

Dissonant Justifications: an organisational perspective of support for Australian community energy

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Abstract

This paper presents a narrative ethnography of a Sydney-based community energy venture called Pingala, drawing on participant observation and action research carried out over an 18-month period from April 2013. The narrative presents a socially embedded account of a) the intersection of biography and expertise in the practices of community energy 'entrepreneurs', and b) the process of negotiating community energy support infrastructure. The organisational perspective of Pingala provides the primary focus for justifications of community energy's worth that must navigate interpersonal and macro-level policy concerns. This sociology of justification perspective shows how incommensurable evaluations of worth justify different forms of support for community energy enterprises such as Pingala. The paper concludes with some remarks on these forms, relating Pingala's experience negotiating support infrastructure to lessons for Australia's nascent community energy sector.

Keywords: innovation, urban solar, community energy, justifications, ethnography.

Introduction

This paper presents an overview of the challenges faced by an urban community solar energy initiative, Pingala. Pingala emerged from a town hall meeting of 100 Sydney residents concerned with climate and environmental issues to become a not-for-profit, incorporated association, run by volunteers pursuing commercial solar projects in greater Sydney. The association aims to create profitable investments for private individuals by installing solar farms on the roofs of host sites such as hotels, schools or car parks. A variety of corporate, donation-based and cooperatively-owned models are being pursued by the 80 different community energy groups in Australia (The Institute for Sustainable Futures Starfish Initiatives *et al.*, 2014). One of the simplest business models is to sell the electricity 'behind the meter' to users in the building. This model has become a preferred approach for Pingala after a careful assessment of options available in the current regulatory landscape. Furthermore, a group south of Sydney have successfully used legal and financial agreements to fundraise and install a photovoltaic solar system at a bowling club (Vorrath, 2014).

Conceptually, this paper examines the ways community emerges from common interest and a shared interest in democratisation, rather than the fixture to rural spaces through which much development and theorising of community energy has occurred (Walker, 2008). In other words, this paper's focus is close to a conception of collective and politically-motivated energy (Becker and Kunze, 2014) than the more overtly normative and politically loaded Anglocentric concept of community energy (c.f. Eadson *et al.*, 2014). The concept of justification is thus introduced to examine the ways in which this democratising potential is discussed within the group that founded the initiative, within the broader Australian community energy sector and to non-energy groups elsewhere such as prospective host site partners.

Participant observation of events and meetings over the complete period of the group, from Pingala's inception onwards, provides the main source of data. This includes social events for members and public events promoting its mission. Building on the innovation theory of David Stark (Stark, 2011), this paper juxtaposes justification theory with this participant observation data to examine how worlds are conjured in relatively mundane encounters. Justifications, in this context, are the vocabulary for why the activities of an organisation such as Pingala's are worthwhile (Boltanski and Thévenot, 2006). Worthiness combines the social with the economic, which speaks to the hybrid social and economic mission of the initiative.¹

The main contribution of this paper is to show the ways in which a variety of orders of worth are mobilised in urban settings to justify community energy. The friction between these orders is the site of innovation for the sector. This account of innovation differs from conventional individualistic accounts that succumb to 'physics envy' (Bygrave, 1989) by making reductionist assessments of an individual entrepreneur's cognition and behaviour. Rather, our account follows the recent turn in innovation studies to accept both the importance and contingency of social relations (Jack and Anderson, 2002). This paper builds on this recent turn by situating community renewable energy in literature on justification theory and orders of worth (Stark, 2011) before outlining how participant observation methods provide the data for this paper. Drawing on this body of evidence, Pingala's experiences of negotiating with host sites and a wider network of support for developing projects is then discussed, in order to demonstrate how value is developed through fragile and contingent social relations. These relations include, crucially, personal and emotional support for committee members for their extensive voluntary gift labour. We conclude by situating Pingala's experiences in the context of energy policy in Australia and draw attention to the democratising potential of community energy.

Justifications for Community Renewable Energy

Community is a term used variously in literature on small-scale, decentralised and community energy to 'distinguish an actor, a scale of activity, a spatial setting, a form of network, and a type of process through which carbon reduction objectives can be implemented' (Walker, 2011). The predominance of rural settings for community energy projects has seen these various referents elided by many policy-makers and commentators seeking to 'roll out' models from one setting to another (Devine-Wright and Wiersma, 2013). Whilst the local is acknowledged to be a complicated site of relations and discourses (Devine-Wright and Wiersma, 2013; Walker *et al.*, 2007), less attention has been paid to such dynamics in urban community energy settings. The reasons for this oversight are technological, where much work focuses on retrofit and energy efficiency rather than generation (Catney *et al.*, 2013; Bird *et al.*, 2014), as well as historical and conceptual.² Thus, we make sense of Pingala's experience by drawing from a conceptual understanding of community rooted in American pragmatism. This

lineage emphasises the diversity of processes and democratising potential of the concept. From this perspective, urban settings can still draw on dimensions of spatial setting and scale that enable low carbon innovation. But, as this paper illustrates, community energy initiatives can mobilise disparate expertise and values in order to stitch together stakeholder coalitions, and build links between these coalitions and the prospective host sites they work with. It is this combination of host site and stakeholder coalitions that constitutes urban 'community'. Rather than being a descriptively geographical concept, urban community is held together by the 'glue' of diverse justifications.

Actors in markets such as electricity navigate uncertain situations by developing shared cognitive and normative understandings of the qualities of what is exchanged (Aspers and Beckert, 2011). Markets emerge alongside conventions, both of which develop over time through shared expectations about quality, which may be institutionalised more or less formally. This process, known as qualification, is not a homogeneous process of pricing, but is entangled with *justifications*: vocabularies that demarcate the social worth of exchange from unworthy ones³ (Boltanski and Thévenot, 2006; Stark, 2011). Thus, justifications structure economic exchange by allowing uncertainty to be converted into risk (Stark, 2011). Worth and justification are inextricably intertwined.

What is at stake in this interstice of the social and economic is the worth of an initiative or exchange in uncertain situations. These vocabularies are a way to raise persons and things to a 'commonness' through justification, that is, stitch together coalitions of support that give projects sufficient justifications to proceed or to resist attacks on their standing (Boltanski and Thévenot, 2006). Orders of worth include market performance, industrial worth based on technical competence and long-term planning; 'civic' equality and solidarity; 'inspiration' expressed in creativity or grace; and 'renown' based on fame. Energy policy debates, such as whether and how quickly coal fired power stations should be retired, can be understood as battles of competing orders of worth. Climate change campaigners and their allies may routinely subject governing decisions about coal-fired power stations to competing qualifications of market efficiency (pricing through the National Electricity Market) and civic qualifications (their deleterious public health and climate changing effects) in public debates.

An emergent 'green' world of sustainability qualification has also been found in a variety of combinations of corporate responses to climate change (Nyberg and Wright, 2012). Scholars have applied the idea of orders of worth to a variety of markets⁴ though not yet to electricity. Electricity markets are most often subjected to industrial, market and 'green' sustainability orders of worth. Corporatisation and regulated marketisation have dominated discourses of electricity production in Australia since the 1990s. The centrepiece of this market is kilowatt hours priced according to regulated standards (Outhred, 2000). Over many decades, national electricity supply infrastructure had been planned and calculated by monopoly state entities according to a range of assumptions about growing demand for electricity (Outhred, 2004). However, peak oil, greenhouse gas, and environmental sustainability concerns in the late 1990s saw a regulated requirement for electricity producers to purchase a small percentage of their outputs from renewable energy generators. Successive Federal governments have reviewed the 'Renewable Energy Target' (RET) repeatedly since its introduction in 2001 (St John, 2014). The financial viability of both multi-megawatt wind and smaller solar photovoltaic community renewable energy projects have been crucially supported by the RET.⁵

Crucially, a new coalition of photovoltaic solar owners has emerged to lobby for Federal support for renewable energies. The 'Solar Citizens'⁶ not-for-profit organisation

links domestic solar PV owners with civic participation through a range of public campaigns in arcane areas of energy policy. Successful campaigns⁷ to stop charges for grid connection for solar energy have relied upon the language of fairness for individuals households 'doing their bit' for the environment.⁸ The prominence of domestic justifications in their campaigns suggests that energy policy is pulled towards individualised ownership and consumption on one hand and distant industrial efficiency on the other, with civic intermediaries like Solar Citizens bridging these orders of worth up to a point but still heavily reliant on mobilising individual households rather than stitching together new collectives. By contrast, Pingala's experience both opens up multiple orders of worth beyond the industrial and domestic, and in doing so helps to frame an emerging, dynamic sense of urban-embedded community.

Orders of worth are not just public vocabularies for economic exchange but operate at the organisational level in assessing decisions. Stark's (2011) ethnographic work in a range of business contexts explored inductively how orders of worth are deployed within firms to decide on the value of their products. Stark's (2011) concept of entrepreneurship is useful for analysing an initiative like Pingala in at least three ways: Firstly, decisions about the worthiness of projects are distributed across a diverse membership of experts and non-experts. Many of these experts are 'insiders' not only of Pingala but councils, solar installation companies, NGOs and other diverse initiatives. Secondly, the friction and cognitive clashes between these groups are the essence of entrepreneurship – rather than 'brokerage' between separate groups by an outsider such as a salesperson – that Stark outlines. Friction is *generative*, rather than merely signalling inefficiency. Thirdly, entrepreneurs generate new things *through* the friction between orders of worth. This suggests that community enterprise is less about heroic individuals than distributed decision-making about how investors, councillors and potential host sites ascribe value to energy projects.

Knowing Justifications

In our research, participant observation was employed to help identify how each of the three points of intersection between decision-making, expertise, and the internal dynamics of an enterprise operate. Participant observation requires the skills of ethnography to excavate "how affects, fragmentary concepts, and mundane details make up the friction-filled, para-infrastructures of everyday living through which worlds are made and inhabited" (Biehl and McKay, 2012: 1214). The making of Pingala's 'world' over the period of Declan Kuch's participation in their activities has occurred at a number of different kinds of events.⁹ The most important of these have been monthly meetings at an inner city University campus. One of us attended nine of these meetings as a member between Pingala's incorporation as an association in May 2013 and September 2014, using the group's exhaustive official minutes of the meetings as field notes (Declan Kuch acted as secretary at several meetings). No follow-up interviews have been conducted as Pingala is still negotiating with potential host sites and no projects have moved past site feasibility stage.

One of our key observations in this time was the distributed nature of evaluations about the worthiness of projects, not only across active Pingala members (those who have paid a nominal membership fee) but their friends, colleagues and acquaintances who participate as guests. Retired engineers who attend one or two of the monthly Pingala meetings, committed community activists involved in direct action, and visiting solar engineering experts offer their assessments of such uncertainties as how politicians will vote to change the Renewable Energy Target – crucial to financing small installations such as those Pingala seeks to develop. These convivial encounters have been opportunities to provide new perspectives on Pingala's plans. The frank exchange

of advice and experience operates to open up the potential for community by extending social relations between the formally incorporated group and its informal networks and friends. This social friction is the site of novelty and innovation where multiple evaluations can be assessed, and the worlds of inspiration and creativity intermingle with industrial worth and demonstrations of technical and planning competence. Exactly what innovations may emerge from this friction is a topic for further research; however, following Stark, we have seen this friction as a site of potential innovation.

Knowing innovation in this sense is also about knowing community in its wider guises, and departs from conventional accounts of entrepreneurship rooted in heroic individualism and a form of executive decision-making. These conventional accounts are problematic because they do violence to the distributed nature of decision-making, ignore the social affordance of different legal structures and their purposes, and tend to extend neoliberal ideas of competitiveness to domains poorly suited to such discourses (Davies, 2014). Acknowledging diverse justifications and multiple orders of worth, therefore, may help draw attention to the deleterious effects of privatisation, which has destroyed communal bonds under this dominant narrative of enterprise (Morgan, 2011; Haglund, 2010).

Pingala's Experience: from formation to host site search

A key event in the formation of both Pingala, and the wider community energy sector in Australia, was the townhall meeting alluded to above in the inner city Sydney suburb of Redfern in April 2013. Two of the leading figures in the sector spoke at this meeting. The first was Nicky Ison from the Community Power Agency, a significant NGO in the community energy policy space in New South Wales. Ison spoke of examples of success from Scottish, German and Danish communal power projects, defining community energy projects as "ones that Decarbonise, Distribute and Democratise our energy system". These imperatives of transformation, she argued, are fundamentally important for mitigating climate change and creating a more just world. This discourse builds on the idea first articulated in the 1970s that renewable energy systems are ecologically sustainable alternatives to "hard-path" fossil fuel dependency. Notions of decentralisation, localism, self-sufficiency, and human-scale governance are constants across this period (Morris, 2013). Here, the domestic world of localised trust and traditions, industrial worth for long-term planning, and the 'civic' world of equity and participation (Boltanski and Thévenot, 2006) connect through rescaled energy system design, ownership and operation. The Community Power Agency's assistance is wide-ranging, including lobbying and facilitating a personal support network for project proponents.

The next speaker gave a crash course in project economic viability. Embark's¹⁰ Andy Cavanagh-Downs emphasised the need to have a financially viable enterprise and 'Social License to Operate', specifying the rate of return Embark is aiming for in developing its own solar projects, as well as the minimum system size they have calculated for viability to sell solar power directly to buildings from roofs they own. This model of circumventing electricity networks and going 'behind the meter'¹¹ minimises the engagement with arcane, cumbersome electricity distribution regulations.¹² The undertone here, via a perceptive cautionary note from 'Big Society' politics, was that economic self-sufficiency was the goal. Renewable energy needed to 'stand on its own two feet' regardless of the policy environment. Market justification trumped all other justifications. Embark's support includes detailed cost spreadsheets, which they share based upon the expectation of a royalty donation from successful projects that adapt their support documents.

This snapshot from the early days of founding and planning shows how, from the very start, the tone was set for Pingala to navigate the goals of wider democratisation *and* more narrowly-defined economisation of energy within the parameters of contemporary political economy: change the energy system, but make the business viable. Scale it up, but change what you are scaling up to in the process. This tension sounds debilitating, but it has not been – rather it has been enormously productive, enabling the group to draw in a range of members to bring skills such as PV solar engineering, accounting and campaigning, and, often, passion.

This tension between democratisation and economisation has continued to surface through differing ambitions and priorities with project development. Discussions with the secretary and the convenor of Pingala at the 2014 annual general meeting (AGM) turned to building viable business models and wider campaigning strategies. One committee member was adamant that ‘Pingala is not a campaigning organisation’, yet *also* acknowledged that without changes in market rules for renewable energy – changes that would stimulate a wider shift in the value of renewable energy – no projects would be financially viable. The desire for both democratised and efficient, economical energy is also expressed in the following two paragraphs of the Pingala Vision Statement, which is the outcome of a visioning exercise conducted in early 2014 to canvass the members’ motivations and values:

We want to see community owned renewable energy projects generating green electricity and benefitting communities right across Australia, so that Pingala is a force to be reckoned with in the energy market and clean green community energy is the norm...

Community ownership of electricity generation leads to energy freedom, driving solutions back into the community, therefore creating empowerment, skills, knowledge and intercommunity trust. It also removes existing monopolies in the energy market, re-localising supply and thus creating resilience and efficiency in the community and the energy supply (Pingala, 2014).

Here the civic worth of public participation through ownership coexists with the market idea of ‘removing monopolies’ and creating efficiency. These competing justifications have required a variety of supports, which Pingala’s members have incorporated informally in ways that provide new opportunities to assess the worth of pursuing both specific sites and wider strategies. Decision-making has been distributed dynamically. For example, political staffers, lawyers and accountants bring enthusiasm, knowledge of their particular expert domains, and processes. Once these new members feel confident enough to join the group, their contributions can appear on the relevant spreadsheets for project costs as *pro bono* or paid. The core group they join includes energy efficiency specialists, renewable energy project developers, and a university student who has participated in direct action against coal mining. In other words, support has tended to come on an *ad hoc* basis as project needs are identified by engineers and project developers.

Lively discussions about how best to achieve Pingala’s goals have marked the critical period of active membership for the core group. Despite consensus that ‘getting [solar] panels on roofs’ is the motivating factor for members, interim goals have been necessary, each arrived through some planning and coordination: how much time and resources should be dedicated to branding, building up the organisation and membership infrastructure versus spending time courting host sites, developing business models and running financial models? These should – and have usually been – complementary, with some members bringing their expertise in site assessment and project development, others in community organising, communication and activism:

grouped in a largely outward facing 'action team' and a 'business models' group. The action team focuses on promoting Pingala as both a viable market-worthy investment and social initiative locally embedded in Sydney, whereas the business models group thrash out the technicalities and financial minutiae of project costs on spreadsheets.

The separation between civic and market justifications came to be a defining feature of the organisational structure of Pingala. As new actors such as host buildings and legal entities were enrolled, the separation between these two became more complicated. Different motivations and capacities pulled across civic and market organisational boundaries. For example, sites with a daytime electricity load fitting a normal power production curve for photovoltaic solar have been preferred for simply yielding the highest potential power output. One member who has professional experience in energy efficiency audits contacted a local patisserie – a technically and economically ideal host. After several meetings between this Pingala member and the shop owner, it was determined that the split incentives of the building owner and patisserie tenant prohibited a long-lived investment in the building from proceeding. Neither the owner nor tenant could commit to 10 years hence, let alone the 25 year forecast life of the panels. Any civic-minded spirit on the part of the host was ultimately frustrated by other legal issues.

More often, potential host sites have justified collaborating with Pingala through communal and civic discourse, rather than the efficient production of electricity presumed in much technical site assessment. That is, rather than energy bills being a matter of efficiently paying the least possible, as a market justification would have it, the prospective partnership with Pingala became an expression of civic responsibility. The particular character of site assessments has made the boundaries between the business models and action teams more porous. Negotiations with many potential host sites have entangled the teams with planning processes and politics, licensing, heritage and other obstacles that are not amenable to the tools of activism or business savvy. Meetings with a local pub who was both interested in the community benefits of solar and could act as a host for the launch party for Pingala exemplified these entanglements. Members with professional solar engineering experience sketched out full technical plans and the business models team eventually progressed negotiations to the head office of the company who owned the pub (and a number of others in Sydney). It was clear from the negotiations that partnering with a community energy initiative was not motivated by evaluations of financial or sustainability worth but rather would provide an opportunity to improve the pub's 'social license to operate' through the demonstration of new social linkages. This 'license' would assist the pub with other plans for development currently with council. Thus, the lines between civic and market justifications are not always clear-cut. The 837 Facebook 'likes' and hundreds of members Pingala holds are attractive marketing avenues for potential host site partners. However, at the 2014 AGM, one member summarised the experience as "like a bad breakup" after the pub management stopped returning Pingala's calls.

Two state government-owned businesses were also courted for potential host site partnership. High-level staff and management of both sites made enthusiastic responses to Pingala's advances, citing organisational reputation and financial reasons collaborating with Pingala. However, both potential hosts were ultimately restructured and the opportunity passed. The state government has listed one site for sale and the managers informed Pingala that liabilities to a community group would be an undesirable addition to the accounts as this sale proceeded. The other site is slated for sale and will be completely redeveloped. In this instance, market justifications have trumped all others insofar as government real estate assets have been sold off in large numbers.

However, a far more viable prospective partner is now on the horizon in the form of an enthusiastic local brewery. The site has a good matching daytime electricity load and at the time of writing, promising meetings with the building owner look likely to evolve into more a detailed project proposal and financial offering.

Negotiating Support Infrastructure

The 'elevation to commonness' documented by convention school theorists (Boltanski and Thévenot, 2006) is helpful for thinking about the ways community energy may emerge as a sector worthy of government and private sector support. 'Elevation to commonness' connotes a capacity to stitch together coalitions of support that give projects sufficient justifications to proceed. As we have seen in the previous section, the operation of plural orders of worth in a community energy project complicates the way in which that project constitutes itself. The same is true for the implication of plural orders of worth for shared infrastructures of support, particularly in the policy environment. The pervasive uncertainties of electricity policy developed by and for industrial-scale supply are amplified by the plural economic objectives and legal forms pursued by community energy. Indeed, government policy echoes that pluralism: government justifications in the political context of Pingala's operation in the state of New South Wales are best articulated in a recent speech by its Environment Minister Rob Stokes: "We want growth, we want innovation, we want new jobs and new investment but want to make sure the direction of that investment is helping create a healthy, safer, more progressive, more sustainable community." (Perinotto, 2014) These plural orders of worth filter into the legal, financial, planning and emotional support structures for community energy as described below.

Pingala has settled on developing urban photovoltaic solar through relatively simple proprietary limited (Pty Ltd) structures. However, there are a variety of technologies, ownership models, motivations and scale of projects. Cooperatives and Companies Limited by Guarantee are the most popular structures for community energy groups in Australia (Ison *et al.*, 2012). Finding expertise in cooperatives law has proven challenging and only one project – Hepburn Wind – has successfully implemented a project using a cooperative form (Ison *et al.*, 2012). A state-based regional development programme has been devised to address shortfalls in expertise: particularly legal expertise in drawing up contracts and conducting site assessments. These grants have not yet facilitated a distinct source of expertise tailored to the needs of community enterprises. At the inaugural Australian Community Energy National Congress, many groups told of lawyers charging full corporate hourly rates, taking much of their seed funding.¹³ Worse, the advice was poorly tailored to support the desired processes of community building.

Government support for Pingala, and a number of similar organisations in New South Wales, has largely come in the form of seed funding. Pingala has paid a coordinator part-time during its incubation phase, which has been decisive for managing meeting minutes, arranging 'action team' activities such as stalls, and other administrative activities. Voluntary labour, including specific solar expertise has fluctuated as day-jobs demand more time of members. Thus, the productive friction between orders of worth has not been all positive. Voluntary labour contributions ultimately strain personal financial resources.

The Community Power Agency recognises that a key aspect of shared infrastructure will be developing support for project leaders, such as facilitating regular meetings to discuss how project promotion is intersecting with personal circumstances and pressures in the nascent community renewable energy sector (Ison *et al.*, 2012). In

other words, support infrastructure is affective, as well as technical. Such affective support may mean modifying how a domestic order of worth is framed; specifically by supporting lower consumption lifestyles as workers move away from corporate salaries towards supporting sustainable enterprise.

Finding sites has proven challenging for Pingala, and this is closely related to the constitutive effects of local planning politics. Contributing to local planning politics has been both motivating and operated as a barrier, particularly where wind projects are concerned (Walker, 2008). 'Behind the meter' rooftop solar PV installations are most promising: hence Pingala's decision to focus on urban photovoltaic solar. In large part, their attractiveness is due to aggressive transmission line upgrade policies that have pushed up electricity prices, particularly in regional areas. However, the economics of rooftop solar has become most attractive at the margins of grid expansion where retail tariffs are considerably higher to reflect high grid expansion costs (Gifford, 2014). Negotiating community energy partnerships in these marginal areas presents both distribution companies and local communities with a potential win-win. The long, spindly structure of the Australia National Electricity Market leads to high transmission line losses and unreliable supply as more things can go wrong over such long distances. A key challenge for community energy groups will be negotiating a fair price for accessing existing infrastructure – which may set a precedent that effectively threatens the existing business model of electricity distribution from centralised power stations. This is another area where the boundaries between economisation and campaigning will be blurred.

Discussion and Analysis

Translating widespread public support for renewable energy into democratically-owned projects has been a very challenging process for groups like Pingala. Government support for renewable energy to correct for the large public subsidies that give existing power stations an advantage remains pivotal to the sector. This support remains politically contentious; however attempts by the incumbent Conservative government to weaken the legislated Renewable Energy Target in Australia have only served to galvanise public support for renewable energy (Kuch *et al.*, 2013; Taylor, 2014). The campaigning and direct lobbying of politicians from Solar Citizens led to a backbench revolt (Coorey, 2014).

It remains to be seen whether this media attention for renewable energy will give Pingala the public platform it needs to get its first projects off the ground. What is clear so far is that, almost uniformly, justifications presented by potential host site partners have not centred on technical efficiency or economic benefit. Rather, they have depended on the immediate context of negotiations, strategies and prevailing issues. This presents a difficult challenge for providing support appropriate for each of the orders of worth identified. The difficulty can be illustrated by returning to the distinction we began with, between mobilising the interests of household-level residential solar panel owners and building community energy initiatives. Solar Citizens' justifications for renewable energy have largely been reactive, centring on protecting householders' autonomy over aspects of their energy production and use.

There is real potential for community energy partnerships to stitch together new social relations centred on more sustainable forms of energy production and consumption. This may transcend campaigns for simply 'doing your bit' for the environment, as Solar Citizens' campaigns have been framed until now.

Justifying community energy necessarily involves friction between the civic, market, industrial and sustainability orders of worth discussed above. New combinations of

these orders of worth will require support on their own terms. This may mean redirecting Solar Citizens' resources to campaigning for projects that go beyond domestic worth, insofar as single households frame this. Technical support for the efficient design of systems has been abundant for Pingala. Rather, its main challenges lie in stitching together new social relations in an urban setting where renewable energy sited on individual households is enormously popular.

Conclusion: Justifying Urban Community

The assumption that community refers to a usually rural locale is pervasive in discussions of community energy, despite insistence that it is also a process. In this paper, we have instead illustrated the ways urban community energy stitch together new social relations around the multiple justifications for community energy, as demonstrated by the experiences of Pingala. These justifications are necessarily political, and often overtly so, but serve to develop channels for new commercial activity through partnerships and investment flows that are less abstract and more hybrid in their form than the current highly centralised energy system.

At the level of site-partnerships, relations centre on highly contingent and locally negotiated judgements and evaluations. However, Pingala's experience suggests that wider lessons flow from attentiveness to the multiple orders of worth beyond the financial that community energy partnerships stimulate. Worthiness is not based on economic returns alone, but also the social mechanisms by which calculation can be stabilised in an electricity market pervaded by political uncertainties. Furthermore, the democratising potential of community energy embodied in Pingala's vision goes beyond 'doing your bit' and suggests a value to the process of partnership in its many forms.

Notes

¹ "Pingala members love renewable energy and we want to see a lot more of it installed in Sydney. It's that simple... We'd like our first project to be a commercial solar project... [whereby the] host site will pay Pingala a fair price for the use of the solar panels and this income will be used to repay the finance used to purchase the solar equipment at the beginning of the project." <http://www.pingala.org.au/faq> (accessed 3 January 2015)

² Modern, European sociology from Simmel, Tönnies and others presumed an opposition between community and the urban experience and environment (Simmel, ([1903] 1976); Tönnies, [1887] 2012). This opposition lingers in much work on community energy.

³ Stark's concept of worth denotes a fusion of economic value and social values whose polysemic character "signals concern with fundamental problems of value while recognising that all economies have a moral component," and moves from static fixtures of value to "ongoing processes of valuation..." (Stark, 2011)

⁴ The theoretical framework of the economics of convention has been applied to evaluation processes in markets as distinct as the labour market, the wine market and financial markets (Aspers and Beckert, 2011).

⁵ For example, the Founding Chair of Hepburn Wind commented at the National Congress that the project would fold if proposed Federal Government changes to the Renewable Energy Target were passed (Holmes-a-Court, 2014). Pingala's proposed

projects using a different part of the RET are financially viable through the deeming of certificates as a form of upfront payment.

⁶ “Solar Citizens is an independent community based organisation bringing together millions of solar owners and supporters to protect and grow solar in Australia. Since starting in May 2013, we've grown to over 60,000 supporters around the country, but we work to represent the more than five million solar owners in Australia and the millions more who wish to go solar.” <http://www.solarcitizens.org.au/> (accessed 4 December, 2014).

⁷ See http://www.solarcitizens.org.au/our_victories (accessed 4 December 2014).

⁸ See http://www.solarcitizens.org.au/sunshine_state (accessed 4 December 2014).

⁹ As site feasibility for larger projects was discussed in greater detail than could be accommodated at the regular meetings, intensive workshop sessions on weekend afternoons were organised. Declan Kuch attended two of these: one where a table at a local pub was booked (itself a potential host site) and another at a council-owned hall. Both workshops involved detailed discussion of tailoring a number of different financial models to specific sites.

¹⁰ Embark Australia emerged to translate lessons from Hepburn Wind, Australia's first community energy project, into other projects and provide sectoral support. Embark describes itself as “a privately funded, non-profit organisation, governed by an independent board ... acting now to eliminate the barriers holding back the growth of a powerful, community renewable energy sector in Australia. Whether those barriers are a lack of project funding, specialist information and advice, reflexive opposition or the impact of poor policy settings, Embark's mission is to help erode them all.” <http://www.embark.com.au/pages/viewpage.action?pageId=2885608>

¹¹ ‘Behind the meter’ refers to installing photovoltaic solar on a building and wiring its output directly into appliances there. This model is economical where grid-purchased power (as measured by the utility meter) is more expensive than the cost of financing, installing, and maintaining the PV system.

¹² The current national electricity market rules (version 66) run to almost 1500 pages <http://www.aemc.gov.au/> (accessed 1 December 2014).

¹³ See presentations from the Congress held 16 & 17 June 2014 at <https://c4cecongress14.wordpress.com/> (accessed 7 December 2014).

Acknowledgements

We thank the members of Pingala, especially Tom Nockolds and April Crawford-Smith for their support and feedback. This article emerges from fieldwork conducted as part of a larger empirical research project entitled Between Social Movement and Social Enterprise. We are grateful for the support of the Australian Research Council Future Fellowship No FT110100483.

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References

- Aspers, P. and Beckert, J. (2011) *The Worth of Goods*. Oxford University Press.
- Becker, S. and Kunze, C. (2014) Transcending community energy: collective and politically motivated projects in renewable energy (CPE) across Europe. *People, Place and Policy*, 8, 3, 180-191.
- Biehl, J. and McKay, R. (2012) Ethnography as Political Critique. *Anthropological Quarterly*, 85, 1209-1227.
- Bird, C., Barnes, J. and Bristol Energy Network (2014) *Maintaining Momentum in Bristol Community Energy*. Available at: <http://www.bristolenergynetwork.org/mm> (accessed 12 June 2015)
- Boltanski, L. and Thévenot, L. (2006) *On justification: Economies of worth*. Princeton University Press.
- Bygrave, W.D. (1989) The entrepreneurship paradigm (I): a philosophical look at its research methodologies. *Entrepreneurship Theory and Practice*, 14, 7-26.
- Catney, P., Dobson, A., Hall, S.M., Hards, S., MacGregor, S., Robinson, Z., Ormerod, M. and Ross, S. (2013) Community knowledge networks: an action-orientated approach to energy research. *Local Environment*, 18, 506-520.
- Coorey, P. (2014) RET has proven resilient as well as renewable. *Australian Financial Review*. Fairfax.
- Davies, W. (2014) *The Limits of Neoliberalism: Authority, Sovereignty and the Logic of Competition*. London: SAGE.
- Devine-Wright, P. and Wiersma, B. (2013) Opening up the “local” to analysis: exploring the spatiality of UK urban decentralised energy initiatives. *Local Environment*, 18, 1099-1116.
- Eadson, W., Foden, M., Johnson, V.C., Hall, S., Burchell, K., Rettie, R., Roberts, T.C., Becker, S., Kunze, C. and Broto, V.C. (2014) Editorial: critical perspectives on community energy. *People, Place and Policy*, 8, 145-148.
- Gifford, J. (2014) Solar plus storage becoming “new normal” in rural and remote Australia. *Renew Economy*.
- Haglund, L. (2010) *Limiting resources: Market-led reform and the transformation of public goods*. Penn State Press.
- Holmes-a-Court, S. (2014) Hepburn Wind. *National Community Energy Congress*. National Library of Australia.
- Ison, N., Hicks, J., Gilding, J. and Ross, K. (2012) *The Australian Community Renewable Energy Sector - Challenges and Opportunities*. Sydney: Prepared by a consortium including Institute for Sustainable Futures, Community Power Agency, Office of Environment and Heritage.
- Jack, S.L. and Anderson, A.R. (2002) The effects of embeddedness on the entrepreneurial process. *Journal of Business Venturing*, 17, 467-487.
- Kuch, D., Ladwig, J., Titus, A. and Webb, S. (2013) *Managing Low Emissions Coal Technologies project risk: The role of public awareness*. Newcastle: Centre for Social Research in Energy and Resources.
- Morgan, B. (2011) *Water on tap: rights and regulation in the transnational governance of urban water services*. Cambridge: Cambridge University Press.
- Morris, J. (2013) The Evolving Localism (and Neoliberalism) of Urban Renewable Energy Projects. *Culture, Agriculture, Food and Environment*, 35, 16-29.
- Nyberg, D. and Wright, C. (2012) Justifying business responses to climate change: discursive strategies of similarity and difference. *Environment and Planning-Part A*, 44, 1819.
- Outhred, H. (2000) Electricity Sector Reform in Federal Australia *IEEE PES Winter Power Meeting, Special Session on 'Asian Power Reform in the Context of Rapid Expansion.'*

- Outhred, H. (2004) *The Evolving Australian National Electricity Market: An Assessment*. In: Hodge G, Sands V, Hayward D, et al. (eds) *Power Progress: An Audit of Australia's Electricity Reform Experiment*.
- Perinotto, T. (2014) Rob Stokes on a conflict worth having. *The Fifth Estate*. (Accessed: 22 October 2014).
- Pingala. (2014) *Vision Statement*. Unpublished. Sydney, Australia.
- Simmel, G. ([1903] 1976) *The Metropolis and Mental Life* in 'The Sociology of Georg Simmel.' New York: Free Press.
- St John, A. (2014) *The Renewable Energy Target: a quick guide*. (Accessed: 11 October 2014).
- Stark, D. (2011) *The sense of dissonance: Accounts of worth in economic life*. Princeton University Press.
- Taylor, L. (2014) Almost 90% of Australians support renewable energy target, says poll. *The Guardian*. (Accessed: 4 December, 2014).
- The Institute for Sustainable Futures, Starfish Initiatives, Community Power Agency, Embark and Association AT (2014) *National Community Energy Strategy - outline draft*.
- Tönnies, F. ([1887] 2012) *Gemeinschaft und gesellschaft*. Springer.
- Vorrath, S. (2014) Shoalhaven seeks \$120,000 for 99kW community owned solar project. *Renew Economy*.
- 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. *Wiley Interdisciplinary Reviews: Climate Change*, 2, 777-782.
- Walker, G., Hunter, S., Devine-Wright, P., Evans, B. and Fay, H. (2007) Harnessing community energies: explaining and evaluating community-based localism in renewable energy policy in the UK. *Global Environmental Politics*, 7, 64-82.