Battles over Biofuels in Europe: NGOs and the Politics of Markets

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Abstract

In this paper, we argue that a consortium of NGOs has played a significant role in shaping the market for, and restricting the use of, biofuels as an alternative to conventional fuels for road transport in Europe. This paper considers why a number of NGOs (Greenpeace, Oxfam, WWF, RSPB, Friends of the Earth) have chosen to enter the biofuels debate, and how they have variously developed policy, agreed a political campaign, and exercised political influence, in a key area of the world's response to major global climate change: how to reduce the carbon footprint of transport.

We found that in many cases the development of NGO policy has been driven more by narrow political opportunities for influence than by broader and more coherent policy responses to global climate change or economic development, or indeed rigorous assessment of the scientific evidence. The research provides evidence of how NGO policies and lobbying significantly affected biofuel policy changes, review processes, target reductions, and sustainability regulation in the UK and in Europe.

We consider that politically instituted markets, such as the one for biofuels, are examples of the emergence of new forms of governance of capitalist political economies facing a novel and pressing combination of drivers (climate change, energy security, resource constraints, and sustainable land-use). Politically instituted markets open up possibilities for political intervention from non-governmental or party-political actors, in ways that other markets do not. If political shaping of markets by NGOs becomes more widespread, issues of democratic legitimacy and public scrutiny will become ever more pressing.

The paper is based on in-depth interviews with senior scientific directors and policy-makers in five NGOs, and of senior officials in UK government departments and the European Commission (DG Environment and DG Transport and Energy). It forms part of a wider ESRC research project in Brazil, the USA and Europe on the Transition to Sustainable Bioeconomies.

Keywords: NGO, Biofuels, Europe, Policy, Markets, Transport

Introduction

1.1 In this paper, we aim to show that a consortium of non-governmental organisations (NGOs) has played a significant role in shaping the market for, and restricting the use of, biofuels as an alternative to petrol and diesel for road transport in Europe. In so doing, they have been key players shaping the future political economy of Europe as it faces the need to provide transport energy in the context of global climate change, recovery from recession, and 'peak oil'. There are three main regions engaged in significant production and consumption of biofuels: the USA where the focus is on bioethanol derived from maize; Brazil, also bioethanol but derived from sugar-cane; and Europe, predominantly biodiesel derived primarily from rapeseed grown within Europe. The three regions also differ significantly in the scale and projected development of biofuels. The USA aims to achieve 20 per cent of its transport fuel by 2022, double the ambition of Europe. Brazil already fuels its transport fleet with 50 per cent or more of fuel provided by bioethanol, with over 90 per cent of its new vehicles being fully flex-fuel, capable of running on 100 per cent bioethanol.

1.2 A third major difference between the three regions concerns the principal political drivers behind the growth of biofuels market development. In the USA, until recently the overwhelming driver has been energy security, first in a short-lived response to the oil price shocks of the 1970s, and then more recently to its increasing, and politically vulnerable, reliance on Middle East oil, to the extent that the major piece of legislation passed in 2007 was named the Energy Security and Independence Act. Brazil, like the USA,

had responded to the 1970s oil price shocks with its ProAlcool programme, and since then has politically driven the development of its biofuel industry with a twin concern for energy security and economic development, supplemented only recently by concerns for rural development, climate change, and the market opportunity for exports to the USA and Europe. Europe began its biofuel development much later, and overwhelmingly in response to the Kyoto Protocol, driven by the claimed potential for biofuels to reduce greenhouse gas emissions.

1.3 From an economic sociology standpoint, the current development of transport energy markets presents an interesting case study of how capitalist political economies are changing, or failing to change, from 'business as usual' pathways in face of these historically unprecedented circumstances of declining oil reserves and global climate change. In particular, we will aim to argue that markets for biofuels have been 'politically instituted' using quite novel and interventionist policy instruments, and this, in turn, has politicised the process of market formation, so opening opportunities for other political actors such as NGOs to engage with and affect that process. Furthermore, as the only region where environmentalist objectives have been dominant, Europe also provided a distinctively favourable context for lobbying by environmentalist NGOs, especially given scientific controversies over claims for greenhouse gas reductions from biofuels.

Politically instituted markets for biofuels

2.1 Before discussing the empirical core of the paper on the role of NGOs, we will briefly set out our analytical framework and the concept of 'politically instituted markets'. Markets have been described as '*the* central institution of capitalism' (Swedberg, 2005), not only because most production flows through markets, but, more generally, it is the characteristic vehicle coordinating buyers with sellers, whether for products, labour or capital. Much of the recent economic sociology of markets has concentrated on activities *within* markets (whether markets for strawberries, electricity, or financial derivatives) (Granovetter and McGuire, 1998; Knorr Cetina and Preda, 2005; McKenzie, 2006; Callon, 2007). The 'instituted economic process' (IEP) approach, derived from Karl Polanyi's later work, focuses rather on the processes of emergence, organisation, and interdependence between, markets, including the institutions of exchange, quality and price institutions. So, for example, it analyses how the supermarket system for food selling emerged in the UK, and differed markedly from those markets in the USA or continental European countries, across all those different institutional processes and aspects. Moreover, this approach recognises that, within the formal economy, law, and hence the political activity of the state, is constitutive of the possibility of market operations, through developing laws of property, notably, but trading standards, competition regulation, health and safety regulation, and many other formal rules enabling exchanges to occur (Swedberg, 2003; Hodgson, 2007). A lot of politics may be involved in the framing and constitution of markets, as is evident from the formation of the European market (Fligstein & Mara-Drita, 1996; Fligstein, 2001; Fligstein & Sweet, 2002), and this too is an important aspect of the economic sociology of markets. More broadly still, the IEP approach accords a major role to states in capitalist economies, so enabling a contrast to be drawn between market exchanges and the exchanges between taxpayers and public services providers (health, welfare, public infrastructure, science, etc.). Thus, this approach emphasises the interdependency between market and non-market forms of economic organisation.

2.2 In using the term 'politically instituted markets', however, we are highlighting a different aspect of the role of the state, namely, the political construction of specified products or services to be provided by market actors for consumers through the market organisation of exchange. In this respect, politically instituted markets differ from state procurement from market actors – as in military, or health service goods and services – in that both sellers and buyers are market actors. A wide variety of political instruments may be involved in political construction of such markets. A notable recent example has been the carbon offset-trading markets, which only exist by virtue of a politically constructed definition of an entity to be exchanged, whether under the Kyoto Protocol or the European Trading Scheme. The case of nuclear-powered electricity is interesting both for the fact that political decisions for this market provision have attracted political controversy and lobbying, but at the same time the product itself is indistinguishable to the consumer from electricity generated by other types of energy.

2.3 In the case of biofuels which interests us here, in each of the major biofuel regions, political institution of their respective markets has been a distinguishing feature (Harvey & McMeekin, 2009), but with considerable variation. However, mandated markets, a significant political innovation, occur in all three, entailing requirements and targets that a certain percentage of transport fuel is to be supplied by biofuels by specified dates. In effect, this guarantees a market of a given minimum size to developers and suppliers of biofuel. In the US, the legislation requires that half of all biofuels will be 'second-generation' by 2022, that is, replacing maize-to-ethanol by other technologies and feedstocks not derived from food crops. In the UK, the Renewable Transport Fuel Obligation (RTFO) requires that 5% of transport fuel by volume is constituted by biofuels by 2013/14, but makes no indication of further market growth thereafter. Aside from mandated

markets, however, governments have directly engaged in developing the basic science, research and development, and subsequent commercialisation (the USA and Brazil) of biofuels. In the US, loan guarantees, a form of state venture capital, have been provided for a variety of new technologies for biofuel production. In Brazil, the government first developed a pure-ethanol vehicle engine in government laboratories, then to be manufactured by the major global car companies. More recently, the government negotiated with those companies for the development and production of flex-fuel vehicles. Many of these innovative forms of political construction of markets have been buttressed by more conventional political instruments, such as the use of fiscal incentives to consumers to switch to biofuels.

> *"Yes, well, if we wait for the market to bring these things online we won't have them. It's like wind energy right? If we had not had the subsidies for wind power and targets for renewable electricity we would never have the wind power that we have now and so the prices wouldn't decrease and wind energy wouldn't get competitive with natural gas which it does now... So you need that, for the simple reason that the conventional energy sector has received subsidies and support since the early beginning... And they still do receive support."*
> Spokesperson, NGO 4.

2.4 Finally, as we shall see, in Europe, sustainability regulation has been pioneered for biofuels under the UK's RTFO and the 2009 Renewable Energy Directive, no other product in any market being subject to sustainability requirements for specified levels of reduction of their carbon footprint or greenhouse gas emissions. By politically placing sustainability on the table, alongside mandates and targets for expansion, these became possible objects of political contestation and lobbying.

Researching the NGOs

3.1 Although not forming part of the original research design, interviews with government officials in the UK and officials in the European Commission, brought to our attention that NGOs had been key players affecting the institution of biofuels markets in Europe, unlike the other two biofuel regions. Consequently the design was extended to incorporate an interview programme and analysis of the role of NGOs in the political institution of biofuels markets in Europe. This paper will consider why NGOs have chosen to enter the biofuels debate, the political positions they have taken, and their impact on this emergent sector. The findings of this paper are based on in-depth interviews with senior scientific directors and policy-makers at five NGOs: Greenpeace; Friends of the Earth (FoE); Oxfam; the World Wide Fund for Nature (WWF); and the Royal Society for the Protection of Birds (RSPB). We have also reviewed and analysed these NGO's published documents and grey literature related to the biofuel controversy. In citing from interviews, we have anonymised the interviewee and the organisation (using the device NGO1, NGO2, etc.), only naming the organisation when referring to matter in the public domain. [1]

3.2 As part of the wider research informing the background of this paper, we conducted over 40 interviews with senior officials in UK government departments, including the Department for Transport, the then DTI, and DEFRA. Furthermore, we have spoken with representatives from the European Directorate Generals for Environment (DG ENV) and Transport and Energy (DG TREN), as well as many industrial organisations, and scientists.

The field of controversy

3.3 Biofuels have developed a field of controversy on three major fronts: their own ecological credentials for sustainability ('Is the cure worse than the disease?', Doornbosch & Steenblick, 2007); competition between food and biofuel for agricultural production; increasing pressures on biodiversity through land conversion and deforestation. Each of these proffered a ready context in which NGOs might contribute to the political shaping of markets.

3.4 To date, particularly in Europe, the biofuels debate has centred heavily around the issue of sustainability, including the capacity of first generation biofuels to reduce greenhouse gas emissions in light of the emissions consequent upon indirect land use change. A major scientific controversy arose, almost exclusively in Europe, on the publication of two papers in *Science* (Fargione et al., 2008; Searchinger et al., 2008) which purported to show that the diversion of maize from food to the production of ethanol resulted in increased global demand for food crops elsewhere. As a consequence, previously uncultivated land was converted to produce food crops. This conversion releases significant quantities of CO_2 trapped in the subsoil, so outweighing the benefits of greenhouse gas reductions from maize-based ethanol. This is known as Indirect Land Use Change or ILUC, and has become a major focus of problematising the sustainability of biofuels of all varieties, although many have contested the original arguments advanced by Searchinger et al. (2008) and Fargione et al. (2008) (Kammen et al., 2009; Kim et al., 2008; Liska and Perrin, 2009; Mathews and Tan, 2009). Indeed, Searchinger himself now publicly supports 'beneficial biofuels' (especially

those that do not compete with food) as an important contribution to reducing fossil-fuel dependency and climate change mitigation (Tilman et al., 2009). Yet, at the time, major NGOs used the Searchinger science as a political battering ram, even though accepting that they do not have independent scientific expertise for assessing it.

> *"I think the actual premise of Searchinger is sound…Now I don't know the ins and outs of his model. I just have not had the capacity, and I suspect that a lot of NGOs, we don't have the capacity to spend a lot of time pulling apart papers like that."* Spokesperson, NGO5

> *"We don't do scientific studies, you know, ourselves so we do take our input from other scientists."* Spokesperson, NGO 2.

3.5 Biofuels have also brought to light the complexity of current pressures on global land area, leading to a food versus fuel debate. Many argue that if an area is to be cultivated, it should be to grow food rather than fuel in order to feed the expanding global population (Oxfam, 2008a). This has progressed into a highly politicised debate on the role of biofuels in recent world food price increases.

> *"Do you want to feed people or do you want to feed cars?..... Our priority has to be food production to actually feed people."* Spokesperson, NGO 2.

3.6 In 2008, biofuels were widely targeted and blamed for food price increases, particularly in regions of the world where the majority of household income goes toward meeting daily subsistence needs. More recently, however, a number of organisations like the Food and Agriculture Organisation (FAO), have come to acknowledge the misdirection of this claim and, instead, look towards underinvestment and low productivity gains in agriculture, regional droughts, depleted stock supplies and price speculation for more likely explanations (eBIO, 2008; IIASA/OFID, 2009; Wiggins, 2009).

3.7 The role of biofuels in biodiversity conservation has also been controversial, particularly for those concerned with land use change driven by the growing palm oil industry in Indo-Malaya and soy in South America (Greenpeace, 2007b). Many environmental NGOs have attributed current rates of deforestation to the expanding biofuels industry and the growing demand for soy and palm oil (both directly in biofuels, and indirectly via the diversion of European rapeseed oil into biofuels from cosmetics and food products).

Source. Cooking the Climate (Greenpeace, 2007b)

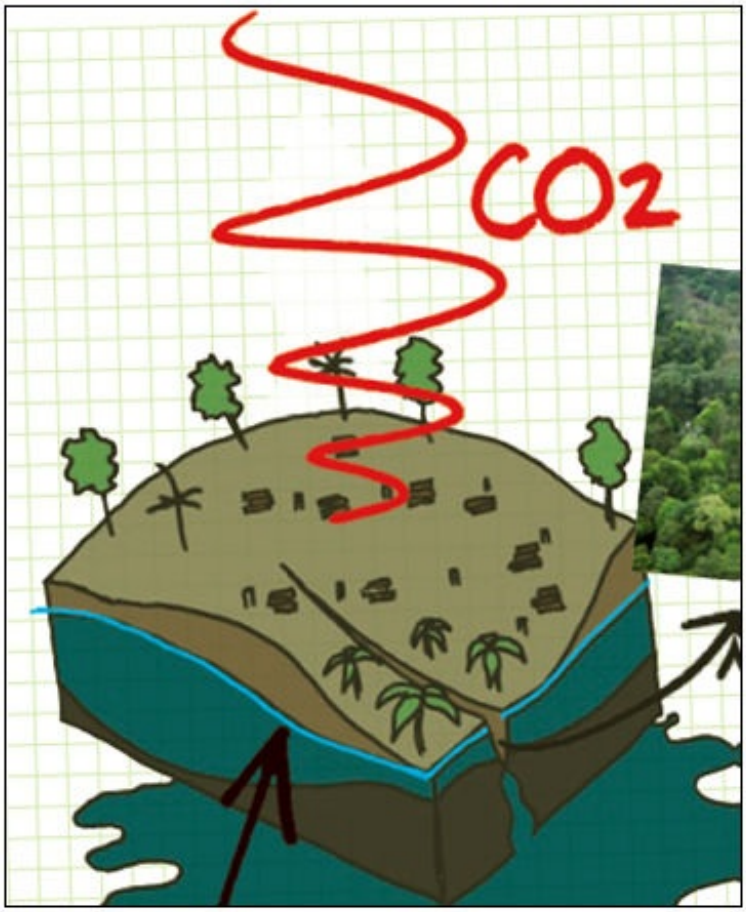
3.8 These principal controversies surrounding biofuels markets (on sustainability, competition with food for use of land, and biodiversity) have been developed by NGOs to focus their lobbying activities, especially

within Europe.

Taking up positions

4.1 NGOs are undoubtedly significant and weighty lobbying organisations. In 2005, the annual turnover of environmental NGOs was estimated to be over £15 million (US $21 million) (Jepson, 2005). This scale of resources combined with heightened political standing has resulted in NGOs becoming powerful players in national and international affairs (Simmons, 1998; Jordan & Tuijl, 2000; Slim, 2002). They speak for 'the public' or 'the planet', yet do not claim to be democratic or representative organisations (Hilhorst, 2003).

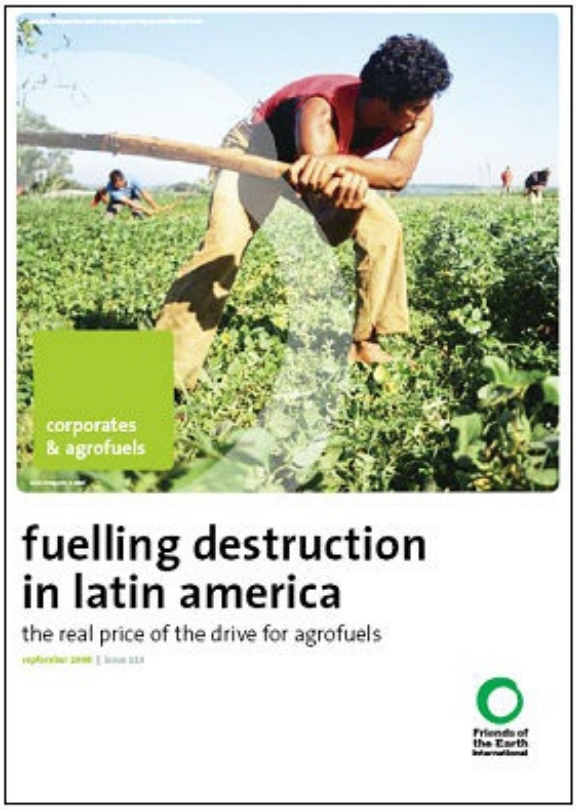
4.2 In this section we explore the policies adopted by the five NGOs under study. Interestingly, two of the most influential biofuels critics, FoE and Greenpeace, were early supporters and promoters of biofuels, perceiving them as a means to promote renewable energy and reduce our carbon emissions (Moran, 2004). However, both have recently called for a moratorium on biofuels and a shift in focus towards a low carbon transport system and reduced vehicle usage (FoE, 2008b; FoE, 2008c; Greenpeace et al., 2008). FoE and Greenpeace are putting pressure on governments to drop biofuels targets, suggesting that biofuels represent a 'false solution' to climate change (FoE, 2008b; FoE, 2008c; Greenpeace, 2008). Both were heavily influenced by, and drew strongly upon, the arguments presented by Searchinger et al. (2008) and Fargione et al. (2008) that first generation biofuels, namely US maize-based ethanol, have the capacity to increase greenhouse gas emissions substantially over the coming years through Indirect Land Use Change, contributing to rather than alleviating climate change.



Source. Cooking the Climate (Greenpeace, 2007b)

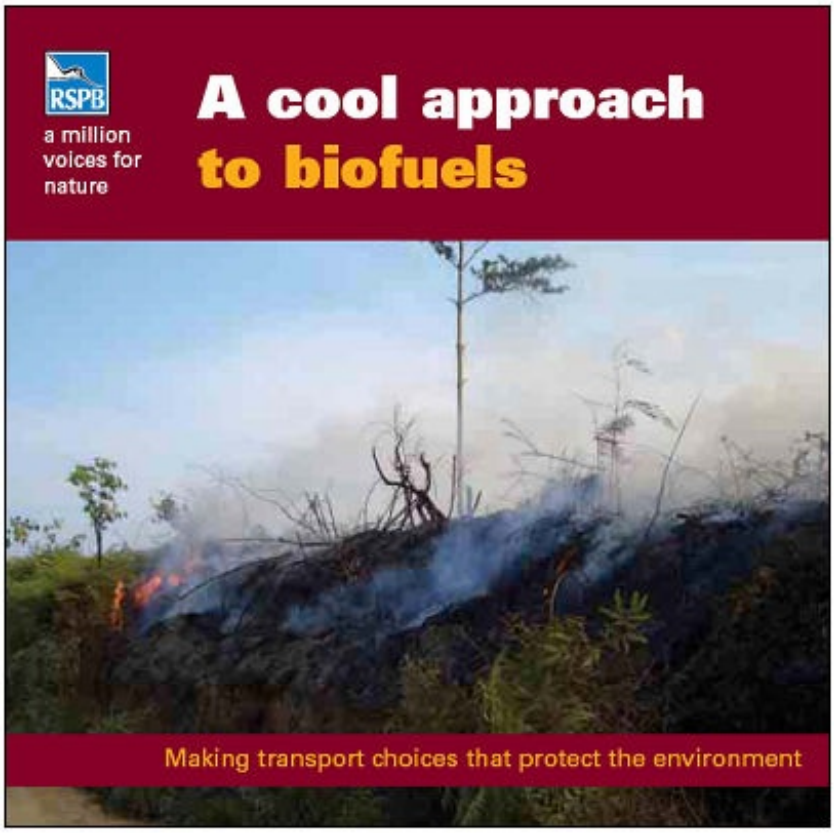
4.3 FoE condemn the creation of biofuels markets through the use of targets and fiscal incentives. They advocate the precautionary principle, stemming from the environmental movement of the 1970s (van den Belt, 2003), that new technologies should be developed only after their benefits have been undeniably proven through in-depth research. Without political market creation leading to investment opportunities, however, it seems unlikely that enough money will enter into the sector to afford extensive research programs and development of advanced technologies, to convert ligno-cellulosic biomass and carbon bio-waste for example. Unlike FoE, Greenpeace recognises that bioenergy, in some form, has a role to play in the renewable energy mix of the future, principally in the heat and power sectors. Greenpeace considers electrification as the preferred alternative to petrol in the transport sector in the long-term (Greenpeace, 2002, 2009a). It acknowledges that the future of the transport sector is unlikely to be solved by a 'one size fits all' approach and concedes that liquid transport fuels will still have a significant part to play in some areas of the world for decades to come, particularly with existing vehicle fleets and energy security

concerns. Greenpeace also acknowledges the potential of sugarcane ethanol according to the Brazil model, particularly if grown on degraded pasture lands, unlike FoE who see no role for Brazilian sugarcane and blame the industry for increasingly worsening labour conditions and deforestation in the country (FoE, 2008a). Instead, FoE consider biofuels to be a mistaken policy strategy with nothing but a damaging role to play in the future.



Source. FoE, 2008a

4.4 The RSPB, in its biofuels lobbying strategy, is calling for current targets to be frozen at existing levels (RSPB, 2008a). Although taking a softer approach than FoE and Greenpeace, all three NGOs share the view that the implementation of sustainability criteria through roundtables (as suggested by WWF) is not enough on its own to realign the industry given current evidence. The RSPB are calling for what they term a 'cool' or measured approach to biofuels, which includes no further target increases in Europe or the UK until rigorous legislation and standards are in place to ensure sustainability (including minimum GHG savings of 60 per cent) (RSPB, 2008b). According to the RSPB, these standards need to be compulsory, robust and verifiable, and implemented from outside the industry (RSPB, 2008b). Like Greenpeace, the RSPB acknowledge that some biofuels (such as from waste oils) may indeed have a role to play in the transport sector in the future, albeit a limited one, but are sceptical that biofuels offer any solution to climate change. The RSPB concedes that if biofuels are to play a part in meeting renewable fuel targets in the future, then it is imperative that only sustainable fuel mixes are pursued. However, it considers the only long-term solution for dealing with climate change, and indeed energy security, will be achieved by reducing our overall fuel consumption through behavioural and technological changes, such as encouraging vehicle efficiency and the use of public transport. The UK's RTFO, it argues, promotes dysfunctional behaviour by creating artificial sectors and markets by mandating the use of a percentage of biofuels.



Source. RSPB, 2008b

4.5 Greenpeace, FoE and the RSPB all raise significant concerns about the relationship between food and fuel, particularly in light of increasing food prices. This is a line strongly pursued by Oxfam International. Oxfam speculates that biofuels account for 30 per cent of recent price rises and are, therefore, directly responsible for pushing 30 million more people into poverty, at the same time endangering 100 million livelihoods (Oxfam, 2008a; Oxfam, 2008b; RSPB, 2008c). According to its report, 'Another Inconvenient Truth', Oxfam claims that biofuels are acting as a tax on foods, and that biofuels alone are responsible for a 50 per cent rise in food crop demand (Oxfam, 2008a). However, the report fails to consider the economic implications of a fuel crisis for developing communities, the fact that the biggest price rises have been observed in non-fuel crops, and that food prices are likely to have been 15 per cent higher in the absence of biofuels according to Merrill Lynch (Barta, 2008; EREC, 2008).

4.6 Like the environmental NGOs, Oxfam draws on the evidence presented by Searchinger et al. (2008) and Fargione et al. (2008) on the greenhouse gas impacts of Indirect Land Use Change. Oxfam suggests that the creation of a biofuels market is a false solution to both the climate and oil crisis, which has in turn created a global food crisis (Oxfam, 2008a). Consequently Oxfam, like the RSPB, is calling for OECD countries to halt the implementation of further biofuels targets. Instead, Oxfam suggests the examination and revision of existing targets, including dismantling fiscal incentives and subsidies, and focusing on vehicle efficiency. Oxfam does, however, acknowledge that an international biofuels market that is rigorously controlled to meet strict sustainability standards could hold development opportunities for poor rural areas. For this reason, Oxfam has called for all import taxes on biofuels to be dropped. Furthermore, it is calling for bioenergy projects that provide clean renewable energy in poor rural areas to be prioritised, although claims that these are unlikely to be ethanol or biodiesel projects (Oxfam, 2008a). In its report, Oxfam attributes the development of current biofuels policy to pressure from organised special interests as a means of sustaining current vehicle use levels while boosting the agricultural sector (Oxfam, 2008a). This view is shared by Greenpeace who claim that increasing support for the agricultural sector, energy security and industrial pressure were the key driving forces behind existing biofuels policy, and climate change was used to mask these incentives.

4.7 WWF take a different approach to the emerging biofuels markets and advocacy in general. Instead of inhibiting further development of the sector, WWF see their role as trying to improve the sustainability of the biofuels industry as it emerges. In light of this, WWF is calling for stringent and mandatory sustainability criteria to be put in place that include minimum performance levels (including a 60 per cent benchmark for greenhouse gas savings), and social and environmental standards. In terms of the development of such standards, WWF is advocating the UK metastandard, a feature of the RTFO, as one of the best models at present if forcefully implemented with mandatory reporting. Until stringent and mandatory criteria are in place, WWF is calling for a slowdown in the pursuit of higher targets, as outlined by the Gallagher Review

(Renewable Fuels Agency, 2008), or the targets to be broken down and assigned to different renewable sources (including wind, solar and electrification). However, it emphasises the need to combine these measures with efforts to actively manage energy demand, such as increasing congestion charges and promoting electric vehicles (WWF, 2008a).

4.8 WWF openly supports the use of taxes, incentives and standards to achieve renewable energy targets, providing they are met using the most energy efficient technologies and not just the most attainable. In line with this, WWF-UK concedes that the UK government should insist all downstream companies know the provenance of their feedstock(s) and become active participants in the roundtables for the feedstock(s) they are using, for instance the Roundtable for Sustainable Palm Oil or the Roundtable for Responsible Soya. According to WWF, this will, in turn, force companies in other regions to adopt rigorous sustainability standards, particularly if they are looking to supply European markets, e.g. Brazil (WWF, 2008b). Thus, WWF sees its role as trying to engage with the companies involved in the emerging sector, but like Greenpeace, it foresees electrification of the transport sector in the medium to long-term (WWF, 2008a).

4.9 Interestingly, in all the debate and policy positions put forward by the different NGOs, the need to reduce human dependence on oil and oil-based products in light of dwindling stocks was not considered in formulating policy statements and positions.

> *"We have started to think about high oil prices, and beginning to think about whether the poor would be better or worse off with biofuels.*
>
> *I haven't really considered the peak oil issue. Our research team is only just beginning to think about that issue, what it might mean for poor countries, and the global political economy. But our thinking is not very far advanced on this."* Spokesperson, NGO 3.

4.10 Instead, most focused on climate change as the key driver behind European targets, and on rural development to a lesser extent. In doing so, they ignore a major driver behind the pursuit of renewable fuels in regions outside Europe, particularly in the transport sector where biofuels offer the only viable alternative to non-renewables as a liquid transport fuel at present.

4.11 This is likely to become an even greater force in the future as countries, like Poland, consider returning to their vast coal supply in the face of dwindling oil stocks, threatening ecological catastrophe (Vidal, 2008). The IEA predict an energy gap between supply and demand of between 10 and 15% (IEA, 2008, 2009), and the more recent Uppsala model accentuated this threat by suggesting that oil depletion may be more rapid still (Aleklett et al., 2009). Moreover, the positioning of most NGOs in the controversies surrounding land-use single out biofuels, even though it is widely recognised that agriculture, and increasing demands for food, present a more significant threat to climate change, contributing two and a half times the greenhouse gas emissions of global transport (World Resources Institute, 2005; IPCC, 2007). The NGOs recognise that they are narrowing down their focus on biofuels, because, opportunistically, they can exercise more lobby-power in influencing new, and politically constructed, markets:

> *"Biofuels is a new issue. It is quite hard to crack problems that have been going on for decades, but as biofuels is a new issue, it's easier to tackle. It is where the politics and corporate interests, and political confirmation of institutions over biofuels is more unstructured. We have more leverage over biofuels."* Spokesperson, NGO 1.
>
> "*We're not blaming biofuels as the only reason why palm oil is expanding, but it is an additional demand and it is a demand we have a choice over because, well, with food it is very difficult to kind of limit it as a resource. But biofuels is something we are setting targets for. It is almost an unnatural market we're creating."* Spokesperson, NGO 2.

Consortiums, affiliations and conflicts

4.12 NGOs invest a great deal in establishing an identity and differentiating themselves from each other, particularly by the weight they put on different issues (Ansell et al., 2006). But at the same time they recognise the benefits of cooperative campaigns. In forming alliances compromises are often made, but NGOs are aware of the impact that developing a common lobbying position can have on policy-makers. Their collective weight derives from combined strengths, shared expertise and workload, and access to new political areas (Jordan & Tuijl, 2000; Hudson, 2002). The full force of lobbying campaigns stemming from NGO policy alliances has been demonstrated during the biofuels debate.

> *"We're talking to a lot of other organisations all the time. Obviously when you see that your policies very much agree then you try to work together."* Spokesperson, NGO 2.

4.13 Early in 2007, five of the most influential NGOs united in a powerful media campaign calling for what they termed 'green fuels'. Greenpeace, FoE, Oxfam, WWF and the RSPB put pressure on the UK government to implement rigorous sustainability criteria (including minimum greenhouse gas savings) as part of the RTFO (WWF, 2007a; WWF, 2007b). This was followed in May 2007 by a politically powerful advertisement placed in several national newspapers featuring an iconic image of an orang-utan with a petrol pump directed at its head imitating a gun. The advert read 'Tell the Government to choose the right biofuel or the orang-utan gets it'. The advertisement was accompanied by a similarly striking video-clip (see http://www.dailymotion.com/video/x2gyec_deforestation-biodiesel_animals). The accompanying text, however, did not call for a moratorium on biofuels, but for strict and compulsory controls to be implemented by governments in order to effectively tackle climate change. It also exhorted the UK government to combine biofuels with other efforts to tackle climate change, such as vehicle efficiency (Greenpeace, 2007a; WWF, 2007a). This carefully worded text was a precondition for WWF signing the consortium agreement, so when the campaign message became stronger, WWF withdrew (from interviews).

Source. Greenpeace website (http://www.greenpeace.org.uk/ blog/climate/ biofuels-green-dream-or-climate-change-nightmare-20070509)

4.14 The consortium was UK-based to begin with. However, once the European bodies became involved, particularly FoE's strong European network, the consortium decided that sustainability standards were no longer enough, and began calling for a moratorium. At this point, WWF withdrew from the consortium. This move, combined with existing industrial alliances, elicited criticism from the other NGOs. The consortium or 'green coalition' (as termed by the media) continued to release joint statements and media briefs in 2008 in the absence of WWF, including publishing responses to the Gallagher Review and target setting in Europe and the UK. During this time, the coalition members continued to release statements independently challenging government targets and incentives. Prior to the publication of the UK RTFO, in February 2008, the RSPB took out full page adverts in two national newspapers calling for the RTFO to be postponed until the greenhouse gas benefits of biofuels could be proven (RSPB, 2008d). In July 2008, Robert Bailey of Oxfam wrote a scathing article in the *Guardian* attacking the UK government's motivation to pursue biofuels. Bailey claimed that climate change is just being used to mask the real drivers behind biofuels targets; profit, industry pressure and farm subsidies (Bailey, 2008).

4.15 Oxfam's emphasis on development and alleviating poverty has led them to acknowledge the potential benefits of biofuels, particularly in low income rural areas, creating tension with other consortium members. Their concern stems from the setting of targets and policy development in the EU and the US that could alleviate the potential economic benefits for poor rural communities. Oxfam are now beginning to explore the rights of access to fuels and energy, including oil, particularly for developing countries. If Oxfam argue that access to energy, and indeed oil, is a basic human right, this could lead to further conflicts with environmental NGOs.

4.16 Despite criticism from other NGOs, WWF have been actively engaging with industry in the setting up of roundtables for sustainable resource use. These coalitions were constructed with the explicit aim of ensuring the social and environmental sustainability of markets surrounding certain natural resources. As the biofuels industry emerged as another resource user, so the key players were invited to become roundtable members. The Roundtable for Sustainable Palm Oil, for example, now has over 160 full

members, including palm oil producers and consumers, food companies, banks and representatives of civil society. In 2005, it passed the first voluntary certification scheme for the sustainable use of palm oil that included both social and ecological criteria (WWF Germany, 2007). However, the roundtable has been heavily criticised by other NGOs (FoE Netherlands, 2010). Greenpeace, for instance, claims that this could just become a form of 'greenwash' to hide the damage caused by the palm oil industry (Greenpeace, 2009b). WWF, however, insists that by forming strategic alliances with industry (that have strong lobbying power and resources), it has strengthened its campaign for a sustainable industry, and although compromises have to be made as part of the process, the roundtables have succeeded in establishing effective sustainability criteria that stand to be adopted by industry.

The impact of the NGO campaigns

> *"In Europe as well, NGOs are taking a very strong position….*
> *The NGOs meet all the actors, like any lobby group, they will meet us, they will meet with our cabinet, they will meet members of Parliament, they will participate in the consultation process…It is difficult to say where they have most influence. But of course, it's important because if all NGOs are seen to be against biofuels, it must have an impact."*
> Spokesperson, DG Environment.

> "*I'm sure NGOs, like other lobby groups, certainly have impacts, not specifically on the commission, but on general policy.*
> *The NGOs have benefitted from the increase in food prices, because certainly during that period they were influential in the Parliament.*
> *Certainly NGOs have an effect. They have underestimated their influence, and they still underestimate their influence."* Spokesperson, DG Transport and Energy.

4.17 Assessing the level of impact directly arising from NGO campaigns is a matter of judgement: it is hard to point to this or that policy as a direct consequence of NGO intervention. In many ways, they constitute part of the environment of government policy-making. Although an obvious point, NGO lobbying, on the whole, has been primarily directed at those government policies involved in politically instituting markets: the mandates, the targets, and the sustainability regulations. Their aim has been to influence governmental policy-making, rather than directly to impinge on the activities of the companies involved, or even to address consumer attitudes to biofuels. It is clear that they have an identifiable influence at the level of the UK government, as well as at European policy level, on biofuels. In general, from interviews conducted with senior officials in the UK government (Department of Transport, DEFRA, DTI) and EU level (DG ENV, DG TREN), it can be said with some confidence that heavy lobbying from NGOs in Europe has led to a substantial slowdown in the biofuels markets, large-scale research into the development of biofuels, revisions in targets and incentives for biofuel adoption, and the introduction of sustainability regulation applied to biofuels.

4.18 In the UK, the impact has been most visible. As reported in the *Financial Times* (6 November, 2007), the Gallagher Review, led by the Renewable Fuels Agency, was initiated in large part as a consequence of pressure from environmental NGOs. This resulted in the former Transport Minister, Ruth Kelly's, notorious orang-utan statement at the dispatch box in the House of Commons, taken directly from NGO campaign material. The extremely hurried Gallagher Review recommended that the target levels set for the UK adoption of biofuels should be lowered from the original target of 5 per cent in 2010, with very limited growth thereafter. Ruth Kelly responded: 'I agree with Prof Gallagher that we should take a precautionary approach over the next few years, until we are clearer about the wider effects on the environment' (Financial Times, 8 July, 2008). As a consequence, the actual UK replacement of petrol/diesel with biofuels stood at 1 per cent in 2007 (UK Department for Transport, 2008), far below Germany (7.3 per cent; Government of Germany, 2008), France (3.57 per cent; French Authorities, 2008), and Sweden (4 per cent; Swedish Government, 2008). In spite of adopting a high ecological political tone, the UK government is amongst the least likely to fulfil targets for reduction of greenhouse gas emissions from transport of all the major economies in Europe.

4.19 At a European level, after much debate, the Renewable Energy Directive and Fuel Quality Directive (EC Renewable Energy Directive, 2009) introduced two new major revisions in the wake of the controversies and political campaigns by NGOs. Firstly, targets for the replacement of conventional transport energy previously identified as a percentage of biofuels were changed into percentages of renewable energy, so reducing the promotion of biofuels by allowing alternative technologies. Secondly, biofuels were uniquely selected for regulation by a new set of sustainability criteria, with increasing requirements for the level of greenhouse gas savings by 2017. No other form of fuel or energy, or indeed cosmetic or food product, is subject to this regulation regime. From interviews, it was clear that the NGOs played a significant role through lobbying Green Parties in the European Parliament to achieve these revisions.

4.20 The shift in policy in a number of member states (including pressure for sustainability criteria) has resulted in a Europe-wide slowdown, and an emergent conflict between DG-TREN (Directorate General for Energy and Transport) and DG ENV (Directorate General for the Environment) of the EC, where the views of the latter are in line with NGO campaign messages. Not all of these developments can be directly attributed to the success of NGO campaigns in Europe, but they are certain to have had a significant effect in all of these areas and many more.

4.21 In accounting for the impact of NGOs on limiting the adoption of biofuels in Europe, it is worth returning to the contrast between politically instituted markets and market-led markets, notably food. The land-use change derived from production of food and from increasing demands for food is recognised to account for at least two and a half times the volume of greenhouse gas emissions than total global petrol consumption (World Resources Institute, 2005; IPCC, 2007). In the case of the expansion of soy production in South America, or palm oil production in Indonesia, the major driver has been use for food (human and animal) and cosmetics. However, the biofuels industry alone is being held to account for the deforestation and habitat destruction stemming from the oil palm and soy industries. If only 2 per cent of food crops are currently entering the biofuels market (a substantial portion of which comprises US corn) and less than 1 per cent of land globally is being used to grow biofuels feedstocks (EREC, 2008), it seems unlikely that the biofuels sector is a substantial contributor to global deforestation, and instead the food industry should be held to account. But the food industry and, indeed, the cosmetics industry are driven by market demand, not demand created by governmental targets and mandates.

Source. Cooking the Climate (Greenpeace, 2007b)

4.22 Greenpeace acknowledges this distortion, but claimed in interview that biofuels are an easier target than Flora margarine or Dove soap, particularly when governments can be held directly responsible for their promotion. Political campaigns against popular consumer commodities produced by farmers and multinationals are fraught with difficulty, unless they present easy scare stories or require strong political regulation, as was the case with GM foods. However, by selectively targeting biofuels as responsible for unsustainable consumption and deforestation, NGOs misdirect political attention from developing a comprehensive strategy on the sustainability of land use for all purposes. If sustainable land use is the core problem, then what is needed is a global land use strategy that requires zero deforestation and encompasses all land conversion pressures, including food, cosmetics and materials sectors, ensuring fallow or idle land is prioritised in all cultivation efforts. NGOs, therefore, have the capacity to promote or demote public debate based on the images and messages featured in their campaigns. By taking the politically soft target of biofuels, and by pursuing the easier negative politics of stopping technological solutions, NGOs stand to promote their own image rather than advance long-term global public interest. Politically instituted markets are already politicised, whereas the global public interest clearly needs to embrace much wider issues, and to politicise the unpoliticised markets and systems of provision that support future prospects of enhanced economic prosperity and well-being.

Conclusion: NGOs and the political institution of markets

5.1 In Brazil, largely as a consequence of the political response to the oil shocks of the 1970s and subsequent high price of petrol, the growth of biofuel production has been strongly promoted by the state. Bioethanol consumption exceeds 50 per cent of transport fuel, and over 90 per cent of all new vehicles are now fully flex-fuel. In the USA, concerns over energy security, and under Obama a greater acceptance of the need to reduce greenhouse gas emissions, has resulted in ambitious targets for biofuels, supported by state incentives, of up to 30 per cent of transport fuel by 2030. In Europe, although initially strongly supported by many governments of the EU, the targets are much more modest, and have been reduced, in some countries quite significantly. Biofuels are now subject to tighter sustainability regulation than any other source of energy or commodity. The European target of 5 per cent by 2010 is almost certainly not going to be achieved, and a target of 10 per cent renewable energy by 2020 only includes biofuels as one possible component (EC Renewable Energy Directive, 2009). Under this political regime, the EU is destined to become the low-biofuel region of the world, increasing its reliance on an as yet undelivered programme of green and nuclear electricity. The development in Europe of a second-generation biodiesel lags significantly behind attempts to develop second-generation bioethanol in the USA. There is no evidence of a development of electric vehicles for use other than primarily intra-urban light vehicles, certainly not for long distance HGVs. In short, Europe is heading towards being a more fossil-fuel dependent region than the USA or Brazil.

5.2 In this paper, we have examined the role of NGOs in influencing the political institution of biofuels markets in Europe. The development of NGO policies have been analysed, and it has been argued that in many cases these have been driven more by political opportunities for influence than by rigorous assessment of the scientific evidence. We then turned to explore the processes of policy positioning, and the formation of a powerful consortium to increase their lobby-power. Finally, the impact of NGO campaigning was assessed for its effect on UK national government and the European Commission. Although, as we have shown, the NGOs are far from being a homogenous group (with Greenpeace and WWF taking quite different stances and pursuing different political strategies), there was clear evidence of their considerable impact, as one influence among others. Policy changes, review processes, target reductions, and novel sustainability regulation were all found, *at least in part*, to have been a consequence of NGO campaigning.

5.3 The 'new economic sociology' has developed an analysis of markets emphasising the 'embeddedness' of markets in social, political and cultural phenomena (Granovetter, 1985; Krippner, 2001; Block, 2003). In this paper, we have taken a different strand of Polanyian analysis, that of 'instituted economic process', to explore political modes of instituting markets (Harvey et al., 2007; Harvey, 2010). In particular, we have argued that politically instituted markets open up the possibilities for political intervention from non-governmental or party-political actors, in ways that markets that emerge commercially through innovation and consumer demand do not. Significantly, in Europe the use of mandated markets and political targets for biofuel consumption has been driven by an overriding political objective of reducing greenhouse emissions. This environmentalist objective adopted by governments undoubtedly made the politics of the market more open to environmentalist lobbying from NGOs. Biofuels were a 'soft target', and seen to be such. Thus, in spite of their greater importance than biofuels for both global climate change and poverty alleviation, changes in land use for food production from agriculture have been resistant to political intervention, whereas biofuels were explicitly chosen as an easy political target.

5.4 This paper has focused on quite a narrow instance of politically instituted markets and the nature of the social and political forces that shape them. It could be argued that global climate change, petro-chemical depletion and peak oil, as well as the use of land and water as finite global resources for many competing claims, all present significant challenges for which market-led innovation and commercially emergent markets characteristic of historical industrial capitalism are wholly inadequate (Harvey and McMeekin, 2009). In this event, politically instituted markets, such as the one for biofuels, are examples of the emergence of new forms of governance in capitalist political economies. We can expect the politicisation of the previously unpoliticised dimensions of the economy, in which many social actors will play a significant role. If that becomes the norm, issues of democratic legitimacy and public scrutiny of those actors and their policies will become ever more pressing.

Notes

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