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Sustainable energy planning as a co-creative governance challenge. Lessons from the Zero Village Bergen

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ABSTRACT

Sustainable energy transition implies different, but interlinked strategies, technologies and policies, implying a complex array of overlapping systems that are shaped by diverse actors' interventions. The formal mechanisms of sustainable transition are ill equipped to address and conform with the political-power dimensions. Furthermore, there is no determined blueprint for sustainability transitions and the existing governance systems hitherto have been inefficient and implicated in unsustainability. This paper argues that energy transition requires conceptualization of co-creative governance, and the dynamic interplays between power relations in the face of conflict of interests. Thereby, this paper goes beyond the traditional division of governance network between private, public and academia to investigate the political structure underpinning the functionality of governance. To assess how sustainable energy transitions can be materialized, the aim is to understand how different multilevel governance systems deal with the competing interests, asymmetrical power and mobilization of resources for goal achievement in the case of Zero Village Bergen. The purpose is to shed light on political and institutional challenges that are common to other sustainable transition initiatives. The method used is semi-structured interviews with private and public actors. The findings describe how the latent conflict between different involved actors' interests has led to prolongation, recurring controversies, stagnation, and moments of adaptation.

1. Introduction

The challenge to make a city sustainable is not primarily on technology, but on service transformation and improvement [1, 2]. The latter is beyond the capacities and reaches of the traditional government alone, and innovative form of governance is needed [3]. The governance approach emphasizes the plurality of actors, indicating that there is no single actor, who has enough steering capacity to determine the strategic actions of the other actors [3, 4]. Dependencies between actors create patterns of relations between them, and the inevitable inconsistency between their interests make the processes of bargaining, coalition formation, and conflict mediation imperative. In these processes, many actors may be forced or convinced to change their original or real attitude and set new goals. Based on their new goals, new networks will be formed, and actors may play new roles. Such loops can be repeated, again and again, until a particular condition is satisfied. Therefore, the outcome of sustainable energy planning is subject to change during the actors' networks' lifecycle in different phases of initiation, emergence and implementation or uptake. On the other hand, the multiplicity of actors and hidden informal exercise of power to protect special interest can exacerbate the political and managerial complexity, ambiguity and uncertainty. This can lead to prolongation, recurring controversies, stagnation, and unwilling adaptations, and challenge transparency, accountability and legitimacy of

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the planning process. Thus, strengthening the institutional governance is critical for taking cooperative action and for implementation of effective policies. However, there is a lack of empirical studies to investigate the dynamics of governance, and mechanisms of sharing resources, shifting power relations and fostering knowledge flows within sustainability transition [5]. While this paper fills the knowledge gap, it considers the contextual basis of the governance functionality that a specific governance system may embed a distinctly opposite output in another context. Thus, it concentrates on the transformation of governance in a single case of Zero Village Bergen.

2. Theoretical approach

Potts and Vella [6] argued that any analysis of a governance system must consider how it is structured and organized, but also the way in which the structures in the system function. Analyzing both the 'structures' and 'functions' enables planners to take a more systemic view of decision-making, while still accounting [in a non-linear way] for the numerous dynamic interactions of multiple structures across scales and policy spheres. Governance structure and function are interconnected and affect each other constantly, thereby analyzing the dynamics of transition governance without considering the interconnection between governance structure and function is incomplete [6, 7].

2.1. Governance structure
To illustrate the governance structure, i.e. the way actors stand in a network and interact with each other, this paper adopts Avelino and Wittmayer's [8] Multi-actor Perspective (MaP) which is developed to understand transition politics by focusing on shifting power relations. In this model, (figure 1), the functionality,
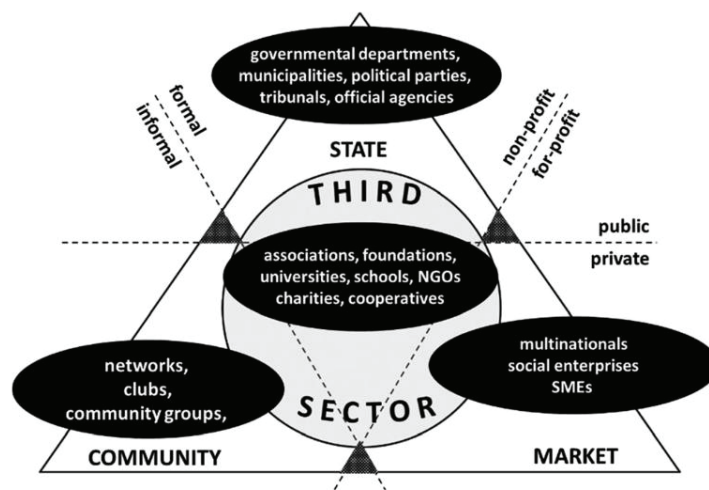

Figure 1: Multi-actor governance structure model [8]

Figure 2: Illustration plan for Zero Village Bergen[*]

i.e. the actors' interactions are seen along the three axes: (1) informal-formal, (2) for profit-non-profit and (3) public-private. Similar to the quadruple helix, actors are structured in four actor categories; 1. State; 2. Market; 3. Community; 4. Third sector, which universities/academia belong to. A rationale behind the choice of MaP is its deep attention to the role and power of the university as a social entrepreneurial and cooperative organization, conceptualizing an intermediary between the three others [8] In this model, sectors are not fixed entities, indeed the boundaries between them are contested, blurring, shifting and permeable[8]. In addition, an actor can be a person, organization, or a collective of persons and organizations, which is able to act [8, 9].

A person, who has a legal right to intervene in a process, is thus a stakeholder (e.g. the residents), until he/she takes an action and plays a role to influence the outcome and becomes an actor. Actors and institutions can exist at multiple scales/levels of governance, interconnect with other actors across the system, and fulfill more than one role, due to the existing interdependencies [10]. Accordingly, it is relevant for the transition governance to sustainability to assess who the different

actors are, how they exercise their power and the (shifting) power relations between them [8].

2.2. Governance function

The structure and position of each actor at different levels of governance give them some functional attributes that lead to actions that are no longer in the direction of their positional affiliation [10]. The functional governance explains how different components influence and shape actors' actions/decisions over time. Functionality is explained by different levels of connectivity (direct-indirect or formal-informal) and power relations between actors to have access to information, knowledge or other forms of resources. Planning and decision-making in the face of inconsistent interests bring the idea of power into focus [11] and asymmetrical power relations can make the decision-making conflictual [12, p.31]. Accordingly, investigation of transition governance functions requires an understanding of the interaction between all different components, such as interests, power, conflict, roles and resources.

3. Methodology

The main body of empirical materials in this study consists of five qualitative semi-structured interviews and follow-up conversations (on later stages) with seven central actors, involved in the Zero Village Bergen (ZVB) case in autumn 2013. The ZVB is a single case study [13] that does not allow for statistical generalization of findings. However, through seeking out sufficient variability in informants and triangulation of statements it is possible to use analytical generalization to put forward theoretical propositions [13]. ZVB has been a pilot project at the Research Centre on Zero Emission Neighborhoods (ZEN) at the Norwegian University of Science and Technology (NTNU) in Trondheim. This center serves as an innovation hub for co-creation between different stakeholders across sectors, functioning as a lighthouse to develop solutions in real-life contexts to support the development and dissemination of ZEN-related knowledge. The authors are partly connected to the ZEN Centre, but this study is performed independently of this institution and is not formally a part of the research performed under ZEN work packages.

Interviews were taped, transcribed, coded and analyzed by template analysis [14]. To protect the identity of informants, no detailed description of their position and role in the case is disclosed and their quotations are anonymous. However, the authors corrected grammatical

[*] http://zerovillage.no/om-prosjektet/andre-forhold/

errors, using brackets to protect the original wording. In situations where it was uncertain whether a correction might change the core of an interviewee's content and intended meaning, the errors remained unchanged.

4. Zero Village Bergen (ZVB)

ZVB consists of a new neighborhood on the outskirts of Bergen (16 km south of Bergen city center). The plan includes approximately 720 dwellings (92 000 m2), divided between terraced houses (68% of total floor area) and apartment blocks (25%). 7% of the floor area is dedicated to nonresidential purposes such as offices, shops and a kindergarten. In addition, a common parking garage is planned.

A forest and a lake, as well as a residential area and a road, surround the area. The planned development area is currently in use as a greenfield with some semi-detached houses. The closest public transportation hub is the light rail, 1.5 km to the north, but there is a bus stop on the site with bus frequency approx. every 15 minutes.

Below is a brief summary of the project's progress so far:

- 2009 ZEB (later ZEN) is established - ByBo joined as an industrial partner
- 2010 BYBO/ZEB choose Ådland as a site; Bergen City Council started making an area plan, which faced opposition from County Governor of Hordaland and Hordaland County Council
- 2013 The Ministry of the Environment approved the area plan with remarks; New prognosis on airport noise pollution challenges the planned development
- 2014 Public hearing demanded further clarification of energy and planning process
- 2016 Revised plan was sent to the County Governor of Hordaland
- 2017 Opposition from the County Governor o was sent to the Ministry of Climate and Envionment (MoCE)
- 2018 The Ministry of Climate and Environment upheld the objections from the County Governor
- 2019 The area plan for ZVB was finally approved by the Ministry of Local Government and administration

In this section, we describe how centrally involved actors have experienced selected elements and episodes in a specific moment in the process (late autumn 2013). Figure 3 shows the position of actors in a governance system, based on the model, adapted from Avelino and Wittmeyer [8].

In the early phase of the project in 2009, the most critical issue in ZVB was the site selection, which had to meet the stringent ZEB technical criteria. As a part of this process, ByBo contacted the central decision makers
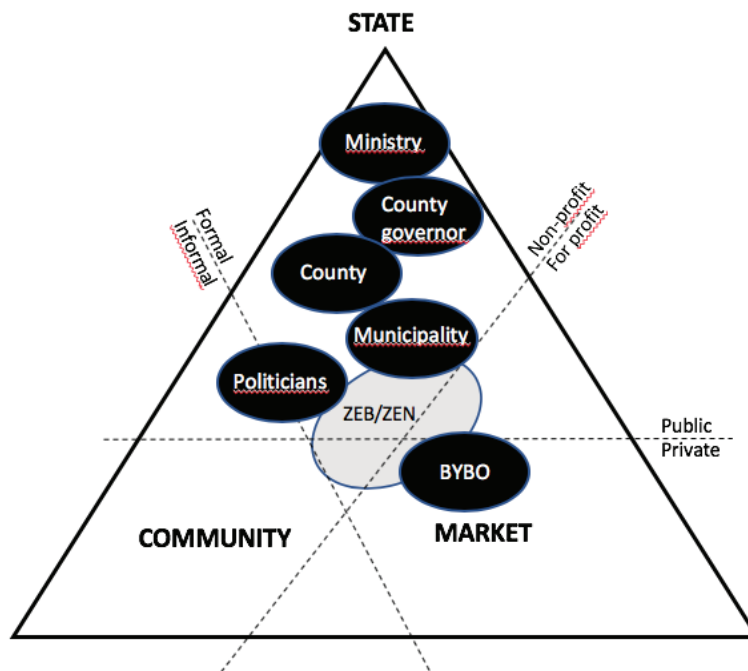

Figure 3: The governance structure Adapted from Avelino and Wittmeyer [8]

in the region and exercised their informal power/ influence to gain the essential support for the project. Here in the words of our interviewee in ByBo:

We have tried to influence [the people] to speed up the process, such as the politicians in Bergen, the Chamber of Commerce and the Hordaland bench to represent us in the parliament. We discussed the project with them and gave them the information to gain their support. And we were successful to be heard when we needed it.

In addition, ByBo had to have a more formalized communication with the property division of the municipality to choose a site. In response, the municipality introduced some pre-regulated residential areas. However, the area that BYBO was interested in, i.e. Ådland, was agricultural land not regulated for housing purposes. According to one of the interviewees:

When we evaluated the municipality's suggested properties, we realized that there would be a competitive bidding for them. A public property – needs to be sold in a market (….) In practice, none of the properties were feasible for us.

The choosing of Ådland created a conflict with several public agencies, among which the county governor of Hordaland was the strongest opposer. For the county governor, the choice of Ådland, represented a narrow view, focusing only on reducing footprints of buildings:

The whole idea of city planning has been scrapped and sidelined. [Reducing carbon footprints of buildings] was a very myopic focus and its influence on the whole planning process was ignored- within this small circle. [Reducing carbon footprints of buildings], everything should be done right - As spatial planner - I find this totally ridiculous.

Such a narrow focus on energy emissions was also criticized by other interviewees from the Hordaland County administration:

There was a list of [technical] criteria – [but] who did decide that it should be like this? The site selection was not put forward for public hearing. [the site selection] should usually happen as a part of the municipal planning process that will be weighted according to the other aspects, which requires a large political consensus behind it. But suddenly one can depart from this because of a whole new set of criteria?! We do not have a mandate to do that. However, the politicians can.

One of the interviewees at the municipality administration pointed out the economic dimension in the selection process - where the property owners' price expectations might have played a dominant role:

The owner of the chosen property was willing to sell at a lower price because the current type of land-use was not very profitable. So, the reasonable price of this site might have an influence on the site selection - even though it should not. In my opinion, if a pilot project means putting projects in the cheapest land, then it is not a very good example of spatial planning.

Several interviewees also pointed to a larger political discourse around the planning regime, addressing a seemingly great opposition between politicians and bureaucrats. The role and influence of politicians in this issue attracted criticism from the county, here in the words of one of our interviewees:

It is a culture in Bergen Municipality to work in a way, in which things are done in a straight line and [are handled] directly by the city commissioner, the city council and the city committee.

This is expanded on by a second interviewee from the county:

This is an ingrained culture in Hordaland county, where the politicians do not care about the Plan and Building Act. The Act does not apply there, and it can be disregarded. Planning is just a bureaucratic hassle.

The statements of the interviewees above reflected their perspectives towards the politicians in Bergen Municipality and the private actors, who through informal channels of influence have made the culture/ [nature] of the planning process less democratic according to their view. This statement from one of the central politicians involved in the ZVB case shows how this matter was perceived from their position:

It is a widely held opinion that if the politicians in the municipality go against the bureaucrats, we have it coming from the administration of the county governor. Or the administration in the county. I have seen this from people working as politicians on the county level. There are some un-democratic forces where the bureaucracy) tries to go against the publicly elected will.

According to this informant there seem to be informal networks working between the administration on various levels, involving municipal, county level and state level representative at the county governor's office. It is also interesting to note how the most important tool of the administration in the formal planning process - the planning and building act, was perceived by the same politician in the statement below:

The Plan and Building Act is the most anti-democratic and illegitimate tool I have ever come across, which is not in the public interest. It is impossible to fully

grasp the complexity of the Act, and the way it balances the public interests in business and other things, and the way it governs the bureaucracy.

In the unfolding narrative of ZVB, the ZEB/ZEN center has held a central position along several dimensions (see figure 3). ByBo has also actively used its affiliation with the research community to position itself as a frontrunner for low or zero emission buildings, implying their environmental interest and motivation. However, BYBO is also a commercial actor with a clear profit motive/economic interest and these differences in interests, views, and goals of BYBO and ZEB/ZEN have resulted in conflicts with the planning and governmental authorities. The political and legal dependency of ByBo and ZEN on the public authorities for the site selection, has created a great amount of uncertainty for them which complicated the implementation of the planning process.

Both the localization outside regulated areas for housing and neglecting the transportation issues in the initial concept for ZVB has generated great resistance and conflict among public authorities. Thus, the scientifically grounded project framing from ZEN/ZEB played a critical and counterproductive role in the planning process. The strategic use of informal networks also compromised the professional identity and perceptions of "due process" among many public actors.

To understand the dynamics of governance through which the actors acted in this case, it is important to focus on the way in which ByBo has drawn on their social network and bond with the ZEB/ZEN center. ZVB by carrying the status of a pilot project in a long-term and ambitious research center had a much higher chance of receiving political support, than without this label. The linkage with ZEB/ZEN has also empowered and equipped the developers with a series of "greater good" arguments, such as branch-leading ways of addressing climate concerns and, branding Bergen as a climate – friendly and innovative region.

5. Conclusions

This paper has used the multi-actor model of Avelino and Wittmeyers [8] to explore which actors are involved in the transition governance to sustainability, how they exercise power, and what factors explain the (shifting) power relations between them. It should here be noted that in the current stage of the planning process, of ZVB, there has been no direct community involvement, beyond

that of elected politicians. Despite of these limitations, we still see this as an interesting illustration of a quadruple helix innovation system in which the knowledge community plays an active part. In the current wave of smart city initiatives municipalities and universities are increasingly taking part in cross-sectoral partnerships and platforms. The current case study has demonstrated that there is a substantial potential for role conflict here, between public authorities as guardians of the common interest, and the formal and informal bindings that occur when they form alliances with commercial actors who will also seek to pursue their self-interest [15, 16]. It is here important to strike the balance between securing democracy and legitimacy of planning through "due process" and the need for new forms of governance with respect to dealing with pressing energy and climate concerns.

It is, however clear to us that the knowledge community holds the potential of reducing conflict between private and public actors by creating arenas where common narratives can be developed across diverse societal interests over time. In pursuing this role, it is crucial that we combine insights into the paradoxes and dilemmas of real-life cases, being aware that our preconceived expectations about the role of the knowledge sector in unfolding governance processes may be challenged. As a result, instead of considering decisions as resulting from the intention and interests of independent actors, attention should be paid to the interaction patterns and the ways in which individual actors and organizations evolve over time. Reflecting on the multi-actor model from Avelino and Wittmeyer, we see that the temporal dimension of the role of actors is not given the focus it deserves. In this regard, we stress the need for developing governance models that better capture the iterative nature of real-life planning processes.

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