

Jenny Cameron & Jarra Hicks, 2014, 'Performative Research for a Climate Politics of Hope: Rethinking Geographic Scale, 'Impact' Scale and Markets', *Antipode* 46(1), 53-71.

#### CONTACT DETAILS

Jenny Cameron  
Discipline of Geography and Environmental Studies  
School of Environmental and Life Sciences  
University of Newcastle  
Callaghan, NSW, 2308  
Australia

Jarra Hicks  
Community Power Agency  
Armidale, NSW, 2350  
Australia

#### ABSTRACT

Research is increasingly recognised as a generative and performative practice that contributes to shaping the world we come to live in. Thus part of the research 'process' involves being explicit about the worlds we want our research to contribute to and reflecting on how the concepts we use might help or inhibit this agenda. This paper is based on our commitment to strengthening the contributions that grassroots renewable energy initiatives might make to a climate changing world. However, to detect the potential of these initiatives, familiar concepts of scale and markets have to be recast. This paper uses insights from the academic literature and research into grassroots renewable energy initiatives to show how scale and markets can be rethought, thereby making it possible to detect some of the ways that grassroots renewable energy initiatives are helping transform ways of living and working, and building hope in a climate changing world.

#### KEYWORDS

Grassroots Initiatives  
Renewable Energy  
Flat Ontology  
Situated Politics  
Geography of Ubiquity  
Diverse Economies

## Performative Research for a Climate Politics of Hope: Rethinking Geographic Scale, ‘Impact’ Scale and Markets

### INTRODUCTION

As a performative practice, academic research *is* activism; it participates in bringing new realities into being. Our role as academics has thus dramatically changed. We are less required to function as critics who excavate and assess what has already occurred, and more and more pushed to adopt the stance of experimental researchers, opening to what can be learned from what is happening on the ground. To put this in the form of a mandate, we are being called to read the potentially positive futures barely visible in the present order of things, and to imagine how to strengthen and move them along. (Gibson-Graham and Roelvink 2009: 342, original emphasis)

The reality of climate change is starting to hit home—and in increasingly embodied ways. We have worked on this paper over a series of blistering Australian summers, most recently in January 2013 as temperatures spiked and records fell. Although the evening news has been dominated by updates on uncontained blazes that are sweeping the land, there is still coverage of unprecedented climate events in other parts of the globe. The landmark roundabout in central Jakarta is underwater for the first time as a result of extreme flooding. Palestine is blanketed with snow as a severe storm moves across the eastern Mediterranean and the Middle East. With respected government authorities, such as Australia’s Climate Commission (2013), now linking the severity and duration of these types of extreme events to climate change, we are faced with the question as researchers of what to do? What role is there for the social sciences in the climate changing world of the twenty-first century?

To address these questions, our starting point is the understanding that research is a generative and performative practice that contributes to shaping the world we come to live in. Social scientists are familiar with the idea that some forms of research such as solidarity, participatory and action research have an explicit political and activist agenda (e.g. The Autonomous Geographies Collective 2010). However, it is increasingly being recognised that *all* social research is political and world-shaping—whether or not it purports to be. Law and Urry, for example, argue that “social inquiry and its methods are productive: they (help to) *make* social realities and social worlds. They do not simply describe the world as it is, but also enact it” (2004: 390–391, original emphasis; see also Law 2004a). So even research that is supposedly ‘only’ or ‘merely’ descriptive uses theoretical framings, deploys concepts, incorporates methods and results in findings that combine with existing bodies of knowledge to help to make some worlds more real and more apparent, and others less (Law and Urry 2004: 396). If we acknowledge that research is generative and performative then our research practice has to incorporate political and ethical questions about the worlds we want our research to help bring into being (ibid: 2004: 396) and the possibilities we want to open up (Gibson-Graham 2008: 615). And we also need to reflect on the concepts we use and how these might help or inhibit worlds from being made.<sup>1</sup>

In this paper we are interested in the possibilities associated with grassroots renewable energy initiatives, and particularly the potential for these initiatives to change not just the day-to-day lives of a handful of committed activists but contribute to the broader societal transformations that these climate changing times call for. This may seem ambitious. Grassroots renewable energy initiatives such as the community-owned wind farms, volunteer-run purchasing programs and solar cooperatives that are the focus of this paper are often seen as marginal and local endeavours that cannot match the global scale of the climate challenge (see also Ireland and McKinnon 2013). This is a common framing of grassroots initiatives, including the furniture-recycling social enterprises, organic gardening cooperatives, low-impact housing developments, farmers' markets and community composting schemes that Seyfang and Smith (2007) describe as "grassroots action for sustainable development" (585). Grassroots initiatives of this type can be easily overlooked or marginalised when seeking out those who might contribute meaningfully to pressing issues such as climate change.

Our explicitly performative research agenda is to help bring into being a climate changing world in which grassroots renewable energy initiatives are more prevalent and their influence more pervasive. As we will argue in this paper, this is not just because these initiatives have the capacity to reduce greenhouse gas emissions but because they have the potential to transform ways of living and working and generate different socio-economic futures. However, to detect their capacity and potential we need to tune out the "louder worlds" (Law 2004a: 116) that all-too-easily claim our attention and frame our understandings of grassroots initiatives. This means we need to engage with understandings of geographic scale and 'impact' scale which portray grassroots initiatives as too small and too fragmented to exert power and influence. We also need to engage with understandings of markets as the manifestation of neoliberal capitalism which portray grassroots initiatives as easily coopted into existing political and economic structures and systems (Gibson-Graham 2002; Healy 2010). We have political and ethical choices about the worlds we want our research to help build. We can present grassroots renewable energy initiatives in familiar ways that sideline them and diminish their potential, or we can present them in ways that might make their transformative potential more apparent and more real (see also Gibson-Graham 2006a: xxv-xxvi). We opt for the latter.

In the literature on climate change, there is evidence of this framing of grassroots initiatives. With UN Climate Change Conferences producing little progress on a multilateral legally binding agreement, researchers and activists are starting to look elsewhere for action on climate change. Hoffman (2011: 5) argues that a plethora of actors in cities, corporations and civil society are experimenting with ways of addressing climate change, and that these experiments "may represent the best hope for effectively responding to the climate crisis." Dimitrov, an academic and government delegate at recent Climate Change Conferences, argues that even though the progress of international negotiations is disappointing there is a "bigger and brighter picture" (2010: 22) in which a host of entities are contributing to an "energy revolution" and "a fundamental socioeconomic transformation of modern societies" (ibid: 23). In this rethinking of where the action is on climate change, grassroots initiatives are acknowledged as having a role to play and there is now interest in researching the ways

that grassroots initiatives (including those focused on renewable energy) might influence broader societal transformations in a climate changing world (e.g. Middlemiss and Parrish 2010; Seyfang 2010; Seyfang and Smith 2007; Walker et al 2007). By looking beyond international agreements and finding possibilities in unexpected places such as grassroots renewable energy initiatives, we suggest that these researchers are engaged in a ‘climate politics of hope.’

The role of hope in the context of a climate changing world has been taken up by a number of authors (e.g. Vanderheiden 2011; Woodyer and Geoghegan 2012). Against the paralysis and sense of defeat that so-easily arises when the facts and figures on climate change are spelled out,<sup>2</sup> these authors argue that an ethos of hope is needed in order to seek out openings and possibilities. This is a form of hope that “opens a crack in the here and now” (Anderson 2006: 705), focuses our attention on the “margin of manoeuvrability” that is present in every situation (Massumi 2002: 211 & 212), and thereby provides the basis for action (Solnit 2004) or as Massumi puts it “the next step” (2002: 212, see also Dinerstein and Deneulin 2012). For the grassroots renewable energy initiatives that are the focus of this paper, the next step has entailed experimenting with and building renewable energy interventions in the face of governments slow to take concerted action on climate change. For the researchers who we characterise as adopting a climate politics of hope, the next step has entailed seeking out sites of climate action beyond the failure of international negotiations. Here we can see how an ethos of hope intersects with a performative research orientation. Stengers (2002: 245) describes an ethos of hope as “trying to feel what lurks in the interstices” just as an explicitly performative approach to research can involve trying to detect and delineate those faint signals and distant glimmers of other worlds that are already present and that we are committed to making more real (Law 2004a). To be clear, this is not blind faith nor wish fulfilment nor the “naïve optimism of the eco-pollyanna” (Vanderheiden 2011: 108). Acting on hope in order to help bring new worlds into being is a constant struggle with all that the world puts up, from seemingly sedimented institutions such as neoliberalism and capitalism to the pull of forms of critical thinking that valorise “masterful knowing and moralistic judgement” and engender “scepticism and negativity” (Woodyer and Geoghegan 2012: 199).

As outlined above, in this paper we are interested in the transformative potential of grassroots renewable energy initiatives and in making these initiatives more prevalent and their influence more pervasive. However, in order to appreciate what it is that these grassroots initiatives might contribute in a climate changing world we have to broaden ways of thinking about geographic scale, ‘impact’ scale and markets. In what follows, we engage with each of these concepts in turn. We interweave material from academics who are rethinking scale and markets with material from grassroots renewable energy initiatives to explore the transformative potential of renewable grassroots energy initiatives, and the glimmers and signals of a hopeful climate future.<sup>3</sup>

## GEOGRAPHIC SCALE: FROM HIERARCHY TO A FLAT ALTERNATIVE

Scale is familiarly understood as a hierarchy in which the global is located at the top and is followed by national, regional and local scales. Power and influence are presumed to proceed from ‘above’, starting with the global and cascading down one level at a time to shape what happens below. Researchers have highlighted how this understanding is evident in policy and academic debates on climate change (e.g. Aall et al 2007: 84; Bulkeley 2005: 878-9; Hoffman 2011: 5; Okereke et al 2009: 59). The focus is generally on international agreements and negotiations; ‘lower’ levels of government are considered only in relation to international manoeuvring and grassroots initiatives barely make a mention. One reason that this approach is so prevalent is that scalar thinking has become a form of common-sense. It is hard to imagine a world that is not hierarchically ordered from the global to the local with events at the global scale impacting on what happens ‘below.’

This hierarchical view of scale is being challenged by research on climate action. One strategy has been to ‘rescale’ and ‘rehierarchize’ the relationship between different levels by “elevat[ing] local institutions and practices as an arena of influence and reduc[ing] the roles of international and national scales of governance” (Bulkeley 2005: 893; see also Betsill 2007; Betsill and Bulkeley 2006; Bulkeley and Moser 2007). A second, and related strategy, has been to introduce a horizontal element and combine an analysis of scale and networks. For example, Bulkeley (2005) argues that climate action can proceed through networked relationships that destabilize the hierarchical scalar imaginary. This strategy has been used to highlight the role of local authorities in initiatives such as Cities for Climate Protection (Bulkeley 2005) and the importance of networking in grassroots initiatives such as Transition Towns (Bulkeley and Newell 2010; Mason and Whitehead 2012).

This rethinking reflects broader debates about scale, particularly in the geographic literature.<sup>4</sup> It is now widely recognized that scale is not fixed or pre-given but is a social construction used to frame and order the world (Delaney and Leitner 1997; Moore 2008). As a result, researchers have become interested in *how* scale is achieved. Moore describes this research agenda in the following way: “the tendency to partition the social world into hierarchically ordered spatial ‘containers’ is what we want to explain—not explain things with” (2008: 212). Moore also argues that scale should be treated as a category of *practice* (and therefore something to interrogate) rather than a category of *analysis* (and therefore a concept used to interrogate other things). Researchers working in this vein find that power and influence cannot be read-off from “some pre-defined scalar arrangement of power” but are enacted in more fluid ways (Allen and Cochrane 2007: 1171).

A very different research agenda has been to try to side-step scale altogether. This comes from the realization that scale stubbornly shapes understandings of the world—even though it is now generally understood as a social construction. As Moore highlights, there is a tendency to pay lip-service to scale’s social construction but once this is done “[categories such as scale] are treated every bit as real and fixed as ontological givens” (2008: 208). For the chief proponents of this approach, the major problem with scalar thinking is that it acts as a brake

on political possibilities (Marston et al 2005; see also Jones et al 2007; Woodward et al 2010). In the scalar hierarchy, power and influence are presumed to reside in ‘forces’, ‘systems’, ‘logics’ and ‘structures’ that operate at the highest level. As a result, politics becomes disconnected from “the very places where ideas are formed, actions are produced, and relationships are created and maintained” (Marston et al 2005: 427), and is blind to “countless alternate political possibilities and actualities [that] transpire beneath the radar” (Woodward et al 2010: 272; see also 277). For the proponents of a scale-less approach what is needed is a ‘flat ontology’ and an associated ‘situated politics’ that attends to concrete and site-specific actions, and to the possibilities contained therein for making a difference in the world (Woodward et al 2010: 277-8; see also Law 2004b: 25).

Flat ontology has been the focus of considerable debate.<sup>5</sup> For some it means the end of geography (Hoefle 2006). However, others are not so dire in their predictions but see flat ontology as part of a move within the social sciences towards more relational forms of thinking. This is the position taken by Allen (2011: 155) who suggests that flat ontology simply means that outcomes cannot be pre-determined because power and influence are not assumed to operate in a top-down way. Instead each site needs to be interrogated for the interweaving of the relationships and interactions which comprise it. This includes sites of so-called global activity and significance, for as Law reminds us, “the global is situated, specific, and materially constructed in the practices which make each specificity” (2004b: 24).

In this paper we are interested in applying this way of thinking to see what it can reveal about the possibilities offered by grassroots renewable energy initiatives, especially because scalar thinking all too-often marginalises or overlooks these initiatives and their potential contribution to addressing climate change. Ireland and McKinnon (2013) also take this applied approach showing how flat ontology and situated politics help them to detect the ways communities in Bangladesh and Nepal are responding to climate threats through a “rhizomatic array of actions to be valued, fostered and supported” (5). In what follows we put to one side the assumptions about flows of power and influence that characterise scalar thinking, and we explore the site-specific relationships that comprise several grassroots renewable energy initiatives. What is revealed is that possibilities for action on climate change are latent in any situation, even in situations where blockages and obstacles seem prevalent.

Climate Action Newcastle (CAN) is a volunteer-run non-profit organization based in Newcastle (Australia).<sup>6</sup> CAN has around 400 members and aims to secure a clean energy and low carbon future for the area through activities that include lobbying, awareness raising, direct action and practical projects. One practical project developed in 2008 was a solar panel bulk-buy scheme called ‘Newcastle’s Going Solar.’ CAN’s members and volunteers developed the scheme because of their frustration with government inaction on climate change, and their commitment to “stop talking and start doing” (CAN Activist 2009). The scheme capitalized on a federal government program, the Solar Homes and Communities program,<sup>7</sup> that paid an \$8,000 rebate to households that installed solar photovoltaic panels, an attractive enough rebate that 500 households had solar panels installed through CAN’s bulk-

buy scheme. CAN appointed another grassroots renewable energy initiative, Sydney Energy Cooperative (SEC), as one of the installers of solar panels. This helped SEC subsidize its initiative of providing low-income households with a range of renewable energy services, including solar panel installations, energy audits and energy efficiency retrofitting. In turn, in the first round of installations, SEC donated \$200 from each installation to environment and climate action groups based in Newcastle and the surrounding Hunter Valley. Some of the groups who benefited including Dan the Bike Man (a well-known identity in Newcastle who reassembles bikes for sale and offers bicycle workshops from his suburban house), Hunter Community Environment Centre and Rising Tide Newcastle. A further \$200 per installation was donated to CAN, with the result that CAN raised \$60,000 through the scheme. These funds were used by CAN for lobbying and direct action activities, including contributing to Climate Action Network Australia (which in turn is part of the international Climate Action Network). Just this short description of CAN's 'Newcastle's Going Solar' scheme provides an insight into the way it interacted with a host of other sites (see Figure 1) and the multitude of political possibilities that were present, whether helping Dan the Bike Man, assisting low-income households gain access to renewable energy services or contributing to the lobbying efforts of the internationally-based Climate Action Network.

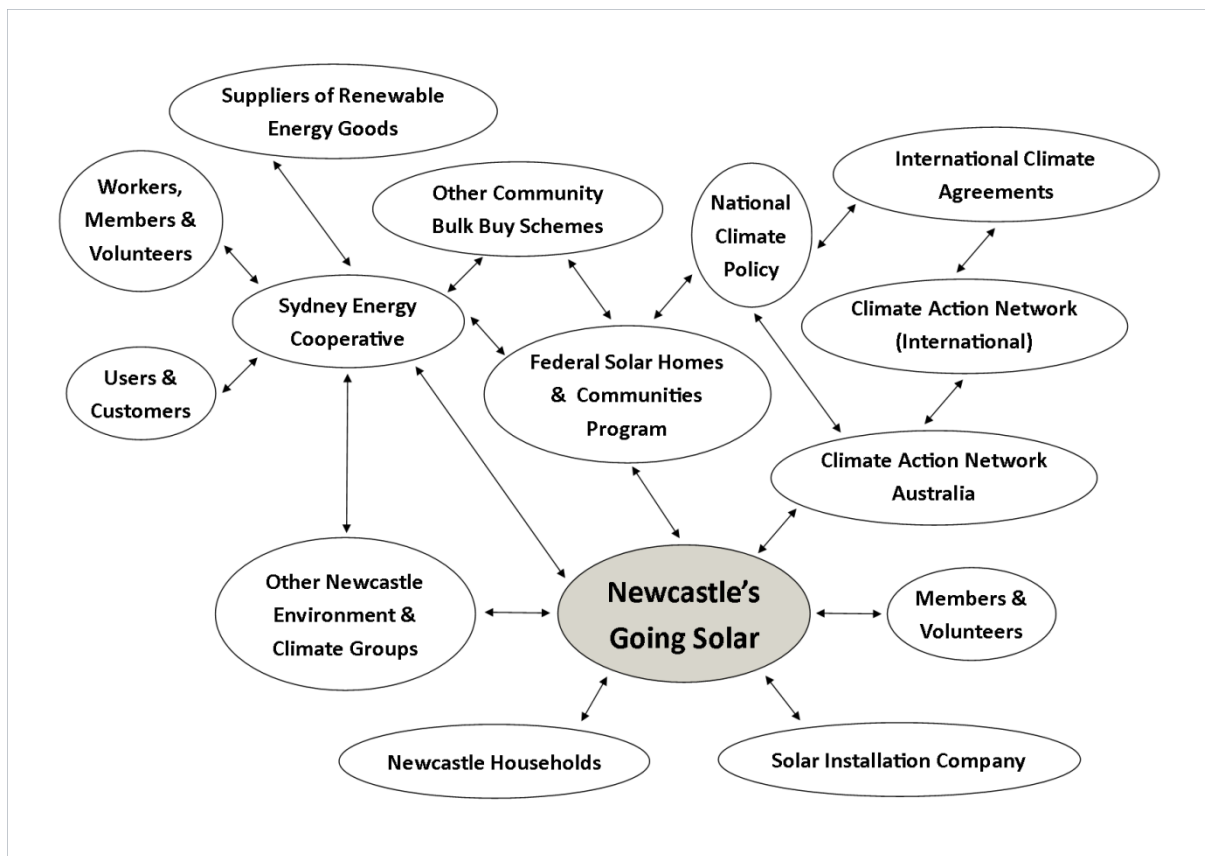


Figure 1: Interactions between CAN's 'Newcastle's Going Solar' and other sites

The interactions that comprise a site—and the political possibilities that are present—are constantly changing. For example, in 2009 the federal government's Solar Homes and Communities program (with the \$8,000 rebate) was replaced with the Renewable Energy

Certificates program whereby households that install solar panels receive certificates that can be sold on the national energy market. Essentially the certificates are bought and surrendered by corporations (such as electricity retailers) to verify their renewable energy supply or to offset their carbon pollution. This change had little impact on CAN as they were already winding down the bulk-buy scheme when the change was announced. However, Sydney Energy Cooperative (SEC) planned to continue installing solar panels but with the switch to Renewable Energy Certificates they re-evaluated these plans. SEC determined that the certificates did little to reduce greenhouse gas emissions and decided not to install solar panels under the new program, even though this meant losing an important income stream. In the hierarchical scalar imaginary, it would be easy to say that power and influence at the higher level flowed down to negatively impact the lower level. But flat ontology focuses attention on the political possibilities that are constantly emerging through the interweaving of the relationships and interactions that comprise sites. Indeed, this focus on political openings is how SEC responded to the program change. Rather than seeing the program change as a way in which the federal government could squelch the efforts of a grassroots initiative, SEC used the change as an opportunity to ‘take stock.’ As one member describes, SEC “got too caught up on doing solar ... [and] had less time to do the things that we wanted to do to make ourselves different.” At the time of the interview in 2009, SEC was “looking forward to balancing our activities out a bit and do[ing] a few more of those things that we envisioned doing.”

This is not to say that new pathways are easy to forge. Marston et al remind us that resistances and blockages are encountered far more commonly than “utter openness” (2005: 424). Sometimes these resistances and blockages are material; however, sometimes they exist in the “doings and sayings” (2005: 423) that result from stubborn scalar thinking. This was the experience of another grassroots renewable energy initiative, Hepburn Community Wind Park Co-operative. Hepburn Wind was established in 2005 to build Australia’s first community-owned wind farm (in Hepburn, in rural Victoria). Initially, the cooperative was looking for substantial funding support from state and federal governments. But after many months of hard work and many pages of submissions, they managed to secure only eight per cent (or \$970,000) of the project costs through one government grant (the Victorian Government’s Renewable Energy Support Fund). Initially, Hepburn Wind saw this as a major impediment and disappointment, but in retrospect they recognize that it provided an opportunity for the cooperative to build its membership. As a result, Hepburn Wind has 1,900 members. In line with its cooperative rule, over half of Hepburn Wind’s members are local residents who were encouraged to join with minimum shares for local members being \$100 (as opposed to the minimum of \$1,000 for non-local members). It is likely that the extent of both local and non-local ownership would not have been achieved except for the perceived ‘blockage’ of government.

Instead of adopting scalar thinking in which the terrain of possible action on climate change is determined by forces from above, Climate Action Newcastle, Sydney Energy Cooperative and Hepburn Wind have all seen the present as “an open threshold” (Massumi 2002: 212) in which grassroots initiatives can pioneer action on climate change. Certainly, they have



harnessed federal-level funding (in the case of Climate Action Newcastle and Sydney Energy Cooperative) or incorporated state-level funding (in the case of Hepburn Wind). But we cannot say with any certainty that this funding was any more or less essential than any of the other interactions and relationships that comprise each initiative. Even when met by apparent obstacles ‘from above’ as we see in the example of Sydney Energy Cooperative and Hepburn Wind, there is a “margin of manoeuvrability” (Massumi 2002: 212). These initiatives are prepared to seek out “the ‘where we might be able to go and what we might be able to do’ in every present situation” (ibid: 212). The stance of these initiatives resonates with the discussion by Garud and Karnøe (2003) on the development of the Danish wind industry. Garud and Karnøe argue that despite limited resources the industry successfully developed through a process of ‘bricolage,’ a term which for them connotes “resourcefulness and improvisation” (278). We would argue that bricolage, manoeuvrability and a willingness to take action in the first place (in the absence of explicit support ‘from above’) are not just consistent with a climate politics of hope but are only possible when thinking and action are not limited by a hierarchical scalar imaginary.

The notion of flat ontology opens out the political landscape by side-stepping the scalar hierarchy and helping us to see possibilities for action that are latent in any site or situation, including grassroots sites. This is not to claim that all sites share the same degree of possibility; resources and capacity are not evenly distributed. However, just as we are arguing that a flat ontology works against the idea that power and influence are concentrated ‘at the top’, so too it works against the idea that power and influence are absent from ‘lower levels.’ The ability to enact power and influence, and mobilize resources and capacity depends on the interweaving of relations and interactions in each site—we cannot assume in advance what may or may not be possible. For example, in their examination of grassroots initiatives, Middlemiss and Parrish (2010) found that several Native American tribes with a history of marginalization were nevertheless able to act on their concerns about energy generation and install industrial-scale wind turbines. Just as Hepburn Wind encountered obstacles to manoeuvre around, so too the Intertribal Council on Utility Policy confronted challenges (particularly funding challenges) which they met with resourcefulness and innovation. A hopeful stance does not deny that there are seemingly insurmountable challenges, but hope is a resource that can be drawn upon for finding ways through these challenges.<sup>8</sup>

## IMPACT SCALE: FROM MAXIMISATION TO MULTIPLICATION

Along with hierarchical scale there is a second way of thinking about scale that can stymie a climate politics of hope that is interested in the transformative potential of grassroots initiatives. This is scale thought of in terms of size and impact. The familiar assumption is that the bigger something is the more impact it has. ‘Impact scale’ can correspond to geographic scale with ‘global’ initiatives thought to have more impact than ‘local’ initiatives. But impact scale can also operate outside of a scalar hierarchy by focusing on the relative size and impact of things. For example, in 2004, only 3.6 per cent of total UK energy was generated from renewable sources, and community-owned initiatives were only a small part

of this (Walker et al 2007: 65; Walker 2008: 4403). On this basis, small grassroots initiatives can be easily dismissed as being of negligible importance. Even those working in the area are concerned that their ability to make an impact goes nowhere near matching the extent of the problem, as an activist from Rainbow Energy Company (which we will discuss in more detail in the next section) despaired:

[T]he whole way that the planet is run is basically wrong, but there's not very much I can do about it other than write about it or do talks about it. It's too big a game for me personally to be able to do anything about it.

Given the 'scale' of the climate crisis it can be difficult to sustain a climate politics of hope, let only a climate politics of hope that focuses on seemingly inconsequential grassroots endeavours.

Researchers who are interested in the contribution of grassroots initiatives to societal transformation have had to contend with this version of scale. Overall, the response has been to argue for "a more holistic evaluative frame" (Walker et al 2007: 78) that takes into account more than just the direct and quantitative contribution of grassroots initiatives to the amount of renewable energy generated. The emphasis instead has been on the ways that grassroots initiatives might contribute to broader societal transformations. One research avenue has been to explore grassroots initiatives as niches in which technological, social and economic innovations are developed. The challenge, then, is to find ways of translating these innovations into more mainstream settings, particularly through a process of 'scaling-up' (Seyfang and Smith 2007). Here the assumption is that small, grassroots initiatives have impact if they can achieve more general application. For example, grassroots innovators in the Danish wind industry are seen as successful because of their contribution to the creation of "a world-leading wind industry" (Smith 2003: 133). 'Scale-up' is certainly one way that grassroots initiatives can have an impact, but researchers have identified other ways of achieving impact. For example, Walker et al ask "Are there impacts more subtle, distant in space and time or accumulative, which a multiplicity of small projects can help realize?" (2007: 78-79).

The idea that change can be produced by a multiplicity of small initiatives intersects with recent work that explores how social transformations occur not just through large-scale and coordinated political action, but also through multiplying and diversifying small endeavors. Second-wave feminism is characteristic. As Gibson-Graham (2002: 25-36) point out, there was no coordinated or unified feminist political organisation or strategy; instead, there was a multiplicity and diversity of small-scale and situated actions. Second-wave feminism was based on "a geography of ubiquity" (Healy 2009: 341) that resulted in the relatively rapid and widespread transformation of women's lives across parts of the globe (and of course these struggles continue). Similarly, Ireland and McKinnon (2003) propose that the initiatives being developed by communities in Bangladesh and Nepal signal "an accumulation of local and diverse practices that, although disparate and disconnected, may be building towards a significant response to what is a global challenge" (7, see also Rose 2013). In the same way, we can position the initiatives that are being developed by groups such as Climate Action Newcastle, Sydney Energy Cooperative and Hepburn Wind as part of the multiple, small-

scale and situated actions that people are taking to help address climate change. Impact can be achieved through an accumulation of small initiatives. By April 2009, CAN's bulk-buy scheme had contributed ten per cent of grid-connected solar panel installations in NSW under the Solar Homes and Communities program. This is perhaps all the more impressive given that the scheme was developed and run by CAN volunteers. This effort helped contribute to an amassing of household solar panels which took governments and energy providers by surprise and has altered the national energy market such that no new coal-fired baseload power station will be required in Australia until at least 2020 (Australian Energy Market Operator 2012; Borschmann 2012).

Along with this measurable accumulative impact, there may also be more subtle and distant impacts that Walker et al (above) also refer to. In retrospect we can see the extent to which feminism over only a generation or two transformed understandings and possibilities for women. So too, grassroots initiatives might also change understandings and possibilities of the energy landscape by working on "hearts and minds" and having "wider catalytic effects" (Walker and Devine-Wright 2008: 499). We should not underestimate the potential contribution of grassroots initiatives to the long-term and "fundamental socioeconomic transformation of modern societies" that Dimitrov (2010: 23) argues is taking place.

So if small-scale and situated actions can potentially transform societies through 'a geography of ubiquity,' how might grassroots renewable energy projects be multiplied? One way is through the efforts of those involved. For example, one of the aims of Hepburn Community Wind Park Co-operative is to be a model for other communities, as one member explains, "[a] very strong driving influence for me is that we are developing a model for this country that other communities will be able to take ... they'll have a way of engaging in what's a very complex issue."<sup>9</sup> Embark, a renewable energy support organisation that grew out of the Hepburn experience, is in contact with over 60 local groups across Australia helping them investigate the feasibility of similar initiatives. Currently, Hepburn Wind staff and volunteers are busy running tours to showcase the wind park to interested groups and individuals. Hepburn Wind itself was inspired by examples of community and cooperative wind farms from elsewhere, particularly the UK and Denmark. In this way, situated actions developed in one location multiply by being applied and adapted in other locations (see also Hicks and Ison 2011). Thus we contend that even though the activist from Rainbow Energy Company, above, despairs that there's not much he can do "other than write about it or do talks about it," writing and talking are critical for broadcasting, amplifying and making more visible the innovations and 'open thresholds' that already exist in the world.

The idea that writing and talking are political strategies for multiplying and proliferating small possibilities resonates with the understanding that research is a performative practice. Just as the activist from Rainbow Energy Company writes and talks about renewable energy options, and staff and volunteers from Hepburn Wind demonstrate grassroots possibilities to others who are interested, so too as academic researchers we can contribute by engaging in research as a performative practice that might "multiply the presence of something better" (Anderson 2006: 706, see also Cameron 2011).

## ECONOMICS: FROM NEOLIBERAL MARKETS TO ETHICAL ECONOMIES

We have argued that by rethinking geographic and impact scale the innovative contribution of grassroots initiatives to a climate politics of hope becomes more visible. However, there is a third way of thinking to be confronted. This is economic thinking that conflates markets with neoliberalism and capitalism, and assumes that markets operate according to principles of “[c]ompetition rather than co-operation, self-interest rather than collective good” (Smith 2005: 15). The relatively recent rise of market-based approaches to manage climate change is taken as evidence of the growing hold of neoliberalism and capitalism (Matthews and Patterson 2005).<sup>10</sup> When grassroots initiatives participate in these markets they can be easily dismissed as being coopted into the ongoing neoliberalization of the environment (e.g. Lohmann 2006). But what if markets could operate according to other principles? What if markets were not conflated with neoliberalism and capitalism? What if grassroots initiatives participated in markets in innovative ways by prioritising ethical concerns?

In her research on housing, Smith (2005) finds that markets can indeed operate in ways that confound assumptions of individualism and self-interest; that “mutual interdependence may be valued over individual independence; [and that] even the bottom line may draw on the moral legacy of an ethics of care” (16). Smith develops these insights to present a hopeful economic politics based on a ‘geography of ubiquity’ which highlights what might be achieved through a multiplicity of small-scale markets:

[p]erhaps the politics and ethics of markets can be challenged not by arguing against markets, but by making a bid for them; by embracing a thousand tiny markets whose ethics are not given but made ... From this perspective, the diversity of actually existing markets, and the multitude of normative ideas and practices that are, or could be, built into them, is ... a far reaching political resource. (ibid: 17)

Others who are interested in diverse economies have also argued that markets have no essence but are constituted through a host of social practices—including the performative role that academic researchers can play by helping to shed light on the diversity of markets that exist, even in contexts that are purportedly ‘neoliberal’ or ‘capitalist’ (e.g. Cornwell 2011; Gibson-Graham 2006b; Roelvink 2007).

The grassroots renewable energy initiatives that we feature in this paper contribute to a climate politics of hope by demonstrating the economic innovations that are possible. Even though they participate in renewable energy markets, they operate according to ethical commitments that are very different from the individualism and competitiveness usually associated with markets, neoliberalism and capitalism (see also Hess 2011). These initiatives are making decisions that foreground cooperation and the collective good. In what follows we give examples of how they do this around market practices of price-setting, wage-setting and profit-making.

### Ethical Decision 1: Price-Setting

To explore how prices can be set in ways that differ from the assumption of individual self-interest we use the example of Sydney Energy Cooperative (SEC). When Climate Action Newcastle (CAN) established its ‘Newcastle’s Going Solar’ scheme it called for expressions of interest from installers of solar panels. As an activist describes, SEC put in a bid using the following ‘formula’:

We make cost decisions based on how much are people willing to pay? how much do we need of that to cover labor and materials cost? how do we distribute the rest, ‘profit’?

As a nonprofit cooperative that does not distribute dividends to individual members, SEC’s price-setting is not motivated by profit-maximisation, instead different values come into play. In this case, SEC decided to distribute surplus—‘profit’—to benefit environmental groups:

We came up with a figure of what we needed, [but] we knew people would pay more than that so we bumped the price up to cover some donations to environmental groups. So \$200 from each installation went to an environmental group of our choosing [in the Newcastle region] and \$200 went to CAN.

Like most firms, SEC set its price by taking into account the cost of the means of production (i.e. labor and materials), but where most firms would then ‘bump up’ the price to maximize profit, SEC ‘bumped up’ the price up to cover donations to CAN and other environmental groups. In place of the economic priority usually associated with price-setting (profit), SEC drew on an ethical commitment of supporting environmental groups.

Like all economic and ethical decisions, this arrangement had to be revisited and renegotiated. In the second round of ‘Newcastle’s Going Solar’ a commercial and for-profit installer came in with a lower price than SEC, and CAN selected the commercial installer. This was a difficult decision but in the end CAN’s commitment to maximizing the number of households that could afford to install solar panels won out. However, for the third round, SEC matched the commercial installer by lowering the donation per installation from \$200 to \$66. Here we see how grassroots initiatives are innovating with ethical markets. SEC was finding ways to be competitive while still supporting environmental groups; while CAN was negotiating ways of making solar panels as affordable as possible.

### Ethical Decision 2: Wage-Setting

One special type of price-setting in markets involves setting wages—the price paid for commodified living beings. Because of restructuring and deregulation, labor markets are generally understood as being characterized by a shift from collective bargaining to individualized wage-setting. However, wage-setting can work very differently, as we illustrate with the example of Rainbow Energy Company (Rainbow).<sup>11</sup>

As one member explains, Rainbow is ethically committed to having “the least environmental impact and the best [impact] in terms of human civilisation generally.” When it comes to wages and employment more generally, Rainbow is guided by the Buddhist principle of ‘right livelihood’, which involves making a living without harming others. This principle is

expressed in several ways. Even though Rainbow is an unlisted public company with around 600 shareholders, it follows the cooperative principle of involving workers in decisions:

The company is set up with the Articles of Association reading very much like a cooperative. So we've built a lot of the cooperative structure into the company. Because cooperatives just feel better than most companies do.

There is also a policy of encouraging workers to become shareholders. Rainbow also has one wage level for all staff, including shareholder-workers who are on the company's board. One member explains this practice in the following terms:

Well particularly with the global meltdown we've been hearing about all these CEOs who are getting outrageous amounts of money, who are being paid out 10s or sometimes 100s of millions of dollars, sometimes even sending a company bankrupt. It stinks. Why should somebody who sits behind a desk get so much more money than somebody who's doing a lot of physical hard labor? It just felt better for everybody to be getting an equal amount of pay for an equal amount of work, no matter what they were doing.

Rainbow is building an ethical economy through pay equity, thereby acknowledging that each worker can make a living and have their needs met without harming other workers.

While pay equity has been used since Rainbow was formed in 1987, the ethic has been revisited. On one occasion a staff member felt that they were not being paid enough, even though Rainbow attempts to pay above-award wages. The case was determined as any other work issue is determined in Rainbow—by the workers. In this case, the collective decision was that the staff member be paid a small fuel allowance for the greater distance they had to travel between home and work. One member acknowledged that “in order to be truly equitable, then everyone should get the same fuel allowance for the percentage of distance that they have to travel. But we didn't do that, we just did it for the one person.” In the words of this member, this was one of the “small concessions [and] compromises” that characterizes ethical economic decision-making. It meant taking into account what one staff member perceived as an appropriate wage within the company's commitment to right livelihood, pay equity and above-award wages—a very different approach from the sorts of wage-setting practices that are associated with deregulated labor markets.

### Ethical Decision 3: Profit

Ethical decisions around price-setting and wage-setting impact on profit. For example, Rainbow's approach to pay equity and above-award wages limits its ability to extract profit. Rainbow has also limited profit-making by using its surplus to build premises that demonstrate the technology it sells (including solar panels, wind turbines, composting toilets, rainwater tanks and passive solar design). But as one member explains:

No we don't want to make enormous profit. That just defeats the purpose. We want to make enough profit to make us viable, but we don't need to become millionaires or anything like that.

In keeping with this ethic of moderating profit, Rainbow has only ever paid dividends to shareholders in two out of nearly twenty-five years of operation, surely making it an exemplary ethical company, and its 'investors' exemplary ethical economic citizens.

Hepburn Wind is similarly committed to activities that will limit its ability to financially reward ‘investors’. Hepburn Wind is establishing a Community Sustainability Fund which will receive \$30,000 a year (or \$15,000 per turbine). By comparison, commercially-driven wind farms in Australia contribute around \$500 per turbine to community projects. The fund will be available for local projects that are fostering environmental, social or economic sustainability. Out of its annual surplus, Hepburn Wind will pay for costs such as the upkeep of the turbines, insurances and rental on the land; as well as \$30,000 for the Community Sustainability Fund. The remainder will be paid as dividends to shareholders. In common with many cooperatives, Hepburn Wind is committing a fixed portion of its surplus towards community projects *before* dividends are paid to shareholders. Shareholders generally invest with a view to maximizing return; however, in Hepburn Wind shareholders are being asked to put individual gain second to an ethical commitment to the Community Sustainability Fund.

Seyfang and Smith (2007) propose that grassroots initiatives are potentially “a source of innovative diversity” (590). In this section, we have shown how four grassroots initiatives are fostering *economic* innovation and diversity by operating in the market but ‘beyond’ neoliberalism and capitalism. These initiatives participate in various renewable energy markets, but their approach to prices, wages and profit are very different from how businesses are presumed to operate. Their economic practices are governed by ethical commitments to reduce environmental and social harm, commitments that take precedence over usual business concerns such as profitability and cost-efficiency.<sup>12</sup> They challenge the understanding that markets are synonymous with neoliberalism and capitalism by showing how markets can be shaped by ethical practices and concerns. The initiatives are also contributing to the constitution of new sorts of economic citizens by asking workers and investors to consider their needs in relation to the needs of others (and these others include fellow workers, community projects and environmental priorities). By reworking the familiar understanding of markets we find grassroots initiatives doing important groundwork for the sort of societal-level transformation that is so pressing in our climate changing world.

## CONCLUSION

When we are presented with the facts and figures on climate change it is easy to become paralysed by the enormity of what we are facing, particularly when national governments seem so reluctant to act and international negotiations seem set to repeatedly fail. Yet, researchers and commentators are finding grounds for hope in the multiplicity of endeavours that are being undertaken by other levels government, by corporations and businesses, and by civil society. According to Bulkeley and Newell (2010), this proliferation of “new ‘sites’ of climate politics” (106) means that theoretical concepts need to be rethought so that we might “go beyond the state as the primary focus of analysis” (ibid: 111). In this paper we have contributed to this rethinking by focusing on three concepts which are critical to how we understand the role and contribution of grassroots initiatives. We have argued that current

understandings of geographic scale, impact scale and markets limit our ability to recognise the transformative potential of grassroots initiatives. We have shown how these concepts can be reimaged by interweaving the insights of academics who are rethinking these concepts with material from grassroots initiatives that are working ‘on the ground’ to construct new presents and new futures.

Instead of a hierarchical understanding of scale in which power and influence are located at the top, the concept of a flat ontology and an associated situated politics enables us to focus on specific and concrete interactions without presuming that the world is structured and organised in predetermined ways. Seen through this lens, it is evident that grassroots initiatives are innovating with what is at hand, and rather than being defeated by inevitable obstacles they are finding ways of manoeuvring around and through various challenges. For example, Hepburn Wind turned the apparent roadblock of a lack of government start-up funding into an opportunity to expand its membership to 1,900. Likewise, Sydney Energy Cooperative turned a change in government funding into an opportunity to redirect its activities towards the energy future it was committed to building. Instead of impact being associated with ‘scaling-up,’ the idea of a geography of ubiquity enables us to recognise how transformations can also be generated through the multiplication of many small endeavours. Seen through this lens, it is evident that grassroots renewable energy initiatives are having an impact. Climate Action Newcastle and Sydney Energy Cooperative, for example, contributed to the amassing of housing solar panels and a change in the national energy market. Grassroots initiatives are also actively promoting further multiplication of small endeavours by acting as demonstration projects that others can learn from (in the case of Hepburn Wind) and by broadcasting what they are doing (in the case of Rainbow Energy Company). Instead of markets being assumed to align inevitably with capitalism and neoliberalism, markets are being recognised as not only having no essential identity but as having the potential to be “a far-reaching political resource” (Smith 2005: 17). Through this lens we can see how grassroots initiatives are operating in the market but because of their commitment to ethical principles that foreground the well-being of others and the planet they are reshaping market practices of price-setting, wage-setting and profit-making. They are fostering the types of economic practices needed in a climate changing world (see also Gibson-Graham et al 2013).

We started this paper by arguing that research is a performative practice that participates in bringing new worlds into being. This means being cognisant of the worlds that our research is helping to make more real. In the context of climate change, we are interested in practising a climate politics of hope in which we are attentive to the ways that grassroots initiatives are transforming how we live on this planet. As researchers we can help strengthen the work of grassroots initiatives by honing our conceptual toolkit in ways that will help delineate their transformative potential and make this transformation more likely. The activist from Rainbow Energy Company writes and talks about his work. Likewise as researchers we can write and talk, and teach and research the possibilities that already exist in the present such as the inroads that grassroots initiatives are making to help create different energy futures and transform how we live on this planet.



## ACKNOWLEDGEMENTS

We would like to thank three anonymous reviewers, our *Antipode* editor, Paul Chatterton, and the Community Economies Research Network in Sydney whose comments have helped to sharpen the paper considerably. Thanks to Katherine Gibson, Stephen Healy, Wendy Larner and Pauline M<sup>c</sup>Guirk for their encouragement. We especially thank the activists who participated in the research and we acknowledge their ongoing commitment to creating new climate futures.

## REFERENCES

- Aall, C, Groven K and Lindseth G (2007) The scope of action for local climate policy: The case of Norway. *Global Environmental Politics* 7(2): 83-100
- Allen J (2011) Powerful assemblages? *Area* 43(2): 154-157
- Allen J and Cochrane A (2007) Beyond the territorial fix: Regional assemblages, politics and power. *Regional Studies* 41(9): 1161-1175
- Anderson B (2006) "Transcending without transcendence": Utopianism and an ethos of hope. *Antipode* 38(4): 691-710
- Australian Energy Market Operator (2012) *Rooftop PV information paper: National electricity forecasting*. Sydney: AEMO
- The Autonomous Geographies Collective (2010) Beyond scholar activism: Making strategic interventions inside and outside the neoliberal university. *ACME: An International E-Journal for Critical Geographies* 9(2): 245-275
- Betsill M (2007) Regional governance of global climate change: The North American Commission for Environmental Cooperation. *Global Environmental Politics* 7(2): 11-27
- Betsill M and Bulkeley H (2006) Cities and the multilevel governance of global climate change. *Global Governance* 12(2): 141-159
- Boykoff M T, Bumpas A, Liverman D and Randalls S (2009) Guest Editorial. *Environment and Planning A* 41: 2299-2304
- Borschmann G (2012) Transformation in the Australian energy sector. Radio Program. Australian Broadcasting Commission - Radio National 29 June 2012. <http://www.abc.net.au/radionational/programs/breakfast/transformation-in-the-australian-energy-sector/4099728> (last accessed 26 September 2012)
- Bulkeley H (2005) Reconfiguring environmental governance: Towards a politics of scale and networks. *Political Geography* 24:875-902
- Bulkeley H and Moser S (2007) Responding to climate change: Governance and social action beyond Kyoto. *Global Environmental Politics* 7(2): 1-10
- Bulkeley H and Newell P (2010) *Governing Climate Change*, Hoboken: Routledge
- Cameron J (2010) Business as usual or economic innovation?: Work, markets and growth in community and social enterprises. *Third Sector Review* 16(2): 93-108

- Cameron J (with C Manhood and J Pomfrett) (2011) Bodily learning for a (climate) changing world: Registering differences through performative and collective research. *Local Environment* 16(6): 493-508
- Climate Commission (2013) Off the charts: Extreme Australian summer heat. Australian Government. [http://climatecommission.gov.au/wp-content/uploads/CC\\_Jan\\_2013\\_Heatwave8.pdf](http://climatecommission.gov.au/wp-content/uploads/CC_Jan_2013_Heatwave8.pdf) (last accessed 20 January 2013)
- Cornwell J (2012) Worker Co-operatives and spaces of possibility: An investigation of subject space at Collective Copies. *Antipode* 44(3): 725-744
- Delaney D and Leitner H (1997) The political construction of scale. *Political Geography* 16(2): 93-97
- Dimitrov R (2010) Inside Copenhagen: The state of climate governance. *Global Environmental Politics* 10(2): 18-24
- Dinerstein A C and Deneulin S (2012) Hope movements: naming mobilization in a post-development world. *Development and Change* 43(2): 585-602
- Garud R and Karnøe P (2003) Bricolage versus breakthrough: Distributed and embedded agency in technology entrepreneurship. *Research Policy* 32: 277-300
- Gibson-Graham J K (2002) Beyond global vs. local: Economic politics outside the binary frame. In A Herod and M Wright (eds) *Geographies of Power: Placing Scale* (pp 25-60). Malden, MA: Blackwell
- Gibson-Graham J K (2006a) *The End of Capitalism (as we knew it): A Feminist Critique of Political Economy*. Minneapolis: University of Minnesota Press
- Gibson-Graham J K (2006b) *A Postcapitalist Politics*. Minneapolis: University of Minnesota Press
- Gibson-Graham J K (2008) Diverse economics: Performative practices for 'other worlds'. *Progress in Human Geography* 35(5): 613-632
- Gibson-Graham J K, Cameron J and Healy S (2013) *Take Back the Economy: An Ethical Guide for Transforming our Communities*. Minneapolis: University of Minnesota Press
- Gibson-Graham J K and Roelvink G (2009) An economic ethics for the Anthropocene. *Antipode* 41(1): 320-346
- Healy S (2010) Economies, alternative. In R Kitchen and N Thrift (eds) *International Encyclopedia of Human Geography*, Volume 3 (pp 338-344). Oxford: Elsevier
- Hess D J (2011) Electricity transformed: Neoliberalism and local energy in the United States. *Antipode* 43(4): 1056-1077
- Hicks J and Ison N (2009) Community-owned renewable energy (CRE): Opportunities for rural Australia. *Rural Society* 20: 244-255.
- Hoefle S W (2006) Eliminating scale and killing the goose that laid the golden egg? *Transactions of the Institute of British Geographers* 31: 238-43
- Hoffman M (2011) *Climate Governance at the Crossroads: Experimenting with a Global Response after Kyoto*. Oxford: Oxford University Press
- Jones J P III, Woodward K and Marston S A (2007) Reply: Situating flatness. *Transactions of the Institute of British Geographers* 32: 264-276
- Ireland P and McKinnon K (2013, In Press) Strategic localism for an uncertain world: A postdevelopment approach to climate change adaptation. *Geoforum*

<http://dx.doi.org/10.1016/j.geoforum.2013.01.005>

- Lasch C (1991) *The true and only heaven: Progress and its critics*. New York: W.W. Norton and Company
- Law J (2004a) *After Method: Mess in Social Science Research*. London: Routledge
- Law J (2004b) And if the global were small and noncoherent? Method, complexity, and the Baroque. *Environment and Planning D: Society and Space* 22:13-26
- Law J and Urry J (2004) Enacting the social. *Economy and Society* 33(3): 390- 410
- Lohmann L (2006) *Carbon Trading: A Critical Conversation on Climate Change, Privatisation and Power*. Uppsala: Dag Hammarskjold Foundation
- Mason K and Whitehead M (2012) Transition urbanism and the contested politics of ethical place making. *Antipode* 44(2): 493-516
- Massumi B (2002) Navigating moments. In M Zournazi (ed) *Hope: New Philosophies for Change* (pp 210-243). Sydney: Pluto Press
- Martson S A, Jones J P III and Woodward K (2005) Human geography without scale. *Transactions of the Institute of British Geographers* 30(4): 416-432
- Matthews K and Paterson M (2005) Boom or bust? The economic engine behind the drive for climate change policy. *Global Change, Peace & Security*, 17(1): 59-75
- McCarthy J and Prudham S (2004) Neoliberal nature and the nature of neoliberalism. *Geoforum* 35: 275–283
- Middlemiss L and Parrish B (2010) Building capacity for low-carbon communities: The role of grassroots initiatives. *Energy Policy* 38: 7559–7566
- Moore A (2008) Rethinking scale as a geographical category: From analysis to practice. *Progress in Human Geography* 32(3): 203-225
- Okereke C, Bulkeley, H and Schroeder H (2009) Conceptualising climate governance beyond the international regime. *Global Environmental Politics* 9(1): 58-78
- Roelvink G (2007) Review article: Performing the market. *Social Identities* 13(1): 125-133
- Rose M (2013) New growth in Detroit: Eastern Market and the creation of an alternative regional economy. Paper presented at the Association of American Geographers Annual Meeting, Los Angeles, 9 to 13 April
- Seyfang G (2010) Community action for sustainable housing: Building a low-carbon future. *Energy Policy* 38: 7624-7633
- Seyfang G and Smith A (2007) Grassroots innovations for sustainable development: Towards a new research and policy agenda. *Environmental Politics* 16(4): 584-603
- Smith A (2003) Transforming technological regimes for sustainable development: A role of alternative energy niches? *Science and Public Policy* 30(2): 127-135
- Smith S (2005) States, markets and an ethic of care. *Political Geography* 24: 1–20
- Stengers I (2002) A "cosmo-politics" - risk, hope, change, In M. Zournazi (ed) *Hope: New Philosophies for Change* (pp 244-272). Sydney: Pluto Press
- Solnit R (2004) *Hope in the Dark: Untold Histories, Wild Possibilities*. New York: Nation Books
- Vanderheiden S (2011) Rethinking environmentalism: Beyond doom and gloom. Book Review Essay. *Global Environmental Politics* 11(1): 108-113
- Walker G (2008) What are the barriers and incentives for community-owned means of energy production and use? *Energy Policy* 36: 4401-4405

- Walker G (2011) The role for 'community' in carbon governance. *WIREs Climate Change*, 2 Sept/Oct, 777-782
- Walker G and Devine-Wright P (2008) Community renewable energy: What should it mean? *Energy Policy* 36: 497–500
- Walker G, Hunter S, Devine-Wright P, Evans B and Fay F (2007) Harnessing community energies: Explaining and evaluating community-based localism in renewable energy policy in the UK. *Global Environmental Politics* 7(2): 64-82
- Woodward K, Jones J P III and Marston S A (2010) Of eagles and flies: Orientations toward the site. *Area* 42(3): 271–280
- Woodyer T and Geoghegan H (2012) (Re)enchanted geography? The nature of being critical and the character of critique in human geography. *Progress in Human Geography* 37(2): 195–214

---

<sup>1</sup> In his discussion of research ‘method’ in the social sciences, Law (2004a) calls for a broad interpretation of method to include not just multiple means of gathering various types of ‘data’ but also the means of theorising data. In other papers we have discussed ways of gathering data which are informed by ideas of performativity (e.g. Cameron 2011). In this paper, we reflect on the concepts and framings used to interpret data.

<sup>2</sup> The latest figure is that the amount of carbon dioxide in the atmosphere is just a fraction off the symbolic milestone of 400 parts per million.

<sup>3</sup> The material from grassroots renewable energy initiatives come from semi-structured interviews conducted in 2009 with activists from four grassroots initiatives in Australia and from a review of the public documents of the four initiatives.

<sup>4</sup> In the context of this paper we can only give an overview of this literature. For a detailed and thoughtful review and discussion see Moore (2008).

<sup>5</sup> For example, see the commentaries on Martson et al (2005) in *Transactions of the Institute of British Geographers*, Volume 31, Issues 2 and 3; Volume 32, Issue 1. See also the reply by Jones et al (2007).

<sup>6</sup> Newcastle is around 150km north of Sydney on the New South Wales coast; and is home to the world’s largest coal port.

<sup>7</sup> Even though it was called a solar homes and *communities* program, there was little take-up from ‘communities’ as the program favoured individual homeowners.

<sup>8</sup> On the role of hope in the anti-slavery movement, the civil rights movement and in politics more generally see Lasch (1991: 80-81; 392-392 and 529-530).

<sup>9</sup> In recognition of its work, in 2012 Hepburn was awarded the World Wind Energy Award.

<sup>10</sup> For discussion of the concerns about market-based approaches to climate change (and environmental policy more generally) see Boykoff et al (2009); McCarthy and Prudham (2004); and the essays in a 2011 special edition of *Antipode* (volume 43, number 3).

<sup>11</sup> Rainbow Power Company was established in 1987 as a grassroots and alternative energy project. It is based in northern New South Wales and it primarily designs, manufactures, sells and installs a variety of renewable energy devices in the local area as well as in other parts of Australia and overseas. In 2009, Rainbow employed 16 full time-equivalent staff.

<sup>12</sup> For discussion of how two food-based initiatives ethically negotiate growth, markets and labor, see Cameron (2010).