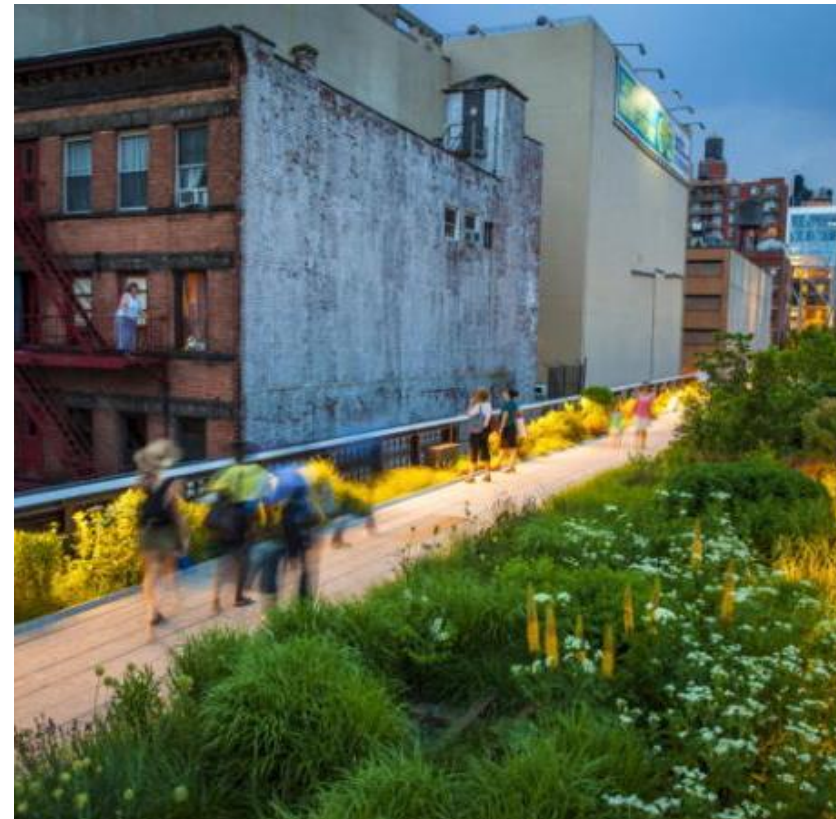


# Can smart cities create sustainable transformation?

Håvard Haarstad, Professor  
Department of Geography  
Centre for Climate and Energy Transformation  
University of Bergen



# The sustainability promise of the smart city

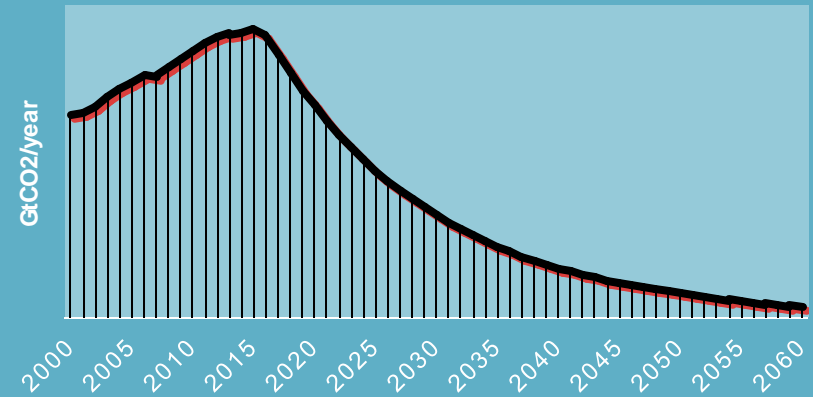
- Telecommunication and reduced need for transport
- Environmental monitoring
- Renewable energy
- More efficient logistics
- Visualised energy consumption
- Effective road pricing





# Is this really *transformative*?

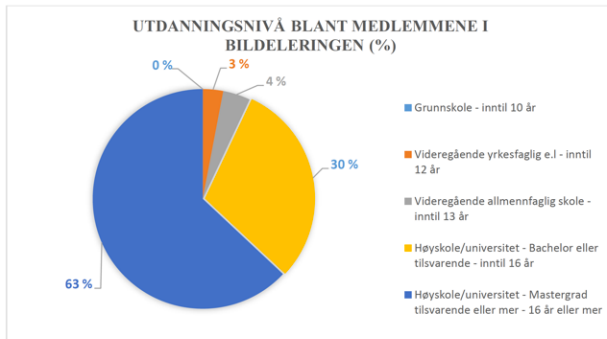
We need rapid cuts in CO2 emissions...



...and transformation with social and political *depth*

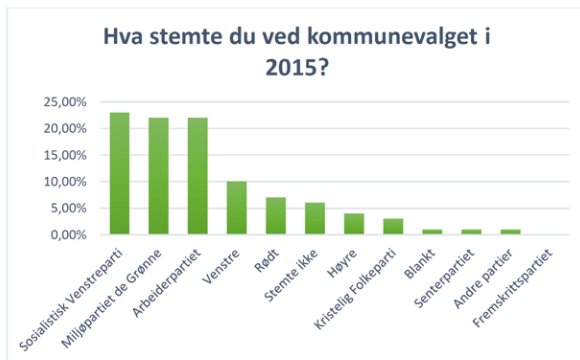


# Sustainable interventions often target only particular social groups. Car sharing, for example:



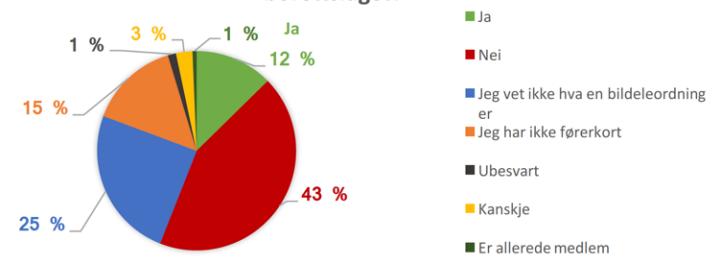
Car sharers are highly educated...

In the low-income suburbs, they don't like the idea or don't know about it



They are leftists

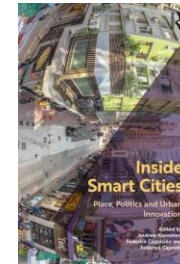
Ville du vurdert å være med i en bildeleordning som bildeleringen eller nabobil dersom det var tilgjengelig i borettslaget?



# Research: How are urban transformations mobilized?



**CET** Centre for Climate and Energy Transformation



Energy Policy 129 (2019) 1018–1029

Contents lists available at ScienceDirect

Energy Policy

journal homepage: www.elsevier.com/locate/enpol

Are smart city projects catalyzing urban energy sustainability?

Håvard Havnås<sup>a,\*</sup>, Maritun W. Weibull<sup>b,c</sup>

<sup>a</sup>Department of Geography, University of Bergen, Post Box 7800, Bergen, Norway

<sup>b</sup>Centre for Climate and Energy Transformation, University of Bergen, Post Box 7800, Bergen, Norway

<sup>c</sup>Centre for Urban Design and Planning, University of Oslo, Oslo, Norway

<sup>d</sup>Centre for Urban Design and Planning, University of Oslo, Oslo, Norway

ARTICLE INFO

ABSTRACT

The purpose of this paper is to investigate the links between smart cities and urban energy sustainability. However, whether a "smart city" is a wide agenda rather than a specific set of interventions, remains unclear. Various models of smart cities are presented and discussed. The smart city agenda is found to be a broad concept that encompasses a wide range of urban interventions. The smart city agenda is found to be a broad concept that encompasses a wide range of urban interventions. The smart city agenda is found to be a broad concept that encompasses a wide range of urban interventions.

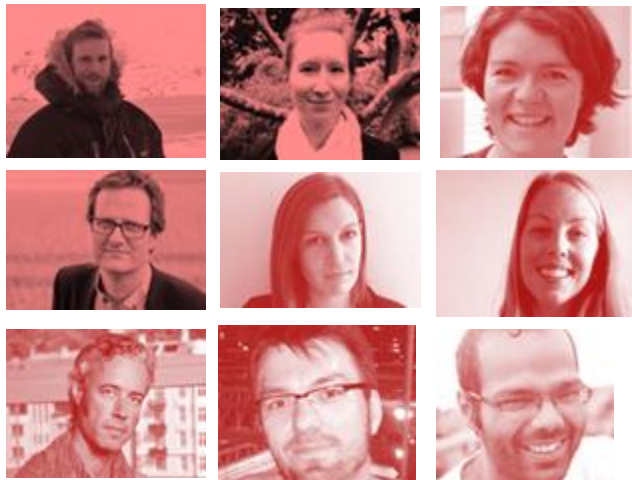
INNSIKT

Vi trenger 10-minutters-byer

The smart city agenda is found to be a broad concept that encompasses a wide range of urban interventions. The smart city agenda is found to be a broad concept that encompasses a wide range of urban interventions. The smart city agenda is found to be a broad concept that encompasses a wide range of urban interventions.

**1. Introduction**

The idea of the "smart city" is increasingly central to debates on urban energy sustainability and a host of cities are now pursuing "smart city" initiatives to improve energy efficiency, transport, and public services. Cities have been placed at the forefront of the sustainability transition and smart cities are presented as a solution to urban challenges in the global North and South. Urban innovation has become a major policy alternative worldwide e.g., one third of cities in the United States and a quarter of cities in Europe have smart city ambitions, two thirds of US cities have announced a smart technology, innovation and the European Union (EU) are both announcing smart city initiatives in Europe (Christensen et al., 2018; Christensen et al., 2017). The European Commission aims to realize one billion euros of investment in 200 smart cities by 2020 (EC, 2015). In introducing new technology for the development and operation of smart cities, cities are also being identified as drivers of the development of sustainability, equity, and economic growth in cities and urban regions (Christensen et al., 2017; Christensen et al., 2018; Havnås and Palmieri, 2019; Havnås et al., 2015; Havnås and Weibull, 2017; Havnås et al., 2018). In other words, the smart city agenda is presented to solve a multitude of urban challenges – cities can become more of economic growth, competitiveness, and innovation while achieving sustainability goals, such as reduced emissions, improved energy efficiency, and improved quality of life (Christensen et al., 2017). However, it is not clear from the smart city agenda contributions to sustainability. There is increasing interest in links between smart cities and sustainability (Christensen et al., 2018). But what are the contributions? In the present paper, we investigate the potential of smart cities to contribute to urban energy sustainability. We investigate the smart city agenda in relation to the smart city agenda and urban energy sustainability. We investigate the smart city agenda in relation to the smart city agenda and urban energy sustainability. We investigate the smart city agenda in relation to the smart city agenda and urban energy sustainability.



Debatt/innlegg

Hvorfor møter det grønne skiftet så sterk motstand?

Nei til tre bomstasjoner! Nei til her bompeper!

Journal of Environment, Policy & Planning, 2019  
ISSN: 0959-7464 DOI: 10.1080/09597464.2019.1630000

Constructing the sustainable city: examining the role of sustainability in the "smart city" discourse

Håvard Havnås<sup>a</sup>  
Department of Geography, University of Bergen, Bergen, Norway

ARTICLE HISTORY  
Received 3 February 2019; Accepted 15 October 2019

KEYWORDS  
Smart city; sustainability; urban energy sustainability







1. Introduction

A predominant idea in the current discussions on urban sustainability is that of the "smart city". The promise of the smart city is to make it so easy for cities to move from a low-efficiency, low-quality public transport system to an efficient and attractive, and to make planners and decision-makers with data to allocate public resources more accurately (Tremblay, 2018). The "smart city" agenda is largely promoted by the European Commission (EC). A European Parliament study found that more than half of European cities with over 100,000 inhabitants had implemented or proposed smart city initiatives (European Parliament, 2014). However, the extent to which the smart city agenda contributes to urban sustainability is unclear. Much of the existing social science literature has been critical toward the idea that the smart city agenda has much to offer in terms of promoting sustainability, or meeting other societal challenges. It is often suggested that





# When do technologies create transformation?

	New technology	New practices	New norms
Sustaining			
Disrupting			
Transforming			

*Adapted from Nyre (2018)*





# Are smart cities transformative?

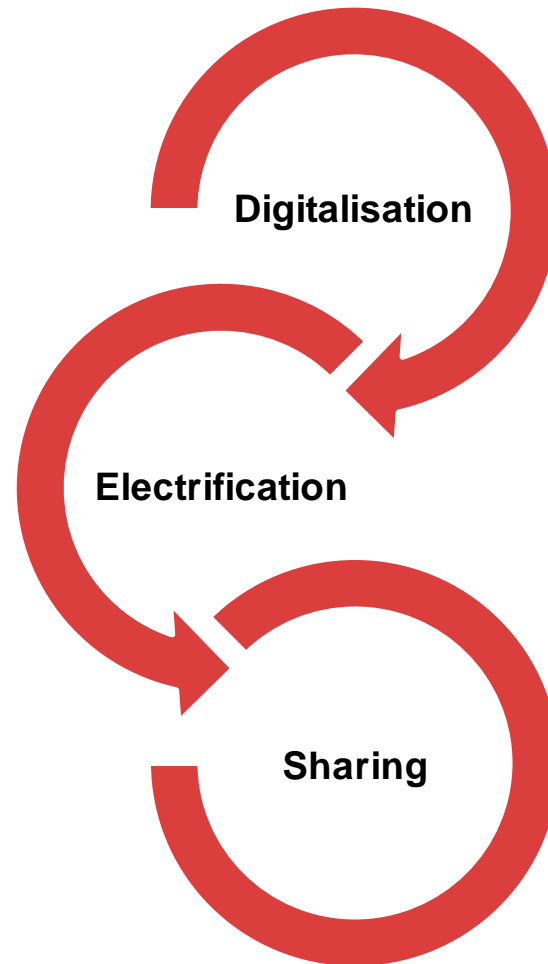
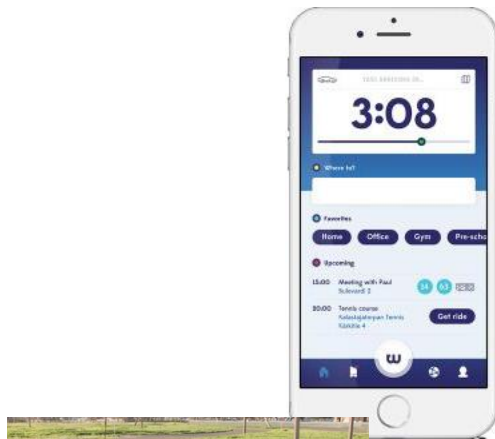
## Empirical findings from multiple case studies

- Implemented solutions are surprisingly low-tech
- They are mostly *sustaining* – not transforming
- Yet – high levels of ambition



Source: Haarstad and Wathne (2019); Karvonen et al. (2018)

# Can smart cities create sustainable transformation?



Better organisation of mobility services

Reduced CO2 emissions

New **norms** of more efficient resource-use, socially inclusive





---

UNIVERSITETET I BERGEN

