Norwegian experience: Policy and Measures (PAMs) ex-ante evaluation

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Norwegian Environment Agency
Oslo 9th. november 2015

Establishing a knowledge base for low emission development

6. March 2014: Phase 1-report

13. October 2014: Phase 2-report

24. June 2015: Phase 3-report

Knowledge base for low-carbon transition i Norway

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Background and task

- Process towards new international climate agreement in Paris in december 2015
- Knowledge base:
  - Norway as a low-carbon society in 2050
  - Possible emission paths towards 2030 that are consistent with a low-carbon society in 2050
- Describe policy options

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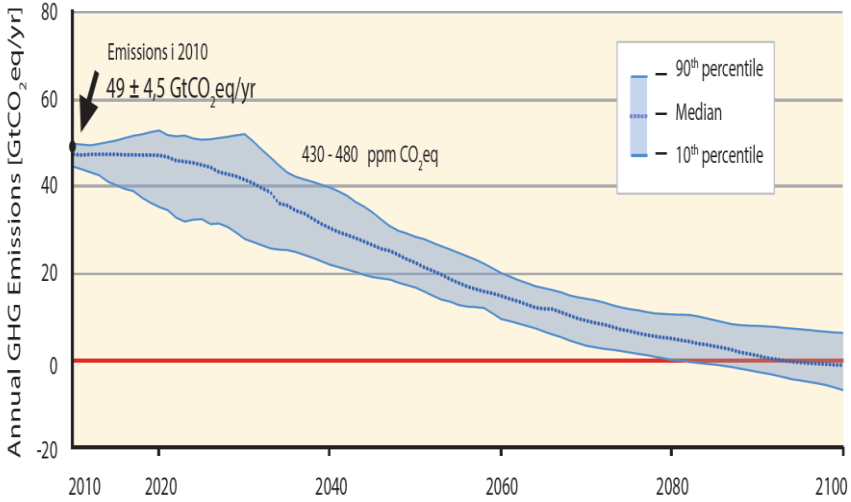
Two-degree target – what is needed globally?

- From IPCC's Fifth Assessment Report:
  - Cuts of 40–70 % by 2050
  - Then net negative emissions by 2100
- Per capita emissions globally:
  - 2050: 1.5 to 3.1 tonnes CO_2-eq
  - 2100: -0.9 to +0.9 tonnes CO_2-eq



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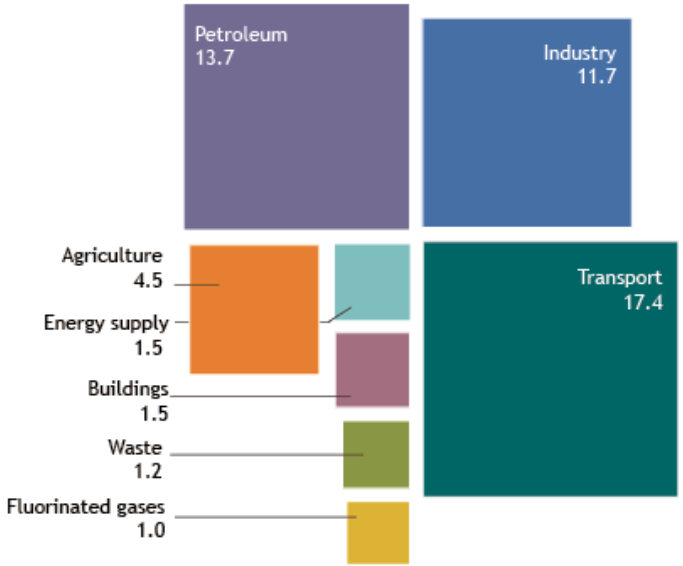
Norway as a low emission society

Norwegian emissions of greenhouse gases in 2012

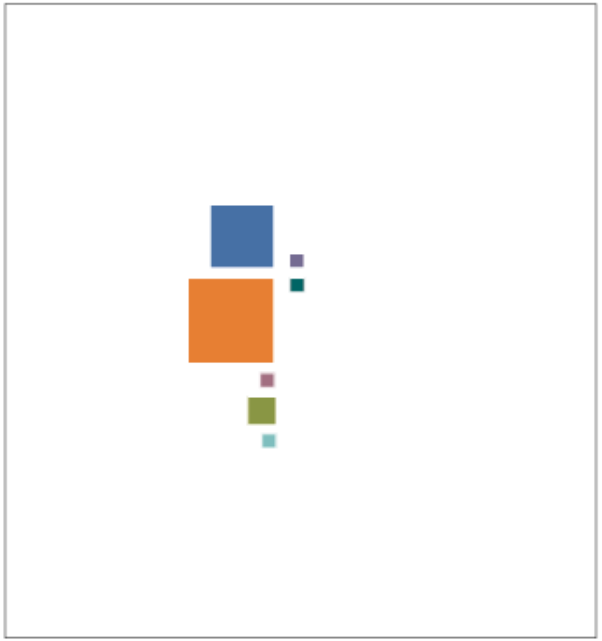
Emissions to air (million tonnes CO_2 equivalents)



10,5 tonn per capita

Norske utslipp av klimagasser i 2050

Tonn CO_2-ekvivalenter



Climate mitigation measures and emission trajetories up to 2030

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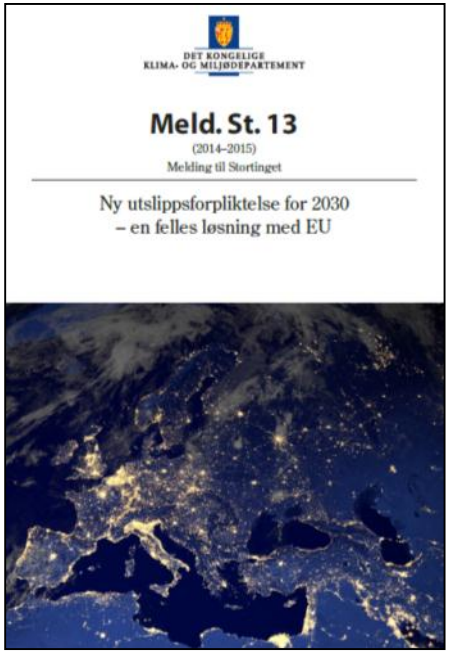
White paper 2015: New targets for 2030 – Norway's INDC

- Reduce emissions by at least 40 percent in 2030 compared to 1990 level
- The government aims to join the EU 2030 framework for climate policies in order for Norway and the EU to jointly fulfil their climate targets
  - ETS sector: part of EU's cap
  - Non-ETS: burden sharing between 0-40 percent reduction



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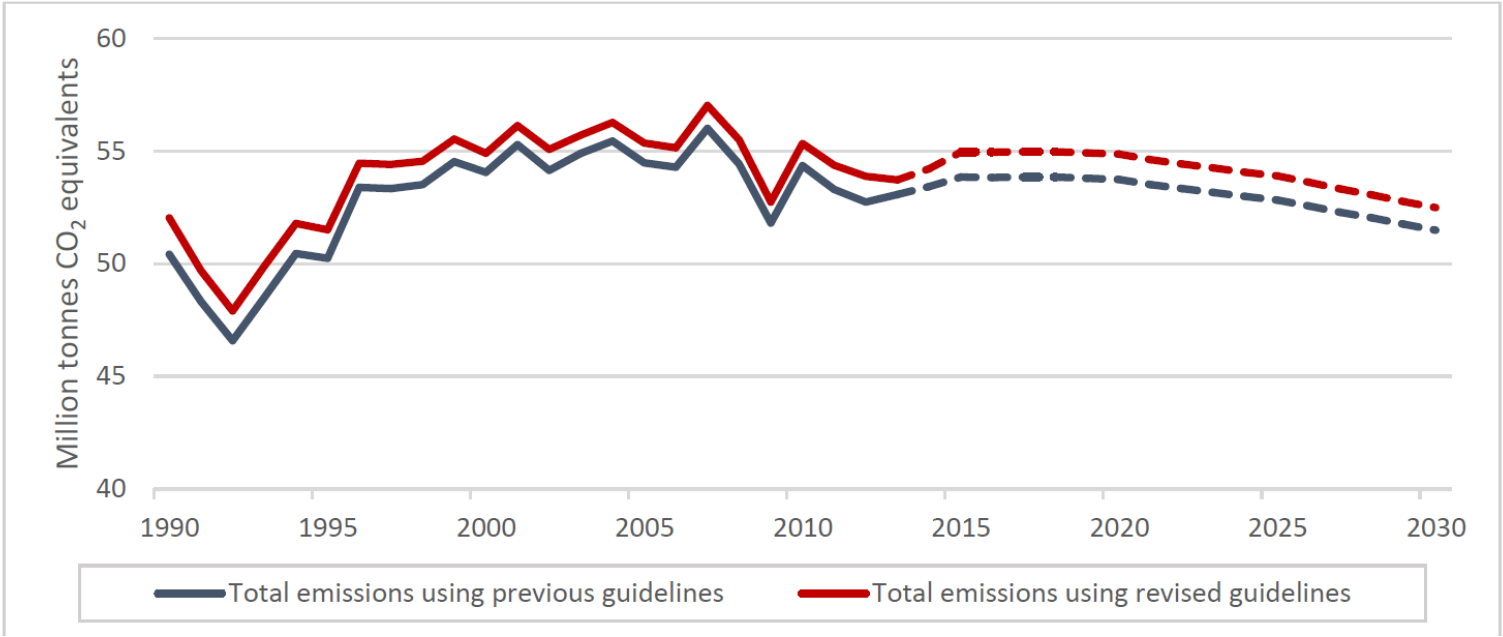
Emission projections in 2015 budget. Adjusted using revised IPCC guidelines



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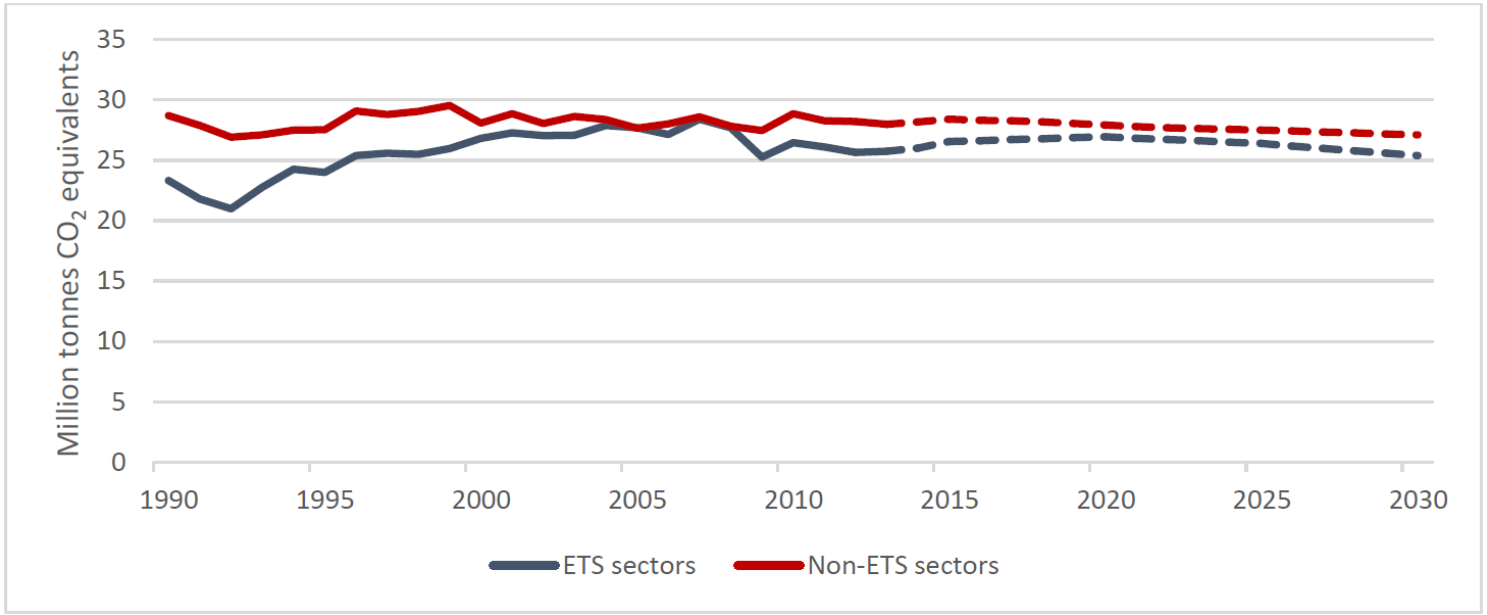
Split between ETS and non-ETS



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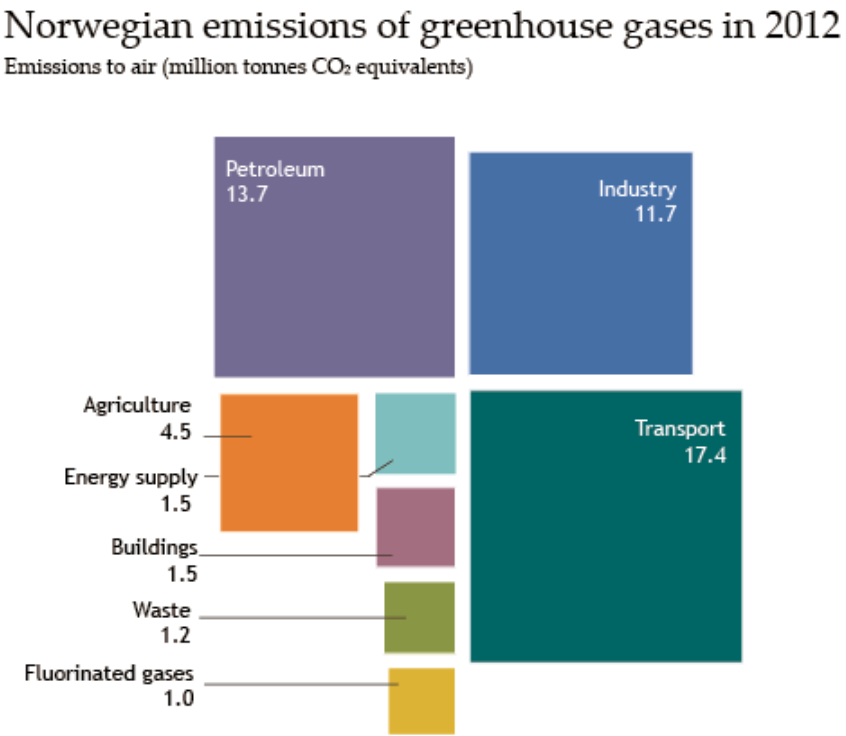
2030: Mitigation analysis for all sectors

- How can different sectors cut emissions?
- What can they do by 2030?
- How does this fit with a transition to a low-carbon society by 2050?



Approach - mitigation analysis

- 84 different mitigation measures were assessed:
  - mitigation potential for the period 2015 – 2030 was calculated
  - All measures was «categorized» according to costs and «feasibility» (technical og possible policy instruments).
  - Increased demand for renewable energy was calculated

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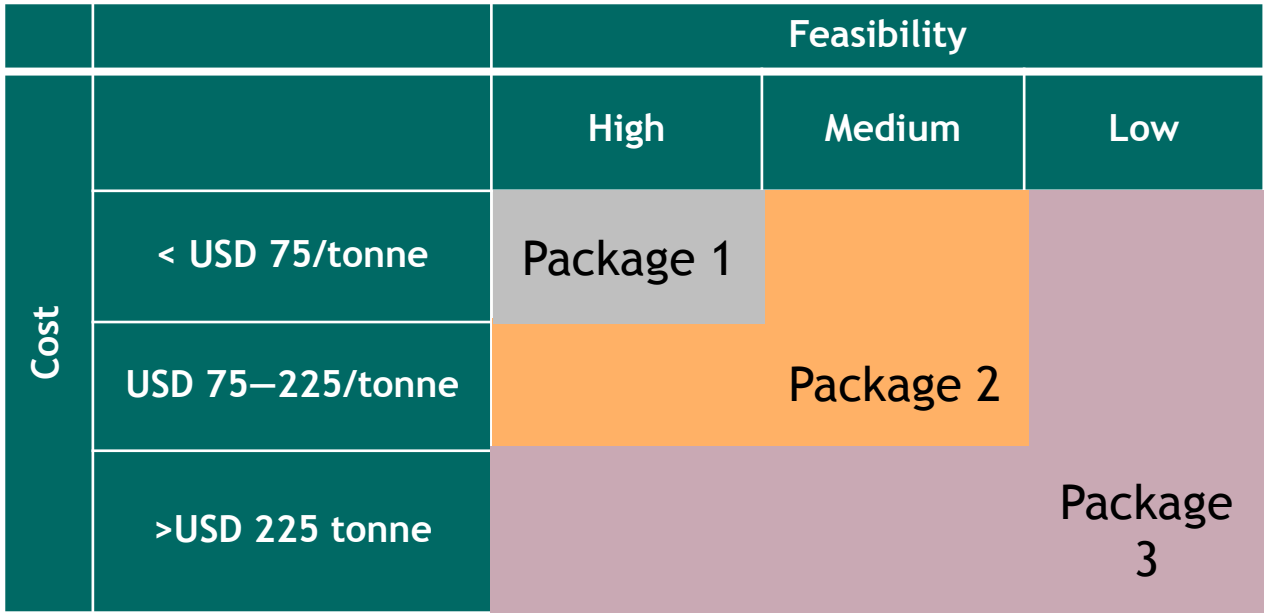
Mitigation analysis for 2030



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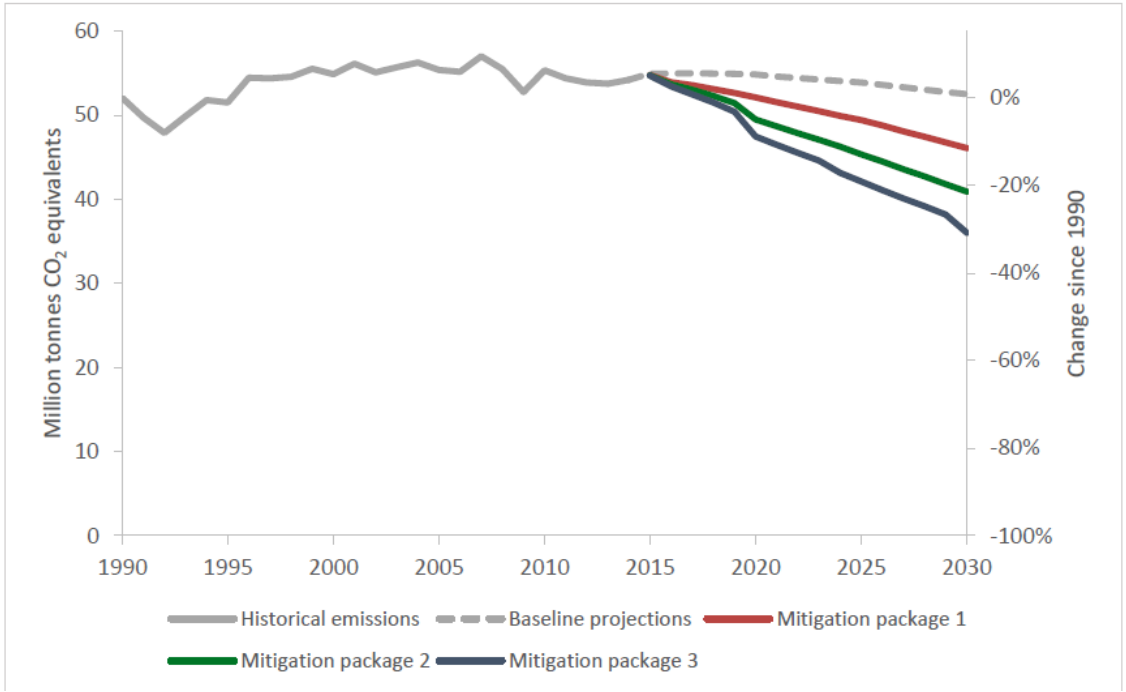
Potential effects of «mitigation packages» towards 2030



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---Package 2

---Package 3

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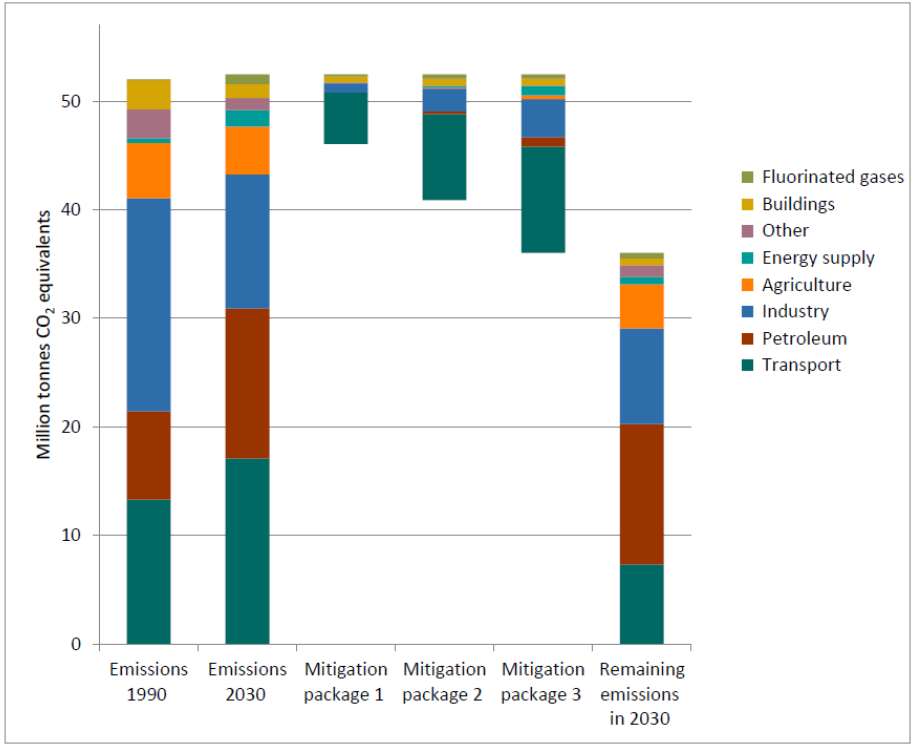
Emission reductions per sector



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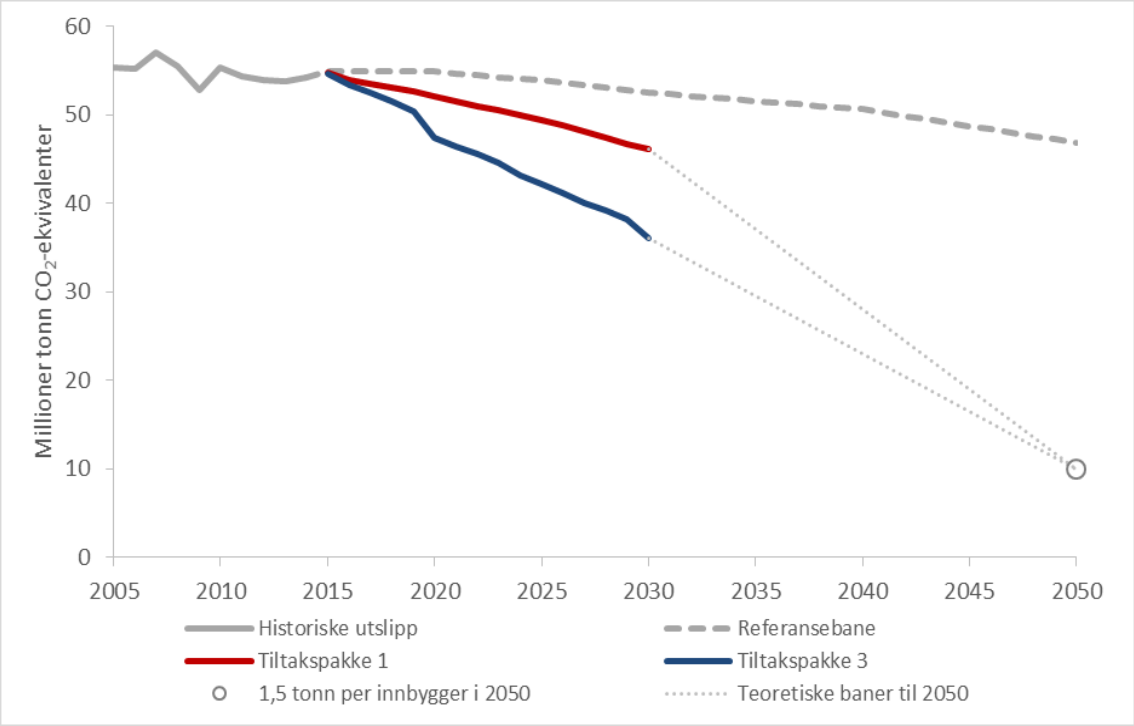
Towards the low emission society in 2050



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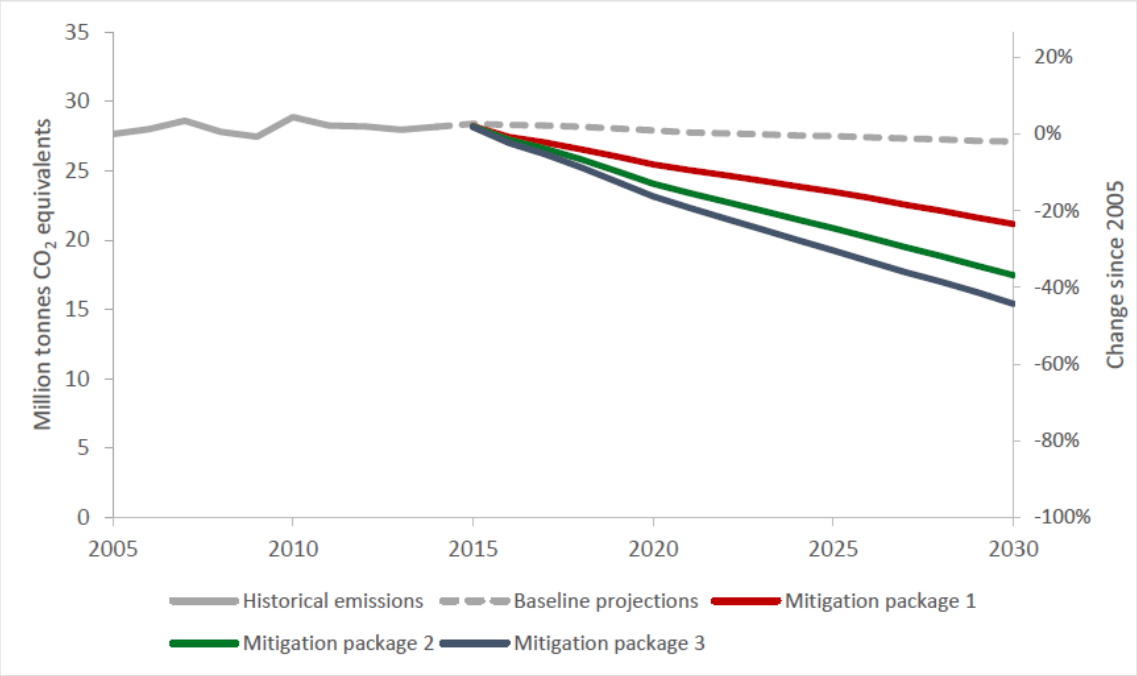
Non-ETS-sector only



---Package 1

---Package 2

---Package 3

--- BAU

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Where can Norway make a difference?

- Continue large-scale electrification of transport, including infrastructure development.
- Improve urban planning to develop climate-resilient towns and infrastructures.
- Develop and deploy carbon capture and storage technologies in industry.
- Develop new processes that minimise greenhouse gas emissions, from metal production and cement production.
- Intensify efforts to develop biomass-based chemicals and fuels.

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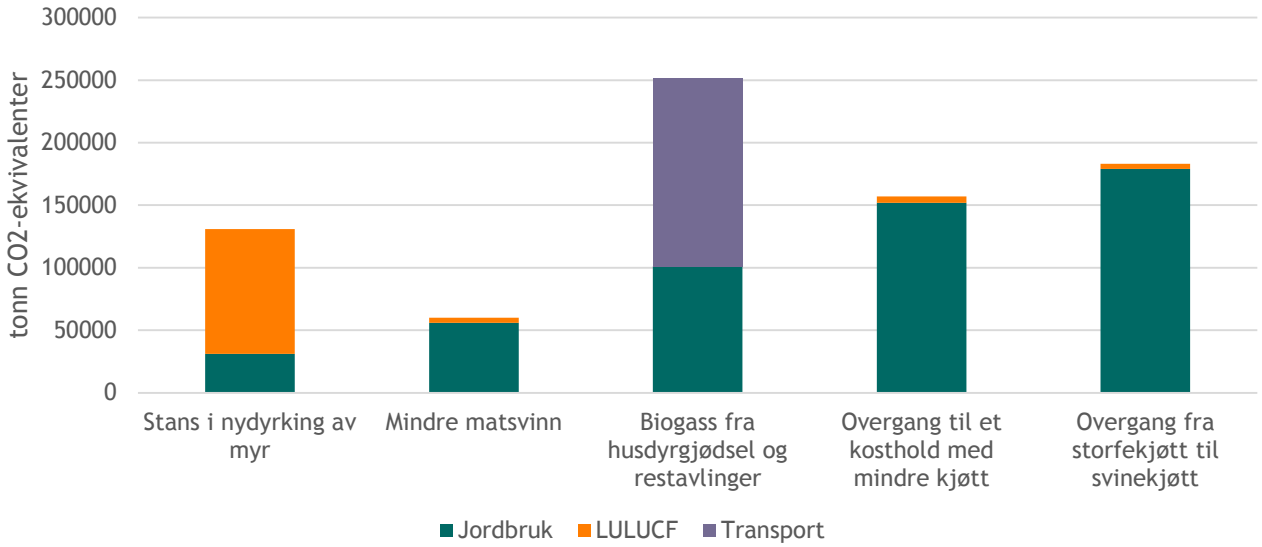
www.miljødirektoratet.no

Utslippsreduksjoner fra jordbrukstiltak



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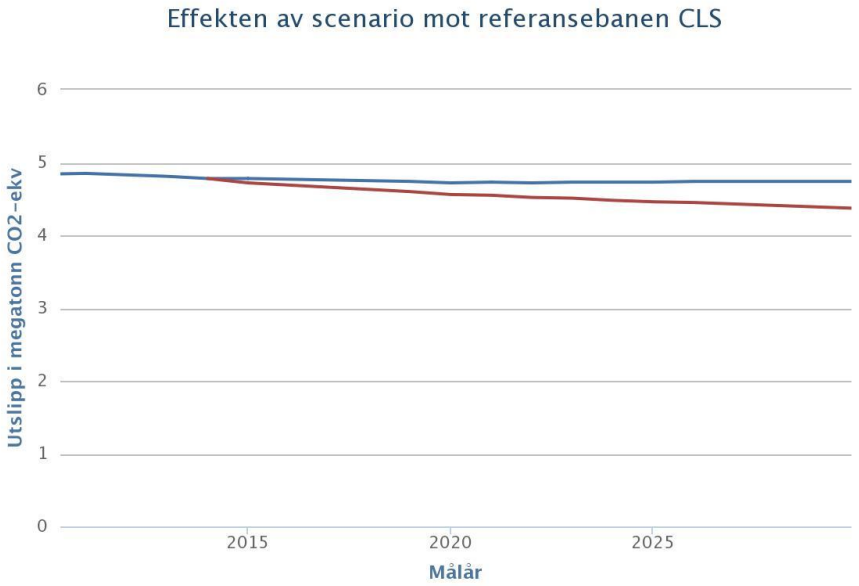
Reduksjon sammenlignet med ref.bane



340 000 tonn CO_2-ekvivalenter lavere enn referansebanen (7 %)

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