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Conceptualizing a social sustainability framework for energy infrastructure decisions



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ABSTRACT

The concept of social sustainability is discussed in a wide range of literatures, from urban planning to international development. Authors agree a notion of social sustainability is difficult to define, comprising numerous component parts (criteria), such as community cohesion, human wellbeing, effective dialogue and the access that citizens have to those that make important decisions on their behalf. The definition and measurement of these criteria and the role of social sustainability in energy decision making is a contentious issue. We argue that a community led, asset based approach is required to achieve any sense of how social sustainability can be defined in a community setting within the context of energy developments. We propose a conceptual framework based on a process of community group prioritization and visioning. Our earlier research on public participation and the role of dialogue for nuclear energy development in the UK, US and Japan is used to demonstrate barriers to be overcome if our systemic model of social sustainability is to become a reality. We highlight the importance of fairness and justice, place based approaches and socio-energy systems, concluding that these are necessary to promote a community and institutional awareness of social sustainability for large energy developments.

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1. Introduction

This paper presents a conceptual framework for social sustainability; a framework and a form of sustainability that allows various stakeholder groups, through deliberation and community visioning [1–3], to agree priorities that contribute to energy decision making for strong and successful communities. Community visioning is a citizen-based planning process, whereby an issue is defined by diverse members of a community, community assets are identified, a desired future is determined, and an action plan to achieve this future is developed [3]. It is increasingly used as a community development technique; for example, to encourage more participatory democratic processes in community planning and development [4], to address urban deterioration in Northern Ireland [5], and in local area planning on the Gold Coast in Australia [2]. As Lachapelle, Emery and Hays [3: 178] note, the

process “emphasizes community assets rather than needs”, and identifies future opportunities for communities.

The decisions made regarding the management of new and ageing energy infrastructure are of local, national and international importance. Improved dialogue between industry and stakeholders can significantly impact upon the quality of decision-making [6], demonstrating a more democratic decision-making process. The literature supports democracy, in governance and society, to be a key theme of social sustainability and our conceptual framework [7]. In this paper, we evidence the shift in the nature of the energy stakeholder–industry relationship through reference to our work at UK nuclear sites [8,9], where there has been an increase in dialogue taking place but questions regarding the fairness of this dialogue for stakeholders.

The importance of and need for further research into understanding the perceptions, priorities, involvement and support of local residents regarding large scale energy infrastructure is evident, and Walker, Wiersma and Bailey [10] echo this in the following statement:

“How to ensure fair processes and just outcomes for local communities, and how to enhance the acceptability of energy generation facilities amongst local populations remain important areas of human-energy research.” [p. 46]

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However, in democracies, obtaining public consent for development of any kind is challenging. We demonstrate this through reference to our work at US nuclear sites, where open competition for consent for energy related developments appears to improve the quality of the scientific choices made and the stability of these choices with a public faced by adverse events [11]. We embrace the move towards a participatory-based form of dialogue in decisions rather than a technocratic ‘top down’, expert-led, ‘one-way’ form of consultation as we discuss with reference to our work in Japan. In our framework, dialogue is not only ‘two-way’, but multi-directional and dimensional, incorporating multiple stakeholders [12]. Through the application of our framework, we aim to start to provide the tools required for communities to effectively engage and influence government and industry on decision-making that directly impacts upon them.

1.1. Why is a social sustainability framework needed?

The need for a conceptual framework to improve understanding of what social sustainability involves and requires has been acknowledged for some time. Lake and Hanson [13] emphasize this, whilst promoting urban sustainability:

“Given the conceptual vacuity burdening much of the debate, the question is not whether sustainability can be resuscitated conceptually but what conceptual framework offers the greatest promise of constructive understanding. Given the term’s co-optation by interests across the political spectrum, the question is not whether sustainability can be achieved but what must be achieved to assure sustainability” [p. 2]

Previous conceptual frameworks for social sustainability include those proposed by Yitfachel and Hedgcock [14] for urban social sustainability and Jones and Tonts [15] for rural social sustainability, the latter being an adaptation of the former. These present urban and rural sustainability as being influenced by social, environmental and economic components, in simple diagrams where these relationships are one-way, feeding into the urban or rural sustainability systems, without the self-reinforcing relationships proposed by Cuthill [2]. The factors contributing to the social component of both frameworks are identified as equity, community, and urbanity [14] or rurality [15]. This not only demonstrates how the understanding of key social sustainability components in the literature has progressed over the past two decades but also the lack of progression over the same period in developing an appropriate conceptual framework for social sustainability.

Cuthill [2] demonstrates a recent attempt to improve understanding of the social sustainability concept; employing an action research approach based on rapid urban growth in South Eastern Queensland, Australia. The author provides a framework employing theoretical, operational, ethical and methodological components deemed essential to regional social sustainability; social capital, social infrastructure, social justice and engaged governance respectively. This is similar to the conceptual framework presented here; similarly an action research approach, aiming to work with various social groups within a community to understand and acknowledge social issues that they prioritize rather than issues deemed by officials or other decision makers to be important.

In regard to sustainable decision-making for new energy projects, the work of Raven et al. [16,17] has informed our work. Managing social acceptance for new energy projects has highlighted the value of incorporating the views and contributions of local stakeholders, in order to anticipate and avoid potential problems with societal acceptance. The authors’ ESTEEM model employs vision building techniques and identifies conflicting issues with stakeholders. The conceptual framework presented here is also based on generating an understanding of local stakeholder

priorities and vision building to improve decision making. By doing so, later conflict may be avoided, as projects are able to develop more sustainably by incorporating a detailed understanding of stakeholder expectations and priorities, and formulating more socially acceptable options and solutions.

We theorize that the impact of a large infrastructure development on a community is more direct and tangible when compared to the regional and national scale. This is not to say that ecological and economic considerations are not of equal importance, but that social issues and potential social impacts at the community level should be given attention, understood in greater detail and incorporated further into local decision making processes. The result is more democratically informed and legitimate decision making, and potentially more sustainable at the community level. This does not generate a scenario to the extent of reflexive modernization [18], but it shares notions of this theory; working towards futures which are more desirable, to communities in this instance, rather than future scenarios that are pre-defined, to which people are forced to adjust to [19], and therefore, are likely more unsustainable.

2. Conceptual framework for social sustainability

When discussing social systems such as a community, we distinguish between systems thinking and *systemic* thinking [20]. Rather than assuming knowledge that identifies a social system to be objective and one that can be readily identified and improved; we understand reality as the creative construction of human beings [21]. We have used this definition as a basis to conceptualize social sustainability, seeking to understand reality as the construction of people’s interpretation of their experiences, in this case regarding energy infrastructure developments and their impacts on communities. Accepting the various traditions that comprise systems approaches to tackling complexity, as Systemists we aim to see the whole picture, entertaining shifts in perspective to reflect differing positions held by engaged observers [22]. By constructing mental models to create conceptual systems, interdependencies are highlighted. This approach seems particularly relevant when reflecting on large scale developments that affect communities over long periods of time. Energy developments, such as power stations (generation) and power lines (transmission) are an example of this. These have an operational lifetime of around 50 years, so impacts on a community can be intergenerational and variable, from gains in employment to a perceived loss in visual amenity.

Bijl [23] argues that social sustainability is instrumentally and intrinsically relevant to sustainable development, as “society needs a sense of community and commitment” (p. 162). Multiple definitions have been developed such as those for urban planning [24–26], as researchers/practitioners seek to understand social sustainability and its sub-themes, such as well-being and democratic governance [7] or development, bridge and maintenance sustainability [27]. Social sustainability is a concept gaining recognition as being critical for sustainable development and societal prosperity.

2.1. Social sustainability, stakeholder participation and dialogue

How do we ensure that social sustainability as a concept is incorporated into community-led decision-making? As previously discussed, we embrace the move towards a participatory-based form of dialogue to derive robust socially sustainable decisions over the long term. A substantial literature supports the notion that greater public participation in decision-making serves to significantly reduce conflict, leading to more robust decisions for large energy infrastructure developments. Less opportunity for public participation increases the likelihood of public opposition and delays to developments [28]. Such developments include nuclear

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