

RGS-IBG Annual International Conference 2014

Geographies of co-production

Session proposal form

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Session Summary	
Session Title:	New Economic Geographies of Resources and the Environment
Session sponsor (if applicable)	Economic Geography Research Group (EGRG) Energy Geographies Work Group (EGWG)
Session Abstract:	<p>This session engages with recent geographical research on how the distribution, properties and affordances of natural resources affect their regulation, commodification and marketization. We begin by acknowledging that the increasingly rich accounts of environment-economy interactions are undermined by a set of paradoxes. First, while non-humans are regarded as active constituents of socio-economic systems, their 'biophysical' qualities are equally recognized to represent the product of various geo-scientific practices, market calculations and governance regimes that constitute resources. Second, emerging studies in economic anthropology and geography note that many contemporary modes of resource appropriation and exchange are no longer 'material' in the conventional sense, pointing towards a need to attend to the increasingly virtual modes of financialization and marketization in resource-making and environmental governance. Finally, while resources are considered as particular, locally and historically contingent framings of the natural environment and its use value, the research presented across this session will serve to illustrate the complexity and importance of considerations of resources that extend beyond the economic. The session opens up with more historically and conceptually informed research on resource-making practices and knowledges and moves to rich empirical studies of the governance of extractive frontiers, followed by analysis of shifting modes of value generation and alternative economic registers in environmental governance. The session concludes with a commentary on new resource geographies by Professor Gavin Bridge.</p>
Keywords:	Resources; energy; materiality; markets; environmental governance

Session Convenors		
Session Convenor Name	Affiliation	Email address
Dr Kårg Kama	University of Oxford, School of Geography and the Environment	karg.kama@ouce.ox.ac.uk
Dr Janelle Knox-Hayes	Georgia Institute of Technology, School of Public Policy, USA	JanelleKH@gatech.edu
Dr Caitlin McElroy	University of Oxford, Smith School of Enterprise and the Environment	caitlin.mcelroy@smithschool.ox.ac.uk

Session Requirements	
Number of timeslots required	4
Type of session proposed	Papers with a discussant in the last session
Special audio visual requirements	
Expected audience	50-60
Any other special requests to be considered	We would like to hold all 4 sessions in 1 day.

Session 1 title and chair		
Session 1 Title	New Economic Geographies of Resources and the Environment I: Knowledge Politics and Resource-Making	
Session Chair name	Affiliation	Email address
Dr Janelle Knox-Hayes	Georgia Institute of Technology, School of Public Policy	JanelleKH@gatech.edu

Session presentation details			
Presentation 1 Title:	Mining money: the generative capacities of scientific and legal knowledge practices in the making of resource economies		
Presentation 1 Abstract	<p>In 1997 a scandal associated with Bre-X, a junior mining firm, and its prospecting activities in Indonesia, exposed to public scrutiny the ways in which mineral exploration firms acquire, assess and report on scientific claims about the natural environment. At stake here was not just how investors understood the provisional nature of scientific knowledge, but also evidence of fraud. Contemporaneous mining scandals not only included the salting of cores, but also unreliable proprietary sample preparation and assay methods, mis-representations of visual field estimates as drilling results and 'overly optimistic' geological reports. This paper reports on initiatives taken in the wake of these scandals and prompted by the Mining Standards Task Force (TSE/OSC 1999). For regulators, mandated to increase investor confidence in Canada's leading role within the global mining industry, efforts focused first and foremost upon identifying and removing sources of error and wilfulness within the production and circulation of scientific knowledge claims. A common goal cross-cutting these initiatives was 'a faithful representation of nature' (Daston and Galison 2010), however, as the paper argues, this was manifest in an assemblage of practices governed by distinct and rival regulative visions of science and the making of markets in claims about 'nature'. These 'practices of fidelity', it is argued, can be consequential in shaping the spatial and temporal dynamics of the marketization of nature.</p>		
Author name	Author affiliation	Author email address	Presenter?
Dr Niall Majury	Queens University Belfast, School of Geography, Archaeology & Palaeoecology	n.majury@qub.ac.uk	Y
Presentation 2 Title:	Financialization, extraction and the new geographies of gold mining		
Presentation 2 Abstract	<p>Key changes in industry competition for funds and the ownership and activism of institutional investors (e.g. hedge funds, pension funds) in large publicly-traded mining companies, have led to the institutionalisation of new financial metrics and practices within mining firms to create more 'value' for shareholders. This paper examines these 'financialized' business strategies in the context of gold mining and their implications for exploration, resource identification and extraction. A case study of the two largest gold mining companies, Barrick Gold and AngloGold Ashanti, reveals concretely how miners explore the possibilities, and material limits, of aligning mining operations to the short-term total return objective of finance capital. The specificities of mining as a business activity and gold as a commodity, the interplay of financial accumulation and physical production are put to the fore and the complex adjustments across scales to lock in financial value and potential on geographically diverse mines embedded in varying socio-political contexts.</p>		
Author name	Author affiliation	Author email address	Presenter?
Julie de los Reyes	University of Manchester, School of Environment, Education & Development	julieann.delosreyes@postgrad.manchester.ac.uk	Y
Presentation 3 Title:	Situating the hydraulic fracturing technology: The political and economic geographies of Marcellus and Bowland shales		
Presentation 3 Abstract	<p>In the debate over shale gas development, scientific controversies surrounding the application of hydraulic fracturing technology has risen to political prominence in the UK and the US. While the technology has been in use for more than sixty years and advanced with the primary aim of improving efficiency of the oil & gas fields, its application in the shale gas formations generated multiple controversies that lend to different articulations of the technology beyond the industry's limited commercial definition. Adding on the literature on knowledge geographies of the oil and gas</p>		

	<p>sector, this paper aims to examine the role of old and new knowledge practices in studying the political and economic geography of the shale gas development. Situating the development and application of the hydraulic fracturing technology locally and historically in both countries, the paper examines the relations between the science and politics in the making of shale gas economies in two parts. First part reviews how the technology has evolved both as an “art and science”, being developed both in the field and the laboratory conditions, and supported through a governance regime of public-private partnerships in the US. Second part returns to recent commercial development of the Marcellus and Bowland Shales, giving an analysis of relationship between geo-scientific practices and economic recovery of shale gas reserves in both countries.</p>		
Author name	Author affiliation	Author email address	Presenter?
Irem Kok	University of Oxford, School of Geography and the Environment	irem.kok@ouce.ox.ac.uk	Y
Presentation 4 Title:	Materiality as potentiality: discrepancies between geologic and economic framings of future resources		
Presentation 4 Abstract	<p>This paper revisits the question of material recalcitrance in extractive economies, drawing upon recent work in economic anthropology and geography and my own research on oil shale development. My aim is to move beyond the political ecology account of resource materiality as a static ‘biophysical’ quality or essence that impedes the progressive commodification and marketization of nature. Instead, I approach materiality as an emergent and context-specific outcome of human and non-human energies that are always mediated through particular knowledge practices and technologies. As a result of the variety of techniques that are deployed to render the underground world intelligible and evaluate its potential use, resources can come into existence in multiple and sometimes conflicting material forms. The affordabilities and generative powers of resource materials are not just controlled, but also unleashed and differentiated through specific technoscientific configurations. This contingent potentiality of resources is particularly evident in respect to estimates of economic viability, a controversy which pervades the development of ‘unconventional’ energy sources. Specifically, I document the discrepancies between geologic evaluations and economic framings of oil shale as an ever-promising ‘resource of the future’ that is assured to be worthy of investment and development. While geologic and economic accounts of resource potentials are partly inter-dependent, they can also diverge and conflict each other. For example, oil shale may never be deemed ‘economic’ to produce in some locations despite promising geological reports, or conversely, considered indeed feasible to develop in other cases even in the absence of geologic and technical assurance.</p>		
Author name	Author affiliation	Author email address	Presenter?
Dr Kärg Kama	University of Oxford, School of Geography and the Environment	karg.kama@ouce.ox.ac.uk	Y
Presentation 5 Title:	The 1968-1979 United States’ energy crisis and the reification of information		
Presentation 5 Abstract	<p>This paper details how the energy crisis (1968-1979) led to a reconceptualisation of the physical properties of energy. A range of actors argued that information was equivalent to energy, and so information could act as a substitute for fuel. By tracing the cycle of credibility through which the idea of information as energy travelled, this paper documents the emergence of a new politics of energy. The intellectual development of this idea is outlined, from nineteenth century thermodynamics, to twentieth century statistical mechanics, and cybernetic science. Critically though, it was in the wake of the energy crisis that this reconceptualisation found political capital. The paper’s principal argument is that the commodification of information acted as an analogy which legitimated a number of political responses. This can be mapped in four fields, in Pierre Bourdieu’s sense: government, academia, finance, and the media. In the governmental field this can be documented in Governor Brown’s Californian administration and Jimmy Carter’s Presidency. In finance, economic orthodoxy was linked to the arguments of the alternative energy movement. In academia, a reassertion of the marginal theory of value, alongside talk of ‘post-industrial’ economies lent their own credibility. In the media, countercultural, environmentalist, and futurological discourse played a part. In sum, the relationship between energy and information led to the emergence of a new model of political economy: towards which the deregulation of energy markets, justified on the basis of their informational component, was the first step.</p>		

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Thomas Turnbull	University of Oxford, School of Geography and the Environment	thomas.turnbull@ouce.ox.ac.uk	Y

Session 2 title and chair		
Session 2 Title	New Economic Geographies of Resources and the Environment II: Extractive Frontiers, Agencies and Governance	
Session Chair name	Affiliation	Email address
Dr Kårg Kama	University of Oxford, School of Geography and the Environment	karg.kama@ouce.ox.ac.uk

Session presentation details			
Presentation 1 Title:	Exploring governance in strongly filamented global value chains: The rare earth magnet market in Europe		
Presentation 1 Abstract	This paper discusses the concept of a global value chain (GVC) of rare earth elements (REEs). It claims that different end-user markets absorb a selection of individual REEs and distinctive product quality requirements by end-markets necessitate a separation of this GVC into multiple filaments. The article provides an understanding of the European-based value-adding processes through which these non-ferrous metals pass preceding their use in magnets. It also seeks to enhance the discussion on how to conceptualize governance within and across the filaments. In doing so, the paper examines inter-firm relationships and works with different levels of abstraction – micro, meso and macro – to identify the significant drivers in the REE filaments. Empirically, the emphasis is on the magnet filament. A subdivision of this filament is investigated based on different governance forms as a result of quality demands by REE magnet-absorbing end-users. Moreover, the role of external, generic factors that affect the REE GVC and its magnet filament (e.g. Chinese industrial policy) is explored.		
Author name	Author affiliation	Author email address	Presenter?
Erika Machacek	University of Copenhagen, Department of Geosciences and Natural Resource Management	erika.machacek@ign.ku.dk	Y
Professor Niels Fold		nf@ign.ku.dk	N
Presentation 2 Title:	'The forestry commission is dead.' Long live REDD+1: carbon forestry, neoliberal re-regulation and state politics in Cross River, Nigeria		
Presentation 2 Abstract	Critical scholars have been continued to investigate the impacts of REDD+ and similar neoliberal projects on local communities and indigenous peoples. Too little, if any attention has been paid to how REDD+ is territorialised within state institutions and to what effects. This also leaves much to be said about actually existing neoliberal re-regulation in carbon forestry projects. This paper considers how REDD+ is being institutionalised in Nigeria and specifically in Cross River state forestry commission. We show how, as a quintessential neoliberal project, REDD+ in Cross River is made possible through strategic practices, sheer serendipity, militarization and multiple contradictions linked to specific rejuvenation and specific deadening of the state forestry department. We thus show how an understanding of the contradictory neoliberal re-regulation in REDD+ could be seen not merely as a call on the state to do the "needful" to midwife neoliberal mode of conservation, but to be the kind of state – in this case, a complexly numbed state – required for the flourishing of neoliberal conservation. Such understanding, as we show, productively engages a specific political ecology articulation of the state as an amalgam of interests and worldviews about which to ask: who wins, who loses and how is the environment transformed in the ongoing REDD+ process. We conclude by highlighting how such understanding is crucial to critically engaging neoliberal conservation and to the search for what some scholars have called "vital alternatives".		
Author name	Author affiliation	Author email address	Presenter?
Adeniyi Asiyambi	Kings College London, Department of Geography	adeniyi.asiyambi@kcl.ac.uk	Y
Presentation 3 Title:	Resource extraction, marine natures and neoliberal conservation in Ponta do Ouro Partial Marine Reserve (PPMR), Mozambique		
Presentation 3 Abstract	This proposed paper will present results from ongoing field research in Mozambique (completed June 2014). Initial findings suggest two ways in which my research could contribute to this session. First, the neoliberalisation of nature through conservation is a growing research focus. Conservation areas in southern Africa are increasingly		

	<p>valued according to 'derivative nature'. Conservation is open to investment, speculation and consumption through activities like eco-tourism (Buscher 2010), supported by political marketing and the manipulation of emotion. My research engages with these 'immaterial' aspects of conservation, exposing the contradictions and consequences for a conservation industry orientated towards derivative nature. Preliminary results suggest that the PPMR can be used as evidence for the neoliberalisation of conservation through emotional and affective means (Bakker 2010). Second, my research explores the relationship between development, conservation and resource extraction (Busher & Davidof 2013). Conservation can provide an 'environmental fix' for extractive industries (Castree 2008). But, extraction often directly conflicts with conservation, as rare ecosystems increasingly intersect with valuable resources (Duffy 2010). Mozambique is determining whether to build an ecologically devastating deep-water port in the PPMR (for the region's booming fossil fuel industry), while newly-discovered tuna fisheries overlap with off-shore gas sites. Mozambique must negotiate these intense ecological conflicts in complex, multi-scale regulatory contexts, and handle intensifying political demands for economic development and environmental security. Initial findings suggest that the PPMR is facing difficulties in establishing legitimacy due to state-level conflicts between these goals, with wider implications for marine conservation in the southern African region.</p>		
Author name	Author affiliation	Author email address	Presenter?
Kate Symons	University of Edinburgh, School of Geosciences	k.symons@sms.ed.ac.uk	Y
Presentation 4 Title:	Extractive Industries and Markets for Development: The more than merely economic value of resource extraction		
Presentation 4 Abstract	<p>The discourse of resource extraction has long been intertwined with conflicting impacts and benefits from the 'race to riches' to the 'resource curse'. The increasing reach of major extractive corporations to new frontiers of resource production geographically and technologically is changing the physical and social relationship of extraction processes to the places in which they occur. The expectations of development benefit from resource extraction have become simultaneously more global and more site specific. The deployment of specialized technologies to peripheral locations realising 'new resources' is propelled by a globally orientated perspective of resource benefit. This approach, and its neoliberal underpinnings, perpetuates a market for resource-driven development that percipitates particular practices for the appropriation of resources, their production, and the distribution of revenues. In contrast, these changes in the landscape of resource extraction have also brought communities, regions, and small states to articulate their resource-driven development expectations. Meeting these expectations, as the social license to operate, is placing increasing pressure on resource extractors to engage in a much different market for development. For this market, the processes of appropriation, production, and revenue distribution are "more than merely economic". The universalizing forces in the industry, such as for increased financialization and integration of value chains, are now confronted by not only the geographical variations for production, but also the place specific co-governance of the physical and economic deployment of these processes. Examples of different stages of co-governance will be presented with a particular focus of the iteration between conducting co-governance and the capacity building necessary for it to occur in relation to a mine in Southern Kenya. Through this it is explored how both global and local 'markets for development' still perpetuate resource extraction. However, it questions the further compatibility of such a divergent dual-market system.</p>		
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Dr Caitlin McElroy	University of Oxford, Smith School of Enterprise and the Environment	caitlin.mcelroy@smithschool.ox.ac.uk	Y

Session 3 title and chair		
Session 3 Title	New Economic Geographies of Resources and the Environment III: Environmental Financialization and Marketization	
Session Chair name	Affiliation	Email address
Dr Caitlin McElroy	University of Oxford, Smith School of Enterprise and the Environment	caitlin.mcelroy@smithschool.ox.ac.uk

Session presentation details			
Presentation 1 Title:	The making of low carbon economies		
Presentation 1 Abstract	<p>The paper uses the example of climate change - and the commodity of carbon - to explore how new markets and economies are made: examining the diversity of practices and objects that have been enrolled into, and framed as, low carbon economies. It considers how different types of pre-existing expertise, technologies and techniques (financial accounting, forest ecology, energy efficiency) have shaped the making of low carbon economies. Economies and markets are defined using a mixed Foucauldian and Science and Technology Studies conceptual frame as something integral to society, rather than a separate sphere of activity, and as necessarily involving heterogeneous actors (technologies, texts, people, standards and so on) (Caliskan & Callon, 2010; MacKenzie, 2008; Foucault, 2007). The paper uses a number of examples to demonstrate how carbon as a commodity and climate change as a policy issue have manifested through a dual process of making new economies centred on climate change (carbon markets), as well as the intrusion of climate change into already existing economies (e.g. housing, energy). Tensions in the co-existence of different types of carbon - some more material than others - are explored.</p>		
Author name	Author affiliation	Author email address	Presenter?
Dr Heather Lovell	University of Edinburgh, Institute of Geography and the Lived Environment	heather.lovell@ed.ac.uk	Y
Presentation 2 Title:	Algorithms and the atmosphere: Geographies of high frequency trading - from algorithms to the environment and back		
Presentation 2 Abstract	<p>During the past decade the temporality of stock markets has accelerated to a rate where the intensification of time-space compression produces radical new dynamics in the financial market. Today, shares shift hands within micro seconds giving rise to a form of economy I will term algorithmic capitalism. The spatio-temporal and economic-ecologic dimensions of high-frequency trading are examined to understand how new modes of knowledge production do not only reconfigure the dynamics of financial capital and change the global financial system in different spatio-temporal ways, but produce political ecologies of engagement, divergence and convergence between the financial system and Earth system. Acceleration of financialization in scale and time, (outwards as well as inwards) reconfigure dialectally the dynamics under which a resource is considered to be profitable or not, hence the dynamism of which material practices are valued to be profitable a given time-scale ratio. This gives rise to new dimensions in our views of limits to growth, and how we utilize and reflect upon our material world in relation to climate change. Finally it is discussed if climate capitalism in the form of high frequency trading will only contribute to make crises worse and how financial investment systems affect our material and socio-ecological practices producing peculiar forms of adaption to climate change.</p>		
Author name	Author affiliation	Author email address	Presenter?
Thomas Skou Grindsted	Roskilde University, Department of Environmental, Social and Spatial Change	tskoug@ruc.dk	Y
Presentation 3 Title:	Pluralities and performativities: The fractured economic geographies of biodiversity offset markets		
Presentation 3 Abstract	<p>Markets for biodiversity offsets represent a novel, paradoxical form of relationship between the economy and the environment. While the emergence of these markets can be traced to the principle of performativity of economics – the application of principles of neoclassical economics to the problem of governing the environment (Callon, 1998, 2007; Garcia-Perpet, 2007; MacKenzie, Muniesa, & Siu, 2007) – their expansion is beset by obstacles brought about by the commodity exchanged therein.</p>		

	<p>Like other natural resources before, biodiversity is proving to be an uncooperative commodity (Bakker, 2003; Robertson, 2004, 2007), limiting the capacity of commodifying technologies (Kopytoff, 1986) to make things the same (MacKenzie, 2009) and establish equivalence between biodiversity lost in one geographical location and biodiversity gained elsewhere. Based on published reports and interviews with agents involved in markets for biodiversity offsets in the United States, Germany and England, this article discusses how the bio-physical and political properties of biodiversity are resulting in specific market architectures. The analysis finds that the triple embeddedness of biodiversity in the local environment, the local polity and legacy regulation results in the creation of local market nodes for biodiversity offsets inside each country. These different nodes act as mutually exclusive spheres of exchange (Appadurai, 1986; Zelizer, 1998): cultural, social, legal and representational barriers are erected around each local market, outside of which a biodiversity offset is decommodified. Biodiversity offsets are only acceptable as commodities within those spheres of exchange, and cannot circulate or be exchanged outside of them.</p>		
Author name	Author affiliation	Author email address	Presenter?
Carlos Ferreira	University of Coventry, Faculty of Business, Environment and Society	ab6859@coventry.ac.uk	Y
Presentation 4 Title:	Market liquidity and the production of space: a necessary engagement for economic geography		
Presentation 4 Abstract	<p>In advanced markets, the process of producing prices is autonomous from the production of commodities. In other words, market prices are more than reflections of an exchange. As useful information, they are commodities on their own. The process of producing prices then is both subject to, and productive of risk. Nowhere is this relationship starker than in derivatives markets. Whether they trade natural or financial commodities, and whether they are constructed as risk management or risk producing devices, they are highly dependent upon “consensus” pricing for their evaluation and sustenance. Financial engineers’ and financial economists’ efforts to isolate risk from fundamental unknowns, is utterly dependent upon the production of prices. Without prices, the “futura” of risk dissolves into concrete present realities. Put another way, without prices, derivatives are not only untradeable, but unusable. This paper is concerned with the necessity for constant trading of derivatives or the constant production of prices, which is referred to in the financial industry as “liquid markets”. It consists of a conceptual analysis of the existing literature on market liquidity, with which geographers to date have barely engaged. It goes on to make the case that market liquidity, or the frequency with which risk is priced, is a fundamentally geographic concept. As more parts of nature and daily life become priced and subject to price risk, they are also enrolled in new economic geographies. The paper argues that particularly in our financialized and increasingly marketized economy, geographers ought to pay closer attention to the constant production and destruction of space engendered by both price making, and its opposite—the lack of price making.</p>		
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Dr Christopher Muellerleile	University of Bristol, Graduate School of Education	chrismuellerleile@yahoo.com	Y
Presentation 5 Title:	Constructing parallel economies: the valuation and trade of environmental services		
Presentation 5 Abstract	<p>A series of new markets have developed over the last few decades to price environmental goods and services. These markets value and trade positive and negative externalities such as carbon, forestry, water and biodiversity. Building on the work of scholars such as Noel Castree and Gavin Bridge, this article offers a theoretical analysis of the nature and function of value in environmental economies. Specifically the article analyzes the economies of environmental services as parallel economies. Economic value is first classified as being constituted of both use value (grounded in objective space and time) and exchange value (grounded in subjective space and time). Economies function to move value in space and time by transferring value between use and exchange. Parallel economies in contrast, utilize use and exchange value simultaneously through the transfer of idealized representations of goods and services. To the extent that the value of the biosphere is derived from its existence, and particularly its stasis, it is difficult to commodify. The ability to mobilize exchange value through the creation of parallel economies for environmental assets seemingly liberates value from the exchange of the biosphere without altering the</p>		

	<p>function of the biosphere. The valuation of the natural environment brings to light the economic potential of the creation of parallel economies, particularly their ability to expand economic activity. Scholars estimate the exchange value of ecosystem services to be on the order of trillions of dollars per year. The integration of the exchange value of the biosphere into economic activity has the potential to fundamentally alter economies. However, the belief that the exchange value of ecosystem services can be mobilized while simultaneously maintaining the integrity of the biosphere's use value is an illusion. Exchange is concomitant with use. As the exchange potential of ecosystem services expands, the function of these services will be subject to increasing spatial and temporal acceleration and displacement.</p>		
Author name	Author affiliation	Author email address	Presenter?
Dr Janelle Knox-Hayes	Georgia Institute of Technology, School of Public Policy	JanelleKH@gatech.edu	Y

Session 4 title and chair		
Session 4 Title	New Economic Geographies of Resources and the Environment IV: Innovation, Energy and Green Growth	
Session Chair name	Affiliation	Email address
Dr Janelle Knox-Hayes	Georgia Institute of Technology, School of Public Policy	JanelleKH@gatech.edu

Session presentation details			
Presentation 1 Title:	Wasting and valuing: the economization of electronic waste recycling		
Presentation 1 Abstract	<p>The aim of this paper is to illustrate the formation and transformation of waste recycling market in the perspective of economization and marketization. Recycling is an economic activity, valuing and transforming the waste into secondary materials within the socio-technical agencement. To understand the process of economization of waste need to analyze the forces participating in the market socio-technical agencements and place in certain historic-geographical context. This paper argues that the e-waste recycling market is usually divided waste re-cycling mechanism into type of global south or global north and overlook the multiple of socio-technical agencement which has been influenced by the materiality of waste, innovation of recycling technology, environmental regulation policy, and global metal price. By following the actions of e-waste recycling in Taiwan from 1960s to 2013, the process of economization of e-waste has a shift from cheap labor cost, highly environmental pollution, and globally imported to strict environmental regulation and local handling. This shift is formed by series of experiments on institution and technology which make the waste be collected and recycled in the certain procedure and process in order to turn the environmental value and social justice into market value. In 1960s, the formation of Taiwan's e-waste recycling market was driven by market value and international division of waste. In 1990s, the market socio-technical agencement of e-waste recycling market was reassembled by the establishment of environmental regulation policy and innovation of recycling technology. But waste as an uneasy pacified good makes the former and latter socio-technical agencement co-existing.</p>		
Author name	Author affiliation	Author email address	Presenter?
Yu-Kai Liao	National Taiwan University, Department of Geography	r01228004@ntu.edu.tw	Y
Presentation 2 Title:	Energy resources and carbon politics: challenges for the manufacturing sector		
Presentation 2 Abstract	<p>Energy is an economic resource for the manufacturing sector. It is vital for the production of products and services as well transport and distribution, with products travelling over increasingly long distances for end-user consumption and intermediate trade. In the sector, energy has traditionally been thought of as a fundamentally secure, and stable, production resource. The current insecurity of energy supply, both in terms of availability and affordability, threatens the functionality of the manufacturing system in places of high price and disruptive supply. The consumption of energy for production has reduced significantly over recent decades, driven primarily by the decline of the industry but also by an increased appetite for efficiency in order to remain competitive in global markets. As the production system becomes more efficient, the reliance on energy as a resource increases and disruptions to supply have increasingly significant impacts. In turn, the geo-political and environmental dimensions of energy shape its nature as a resource. The commoditization of carbon has generated additional, and unequally distributed, costs related to the consumption of energy. The interrelation of carbon and energy through consumption taxes, subsidies and efficiency policies has confounded the issues around energy as an economic resource. The role of carbon, supply and demand profiles and the increasingly complex use of energy in production systems makes its use as a resource difficult. This paper discusses the impact of an increasingly integrated carbon, energy and industry reliance.</p>		
Author name	Author affiliation	Author email address	Presenter?
Dr Rachel Mulhall	University of Birmingham, Birmingham Business School	r.a.mulhall@bham.ac.uk	Y
Presentation 3 Title:	Distributional aspects of financing clean energy infrastructure: Evidence from the British feed-in tariff for small-scale PV systems		

Presentation 3 Abstract	<p>We investigate the distributional impact of a clean energy infrastructure financing scheme, the British Feed-in Tariff (FiT) for small-scale renewable energy installations, which pays out £500 million each year in clean energy subsidies. We examine how the costs and benefits of the program have been distributed across rich and poor households during the scheme's first three years of operation. We match data for around 360,000 PV installations to socio-economic data gathered through the 2011 census of England and Wales. We estimate the relationship between installation counts and the socio-economic characteristics of the areas where installations are located. A disproportionately small number of installations have located in relatively poor areas and a disproportionately large number of installations have located in relatively rich areas. On the cost distribution side, we find that responsibility for how the cost of the program is distributed has effectively been relinquished to the electricity suppliers. This means that while poor households are participating less in the program, they may be bearing a similar financial burden to support the program as rich households. The program is a cautionary tale to other nations deliberating how to design their own programs to finance the deployment of clean energy infrastructure.</p>		
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Dr David Grover	London School of Economics, Grantham Research Institute on Climate Change & the Environment	d.grover@lse.ac.uk	Y
Discussant Professor Gavin Bridge	Commentary on New Resource Geographies		
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Professor Gavin Bridge	University of Durham	g.j.bridge@durham.ac.uk	Y