

**Beyond Copenhagen:
Common Ownership, Reparations, Degrowth and Renewable
Energy Technology Transfer¹**
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Changes within the energy sector are speeding up dramatically. A combination of ecological, political, economic and financial factors is converging to ensure that energy production and consumption are set to become central to global political, economic and financial dynamics. This is true of energy in general and the globally expanding renewable energy sector in particular. The way in which the world's energy system evolves in the years ahead will be intimately intertwined with different possible ways out of the world-financial-economic crisis (which is also increasingly becoming a political crisis).

Importantly, the outcome of the coming period of transition and attempts at resolving the multiple crises are open. Nonetheless, while there are no inevitable outcomes, this does not mean that it will be chance that will be the deciding factor either. On the contrary, the outcome will be almost entirely shaped, directly and indirectly, by human action, intentional or otherwise.

In the face of climate change, and also resource scarcity, the world's energy system is on the verge of far reaching change. In order to massively reduce CO₂ emissions in a short space of time, there is a need to build a new energy system, one that is based around a greatly expanded use of renewable energies. It is almost certain that in 20 or 30 years time the world will have a very different energy system from the one that currently exists. However, what is not currently clear is what it will look like,

¹ This essay was previously submitted to the international competition "Thinking Against the Mainstream".

what form it will take, which technologies it will include, who will benefit and who will pay the costs. Nor, for that matter, is it clear for what purposes energy will be produced and in what quantities. All of these are unknown questions, with no immediate, or calculable, answers. As the world's energy system undergoes these far-reaching changes, so too is it becoming up for grabs.

In discussions of climate change, it is frequently stated that it is urgent to reduce CO2 emissions by 40% below 1990 levels by 2020 and by 95% by 2050, and that it is mainly northern countries, the main emitters, which need to implement these reductions. In order to share the burden of adjustment fairly, and in accordance with responsibility for emissions, between different geographical regions of the world, the concept of "Common but Differentiated Responsibilities" has been developed.

This article will seek to explore these questions very concretely in relation to energy in general and renewable energy in particular. The article seeks to contribute towards anticipating and strategizing future scenarios in order to assess current options for collective struggle, as part of a wider anti-capitalist process of resistance and long term social transformation.

Copenhagen and the Dead-end of Regulation

At least until the Copenhagen climate talks in December 2009, there has been a widespread hope and expectation that, with adequate levels of popular pressure, these desired results might be delivered from concerned governments and international policy makers. Most grassroots social and environmental organizations working on climate change, predominantly rely on lobbying governments and international institutions (especially the UN climate change apparatus) to commit to bring about these

reductions. This includes those organizations with a radical critique of current governmental postures, including those that use confrontational street protest, as well as the few governments who have taken up radical positions within the inter-governmental negotiation process itself, such as Bolivia or Venezuela.² When these institutions then fail to deliver the goods, they are met with widespread disappointment, exasperation, and seeming disbelief that, in the face of a looming climate disaster which is in fact already underway, governments could be so stupid, short sighted or ill-informed as to fail to act.

Until now, the dominant approaches on climate change have vested most of their energy on promoting regulatory reforms, rather than on more fundamental changes in the social relations on which constitute the world-wide division of labour, the capitalist world-economy. This is true for the majority of governments, multilateral institutions and also large sectors of so-called “civil society”. Importantly, also included here are the major national and international trade unions and their federations, as well as a whole range of social and environmental Non- Governmental Organizations (NGOs).

It is very likely that the Copenhagen climate talks, classified by many as a “failure”, mark a turning point in this approach. For the first time, governments from all over the world came together to announce, at least in rhetoric, that now is the time to act on climate change, and that there is no more time to lose. The age of climate change denial, as epitomized by the ignorant, but nonetheless powerful, buffoon George Bush Jr. has been formally declared over. Now, we hear shouted loudly from all corners of the planet that it is time to all pull together, in order to “save the

² For example, Climate Justice Action, <http://www.climate-justice-action.org> or, Climate Justice Network or Klimaforum2009 <http://www.klimaforum09.org/?lang=da> .

planet”. Indeed, one of the chief spokesmen of this rallying call is Bush’s successor, the ever-so well spoken and intelligent President Obama (who, despite being renowned for being highly articulate, is, nonetheless, still a US president...)

Yet, just as, literally thousands of heads of state, government ministers, corporate lobbyists, NGOs and civil society organizations met, in the gaze of hundreds of journalists from around the worldthe impossible, but nonetheless highly predictable, happened: the talks proved disastrous, divisive and completely inconclusive.

Protestors outside the summit sought to get into the conference to present an alternative agenda, constructed and mandated collectively by movements from around the world, including a diversity of peasant, indigenous, fisher folk, and island communities, as well as trade unions, women’s organizations, renewable energy activists, and many other social and environmental organizations, from a wide range of countries and broad political perspectives.³

Meanwhile, amidst what were already highly conflictive inter-governmental negotiations, both governmental and non-governmental delegates to the conference attempted to leave the conference center in order to join the protesters outside for a Popular Assembly, an action which they had been invited and encouraged to do by the protest organizers, under the banner of “Reclaim Power”⁴. In perhaps a first of its kind, and perhaps highlighting the stakes at play, the delegates from the inside who

³ See, for example Climate Justice Action <http://www.climate-justice-action.org/>, Klimaforum2009 <http://www.klimaforum09.org/?lang=da>, Via Campesina http://viacampesina.org/main_en/, The Social and Climate Justice Caravan <http://www.climatecaravan.org/>.

⁴ For more information on Reclaim Power, see <http://www.climate-justice-action.org/index.php>. Prior contact had been made to at least the Bolivian, Venezuelan and Tuvalu governments to encourage them to send their delegates to meet the protesters, and possibly others too.

were attempting to leave in order to join the protestors on the outside were actually beaten and tear gassed by police, thus preventing the two groups from joining with one another.⁵

Countries were divided along predictable and less predictable lines, and everyone accused everyone else of not compromising and derailing the talks. Governmental officials from Bolivia and Venezuela were even rumoured to have attempted to leave the summit to join the protestors and were prevented from doing so by the police. The Venezuelan negotiator, Claudia Salerno, was quoted as saying “do I have to bleed to make myself listened to”, as she raised a bloodied hand to speak in the summit. And, literally thousands of the “civil society” organizations who had been granted official delegate status had their passes denied in the final days of the summit. Organizations such as Friends of the Earth International, hardly known as for being the most dangerous organization in the world, had their passes revoked in the name of security. The number of permitted “civil society” delegates was reduced from several thousands on the first day of the summit to 90 on the last. Meanwhile, approximately 2000 protestors were arrested during the week, making use of Denmark’s new preemptive arrest laws that had been brought in specially in the months preceding the summit.

The result of all this was that by the end of the summit, the official COP process had suffered a massive, and perhaps irreversible, delegitimation, both in the eyes of many governments and also so-called “civil society”. Painful experience has shown that a lot of time and political energy have been virtually wasted on developing a highly ineffective

⁵ See <http://www.guardian.co.uk/environment/video/2009/dec/17/copenhagen-climate-change> and also http://www6.cop15.meta-fusion.com/kongresse/cop15/templ/create_sse.php?id_kongressmain=1&theme=cop15&id_kongresssession=2563

regulatory framework to tackle climate change. Years of COPs and MOPs, the international basis for regulatory efforts, have simply proven to be hot air. And, unsurprisingly, hot air has resulted in global warming.

Perhaps the most important, and arguably very positive outcome, of the Copenhagen talks is that they revealed, with an almost blinding clarity, to increasing numbers, and broad social and political sectors, that the needed changes, namely far reaching and rapid changes whose costs and risks are distributed fairly in accordance with historical responsibility and ability to pay, or climate justice as it is frequently coming to be known as, will *simply not happen* from governments and international policy making institutions delivering the desired results in a top down manner. Such institutions are either incapable or unwilling to undertake the required changes on the scale and within the time frame necessary. Those governments that are willing are not capable, and those that are capable are not willing.

And, crucially, it is not just the specific policies of specific governments and international institutions which have been judged incapable of delivering. The critique and deligitimation is more profound: the protestors on the outside of the Copenhagen summit all gathered under the slogan of “*System Change Not Climate Change*”, while on the inside, progressive governments were inspired by the open letter written by Evo Morales in the run-up to the preparatory talks for the Copenhagen summit, which took place in Poznan in December 2008, entitled *Saving the Planet From Capitalism: an Open Letter on Climate Change*⁶.

⁶See <http://www.climate-justice-action.org/news/2009/12/04/dec-12th-system-change-not-climate-change/> for call for System Change Not Climate Change action, and <http://climateandcapitalism.com/?p=591> for Evo Morales' letter.

On the one hand, there is increasing skepticism as to the possibility of reaching solutions within the framework of capitalism. And, on the other hand, the “solutions” that are being offered within the context of capitalism are increasingly being labeled as “false solutions”. They clearly reveal the danger of new “green capitalist” forms of enclosure, displacement, exploitation and colonization, as the new “climate technologies”, especially renewable energies, become simply another tool for capital accumulation.

Furthermore, another stark reality is becoming clear. To the extent that important reductions in CO₂, and other greenhouse gas emissions, can in fact be delivered within the context of existing social relations, it is increasingly clear that this has only been possible through an imposed crisis, structural adjustment, and forced degrowth. The only two recent periods which have seen a major reduction in global CO₂ emissions have occurred in periods of very sudden, rapid, socially disruptive and painful periods of forced economic *degrowth*: namely the breakdown of the Soviet bloc and during the current financial-economic crisis. Strikingly, in May 2009, the International Energy Agency reported that, for the first time since 1945, global demand for electricity was expected to fall. Ironically, it is only *unintended* degrowth that has achieved the effect that years of intentional regulations have sought, in vain, to achieve.

Importantly, the energy intensive industries (major emitters of greenhouse gases), including amongst others: cars, transport, the energy sector itself, export industries, have been some of the most heavily impacted by the current economic-financial crisis. Yet, rather than resulting in any positive change for the environment, this process has resulted in immense social and

ecological dislocation and austerity measures being imposed on both waged and unwaged workers and their communities throughout the world, both rural and urban populations, and in countries in the North and those in the South.

However, perhaps converse to expectations, it is very likely that the delegitimization of the official inter-governmental processes around climate change will not actually paralyze efforts to build alternatives that seek to address the problems at hand, but rather will in fact accelerate these efforts. It will free people throughout the world to abandon their focus on lobbying existing institutions and processes and force them to collectively develop political perspectives, long term processes of struggle and coalition building that actually might be capable of building the kind of mass broad based social force that is capable of bringing about the necessary changes within the necessary time frame.

The failure of the Copenhagen talks gives explicit visibility to the structural conflicts which are at the heart of the climate and energy crisis, which are themselves part of a wider crisis of social relations. These conflicts have been brewing for many years (there were already important international grassroots mobilizations around the COP process as early as 2000 in the Hague, Netherlands, growing much larger by the Bali talks in 2007). The importance of Copenhagen is that now these conflicts, tensions and contradictions have exploded into the open, on a massive scale, both within the process itself and outside of it.

These conflicts exist, and they cannot be wished away. Above all, Copenhagen shows that now is the time to break with the deceptive rhetoric of “we are all in the same boat and must pull together to solve the climate crisis.” This is nothing but a thinly

veiled way of saying that people throughout the world should pull together to shoulder the burden of a capitalist transition to a new energy system in order to ensure capitalism's continued existence. Now is a moment for a collective realignment of forces that involves breaking with some accepted alliances and building new ones. Importantly, now is not a moment for remaining neutral, but rather for making informed decisions and commitments about with whom to align and on what basis in order to prepare for the long term, and highly uncertain, process of collective struggle that almost certainly lies ahead.

Evidence of the acceleration of this process of disengaging with existing processes and building new alliances can be seen in the Bolivian government's call for a global social movement conference on climate change, to take place in April this year. This call was issued within just days of, and in response to, the closure of the failed COP talks⁷.

There are many major economic, financial, and political interests which are, and will continue, to fight tooth and nail to oppose the changes necessary to address climate change, and these interests are incredibly well organized, well financed and well armed. In other words, the transition towards a new energy system is not simply an ethical issue that will be won through persuasion alone. Good ideas, though essential to the process, will not be enough. Rather, it will require building, from the grassroots upwards, an organizational process that actually has the material strength to confront these interests in order to create and impose these alternatives on them in the short term, while looking to defend them in the long term.

⁷ For more information about the Peoples' World Conference on Climate Change and Mother Earth's Rights that will be held from 20 to 22 April 2010 in Cochabamba, Bolivia, see www.cmpcc.org.

Leaving the necessary changes in the social relations of production and consumption (of energy, and more generally) to the logic of accumulation of profit in the world-market is likely to both be far too slow, given the urgency of the climate crisis. It is also likely to be immensely socially disruptive. The kind of massive and rapid reductions in CO₂ emissions (and the corresponding changes in the system of energy production and consumption which are necessary for this to occur) will not be possible without very far reaching changes in production and consumption relations at a more general level, involving fundamental change in how humans reproduce their own existence and interact with nature.

The problem at hand is one of production, and the reproduction of lives and social relations. It is not simply a problem of regulation. This is not to say that developing appropriate regulation is not important. It is completely essential. However, the regulatory process is very unlikely to be the driving force behind the changes, but rather a necessary facilitation process that enables wider changes to occur. Furthermore, regulation that is strong enough to be effective is only likely to come about once wider changes in production and reproduction are already underway.

The failure of Copenhagen showed the failure of the regulatory approach, and this is an important change to register. Despite the patent inadequacy of pushing for a regulatory approach, efforts in this sphere will almost certainly continue to be pursued in the coming years, as governments from major powers and international institutions attempt to rebuild faith in the regulatory approach. As the legitimacy of this approach lies in tatters, increasingly not just in relation to climate change, but also in

relation to the “solutions” offered to the world economic-financial crisis, efforts to rebuild the COP process on climate change are likely to seek to contribute to shoring up legitimacy. This may well still be possible, at least in the short term, and in certain, predominantly northern, countries where the effects of climate changes are less immediately visible and directly impacting on people’s lives than they are in southern countries.

Consequently, movements need to be very wary of being pushed back onto the terrain of regulation, as this approach is likely to result in a disempowering demobilization process in which the main message is to trust political and economic leaders, rather than to self-organize for a long term process of struggle. As such, it is vital to situate any discussion about climate change, energy and the future of the energy system within a wider discussion about the productive and reproductive relations defining the capitalist world-economy and the future of these relations. Above all, any meaningful struggle against climate change cannot be separated from the process of resisting capitalism and seeking to create alternatives to this socially and ecologically devastating social system.

Importantly, in such a discussion, the question of ownership and control of means of production becomes key: why goods are produced, by whom, where and how. And, perhaps even more important than this is the question of the production of means of production, as well as component parts and raw materials along the global commodity chains associated with this production. Similarly important is the question of prices in the world market, in relation to raw materials, labour power and finished products. Of particular relevance here is how these questions relate to the existing and emerging energy sector and energy intensive

industries. This will be explored at a later point in this article. However, first it is important to address some wider strategic concerns.

Strategic Concerns for a Long Term Process of Struggle

The question as to what kind of long-term broad and powerful coalitions might be possible to build, and around what long term political perspectives, in order to become collectively strong enough to bring about a far reaching and emancipatory transition to a new, and predominantly renewable energy-based, energy system is becoming of the utmost significance. The big uncertainty of this transition process is who will bring it about, for what purposes and whose benefits. It will take many years for a new energy system to take shape, and the long-term outcome is as yet still comparatively open. As such, there is a need for developing careful understanding of where structural conflicts lie and possible commonalities of struggle may be found.

In particular, it will be important to find ways of building a long term process of overcoming and avoiding three important lines of hierarchy and division which already exist and which have the potential to get much worse as the world's energy system undergoes far reaching changes in the coming years. These are: the relation between rural and urban communities and workers; the relation between workers in the "dirty" and "clean" energy sectors, and; the relation between communities and workers in energy producing regions (and countries) and energy consuming ones.

The need for rapid and far reaching reductions in CO2 emissions is non-negotiable and affected communities and workers must lead the discussion on how to bring about this change. A crucial

question concerns the meaning of “clean energy”, and the extent to which it is possible, or not, to “clean up” existing “dirty” energy and energy intensive industries. To the extent that such a process is possible, it will be important that it is brought about in such a way that is empowering for affected workers and communities (who, after all, are the ones who know the industries better than anyone else), rather than at their expense. And, to the extent that “clean up” is not possible, dislocated workers and communities will need to be protected and provided with opportunities to create alternative forms of livelihoods. Similarly, international compensatory mechanisms will have to be developed to avoid unfair penalization of particular countries whose main source of national revenue may be the revenue which comes from selling “dirty energy”. In particular, the question of ecological debt and reparations is crucial in this respect, since people in different regions do not share equal historical or current responsibility for climate change.

On the other hand, ‘peak oil’ starkly poses the question of how to collectively manage scarcity in a fair manner in order to avert extremely destructive power struggles that exacerbate already existing inequalities (especially in relation to class, race, gender and age). It will also be crucial to seek to avoid the forced imposition of austerity measures on people. Solutions that do not actively strive to avoid pitting different workers, both waged and unwaged, in different regions of the world against one another, are almost certain to result in a transition being carried out on the back of these workers and their communities. The failure of emancipatory movements to force capital to pay the burden, would, in all likelihood, prove immensely divisive and destructive.

It will also be important to undertake collective efforts to ensure that the globally expanding renewable energy sector contributes towards a positive shift in power relations, and does not provide a new basis for exploitative power relations. Renewable energy has enormous potential for communities to have increased control over the natural resources which exist in their territories and to benefit from their collective use. Conversely, there is also the danger that new structures of inequality, domination, hierarchy and marginalization may arise. Such problems have been characteristic of the fossil and nuclear energy system, and, as will be explored further below, there is a danger that a new energy system could reproduce and further exacerbate these problems. It will require coordinated and intentional action to avoid these scenarios.

Energy sovereignty and autonomy could offer an important basis for reducing the levels of coercion and inequalities on which the world's energy system is dependent, a system which is based on a highly hierarchical structural relationship in which regions which are large energy consumers depend, in a parasitic way, on regions that are net exporters of energy. There is an urgent need to simultaneously take steps towards equalizing access to energy, and also reducing these dependencies (as well as the related but separate question of poorer non-fuel exporting countries having to use much of their country's income on importing expensive fossil fuels in the world-market). This is important in order to move towards overcoming the unequal and coercive global power relations on which this situation is based and in turn reinforces. These problems will only be resolved through communities being able to exert greater collective control over the energy resources that are both produced and consumed in their regions.

Finally, it will be important to collectively develop energy and climate solutions that contribute to, and speed up, a wider process of long term emancipatory social change in the face of the current world-financial-economic and political crisis. This highlights the urgent need to build collective political control and democratic and participatory decision making over production, consumption and exchange, as well as how human sustenance needs are met on a day to day level.

Struggles Over Ownership and Control of the Energy and Energy Intensive Industries

The key means for generating society's wealth and human subsistence include: land, seeds, water, energy, factories, universities, schools, communication infrastructures etc. Especially significant in relation to a transition to a new energy system are, in addition to all branches of the energy sector itself, the major energy consuming industries, such as transport, steel, automobiles, petrochemicals, mining, construction, the export sector in general, and industrialised agriculture.

However, it is very difficult to imagine that it will be possible to bring about a rapid and far-reaching process of collectively-planned emancipatory change, at the pace and scale which is necessary, unless these key means of generating and distributing wealth and subsistence are under some form of common, collective, participatory and democratic control, decision making and ownership. This could enable a worker-community led industrial conversion process in these energy consuming sectors. Furthermore, it is crucial to make sure that these industries are used to meet the basic needs of all the world's population, rather than the profit needs of the world-market and the select few

workers and communities who are able to reap the benefits of this. In other words, there is an urgent need to *decommodify* these sources of wealth as much and as fast as possible.

However, following years of market-led reforms, and an unprecedented concentration of wealth and power, we are very far from this reality. This is true both in concrete terms and also in terms of our collective aspirations and strategic approaches. As described above, dominant political strategies for achieving change are entrenched in seeking minor regulatory reforms (at best including state ownership by progressive governments) rather than a more fundamental shift in power relations pertaining to structures of ownership and control.

Consequently, an urgent task for the years ahead is to embark on a collective world-wide discussion process about what kind of short-term interventions might help to make such a political agenda more realistically achievable in the near and medium term future. It is not a new discussion. In the past, collective ownership, management and control of key means of production (either in the form of worker, community, cooperative or state) have been at the heart of most radical, revolutionary, anti-imperialist, and even many progressive, proposals for long term struggles for emancipatory social transformation.

Within the energy sector itself, the contemporary landscape is one of intense struggle. Important struggles over ownership and control of energy production and extraction processes, as well as over access and price are underway throughout much of the world. This has entailed developing a range of different forms of ownership, including by communities, users, workers, cooperatives, municipalities and states that, to differing degrees

challenge private ownership and commodification. Broad social sectors have been involved: energy users, affected communities, peasants, indigenous peoples and workers both in the energy sectors and more generally.

Frequently, for example in Colombia, South Africa, or Iraq, they have faced harsh repression from state and military forces. In many areas, what is at stake in these struggles is literally life and death. On the one hand, struggles for national control over energy ownership have been at the heart of foreign military occupations, such as in Iraq. On the other, the assertion of national control over these resources has also provided a key material resource basis for wider emancipatory or even revolutionary social processes, such as in Venezuela or Bolivia (where gas is also part of the equation). These are the struggles that currently define the world-wide energy sector. They are a central, and frequently overlooked, aspect, and at least partial cause, of the so-called 'energy crisis'. In no small way, what is emerging is a crisis of capitalist control over the sector – though this is certainly not the only cause of the energy crisis. Importantly, these struggles are likely to intensify in the future. Furthermore, they have by no means already been lost by emancipatory movements.

While there are widespread, and ongoing, struggles over control of fossil fuel reserves, such as oil (and gas) in Nigeria, Iraq, Ecuador, Venezuela or Colombia and Bolivia (to name but a few examples), similar processes are also underway in relation to electricity generation and distribution, infrastructure and pricing. In recent years, such struggles have occurred in South Africa, France, Germany, Dominican Republic, India, South Korea or Thailand (again, to name just some of the struggles in the sector). Similarly, there is a world-wide process of resistance to the

privatisation of forests, one of the main sources of non-commercial biomass fuels, which meet the domestic energy needs of approximately 2 billion people worldwide. Women, who are the ones who mainly collect and process these fuels, are often at the heart of such resistance, especially in Africa, Asia and Latin America. And, as coal becomes increasingly important once again, there are early indications that important ownership struggles are likely to emerge in this area too.

Importantly, such struggles are also intensifying in relation to the globally expanding renewable energy sector. Since the 1970s, many pioneering initiatives in renewable energy had a strong emphasis on cooperative and local control. This has included farmers' wind energy cooperatives and consumer owned municipal Combined Heat and Power plants in Denmark, citizen energy projects in Germany (including cooperatives, buying local grids, and all-women's initiatives); or a worker-owned cooperative in Spain that was successful in becoming one of the important producers of wind turbines for the world-market, and was a member of the Mondragon industrial cooperative group. This is a group that has existed for more than half a century, involves many different industrial sectors and over 100,000 worker-members. These local and democratic ownership structures mainly emerged in northern countries, the major pioneers of new renewable energy technologies during this period. However, there have also been some interesting examples in southern countries, such as in Nepal in relation to micro-hydro, Argentina in relation to wind, and India in relation to household and village level biogas digesters.⁸

⁸ Collective and locally controlled renewable energy infrastructure played a significant part in China's rural energy development, during the early years of the Chinese revolution, but this is a very different story, which there is not time to go into here.

However, such processes which emphasised a democratic and participatory community controlled development of renewable energies, which contributed in an important way to the ability of the inhabitants of territories rich in such energy resources to build somewhat autonomous and empowering development paths, are now frequently being undermined. This is because of the threats posed by private investors, companies, and free trade agreements, all with the full support of national policies aimed at undermining previous forms of democratic and participatory control.

The question of ownership and control over the territories rich in renewable energy resources is becoming increasingly important (and may in fact become one of the determining factors in shaping the future renewable energy sector). Important here is the production of raw materials for agrofuels (fuels that many people question should even be described as renewable). The production of these crops, especially soya sugar cane and palm, competes with food production and is pushing up the price of food and land. This is especially important in Malaysia, Indonesia, Brazil, Colombia, and Paraguay, but is not limited to these countries. Resistance from rural communities to these developments is very strong. The question of agrofuels is already gaining substantial visibility, so will not be discussed any further here⁹.

Less well known is the fact that territorial conflicts are also occurring in relation to wind energy. In Mexico, indigenous communities are being deceived and displaced so that the country's wind resources (amongst the best in the world) can supply electricity to major multinational companies, such as the Mexican arm of Walmart. In China, police have killed peasants protesting against inadequate compensation for wind turbines

⁹ For instance, see articles on the following websites: <http://viacampesina.org/>, <http://www.grr.org.ar/>, <http://www.tni.org/>, or <http://lasojamata.iskra.net/> for a selection of information about agrofuels.

installed on their land. In Colombia, indigenous communities are facing territorial loss and paramilitary violence in relation to wind farms that supply electricity for one of the largest open pit coal mines in the world, itself a development closely associated with ecological and human rights violations. Both the Mexican and Colombian wind energy projects have received international financing through the Clean Development Mechanism. In all these examples, local communities are resisting these developments.

Importantly, labour struggles are also emerging in the sector, especially in relation to the production of the raw materials for agrofuels in the countries where they are produced. In Germany, a leading country in the production of wind and solar energy infrastructure, the major trade union IG-Metall is organising workers in the face of poor working conditions in the plants where the infrastructure is produced, many of which are in the former East German GDR where wages are much lower than in the part which was once West Germany.

So far, these struggles have been more centred around working conditions in relation to producing the infrastructure or fuels for renewable energy systems, rather than workers' ownership of the productive process itself. However, there are some exceptions to this, and these need highlighting. In Indonesia, workers in the palm plantations have also taken steps to take over the mills. And, in the summer of 2009, just a few months before the Copenhagen talks took place, what is likely to prove to be a historic turning point in the wind industry began to unfold in the UK. The country's only wind turbine component manufacturing plant (owned by the Danish company Vestas, the world's largest producer of wind turbines) announced it was to close, sacking

600 workers. The workers occupied the plant for about three weeks. Demands from workers and their supporters included government nationalisation of the plant, as well as converting it into a workers' cooperative. They were met with a combination of widespread social support as well as the (limited) use of riot police and court rulings. The issue remains unresolved.

Finally, it is also worth mentioning the importance of patents, and the struggle over who owns knowledge and technologies, and to what degree they will be commodified or not. Despite some initial murmurings about 'open source' technology and non-commercial technology transfer-movement arising in the renewable energy sector, inspired by the open source computer software movement, such a process is still virtually non-existent.

On a more general level, but of crucial relevance to the question of transition towards a new energy system, it is worth looking at contemporary struggles over land and energy-intensive industries. Land is one of the most basic elements of subsistence for humans throughout the world, and is also essential for capital accumulation. It is both a key means of production, and of the reproduction of human life. Collective ownership and decommodification of land are still at the heart of many, if not most, rural and indigenous struggles throughout the world today. It is in these struggles that the clearest political discourse surrounding control of the means of production can be found.

However, the outlook for struggles in energy-intensive industries such as cars, aviation, transport or tourism is more pessimistic in terms of struggles over ownership and decommodification. The dominant strategic discourse from major trade union and other worker organisations in these sectors is equally pessimistic in this

regard. Similarly, for most left wing political parties. Ownership struggles have by and large already been lost. Over the last many years, most struggles in these sectors have revolved around demanding certain reforms in the production and labour process, as well as improved user access. However, little space remains open for serious struggle (or even discussion) for major changes to patterns of ownership and control.

At the more radical end of ecological critique there are many discussions about the need for a profound change in production relations. However, the organisations and collectives with such perspectives frequently lack the social base necessary for such a process of change to actually happen. In particular, they have little capacity (and sometimes lack even the will) to contribute to serious debate within trade unions and other worker organisations within these sectors, so their more sophisticated critique amounts to just that: a critique without a process of change accompanying it. On the other hand, the dominant “green” discourse, though often well-connected to trade union organisations working on sustainability from a worker perspective, hardly talks about ownership of key means of production. Most climate change campaigns from this broad group of organisations are pushing for change within the existing framework of social relations. Finally, the dominant trade union discourse in these sectors favours tripartite bargaining, ‘decent work’, and social peace, based around regulating production for private profit in an expanding world-market.

However, the economic-financial crisis also offers an opportunity to reopen this old discussion, since the old model of Keynesian class compromise and stabilisation of struggles aimed at changing ownership patterns of key means of production is dead,

and in all probability will not be resurrected. Furthermore, *unless* the discussion on production is reopened, it is very likely that the ‘solutions’ found to the economic-financial crisis will be authoritarian.

Starting with the economic and financial collapse of Argentina in 2001, factory occupations and self-managed industrial production and exchange have returned to the political landscape. In the wake of the current worldwide financial and economic crisis, a ripple of factory struggles, including worker occupations and kidnapping of bosses, have spread around the world, including in the U.S., the UK, and numerous countries in Eastern Europe. Such struggles are largely defensive, related to redundancy conditions, rather than proposing a new model of ownership, production and control, and are still on a very small scale. Notably, the Detroit car factories have virtually been left to go under, or given lifelines in order to draw out their demise over time. Certainly they have not been taken over by workers and communities and converted into renewable energy production plants. Yet, even the head of the United Autoworkers Union made a fleeting and cautious reference to workers’ occupations of the plants, albeit way too little, way too late. Yet, this is a rhetoric that has not been used in such places for many decades. In South Korea, workers in the Ssangyong car industry have recently sustained an occupation of a car factory that lasted over two months, involved close to 1000 workers, and armed self-defence. It was only defeated after a prolonged struggle involving several thousand riot police. For the most part, with the exception of the Korean car plants, these have been small processes. Nonetheless, they are of great importance, and appear to be on the upsurge. Importantly, the industries in crisis are some of the key energy-intensive industries, such as cars and steel, which are especially

relevant to the issue of energy transition and worker-community led conversion processes.

Reparations, Degrowth and World-wide Class Struggle

Establishing some form of collective or common control over society's wealth generation and distribution is likely to prove an incredibly difficult task. However, it must be seen as only a stepping stone to a wider set of even more difficult, but necessary solutions. While it is not enough, it would open up the possibility for at least embarking on a collective, participatory and democratic process of planning the future of production and the reproduction of our existence. Importantly, it would offer a material basis for a number of other processes that are currently impossible to implement, despite being very noble ideas.

These include:

- Rapid and far reaching cuts in greenhouse gas emissions in the north.
- Renewable energy and energy efficiency Technology transfer from the north to the south.
- Leaving the oil (and other greenhouse gas emitting hydrocarbons) in the ground in exchange for international compensation that will go towards funding a post-petrol development in these countries.
- Just transition workers and communities affected by the moving away from carbon intensive industries.

Each of these interventions already has a whole host of advanced proposals and organizations that have been mobilizing for many years around these themes, gaining valuable experience and expertise, as well as building important international

collaborations. For instance, networks such as the World Council of Renewable Energy have, after finally been successful in getting governments from around the world to establish an International Renewable Energy Agency, dedicated to promoting renewable energy worldwide. The proposal to leave the oil in the ground in Yasuni national park in Ecuador is being echoed around the world, through the network Oilwatch International which is active in many different countries that have an abundance of oil. The International Federation of Chemical, Energy, Mine and General Workers Unions (ICEM) has for years been promoting a worker-led just transition process within both the energy sector and energy intensive industries¹⁰.

Several interesting conceptual frameworks have been proposed for developing these proposals in ways which distribute the burden and benefits of this process in a way that simultaneously strives for justice in today's world, while addressing historical injustice, through a process of reparations. These frameworks for conceptualizing the process of change, similar yet distinct from one another, include Common but Differentiated Responsibilities, enshrined in the Kyoto Protocol; Greenhouse Development Rights; Reparations and climate justice and; Economic degrowth¹¹.

¹⁰ There is no space to discuss these issues further here. However, readers are encouraged to look at the websites of World Council for Renewable Energy, www.wcre.org, International Renewable Energy Agency, www.irena.org, Oilwatch International <http://oilwatch.org/>, Accion Ecologica, www.accionecologica.org, and ICEM, www.icem.org, as well as the Bolivian government document Vivir Bien como respuesta a la Crisis Global, which can be found at http://www.un.org/esa/socdev/unpfii/en/EGM_DCI.html.

¹¹ There is no space to discuss these issues further here. However, readers are encouraged to look at the websites of http://unfccc.int/kyoto_protocol/items/2830.php, <http://www.boell.de/downloads/ecology/GDR-second-edition-i.pdf> and www.degrowth.net.

There are two important aspects to these frameworks for change that is common to all of them. One is a recognition that the north has spent literally centuries stealing land, nature, raw materials and labour power from southern countries, and that this unacknowledged historical and current social and ecological debt (often modified specifically to refer to climate debt) needs to be paid off. What has been stolen needs to be returned.

Fundamentally, reparations seek to find long term answers to both power inequalities and economic inequalities. While it is not exactly clear what they do consist of or how to implement them, and there is much disagreement over these questions, it is clear that they must *not* be any of the following: a) market transfers based in the accumulation of capital, b) new loans that need to be paid back, c) small quantitative improvements in international development aid.

The other is the need to reduce overall energy consumption and break the trend towards ever higher levels of energy consumption, especially in northern countries. The idea is based on the understanding that the current world-wide system of production, exchange and reproducing of lives is based on endless growth and expansion. This is the basis of capitalism, and it is simply incompatible with a long term reduction in emissions and energy consumption. Despite the fact that localized and punctual moments of reduction may well be possible, and are in fact occurring in many places, the overall energy consumption and emissions of the system as a whole can only increase. Historically, the expansion of a world-wide system of capitalist relations has gone hand in hand with expanding energy inputs. All the energy efficiency technologies in the world, though undoubtedly crucial to any long term solution, cannot, *on their*

own, square the circle by reducing total emissions produced by a system whose very survival is based on continual expansion.

As mentioned effectiveness of unplanned 'degrowth' (i.e the current economic-financial crisis and the break-up of the former Soviet Union and the majority of its closely allied countries) in reducing emissions, relative to international negotiations. Yet, the social and ecological consequences of this degrowth have been disastrous. Consequently, an urgent question facing emancipatory social and ecological struggles is how to avoid such disastrous and imposed degrowth scenarios by instead collectively and democratically constructing a process of planned rapid and broad degrowth, based around collective political control and democratic and participatory decision making over production, consumption and exchange.

In a nutshell, reparations involve the perpetrators who have stolen, and continue to steal, wealth (both tangible and intangible) over a prolonged period of time giving back what has been stolen to those they have stolen it from. In a second nutshell, massive reductions of greenhouse gas emissions in the north means a whole-sale dismantlement of the production and consumption processes that give rise to these emissions. On neither count will anything less be able to solve the problems at hand. The enormity of the solutions proposed is the reason why these proposals are either dismissed as out of hand and outrageous by those interests opposed to them, or are advancing painfully slowly by those in favour of them. The level of potential chaos and social disruption implicit in both of them is potentially, though not necessarily, enormous, as is the level of conflict required to reach these results.

All of the interventions and strategic perspectives described above contain important elements of solutions. However, they are frequently presented as blueprints to be implemented from above by governments, rather than as processes which will require a long and complex process of struggle from below to bring them about, if indeed this will ever be possible. Furthermore, the proposals advanced also frequently lack a material base that could allow them to become.

The above discussions are often based in an analysis that creates a clear dichotomy between “north” and “south”, and, in general terms, the “north” is considered the perpetrator of climate change (as well as other social and ecological injustices) and the “south” is its victims. Consequently, again in general terms, climate justice would mean that the “north” should pay, and the “south” should receive. Of course, few would deny that there is more than a broad element of truth in this. Nonetheless, the analytical focus is on nation states, or at best regions, and completely misses a class analysis of the world-wide division of labour, and its hierarchies and conflicts.

The continued existence of the capitalist world-economy relies on the existence of several structural hierarchies by which the worldwide division of labor has been shaped, reproduced itself and expanded over time. The most important hierarchies in this respect are those based along socially constructed class, sexist, racist and ethnocentric divisions. All of these hierarchies, and the struggles against them, are continuously shaped and constrained by the fact that they function within the context of a perpetually evolving world-wide interaction between nation states in a single, interstate system. Simultaneously, the way in which nation states interact with one another is in turn shaped and constrained by

popular struggles against these hierarchies. Importantly, states also interact with one another in a hierarchical manner, in a process of continually evolving inter-state struggle. Also, it is important to note that the nation state itself constitutes an enduring structure of power and domination, even in situations where specific governments may be very committed to pursuing broadly emancipatory policies.

World-wide class struggle, between capital and labour is the driving process of change within the world's division of labour. However, the concept of world-wide labour is used here in the broadest sense of the word. It includes 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 labor.

Furthermore, it is based on the premise that real hierarchies and conflicts of interest exist within the world's working class itself due to internal structures of racist, sexist, ethnocentric, agist or other forms of oppression and domination. Hierarchies also result from people's differing positions within the world division of labor and especially the core-periphery (or north-south) hierarchy, resulting in fundamentally different wage levels, both between countries and within countries. The question of hierarchy within the world's working class is crucial, since historically it has often been the case that workers struggles (both waged and unwaged) in one part of the world have been met by reforms that are paid for with the labour and natural resources of other workers in different parts of the world-wide division of labour in order to buy off class struggle and pit workers in different parts of the world against one another.

In particular, the Keynesian welfare state model has been based on this, as has the recent influx of cheap imports of consumer goods from China to the USA and Europe. Importantly, the extremely energy-intensive post World-War Two development model in the USA, aimed at stabilizing and breaking internal class struggle through mechanization, automation, and cheap imports (including food), has been achieved at the expense of communities, workers and the environment throughout the world who are impacted by the extraction and burning of fossil fuels, especially oil- the so-called “cheap energy” which the US, and to varying degrees also other northern countries, have become “addicted” to.

Importantly, the main victims of climate change, and those least responsible for generating it, are those sections of society who have been assigned, in broad terms, the lowest levels of the hierarchy in the world’s division of labour: indigenous peoples, peasants, afro descendents, fisher folk, forest and small island communities and women. Consequently, these communities have also often been at the forefront of resistance, and this is especially true in relation to climate change.

When it comes to considering the question of a transition to a new energy system, it is important to maintain a global understanding of these processes, and to understand how different sectors of a world-wide working class can be divided from each other and put in competition with one another, and above all how certain sections of this class can gain material benefits at the expense of other sectors. As emphasized earlier in this article, this presents the crucial question as to how to achieve a world-wide convergence of material interests between struggles

for energy and climate solutions in different parts of the world, and how to avoid certain sectors being bought off through cooptive deals with capital that completely undermine unity and mean that some workers participate in the exploitation of others. An example of this, which is already emerging as a “solution” to climate change is the promotion of agrofuels, based on quasi-slave labour and displacement in the south to allow large sections of the population in the north, and especially the US, to continue with the “American Way of Life”. Another example is the system of Border Tax Adjustments, which effectively prioritizes the interests of US workers over Chinese workers, at the latter’s expense.

On the other hand, bearing in mind that the only two recent periods of reduction of CO2 emissions have come during top down periods of forced degrowth through crisis (the break up of the Soviet Union and most of the Soviet bloc countries and the current world economic-financial crisis), it is also important to avoid that climate change is used as an excuse to impose austerity on populations in north. Should climate change activists get sucked into such an agenda, it could put in danger the social (and environmental) conquests that generations of worker and other social struggles have won in the northern countries.

Let us now turn to the question of renewable energy technology transfer and the emerging world-wide division of labour associated with the sector.

The Division of Labour in the Renewable Energy Sector

A rapid global expansion of the renewable energy sector is already underway and this is likely to continue for many years to come. However, the expansion is taking a form that was not

widely predicted by many in the field. For decades, the analysis and scenarios developed by many renewable energy advocates have assumed that a transition towards these sources would automatically result in decentralized and community-controlled renewable energy systems. There has been a great reluctance to even acknowledge, let alone take sides in, the immense conflicts which are in fact emerging at the heart of the sector and will increasingly come to define its future development.

Renewable energy, as with other energies, is not an idea but a material reality, existing in complex, and continually evolving, global commodity chains. These commodity chains exist within, are shaped by, and, in turn shape, the capitalist world-economy. The global flows of knowledge, raw materials, money and labor shaping the sector are undergoing a far reaching and highly uneven restructuring. 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, and as such the sector's long term evolution is still a very open question.

However, neither chance, nor good will, are likely to be the determining factors. Rather, as the sector expands globally, a struggle is intensifying over what form it will take in the years ahead. On the one hand, a struggle is emerging over how, where and by whom, surplus is produced in the sector. And, on the other hand, there is a struggle over how, where, and to whom this surplus is distributed once it has been produced. And, last but not least, is the struggle over why the energy is produced in the first place. These conflicts are already placing states in competition with one another, and also companies. Importantly, workers (both

waged and unwaged) and their communities throughout the world are also being put in competition with one another.

The renewable energy sector is still very small relative to other energy sectors, and the bulk of the renewable energy infrastructure remains to be built. As such, the next years offer a window of opportunity for communities, social organizations and workers' organizations to have a major influence in shaping the future renewable energy economy. Importantly, the struggle to ensure that a significant share of the sector can in fact come under some form of common, collective or public ownership and benefit emancipatory social processes is a struggle that has not yet been lost. However, time is short, and unless appropriate globally reaching interventions are made very soon, the window is likely to be quickly closed.

A dominant approach to international renewable energy technology transfer, as exemplified by the newly created International Renewable Energy Agency, (IRENA) is to identify "best practice" mechanisms and then to look for appropriate political and institutional ways that these practices can be replicated and transferred around the world. As described earlier in this article, some of these "best practice" approaches have indeed been very good in terms of their ecological and social desirability. They have simultaneously resulted in a high level of renewable energy capacity and use, and also shown a path of community empowerment, autonomy and energy sovereignty at least on a local level. However, the problem, until now, is that these "successes" have only occurred in a tiny handful of countries, despite the fact that they are certainly worthy of replicating around the world. The hope is to find a process to facilitate conditions for a far reaching and, above all, rapid

“global take-off” of the sector to occur. Again, this is exemplified in IRENA’s approach.

Yet, this “take off” approach is eerily reminiscent of earlier debates surrounding “industrialization take off” based on “modernization theory” and the whole host of “development” strategies and policies that followed on from this. This approach suggested that, with a heavy dose of patience and through implementing the appropriate policy measures, all countries of the world could, at some point in time, industrialize and “catch up” with the “most advanced” ones. Such a perspective is, of course, heavily flawed and has been completely discredited through the actual course of events. Angola, for example, simply never did “catch up” with the USA, nor will it ever within the context of capitalist relations. This is not to say that *some* countries will not catch up or at least substantially close the gap. This may well happen, especially in the coming period of restructuring in the world-economy. However, what will definitely not happen is that *all* countries will catch up. The “level playing field” of development is in fact profoundly uneven. It has never been level, and it never will be. Furthermore, some countries and regions of the world are “underdeveloped” precisely because others are “developed”. The underdeveloped world and developed world are not independent of one another, but hierarchically related, and one produces the other.

As with modernization theory, the “best practice” strategy for expanding the renewable energy sector globally is rooted in a two-fold understanding, both of which are false. On the one hand, it assumes that national states are disconnected autonomous units, ignoring the worldwide division of labour and the hierarchies and inequalities on which it is based and which it reproduces. On the

other hand, it assumes that the currently existing inequalities in the global energy system and related technologies can actually be solved through simply expanding the existing system so that the number of “renewable energy losers” are reduced and the number of “renewable energy winners” increased. Implicit here is the view that it is only a matter of time and careful application of the right procedures (this time in the realm of renewable energy) before the “losers” are able to catch up with the “winners” and equality (or at least relative) equality can prevail.

At a general level, inequalities in global technology transfer are linked to structural features of the world-economy, and its flows of labour, capital, raw materials and knowledge. Technology transfer does not happen predominantly through a process of global agreement to disseminate “best practices”, but through industrial competition and restructuring, and class struggle in the world-wide division of labor (which in itself frequently implicates workers in some countries in the exploitation of workers in other countries). Above all, it is dependent upon wage differentials in different places. And, just as “under-developed” and “developed” zones of the world do not exist independently of one another, but are connected through a hierarchical relationship in which one constitutes the other, so too are “hi-tech” and “low tech ones”. The world-economy needs “low-tech” zones as the pillar on which “hi-tech” ones can actually exist.

Within the context of actually existing social relations, the model of expanding technology until it is universally distributed is simply not achievable. This does not necessarily imply that it is impossible for certain technologies (in this case renewable energy technologies) to be distributed on a much more even basis throughout the world, but simply to say that such an effort would

involve an uphill struggle against wider systemic dynamics, and would require a conscious effort to do so and to obtain the necessary means for allowing it to happen.

A crucial issue here is the production of the means of production. In the case of renewable energies, this means wind turbines, solar panels, storage systems, wave generators, refineries and fuel-stocks, and many other types of equipment and their component parts. An important question will be how the division of labor associated with the production of these means of production will develop in the coming years. This will be one of the key factors in determining whether the sector is able to really spread world-wide, or whether it will remain located in just a small number of centers of production.

Manufacturing of the infrastructure necessary for wind energy, for example, currently occurs mainly in: Germany, Denmark, Spain and the USA, with China and India rapidly also becoming important centers of production. In the next years a few other countries are also set to become important players, including Egypt, Brazil, Turkey and Pakistan. Nonetheless, the numbers of countries remains quite small, given that wind energy can be used in most countries where there is wind.

If production of these means of production remains under monopoly (or oligopoly) control, the rest of the world will have no other option than to import from these countries at high cost, or to pay expensive licensing fees to work their way around patent mechanisms. The other side of this equation is likely to be that at least some of the countries which do not produce the means of production needed by the sector will be assigned a different role in the division of labor. These countries may

become producers of raw materials for export onto the world-market at low prices. This includes, for instance, steel, sugar, palm, vanadium, silicon, lithium and many other materials necessary for manufacturing renewable energy infrastructure and storage mechanisms. Many of these are associated with extractive industries, a sector which frequently involves poor labor conditions, ecological degradation, and displaced populations, especially affecting peasant, indigenous and Afro-descendant populations.

Furthermore, the fact that many of these raw material commodities are produced in low wage zones of the world-economy and then imported to high wage ones, means that they are traded on the world-market on terms that benefit the importing countries to the detriment of the exporting countries. This process is known as unequal exchange. Already a small number of countries are becoming key raw material providers in the global commodity chains related to sugar, palm, soya and jatropha, the raw materials associated with Agrofuels. These include, but are not limited to, Brazil, Argentina, Tanzania, Indonesia, Malaysia and Colombia. Similarly, Bolivia is set to become an important supplier of lithium, a key ingredient in the batteries necessary for “green cars”.

All of this, rather than ensuring a rapid and universal dissemination of renewable energy technologies throughout the world, will ensure a very stunted and partial growth of the sector, concentrated in a small number of countries, while using the resources and labour of other countries to make this possible. Far from contributing to solving global inequalities, such a development would create a highly stratified and unequal world division of labour associated with the renewable energy sector.

It is here that the question of common or collective ownership and control of relevant productive capacity, including land, raw materials, energy resources and infrastructure, as well as knowledge and technologies becomes important. However, taking collective control over means of production in core countries is necessary, but not sufficient. The problem is these means of production should not really exist, in the form that they currently do, or in the places that they currently do, in the first place. As generators of wealth within capitalist relations, they are, essentially, the accumulated stolen wealth and labour of generations of workers (waged and unwaged) in the core countries and, especially, workers and communities in the southern countries.

In order to address this, and to break the uneven technological development, especially in relation to production of means of production, a highly targeted non-commercial technology transfer of renewable energy technologies based on reparations is necessary. However, collective control of production in north is necessary in order to give a serious material basis for the reparations and technology transfer, since this process would require huge transfers of material wealth and it makes no sense to even conceive of this being possible to implement within a market based on private accumulation.

Needless to say, this is an extremely confrontational process. On the one hand, it does not make any sense for struggles in the south to wait for people in the north to work on setting such a process in motion. This would be completely paralyzing and would be a return to old forms of leftist thinking that demanded revolution in the capitalist countries before it could occur

elsewhere, a return to a pre-Fanon age. Importantly, most struggles over raw materials and land are already occurring in the south, and these struggles are much more advanced than similar processes in the north. Yet, on the other hand, both degrowth and reparations are only likely to be possible, and will only be accepted (and seen as desirable) by workers in the core countries who depend on these industries for their livelihoods if it is possible to somehow delink their survival from the continued existence of these industries, as well as workers in other countries who also depend on these industries. This does not just mean diversifying the economy, but, at least in the longer term, means breaking people's dependency on waged income.

Importantly, reparations need to be used to build autonomous and independent productive capacity in the south, not new dependencies. On the other hand, degrowth and reductions of emissions in the north need to make production less resource intensive (especially in relation to energy and greenhouse gas emissions), while at the same time not going backwards and destroying relations of cooperation. Fundamentally, the two processes are two sides of the same process – a fundamental redistribution of wealth and power, much of which will involve actual physical transfers, that can only take place once society's important resources are under some form of collective and decommodified control.

No Time to Lose

The stark reality is that we are very far from bringing about the kind of change in world-wide production and consumption relations that is needed to solve the climate/energy crisis. We may in fact never be in a position to do so. However, if we are to have any chance of avoiding a socially and ecologically

disastrous process of climate change and enforced change in social relations, it will be important to at least pose the question of how this might come about. Until we face up to this, efforts to tackle climate change will almost certainly go nowhere.

The task of collectively taking over the key means of production and decommodifying the major processes through which goods are produced and humans reproduce their existence are immense. The tasks of technology transfer as part of a wider process of reparations combined with degrowth are perhaps even bigger tasks. We are certainly not yet ready, especially in northern countries, where the major emissions cuts have to be made.

However, what is both possible and long overdue is to at least take some initial steps towards deepening a long-term strategic debate about how, and for what purposes, wealth is produced and distributed in society, and how people's subsistence needs are met, as part of a shift to a new energy system. Through a process of debate, and above all through building long term alliances, we will hopefully be able to slowly develop collective interventions which contribute to these goals, so that in the medium term, as the economic-financial and ecological crises deepen, we might then be able to do what is not possible now.