

'Imagining energy potential', a critical reflection on spatial scenarios in a participatory planning process

Clemens Bernardt, Alex van Spyk and Sandra van Assen

Hanze University of Applied Sciences

bernardt@home.nl

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Abstract

Significant factors in the success or failure of energy transition arise from the spatial potential of places and their communities. Scenario planning appears to be an appropriate design instrument to enable architects to unveil, conceptualise, imagine, test and communicate this potential to stakeholders. This paper critically reflects on the scenario as an architectural design instrument. Inscribed with implicit political intentions, scenario planning may be a far from neutral design instrument. Instead of triggering communities to explore local energy potential, a scenario may have a normative effect on a community's imagination. The paper aims to define guidelines for the deployment of scenarios in an open, participatory planning process. To mediate in a local participatory planning process, we argue, scenarios should be situational, dynamic and open-ended, allowing or even triggering communities to (re)define the issues relevant to a place during the ongoing process of energy-transition. How, when and where should scenario planning be deployed in order to enable communities to understand and develop their local energy potential?

Keywords: local energy transition; spatial scenario study; participative planning process

1. Introduction

Urged by shrinking regional resources of natural gas and growing problems related to the exploitation of these resources, local communities in the North of the Netherlands become increasingly aware of the importance to take control of the production of renewable energy. Local energy initiatives emerge in order to produce renewable energy independent from large scale energy companies. These initiatives are strongly attached to their own environment; what counts is the future of their communities. The success or failure of technological innovations within these initiatives is strongly connected to local spatial and socio-economic factors, and the collective capacities within local communities to distinguish and develop their energy potential.

Boer and Zuidema (2013) assert that bottom up innovations in the field of renewable energy “should be well connected to the local physical and socio-economic landscape” (Boer and Zuidema, 2013, p. 2). To a large degree local energy is a spatial planning issue. In this paper we elaborate on the role of architects in enabling these energy initiatives to distinguish and develop their local energy potential. How should these initiatives be assisted during the unclear processes of their energy transition in order to orient themselves towards the future of their communities? The paper focuses on the potential role of spatial scenarios during these processes.

Based on case studies of German local energy initiatives, Busch and McCormick (2014) conclude that it is far from self-evident that processes in a local energy transition proceed from clearly elaborated visions and strategies. Local energy initiatives often appear simply to start; hands-on, without predetermined statements or strategies. “[S]trategies, visions and political declarations of intent are ex-post products of a successful renewable energy implementation process rather than an initial driver [...] processes grew and were not envisioned from beginning to end” (Busch and McCormick, 2014, p. 12). Van der Schoor and Scholtens (2015) stress the recent increase of activities, unfolded by local energy initiatives in the north of the Netherlands on the one hand and the lack of “developed local visions with clear energy goals” (van der Schoor and Scholtens, 2015, p. 674) within many of these initiatives on the other hand. We propose in this paper that it is perhaps more important to follow and if necessary support a local initiative’s imagination, than to convince this community of the need to establish elaborated visions, goals and strategies. We presume, architects may support an initiative’s physical process of growth-by imagining distinct ideas concerning its spatial development; exposing the spatial consequences of its potential developments; activating, opening up or enriching discussions and negotiations concerning these developments within a local community, without framing these developments within the fixed boundaries of preconceived or standardized solutions. Perhaps spatial scenarios may play a valuable part in this process, if these scenarios are sketched hands-on, in direct cooperation with the different stakeholders in this process, and if these scenarios are carefully embedded in a community’s specific historic and spatial context. Spatial-temporal and participative processes are the central issues in this paper. Local energy transition, we argue, is a situational and open-ended process that is carried out by communities themselves. How, when and where should spatial scenarios be deployed to assist these communities in exploring, imaging and developing their local energy potential?

The paper is written in the context of a long-term research and design atelier at the Academy of Architecture in Groningen, the Netherlands, in which second and third year master students explore the roles of architects in local energy transition. As part of this atelier, these students are introduced to scenario development. The paper aims to embed scenario development in the spatial and political environment of local energy transition.

In the following paragraphs we subsequently elaborate on the precariousness and instability of this environment; on the local actors that to some degree produce this environment in their everyday spatial practices and negotiations; on the potential role and meaning of spatial scenario studies during these negotiations; in order to conclude with a number of preliminary guidelines regarding the deployment of these studies in a local participative planning process.

2.1. A sense of direction

Jack Sparrow, in the movie “The Pirates of the Caribbean” possesses a “self-referential compass” (Bühlmann, 2008, p. 1) that shows him the direction to a place where he will find what he is really looking for. Whilst the commodore of the British fleet in this movie determines his strategies to pursue the treasures of the Caribbean on a huge map of the oceans of the world, provided with a framework of longitudes and latitudes, Jack Sparrow is guided by his body, his compass, and by the “wind and noise, forces, and sonorous and tactile qualities” (Deleuze and Guattari, 1987, p. 479). The direction, Jack Sparrow follows, is dependent upon the moment, the circumstances and a sense of urgency. The exact goal of his journey is defined along the way. It is untraceable on the commodore’s map, as it eludes each intersection point of longitude and latitude. Jack Sparrow’s body is in a “line of flight” (ibid., p. 14); only along the way, the awareness of his trajectory is growing. His compass helps him to orient in the “smooth space” (ibid.: 480) of the Caribbean. Smooth spaces, Deleuze and Guattari argue, are intense and undifferentiated spaces; immense fields of possibilities “constructed by local operations involving changes of direction” (ibid., p. 478). Without Jack Sparrow’s self-referential compass, we are depending on our own sense of direction and imagination to navigate these spaces.

2.2. Negotiating futures of a place

To a large degree, local energy transition is a spatial transition. “Careful planning that focuses on both the physical landscape and societal responses is required” (Boer and Zuidema, 2013, p. 2). This transition intervenes in a community’s everyday spatial practices and routines. The future of local energy supply is defined in countless negotiations between different local stakeholders; each having their own norms, ambitions and interests. In this paragraph we elaborate on the spatial and political environment of local energy transition, drawing from Doreen Massey’s realm of thought regarding space as a product of local practices and negotiations,

Massey conceives places as “integrations of space and time; as *spatio-temporal events*” (Massey, 2005, p. 130). Contemporary space, Lefebvre asserts, is a “(social) product” (Lefebvre, 1974, p. 26). A space is produced in everyday routines and practices. In Lefebvre’s view, space is a product; a concrete substantiation of everyday life, instead of an abstract container filled with objects. A space unfolds during human and non-human activities. The relations, contradictions and conflicts between these activities are readable in a space. Massey stresses the role of time in the production of space. A space, Massey argues, is contingent and relational. It is a more or less accidental assemblage of human and non-human entities; each entity possessing a distinct story; traversing a unique trajectory, in order to assemble; produce a temporary space; and continue its journey. Exemplary for such an assemblage are the human activities on and around Mount Skiddaw. Rather than a timeless and solid foundation for these activities, this mountain itself is active; it is even a relative newcomer in the area. Massey sketches the trajectory this volcanic formation has traversed during the millions of years of its existence, coming from the southern hemisphere in order to temporarily settle in the Northwest of England. “The rocks of Skiddaw are immigrant rocks, just passing through

here" (ibid., p. 137). Trajectories, Massey argues, possess their own temporalities; they cover different time-scales. Here and now, extremely slow geological processes coincide with more or less volatile human practices and routines. Rather than being autonomous, these processes are interconnected; they proceed from other processes. In this context, Massey speaks of "space in process" (ibid., p. 11). Rather than being finished, space is "always under construction" (ibid., p. 9). A space is open, Massey argues, if it is unfolding in a process of collective negotiations and "active experimentation" (ibid., p. 11); a space is closed, if these experiments and negotiations are framed in advance. "Only if the future is open is there any ground for a politics which can make a difference" (ibid., p. 11).

Shove and Walker (2007) stress the implicit assumptions and political choices that underlie seemingly self-evident and attractive projections on a 'sustainable future'. "[D]espite extensive debate and rhetoric about the construction and democratic choice of visions and images of the future, the depth of the politics involved is frequently underplayed" (Shove and Walker, 2007, p. 766). Sustainable visions and images of policy makers may frame the field of play of local energy transition, as well as the actors who play their part in this transition. These visions and images are far from neutral and have a limited expiration date. "[I]t is necessary to recognize", Shove and Walker argue, "that provisional templates for transition are political statements that can only be partially inclusive (when there are ever more actors on the social stage), contingent (when "conditions are dynamic) and potentially unstable as material forms and practices evolve over time" (ibid.).

[T]he mood of society inclines towards change and the changes promise to be more rapid (de Jouvenel, 1967, p. 10). De Jouvenel (1967) argues that our projections into the future are based on a "[m]ap of the present" (de Jouvenel, 1967, p. 37). From this map, that stores our knowledge and past experiences, we derive our norms, future challenges and expectations. However, this map is "charged with non-specifiable possibilities" (ibid., p. 87); time after time it appears an unpredictable foundation for our projections into the future. Just like Mount Skiddaw will presumably proceed in its journey over the oceans of the world, hidden fault-lines in this map may develop into "landslides and upheavals" (ibid., p. 38); deviate human and non-human trajectories; and disturb familiar patterns. As developments progress at a higher rate, de Jouvenel, asserts, we are increasingly incapable of relying on current knowledge and experiences. Our patterns, projects and expectations are increasingly questionable.

De Jouvenel conceives a project as a product of the imagination that is projected into the future. "[A]ctions coming before this imagined future are determined by it and prepare it rationally" (de Jouvenel, 1967, p. 28). A project, he points out, is bound up with an intention; "a direction in which a person continually bends his energies" (ibid., p. 29). Building on de Jouvenel, Marchais-Roubelat and Roubelat (2007) assert that an actor's projects and actions are evoked and constrained by the systems s/he participates in. Our environment, they argue, "is a combination of multiple subsystems which move at different speeds" (Marchais-Roubelat and Roubelat, 2008, p. 26). A system's development and its associated patterns may progress by fits and starts. Once in a while a system is questioned by endogenous or exogenous factors. As a result, familiar patterns may lose validity. In the transition between subsequent systems, new patterns may emerge.

The energy system in the North of the Netherlands, dominated for decades by the supply of gas, is solidly anchored in regional institutions, economy and infrastructure. “[T]he energy system is a complex web of interrelated actors and networks” (Boer and Zuidema, 2013, p. 1). This system, however, is in transition. Although the gas network still plays a pivotal role, new local and sustainable energy initiatives emerge. In the absence of a powerful, centrally developed vision regarding the region’s energy transition, these initiatives take control of the transition of their own environment by developing sustainable energy projects. Local energy initiatives, van der Schoor (2016) argues, often consist of volunteers who deploy their technological, financial and managerial background in order to develop “grassroots innovations” (van der Schoor et al., 2016, p. 96) concerning the production, distribution and, possibly, the storage of renewable energy. “[T]hese volunteers are engaged citizens who have a strong normative motivation to invest their time and effort in the pursuit of sustainable energy” (ibid., p. 100). Their local projects, however, are still obstructed by a political, economic and spatial environment that is insufficiently prepared to accommodate the innovations bound up with these projects. “[T]he Dutch government [...] foresees few roles for local initiatives in the ‘energy transition’ (Boer and Zuidema, 2013, p. 5)). The transition from fossil to local, renewable energy resources takes place in a volatile environment of innovative experiments and practices; of temporary networks, coalitions and conflicts. Such an environment is unstable; developments are continuously accelerated or disturbed by unexpected events. In order to support local communities to (re)orient themselves in this environment, an architect first and for all has to gain insight in:

- the human and non-human actors in and around these communities;
- their histories, perspectives, mutual relationships and collective practices;
- their spatial patterns, connected with their current energy systems;
- the incentives, potential, and eventual contradictions of their energy projects.

2.3. A role for spatial scenarios in local energy transition

A scenario is “[a] description of a future situation and the course of events which allows one to move forward from the original situation to the future situation” (Godet and Roubelat, 1996, p. 164). A scenario may represent a possible, a plausible, a desired or feared future. Börjeson et al. (2006) assert that scenarios attempt to answer three “principal questions” related to the future: “*What will happen?, What can happen? and How can a specific target be reached?*” (Börjeson, 2006: 725). In their scenario typology, Godet and Roubelat “(1996) distinguish between “exploratory” and “anticipatory or normative” (Godet and Roubelat, 1996, p. 166) scenarios. Although anticipatory or normative are possible, they may not be plausible; they are desired or feared “visions of the future” (ibid.). Anticipatory or normative scenarios are retrospective; based on desired or feared projections into the future, these scenarios develop paths back to the present. Exploratory scenarios, they argue, are prospective; based on “past and present trends” (ibid.), these scenarios develop paths into “likely future[s]” (ibid.). The choice for one specific, or a mix of methods in a scenario study, Godet and Roubelat, assert, depends on the degree a user is able to appropriate the method(s). “Such appropriation is necessary to turn anticipation into action” (Godet and Roubelat, 1996, p. 166).

The appropriation of a spatial scenario study by a local community, we argue, has a small chance of success, if actors within this community are confronted with ready-made visions. Instead, we argue, these actors must be enabled to cooperate hands-on in writing and sketching their future. Rather than providing an incidental framework for a community's future, a scenario study in the context of local energy transition, provides a community with a "self-referential compass" (Bühlmann, 2008, p. 1); a compass that enables this community to continuously negotiate and attune the projects and actions of its distinct actors. During the long-term and uncertain processes of this transition, actors and communities are continuously faced with unexpected problems and choices. The compass enables these actors to (re)orient themselves in a changing environment and, if necessary, to adjust their goals. The compass follows an actor's trajectory, both *retrospectively*; by critically evaluating his or her past and present actions in light of a desired or feared future, and *prospectively*; by creating insight in the probable consequences of his or her own actions, present tendencies or likely events, in "a fan of possible futures" (de Jouvenel, 1967, p. 16).

Scenario's, Celino en Concilio (2010) assert, "are assumed and arranged as tools that might assure a continuous and deliberative engagement in the future by multiple actors" (Celino and Concilio, 2010, p. 737). The deployment of the compass aims to enable actors in local energy transition to make collective choices regarding their future projects and actions. It is a communicative technology that addresses these actors' individual trajectories, goals and actions; that clarifies the spatial relations, similarities and contradictions between their individual projects and actions; and involves these actors in collective negotiations and spatial experiments. Scenario's "are work-in-progress products" (Celino and Concilio, 2010, p. 737); rather than ready-made solutions, scenarios mediate in an open and participative planning process.

Like the compass that supports Jack Sparrow in determining his course in smooth space, a scenario study is a far from neutral technology. Whilst a scenario study is deeply connected to the personal references of the one who deploys this technology; on the other hand this technology also affects and constitutes these references. "Mediating technologies" (Verbeek, 2006, p. 365) "help to shape what counts as real" (ibid., p. 366). Technologies transform an actor's perception of the future by highlighting specific aspects of a possible future reality "while reducing other aspects" (ibid., p. 365). Framing a reality or a problem, Inayatullah (1998) asserts, "changes the policy solution and the actors responsible for creating transformation" (Inayatullah, 1998, p. 820). A scenario study in the context of local energy transition may consciously or unconsciously affect the actors' perceptions of the transition of their environment, as well as their goals, projects and actions. In the involvement of specific actors in a scenario study; in the representation of their individual trajectories, goals and choices; in the analysis of mutual relations, similarities and contradictions between their projections into the future, choices are made; choices that inevitable proceed from a specific framing of the studied problem.

3. Conclusion

In this paper, we aim to define a number of provisional guidelines regarding the roles of the architect in local energy transition in order to evaluate these guidelines during the current research and design atelier. The paper focuses on the deployment of spatial

scenario studies that enable actors, involved in local energy initiatives to explore, imagine and develop their energy potential. Local energy transition, we argue, is a situational and open-ended process. On the one hand, this process is carried out and controlled by a community's human and non-human actors; on the other hand, this process intervenes in these actors' everyday practices. We provisionally conclude that in order to assist these actors in a spatial scenario study, an architect needs to:

- gain insight in these actors; in their histories, perspectives, mutual relations and collective practices; in the spatial patterns connected to their current energy systems; in the incentives, potential, and the eventual similarities and contradictions of their energy projects;
- engage in the long-term and uncertain processes that these actors are going through in the transition of their community;
- support them during critical moments in these processes, in order to (re)define their directions and goals;
- clarify and discuss current as well as future spatial issues bound up with these actors' projects and actions;
- deepen his or her insights in the representations, interpretations, and "assumptions" (Inayatullah, 1998, p. 820) that frame the spatial and political environment of local energy transition, as well as in his or her personal incentives to participate in this local transition.

References:

- J. de Boer and C. Zuidema (2013) 'Towards an integrated energy landscape' conference paper Dublin 2013: AESOP-ACSP Joint Congress.
- L. Börjeson, M. Höjer, K. Dreborg, T. Ekvall and G. Finnveden (2006) 'Scenario types and techniques: Towards a user's guide' in *Futures* 38, pp. 723-739.
- V. Bühlmann (2008) 'Gilles Deleuze as a Materialist of Ideality'
www.caad.arch.ethz.ch/.../Buehlmann_Deleuze_Pittsburgh2010.pdf
- H. Busch and K. McCormick (2014) 'Local power: exploring the motivations of mayors and key success factors for local municipalities to go 100% renewable energy' in *Energy, Sustainability and Society* 4(5), pp. 1-15.
- A. Celino and G. Concilio (2010) 'Participation in environmental spatial planning: Structuring-scenario to manage knowledge in action' in *Futures* 42, pg. 733-742.
- B. de Jouvenel (1967) *The Art of Conjecture*, (New York: Basic Books, Inc.).
- G. Deleuze and F. Guattari (1987) *A Thousand Plateaus Capitalism and Schizophrenia*, (Minneapolis: University of Minnesota Press).
- M. Godet and F. Roubelat (1996) 'Creating the Future: The Use and Misuse of Scenarios' in *Long Range Planning*, 29(2), pp. 164-171.
- S. Inayatullah (1998) 'Causal Layered Analysis: Poststructuralism as method' in *Futures*, 20(8), pp. 815-829.

- H. Lefebvre (1991) *The production of space* Trans. D. Nicholson-Smith (Malden: Blackwell Publishing).
- D. Massey (2005) *for space*, (London: Sage).
- A. Marchais-Roubelat and F. Roubelat (2008) 'Designing action based scenarios' in *Futures* 40, pp. 25-33.
- E. Shove and G. Walker (2007) 'CAUTION! Transitions ahead: politics, practice, and sustainable transition management' in *Environment and Planning A*, 39, pp. 763-770
- T. van der Schoor and B. Scholtens (2015) 'Power to the people: Local community initiatives and the transition to sustainable energy' in *Renewable and Sustainable Energy Reviews* 43, pp. 666-675.
- T. van der Schoor, H. van Lente, B. Scholtens and A. Peine (2016) 'Challenging obduracy: How local communities transform the energy system' in *Energy Research & Social Science* 13, pp. 94-105.
- P.-P. Verbeek (2006) 'Materializing Morality: Design Ethics and Technological Mediation' in *Science, Technology & Human Values*, 31(3), pp. 361-380.