

George Rahi - Landscapes of Energy (Geog 442)

December 12<sup>th</sup>, 2010

### **Energy, Equity, and Social Struggle in the Transition to a Post-Petrol World**

The relationships between energy and society are multifaceted and highly complex. Energy issues, be they intra/international conflicts, peak oil, or the viability of renewables, are central not only to geopolitics of empire and climate change, but also to the most banal reproduction of everyday life. International awareness of the challenges faced by climate change and fossil-fuel dependency has given impetus to a widespread reevaluation and critique of industrial society's relationship to energy. This paper surveys some of the key tensions between various critiques of the energy/society relationship, and highlights the importance of equity, labour, and livelihood in relation to discussions of energy futures. Furthermore, this paper explores whether a shift to "alternative" energy requires an accompanying new mode of production and social relationship to capitalism.

I would like to begin by echoing David Harvey's insight that every ecological project is a social project, and every social project is ecological (2000; 235). This dialectical view sees people and their environment(s) as existing in covalent relationships, continually in flux, and thus, rarely stable. Out of this daily churning up of nature and culture comes the production of various socio-economic forms (the city) and processes (industrialization-urbanization). Such a dialectic-materialist viewpoint would enable us to see the world's ubiquitous city skylines as "technologically, economically, and philosophically the "inverted mines" of the city's massive hinterland" (Bridge, 45). Thus, the incredible pace of urbanization in recent times has been in tandem with increased strains on the allocation of resources such as oil, water, food, and other raw materials. To address the challenges faced by biophysical and social limits to growth of this kind, the concept of "sustainability" as a goal has gained increasing prevalence in urban

planning, local community development initiatives, and at global climate summits. Efforts to overcome the metabolic rift between urban populations and their demands on external resources have propelled policy discussions and material practices into the task of maximizing potential environmental efficiencies inherent in human-settlement density. Examples include local renewable energy production, urban agriculture, smart-energy grids, and public-transit investment.

### **Sustainability: semantics struggles**

With the challenges of climate change and declining oil supplies in mind, what will a sustainable, post-carbon city look like? One thing is clear, there is no single transition process waiting to unfold. As James O’Conner notes, “There is a worldwide struggle to determine how sustainable development will be defined and used in the discourse on the wealth of nations” (238). Because this struggle is over the much larger idea of an appropriate or ideal relationship between humanity and nature, different moral, political, and economic perspectives greatly influence one’s definition of sustainability. The famous Brundtland report defines sustainable development as development that “meets the needs of current generations without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 23). What remains initially most vague is that which constitutes “needs”, as it is a concept culturally constituted and increasingly blurred with the desire realm of marketing and advertising. This ambiguity, flexibility, and adaptability of ‘sustainability’ have made it highly attractive to various communities of interest. Some argue that “sustainability” has been co-opted by both corporations and governments as they practice “cosmetic environmentalism” (Robinson, 374) while others worry that the attractiveness of sustainability as a slogan falsely suggests the possibility of a “conflict-free consensus on policies” that encourages the “sustaining of the unjust status quo” (Marcuse, 104).

In light of the politics of climate-change, the semantic content of “sustainability” has arguably been rendered to the status of a slogan which rationalizes the continuation of the status-quo. The dominant discourse on the appropriate climate-change mitigation process has been aptly described by Matthew Paterson as “global governance for sustainable capitalism” in its insistence on technological innovation fostered first and foremost by the private sector in a competitive global economic marketplace (110). Reductions in GHG emissions in the post-Kyoto settlement have been narrowly confined by the mechanisms of market environmentalism, which “assumes that the best way to protect the environment is to price nature’s services, assign property rights, and trade those services within a global market’ (Bumpus and Liverpool, 132). Advocates of market environmentalism argue that commercialization, marketization, and privatization would lead to more rational and efficient resource management. These assumptions are tied to the “ecological modernization discourse” whereas environmental and development policies became “premised on the notion that economic growth and environmental deterioration can be decoupled by pursuing greener growth rather than by slowing growth” (Eckersley, 72). Green growth in this instance usually means “economic growth that uses less energy and resources, produces less waste per unit of GDP, and seeks constant technological innovation in production methods and product design in ways that are less material-energy intensive” (Eckersley, 73). This concept of greener growth has proved fertile ground for the restless entrepreneur, as a multitude of tech-fixes and geo-engineering schemes have been proposed as feasible solutions to the twinned-challenges of climate change and oil-dependency.

### **Counter-Narratives: questioning growth**

Various other perspectives have sought to destabilize the dominant discussion on ‘green growth’, ‘sustainable capitalism’, and ‘market environmentalism’ by locating the problems of climate change and environmental destruction as part and parcel of the structure of global capitalism. James

O’Conner posits there are internal contradictions of capitalism that drive it to crisis and environmental destruction. The first contradiction, called the ‘demand crisis’ or ‘overproduction crisis’ is the practice of increasing labor productivity and putting downward pressure on wages in order to defend profits, which has the side-effects of reducing final demand (O’Conner, 240). The second contradiction is capitalism’s externalization of the costs of social and environmental degradation; “neglecting work conditions raises the health bill, degrading soils decreases the productivity of land, neglecting decaying urban infrastructures increases congestion and policing costs” (O’Conner, 240). ‘Sustainability’ for green-minded entrepreneurs becomes a design problem where nature is remade in ways compatible with sustainable profitability; “enter a world in which capital does not merely appropriate nature, then turn it into commodities that function as elements of constant and variable capital, but rather a world in which capital remakes nature and its products biologically and physically (and politically and ideologically) in its own image” (O’Conner, 238). O’Conner references genetically modified crops and monoculture forests as the most obvious examples of the capitalist remaking of nature. Such strategies are not about the preservation of nature per se; rather they are more fundamentally about the preservation of a particular mode of production and social order (Harvey 1996; 148).

Advocates of a ‘steady-state economy’ build on this critique of capitalism’s internal contradictions and expansionary drive. Rather than propose ways to remake nature in the image of capital, reformists (Daly 2009, Jackson 2008, Victor 2008) propose ways to remake capital in ways consistent with the sustainability of nature. Contrary to the Brundtland Report’s call for a 5-10 fold increase in global economic product for ‘sustainable development’ to be achieved, advocates of a steady-state economy challenge the very premise of continued economic growth (Robinson 373). As David Harvey argues, “Scapegoating natural limits rather than the internal contradictions of capitalism is a well-tried tactic ... the rhetoric of growth that respects natural limits diverts attention from entrenched class and imperialist privilege in its hesitancy to raise living standards worldwide” (1996; 381). The

rhetoric of sustainable growth thus avoids the following anathema, “Without growth, the only way to cure poverty is by sharing” (Daly, 3).

Although the Brundtland report recognizes that environmental and development issues are tightly intertwined, that “ecological sustainability cannot be achieved if the problem of poverty is not successfully addressed around the world”, can poverty reduction be left to development (growth) of world industrial activity (Robinson, 372)? The Center for a Steady State Economy estimates that a \$1 reduction in poverty requires a \$166 increase in global production and consumption (O’Neil et al., 30). Extremes of privilege are thus maintained at the convenience of the assumption that “a rising tide lifts all boats”. Perhaps it is impossible to meet environmental targets if 90 percent of the world’s population has access to only 10 percent of its resources, for “trying to survive in a poor environment with scarce resources places enormous strain on the natural environment. This can lead to deforestation, overgrazing and soil erosion, as well as social instability which encourages mass migration and often war” (Whitelegg, 102). Without discussion and action regarding the deep structural issues having to do with power, control, and unequal access to resources, the concept of ‘sustainable development’ discards its most transformative potentials.

Between the competing concepts of ‘sustainable capitalism’, steady-state economics, and other alternatives, lay differences in how the problem, and thus the solution, is perceived. As Harvey notes, “how we construct the problem discursively also has its crucial moment in the sun as constituting the imaginative moment through which alternative visions can be constructed” (2000; 218). Will technological innovations and more “sustainable” forms of growth be privileged as the solution to be sought for? Or is there a need for a wider social transformation of capitalist relations with equity concerns at the forefront? For example, how do geographers, urban planners, architects, and policy makers formulate a response to Hurricane Katrina’s devastation of New Orleans and its population? One

response from Joan Busquets, architect and expert in urban development, situates the origins of the disaster in an “exorbitant faith in the power of modern hydrological infrastructure to keep at bay the implacable givens of a deltaic landscape” (Payne, 78). Busquets calls for a regional sustainability plan to intervene in the mismatch between the ecological surroundings and the technological infrastructure. Andrew Payne argues that this insistence on sustainability as a technical issue “has the effect of effacing the complex interlacing of natural and cultural history that the Katrina event implies, with the result that any architectural response to the racialized diaspora that has occurred in the aftermath of that event is effectively effaced” (Payne, 78). Furthermore, Payne argues that the “priority of the natural system over its social and political correlatives can have the effect of precipitously foreclosing the question of how these various regimes interact with one another” (Payne 78). If we are to abstain from privileging certain perspectives, I find it apt to echo John Robinson’s statement that “sustainability is itself the emergent property of a conversation about what kind of world we collectively want to live in now and in the future” (382). With this recognition that “sustainability” is more a political act than a scientific concept, I would like to turn towards the issue of energy.

### **Energy, Labour, and Social Movements**

In light of the debates surrounding sustainability, the energy question looms large. Given global capitalism’s overwhelming reliance on cheap fossil fuels, it is clear that the use of this finite energy resource will soon be transformed at a far-reaching scale. But rather than conceptualize this transition as technological, whereby renewable energy replaces fossil fuels in the engines of global capitalist growth, I would like to emphasize the importance of understanding social relationships to energy. This perspective builds on the insights of Jean Robert, who argues that the energy discourse too heavily relies on the grammar of efficiency, which purports ‘energy’ to be a natural and universal metric of “nature’s ability to do work” (138). Discourse in this sense is the “moment of communicative persuasion

of discussion between persons regarding certain lines of action and belief which internalizes itself as a form of power ... a mode of social relating, a material practice” (Harvey 1996;83). Discursively, Robert states that the popular usage of energy “functions as a fog that blurs the distinction between nature and machines, living organisms and persons, mechanical work and human action while feeding fantasies that organize society and reshape individuals into efficient and productive processes” (Roberts, 138).

To arrive at a more useful [political] category, it may be necessary to conceive of ‘energy’ not as an entity or resource unto itself, but as a “social relation enmeshed in dense networks of power and socio-ecological change” (Huber 106). Within these networks, ‘energy’ occupies incalculable and often contradictory functions that exist simultaneously. As Abramsky notes, “On the one hand, energy is a highly profitable commodity and exchange in the world-market and an essential raw material in the production and circulation of other such commodities. And, on the other, it is fundamental to human life and subsistence” (10). It is worth elaborating on the tensions between these two particular functions of ‘energy’ in a historical perspective.

Fossil fuels played a critical role in the spread of capitalist social relations in history since the Industrial Revolution. Fossil fuels, particularly oil, are an extremely concentrated and a geographically mobile source of energy. These flexible properties forever changed capitalism’s productive forces, and its means of circulating commodities. Huber notes that prior to the industrial revolution, roughly 85% of all mechanical energy came from animal and human muscle power, the rest coming from wind and water (107). The industrial revolution freed production from numerous physical (land/bodies) and temporal constraints. The intensity with which fossil fuels could be used did not change through the progression of the day, or the passing of the seasons. Steamboats, railcars and later, automobiles, circumvented the barriers to markets that long-distance travel represented, thereby increasing the sphere of commodity relations to a world scale.

For the first time ever, the core energetic base of the production process was no longer human power, but rather an inanimate resource Gavin Bridge termed “geological subsidies to the present day, a transfer of geological space and time that has underpinned the compression of time and space in modernity” (48). Most importantly for this discussion, the social relationship to capitalism transformed, as workers become more and more like a “living appendage of the machine” (Huber, 109). The ‘machine’ adds a new vulnerability to the worker. To defend profits, capitalists generally employ the tactics of “increasing labor productivity, speeding up work, cutting wages, and turning to other time-honored ways of getting more production from fewer workers” (O’Conner, 240). As energy-intensive machines increasingly became a substitute and enhancer of human labor, tendencies towards working-class self-organization and resistance were disarmed. Huber states, “The whole notion of workers divorced from the means of production began to make social sense only in the context where the worker is no longer a prime physical force of production” (109). Furthermore, the cheap consumer goods enabled by cheap oil prices and mechanized labor lowered the costs of reproducing the workforce, thereby buffering demands for increased wages. Thus, inexpensive energy, along with the expansion of the credit market, continues to maintain social peace in countries like the United States, where the minimum wage has not risen, in inflation-adjusted dollars, since 1974 (Knox and McCarthy, 330).

With these social relations in mind, a shift to alternative energy has widespread implications for global class struggle. Looking at the history of past energy shifts, it is clear that social movements have been highly influential in affecting energy policies. Bruce Pobobnik argues that labor militancy in coal mines from the 1880s onwards accelerated the transition to emerging oil industries as the security of access to coal was continually disrupted (74). During the 1960s and early 1970s, strikes by oil workers, nationalizations abroad, and the geopolitical instability of the 1973 embargo led the United States to drastically increase funding for renewables and initiated many command and control regulations



(Pobobnik, 75). More recently, argues Harvey, the British Government's success in meeting emission reduction targets set at the 1994 Rio Conference in the run-up to Kyoto was indebted to the "Conservative Party's determination to crush the power of labor anchored in the Miners' Union by freeing the British energy industry from its dependency on coal" (2000;217). These interactions between class struggle and energy geographies reveal important dimensions of the emerging "alternative energy" economy. Expansion of the renewables is not without conflict. Mega-dams have a long and continuing history of struggles for social justice (Leslie, 2005). Farmers in Oaxaca, Mexico are currently fighting the enclosure of the 'wind commons' as private energy companies seek to gain control over strategic sites for renewable energy production (Oceransky, 506). In 2006, over a dozen villagers were killed by police during protests in the Guangdong province of China over the lack of compensation for land lost to a wind power plant (Reuters, 524). The continued expansion of the industrial agro-fuel economy has been tied to the displacement of indigenous peoples, loss of biodiversity, and human rights abuses in places like Brazil's sugar cane ethanol industry (Collazos, 2010).

To promote the concept of a 'just transition', groups such as the Energy Justice Network and Rising Tide North America have advocated the need for decentralized, non-commercial, publicly owned, energy systems. Community autonomy is a central component in order to avoid the commodification and monopolization of energy. For Ivan Illich, an industry maintains a radical monopoly not only when "it produces scarce products, or by driving competing industries off the market" but ultimately when it has acquired the ability to "create and shape the need which it alone can satisfy" (14). Such a vision of energy autonomy stands in opposition to many of the accumulation strategies based on private control over the energetic means of production and cheap fossil fuels that serve as subsidy. The task, as Illich states, is not to ask "how reservations necessary for the survival of people can be established on an earth that has been reshaped for the sake of industrial outputs", but rather to envision the preservation of the world for all peoples in a just, democratic way (15).

When considering whether 'sustainable growth' and 'alternative energy' will offer new possibilities for emancipation from a crisis-prone system, it is crucial to keep in mind the possibility that renewable energy may only perpetuate, perhaps even strengthen, forms of hierarchy and domination in the sunbelts and wind-corridors of the world. There is no *a priori* reason why renewable energy should be based on progressive social and environmental terms. Thinking beyond the renewable/nonrenewable binary, "All industrial energy systems deploy space, capital, and technology to construct their geographies of power and inscribe their technological order as a mode of organization of social, economic, and political relations" (Ghosn,7). It is important not to overlook the deep structural continuities between conventional and alternative energy in regards to issues of power, control, and unequal access to resources. The attractiveness of 'renewable energy' as a panacea for social and environmental ills, independent of a wider social transformation of capitalism, risks foreclosing serious political questions about alternative socio-environmental trajectories.

## Works Cited

- Abramsky, Kolya. 2010. "Energy, Work, and Social Reproduction in the World-Economy" in *Sparking a Worldwide Energy Revolution: Social Struggles in the Transition to a Post-Petrol World* ed. Kolya Abramsky pg 91-101, Oakland; AK Press.
- Bridge, Gavin. 2009. "The Hole World: Scales and Spaces of Extraction" in *New Geographies* (vol 2). Cambridge: Harvard University Press.
- Bumpus, Adam., Liverman, Diana. 2008. "Accumulation by Decarbonisation and the Governance of Carbon Offsets" *Economic Geography*. Volume 84, Issue 2, pg 127-155.
- Daly, Herman. 2009. "From a Failed Growth Economy to a Steady-State Economy". American University: Washington D.C.
- Collazos, Monica Vargas. 2010. "The Ecological Debt of Agrofuels" in *Sparking a Worldwide Energy Revolution: Social Struggles in the Transition to a Post-Petrol World* ed. Kolya Abramsky pg 355-365, Oakland; AK Press.
- O'Neill, Dan, Dietz, Rob, Jones, Nigel. 2010. "Enough is Enough: Ideas for a sustainable economy in a world of finite resources" *Center for the Advancement of the Steady State Economy and Economic Justice for All*, Leeds, UK.
- Eckersley, Robyn. 2004. *The Green State: Rethinking Democracy and Sovereignty*. Cambridge: MIT Press.
- Ghosn, Rania. 2009. "Energy as a Spatial Project" *New Geographies* (vol 3) pg 7-10, Cambridge: Harvard University Press.
- Harvey, David. 1996. *Justice, Nature, and the Geography of Difference*. Cambridge: Blackwell.
- Harvey, David. 2000. *Spaces of Hope*. Berkeley: University of California Press.
- Huber, Matthew. 2009. "Energizing Historical Materialism: Fossil Fuels, Space and the Capitalist Mode of Production" *Geoforum* (vol 40), Issue 1, pg 105-115.
- Illich, Ivan. 1978. "Energy and Equity" in *Toward a History of Needs*. New York: Pantheon.
- Jackson, Tim. 2009. "Prosperity without Growth?" *Economics for a Finite Planet*. Earthscan Publishing: Sterling.
- Knox, Paul and Linda McCarthy. 2005. *Urbanization*. 2<sup>nd</sup> edition. New Jersey: Pearson Prentice Hall.
- Leslie, Jacques. 2005. *Deep Water: The Epic Struggle over Dams, Displaced People, and the Environment*. New York: Picador.
- Marcuse, Peter. 1998. "Sustainability is not enough" *Environment and Urbanization*, Vol. 10, No. 2, pg 103-11.

Oceransky, Sergio. 2010. "Fighting the Enclosure of Wind: Indigenous Resistance to the Privatization of the Wind Resources in Southern Mexico" in *Sparking a Worldwide Energy Revolution: Social Struggles in the Transition to a Post-Petrol World* ed. Kolya Ambrasmky pg 505-522 Oakland; AK Press.

O'Connor, James. 1998. *Natural causes: Essays in ecological Marxism*. Guilford Press, New York.

Paterson, Matthew. 2009. Global Governance for Sustainable Capitalism? In W. Neil Adger and Andrew Jordan, eds., *Governing Sustainability*. Cambridge, UK: Cambridge University Press.

Payne, Andrew. 2009. "Sustainability and Pleasure: An Untimely Meditation" *Harvard Design Magazine* (vol 30) pg 68-83. Cambridge: Harvard University Press.

Pobobnik, Bruce. 2010. "Building the Clean Energy Movement: Future Possibilities in Historical Perspective" in *Sparking a Worldwide Energy Revolution: Social Struggles in the Transition to a Post-Petrol World* ed. Kolya Ambrasmky pg 72-78 Oakland; AK Press.

Reuters. 2006. "Warnings, Jailings Reported in China Protest Deaths" in *Sparking a Worldwide Energy Revolution: Social Struggles in the Transition to a Post-Petrol World* ed. Kolya Ambrasmky pg 524-525 Oakland; AK Press.

Roberts, Jean. 2009. "Alternatives and the Technogenic Production of Scarcity" *New Geographies* (vol 3) pg 133 – 138, Cambridge: Harvard University Press.

Robinson, John. 2004. "Squaring the circle? Some thoughts on the idea of sustainable development" *Ecological Economics* (vol 48) pg. 369-384.

Victor, Peter. 2008. "Managing without Growth", *Confronting Structure*, Sustainable Development Commission, London.

Whitelegg, John. 1997. *Critical Mass: Transportation, Environment and Society in the Twenty-first Century*, Pluto Press: London.

World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press, Oxford.