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## GEOGRAPHY | RESEARCH ARTICLE

# The transformative potential of local-level planning and climate policies. Case studies from Norwegian municipalities

Hege Westskog<sup>1\*</sup>, Nils Aarsæther<sup>2</sup>, Grete K. Hovelsrud<sup>3</sup>, Helene Amundsen<sup>4</sup>, Jennifer Joy West<sup>5</sup> and Ragnhild Freng Dale<sup>5</sup>

**Abstract:** We analyse whether and how current municipal climate policies can be characterised as transformative and which factors and pathways may lead to transformative change at the municipal level. Based on 13 in-depth case studies of Norwegian municipalities, we address the transformative potential of climate planning and policy measures as defined and implemented by municipal authorities. We argue that municipalities' engagement in transforming towards a low-emission society must be seen as a continuous process. Our investigation shows that municipal transformative actions are both "broad" and "in-depth". Our study has identified several frontrunner municipalities whose "green pathways" towards transformation have emerged through historical events. We also identify how these transformative aspects are emphasised by networks and entrepreneurial actors. However, in the majority of municipalities studied, transformative climate policies are challenged by the need for job and business development along with competition over limited resources to fulfil mandatory public service tasks.

**Subjects:** Public Policy; Environmental Politics; Government; Planning - Human Geography

### ABOUT THE AUTHOR

The authors of this paper; senior researcher Hege Westskog, professors Grete K. Hovelsrud and Nils Aarsæther, senior researchers Helene Amundsen and Jennifer Joy West and researcher Ragnhild Freng Dale belong to a researcher group under the project Transform led by Grete K. Hovelsrud. The project aims at providing knowledge on how the local level of government can contribute to transformation, in the sense of radical, fundamental, and paradigmatic change, to a low-emission society. The researchers come from different disciplinary backgrounds (economics, anthropology, political science and human geography) and as such provide an interdisciplinary background for analyzing transformative policies and actions at the local level.

### PUBLIC INTEREST STATEMENT

In this study we address whether and how current municipal climate policies can be considered transformative. Climate change poses major threats to humankind both in the severity and range of changes. Our point of departure is that this challenge requires fundamental changes to lifestyles and private and public production and mobility systems. This shift is captured in the concept of *transformation*. We show that most of the municipalities studied neither have a sufficient depth in their climate policies when targeting lifestyles and societal systems nor a broad enough focus that includes all relevant sectors for climate transformation. However, some of the municipalities studied have transformative plans and measures as part of their climate strategies and are characterized as frontrunners in our study. These municipalities engage the municipal organization more broadly, situate their climate policy in their local context and take the role as societal developer in their approach to climate transformation.

**Keywords: Transformation; planning; climate policies; municipalities; long-term engagement**

## 1. Introduction

In this study, we ask whether and how current municipal climate policies can be considered transformative (i.e., more than incremental and short-term moves). Expecting that the efforts of municipalities vary in this respect we investigate the success factors, barriers and avenues of improvement for municipal climate action. Climate change poses major threats to humankind both in the severity and range of changes. To curb climate change within acceptable risks of damage to ecosystems and humans, there is an urgent need for substantial reductions in greenhouse gas (GHG) emissions of 80–90% by 2050, compared with 1990 levels (Norwegian Environment Agency, 2014). This implies a major challenge for governance systems at all levels in the years to come. Our point of departure is that this challenge requires fundamental changes to lifestyles (consumption) and private and public production and mobility systems. This shift is captured in the concept of *transformation to a low-emission society*, defined by the IPCC as the “altering of fundamental attributes of a system (including value systems; regulatory, legislative, or bureaucratic regimes; financial institutions; and technological or biological systems)” (IPCC (Intergovernmental Panel on Climate Change), 2012, p. 564).

Climate change is often described as a wicked problem (Head, 2014; Lazarus, 2008; McConnell, 2018; Rittel & Webber, 1973), referring to a problem that is multi-causal and complex, working across organisational boundaries and responsibilities. There is no agreed-upon understanding of the cause of wicked problems or a single agreed-upon solution (McConnell, 2018). Faced with complex decision-making problems and a high level of uncertainty about adequate solutions, there is an increasing consensus that technocratic and top-down governance is insufficient to tackle wicked problems (Chaffin et al., 2014; Graeme et al., 2006). Instead, profound changes in governance regimes, decision-makers’ worldviews, values, perceptions, mindsets and local practices are called for (Head, 2018; O’Brien, 2012; O’Brien & Sygna, 2013; Termeer et al., 2017). This requires a fundamental and radical transformation of society (Blythe et al., 2018; Feola, 2015; Wang et al., 2016). National policy, regulations and incentives are not tailored to the local context and are therefore insufficient to address the challenges associated with major societal transformations. In most systems, the local level will mirror the central level, with bureaucratic divisions that inhibit cross-sectoral transformative action. However, similar to other Nordic countries, Norway has a municipal institution designed to act across sectoral responsibilities, and it may initiate community development policies beyond those that are stipulated as mandatory, such as schools and health care.

This enables decision-making to transcend the public sector and civil society and allows for collaborative operations between public responsibilities and private business development. Thus, the multi-faceted role of the Norwegian-type municipality is well-suited for addressing wicked problems like climate change (Amundsen and Westskog 2018; Amundsen et al., 2018).

Policy instruments, entrepreneurial leadership and long-term planning capabilities are called for at the municipal level to contribute to reducing climate emissions (Kasa et al., 2018; Wang et al., 2016; Westskog et al., 2017). Many scholars have addressed how and with what success municipalities reduce GHG emissions, and many of their results inspire the expectations for our study. We know from several studies (some from the Norwegian context) that institutionalising work on emission reductions throughout the municipal organisation is an important success factor for local climate policy (Kasa et al., 2018; Kern & Alber, 2008; Wejs, 2014). Also, adapting strategies and approaches of local climate policy to the local context, is shown to influence the success of these policies positively (Tørnblad et al., 2014; Westskog et al., 2017). Finally, many studies underline the importance of multi-level governance approaches for addressing complex problems, such as climate change mitigation (Betsill & Bulkeley, 2006; Bulkeley & Betsill, 2005). Strikingly, none of

these studies investigate the transformative potentials of municipal climate action, which may be only partially explained by the recent emergence of studies addressing transformation to a low-emission society. Thus, this study examines current municipal climate policies to ascertain whether they are sufficiently ambitious to be characterised as transformative, as well as how these ambitions can be described. We also point to factors and pathways that have the potential to lead to transformative change at the municipal level. The analysis is anchored in theoretical discussions of how to conceptualise transformative policies and a case-based study of 13 Norwegian municipalities' work with climate mitigation.

Below, we present our analytical framework for analysis and describe the background for transformative action at the municipal level in Norway. An outline of methods and findings follow. Finally, we discuss the results and offer some concluding remarks.

## 2. Framework for analyses

Studies of societal or green transformation have grown in number over the past decade in response to the global challenge of climate change. These studies recognise that adaptation and mitigation efforts are insufficient to catalyse the depth, speed and scope of changes that are needed (e.g., Scoones et al., 2015). For some, this illustrates that gradual or incremental changes are not enough to avoid dangerous climate change impacts, implying that more fundamental paradigmatic and sustained changes to societal structures and worldviews are needed (e.g., O'Brien, 2012). This requires a need for both challenging and changing dominant social paradigms of social structures and systems, including "assumptions, beliefs, values, commitments, loyalties and interests" (O'Brien, 2012, p. 668). In contrast, others argue that both incremental change and abrupt events may have the potential to alter structural conditions in society (Few et al., 2017). Termeer et al. (2017) boldly argue that it is not fruitful to create a divide between transformational and incremental levels of change since this compartmentalisation hinders "tailored governance interventions to achieve change" (562). Following Termeer et al. (2017), we assert that transformative measures involving a major restructuring of society should be approached as a process that includes both incremental and continuous changes (Few et al., 2017). This acknowledges trade-offs between different values, sectors and livelihoods associated with substantial emission cuts (Blythe et al., 2018; Brown et al., 2013), and underlines the need to investigate what transformation entails in different segments of society (Pelling et al., 2015).

Transformation, as it is applied within global change science and climate policy (e.g., IPCC 2012), is both an analytical and normative concept. It includes dimensions of technology and innovation, economic restructuring and societal responsibility. Transformation is becoming integral to climate change discussions, with an increasing focus on sustainability (Patterson et al., 2015). However, the concept has no singular definition or application in the scientific literature or in policy (e.g., Feola, 2015).

Consequently, there are competing visions and framings of what green transformation means across academia, policy and business (e.g., Karlsson & Hovelsrud, 2021). Why and whether transformation is needed, what is to be transformed and who should have the main responsibility for driving the change are all debated (e.g., Blythe et al., 2018; O'Brien, 2012). Therefore, it is challenging to conceptualise and operationalise societal transformation, as shown by Feola (2015) in his review of its application in the global environmental change literature. He presents a broad range of conceptualisations and operationalisations of societal transformation and cautions that the elasticity of the term and lack of empirical grounding for transformation as a concept may be counterproductive to addressing the underlying problems of climate change (Feola, 2015). Our ambition in this paper is to contribute with grounded empirical studies to strengthen the analytical capacity of the concept of transformation and thus reduce its slipperiness.

Termeer et al. (2017) debunk the two assumptions that transformational change is concurrently in-depth, large scale and quick, and that incremental adjustments cannot be transformational.

Continuous transformation is offered as an alternative to the dichotomy between incremental and radical change based on the view that “organizations are continuously adapting, learning, and improvising, and that they are unable to remain stable” (Weick & Quinn, 1999, as cited in Termeer et al., 2017, p. 565). People, groups, and in our case, municipalities, are continuously involved in making and re-making social and institutional practices within a dynamic environment through both top-down and bottom-up processes. In our framework for assessing whether and how municipal action is transformational, we are inspired by Termeer et al.’s (2017) process-intervention language that continuous changes provide openings for transformation. This offers a useful entry point for understanding transformative municipal actions and planning that have the following attributes: 1) they result in in-depth changes in specific areas (what Termeer et al. (2017) term “small wins”), and 2) they enable accumulation of small wins that lead to a broader scope and scale of in-depth changes over time. We add the *time* dimension because it is central to the municipal planning cycle.

The categories of depth, scope and time are applied to analyse the transformative potential of municipal climate actions and policies. We operationalise depth, scope and time in the following way:

- **Depth:** To assess the *depth* of municipal policies, we apply a numerical scale of 1–3 and add a level “0” to illustrate that a municipality has not yet engaged in any climate policies or actions. Here, we follow Wang et al.’s (2016) (see also, Selvig et al., 2020) classification for assessing the depth of municipal climate policies. Increased depth in policies and measures signifies increased systemic change. We adopt Wang et al.’s (2016) application of a three-level scale: 1) *Efficiency* measures that reduce emissions per unit. These types of measures are developed within today’s existing structures and systems. Examples are energy efficiency measures in buildings, fuel-efficient vehicles and biofuel replacing fossil fuel in construction machinery and transportation. 2) Measures that *develop* the system towards transformational emission reductions. Such measures include new approaches to mobility, housing and food consumption. Examples are measures that facilitate biking, public transport and car sharing or utilising residual products from agriculture in energy production. 3) Measures that undertake *transformational* emission reductions. Here, the fundamental problems of climate emissions are addressed by reducing or eliminating emissions-producing activities. This may imply reducing consumption by repairing/increasing reuse and housing policies favouring smaller individual living areas and larger shared ones. It may also address mobility by limiting long distance travel and by locating public services, shops and workplaces closer to where people live. Transformational activities may also address emissions from food production by reducing the consumption of red meat in municipal cafeterias, and by preventing food waste. Measures at level 3 typically address connections between different sectoral emissions and may thereby facilitate systemic change.
- **Scope:** To address the scope of municipalities’ work to reduce climate emissions, we examine four main activity areas for municipal interventions: i) the municipality’s own operations, ii) local businesses, iii) citizens’ lifestyles and iv) infrastructure. Within municipal operations, climate emissions are reduced by, for example, climate-friendly purchases, revamped building and refurbishing practices for municipal property, electric vehicles and bikes in municipal operations, climate-friendly food in schools and elderly homes. Within the activity area of local business, municipalities act as facilitators for the development of climate-friendly businesses via land-use planning in cooperation with local businesses and by attracting “green” businesses/entrepreneurs to the municipal area. Land-use and transportation planning are also used in the activity area of lifestyle to reduce the need for private transportation (daily life and for leisure). In this same activity area, climate friendly consumption practices may be promoted through establishing facilities for sharing of goods and services. Finally, within the activity area of infrastructure, municipalities plan for climate-friendly infrastructure in cooperation with sectoral regional and state agencies (e.g., electric-powered railways, low-emission energy installations, high-speed digital networks).

- Time: We investigate the time dimension of municipal transformation to a low-emission society according to 1) the number and content of short-term, standalone measures and sector policies that municipalities have implemented to address climate change and 2) emissions-reducing activities that are noted in long-term master planning, in medium-term planning strategies and in the municipal Climate and Energy Plans. Here, we expect the long-term planning activities to be more aligned with an ambitious transformative perspective compared to the medium-term and short-term measures, as the latter are more likely to address imminent challenges and in-vogue solutions.

### 3. Background: the role of Norwegian municipalities

Norway has two levels of sub-national government, comprising 11 counties and 356 municipalities, each level governed by elected councils. The municipalities range from 200 to 670,000 inhabitants. Despite the enormous variation in population size, they all have the same responsibility to provide major welfare, educational services and technical infrastructure to municipal inhabitants. Additionally, the municipalities are expected to act as the principal “community developers”, and to plan long-term. National legislation demands that the municipalities take action to reduce GHG emissions, but the municipalities can decide the scope, depth and focus of their climate policies (Amundsen and Westskog 2018; Kasa et al., 2012; Kasa et al., 2018).

One of the main instruments for community development is the long-term municipal master plan. In addition to the master plan, the 2008 Planning and Building Act (PBA) demands that the municipal councils produce a planning strategy at four-year intervals,<sup>1</sup> containing a “discussion of strategic choices linked to societal/community development” (PBA (Planning and Building Act), 2008, § 10–1). The planning strategy also determines the thematic plans that are to be produced in the electoral period, thereby indicating the priorities of the municipal council. The planning strategy is to be followed by a long-term (minimum 12-year) masterplan for land-use and community development. By setting the medium-term and long-term directions for the municipality, the local planning system constitutes a key entry point for transforming municipalities toward a low-emission society.

In 2009, in response to the need for ambitious GHG reductions, the government urged the municipalities to prepare separate Climate and Energy Plans containing proposals for action in different sectors and in municipal operations, transport and agriculture (Stokstad, 2014). The municipalities were further instructed to ensure that the Climate and Energy Plans provided input to and/or could be integrated into the overall municipal masterplan.

Several municipalities have excelled at this process and may incorporate climate considerations into their day-to-day activities, while other municipalities lack the capacity and/or motivation to develop and implement climate measures and policy instruments (Kasa et al., 2018). The national government has introduced incentives for municipal climate action, exemplified by the Norwegian state funding scheme for municipal climate measures known as *Klimasats*, introduced in 2016. In 2019, a total of 574 applications from municipalities were submitted, and 360 projects received support (Government of Norway, 2019).

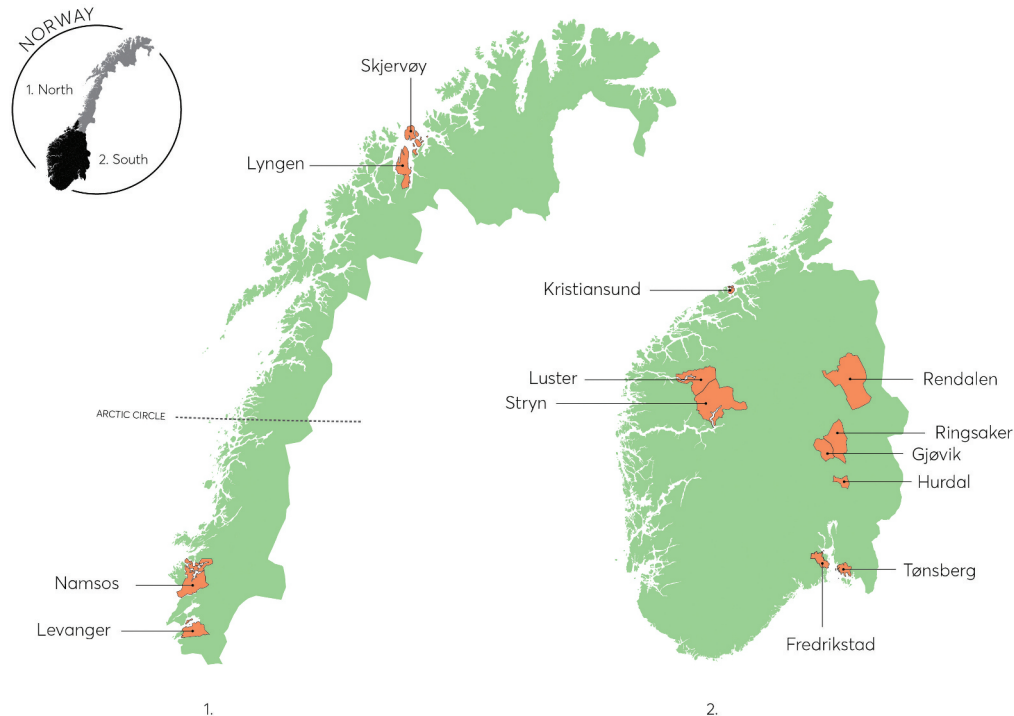
## 4. Methods

### 4.1. Case selection

To assess the transformative potential of short and long-term climate policy in Norwegian municipalities, we selected 13 municipalities of different sizes and locations for a case study. The case municipalities’ populations range from small (fewer than 5,000 inhabitants) to medium-sized (5,000–25,000 inhabitants) and large (more than 25,000 inhabitants), and include rural/peripheral, urban/centrally-located, coastal and inland municipalities in the northern, eastern and western parts of Norway, as well as the Trøndelag region (see, Figure 1). Geographically, along with their differing population sizes and business sector compositions, these municipalities were selected by



**Figure 1. Case municipalities.**



the project team to reflect the diversity of local policy contexts among Norwegian municipalities (see [Table 1](#)). For three of the cases, Hurdal, Tønsberg and Fredrikstad, we had in-depth contextual knowledge from previous studies (Kasa et al., 2012; Westskog et al., 2018), which was useful for designing the study. While the team previously had not conducted transformation research in the other 10 cases, long-term experience with adaptation research in a range of Norwegian municipalities and familiarity with the type of communities, their geographic particularities, location and business structure formed a solid foundation.

#### **4.2. Data collection**

Our data originate from document studies and in-depth interviews with key informants in 13 municipalities.

#### **4.3. Document studies**

For each case municipality, we collected strategic planning documents from their official municipal webpages, including the latest planning strategies (2016), municipal masterplans, and, if updated, the Climate and Energy Plans. Within each planning document, we identified climate-relevant projects and assessed their transformative potential in terms of the depth, scope and timescale of municipal climate policies.

#### **4.4. In-depth interviews**

To address the short-term specific/standalone climate measures, initiatives and sectoral policies, we carried out a total of 93 in-depth interviews. Five to 10 interviews were conducted in each municipality between 2018 and 2019, nearly all in-person. Interviewees were selected based on their role within the administrative and political system, ensuring broad representation in each case municipality. In addition, we selected strategic actors from the business sector and other informants who could give us a deeper understanding of the local context of climate policies (e.g., non-governmental organisation [NGO] representatives and former administrative employees). Our selection was expanded and supplemented through a snowballing method during fieldwork,

wherein we asked our interviewees to suggest other relevant individuals to participate in our study. Potential interviewees were given an information sheet detailing the purpose of the study and procedures for processing and storing the data during recruitment, following the Norwegian Centre for Research Data (NSD) guidelines.

The interview guide was adapted to the specific municipal contexts, and, in the cases of businesses and NGOs, included a focus on the organisation's or firm's climate strategies and whether and how they collaborated with the municipality on climate issues. The guide aimed to elicit respondents' views and experiences related to the following topics:

- The perception of the transformation concept, both in general terms and in relation to climate mitigation;
- Existing municipal policies, planning structures and long-term local climate policy;
- Specific measures and policy instruments deployed by the municipality;
- Networks and engagement with the business sector and citizens to promote climate mitigation measures;
- Views on the need for radical transformation (IPCC definition; IPCC 2012, 564); and
- Barriers and opportunities for transforming to a low-emission society.

All interviews were audio-recorded and detailed notes were taken. Responses were categorised according to the main themes in the interview guide to facilitate analysis of the material. This allowed us to analyse how our interviewees perceived the transformative potential of their municipality and gave us a deeper understanding of the relationship between municipal plans and their implementation within the different case municipalities.

In the next section, we present and discuss our assessment of the long-term transformative potential of climate policies expressed through planning strategies and municipal masterplans in the case municipalities. We continue with an assessment of the municipalities' short-term climate engagement as manifested in separate climate measures, initiatives and sector policies. This assessment is derived both from interviews and document studies. Finally, we characterise the transformative potential of short-term and long-term climate policies according to the depth and scope of the policies (see, Section 2 for operationalisation).

## 5. Results

### **5.1. Municipal planning: long-term transformative potential?**

The long-term strategies and priorities of the municipalities are found in the municipal planning documents. We screened the contents of the planning strategies (4-year horizon) and comprehensive municipal plans (horizon of 12+ years) of the case municipalities (see, Table 2).

First, we found that only a small portion, about 5% of the specific plans listed in the municipal planning strategy documents explicitly addressed climate mitigation issues. Furthermore, few of the plans that do address environmental/climate issues displayed transformational ambitions. Consequently, most municipal planning strategies are ranked at the first level of transformative ambitions.

Yet, even if the planning strategies indicate potential future municipal climate policy, it is the municipal masterplan that discerns the long-term direction and holds the most potential for transformative perspectives. Particularly, the societal part of the masterplan opens for long-term and potentially transformative action. As with the planning strategies, we have provided detailed assessments of the depth and scope of priorities within each masterplan document. However,



**Table 1. Municipal characteristics—13 selected units**

<b>Municipality, population, location</b>	<b>Total land area in sq. km<sup>2</sup> (2019)</b>	<b>Private/business structure (2019)<sup>3</sup></b>	<b>Green parties<sup>4</sup> % in Council</b>	<b>Mayor's party, 2015</b>
Fredrikstad, 82,000, south-eastern, coastal	293	Mechanical industry, food industry and chemical industry	9%	Labour
Tønsberg, 47,000, south-eastern, coastal	285	Food industry, mechanical industry, chemical industry	23%	Conservative
Ringsaker, 35,000, eastern, inland	1,280	Food industry, wood-based industries, agriculture	7%	Labour
Gjøvik, 31,000, eastern, inland	672	High-tech industries linked to university; wood-based, food and mechanical industries	9%	Labour
Kristiansund, 24,000, middle region, coastal	87	Food-based industry, mechanical industry (linked to oil and gas extraction)	11%	Labour
Levanger, 20,000, middle region, fjord	646	Wood-based industry, agriculture	14%	Labour
Namsos, 13,000, middle region, fjord	2,093	Food industry, wood-based industry, mechanical industry, forestry	22%	Labour
Stryn, 7,000, western, fjord	1,382	Food industry, tourism, wood-based industry, mechanical industry	8%	Conservative
Luster, 5,000, western, fjord	2,706	Agriculture, forestry, tourism, electricity production	4%	Centre
Skjervøy, 3,000, northern, coastal	474	Fishery and aquaculture industries	11%	Christian
Hurdal, 3,000, eastern, inland	285	Agriculture, wood-based industry	35%	Liberal
Lyngen, 3,000, northern, fjord	813	Plastics industry, tourism, fisheries	5%	Non-partisan
Rendalen, 2,000, middle, inland	3,180	Forestry, agriculture	6%	Labour

Note. Except for in Skjervøy, the service sector provides the most employment across the case municipalities.

screening the long-term masterplans, we assess the planning in Hurdal, Fredrikstad, and Gjøvik as far more ambitious compared with those of the 10 other municipalities

The small municipality of Hurdal is the only one with high scores in all four areas of transformative ambitions, displaying a firm eco-commitment running through their planning documents.

**Table 2. Long and short-term transformative potentials across depth, scope and time (0–3), assessed by the research team**

<b>Municipality</b>	<b>Transformative potential across depth and scope; long-term)</b>	<b>Transformative potential across depth and scope; short-term.</b>	<b>Overall transformative potential across depth, scope and time.</b>
Fredrikstad	2	2	2
Tønsberg	1	1	1
Ringsaker	0	1	0.5
Gjøvik	2	2	2
Kristiansund	0	1	0.5
Levanger	0	1	0.5
Namsos	0	0	0
Stryn	0	0	0
Luster	0	0	0
Lyngen	0	0	0
Skjervøy	0	0	0
Hurdal	2	2	2
Rendalen	0	0	0

Scores in column 2 are from Table A1 in Appendix (column “transformative potential across depth and scope; long-term). Scores in column 3 are from Table A2 in Appendix (column “transformative potential across depth and scope; short-term).

Next to Hurdal, the urban municipalities of Fredrikstad and Gjøvik have high scores in three of the activity areas such as planning for non-motorised local mobility. The findings and assessments are shown in detail in Table A1 (Appendix). In about half of the masterplans, we find almost no attempts to envision a low-emission future for their attendant municipalities.

### **5.2. Short-term transformative potentials**

Our case municipalities also differ when it comes to their specific measures and sector policies for combatting emissions. In Table A2 (Appendix), we show the results of our assessment of these initiatives transformative potential. Some municipalities express a clear climate-related vision, which is expected to inform municipal actions, such as Hurdal’s rebranding as “The Sustainable Valley”.

As for our planning assessments, we find variations across municipalities in short-term measures and policies. We identify three groups of municipalities in relation to climate measures and sectoral policies. There are three municipalities (Gjøvik, Hurdal and Fredrikstad) that perform better than the others with scores of around 2 in all areas of municipal actions. Second, four municipalities can be characterised as mid-fielders (Tønsberg, Ringsaker, Levanger and Kristiansund). These four municipalities have specifically implemented emissions-related measures in their operations and have to some extent also branched out to other activity areas for municipal actions. Finally, most of our case municipalities (Namsos, Stryn, Luster, Skjervøy, Lyngen and Rendalen) are barely engaged in measures to reduce GHG emissions, with none or only a few measures in place to initiate change towards a low-emission society.

When it comes to our case municipalities efforts in different activity areas, the municipalities engage more actively, and with more in-depth measures in their operations. As can be seen from Table A2 in the Appendix half of our case municipalities have scores above 1, while for the other categories of municipal measures and sectoral policies, all are below level 1 in depth.

Finally, the best performer municipalities have clearly formulated, climate-related visions in their master plans. Interviewees in Fredrikstad, Gjøvik and Hurdal describe their municipality as a city or place for sustainable development. Fredrikstad is branded a “Sustainable City”, and Gjøvik is described as a “Fronrunner for Sustainable Growth”, whereas Hurdal is “the Sustainable Valley”. Interviewees in Levanger emphasise the related image of “a circular economy city”, though the municipality has a narrower focus compared with the best performers, and a specific focus on waste handling.

### 5.3. Transformative actions

Table 2 shows that the transformative ambitions are generally weak in the case municipalities, with most scores at level 0 or 1. The similarity between long-term instruments (planning scores) and single initiatives or projects is striking; this indicates that most of the municipalities will be slow movers in terms of transformative actions, even in the long run. Five municipalities with scores close to 0 have undertaken few if any steps to transform. Low long-term scores suggest that the potential opportunities of “transforming” remain unexplored and unexploited.

In the right-hand column, we see that Hurdal, Gjøvik and Fredrikstad consistently perform better than the rest of the municipalities, and they can be characterized as “fronrunners” among the municipalities in our sample. However, these three frontrunners differ in size, location (coast/inland), political ideology and business structure. Curiously, the only structural factor that unites the three of them is “trees”: In terms of industrial employment, they are all built around forest-based activities.

The three frontrunners display more ambitious measures in their planning compared to the others, and they initiate climate-oriented changes in how they organize activities, both in their organisations and in their work on community-directed policies. Hence, they are all at level 2 (“development”) in terms of the depth of their transformative actions. Community leaders in Hurdal, for example, focus on developing a system for sustainable purchases in municipal operations and actively work to attract sustainable businesses to their community. They express that in some cases it is an advantage to be a small municipality because there exist fewer bureaucratic hurdles to initiating change:

[B]eing a small municipality with a close chain of command is not a disadvantage—much of what we have accomplished most likely would have been lost in a bureaucracy. (Informant, Hurdal Municipality)

Fredrikstad demonstrates a capacity to link cross-sectoral planning to specific climate-related projects. Climate policies are thus institutionalised and permeate development and planning activities. Gjøvik facilitates the development of an industrial park built on circular economic principles with smart industrial symbiosis as one key element. This municipality has also come far in reframing its role in the development of a low-emission society by motivating sustainable consumption among its inhabitants.

A clear difference between those municipalities that have moved towards level 2 of transformation (*development*) and those that develop their climate policies focusing on level 1 (*efficiency* improvements) is the scope of engagement. The three frontrunning municipalities have planned and implemented measures in most of the areas available for municipal climate action and with more depth than the other municipalities.

In their short-term plans, mid-field municipalities have implemented measures at level 1 (*efficiency*) or are moving towards level 2 of transformative action (*development*). This is mostly found in their operations, such as a focus on energy improvements in municipal buildings or the use of solid wood in building projects. We surmise that the reason for this tendency may be found in the win-win opportunities that some of these measures provide, including saving costs.

Interestingly, when it comes to long-term planning, the situation is slightly different concerning the scores in different activity areas. In the municipal masterplans, more focus is placed on the municipalities' roles as societal actors, with climate ambitions in the three key categories of business, lifestyle and infrastructure. These categories are related to the community-oriented role and purpose of the municipal masterplans. They serve as frameworks for developing municipal communities and include land-use and resource management. Hence, the focus is first and foremost on societal development and not on municipal organisation (category 1).

A third group of municipalities has either not been actively involved in the planning and implementation of climate measures in any of the four categories that we have specified in our framework or has taken only a few measures to initiate change towards a low-emission society. One informant points to the lack of financial and human resources constraining their engagement with transformation to a low-emission society:

It is difficult to prioritise resources for this (i.e., climate measures) when there are so many other important tasks—and we lack local engaged individuals in the climate and environmental field. (Informant, Luster Municipality)

This illustrates that transformation to a low-emission society is confronted with obstacles and barriers. In any municipality, climate change issues compete with other urgent and mandatory tasks, especially in public services. For municipal leaders, climate measures may be regarded as a hindrance to growth and job creation. Several of our case municipalities are tourist destinations with a large volume of international visitors. One of our informants expressed that this presents an inherent paradox. Take Norwegian glaciers, for instance:

*Visit Sognefjord* is massively marketing Nigardsbreen (the glacier) to long-distance visitors from China, Indonesia, India, South Korea and Brazil. In a climate change context, it is a paradox that they use long-distance air transport to look at glaciers that are melting due to such travel and activities. (Informant, Luster Municipality)

Furthermore, there has been growing pressure to allow the use of motorised transportation in local nature areas, posing a problem for local elected representatives who want to engage in transformative climate policies. In Lyngen Municipality, motorised transportation in pristine nature areas was a concern for one informant:

We opt for nature-friendly tourism. In the long run, this is an advantage ... but most people regard 'the motorised' as the most economically viable. (Informant, Lyngen Municipality)

In relation to lifestyle, a high level of consumption among inhabitants in our case municipalities poses a challenge to transforming. Informants in Gjøvik regard general consumption as the next challenging step in their climate policies.

## 6. Discussion

In our study, we find that many of our case municipalities have a focus on efficiency improvements, but only a few are trying to prepare for systemic change. Three out of 13 case municipalities have taken steps towards levels 2 and 3 of transformation through their planning, separate measures and sector policies. Five important factors emerge from the case municipalities' efforts.

First, our results show that the frontrunner municipalities (Gjøvik, Hurdal and Fredrikstad) display more depth and scope in their climate policies than the other case municipalities, with a long-term focus in their engagement with transformative actions. They effectively utilise their potential as societal developers along with their role as public service providers. Gjøvik engages with the business community to support sustainable business development. Hurdal works with young people in schools to involve them in both practices that reduce GHG emissions (e.g., walking

instead of driving and changing food consumption habits) and discussions about transformation to a low-emission society. Fredrikstad has an ambitious municipal masterplan coupled with a strong focus on supporting local businesses that work according to circular economic thinking and the facilitation of sustainable transportation options for the municipality's inhabitants. Further, all three frontrunners have established a climate-related image by communicating a sustainability focus: Hurdal as the "Sustainable Valley", Fredrikstad as the "Sustainable City" and Gjøvik as a "Frontrunner for Sustainable Growth".

Second, the frontrunners' focus vary according to their local contexts. This is exemplified by Gjøvik, which draws on the potential of the innovative wood-based industry and the polytechnic university campus to facilitate the establishment of an industrial park based on circular economy principles. With its long-term history of engagement in sustainable development, Fredrikstad aims to become a smart city (even a global city) and financially support household investments in solar panels. This effort is coupled with high ambitions for zero emissions in the city centre. Hurdal's plans to develop its village centre according to sustainability principles are situated in the local, long-term focus on sustainable development and transformation through direct involvement of the population. Hence, transformative actions towards a low-emission society follow different paths and are clearly shaped by the local historical and current context. Our results on transformative municipal climate policies echo other studies underlining the importance of the local context for the development of climate policies (e.g., Tørnblad et al., 2014; Westskog et al., 2017).

Third, our results indicate that the size of municipalities does not necessarily determining the ability to transform. While some scholars have suggested that the limited size and administrative capacity of small municipalities constitute a potential barrier to relevant local climate policy development (e.g., Lundqvist & Von Borgstede, 2008; Westskog et al., 2017), others suggest that municipal size does not create an insurmountable barrier for developing an effective climate policy. This is instead shaped by the level of political engagement and a "networked" governance approach to climate issues (Hovelsrud et al., 2010; Kasa et al., 2018; Wejs, 2014). In our material, one small municipality (Hurdal) is one of three municipalities that have reached level 2 of transformation (*development*). The other two are larger cities. The other case municipalities, whether large or small, have not yet reached this level. Therefore, we suggest that municipal size is not the determining factor for driving transformative action.

Fourth, in two of our frontrunner cases, significant events dating back to the 1990s took place that provided openings for pursuing sustainable pathways. In Hurdal, eco-enthusiasts created Norway's first ecological village, and since then, the municipality has gradually extended the scope of environmental measures and even created an image as an environmental frontrunner. In 1998, Fredrikstad became the stage for a national start-up conference on Agenda 21, which produced the "Fredrikstad Declaration". This led to the municipality's firm commitment to promote a broad scope of climate measures. Gjøvik, the third frontrunner, lacks a similar kick-off project underpinning its long-term commitment to environmental policies, but it demonstrates that it is possible to get a high transformative score by pursuing systematic, long-term endeavours to reduce emissions.

Finally, our results support the view that transformation can manifest as a continuous process that combines small wins with long-term and in-depth results (Termeer et al., 2017). This supports Termeer et al.'s (2017) argument that the often-claimed divide between transformational and incremental change should be dismantled. Our results show that the short-term measures in the municipalities' own operations are more in-depth than those of the other municipal sectors. For example, Ringsaker municipality plans to use solid wood when building new municipal facilities, supports purchases of electric bikes for their employees and invests in electric cargo vehicles for municipal operations. This will likely lead to a deeper and more thorough engagement within other municipal sectors, and is in line with Tolbert and Zucker's (1996) argument about how policies become institutionalised. Institutionalisation of policy areas is seen as a process that starts with

what they term *habitualisation*, where established policy areas are linked to climate policies to take advantage of win-wins (Kasa et al., 2018). Habitualisation may spark a more in-depth focus on and larger scope for climate policies, starting with municipal organisation and gradually involving the local community, businesses and daily life. Ideally, it will result in a full integration of climate policies into societal processes.

Our study underlines that there is no reason to believe that a process of continuous transformational change will be easy or that it will not provoke resistance. Municipalities are confronted with many challenges in formulating and implementing their climate policies. The prospects for a broad, popular movement to underpin transformative changes are not promising, and bold measures taken by local leaders will likely be met with resistance and protests. There is also a risk that green-leaning politicians will be replaced by representatives who defend fossil fuel-based lifestyles and forms of production. Hence, as we have seen from the frontrunner municipalities, consistent and long-term engagement is needed for transformational change. Shock events, entrepreneurial action and new economic opportunities may galvanise such engagement along with developing a local identity that is closely linked to sustainability and a transformative agenda for a low-emission society. Further, and importantly, municipal policies are not developed in isolation. The regional and state levels both also play a role in transformative change, and, as many authors have underlined, a multi-level perspective is crucial for supporting local transformation to sustainability (e.g., Bulkeley & Betsill, 2005; Bulkeley & Kern, 2006).

## 7. Conclusion

In this paper, we analysed whether current municipal climate policies can be characterised as transformative and which factors and pathways may lead to transformative change at the municipal level. These questions were analysed by investigating the depth and scope of municipal climate policies in relation to time, expressed as short-term and long-term priorities, measures and actions. We showed that municipal plans and actions for transformative change differ across the municipalities with respect to depth and scope, but they are surprisingly consistent between long and short-term ambitions.

Our broad, albeit geographically limited research approach, focussing on the multitude of tasks and responsibilities found in the (Nordic-type) municipal institution has been justified, as we have observed a wide range of moves and measures related to climate policy. A more targeted study, focussing solely on for example, transportation, would have missed the complex decision-making situation facing the municipalities. They are managing competing sectoral responsibilities, sorting out demands and pressures from the climate-committed central authorities and from a majority of citizens more preoccupied with welfare standards than saving the planet.

In line with Termeer et al. (2017), we argue that municipalities' engagement with transforming towards a low-emission society must be seen as a continuous process. Thus, we contend that, rather than focusing on whether municipal policies can be considered transformative, the focus should be on how current climate policies enable pursuing and building on small, in-depth wins in different municipal sectors. A further focus should consider the circumstances under which these wins can be connected and consolidated across sectors, action areas and scales to achieve a more coherent, widespread and in-depth transformation towards a low-emission society.

The frontrunner municipalities illustrate that the factors contributing to successful transformation reside in both broad and in-depth engagement of many municipal sectors, along with the development of an environmental identity that guides their policy involvement. In addition, these municipalities all take on the role of societal developers—along with being service providers—and adapt their climate policies to their local contexts. To a large extent, the mid-field municipalities are more focused on the short-term policies and measures within their operations. The remaining municipalities that have implemented climate measures to an even lesser extent than the mid-



field municipalities lack political and community support for embarking on climate-focused planning and short-term measures. With respect to the success factors for transformative municipal climate actions our results largely align with what we expected to find based on other studies of local climate policy; institutionalisation of local climate policy in municipalities and attention to the local context matter for successful adaptation (Kasa et al., 2018; Kern & Alber, 2008; Tørnblad et al., 2014; Wejs, 2014; Westskog et al., 2017). Further and as shown, the barriers most municipalities face in their work on transforming to a low-emission society are substantial. Transformative policies compete with other pressing, mandatory and short-term tasks. In addition, policies for climate transformation are in some municipalities regarded as a barrier to economic growth, illustrated by tourism. Finally, and perhaps quite obviously—transformation intertwine with our values, habits and attitudes. Changing lifestyles (for instance, with respect to motorized transportation) is a challenging task, and one that many municipalities resist to confront and not the least to implement. Combined these barriers explain and highlight what obstacles all our case municipalities face in their work on transformation and why many of them lag behind.

Transformation to a low-emission society, as a continuous process with iterative steps towards a transformed society, has several pitfalls. First, all steps do not necessarily lead to sustained transformations. A lock-in situation could result from, for example, a singular focus on electrification of transportation and not on modal shifts towards walking and cycling. It is well established that reducing GHGs to zero would require a reduction in all activities creating emissions, including private transportation. Second, municipalities are vulnerable to changes in political priorities following elections. Therefore, competence in long-term planning with consistency between short and long-term policies is needed. Finally, the success of municipalities' efforts to transform depends on clear and decisive national and global policies that provide a framework for transformative change at the local level. Without support and interaction between different levels of government and between local governments and their respective local communities, local transformative policies are difficult to create and implement.

Our results are based on an analysis of selected Norwegian small and middle-sized municipalities, but we are confident that the preconditions and responses noted above are of a generic character and are relevant in other geographical and institutional contexts. Many other European countries, particularly the Nordic countries, share quite similar institutional contexts by allocating a prominent role to municipalities in combating climate change (Kasa et al., 2018).

Our approach and conclusions may evoke criticism for not addressing the need for fundamental and paradigmatic changes in the way we organise our societies, including spearheading changes in our worldviews and values. Many of the climate and energy measures and policies that are addressed in the case municipalities are only aimed at transforming values, worldviews or styles of leadership to a limited extent, and they do not suggest making radical institutional changes at the local level. Based on these findings, the main point of our study is that transformation should also be viewed as a process involving both small, incremental shifts and in-depth changes in different policy areas, which in turn can be consolidated over time and at scale to support sustained and paradigmatic transformations (Termeer et al., 2017). The challenge is to make these incremental steps while also avoiding lock-ins that prevent more ambitious moves, and to involve the citizens and business sectors of respective municipalities to create legitimacy, willingness and backing for policies and measures that support transformation to a low-emission society.

One final comment must be made: Our study is solely based on a theory-informed analysis of interviews and planning documents. It may be questioned, then, whether these types of data reflect realities when it comes to factual emission levels and developments in the municipalities studied. As this aspect is outside of the project's (social) scientific ambitions, we nevertheless have performed a short "visit" to the Norwegian Environmental Agency's (no. Miljødirektoratet) municipal-level database on GHG emission developments. Indeed, the three frontrunner municipalities

perform consistently better than the other ten when it comes to emissions change: On average, the frontrunners have recorded a 7.4% reduction in the 2018–2019 period, while the average performance of the other ten municipalities in our sample was a modest 2.1% reduction (Miljødirektoratet, 2021).

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#### Notes

1. The government's *National expectations for local and regional planning* were for the first time issued in 2011, followed up in 2015 and 2019.
2. Includes all land and freshwater, rounded to the nearest kilometer
3. Main sectors of employment based on SSB (2020). Main industry sectors based on SNL's (Store Norske Leksikon) presentation of Norwegian municipalities, e.g., SNL (2020) supplemented by information gained during fieldwork.
4. Green parties: Environmental Party («Miljøpartiet de Grønne»), Socialist Left Party («Sosialistisk Venstreparti»), (Green) Liberal Party («Venstre»).

#### Disclosure statement

No potential conflict of interest was reported by the author(s).

#### Declarations

All ethical guidelines from the Norwegian Centre for Research Data is followed and our research is approved by them (approval number 59,645).

#### References

Amundsen, H., Hovelsrud, G. K., Aall, C., Karlsson, M., & Westskog, H. (2018). Local governments as drivers of societal transformation: Towards the 1.5°C ambition. *Current Opinion in Environmental Sustainability*, 31, 23–29. <https://doi.org/10.1016/j.cosust.2017.12.004>

Amundsen, H., & Westskog, H. (2018). Omstilling til lavutslippssamfunnet – Hvordan kan kommunene bidra? In H. Haarstad, and G. Rusten (Eds.), *Grønn omstilling - norske veivalg*. Universitetsforlaget. 115–127.

Betsill, M., & Bulkeley, H. (2006). Cities and the multilevel governance of global climate change. *Global Governance*, 12(2), 141–159. <https://doi.org/10.1163/19426720-01202004>

Blythe, J., Silver, J., Evans, L., Armitage, D., Bennett, N. J., Moore, M.-L., Morrison, T. H., & Brown, K. (2018). The dark side of transformation: Latent risks in contemporary sustainability discourse. *Antipode*, 50(5), 1206–1223. <https://doi.org/10.1111/anti.12405>

Brown, K., O'Neill, S., & Fabricius, C. (2013). Social science understandings of transformation. *World Social Science Report*, 100–106. <https://doi.org/10.1787/9789264203419-en>

Bulkeley, H., & Betsill, M. (2005). Rethinking sustainable cities: Multilevel governance and the 'urban' politics of climate change. *Environmental Politics*, 14(1), 42–63. <https://doi.org/10.1080/0964401042000310178>

Bulkeley, H., & Kern, K. (2006). Local government and the governing of climate change in Germany and the UK. *Urban Studies*, 43(12), 2237–2259. <https://doi.org/10.1080/00420980600936491>

Chaffin, B. C., Gosnell, H., & Cosens, B. A. (2014). A decade of adaptive governance scholarship: Synthesis and future directions. *Ecology and Society*, 19(3), 3. <https://doi.org/10.5751/ES-06824-190356>

Feola, G. (2015). Societal transformation in response to global environmental change: A review of emerging concepts. *Ambio*, 44(5), 376–390. <https://doi.org/10.1007/s13280-014-0582-z>

Few, R., Morchain, D., Spear, D., Mensah, A., & Bendapudi, R. (2017). Transformation, adaptation and development: Relating concepts to practice. *Palgrave Communications*, 3(1), 17092. <https://doi.org/10.1057/palcomms.2017.92>

Government of Norway. 2019. "Klimasats-støtte til kommuner over hele landet." Accessed May 15, 2020. <https://www.regjeringen.no/no/aktuelt/klimasats-stotte-til-kommuner-over-hele-landet/id2661906/>

Graeme, C., Cumming, D. H. M., & Redman, C. (2006). Scale mismatches in social-ecological systems: Causes, consequences, and solutions. *Ecology and Society*, 11(1).

Head, B. W. (2014). Evidence, uncertainty, and wicked problems in climate change decision making in Australia. *Environment and Planning. C, Government & Policy*, 32(4), 663–679. <https://doi.org/10.1068/c1240>

Head, B. W. (2018). Forty years of wicked problems literature: Forging closer links to policy studies. *Policy and Society*, 38(2), 180–197. <https://doi.org/10.1080/14494035.2018.1488797>

Hovelsrud, G. K., Dannevig, H., West, J., & Amundsen, H. (2010). Adaptation in fisheries and municipalities: Three communities in Northern Norway. In Hovelsrud G., Smit B. (eds) *Community adaptation and vulnerability in Arctic Regions* (pp. 23–62). Springer, Dordrecht. [https://doi.org/10.1007/978-90-481-9174-1\\_2](https://doi.org/10.1007/978-90-481-9174-1_2)

IPCC (Intergovernmental Panel on Climate Change). (2012). Glossary of terms. In V. Barros et al (Eds.).

- Managing the risks of extreme events and disasters to advance climate change adaptation* (pp. 555–564). Cambridge University Press.
- Karlsson, M., & Hovelsrud, G. K. (2021). Everyone comes with their own shade of green”: Negotiating the meaning of transformation in Norway’s agriculture and fisheries sectors. *Journal of Rural Studies*, 81 (January 2021), 259–268. <https://doi.org/10.1016/j.jrurstud.2020.10.032>
- Kasa, S., Leiren, M. D., & Khan, J. (2012). Central government ambitions and local commitment: Climate mitigation initiatives in four municipalities in Norway and Sweden. *Journal of Environmental Planning and Management*, 55(2), 211–228. <https://doi.org/10.1080/09640568.2011.589649>
- Kasa, S., Westskog, H., & Rose, L. E. (2018). Municipalities as frontrunners in mitigation of climate change: Does soft regulation make a difference? *Environmental Policy and Governance*, 28(2), 98–113. <https://doi.org/10.1002/feet.1791>
- Kern, K., & Alber, G. (2008). “Governing climate change in cities: Modes of urban climate governance in multi-level systems.” In *Competitive cities and climate change, OECD Conference proceedings*, 171–196. Paris: OECD.
- Lazarus, R. J. (2008). Super wicked problems and climate change: Restraining the present to liberate the future. *Cornell Law Review*, 94(5), 1153.
- Lundqvist, L. J., & Von Borgstede, C. (2008). Whose Responsibility? Swedish local decision makers and the scale of climate change abatement. *Urban Affairs Review*, 43(3), 299–324. <https://doi.org/10.1177/1078087407304689>
- McConnell, A. (2018). Rethinking wicked problems as political problems and policy problems. *Policy and Politics*, 46(1), 165–180. <https://doi.org/10.1332/030557317X15072085902640>
- Miljødirektoratet. (2021). Utslipp av klimagasser i kommuner. Accessed February 19, 2021. Utslipp av klimagasser i Norges kommuner og fylker - Miljødirektoratet (miljodirektoratet.no).
- Norwegian Environment Agency. (2014). “Kunnskapsgrunnlag for lavutslippsutvikling” Report M229/201.
- O’Brien, K., & Sygna, L. (2013). “Responding to climate change: The three spheres of transformation.” *Proceedings of transformation in a changing climate*, 19–21, University of Oslo, Norway.
- O’Brien, K. (2012). Global environmental change II: From adaptation to deliberate transformation. *Progress in Human Geography*, 36(5), 667–676. <https://doi.org/10.1177/0309132511425767>
- Patterson, J., Schulz, K., Vervoort, J., Adler, C., Hurlbert, M., van der Hel, S., Schmidt, A. et al. (2015). Transformations towards sustainability. Emerging approaches, critical reflections, and a research agenda. *Earth system governance Working Paper No Vol. 33*. Earth System Governance Project.
- PBA (Planning and Building Act). (2008). “Lov av 27.juni 2008 planlegging og byggesaksbehandling” [The Planning and Building Act].
- Pelling, M., O’Brien, K., & Matyas, D. (2015). Adaptation and transformation. *Climatic Change*, 133(1), 113–127. <https://doi.org/10.1007/s10584-014-1303-0>
- Rittel, H. W., & Webber, M. M. (1973). Dilemmas in a general theory of planning. *Policy Sciences*, 4(2), 155–169. <https://doi.org/10.1007/BF01405730>
- Scoones, I., Leach, M., & Newell, P. (2015). *The politics of green transformations*. Routledge.
- Selvig, E., Lea, R., Mygland, R., Tønnesen, A., Wang, L., Westskog, H., & Fosli, O. (2020). “Hvordan dokumentere effektene av Klimasats”. Miljødirektoratet Report M-1803/2020.
- SNL. (2020). Tønsberg. Accessed May 15, 2020. <https://snl.no/T%C3%B8nsberg>
- SSB (2020). *Kommunefakta*. Accessed May 15, 2020. <https://www.ssb.no/kommunefakta>
- Stokstad, S. (2014). Rettslige krav til kommunal klima- og energiplanlegging. *NIBR-notat*, 2014(109). Accessed May 30, 2020 <http://www.nibr.no/filer/2014-109.pdf>
- Termeer, C. J., Dewulf, A., & Robbert Biesbroek, G. (2017). Transformational change: Governance interventions for climate change adaptation from a continuous change perspective. *Journal of Environmental Planning and Management*, 60(4), 558–576. <https://doi.org/10.1080/09640568.2016.1168288>
- Tolbert, P. S., & Zucker, L. G. (1996). The institutionalization of institutional theory. In S. Clegg, C. Hardy, & W. R. Nord (Eds.), *Handbook of organization studies* (pp. 174–190). SAGE.
- Tørnblad, S., Hege Westskog, H., & Rose, L. E. (2014). Does location matter? Public acceptance of restrictive policy measures at the local level. *Journal of Environmental Policy & Planning*, 16(1), 37–54. <https://doi.org/10.1080/1523908X.2013.817946>
- Wang, L., Westskog, H., Selvig, E., Mygland, R., & Amundsen, H. (2016). “Kortreist kvalitet. Hva betyr omstilling til et lavutslippssamfunn for kommunesektoren?” KS FoU-prosjekt nr. 154025. 162s. KS.
- Weick, K.E., & Quinn, R. (1999). Organizational change and development. *Annual Review of Psychology* 50, 361386. <https://doi.org/10.1146/annurev.psych.50.1.361>
- Wejs, A. (2014). Integrating climate change into governance at the municipal scale: An institutional perspective on practices in Denmark. *Environment and Planning. C, Government & Policy*, 32(6), 1017–1035. <https://doi.org/10.1068/c1215>
- Westskog, H., Hovelsrud, G. K., & Sundqvist, G. (2017). How to make local context matter in national advice: Towards adaptive comanagement in norwegian climate adaptation. *Weather, Climate, and Society*, 9(2), 267–283. <https://doi.org/10.1175/WCAS-D-16-0063.1>
- Westskog, H., Winther, T., & Aasen, M. (2018). The creation of an ecovillage: Handling identities in a Norwegian sustainable valley. *Sustainability*, 10(6), 2074. <https://doi.org/10.3390/su10062074>



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