



The climate challenge: From wicked to super wicked problem-solving in the context of local governance

Presentation at the webinar “Climate conversation: Mitigation - challenges, opportunities and ways forward”

Organised by departments at the Sveriges landbruksuniversitet (SLU): SLU Global, SLU Future One Health, SLU Urban Futures, SLU Future Forests and SLU Future Food, 4 May 2022

Carlo Aall
Professor in sustainable development
Western Norway Research Institute, Sogndal, Norway

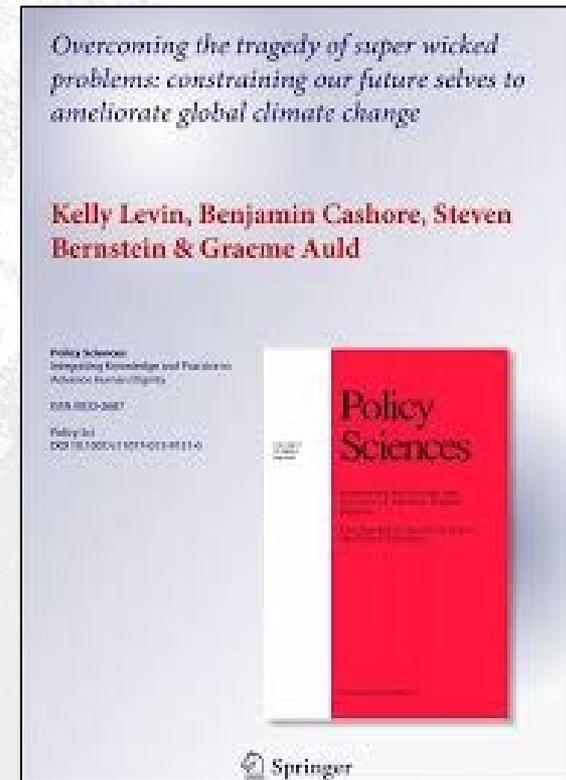
Framing the climate challenge as a wicked or even super wicked problem?

- **Wicked problems**

- Incomplete and / or contradictory knowledge
- Strong conflicts of interest
- Large financial costs
- The problem at hand is closely linked to other societal problems

- **Super wicked problems**

- Time is running out to solve the problem
- Those who are set to solve problems are also those who are causing the problems
- Lame action authorities
- Future benefits of solving the problem are systematically given too little weight

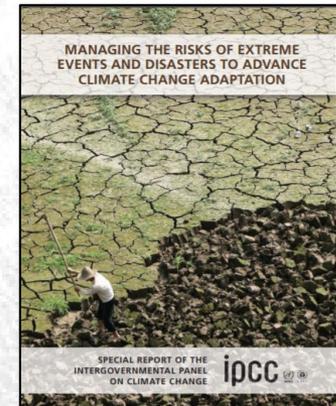


Solving the (super) wicked climate problem through societal transformation

- **2012: Climate change adaptation**

- “The altering of fundamental attributes of a system (including value systems; regulatory, legislative, or bureaucratic regimes; financial institutions; and technological or biological systems)”

<https://www.ipcc.ch/report/managing-the-risks-of-extreme-events-and-disasters-to-advance-climate-change-adaptation/>



- **2018: Climate change mitigation**

- “The global transformation [imply] "rapid and far-reaching transitions in energy, land, urban and infrastructure..., and industrial systems.. [which are]... unprecedented in terms of scale, but not necessarily in terms of speed“

<https://www.ipcc.ch/sr15/>



Digging for the root cause of the climate problem - economic growth – and the problems with such an excavation

- **Early version of the sub report from working group 3 of the 6th IPCC assessment report**

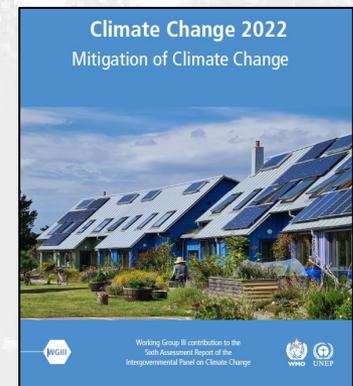
- “greenhouse gas emissions must peak in the next four years.. there is little or no room for further economic growth”
- “The drastic decrease in emissions which are essential, are impossible to achieve in the short term with the current model, with its assumptions about growth in energy consumption and material use”

<https://mronline.org/2021/08/23/leaked-report-of-the-ipcc-reveals-that-the-growth-model-of-capitalism-is-unsustainable/>



- **The text above was taken out in the final version, in favor of the one below**

- “The ‘green economy’ and green growth – growth without undermining ecological systems, partly by gaining economic value from cleaner technologies and systems and is inclusive and equitable in its outcomes - has gained popularity in both developed and developing countries as an approach for harnessing economic growth to address environmental issues”



Still, there are many examples of implicit critiques of the idea that economic growth must continue – and support for the idea of degrowth

<https://www.resilience.org/stories/2022-05-03/degrowth-in-the-ipcc-ar6-wgiii/>

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Even after two days of binge reading, I still have trouble believing that the last IPCC report “Mitigation of climate change” is real. The document is packed with powerful statements with radical implications and might represent nothing short of a watershed in the history of climate politics. There is so much to talk about and so I will split the analysis into several articles.

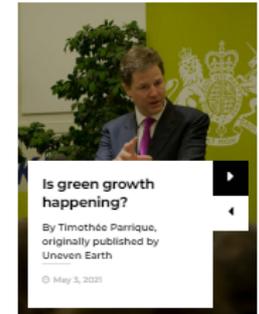
This first one is about *degrowth*. The term is mentioned 7 times (plus 21 times in the bibliography)^[1] in the 2,913-page report. This is roughly the same number of mentions than in the adaptation report, which had a total of 27 mentions (15 in the text and 12 in references). Just like in the adaptation report, “degrowth” is neither mentioned in the *Summary for Policymakers* nor in the *Technical Summary*, even though we’ll see that the underlying idea is present (this will be the topic of another article).

There are four places in the report where degrowth is discussed. In *Chapter 1: Introduction and framing*, degrowth is presented as an alternative sustainability concept with a specific take on well-being; in *Chapter 3: Mitigation pathways compatible with long-term goals*, it is discussed as a scenario feature for modelling mitigation pathways; in *Chapter 5: Demand, services and social aspects of mitigation*, it is evoked again in the context of prospective scenarios; and finally in *Chapter 17: Accelerating the transition in the context of sustainable development*, the term is mentioned twice in a discussion about the transition.

Degrowth and well-being

The first mention occurs in *Chapter 1: Introduction and framing* in a section titled “Concepts and frameworks for integrating climate mitigation and development.” After a few paragraphs discussing the relevance of the concept of sustainable development, there are two long paragraphs that present nine “alternative sustainability concepts”: doughnut economics, ecological modernisation, mainstreaming, green economy, green growth, degrowth, post growth, post development, and just transition.

RECENT ARTICLES BY AUTHOR



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Does the slogan ‘think globally – act locally’ make sense when addressing the growth-issue?

- The slogan has its origins in the **peace movement** and the threat of nuclear war of the **1960s**, and was picked up by the environment movement in the 1980s
- Still, according to Røiseland (1996) the foremost challenge in environmental politics will not be to “think globally, act locally”, but rather to adopt a “**local perspective on global environmental problems**”
- With a similar starting point Høyer and Aall (1995) refer to Hägerstrand (1991) and argue point out the need to clarify **how the global and the local levels are interconnected**, in both nature and society
- This entails being able to transform the global into a local problem; and it concerns being able to clarify the **importance of local actions**, measures and choice options (Corell, 2003)
- To accomplish this there is a need to develop **concepts** and **utilize metaphors** (Aall, 2000)

Signs of transformation at the local level of governance

- 'Compost modernism' started locally, under the opposition of national health authorities

Aall, 2000

- Local Agenda 21 more successive than National Agenda 21

Lafferty and Eckerberg, 1998

- Front runner local authorities acting at the international climate negotiations to push their respective national governments to adopt more ambitious climate goals

Aall et al, 2007

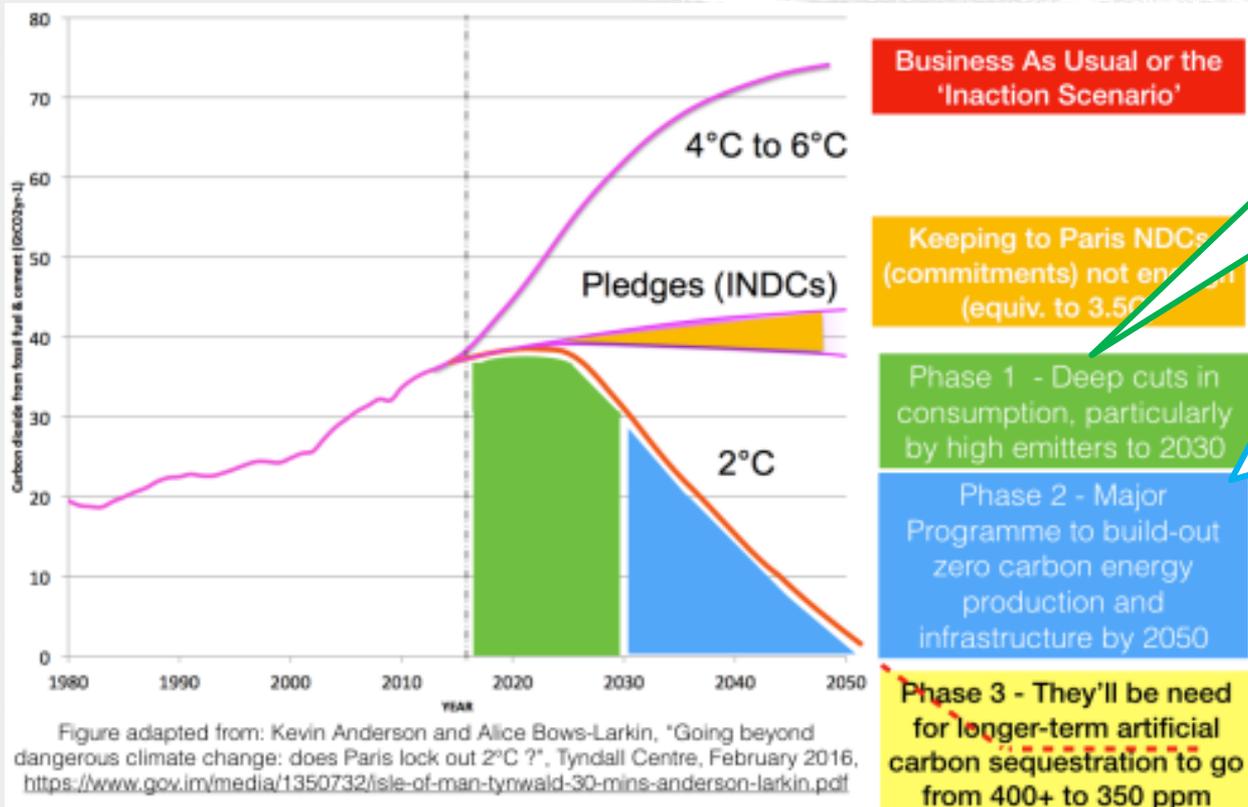
- Local level putting climate change adaptation on the policy agenda prior to the national level

Aall, 2012

- Local levels of government in HIC-countries and Western liberal democracies are in a position with a lower level of organised 'system resistance' towards climate transformation than national levels of government

Amundsen et al, 2018

Mitigating GHG emissions by addressing the troublesome consumption-side of the economy



Business As Usual or the 'Inaction Scenario'

Keeping to Paris NDCs (commitments) not enough (equiv. to 3.5°C)

Phase 1 - Deep cuts in consumption, particularly by high emitters to 2030

Phase 2 - Major Programme to build-out zero carbon energy production and infrastructure by 2050

Phase 3 - They'll be need for longer-term artificial carbon sequestration to go from 400+ to 350 ppm

“..a large reduction in consumption (in all its forms) amongst high emitters in all countries, but principally the ‘west’ – could be implemented in the short term (the shorter the better but let’s say, by 2030)”.

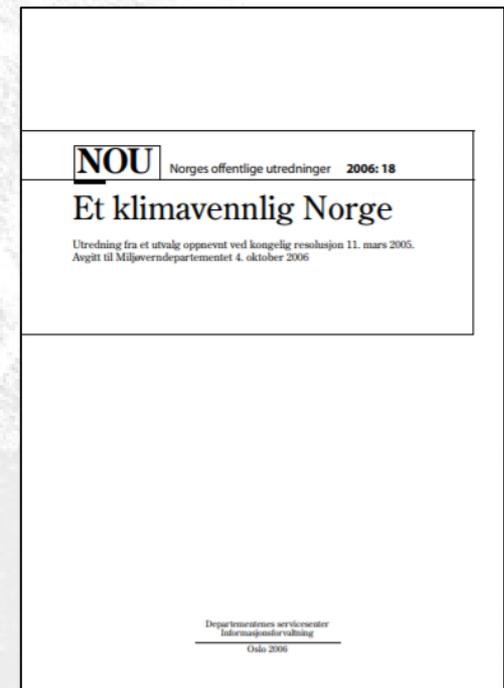
“It is not that a zero or low carbon infrastructure is not needed, but that the time to fully implement it is too long – even if we managed to do it in 30 years time – to address the issue of rising atmospheric greenhouse gases. This has already started, but from a low base, but will have a large impact in the medium term (by 2050)”.

Figure adapted from: Kevin Anderson and Alice Bows-Larkin, "Going beyond dangerous climate change: does Paris lock out 2°C ?", Tyndall Centre, February 2016, <https://www.gov.im/media/1350732/isle-of-man-tyrnwald-30-mins-anderson-larkin.pdf>

Consumption related policy measures in Norwegian national climate policy has been a contested issue

2006: The Norwegian government-appointed Commission on Low Emissions

“A radical shift in the Norwegian way of life in a more climate-friendly direction could deliver major reductions in future GHG emissions. The Commission on Low Emissions has, nevertheless, chosen not to recommend such a strategy, because, among other things, we believe it would be politically impossible to put into effect”



...still not popular...

Miljødirektoratet · Januar 2020 · Klimakur 2030: Slik kan utslippene kuttes

Klimakur 2030: Slik kan utslippene kuttes

Norge kan halvere ikke-kvotepliktige utslipp av klimagasser innen 2030 dersom atferd endres, teknologi utvikles og virkemidler innføres raskt.

Publisert 31.01.2020

Klimakur 2030

Miljødirektoratet, Statens vegvesen, Kystvesenet, Landbruksdirektoratet, Norges vassdrags- og energidirektorat og Enova har i Klimakur 2030 analysert potensialet for å redusere ikke-kvotepliktige utslipp av klimagasser, og tilbak sett øker opptaket og reduserer utslipp fra skog og annen arealbruk. Rapporten er laget på oppdrag fra regjeringen. | Bildet Klimakur 2030/Plumbag/Lars Erik Frettil, Kolonias.



Vil ha brei avtale om klimakutt – så lenge veksten får halde fram

Regjeringa lovar klimatiltak for å nå utslippmåla i 2030. Dei tre regjeringspartia vil gjerne ha ein brei politisk avtale om klimakutta. Men det er eitt vilkår: Den økonomiske veksten skal ikkje stoppe opp.



Håvard Grenli
@hvardg
Journalist

Publisert 31. jan. kl. 05:47

Erna Solberg (H), Kjell Inge Røspstad (KrF), Sveinung Rotevatn (V) og Trine Skei Grande (V) ønsker politisk avtale om tiltak for utslipp av klimagassar, men...

FOTO: HÅVARD GRØNLI / NTB

“I believe that getting through the green shift with people getting poorer wage conditions, poorer welfare state and poorer lives for themselves and their families, it is not possible. That is why we must have green growth”

Sveinung Rotevatn (The Liberal parti – Venstre – and at that time Minister of Climate and Environment)

Consumption related policy measures on the local climate policy agenda

- **Two (early) examples**

- **1996-1999:** The government initiated project “sustainable communities” which was part of the Norwegian effort on putting sustainable consumption on the agenda of the UN commission for sustainable development (CSD)
- **2001:** The City of Stavanger commissioned the first Norwegian version of a carbon footprint calculator as part of the process of developing their first climate action plan
- **2002:** First local footprint calculation in Norway, for the city of Oslo

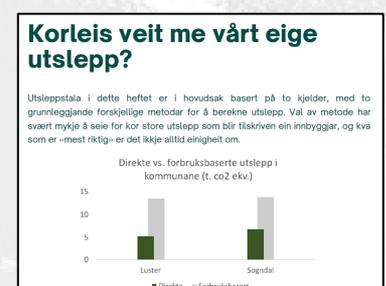
- **Status as of today**

- An increasing number of municipalities are presenting consumption related GHG inventories at par with the traditional territorial GHG inventories (example from Sogndal and Luster)



BAKT
utslipp og utslippspolitik

Hushaldsstatistikk Rapport og Luster kommune



The potential for local authorities to reduce greenhouse gas emissions over the next 30 years

- **The conventional ‘territorial’ approach**
 - **Large** variations in per capita emissions between counties and municipalities
 - **1,9-2,5 mill tons CO2-ekv**
 - Most of this is within **local road transportation** and **agriculture** (since much of the other local GHG-emissions are already reduced substantially, like methane from waste and CO₂ from heating)
- **A supplementary ‘consumption’ approach**
 - **Small** variations in per capita emissions between counties (+/1 %) and municipalities
 - **13–26 mill. tons CO2-ekv** (7 – 10 x the figures above) – but much of these reductions will not be part of the official report to the UN
 - **New** categories of activities to be address: food consumption, aviation, housing etc



Board games: a tool for local agenda-setting?

The HOPE game
Addressing private households



The TRANSFORM game
Addressing local government policymakers



The HOPE project (2015-2019)

Research questions

1. What are the drivers behind current household direct and indirect GHG emission?
2. What are the households' choices on consumption changes to achieve hypothetically imposed GHG reduction targets of -50% by 2050?
3. What are the economic costs & benefits as well as health co-benefits of the identified household choices?

Country	Germany	France	Norway	Sweden
Name of town	Mannheim	Communauté du Pays d'Aix	Bergen	Umeå
Population	290,000	350,000	250,000	120,000
Economy	Manufacturing	Touristic, service	Touristic, service	Services, manufacturing
Climate	Average	Warm	Cold, heavy rain	Cold temperate
Number of households	107	70	58	74

The screenshot shows the website for the HOPE project. At the top, there is a logo with the letters 'HOPE' inside stylized house icons. Below the logo is the text: 'Household Preferences for Reducing greenhouse gas Emissions in four European High Income Countries'. There is a search bar to the right of the logo.

The navigation menu includes: THE PROJECT, RESULTS, RESEARCH PLAN, NEWS & EVENTS, PUBLICATIONS, and FAQ.

The main content area is titled 'The Project' and contains several sections:

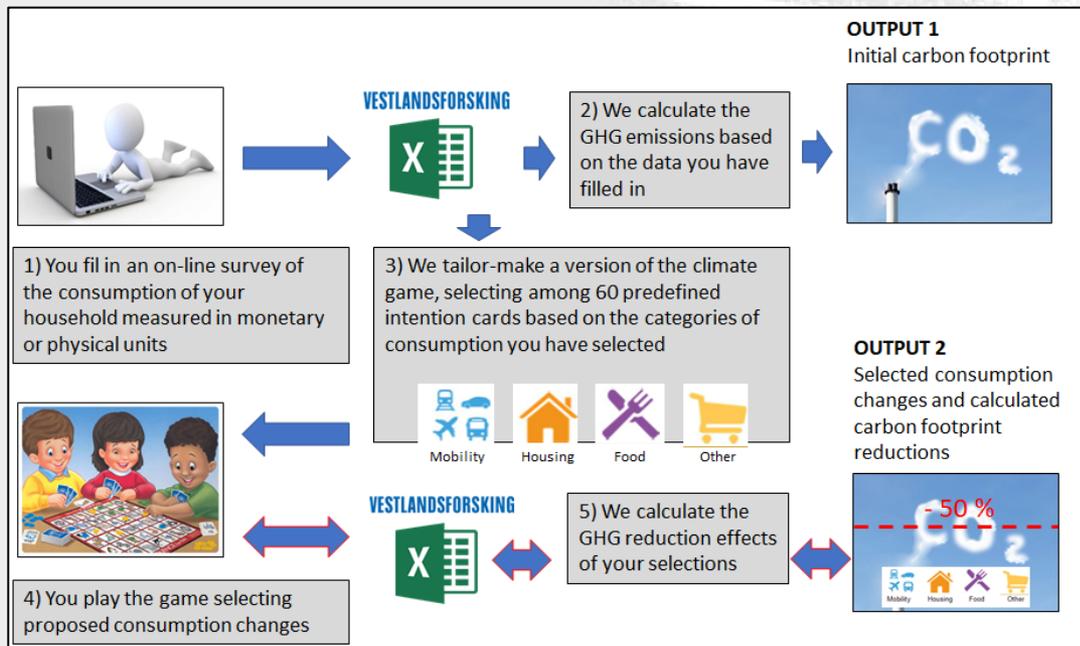
- Final Seminar of the Project**: A paragraph mentioning a seminar in Brussels on 29/29 May 2018.
- Climate Policies of the European Union**: A paragraph discussing the EU's goal to reduce greenhouse gas emissions by 50% by 2050.
- Climate Policies on an Individual Level**: A paragraph explaining the project's focus on household-level decisions.
- Our Project**: A paragraph detailing the project's international nature and its goal to provide a policy advisory board.

On the right side of the page, there is a 'Recent Posts' section with three entries:

- Announcement: Final HOPE Conference in Brussels, 28/29 May 2018
- First publication about the survey protocol
- Survey almost completed

At the bottom right, there are logos for partners: CIRED, TEC, Universitätsklinikum Heidelberg, Umeå University, and VESTLANDSFORSKING.

The HOPE game



- ### Interactions with households
1. Recruitment (much work!)
 2. Explaining the procedures (phone, email)
 3. Households to fill in an only consumption survey
 4. Home-visit gaming session with the whole family (2-3 hours)
 5. Post-game (1-2 months after) qualitative interview (phone or home-visit)

Reflections presented by the households

- A general support to the idea of changing consumption to help save the climate
- Skepticism to the content of much of the current "climate information" (eg "ecolabeling")
- A limited selection of local and organic food makes it hard to choose these
- Skepticism to the idea that reducing meat consumption in fact is an important climate mitigation measure
- Limited willingness to drastic reduction of flights, unless they are 'forced' to do so, but then they are accepted
- Willing to live more "climate smart", but many miss sufficient economic incentives to do so
- Many complained about poor access to buy second-hand products like furniture and clothes

The TRANSFORM project (2017-2022)

- **Goal**

- Investigating how the local level of governments can contribute to transformation to a low-emission society

- **Research design**

- Case studies and experiments (simulation gaming) will address how municipalities relate to transformation and will uncover potential transformation pathway

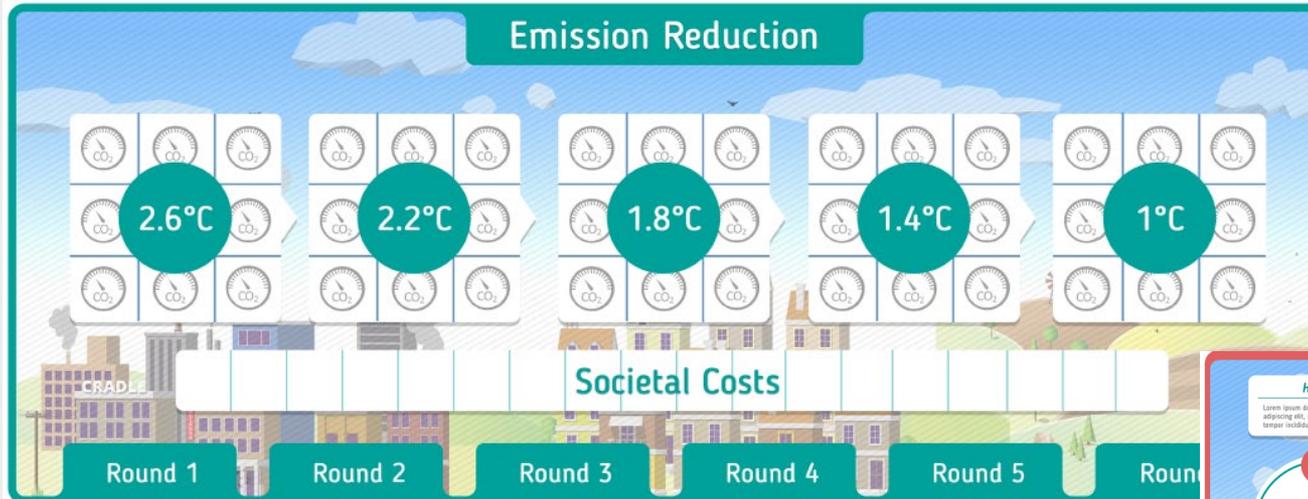
- **Research partners**

- CICERO (lead), Nordlandsforskning, Vestlandsforskning, Univ of Breda

- **User partners ('players')**

- Sunnfjord, Sogndal, Bodø, and Bergen





The three big emission categories the 'big-Bs': Biff, Bil, og Bolig (SOU 2005): Similar for food, mobility, and other housing

60 predefined policy cards referring to the five policy categories: Planning, Business, Technical, Economy, and Climate

Resirkuleringskampanje i skolen

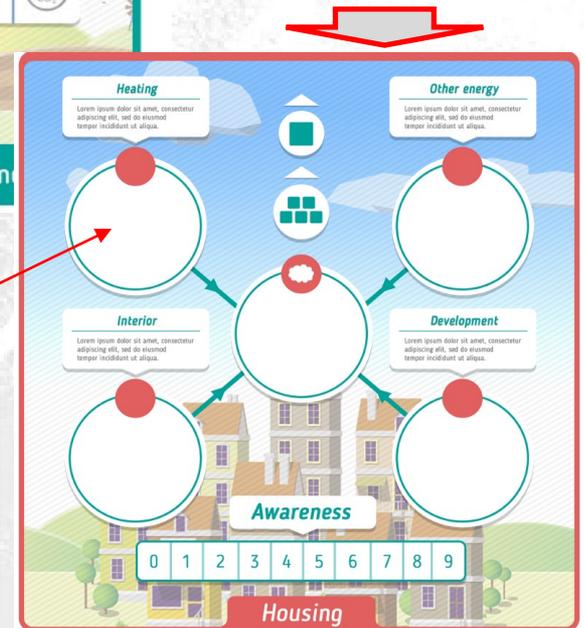
Byrde

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Høy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Veldig høy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Effekt

Effekt	1	2	3	4	5	6	7	8	9
1	<input checked="" type="checkbox"/>	<input type="checkbox"/>							
2	<input checked="" type="checkbox"/>	<input type="checkbox"/>							
3	<input checked="" type="checkbox"/>	<input type="checkbox"/>							
4	<input checked="" type="checkbox"/>	<input type="checkbox"/>							
5	<input checked="" type="checkbox"/>	<input type="checkbox"/>							

"Emission blocks" are distributed according to the current local emission profile (which vary very little between the municipalities)



Some preliminary experiences from playing the TRANSFORM game

- **The gaming experience**

- Appreciation from the players that the game-design has made an effort to be close to reality with respect to emission-profile and emission-impacts of choosing policy measures
- Good gaming experience – support the idea of making this into a commercial game

- **Impacts of gaming**

- Input on how to expand the traditional local climate policy agenda with 'new' areas for policy-making
- Experience the challenges of delivering major emission cuts
- Acknowledge the need to develop new policy measures as well as new national-local governance partnerships

What happens now?



Klimautvalget 2050

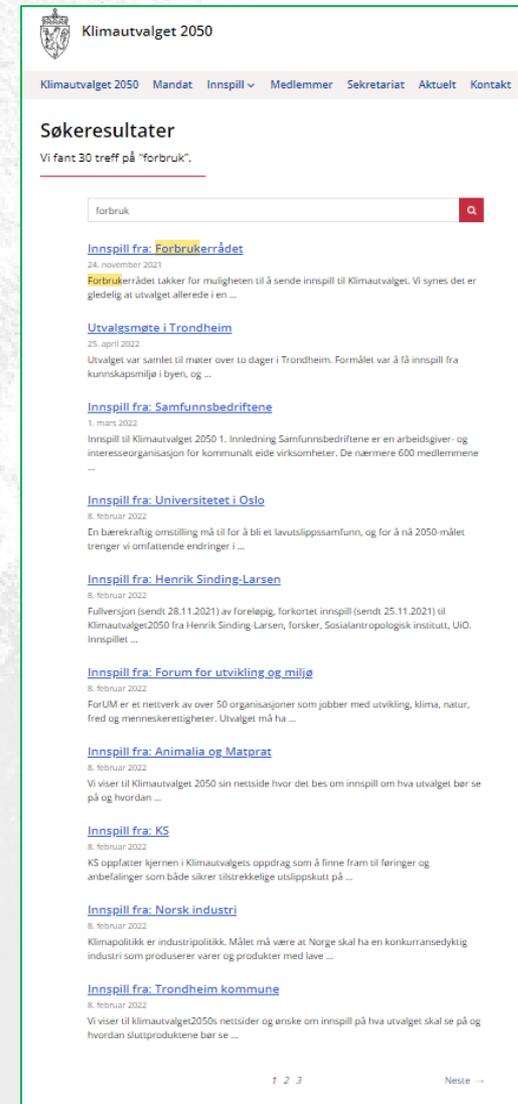
Klimautvalget 2050 Mandat **Innspill** ▼ Medlemmer Sekretariat Aktuelt Kontakt

Mandat

Hovudføre målet til utvalet er å gjere ei heilskapleg utgreiing av dei vegvala Noreg står overfor for å nå klimamålet i 2050, og vise korleis Noreg kan bli eit lågutsleppssamfunn i 2050, på ein mest mogleg kostnadseffektiv måte, med effektiv ressursbruk og eit konkurransedyktig næringsliv. Denne omstillinga må også medverke til ei utvikling som sikrar naturmangfaldet og eit berekraftig velferdssamfunn. Utvalet skal vurdere måloppnåing og nytte i høve til den samfunnsøkonomiske kostnaden.

<https://klimautvalget2050.no/>

‘Consumption’ to (finally) become a (serious) part of the national climate policy agenda? (→ and thereby giving the necessary policy support for ongoing consumption related efforts at the local level of government)



Klimautvalget 2050

Klimautvalget 2050 Mandat Innspill ▼ Medlemmer Sekretariat Aktuelt Kontakt

Søkeresultater

Vi fant 30 treff på "forbruk".

forbruk

[Innspill fra: Forbrukerrådet](#)
24. november 2021
Forbrukerrådet lækker for muligheten til å sende innspill til Klimautvalget. Vi synes det er gledelig at utvalget allerede i en ...

[Utvalgesmøte i Trondheim](#)
25. april 2022
Utvalget var samlet til møte over to dager i Trondheim. Formålet var å få innspill fra kunnskapsmiljø i byen, og ...

[Innspill fra: Samfunnsbedriftene](#)
1. mars 2022
Innspill til Klimautvalget 2050 1. Innledning Samfunnsbedriftene er en arbeidsgiver- og interesseorganisasjon for kommunalt eide virksomheter. De nærmere 600 medlemmene ...

[Innspill fra: Universitetet i Oslo](#)
8. februar 2022
En bærekraftig omstilling må til for å bli et lavutslippssamfunn, og for å nå 2050-målet trenger vi omfattende endringer i ...

[Innspill fra: Henrik Sinding-Larsen](#)
8. februar 2022
Fullversjon (sendt 28.11.2021) av forelegg. Forkortet innspill (sendt 25.11.2021) til Klimautvalget2050 fra Henrik Sinding-Larsen, forsker, Sosialantropologisk institutt, UiO. Innspillet ...

[Innspill fra: Forum for utvikling og miljø](#)
8. februar 2022
ForUM er et nettverk av over 50 organisasjoner som jobber med utvikling, klima, natur, fred og menneskerettigheter. Utvalget må ha ...

[Innspill fra: Animalia og Matprat](#)
8. februar 2022
Vi viser til Klimautvalget 2050 sin nettside hvor det bes om innspill om hva utvalget bør se på og hvordan ...

[Innspill fra: KS](#)
8. februar 2022
KS oppfatter kjernen i Klimautvalgets oppdrag som å finne fram til føringer og anbefalinger som både sikrer tilstrekkelige utslippskutt på ...

[Innspill fra: Norsk industri](#)
8. februar 2022
Klimapolitikk er industripolitikk. Målet må være at Norge skal ha en konkurransedyktig industri som produserer varer og produkter med lave ...

[Innspill fra: Trondheim kommune](#)
8. februar 2022
Vi viser til klimautvalget2050s nettsider og ønske om innspill på hva utvalget skal se på og hvordan slutproduktene bør se ...

1 2 3

Neste

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