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Understanding the emergence of policies – revising building regulations in light of the three pillars of sustainability

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Abstract

The building regulations for the Norwegian construction industry (TEK10) undergo a major revision in 2015. This case study firstly examines to what degree social and economic consequences are taken in consideration when deciding energy (environmental) requirements in buildings. Secondly, it looks at the analysis and assessments that lay the basis for the decision of new requirements. The economic and social consequences of new building requirements are significant. These are, however, found to be to a smaller degree taken in consideration than the environmental perspective. Higher requirements to energy use in buildings are expected to drive the housing market up.

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Keywords: building policy; TEK10; three-pillar sustainability; energy requirements; building cost

1. Introduction

This paper reports a pilot case study of the energy requirements stated in the Norwegian *Regulations on technical requirements for building works* (TEK10), including proposed revisions. The regulations are the current valid framework for land-based construction, and therefore lay the main requirements as to how we build our houses and buildings. This includes all parts of the technical aspect of a building, from universal design to fire safety, and from construction safety to energy requirements. This paper will focus on the latter. This gives an opportunity to investigate whether the three-pillar model of sustainability is exposed when assessing policies, or if some pillars are

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emphasized more than others.

In 2012, the Norwegian government stated that “[s]ustainability should be a fundamental principle for all development in Norway and the rest of the world” (Ministry of Environment 2012, p. 8). The same document had the following goal for a climate-friendly building industry:

“Tighten the energy requirements in TEK to passive house level in 2015, and near-zero energy level in 2020. The government will later decide what will define the passive house and almost-zero level. The decision of these levels will be made based on socio-economics, matters of health, and the competence in the industry.” (Ministry of Environment 2012, p. 140) (Our translation).

In the opinion of the authors, this is a strategically bold and ambitious move, and a big step towards low-energy buildings. Whether this is wise could, however, be questioned. Even though buildings represents about one third of Norway’s land-based energy use, the CO₂ emissions is only 3 per cent of the country’s total emissions (Klimakur 2020 2010, p. 155). The main reason for the relatively low emissions is Norway’s large production and use of renewable energy made from hydropower.

TEK has been subject to major critique, both in the public debate and by building specialists. The increased insulation decreases the living space in a building. For apartments, this means a two per cent decrease in living space (Rattsø, 2015), but for a small house (200m²) it typically represents an eight per cent decrease (16 m²) (Nylund, 2011). In addition, the regulations have a direct cost in terms of more technical complex solutions. ‘The Building Cost Index’ shows an increase in building costs of 46.6 per cent between 2005 and 2015 for a single house (Statistics Norway, 2015). The suggested new requirements will have an additional cost around NOK 150.000 (approx. \$ 20.000) for a 200m² house (Multiconsult, 2014). The energy requirements represent the largest extra cost as a result of stricter regulations in TEK10 (Rattsø 2015, p. 29). Hustad (2014) states the technical requirements as the main reason for a significant fall in the building of new houses in 2014.

The ‘Instructions for Official Studies and Reports’ (Ministry of Local Government and Modernisation, 2006) makes it mandatory to study financial, administrative and other significant consequences before deciding on a public investment or policy. This means that an impact assessment has to be carried out. In addition, the instructions state that alternative instruments also shall be assessed, i.e. an alternative analysis. The instructions has been subject to critique, because consequences to a small extent are being described and quantified, economical analysis are seldom executed, and alternatives are to a small extent made visible (Riksrevisjonen, 2013)p. 7). See also Aarseth (2014).

In order to understand how Norway came to the decision of moving towards passive houses, this paper examine how public policy-making emerges in Norway. The paper will not focus on the actual technical solutions, not whether or not today’s goal is the right one, but rather the over-all strategic purpose of the policy. In this paper, TEK10 is used as a case in order to study how we develop policies to comply with a three-pillar sustainability.

The research questions are as follows:

- Have the energy goals in TEK10, including proposed revisions, been designed to comply with a three-pillar sustainability principle?
- To what extent has a sufficient alternative analysis been executed, as made mandatory in the ‘Instructions for Official Studies and Reports’?
- To what extents have the economic and social consequences that the energy requirements in TEK10 entail been taken in consideration?

2. Method

This paper is based on a case study of the energy requirements in TEK10, in accordance with the principles outlined by Yin (2014). The study consists of a document study of official reports and analysis, review of relevant literature, as well as semi-structured, open-ended interviews. It aims to study whether three-pillar sustainability is present in the decision of public policies in Norway.

The document study includes analyses executed in connection to the 2015 energy requirements, as well as documents and reports regarding building regulations and energy requirements from the last five years. The reports stem either from the government, in form of white papers and official plans, or are reports and studies carried out by private consultants on behalf of the government.

The literature review is conducted in accordance to Blumberg (2014). The review regards the concept of

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