investment and Participation Fund (FIP) in order to fund the construction of the San Antonio dam. The Fund hopes to mobilize 220 million dollars. The Spanish bank advises a consortium led by the Brazilian construction company Odebrecht, the company which is bidding for the project's tender. Experts from the Brazilian Technical Service for Environmental Protection recommended to withhold granting the license until additional environmental impact studies can be carried out. The Bolivian government has also protested and demanded new studies to verify what impacts the dams would have in his country. These dams are closely linked to the growth of agrofuels, since the hydroelectric power stations will supply the energy to the Brazilian states of Rondonia and Matto Grosso, enabling an expansion of the soya industry. Soya production is particularly important in Matto Grosso, whose governor is Blairo Maggi, one of the biggest soya producers in the world[16].

Megaprojects for integrating infrastructures is, as we will see, turning out to be a crucial factor in the transportation of the raw materials for agrofuel production, such as grains. Not only does this entail increasing the external debts of the countries where these plans are being carried out, but it is simultaneously also generating a considerable ecological debt from the large companies with respect to the local populations. These populations lack any possibility to participate or to even exercise their right to being consulted, and are experiencing major social and environmental impacts from the projects.

Second Generation Fuels: From Bad to Worse

Faced with the multiple problems presented by first generation agrofuels, a new technological response is once again being offered; producing liquid agrofuels (BtL, Biomass to Liquid) which can be obtained from lignocellulosic biomass such as straw or wood chips. This includes producing bioethanol by fermenting hydrolized biomass, as well as agrofuels obtained by a thermo-chemical process, such as the bio-hydrocarbons obtained by pyrolisis, the forms of gasoline and diesel which are synthetically produced by the Fischer-Tropsch synthesis, amongst others.[17]

16 For more information see: http://www.biceca.org and http://internationalrivers.org/.

17 See: *Programa del Encuentro Biocarburantes'07* (http://www.iir.es)

The social and environmental impacts generated by the large scale production of these fuels are, for the time being, relatively similar to those associated with first generation. Gathering organic waste from fields requires the use of greater amounts of fertilizers, thus emitting greater quantities of nitrous oxide. Furthermore, the massive harvesting of dead trees will result in loss of biodiversity, given that thousands of species depend precisely on this vegetation waste which lies in the soil. This could reduce the forests capacity to absorb carbon. The other aspect is that, given break the molecular structure of the plants requires reducing the number of enzymes, the preferred raw material would originate from tree monocultures. The genetics industry is currently researching the modification of plants to produce less lignin, in order to facilitate cellulose breakdown and accelerate the plants' growth rhythm. However, release transgenic trees into the environment has unknown risks (Biofuelwatch, Carbon Trade Watch/TNI, Corporate Observatory, 2007). Enthusiasts of second generation fuels and tree plantations seem to have forgotten that a forest is not just a collection of trees, but is an ecosystem.[18] The World Rainforest Movement reminds us that in Chile tree plantations are known as "planted soldiers" (because they are green and they are killers). The plantations are occupy massive lands, threatening the traditional sources of subsistence of the areas' inhabitants. In Thailand, eucalyptus is referred to as the "selfish tree" because it monopolizes the water necessary for growing rice, the basic peasant subsistence. The model of monoculture trees that has been used by the growing paper industry is being replicated in different countries, and its social and environmental impacts are continuously being denounced.

Human Beings, Not Machines

Until now we have argued that agrofuels constitute a completely inadequate response to global problems such as global warming and hunger. Actually, the large scale production of these fuels does not represent any break with whatsoever for fossil fuels, since fossil fuels are necessary for the production of agrofuels, as well as for transporting them. Furthermore, agrofuels imply an intensification of the agro-industrial model, a model which already bears significant responsibility for the current environmental crisis and the worsening living conditions of the world's poorest populations. The only beneficiaries from agrofuels are the conglomerates of large business groupings, several of which have already contributed to generating

18 See the documentary film "Invasión verde", http://www.wrm.org.uy

climate change and an unclaimed ecological debt, by way of their participation in the petroleum, automobile, agribusiness and construction sectors. According to the FAO, the rapid transition towards a greater use of agrofuels could reduce the emissions of greenhouse gases "*only if they take into account food security and the environmental consequence*" (FAO, 2007) Based on all the elements discussed in this article, yet also set within the context of one of the central pillars of capitalist logic, the obsession for sustained growth (which itself is not sustainable), the FAO proposal places before us an equation which is impossible to resolve. Furthermore, its starting point is an over simplistic understanding of both the environment and also of effected populations.

This is due to disdain for a key parameter: human beings are still not automatons. The millions of impoverished people throughout the planet cannot be considered as machines which simply require a suitable source of energy. An indigenous leader from the Mixe Peopel (Oaxaca, México) told me that what seek is autonomy. Autonomy is a complex equilibrium which includes concepts such as: having their own food, hope, decision making power, thought, language, territory, development path, education, life and death, all of which belonged to them. For their part, the Andean communities are fighting for *Suma Qamaña* to be introduced into the new Bolivian constitution. This is understood to mean "good living," in a territory which for its inhabitants is sacred and where the diversity of nature and its divinities live together with the human species. In Mexico, maize is not simply a basic food staple for the *Wixárika*. It also has a sacred character, expressed through the collective work of sowing, deer hunting and ceremonies. The *milpa*, or cultivated land plot, is like a community where maize, beans, squash, amaranth, and medicinal plants all live together and complement one another (Redes-AT and GRAIN, 2007a). After years of studying diverse indigenous cultures in Latin America, the anthropologist Alicia Barabas says that the representations of space and the cultural guidelines of construction constitute structuring categories in a culture given that its meanings and orientations are key to the social reproduction (Barabas, 2003). As such, we need to approach dilemmas such as climate change and the contradictions generated by the capitalist system from a recognition of human's complexity and cultural diversity. In this light, the possibilities to act are numerous. Indigenous and peasant organizations have given expression to their demands in the all encompassing and comprehensive concept of food sovereignty. More recently the concept of energy sovereignty has also been adopted. Popular campaigns around food sovereignty are also taking shape to demand a halt to

energy crop plantations and a moratorium with regard to the EU policies of incentives for agrofuels, and its importation of monoculture-based agrofuels or which in some other way contribute towards the ecological debt and food sovereignty.[19]

Let us end this article by underlining a theme which is currently garnering ever greater strength and around which and ever great variety of ideas for change are gravitating towards: degrowth, understood as "the need to leave the current economic model behind and break with the logic of continuous growth" (Mosangini, 2007). Essentially the idea emerges from the thought of Nicholas Georgescu-Roegen, who developed bioeconomics. This is understood as the formulation of an economic, ecological and socially sustainable science, which seeks to reground the economy as a subsystem of the biosphere, in respect of its laws and physical limits. An example is the emergence of proposals for production on a local and sustainable scale, organic agriculture, deindustrialization, the end of the current transport model, the end of consumerism and advertizing, deurbanization, self-production of goods and services, austerity, and non-market based exchanges. Such proposals are especially urgent in the Core countries. Such initiatives, in an effort of empathy, listening and collaboration between the different resistances to the capitalist system, will undoubtedly provide a basis from which to responsibly face up to today's global problems in order to recover the possibility of a dignified life for all of us who inhabit the planet.

Bibliography

Interamerican Development Bank (BID). (2007), "BID aprueba US$120 millones para proyecto de biocombustibles en Brasil," Press Release 25th July.

Barabas, A. (2003), "Introducción: una mirada etnográfica sobre los territorios simbólicos indígenas." In: Barabas, A. (coord.) *Diálogos con el territorio*, Vol. 1, México, INAH.

Binimelis R., Jurado A., Vargas M. (2007), "La trama de los agrocarburantes en el Estado español," *Revista Ecología Política*, n. 34.

Biofuelwatch, Carbon Trade Watch/TNI, Corporate Observatory. (2007), *Agrofuels. Towards a reality check in nine key areas*, TNI-CEO, Amsterdam.

Coordinadora de Organizaciones de Agricultores y Ganaderos (COAG).

19 See http://www.biofuelwatch.org.uk/ and http://www.noetmengiselmon.org

2007. *Las verdaderas causas de la subida del precio de los cereales; consecuencias para el sector agrario*. Madrid.

GRAIN. 2007. *Seedling*. Agrofuels special issue, Barcelona.

Gudynas, E. 2007. *Bolivia: sueños exportadores y realidades nacionales*. Bolpress, 2nd June.

Holt-Giménez, E. 2007. Biocombustibles: mitos de la transición de los agro-combustibles. *Revista electrónica Biodiversidad en América Latina*, 3rd September.

Llistar, D. 2007. Guerra Norte-Sur: biocombustibles contra alimentos." *Revista electrónica Rebelión*, 19th April.

Mosangini, G. 2007. Decrecimiento y cooperación internacional. *Revista electrónica Rebelión*, 29th September.

United Nations 2007. *The Right to Food*. Report from the Special Rapporteur on the Right to Food. August. A/62/289.

United Nations Food and Agriculture Organization (FAO). 2007. *Living With Climate Change*. Press Note 10th September.

Ortega, M. (Coord.). 2005. La deuda ecológica española: impactos ecológicos y sociales de las inversiones españolas en el extranjero. *Sevilla*, Spanish State, Muñoz Moya Editores Extremeños.

Redes-AT and GRAIN. 2007a. Revista Biodiversidad: sustento y culturas, *Montevideo*, Uruguay, (50/51).

Redes-AT and GRAIN. 2007b. "La fiebre por los biocombustibles y sus impactos negativos." *Revista Biodiversidad: sustento y culturas*, (52): 16-20.

Rulli, J. 2007. Soja en San Pedro-Paraguay. Guardias emboscaron a campesinos por cazar en latifundio. *Revista electrónica de Base investigaciones Sociales*, 29th August

Rulli, J. and Semino, S. 2007. La génesis de una política agraria. De la OCDE a la producción de biodieseles de soja, article presented in the *Seminario de Expertos sobre biodiversidad y derecho a la alimentación*, Madrid

Russi, D. 2007. Biocarburantes: una estrategia poco aconsejable. *Revista Biocarburantes* Magazine, Estado español, May.

Saragih, H. 2007. It's cars versus humans. *The Jakarta Post*, Jakarta, 26th July.

Stern, N. 2006. Stern Review Report on the Economics of Climate Change, *HM Treasury*, London

Vicente, C. 2007. Interview with Joao Pedro Stedile, leader from MST and Via Campesina Brasil. *Revista electrónica Biodiversidad en América Latina*, 6th June

Dynamics Of A Songful Resistance

Tatiana Roa Avendaño
Jessica Toloza[1]

> A single swallow does not necessarily mean that summer is on its way. —Juan Ventes[2]

Despite the fact that it might appear as if the voyage along the length of the South Pacific coast of Colombia came to an end with the latest activities in Tumaco, the journey is not over yet. Through the debates, discussions and denunciations arising from the presentation, as well as the warnings about megaprojects that marginalize and bleed the territories, we have been brought face to face with the vestiges of slavery. Such has been the outcome of this campaign for life and freedom in the context of today's marginalization. Like migratory birds, we made our way from port to port, listening to tales of a pained world, aware that the confirmation of the story lay in the lives of the protagonists: peasant men and women. These are the downtrodden victims of injustice, yet they are nonetheless alive with happiness. Together, we built a fraternal fire and shared a small artesenal boat in which we ate together as equals and gently sung ourselves into dissonance. Despite our diverse places of origin (Buenaventura,

1 Tatiana Roa Avendaño—Censat Agua Viva Amigos de la Tierra (Friends of the Earth) Colombia. Jessica Toloza—Anthropology Student at the Universidad Nacional de Colombia. This article was published previously in *Agrocombustibles: Llenando Tanques, Vaciando Territorios (Agro-fuels: Filling Tanks, Emptying Territorios,* published by Censat Agua Viva and the Proceso de Comunidades Negras (Process of Black Communities), Bogotá - Colombia, 2008. It was translated from the Spanish by Kolya Abramsky, with assistance from Claudia Roa and Adam Rankin.

2 Member of the South Pacific Voyage, old sailor and peasant from Guapi (Cauca).

Bogota, Bahía Málaga, Ladrilleros, Cali, Sala Onda, Guapi, Timbiqui and Tumaco) and our different professions, we made the journey together in a familial and fraternal spirit. Combining visions and dreams for a single cause, we reclaimed the word, recounting the outrages and injustices of a capitalism whose discriminatory policies and practices are devastating the African population and banishing them from their own territories. Capitalism which, according to Bolívar Echeverría, *"implies the alienation of the human subject, and the erosion of its ability to reproduce itself and generate its own ways of being."*[3]

This "South Pacific Voyage" was a joint initiative of the Process of Black Communities [Proceso de Comunidades Negras] (PCN) and CENSAT Agua Viva, Friends of Earth Colombia [Amigos de la Tierra Colombia]. Its goal was to broaden the resistance campaign against agro-fuels: *Filling Tanks, Emptying Territories* [Llenando Tanques, Vaciando Territorios] amongst local communities. This "pacific" trip through the Pacific region began in the Puerto de Buenaventura on 28th September 2007 and ended in Tumaco on the 8th October of the same year. The journey exposed the reality of permanent state of siege which Afro-descendants are facing, threatened with loss of sovereignty, freedom and territory by the onslaught of megaprojects. Of crucial importance is agribusiness, especially the monocultures of oil palm (originating from Africa) which are being developed in the region.

The multiple grievances and problems that we witnessed during the trip left us feeling impotent, with a desolate and unpleasant aftertaste. Yet, they also demonstrated the urgent need for embarking on activities that strengthen the articulation between these communities and their abilities to analyze and design local and regional strategies for defending their territory. The campaign seeks to link the entire Afro-descendant population of the South Pacific region within a common perspective of deepening the autonomous Plans and Projects for Life in such a way as to emphasize their own capacities to research and acquire knowledge. At the same time, it strives to strengthen their culture and valorise their ancestral wisdom. With this in mind, these communities are concentrating their political efforts

> in the ability of humans to make their own decisions about themselves and their ways of living together. This ability is necessarily exercised in a process of acquiring consistency in concrete daily life and in the creation of identitie."[4]

3 Bolívar Echeverría. *Cultura y barbarie.* www.bolivare.unam.mx/ensayos/barbarie.html

4 *Ibid.*

Thus, their political perspective serves to reinforce their knowledge of their rights and legal tools. By asserting their ancestrality and culture they are able to cohesively constitute themselves as a threatened people and culture. Alternative proposals are based in appealing to these aspects. As the popular saying goes, *"A single swallow does not necessarily mean that summer is on its way."*

The South Pacific is not merely a geographical space. As the inhabitants on the shores of its rivers are fond of saying, it is an entire universe. It is a universe where people still use song to express their feelings and play the marimba to get in touch with their past: "*the devil is ... the marimba*" chants the song. And, after feeling and getting to know the South Pacific's coastal and river areas, one might easily imagine that today only one devil exists in the region: megaprojects. The overbearing and indiscriminate presence of these projects is the expression of a development-based logic, characterized by a heavy dose of environmental racism and indifference to the communities and their cultures. These megaprojects obey a logic that is based in the destruction of natural wealth and the erosion of cultural autonomy. At the same time, communities that are already historically impoverished and degraded in the country's idiosyncratic imagination, are facing displacement.

The devil made his appearance... and he was anything but a marimba

The phrase "development" conceals the shadow that megaprojects are casting throughout the region. The people there refer to it by name with great caution, just as they might refer to a ghost or an armed man. However, the various organizations and community councils which inhabit the whole region are sounding the alarm. These development proposals are the products of Colombian governmental initiatives, together with the multinational financial institutions such as the CAF (Corporacion Andina de Fomento), the Interamerican Development Bank and FONPLATA (Fondo Financiero para el Desarrollo de la Cuenca del Plata). The projects have been drawn-up and implemented without prior consultation and fail to prioritize the ethno-development projects that the regions inhabitants have managed to forge around their traditions and visions. Instead, the megaprojects are clearly a strategy aimed at dispossessing and displacing these very same populations. By undermining legislation concerning the *Consulta*

Previa,[5] namely Law 70 that was passed in 1993 and Decree 1320 which was issued in 1998, these development projects are simply a mechanism to snatch away Afro-Colombians' right to define their own ways of living which these laws entitle them to.

The Colombian state's interest in territories rich in natural diversity does not come free of charge. Foreign companies and capitals have already mapped out the future of entire communities.

> "Rooted in the historical process of capital accumulation, these companies are now developing policies aimed at seizing the peoples' genetic, intellectual and cultural wealth. And, in the name of democracy and civilization, monocultures are being promoted."[6]

These interests do not take the communities into account, quashing and devaluing their beliefs, traditional practices and labors. The ground is being laid for a territory void of inhabitants. In other words, no peasants, indigenous people, or Blacks. In the early decades of the 20th Century, legal measures were established to usurp the land from peasants and settlers, and in this case, the Afrodescendant communities specifically. Yet, today, colonial methods still remain intact in their essential features. Now, as in the past, peasants continue suffering banishment from their land in order to offer legal and economic guarantees to the large and wealthy landowners. Only this time around, these landowners take the form of transnational companies.

The existence of a state that instigates eviction or subjugates life to new forms of commodification through the imposed presence of large multinational companies (the sole beneficiaries of the government's proposals) hinders the existence of viable and peaceful relations between a territory and its inhabitants. This phenomenon of accelerated and unscrupulous extraction of natural wealth, as well as its commodification, is characteristic of the position of southern countries in a globalized market. And, as far at the Black communities of the Colombian South Pacific are concerned, it poses a dramatic and all encompassing threat to their cultural, biological and ancestral patrimony.

Throughout the course of the Voyage, the clearest and most evident example of the threat posed by megaprojects which we encountered was the Deep Water Port in Malaga Bay [Puerto de Aguas

5 The *Consulta Previa* is a legal mechanism for consulting the Black and Indigenous communities before going ahead with a megaproject.

6 Almendares, Juan. *Reflections on human rights, torture and cruel, inhuman and degrading treatment and environmental justice* [Reflexiones sobre derechos humanos, tortura y tratos crueles inhumanos y degradantes y la justicia ambiental]

Profundas en Bahía Málaga] in the Valle del Cauca. Not only will this construction impact on the local population's right to cultural diversity, territory and participation that the *Consulta Previa* entitles them to, but it will also endanger territories for which collective titles have already been issued. A group of young environmentalists in the community of Bahía Málaga have initiated an eco-tourism process. This is rooted in a local community perspective, as opposed to the typical logic of travel agencies or others promoting commercial tourism packages which devour landscapes and cultures. To the contrary, this eco-tourism initiative strives to cherish, reclaim and revindicate the beauty of the areas traditions and territory. By doing this it seeks to raise awareness amongst visitors to the area so that they will leave with an understanding that other ways of seeing the world and relating to nature do in fact exist. However, these very same local forms of life are seriously threatened by the building of the deep water marine port, as is their food sovereignty and territorial autonomy, which will end-up being administered by "outsiders."

The region of Gran Patía is also learning about an additional threat, the Waterway [Acuapista] megaproject. Together with the Deep Water Port, this forms part of the Archimedes Project. The government's devious approach to implement this project has consisted in breaking it down into sub-components and dividing them between the different municipalities that it will pass through. In this way, the megaproject will bring together three departments and fourteen municipalities. The Waterway would traverse the entirety of the region's complex ecosystem of marsh-lands, provoking the kind of incalculable damage which has already occurred with the Canal Naranjo. This is a canal that connects the Patía Viejo river with the Turbia ravine, a tributary of the Sanquianga river. It was built in the 1970s to allow faster transportation of wood extracted from the zone. Its construction has accelerated the sedimentation of the Patía river, making its passage almost impossible. Let us not forget that the rivers are the only means of access and communication for the inhabitants of the Pacific region. Not only would the loss of the Patía river leave an entire population isolated and marginalized (even more than they currently already are), but it would also alter an entire ecosystem and water basin which has served as sustenance and a cultural reference for decades. The inhabitants still remember a time when the river was wide and deep. Now all you hear is *Canalete!*[7], the rallying cry for people to set about the task of removing blocks of mud and earth which are clogging the river. Projects such as the Waterway, and

7 *Canalate* is a stick which the rafters use when their boats become stuck in the sand due to rising tides.

others which form part of the Archimedes Project, are being developed with the framework of the Initiative for the Regional Integration of South America [Iniciativa de Integración Regional para Sur América], IIRSA. This is an attempt to construct infrastructure in order to guarantee the opening up of new commercial routes, as well as facilitating international trade, a process of pillage brought about by way of Free Trade and Bilateral Investment Treaties. These infrastructure projects seek to speed up the transport of commodities produced by large companies and multinationals and result in ever greater degradation and marginalization of local and regional trade and alliances.

Patía comes under the Association of Community Councils of Greater Patía [Asociación de Consejos Comunitarios del Gran Patía], ACAPA. ACAPA was one of the first Associations to receive collective ownership rights to land that was ancestrally occupied by the region's inhabitants. Today 96,000 such titles have been granted, spanning three municipalities: Mosquera, Francisco Pizarro-Sala-Onda and Tumaco, in Nariño. Despite the fact that these collective land rights have been granted, and the black communities' longstanding residence in the region, there have nonetheless been reports of incidents in which land belonging to these collective holdings has been sold to foreigners. This has resulted in the land being exploited through practices that are not traditional to the region, such as extensive livestock grazing.

On the other hand, the municipality of Guapi situated in the Caucan Pacific region, is being drawn into the dynamic of megaprojects by way of the indiscriminate planting of African Palm in areas which are part of the collectively held lands. It is not only the old people of Guapi who are worried by these monoculture plantations: the young men and women are also concerned about the threats to their land that are associated with this megaproject that purports to produce African Palm for the next 60 years. 15 thousand hectares of the Communitarian Council of Lower Guapi's total 23 thousand hectares are endangered and the territory's integrity is in jeopardy due to Salamanca, the palm company that has won the concession.

Locals are also concerned about the construction of the Small Scale Hydroelectric Plant at Brazo Seco. They believe that this project will not serve the population's wellbeing, but rather seeks to guarantee the energy requirements of agribusiness, just as has been the case with other projects in the area. Once again this violates Decree 1320 that was issued in 1998 and concerns the *Consulta Previa*. The Brazo Seco hydroelectric plant also threatens to have a severe ecological impact.

Tumaco is a dramatic case in point. Here the Guapireños have had ample opportunity to experience the consequences of producing African Palm. Tumaco is the municipality with the largest presence of African Palm cultivation in the South Pacific region, and it was here that the sowing began. It is reported that today around 40 thousand hectares have been planted, as compared to only 18 thousand in 1998. In less than a decade, the extension of African Palm crops in Tumaco has doubled. Meanwhile, the Afrocolombian peasants maintain a traditional culture, based on agriculture that is both varied and sustainable. This has allowed them to turn their land into a microcosmos containing diverse plant and animal varieties. However, according to accounts from people in the area, the oil palm gives rise to nothing but sterility of the soil and a uniform strain of plants which homogenizes the landscape and the territory. Furthermore, it is not even edible! In the words of a woman who attended the meeting of the Communitarian Councils:

> The oil palm is a selfish crop that does not allow for the production of anything else. Those who cultivate it will lose their ability to grow banana, cassava and fruit trees. They won't be able to cultivate anything. Nothing at all. Absolutely nothing. This is why I call the oil palm plantations selfish.

Charo Mina, a leader of PCN who lives in the USA and participated in the Voyage, wrote:

> The communities exposed to the cultivation of oil palm in the vicinity of Tumaco have experienced the devastating environmental, social and cultural effects of its presence. Their lands have been expropriated (in many cases violently), their water has been contaminated, and they have lost traditional production practices such as the traditional farming system which is based upon a complex ecosystem combining edible food crops, wood sources and ecological control mechanisms. The monocultures present the Afro-descendant communities with an ethical problem, both in relation to environmental, economic and cultural issues, as well as from a historical perspective. The Colombian government's insistence on imposing monocultures in the collective territories belonging to these communities is an affront to their morality and ethics.

In the mid-1970s palm cultivation was implemented in Tumaco by way of pressure and coercive and cruel methods. However, since 1999 a new strategy of getting hold of land has been adopted by those promoting palm-oil. This strategy complements their earlier strategy. In 1999, Cordeagropaz, the Tumaco Corporation for Agribusiness Development [Corporación para el Desarrollo Agroempresarial de

Tumaco] was established. This is a public-private entity created to promote so-called "strategic alliances." These alliances have overridden the legal rights of the Boards of the Communitarian Councils by organizing small cultivators of oil palm into business associations that serve to bypass these Councils. Cordeagropaz, with assistance from USAID, promotes mediation between the government, banks and palm companies and violates the basic rules stipulated in the special ethnicity law. These alliances seek to intensify the presence of agro-industrial palm plantations in the midst of collectively held territories, by way of associations which do not have legal decision-making power over the territory. These associations simply express the unequal relations between capital and the local population, where the natives put their lands and their labour at the service of this monoculture, while they themselves become indebted. Not only are their culture and food sovereignty at risk, but also their actual territory. *In order for palm cultivation to be able to expand, the people must vacate their territories.*

Thus, it must be understood that the displacement to which the black communities are being subjected to on account of the government's fervent promotion of megaprojects is an intentional strategy. It is aimed at weakening the control that these communities have begun to exert since being granted collective land titles and the establishment of Communitarian Councils to administer the territory. This is crucial, since if the Communitarian Councils were to be strengthened and given due recognition as the appropriate governing bodies within these territories, as distinct from merely being grassroots organizations, this would introduce new elements in the discussions posed by government policies and the Afrocolombian communities.

And so, the Devil arrived with his demons in tow

Numerous policies seeking to integrate the black communities with the rest of the country are based on megaprojects that in addition to assaulting the ancestral nature of the territories belonging to these communities, also intensify existing conflicts and threaten the communities. The projects are being generated according to external economic requirements, and do not include consultation with the communities about the initiatives they would aspire to be able to realize within their collective landholdings.

The invasion of illegal crops into various zones of the South Pacific has intensified the armed conflict in these regions. The different sides of the conflict fight for control over the territory and the civilian

population becomes caught-up in the middle. In the midst of this violence, the government has developed so called "alternative proposals." However, these proposals have nothing more substantive to offer than further penetration into territories and displacement of their inhabitants. These supposed "alternatives" simply serve to cement hegemonic models in place, models which were initially placed on the table by the interests of large-scale capital and multinational foreign investment, and are backed up by unjust and unequal trade treaties.

The megaprojects have arisen under the pretext of the Colombian government's programme of eradicating illegal crops. The imposed establishment of oil palm monocultures for the production of edible oils and agro-diesel is turning out to be the strongest pretext. The communities' have suffered the fate of being recipients to the spread of coca in certain regions of the South Pacific, brought about by outsiders. On the one hand, the indiscriminate glysophate fumigations negatively affects peoples' health, harming basic food-crop production and the territory's biodiversity. And, furthermore, the agricultural products and crops which the government has introduced to replace coca, have also been affected by the aerial spraying. One concrete example of this is the community of San José de Tapaje, a *corregimiento*[8] which forms a part of the municipality of Charco.

On the other hand, it is clear that armed conflict has caught the civilian population in the middle and is suffocating the tranquility that people used to enjoy in their Pacific homeland. This is in violation of international humanitarian law. The communities that settled on the shores of the Tapaje River have had to sustain the scourge of the armed groups (both legal and illegal ones). These armed forces are often stationed very close to the houses in the community, thus preventing people from exercising their right to move freely within their own territories and benefit from its natural wealth. After six in the evening, the river is a lonesome place, a predatory serpent that inspires terror in all who stumble upon it.

However, some people are more afraid of being uprooted and the resultant homesickness than of the bullets. And, so, despite everything, they continue living in Tapaje. Women, men, old people, and children all continue to bathe in the currents of the river, continue singing to its waters and have not given up sowing banana, sugarcane and hope. And, alternative projects manage to survive. One such initiative is the Association of AfroColombian Women for Peace [Asociación de Mujeres Afro Colombianas por la Paz] (AMAC). This

8 This is an administrative term for a small populated area that exists within a municipality.

group of women from San José de Tapaje have had to resist constant threats against its agricultural and cultural proposals.

The Tapaje River is the epicenter of multiple problems. Those mentioned above are just some of them. When coca and armed groups mix with the civilian population, the result is that the communities and the territories where they live are the most effected. Many families are forcibly displaced.

The displacement suffered by the river communities of Tapaje has undergone important changes recently. A new category of people has emerged within the displacement process. These are people who refer to themselves as "The Resisters" ["Los resistentes"]. In addition to physical dispossession, displacement also involves symbolic and psychological dispossession. The relations between the inhabitants and their land and its resources undergo profound changes. Amongst those who stay, children are left with fear in their eyes and women with empty stomachs. However, these people are not considered to be displaced peoples, and hence are not prioritized within the government's national assistance program which purports to serve communities affected by this scourge.

"The Resisters" are loathe to abandon their land, referring to it as "their paradise." Aggrieved, they ask themselves why the government fails to offer other alternatives that do not entail abandoning their homes. Instead, they receive threats and harassment from all the different armed groups warning them to "vacate the territory." Bearing the brunt of the violence, they have very few tools at their disposal with which to sustain their resistance. Their main weapons are their culture and the processes of ethno-education which have enabled them to appropriate their territory as their own, by way of love for their traditions and culture. Having opted so valiantly in favour of life and communion with the land, for the most part these elements are the lifeline that The Resisters cling to so dearly. The songs, the poetry and the dance are the arms wielded by these men and women who talk to the river and rouse people to clear its channels, giving them the strength to face the bullets which have sought to remove them from their homes.

> The displaced and The Resisters alike both have lost their right to freely exercise their culture and social being, owing to their loss of autonomy to freely move, to maintain their traditional crops, to freely exercise their right to organize themselves and to participate politically. They have also lost their right to enjoy themselves and carry out recreational activities. The inhabitants of the Territorio Región of the South Pacific live in a situation of confinement, held hostage in their own territory, kidnapped for what they represent and

what they are a part of.[9]

These are the features of the policy of plunder and imposed change which is being implemented in the territories that have belonged to the Colombian black communities since ancestral times. There is a sense of being under siege, both from the state and from the transnational companies. Their activities threaten the region's communities and its territories; territories which are recognized as the world's third richest, both in terms of genetic wealth, as well as natural wealth in general.

And, with the power of traditional sorcery, people take on the Devil

The diversity and culture of an immense lyrical universe is under threat from agro-fuel monocultures, as well as the megaprojects that go under the name of "development" for the communities. Affecting nature, the geographical landscape, the cultural worlds, the agricultural traditions and the beauty of a territory that is both friendly and seductive, these initiatives amount to an assault against life.

In many communities, such as Bahía Málaga or San José de Tapaje, people continue struggling for alternatives aimed at improving the living conditions of men and women alike, and reconciling the communities with their environment and the traditions of their elders.

Finally, the only thing that remains is to recall that upstream we encountered the men and women of a songful resistance. There they were, soaking their clothes and their stomachs in the waters of the river, drinking freshly-made *biche* and *naidy* juice[10] as they engaged in their daily celebration of life. Yet, all the while, contemplating the harsh reality of hunger and the indiscriminate spraying of chemicals.

There, the bland color of the skin likens the earth, and it is at this moment when uprootedness and homesickness weigh down on our chests and we feel the burden of those who are unable to roam their territory and freely enjoy their traditions.

Despite the fact that we do not have ancestral and collective lands, that we do not know how to plunge a *canalete* deep into the water, that we do not distinguish between the flavours of "pepa e' pan"[11] and that we do not have a river coursing through our memories**,**

9 Comment made by Charo Mina in his report " Colombia's African Diaspora is the Target of an Extinction Strategy" . ["La diáspora africana en Colombia está en la mira de una estrategia de extinción."]

10 Translator's note: I have been unable to find any English translation for these terms.

11 This is a phrase that does not translate easily into English. Pepa e'pan is the fruit of the bread tree.

this territory and its people nonetheless opened its heart to us. The women sang us a lullaby and seasoned our palettes with the tasty local herbs, chillangua and chillarán, while the local music reminded us of how arhythmical our feet are under the sound of a marimba. The communities entrusted us to shout to the four winds all the pain and injustice which they are living through in their own lands. And, so, this is how the people in the Pacific live, living as they do in the midst of war, and exorcising bullets and intrusions with prayer and song.

Postscript

Palm Oil in Colombia: a Tale of International Backing, Commercial Networks and Companies[12]

The majority of the palm oil produced in Colombia is produced for the national market. In 2005, 85.45% of the oil was sold on the Colombian market as compared with 14.55% in the international market, with 13.229 tons consumed nationally, and 2.253 tons exported.

Unrefined raw materials make up 80% of exported palm products. These are sent to Europe, where they are refined in European plants in order to be re-exported at a later date. Thus, the European market receives the greatest share of exported oil. The main countries recieving exported Colombian palm oil are: Spain, UK, Germany, Holland, and outside of Europe, also Brazil.

The companies which market palm oil overseas are Colombian national capital and specialize in the palm sector. The two most important exporters are the industrial groups Famar S.A. and Daabon, belonging to the Dávila family. These commercial groupings bring together several international marketers including the international marketing companies Tequendama (owned by the Daabon group) and El Roble (owned by Famar S.A.). Aside from these conglomerates, other companies include Bajirá Industrial, Extraction and Marketing Company [la Extractora y Comercializadora Industrial Bajirá] and the

12 This postscript was written as part of a report about oil palm in Colombia by Censat Agua Viva, by Irene Vélez Torres, in February 2008. It is a previously unpublished document. This text was translated into English by Kolya Abramsky, with assistance from Claudia Roa and Adam Rankin.

Gradesa International Marketing Company PLC [Comercializadora Internacional Gradesa S.A.].

These marketing companies benefit from favourable credits and taxation arrangements from FINAGRO, the Investment Fund for Peace [Fondo de Inversiones para la Paz] and USAID—The US Agency for International Development.

The Role of International Financial Institutions in Promoting Agro-Fuels

During the period 2006-8, the World Bank increased the funds available for loans in the energy sector by 40%. In a similar vein, the Interamerican Development Bank (IDB) has begun promoting agro-fuels as part of the Initiative for Climate Change and Sustainable Energy which seeks to offer support for clients to diversify their energy matrix. According to the IDB, ìt will take at least 14 years before Latin America is able to become a large scale producer of agrofuels, for which it will require at least 200 billion dollars. In order to realize this potential, the bank putting its resources into supporting the expansion of African Palm and sugar cane crops.

While the majority of the companies which produce and sell palm oil are national capital, this productive system is nonetheless connected with international capital and its interests. Concretely, it must be stressed that a good part of the loans from which the palmiculturists benefit are loans that the Colombian government has acquired from international financial institutions and are charged to the public treasury.

Strategic Alliances

One of the strategies currently promoted by the Colombian government involves Strategic Alliances. In an official communiqué issued by the Presidency of the Republic on 7th July 2007, it was reported that in the first semester of 2007 18, 500 hectares of palm were sown within the framework of Strategic Alliances. These alliances are led by two key players: the businessman Carlos Roberto Murgas[13]

13 Roberto Murgas was a functionary of César Gaviria and Andrés Pastrana's governments, and went on to become a key player in Álvaro Uribe's presidential campaign on the Atlantic Coast. Together with César De Hart (president of the Colombian Association of Agricultural Producers [Sociedad de Agricultores de Colombia] and the husband of Martha Pinto de De Hart, the first Minister of Communications in Uribe's government) and Jens Mesa (president of Fedepalma and husband of the current Minister of

and the company Indupalma. In 2007 Murgas owned 14,400 hectares, working in a Strategic Alliance with peasants from in regions such as María la Baja, the department Bolívar, North Santander, the region of Catatumbo, the municipality of Tibú and in César. In the period preceding the issuance of the government communiqué, Murgas had recieved loan for more than 2.25 billion pesos by way of the Rural Capitalization Incentive (RCI). Indupalma, on the other hand, has 4,100 hectares in the Sabana de Torres, Santander. It had received handouts of just over 23 billion pesos. These figures showed Murgas to be the biggest player in the Strategic Alliances in 2007.

Murgas is emblematic of the chain of interconnections which exist between public indebtedness, the use of legal instruments such as the RCI to encourage the expansion of these crops, the establishment and imposition of Strategic Alliances which bind the local populations to the palm-based productive system, and the dominance of one single businessman throughout the various phases of production and distribution of palm oil. However, Murgas is by no means the only person within the palm sector's business panorama who exhibits these characteristics. A series of exposés in the country's most representative weekly newspaper provoked a scandal in mid-2007. Incoder, the Colombian Institute for Rural Development, had given out more than 16,330 hectares of uncultivated land in the department of Vichada to 13 close associates of Habib Merheg, a senator from the department of Risaralda. Included amongst the recipients were members of his Legislative Work Unit [Unidad de Trabajo Legislativo], his secretary, lawyer and several directors from the company Cable Unión de Occidente, which Merheg was linked to until 2002. In addition to these lands, the legality of whose transfer is still being disputed, senator Merheg also bought the 2,400 hectare Mirador estate in 2005. The goal of purchasing this land, also in the department of Vichada, was to cultivate palm, a prospect which, in his own words, Merheg found "very emotional."

In general, the type of connections revealed in these specific cases is cause for reflection about the complex web of connections between the companies and promoters of palm in the different stages of production, as well as their relations to the governmental policies which back up the interests of these companies and individuals.

Communications, María del Rosario Guerra de la Espriella) Murgas formed part of the troika leading the country's agricultural sector. In 1990, Murgas managed the Agrarian Bank [Caja Agraria] for several months during the Gaviria government. He later went on to become president of Fedepalma and the Colombian delegate to the Food and Agriculture Organization (FAO). In 1997 he participated in the presidential campaign of Andrés Pastrana, who subsequently appointed him as his Agriculture minister. The Codazzi refinery, in the department of Cesar, is currently part of his business holdings.

Wind Conflicts In The Isthmus Of Tehuantepec

The Role of Ownership and Decision-Making Models in Indigenous Resistance to Wind Projects in Southern Mexico[1]

Sergio Oceransky

Abstract

Wind energy projects in the Pacific coast of the Isthmus of Tehuantepec (Oaxaca, Mexico) are facing an increasing local resistance. This region, primarily inhabited by indigenous peoples whose land rights are recognised collectively in so-called Ejidos, is gifted with one of the best wind resources in the world. Projects to install more than 2,300 MW of wind energy capacity in the region within the next 4 years have already been approved, and more are expected to be approved in the coming years, mainly within the framework of self-supplying contracts in which primarily European (and

1 This article is a shortened version of an article presented by the author at the 7th World Wind Energy Conference which took place in Kingston , Canada on the 24-26 June 2008. The article has not been updated since then. The most important current news is that right now there is an escalation of tension in La Venta with incidents of violence breaking out, and a decision of the Ejido's assembly to stop the works, which has not been respected by the developers (CEMEX in cooperation with Acciona and other powerful smaller players). There are already calls for the special commission in charge of indigenous affaires at the parliament to intervene, but these calls are extremely unlikely to be listened to. The situation looks set to worsen in the near future.

in particular Spanish) companies act as providers and a number of Mexican and international companies as receivers of wind power. However, a growing number of farmers and communities in the region and of environmental and human rights NGOs oppose these projects. They argue that the wind farm projects were drawn and are being executed without local consultation or involvement, and that the companies have provided incomplete and/or incorrect information to land owners in order to obtain abusive land lease contracts. A hundred and eighty legal demands to nullify the land lease contracts have been presented to court by land owners, as well as a case against the former local authority of the Ejido where the only operating wind farm is installed. The creation of a Law for the Use of Renewable Energy Sources and of a National Wind Energy Plan provide an opportunity to address the structural reasons underlying this conflict and to establish a framework where local communities can make use of their wind resource. This would foster a conflict-free and community-oriented development of the Mexican wind resource.

One
Introduction

This paper explores the conflicts that are taking place around wind projects in this Isthmus of Tehuantepec, with the objective of explaining the causes that motivate them and of deriving from them possible solutions that allow a positive development of wind energy in Tehuantepec and Mexico.

After explaining the socio-economic, legal and entrepreneurial context in which these projects are taking place, the paper explores the different dimensions of the conflict around them. Subsequently the local organisational processes of resistance against wind energy projects are briefly described. This is followed by an analysis of the possibilities opened by the (not yet approved) initiative for a Law for the Use of Renewable Energy Sources as well as by the National Wind Energy Plan which is being drafted right now, with the aim of exploring possible solutions to the conflict. The paper ends with a series of conclusions and recommendations referred both to the case of Tehuantepec and to the development of wind energy in general.

Two
Context

2.1
Geographic and Socio-Economic Context

The Pacific coast of the Isthmus of Tehuantepec, in the Mexican state of Oaxaca, has one of the best wind resources in the world. According to Antonio Pérez Rodríguez, Director for Energy and Environment, there are four different estimations of the total wind energy potential in the area. The most optimistic one goes up to 40,000 MW, but there is a consensus on the potential being at least 10,000 MW, probably larger.

This region is inhabited mainly by five different indigenous peoples, the most numerous of which are Zapotecos and Huaves, whose territorial rights are recognised, and in almost all cases collectively organised in so-called ejidos and communities, Mexican legal figures that combine individual land use with collective property. The collective character of some ejidos and communities has been (or is being) modified through the plans PROCEDE and PROCECOM, which give more emphasis to private than to common property; however, not all ejidos and communities have applied these plans.

There are two areas (Juchitán and Unión Hidalgo) where ejidos were not established, but according to a Presidential Resolution of 1964, the use of land is communal, even if the plots of land are distributed. This Resolution was never translated in the formation of ejidos. A first attempt to do so in the 1970s was aborted after the political disappearance of Víctor Pineda Henestrosa, the leader in the struggle for collective territorial rights. A second attempt to establish an ejido in Unión Hidalgo was abandoned in 2002 due to the lack of funds and the high cost of the process and the lawyers.

This is an agricultural region with high-quality land and rich water resources. It is endowed with several important rivers, such as Ostuta, Corte, Tehuantepec and Los Perros, and with the dam Benito Juárez which provides irrigation to 23,000 hectares. There is also an

underground aquifer at a depth of between 6 and 12 meters, but in some places it already emerges at 1,5 meters of depth. It was a sugar-producing region until the government sugar policies changed. Today the main activities are milk production and agriculture. In the Huave area a large proportion of the population works also as artisanal fishers.

Bettina Cruz Velázquez, specialist in territorial planning and regional development and member of the Assembly in Defence of the Land and Territory of Juchitán, declares that farmers produce three harvests per year in irrigated land and two harvests in non-irrigated land. Farmers in the area feel that this agricultural wealth is not properly valued by the authorities in charge of wind energy programmes, which according to them argue that the land in the region has a low productivity and it should therefore be devoted to wind energy generation.

Carlos Vázquez, landless labourer from Unión Hidalgo, reports about the concern amongst sectors of the local population about the change of land use (from agricultural to industrial) required by wind energy projects. This change could have negative consequences in terms of access to irrigation water. The loss of irrigation water would bring serious consequences to the farmers and also to the landless labourers whose work depends on the irrigation.

Most of the population lives in poverty, but there is no hunger due to food production for self-supply. Bettina Cruz Velázquez explains that most of the population obtains income from the small-scale commercialisation of agricultural, husbandry or fishing production. The trade takes place either through intermediaries (for those who have more land), which tend to keep a large share of the profit, or directly in local markets in the whole Isthmus region and beyond, all the way to Guatemala. The direct commercialisation of excess production is often undertaken by women, who play a key social role in the indigenous cultures of this region.

Lack of access to education is a serious problem. Alejo Girón Carrasco, from the Grupo Solidario in La Venta, remarks that in his community, where the first operative wind farm was built, 76% of the population is illiterate. Amongst those who had the chance to receive formal education, most only completed the 3rd year of primary school. The situation is similar in all the affected communities. As a consequence, “caciquismo” (authoritarian social structures where the leader commands the community) is still alive: an important part of the population obeys the orders of local leaders, especially in communities where political parties have more influence due to the erosion of traditional practises of collective decision-making.

In this sense, it seems no coincidence that the first wind farm came into operation in the community of La Venta, which has lost much of its indigenous inheritance, where the Zapoteco language has been lost, and where political parties have a larger influence.

Huave communities confront specific problems in their fishing activities due to the pollution caused by a nearby refinery, and to persistent organic pollution that come all the way from North America, which affect their mangroves and reduce their income from fishing.

2.2
Legal Framework and Approved Projects

According to the Director for Energy and Environment at the Secretaría de Energía (Energy Ministry), renewable energy sources (RES) have entered Mexican energy policy mainly in pursuit of diversification objectives, not due to environmental or social objectives. Hence, there isn't yet a legal framework to promote their use, although this is expected to change with the approval of a Law for the Use of RES (see section 5). For the time being there are no specific laws or plans regarding wind energy. Within the next months the Secretaría de Energía will publish a draft National Wind Energy Plan.

In Mexico the Federal Electricity Commission (CFE) has a monopoly over the transmission network and over most power generation, due to Article 27 of the Mexican Constitution, which also mandates CFE to generate electricity at the lowest possible cost. This had important consequences for the development of wind energy, since the power generation cost is higher than with conventional sources.

Julio Valle Pereña, Director for Promotion of Investments in the Energy Sector, explains that the only operative wind farm (La Venta I and La Venta II, now integrated in one single farm) was built under the format of Financed Public Work, a turn-key contract in which a company builds the farm and delivers it against payment to CFE, which then becomes owner and operator of the wind farm. La Venta I, installed in 1994, consists of 5 small Vestas wind turbine generators (WTGs), adding to a bit more than 1,5 MW in total. La Venta II, inaugurated in March 2007, has 98 Gamesa WTGs of 850 kW each, and was built by a consortium built by Iberdrola and Gamesa.

The Law of Public Service of Electric Energy, approved in 1992, defines 5 cases in which the private sector is allowed to participate in

electricity generation.[2] This law applies to power and natural gas, which are therefore partially open sectors, albeit within a relatively narrow regulatory framework. The oil sector is still completely in the hands of the Mexican State, but the Calderón administration is currently trying (like previous administrations) to open it partially to private investment, a highly controversial proposal that has already been rejected in the past by wide sectors of the population and has generated an intense debate. This debate is relevant to the renewable energy sector, since the initiative for a Law for the Use of RES will not be discussed until the debate on hydrocarbons is resolved, and its outcomes are likely to influence the final contents of the law.

RES is one of the sectors that have been partially liberalised by the Law of Public Service of Electric Energy, and the one on which private investors have expressed most interest. Public administration has taken measures to resolve the existing obstacles to that investment, creating the conditions in which private projects can take place.

In conclusion, the current legal framework for wind energy projects in Mexico is not based on environmental or social objectives, but on economic criteria. Therefore, the protection of the rights and interests of the communities where the wind resource is located is not part of the existing legislation. However, private projects do interact with the public domain, primarily through the transmission infrastructure and because they place on the State the responsibility to install additional capacity to balance the natural fluctuations in wind power generation. This is particularly important for the Mexican transmission network, which is very complex and relatively unstable.

Three
Conflicts in the Isthmus of Tehuantepec

This section describes the reasons that have moved members of the communities affected by wind farm projects to establish organisational processes to oppose them, generating a still embryonic but growing movement. Each subsection first reflects the reasons for opposition as

2 Unless otherwise stated, all the information included in the rest of sub-section 2.2, except for the final concluding paragraph, was facilitated by Mr. Julio Valle Pereña.

they were described by members of these groups, followed by the responses given by the President of the Mexican Wind Energy Association (AMDEE) and by high-ranking public servants from the Secretaría de Energía.

3.1
Conflicts Regarding Participation and Decision-Making

The lack of local and community-based participation is one of the main reasons for the rejection of wind farms. Opposing groups argue that the projects were only discussed between companies and institutions, and the local communities were only seen as providers of land. Since wind is a local resource, and given the great impact that the installation of thousands of megawatt-class turbines will have in their region, they claim that the communities should be the ones deciding how and on which scale this resource should be used, and they should participate in equality of conditions with the other players.

Lack of transparency has also generated animosity in the affected communities. Alejo Girón Carrasco, from Grupo Solidario in La Venta, underlines that neither the companies nor the institutions have provided information about the profits expected from the planned investments. All opposing groups claim that land lease contracts have been signed without the farmers having access to their contents or their appendixes, in particular the one detailing the restrictions in the activities that farmers can undertake once the wind farm is in operation.

Alejo Girón Carrasco asserts that the Environmental Impact Assessment for the project La Venta II was never consulted with the community, although according to the law this document has to include a section on the social impact which has to be consulted with the local population, offering a period of time to question it and modify it. In this case, the assessment was not available to the local population until the works were almost finished.

Opposing groups also denounce the use of antidemocratic practices based on caciquismo (see section 2.1) in order to push projects through. Grupo Solidario from La Venta claims that the order to sign land lease contracts came directly from the Governor of Oaxaca, Ulises Ruiz, from the same political party (PRI) that dominated this community at that moment, and was blindly obeyed by a high percentage of the population. They denounce that in this community, as in all others, the caciques receive a commission for each land lease contract signed by local farmers.

Most groups opposed to the current projects would support other wind energy projects, but only if local communities participate in them and in decision-making around them, if they are carried through in a democratic manner, if there is economic justice, and if the negative impacts (in agricultural production, bird life, electromagnetic radiation etc) are minimised.

Eduardo Zenteno, President of the Mexican Wind Energy Asscociation, claims that most communities are in favour of the projects and bases this claim on the 1,500 land lease contracts that have already been signed. He asserts that each company informs the farmers with which it has contracts, and that there is a dialogue with legitimate land owners. However, when asked whether he has met the local communities, he responds that this is not necessary, since it is enough to meet 10 leaders from the region, and that those who oppose the projects should be careful since Oaxaca is a violent region. This answer does suggest the use of caciquista practices in the wind projects of the region.

None of the three persons interviewed in the Secretaría de Energía denies that the projects were planned without participation from the affected communities. However, they claim that the relationship between companies and land owners is essentially positive, even though there are some voices against the projects.

Antonio Pérez Rodríguez, Director for Energy and Environment, when asked if it would be possible to involve the communities directly in the projects, replies that the problem to involve them beyond leasing the land is that the companies involved are large multinational corporations that do no want to share their profits. He went twice to talk to the communities, but his main source of information are the persons in charge of wind energy projects in the Government of Oaxaca.

Julio Valle Pereña, Director for Promotion of Investments in the Energy Sector, remarks that the region of Tehuantepec is politically unstable and very poor, which generates lack of confidence in politics amongst the communities. He claims that investors have agreed with the ejido councils and the community councils the payment to lease the land, the amount of land to be used, etc. He asserts that much of the noise is of political nature, and comes from people who are not even from the communities affected or the State of Oaxaca, but are external professional agitators.

This claim did not match my observations in the communities. All the persons from opposing groups that I met are members of the local indigenous communities and active participants in community life. Some of them had access to higher education, and this probably

contributes to their lack of docility and to their criticism to this kind of projects, but this does not mean that they are external to the communities. Most members of the opposing groups are small landholders or landless labourers who unfortunately didn't have access to medium or higher education (and often to any formal education at all), but have a rich community-based informal education and are aware of their rights and identity.

3.2
Economic Conflicts

Opposing groups denounce that the annual rent offered to land owners is an arbitrary amount and is insufficient to compensate the negative consequences that wind farms have on farmers and communities. According to Grupo Solidario from La Venta, some people signed land lease contracts for La Venta II for 1,500 Mexican pesos (around 150 USD) per hectare and year.[3] Due to the pressure exerted by their group, later contracts paid 3,000 pesos per hectare and year. A new farm being built in La Venta pays 6,000 pesos per hectare and year, and in other areas apparently 12,000 pesos are being paid per hectare and year, an increase of 800% with respect to the first contracts, for areas with a similar wind resource. Apparently some contracts have been signed with offer to the land leasers a payment in relation to the power produced, but the details of these contracts have not been released. This variation in the terms of the contracts has led many people to conclude that the companies offer as little as possible for the land, and that those amounts have no relation with the value of the wind resource that they receive in exchange.

There is the perception that many projects operate through intermediaries (called "coyotes" by the local population) that keep an important part of the profits. Alejo Girón Carrasco from the Grupo Solidario offers the example of the private project being built in La Venta, which is making payments with cheques made by hand and signed by a physical person rather than a company.

According to Pedro Matus, agrarian engineer from Unión Hidalgo, milk producers earn about 40,000 pesos per hectare and year in irrigated areas, and extra income from selling cows and calves. Irrigated land costs around 100,000 pesos per hectare, but there is no stability in the prices. Once a land lease contract is signed, the land

3 The amounts mentioned refer to the rents that farmers will receive once the projects are in operation. Before the construction works start, farmers receive a much smaller rent, between 100 and 500 pesos (between 10 and 50 dollars) per hectare and year.

value is reduced to about 20,000 or 30,000 pesos per hectare. There is also the fear that underground aquifers, which in this coastal region are very close to the surface, will be affected by the foundations of the Wind Turbine Generators.

In theory, farming activities can continue once the works have been finalised, but in the case of La Venta II (the only operating wind farm) the roads and the lines of generators have been raised, affecting irrigation channels and the natural water flows to discharge rainwater. Therefore, there are plots with no access to irrigation and others that get flooded when it rains. This kind of planning of the works shows that the interests and needs of farmers have been ignored in the framework of the project. In addition, the contracts include an appendix with restrictions on the use of the land by the farmers, banning them from planting anything that grows beyond 2 meters, erecting any kind of building, opening wells, etc. In contrast, the contracts grant "usufructo" (unrestricted use rights) of the land to the companies.

According to an estimation made by Bettina Cruz Velázquez from the Assembly in Defence of the Land and Territory of Juchitán, the first private wind farm which is being built in La Venta is building foundations of approximately 30 x 30 meters, leaving approximately 80 meters between foundations. Therefore, a large percentage of the land sited in the line of generators will be rendered permanently unfit for agriculture. It is still unknown how much distance there will be between the lines of generators, since the company is still building the first line. Initially, the Spanish investors said that the lines would be placed at a distance of 500 meters and that there would be a total of 180 WTGs in the farm, but according to Alejo Girón Carrasco, discussions between the company and trade unions have revealed that the current plan is to install 300 WTGs in the farm. According to a report by the Mexican weekly Proceso, the Spanish family Mouriño plays a key role in this private project in La Venta. The report denounces that this family is making large profits in Mexico, especially in the energy sector, through contracts and procedures that not always follow the existing regulations. Juan Camilo Mouriño, son of the owner of the company GES that builds the private wind farm in La Venta, is Secretario de Gobernación (Federal Government Secretary) in the Calderón administration.

All these reasons have led several environmental and human rights NGOs to express criticism towards the wind energy projects in the Isthmus. Mass media recently published the position of Greenpeace; Cecilia Navarro, communication officer of Greenpeace Mexico, declared: "We do not want corporations to build wind farms that expel communities out of their land. This is not the development

that the country needs, we need to develop clean energies together with the communities that own the land, so that they are part of the wind farms, that they make the decisions." [4]

Eduardo Zenteno, President of The Mexican Wind Energy Association, asserts that all companies involved are socially responsible, and that the protests are based on ignorance, sensationalism and bad faith. According to him, the protests come from a minority represented by leaders who pursue their own interests, but most of those who have signed land lease contracts are not complaining. He claims that all companies are paying in similar terms, that a fair rent is being paid for the use of the land, and that most companies have social plans for the communities that they are working with. He understands the economic trickle-down process that will be provoked by the projects to be a contribution to the development of the area, since it is providing an extra income to the farmers and improving their quality of life. He also underlines that the companies should not take over the role of the State towards the communities.

He estimates that farmers in the area have an average of 10 hectares and earn less than 10,000 pesos per month (i.e. 12,000 pesos per hectare and year), and that when the wind farms start operating they will receive around 120,000 pesos per year (12,000 per hectare) as an average rent. They will also receive compensations for the construction works (all farmers) and specific compensations to those whose land is affected by roads or lines of generators. He claims that many farmers have been receiving rent for 8 years (a reduced amount to reserve the right of land use), even though the works have not started yet, and that all companies are paying the rents in time.

He also claims that the value of land in the Isthmus is about 30,000 pesos per hectare, although the price depends on whether it is irrigated land. He says that most of the land has no irrigation and are not apt for agriculture due to the strong winds. He adds that members of the ejidos do not have ownership over their land, they only have the right of use, but no property, which belongs to the Mexican State.

Regarding the role of intermediaries, he claims that all companies that are part of the Mexican Wind Energy Association sign their contracts directly with land owners, and that only Acciona (a Spanish company that is not part of the Association) uses intermediaries. He says that the problems due to the elevation of roads and WTG lines in La Venta II are responsibility of the Federal Electricity Commission, not of the companies represented by the Mexican Wind Energy Association.

4 http://estadis.eluniversal.com.mx/notas/512513.html

He asserts that Greenpeace knows nothing about what is happening in Oaxaca, that its position is based on rumours and that it creates problems where there aren't any. He does not know what interests it pursues, but thinks that they are illegitimate interests.

Oscar Galindo Ríos, representative of Eoliatec and responsible within the Mexican Wind Energy Association for wind energy projects in Oaxaca, asserts that the protests come from those who have not signed the contracts, not from those who have signed them. He explains that it is important to consider the conditions in which the projects are being built. They pay a very high price for the transmission infrastructure, a growing price for the WTGs and there is no feed-in tariff to guarantee the economic viability. Only for the new transmission line they pay 145,000 USD per installed MW, in addition to the connection to CFE's substation, which costs an average of around 50,000 USD per installed MW. They depend completely on the power tariff charged by CFE: if there is a policy of reduction of power tariffs, all the self-supply projects would collapse. He claims that the projects are not very profitable, and that the fulfilment of many is still uncertain, since this is an area with high seismic activity, there is little infrastructure, a lack of cranes, and there is also lack of certainty with regards to access to land. All this means that Oaxacan wind farms are amongst the most expensive in the world, and their economic viability rests solely on the great wind resource in the Isthmus.

Antonio Pérez Rodríguez, Director for Energy and Environment in the Secretaría de Energía, claims that currently there are no economic problems with the ejido members who own the land. His colleagues in the Government of Oaxaca told him that this problem came up last year because the companies pay a lower price to reserve the land before the wind farms are built than once they are in operation; for this reason the farmers were complaining for the low rents, but the Oaxaca Government already explained that they will earn more when the projects start and the problem was solved. He adds that the trickle-down effect provoked by the wind farms has to reach the whole community in order to avoid that people migrate out of the area; therefore, there have to be training and employment possibilities for the local population.

Julio Valle Pereña, Director for Promotion of Investments in the Energy Sector, claims that the investors have been very open in terms of giving a fair rent for the land, but there were problems due to people who came to feed strange ideas to the communities and to claim that everyone gets paid and not only those who lease the land. Some people did not sign contracts and now protest for this reason. The Secretaría de Energía does not enter into the issue of land lease,

since it is outside of its competence. They are private contracts, governed by commercial laws, since there is no specific regulation in this respect. Land property is governed by a law that defines the property systems, but it does not regulate land lease contracts.

3.3
Cultural and Territorial Conflicts

Opposing groups claim that, due to the lack of justice towards the communities that own the wind resource, wind farms will contribute to migration processes to other parts of Mexico and other countries (particularly the USA), and to the influx of external professionals from urban centres. The result will be the disappearance of the existing indigenous cultures, a process that they perceive as territorial displacement by private companies (most of which are owned by foreign capital).

Alejo Girón Carrasco, from the Grupo Solidario in La Venta, also asserts that these projects have resulted in increased criminality. This is due to the fact that during the construction period, an unusual amount of money enters the community (due to compensations for the impact of the works, but also due to the employment and trade generated temporarily by them), but when the works are over only the money of the rents remains, which is insufficient to compensate the negative effects brought about by the wind farms. This intervention in the community destabilises the local economy and generates new problems. According to Grupo Solidario, their community used to be totally safe, but now there are increasingly frequent robberies.

According to the Human Rights Centre Tepeyac from Tehuantepec (an organisation created by the basis of the Catholic Church to defend the rights of the local population and in particular of indigenous people) and other opposing groups, the companies have distorted the information given to the indigenous population, in particular to those who do not speak Spanish. Their contracts were signed due to the intervention of translators who did not translate the contracts literally and withdrew or manipulated information on many of their contents. The contracts were not translated into the languages spoken by the communities, even though there is a law of language rights which determines that they have to, and even though Mexico has signed Convention 169 from the International Labour Organisation, which establishes that such translations must be provided. Article 7 of the same convention establishes that indigenous peoples have to participate in the formulation, implementation and evaluation of

national and regional development plans that might directly affect them.

Bettina Cruz Velázquez, member of the Zapoteca community and of the Assembly in Defence of the Land and Territory of Juchitán, underlines that the concept of development of the indigenous peoples in the region is based on their autonomy and capacity to decide collectively about their future. From her point of view, wind energy projects will erode both aspects, resulting in the loss of indigenous cultural identities that have remained alive in the Isthmus for the last 500 years despite the adverse conditions that they faced. She asserts that such a result is probably not casual but intentional, since the loss of identity is a necessary condition to undertake other kinds of mega-projects in the Isthmus, a region of great geo-strategic interest.

The fact that land lease contracts are valid for 30 years and automatically renewed for another 30 years is one of the main reasons for concern with regards to the future of this territory. The perception of opposing groups is that after 60 years there will be no local population left to claim back the land.

Eduardo Zenteno, President of AMDEE, asserts that all companies work with translators when there is a need to do so, and that the wind farms will bring a positive contribution to the development of the region.

3.4
Juridical Conflicts and Police Interventions

According to groups opposed to the current projects, there are around 180 legal demands to nullify the land lease contracts that have been presented by land owners against the investors, and it is expected that there will be more. All the demands (presented collectively and with the help of NGOs) have been accepted but not yet processed. The juridical argument behind them is that the companies withdrew and manipulated information and acted in a premeditated manner, using the disadvantaged position of farmers in order to obtain larger profits. Many cases are also based on the claim that companies did not provide the contract in indigenous language, and in the case of illiterate farmers, did not read the complete contract including the restrictions implied.

Four
Organisational Processes in the Local Communities

There are already groups that reject this kind of wind farm projects in almost all affected communities of the Isthmus of Tehuantepec. These groups have conformed the Frente de Pueblos del Istmo en Defensa de la Tierra (Front of Peoples of the Isthmus in Defence of the Land/Earth).

According to Javier Balderas Castillo, from the Human Rights Centre Tepeyac, the organisational process of the communities is still at an early stage and it is not yet a mass movement, since there is not enough information in the communities about the negative impacts for the communities, and since the companies and the Mexican State have based their efforts in the corrupt leaders of some communities. They have demanded comprehensive information about the wind farm projects since 1995, but they never received the information. With the construction and operation of La Venta II people could see the real impacts, but the movement was not mature enough to confront the situation in an effective manner. It was even more difficult to confront the companies that have been signing land lease contracts since years. They assess that between 25,000 and 35,000 hectares have already been leased in negative conditions for the farmers and their communities.

Bettina Cruz Velázquez explains that the Assembly in Defence of the Land and the Territory of Juchitán was constituted on the basis of rejection to the wind projects planned in the community of Juchitán. Its members do not accept negotiations with the companies. The Assembly is not against wind power, but against the land grabbing by companies and against the impact that it will have on the life, culture and territory, due to the way in which the projects have been drawn. They are concerned about how all aspects of social relations will be transformed; for instance the work of women, who play a central role in the Zapoteca culture. These intangible values will be lost due to these projects. They demand complete information, followed by a participatory and democratic territorial planning that assures that the impact is minimised and the common benefit as large as possible.

The Assembly has few members, about 100 persons who signed contracts in Juchitán, but even though they are a minority, the

members are conscious and daring persons. Many people are not yet organised in the Assembly, since they are still waiting to see how the companies' projects will take shape, and if they see that the projects are similar to the one in La Venta, they will join the Assembly's efforts to stop them. In addition to people who signed contracts, there are people who did not sign, or who decided not to sign due to the work of the Assembly. They already paralysed projects in some areas of the Juchitán region. For instance, in El Cazadero the companies wanted access to 2,000 hectares, but the Ejido assembly decided not to approve the project.

There are other examples of the impact that the mobilisation has made in communities where no contracts have been signed yet. The ejidos of San Francisco del Mar and San Mateo del Mar, in the Huave region, rejected the wind projects in their respective assemblies. However, in San Dionisio del Mar (another Huave community) the project was approved due to tricks in the assembly, according to Leonel Gómez.

In La Venta most families have signed, only 10 families have not. Many people regret having signed, but they are resigned; they do not participate actively in the struggle due to fear of losing time and money in legal demands or mobilisations against farms that are already operational or under construction.

Both in La Venta and La Ventosa, the ejidos where most contracts have been signed and most advanced are the projects, the current Presidents of the Ejido Commissariat are critical towards or opposed to the wind farm projects.

The Front of Peoples of the Isthmus in Defence of the Land/Earth has established the following lines of work:

- Making the resistance visible: presenting their situation in Oaxaca City, Mexico City and other places. Looking for national and international allies. Linking this movement to similar movements struggling against large-scale hydropower projects, mining projects, etc.
- Legal work: taking forward the current court cases, and reaching other communities to help them use the legal channels to nullify the land grabbing. This work is limited by the lack of resources needed for lawyers to visit remote communities. They also don't have the resources needed to take farmers to La Venta so that they see the impacts of these projects. However, the work done so far has been effective, and they want to continue with it.
- Involving the communities in an awareness-raising process. Legal demands are documented and taken to the court, and

then remain in the court's hands. The Front thinks it is necessary that the affected communities also participate in organisational processes that consist of concrete actions.

Five
The Law for the Use of Renewable Energy Sources and the National Wind Energy Plan

There is currently no specific legislation regulating the use of renewable energy sources (RES), nor a wind energy plan to give shape and coherence to the development of the Mexican wind resource. The initiative to create a specific law, presented by the Mexican Green Ecologist Party, and the draft National Wind Energy Plan, to be presented by the Secretaría de Energía, could resolve these problems. However, there is no guarantee that this will happen, since the contents of the National Wind Energy Plan are not yet public and the law, after being approved by the Mexican Congress in December 2005, has been stuck in the Senate for two and a half years, does not receive much attention from legislators, and apparently will not be debated until 2009. The Secretaría de Energía hopes that the approval of a National Wind Energy Plan (and of a Solar Plan and other plans for other RES) will stimulate the Senate to give more attention to the proposed law.

Six
Conclusions and Recommendations

The conflicts around the wind farm projects in the Isthmus of Tehuantepec are a direct consequence of the unequal conditions in which the negotiations are taking place and the land lease contracts are being signed. This inequality of conditions is caused by different factors:

- The exclusion of the communities from planning and decision-making processes regarding wind energy projects
- The great difference in access to information (in particular about the value of the local wind resource and the profitability of projects) of the two parties to the land lease contracts
- The fact that in each community only one company operates, which indicates that the companies have divided the region in areas of influence in order to avoid competing with each other and therefore have a stronger position than the farmers in the negotiation of land lease contracts
- The existence of social and political structures based on caciquismo, maintained by the important deficits in access to education, and their apparent (conscious or unconscious) use by the institutions and companies in order to obtain land lease contracts

Taking into account these factors, the growth of conflicts around these wind energy projects is not surprising. The groups constituted in the affected communities conform the seed of a movement of opposition that could even paralyse part of the approved projects. A more serious consequence of these conflicts could be a negative change in the perception and evaluation of wind energy, both in the communities affected and in society in general, which could delay the necessary transition to renewable energy sources.

It is therefore necessary that the Mexican State takes measures to address the structural reasons underlying this conflict.

There are experiences which prove the viability and importance of local participation in wind energy projects. Denmark combined for many years a feed-in tariff with regulations which only allowed investment in wind turbines by families from the municipalities where they were to be installed, and from the surrounding municipalities, and limited the participation of each family to ensure a fair distribution of benefits. Since the profitability of the projects was guaranteed by the feed-in tariff, banks offered access to credit to all families that wanted to participate, including families without land or resources, since the turbines themselves acted as collateral for the loans. Wind energy grew at exponential rates while this regulatory framework was in place (resulting in technological development and the creation of contemporary Danish wind industry), since all communities wanted wind energy projects to take place in their territory. However, since the wind sector was liberalised, the attitude towards new projects radically changed. Currently new projects face local opposition, and for this reason in the last year virtually no new capacity has been installed. Denmark has lost its leadership in the sector.

Danish participative policies were based on specific social structures and practices and therefore cannot be automatically "exported" to other countries, but they can widen the perspective beyond the property and decision-making models under which the wind energy sector currently operates in Mexico. Experiences from all over the world demonstrate that local acceptance of wind energy depends on an active participation by the local communities, both in project planning and in the distribution of benefits. This is particularly important in regions that still have a high proportion of rural population and an important agricultural activity; evidently, it is not a critical factor for projects installed in inhabited areas. This situation is logical, since wind is essentially a rural resource and its use therefore has to benefit the communities where it occurs, as well as the common good.

The elaboration of a National Wind Energy Plan and the discussion on the Law for the Use of RES provide a perfect opportunity to establish a framework in which local communities can make use of their wind resource. Since the Secretaría de Energía is considering the inclusion of environmental and social externalities when calculating the cost of electricity production, the positive social impact of community-based property models could be taken into account, and such models could be favoured with respect to other models that do not benefit local communities in the same manner. In addition, the fact that Municipalities and Ejidos are entities of the State could facilitate their participation in electricity generation, since this would not contradict the essence of the constitutional mandate. This would foster a conflict-free and community-oriented development of the Mexican wind resource.

The interview with Eduardo Zenteno, President of the Mexican Wind Energy Association, indicates that the private sector does not favour this kind of changes. He expressed concern about the possibility that community-based experiences and policies, since in his opinion even if it is done with good intentions, this will complicate the development of wind energy in Mexico. He underlined that it makes no sense to make comparisons between the policies in Mexico and Europe since the situations are totally different in terms of regulation and in economic terms. He asserted that in Mexico it is not possible for farmers to be co-owners of wind energy projects.

While it is true that the conditions in Mexico are different than in Europe, this does not preclude the possibility of designing domestic policies oriented towards facilitating the participation of local communities in the wind energy sector, along with specific information and training measures to facilitate the participation of communities in the planning and management of wind energy projects. The main

recommendation of this paper is that such policies and measures come out of a broad and participatory consultation, in which local communities should play a central role, since they are, together with the State, the legitimate owners of the local wind resource.

The End Of One Danish Windmill Co-Operative

Jane Kruse[1]

The new direction is for windmills to be owned by individuals. This is a very unfortunate and unfair development.

In January 1988, 49 people decided to come together to purchase and install a 200kW windmill in Kallerup in the Thy region of Denmark. The members of this co-op gathered once a year in small local restaurants to socialize, receive an annual report for their windmill and listen to speeches about wind energy and other renewable energy technologies.

This chapter is over. The windmill has been sold. It was able to produce enough electricity for 100 families but the government wants to have even larger windmills. They are giving subsidies to those putting up bigger windmills and decommissioning smaller ones. Because of these subsidies, the cooperative was offered such a large amount of money for their windmill that in 2005 at the annual meeting they voted to sell it and end the cooperative.

When wind energy started in Denmark it was very exciting and the people were behind it. It was a very popular topic of discussion between neighbours, colleagues, family and friends. They felt good about finding ways to tackle environmental issues. Small and medium sized companies in Jutland jumped quickly at the opportunity to produce windmills and gradually became leading producers in Denmark and internationally.

More than 150,000 families throughout Denmark invested in windmill cooperatives. The national and local governments did their part by ensuring that cooperative-owned windmills had the right to be

1 Published in Danish newspaper *Politiken* Feb 9, 2006. Jane Kruse is the Former Chairman of the *Hornstrup Mark Windmill Cooperative*. This article was translated by: Jane Kruse and Melissa Valgardson.

connected to the grid, the utilities would buy their clean energy, and by guaranteeing the price per kWh.

Now it seems the future is for individual owners of windmills. Because of the ownership moving away from cooperatives to investors, who are making profits in the millions, more people are starting to protest wind power. What were once beloved windmills are now seen as money machines.

One of the reasons for this is government wind energy planning. These plans dictate specific coordinates where windmills can be placed.

The right for rural farmers and their neighbours to decide where to put up a windmill no longer exists. The owner of the field where these specific coordinates lie is a very lucky person. They are quick to take advantage by putting up large, MW sized windmills and sit back to watch the wind blow millions directly into their pocket.

Meanwhile, their neighbour has to see, hear and even feel the presence of the windmill. They live with the change it brings to the landscape but without being an owner they continue to pay for electricity while getting no benefit from what's being produced next door. The windmill owner's bank account continues to grow with the over 5 million kWh of electricity per year being sold. This is enough for 1200 families. Due to the windmill owner's good fortune, maybe soon he can also buy the neighbour's house, farm and who knows what else?

The politicians have to act to change this situation. The ownership of windmills, in my opinion, should only be by cooperatives or communities unless, of course, an individual wants a small windmill to cover their own electricity needs. Cooperative and community owned power ensures that the benefits are shared equally. This needs to happen for wind energy to regain the acceptance it once had.

Afterword

This great loss of active community involvement was caused by government policy. In the meantime liberalization and market principles became the new paradigm with the consequence that 2003 to 2007 installation of new wind power in Denmark was almost zero MW. It is ridiculous too, that for the right to take down a 17 year old windmill the cooperative received the same amount of money they paid for it brand new. It was sold October 1, 2005 for 950,000 DKK (130 000 Euro). On top of this, the windmill was perfectly operational and could have gone on producing electricity for many more years.