



Implementing energy policies in urban development projects: The role of public planning authorities in Denmark, Germany and the Netherlands



Jens-Phillip Petersen^{a,*}, Erwin Heurkens^b

^a Department of Civil Engineering (ICIEE), Technical University, Denmark

^b Department Management in the Built Environment, Delft University of Technology, The Netherlands

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ABSTRACT

Governing climate mitigation is complex, as the recurring gap between policy intentions and actions exhibits. Interventions at the urban scale represent an opportunity to implement energy policy targets. Urban development projects can function as carrier to implement innovative energy solutions as ‘by-product’. To do so, planners must proactively and strategically deploy planning instruments to influence market behaviour, since project realization relies heavily on public-private interaction. This paper explores how local planning authorities use a variety of planning instruments in urban development projects that assist in implementing both planning and energy policy targets. To understand how planning instruments can be deployed deliberately to implement energy policy targets and why a specific instrument mix was chosen, this paper presents a cross-comparison of three urban development projects from Denmark, Germany and the Netherlands, which all successfully implemented innovative energy solutions. Results show that contextual differences in the processes entail the use of specific instruments to implement energy policy targets. However, the deployed instrument types, enabling factors and involved governmental levels in the technology-open processes showed a similar pattern across all three cases.

1. Introduction

The importance of the urban scale and local authorities for the implementation of the sustainable development agenda has been amply stressed since early climate change discussions among the wider public three decades ago (Bulkeley and Betsill, 2005). This ‘near-universal’ claim has entered public policies, delegating a high ratio of the realization of global climate mitigation targets to the urban scale, since it can function as a testing ground for new approaches and innovation, where niche spaces for sustainable development paths are explorable, and where these targets should be planned and implemented by local authorities (Schroeder et al., 2013). Notably, land-use planning competencies are a powerful tool for local authorities to influence energy use (Stoeglehner & Narodoslowsky, 2013): Through binding stipulations, abstract energy policies can manifest in concrete changes of the built environment at community scale (Bulkeley and Betsill, 2005). The community scale—as intermediate between policy level and households (Connors & McDonald, 2011)—is emphasised as the central arena for energy strategy implementation through the translation of abstract targets into concrete actions (Mulugetta et al., 2010). All kinds of urban interventions and development projects are a potential window of

opportunity to implement energy policies (Rutherford & Coutard, 2014).

However, the implementation is far from straightforward, since the complexity of the stressed urban scale requires comprehensive actions by various actors, scales and disciplines in taking responsibility across collaborative networks (Bulkeley & Moser, 2007). While urban energy strategies are typically formulated at city scale, the implementation relies to a large extent on aligning activities at community scale to city scale targets (Petersen, 2018). Here, urban development projects can be a strategic tool to govern energy mitigation policies (Rydin, 2010). This is challenged by the changing roles of public authorities in pluralistic societies, where neo-liberal processes in spatial planning have led to government decentralization, retrenchments, and new modes of governance (Pierre & Peters, 2012), leading to an increased role of private market actors in urban development policies (Heurkens & Hobma, 2014). A major share of urban climate change experiments is already carried out by public-private partnerships (PPP), blurring the boundaries between public and private spheres (Castán Broto and Bulkeley, 2013). Despite environmental sustainability being considered as important by public and private actors, it is still mainly seen as a by-product in urban development projects, since the main targets are of a

* Corresponding author.

E-mail address: jepete@byg.dtu.dk (J.-P. Petersen).

social or economic nature (Harman et al., 2015). The regularly experienced gap between the rhetoric of climate protection and its implementation in the built environment (Bulkeley & Betsill, 2005) has led to a non-attainment of climate mitigation targets (Vergragt et al., 2014). A deliberate deployment of planning instruments by public authorities can be a viable option to implement energy policies in urban development projects. However, there is a general lack of understanding how this is done, since energy literature does not consider urban issues, and urban literature mutually does not consider energy issues (Rutherford & Coutard, 2014). In this context, we want to put more explicit attention to interactions between local governments and the private sector that reconfigure the built environment in accordance to energy policies.

This paper seeks to explore how the implementation of higher-level energy policies can be achieved in urban development projects—despite only being a by-product. Drawing on the action-oriented concept of ‘plan-shaped markets’ (Adams & Tiesdell, 2010), we are interested in analysing the planners’ role in deploying specific instruments to actively influence market decisions that enable the attainment of energy targets. We argue that a successful energy target implementation goes hand in hand with planners taking on an active role in shaping markets through well-informed plans, instead of just reacting to market-presures (Heurkens et al., 2015). The likelihood of implementing energy policies as by-products in urban development projects increases if planners choose a proactive approach, retaining energy ambitions in public-private interactions. Since planners operate within a particular sociopolitical context, shaping preferences for different policy instruments, we have to be aware of the role of the underlying institutions that define the role of the planner, the available mix of planning instruments, and the way in which the development aims and energy policies are framed (Majoor & Schwartz, 2015). The dependence of planning instruments from national institutions (Pierre & Peters, 2012) requires cross-national analyses of similar urban development projects.

In the next section, we provide a deeper insight into planning strategies, how planners can shape local markets that enable innovative energy solutions, planning instrument types, and which contextual factors have to be considered. Based on this we propose an analytical framework in the following methodology section. In Section 4 we examine three urban development projects from Denmark, Germany and the Netherlands to demonstrate which combination of instrument types enabled the implementation of energy policy targets. This includes the analysis of instrument choice and market effects in relation to project aims and institutional contexts. Through a cross-case comparison, lessons are drawn on the relevance of planning instruments as enablers for the implementation of energy policies in urban development projects.

2. Theoretical background

To attain overall societal energy policy targets, actions at all scales are necessary, which implies that all interventions in the built environment should positively contribute. A closer attention to planning instruments enabling the target implementation is required, while being aware of the dynamics in public-private actor-networks in the urban context. Urban development projects are an important arena where abstract energy policy targets can be transformed into concrete energy technology (Bulkeley and Betsill, 2005). We claim that attaining energy targets is similar to other agendas in spatial planning. However, as abstract and relatively new agenda (Islar & Busch, 2016), energy is often considered with lower priority than classic spatial concerns, leading to required competencies often not being at disposal (Petersen, 2018). To analyse planning instrument choices and market effects we have to consider the roles of planning entities, public-private interactions in urban development, and how these are influenced by the institutional contexts of urban development projects.

2.1. From strategy to action: preconditions for the implementation of energy policies

The translation of strategic intentions of energy policies into practice is a constant challenge for any planner. The implementation of energy policy targets requires interrelated actions, often composed in spatial energy strategies. These strategies are more than a document outlining future actions to reach a desired energy target: they are the systematic organization of collective actions around goals (Bryson, 2011) involving a multitude of public and private actors. Hence, energy strategies are both a product of and an ongoing process from strategy production, over framing documents, up to the implementation of key considerations through time (Healey & Hillier, 2008). In this understanding, real world strategies are behavioural patterns to achieve specific targets, usually found in-between deliberate plans and emergent developments, since parts of the deliberate plan stay unrealised and are replaced by emergent strategy elements (Mintzberg et al., 1998). The frequent implementation gap between energy policy ambition and practice raises the question if planners are vulnerable towards emergent market developments and ‘decision-takers’, or if planners can also be a proactive ‘decision-makers’ (Heurkens et al., 2015)?

In market economies, public planners are seldom in a position to determine the implementation of urban development targets. We have to understand planning as ‘an intervention in, or an influencing of, the creation and use of the physical environment by others’ (Needham, 2000), and strategies, if seen as human interactions, as capacity to link actors with divergent interests, goals, and working procedures to realise certain goals (Daamen, 2010). The understanding, incorporation and alignment of different ‘actor worlds’ (Callon et al., 1986) requires a deliberate proceeding by proactive planners to be able to unlock and use their inherent competencies. This gains importance since the private sector and not the public is becoming ‘the dominant implementation agent’ in planning (Heurkens et al., 2015). Planners do have a set of planning instruments that, if deployed insistently, can influence the behaviour of semi-public and private actors to implement energy policies as by-product in urban development processes.

2.2. The role of the planner as market actor

Similar to an active-land policy, the implementation of energy targets requires an active-energy policy. Plans only become actions if public planners make a constant effort to merge political power with the dynamics of real estate developments in shaping, regulating and stimulating real estate markets. Planners have to realise that they are market actors, which to some extent are able to (re)construct markets using planning instruments. The implied concept of ‘plan-shaped markets’ sees planning and markets in a constant and dynamic interaction, so planners ‘become a significant constitutive element of such markets’ (Adams & Tiesdell, 2013).

The concept offers an economic explanation and justification of planners’ actions in practice (Heurkens et al., 2015), since real estate markets are understood as a social construct, shaped by institutional, cultural, and economic environments (Magalhães, 2001). In regard to municipal energy policy this recognition was stalled due to the prevailing ‘techno-rationalist approach’ (Guy & Shove, 2000) in energy planning focusing too often on specific technical constellations as target, which are not in line with other actors’ (economic) interests. In line with Petersen and Quitzau (2018), we understand implementation of energy targets as the translation of policies into viable (re)configurations of the built environment. This requires the alignment of the different stakeholder-networks that shape urban development (Rydin, 2010, p.32), which is a key task for planners. In contrast to other descriptive models of governance approaches (e.g. Rydin, 2010; Pierre & Peters, 2012), the concept of Adams & Tiesdell (2013) allows the assessment of causal relationships between planning, instrument use and

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