

53. Are increasing greenhouse gas emissions inevitable?

by
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Western development over the past century involves the interdependent development of a cluster of high-carbon socio-technical systems and related social practices. Reversing these systems will be a massive challenge. Instead a set of low-carbon models or systems are needed, using new practices of low-carbon innovation. This article explores the likelihood of these developing as more than tiny niches, and ends by noting some green shoots of such alternatives.

This article uses systems thinking to examine how a high-carbon world was initiated, established, and globally diffused over the course of the 20th century, and to consider how to reverse those locked-in high-carbon processes.

Various systems were trialed and developed in the United States in the 20th century, and then spread and formed the “Western” way of life. These included electrical power, national grids, oil-based car and truck transportation, aeromobility, industrial food production, suburban homes and a general zoning of development, as well as distant places of shopping, leisure and pleasure (Urry, 2011). These systems were not just technological, but involved social values and practices, and were often characterised by long-term path-dependence as many elements were locked into the system and were very difficult to shift (on the automobility system, see Geels et al., 2012).

Such systems cluster together, thus reinforcing each other and engendering high-carbon practices and lives. Nye describes how in the United States, the “high-energy regime touched every aspect of daily life. It promised a future of miracle fabrics, inexpensive food, larger suburban houses, faster travel, cheaper fuels, climate control, and limitless growth” (1998: 215). Various social practices extended over various societies, including a daily shower, the school run, foreign holidays, climate control, dining out, global friendships, project work in a global team, the weekly shop and so on (see Shove, Panzar and Watson, 2012 on social practices).

This cluster of Western practices spread during the second half of the last century as the population, income, consumption and energy use grew exponentially. This led to the problem of the systemic, clustered and path-dependent nature of high-carbon systems and practices (see Urry, 2013 for more detail). From a systems perspective, merely slowing

down the rate of emissions will not be sufficient to reduce future temperature rises. Rather, what is needed is the rapid global growth of an alternative cluster of low-carbon systems. This is not just a question of different individual values, beliefs or behaviour. Nor is it just a question of the economy. The requirement is to reverse the apparently inexorable growth of high-carbon systems and related social practices, thus reducing, eliminating or replacing many high-carbon worlds with an interdependent cluster of low-carbon systems. This reversal has to be both social and economic.

This requires “reversing” most systems set in motion during the 20th century, finding the equivalent of a reverse gear while going forwards very fast. However, there are many reasons why finding a reverse gear is so troublesome.

First, there is the power of the carbon interests which generate rising greenhouse gas emissions and which are complicit in the over-use of energy (as documented in Oreskes and Conway, 2010). And yet these interests are also expected to solve these issues by systematically reducing emissions. This is a kind of wicked problem in which the interests generating system problems are also those that are seen as crucial to the development of solutions.

Further, low-carbon systems will reduce the short-term levels of measured income and consumption, which will make it difficult to persuade people to embrace low-carbon social practices. And yet research shows that beyond a level of income in a society, increasing personal incomes do not necessarily turn into more human well-being. Wilkinson and Pickett (2009) document how life expectancy, the well-being of children, literacy, social mobility and trust are all higher in societies that are more equal. Many extra goods and services are “wasted” in unnecessary products, extra car journeys, goods that become prematurely obsolescent or building temperatures kept too high (Shove, Chappells and Lutzenhiser, 2009; Offner, 2006). Societies need to be measured in terms of their quality of life, or “prosperity”, and not through gross domestic product (GDP) measures of “growth” (Jackson, 2009).

Third, systems are often characterised by their momentum, which makes it more difficult to reverse those systems in which most people in a society are embedded. Societal change can be surprisingly slow. An example is seen with the enduring car system, which dates from the late 19th century and which has so far “driven out” potential competitors (see Dennis and Urry, 2009; Geels et al., 2012).

There is a lack of time to make the seismic shifts necessary, given that changes in the atmosphere and a decline in energy security are already locked into systems. To some degree these will happen whatever changes happen now or in the immediate future (Hansen, 2011). Some would say that we should prepare to adapt to such atmospheric changes, since climate transformations are more or less inevitable.

There are also difficulties in organising a global polity that can reset global agendas, especially as resources are in short supply and contested. Latouche (2009) suggests that the World Trade Organization should be replaced by the World Localization Organization in order to disrupt the momentum of increasing globalisation, which is partly the cause of rising greenhouse gas emissions.

In addition, even if there were global agreements, states are rarely able to enforce change from the top, because of people’s understandable resistance to being instructed to move to low-carbon practices. The global media circulate stories and accounts of how corporate, political and media celebrities live ultra-high-carbon lives, which make

them especially inappropriate to lecture others on reducing their carbon footprint. One element of celebrity lives is tax evasion or avoidance, resulting from the “offshore world” of 70 or so tax havens or “secrecy jurisdictions” (Shaxson, 2011). This offshore world is disastrous for reducing carbon emissions and for moderating energy use. These havens limit the taxation available to the societies where income and wealth are mostly created. This is an especially pertinent issue in societies where many people’s basic needs are not met and where people are especially vulnerable to climate change impacts. Low-carbon systems cannot develop if resources are not brought onshore, and made public and much more accountable.

Indeed a low-carbon world requires people around the globe to feel a strong mutual indebtedness, especially by current generations towards future generations, including those not yet born. This public or social indebtedness is expressed in the UNESCO Declaration of 12 November, 1997 on the responsibilities of present to future generations (UNESCO, 1997). However, this social indebtedness has been overlain by financial debt for people, states and corporations (Dienst, 2011). In the neoliberal decades since the 1980s, social indebtedness has been distorted by financial indebtedness and greater inequality through the large-scale offshoring of income and wealth, especially by major corporations, societal leaders and celebrities.

Global inequality has probably never been higher, which makes low carbonism even more difficult to implement. In China, India and the other “BRIC” countries, there are generally large increases in fossil-fuel dependency and a striking resurgence of “King Coal” as these countries become even more unequal (see Hansen, 2011). In societies in which many people do not have access to adequate resources to meet their basic human needs, there are strong aspirations to improve access to energy for power, heating or cooling, and transportation as elements of a development strategy. But there are also opportunities for development through new low-carbon systems, to bypass the fossil-fuel-intensive path of traditional development. This is partly why futurist Richard Buckminster Fuller once maintained, “You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete.”¹

This points to the need for a cluster of new models that use less energy but which sustain many of the pleasures of contemporary wealthy societies. Societies could be as happy, with high life expectancy, but not as rich as measured by GDP. It is not so much a reverse gear that is needed, as a different set of gears altogether to make innovations in “developing societies” productive. There would be no smooth progression from the present to a lower-carbon future. If we consider where other big changes have occurred across large populations, it took something like 50 years for the rich North to bring about significant reductions in tobacco smoking, although the scientific evidence for its dire health consequences was clear-cut (Oreskes and Conway, 2010).

There are many models that explore the possibilities of low-carbon societies or “de-growth” (Latouche, 2009). The important question is how to get to such a powered-down future, and how to get there fast enough. It will require engineering “systems” of low carbon social practice, a matter of technical, economic and social development. It would involve innovation, with users of commodities and services modifying products, making fashionable alternatives and developing new, collective innovations. Various analysts, such as von Hippel (2006), increasingly emphasise the importance of “democratising innovation”. He describes how many “users” of goods and services engage in and develop new products and services. The development of apps for mobile phones is a good illustration of widespread consumer

innovation, some of which is – most strikingly – found in the developing world where the costs of innovation are reducing quickly.

Similarly, sustainable innovation requires consumer communities that highlight, advocate and develop low-carbon actions and objects, and make them fashionable. Consumers would have to innovate low-carbon local goods and services on a vast scale, while states and corporations would have to provide the conditions for these to start and then be scaled up. *The Transition Companion* (Hopkins, 2011), based on the “transition towns” movement, describes many different aspects of how this can be engineered by starting out, deepening, connecting and building new products and services. Some of the innovation features of this transition movement are that it is viral, open source, self-organising, iterative, historic and enjoyable.

It is possible that some tiny green shoots of such a future are developing in the rich North. Analysis shows that travel has reached its peak, with various surveys reporting declining numbers of car journeys, distances travelled by car, and of young people acquiring driving licences (Millard-Ball and Schipper, 2011; Geels et al., 2012). It also seems that the amount of material goods that consumers in the rich North are now using is peaking. This quantity seemed to peak before the 2007-08 financial crisis, and so suggests increased material efficiency, which could mean that a low-carbon cluster is beginning to emerge. Perhaps at long last, at least in the rich North, there are some green shoots of a different set of practices and systems developing (as shown in Urry, 2013).

Note

1. <http://challenge.bfi.org/movie>, accessed 4 November 2011.

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From:
World Social Science Report 2013
Changing Global Environments

Access the complete publication at:
<https://doi.org/10.1787/9789264203419-en>

Please cite this chapter as:

Urry, John (2013), "Are increasing greenhouse gas emissions inevitable?", in International Social Science Council/United Nations Educational, Scientific and Cultural Organization, *World Social Science Report 2013: Changing Global Environments*, OECD Publishing, Paris/Unesco Publishing, Paris.

DOI: <https://doi.org/10.1787/9789264203419-57-en>

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