



**CLIMATE AND
POLLUTION
AGENCY**

The Norwegian Climate Cure **- climate mitigation measures and instruments in a long and short time perspective**

IAIA Symposium Aalborg 2010
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Norwegian Climate Targets

- 2008- 2012: exceed Kyoto agreement by 10%
- 2020: cut global emissions by an amount equivalent to 30% of our emissions in 1990
- **2020: reduce national emissions by 12-14 million tons**
- 2030: carbon neutral (as a part of an ambitious international agreement)
- limit global warming to 2°C

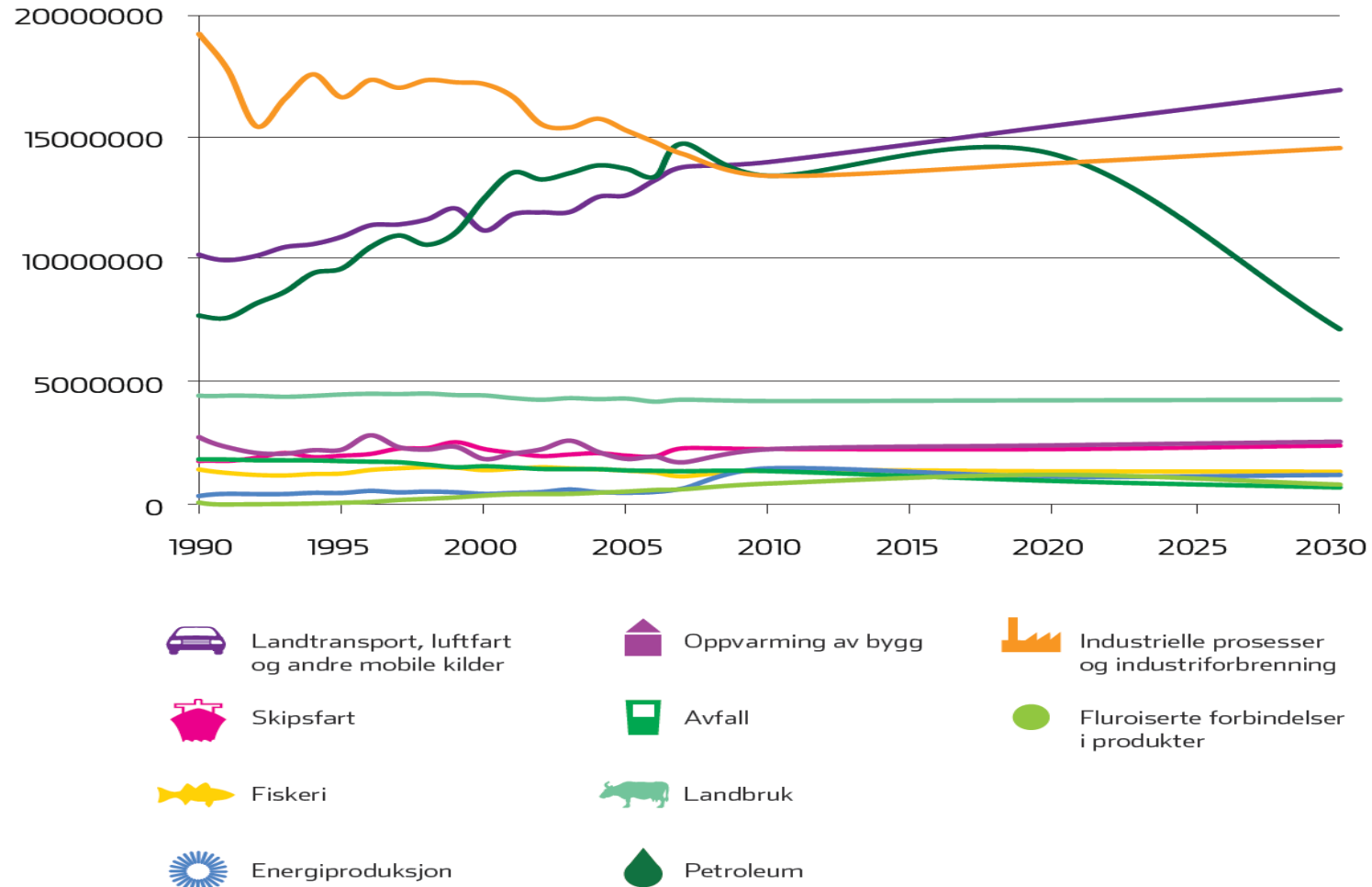


Photo: Erik

Lorentzen



Norwegian climate emissions

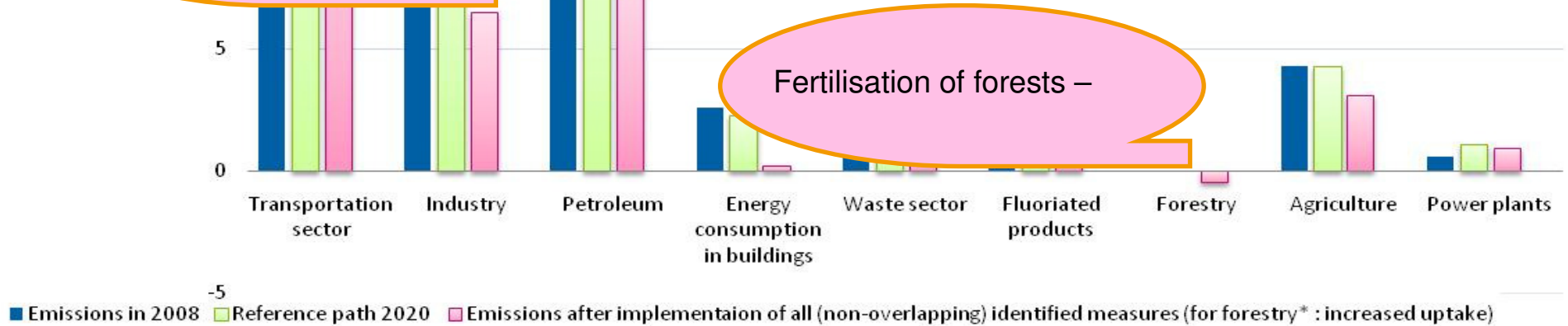


Excludes emissions from petroleum

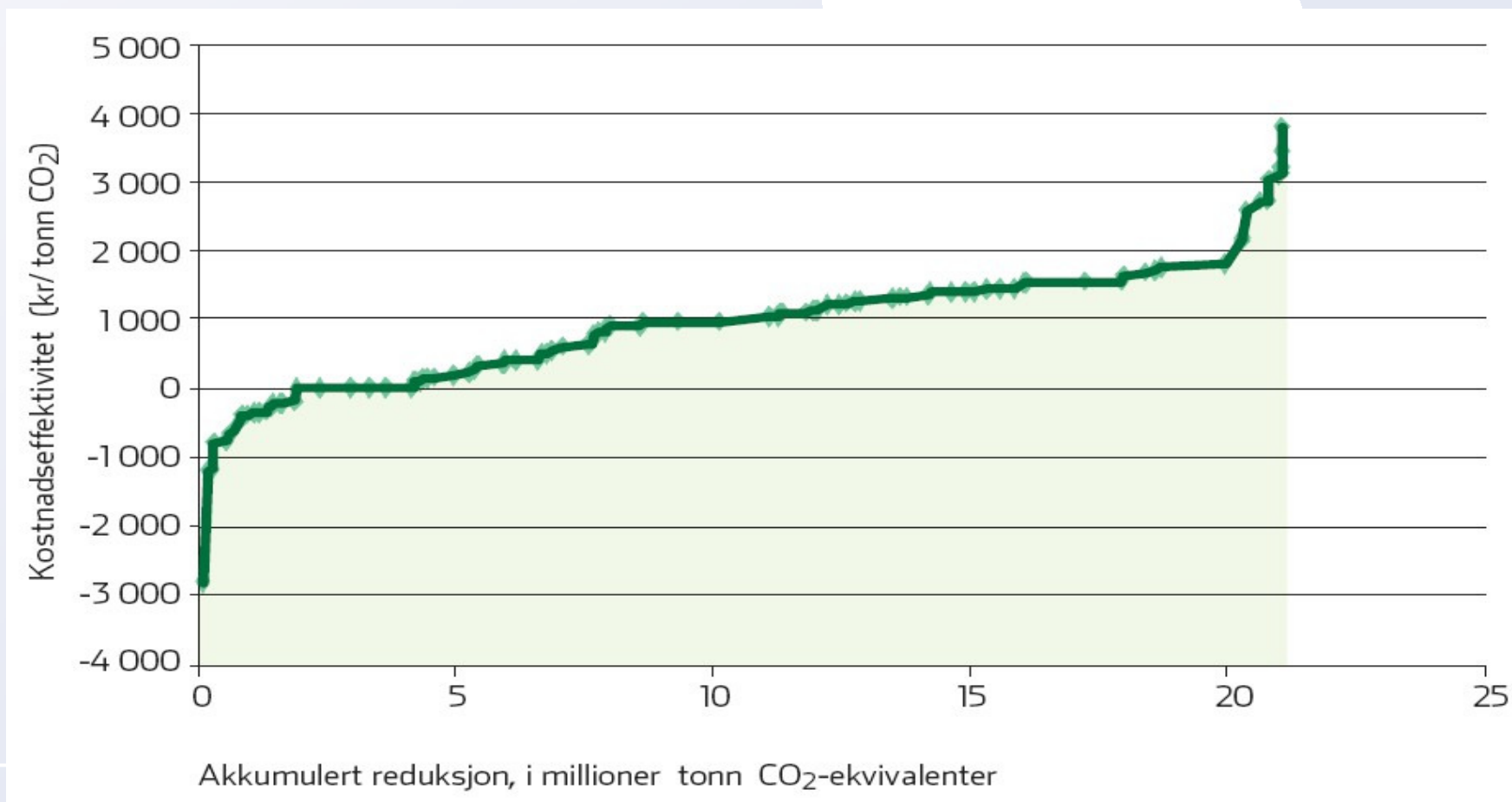
160 mitigation options in all sectors

More efficient vehicles, ships, other fuels (biogas, electricity, hydrogen), better public transportation systems, energy efficiency measures, and other energy sources, renewable energy sources, reducing agents,

Fertilisation of forests –



Marginal cost curve – mitigation options



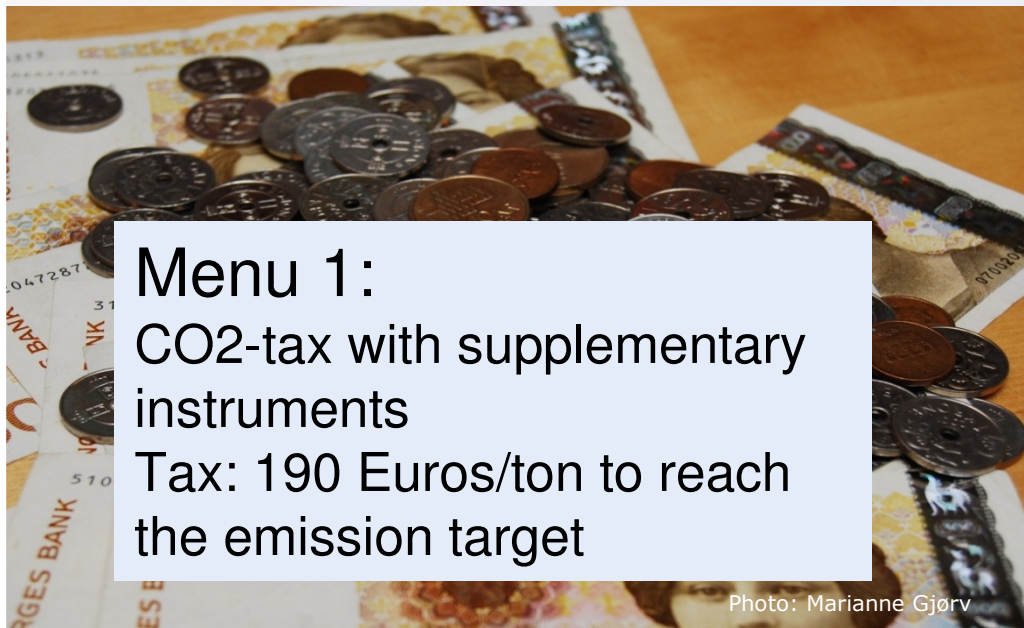
Future without pollution

Some results drawn from transport model scenarios

- Strong economic instruments (fuel tax, road taxes, high parking fees) are necessary in order to reduce emissions substantially.
- Increase in public transportation services alone leads to small reductions in CO₂-emissions
- Increased public transportation **combined** with economic instruments give much higher effect.
- Measures implemented in the larger cities alone reduce climate emissions locally, but have smaller impacts on the national emissions.



Instrument menus – a combination of results from the sector assessment and macro economic assessment



Menu 1:
CO2-tax with supplementary instruments
Tax: 190 Euros/ton to reach the emission target

Photo: Marianne Gjørv



Menu 2:
Regulation and support

Photo: Erik Lorentzen



Menu 3:
No further instruments in the ETS regulated sector

Photo: Marianne Gjørv



Menu 4:
Supplementary instruments in the ETS sector (agreements and funds)

Photo: Erik Lorentzen

Yes, it is possible to reach the goal....



- ... with additional climate instruments.
- Both efficiency measures, technology changes and behavioral changes will be necessary
- Increased mitigation potential and lower costs after 2020.
- _____
- Important with a strong “climate perspective” in all long term planning to reach a low carbon society

Assessment of 4 planning processes:

New regional hospital:
IA **did not** assess any
climate aspects at all



New national museum –
IA included climate
emissions in a **very limited**
way



Plan for transport and infrastructure in
the Oslo region: IA included climate, but
as **one of many aspects** it was not
important for final choices.



High speed railway: Climate was
important part of the
assessment, and **high carbon
pricing** was applied by German
consultants



How can planning processes better support national targets?

- Is the **low carbon alternative** really one of the alternatives? If not – this must be communicated!
- Use a **carbon price** that reflect the target (today 16 Euro/ton, need to be 200 Euro or up?)
- Central government should establish **minimum default values** for calculations in local and regional planning processes.
- Many decision makers rely only on results from **cost/benefit analysis** – a method which is not alone suitable for long term decision making. We need accept for applying other methods as well.

Today's climate instruments can reduce emission with approx. 3 Mtons until 2020

- **CO2-tax on use of fossil fuels in most sectors (25- 45 Euro/ton)**
 - **European Trading System (ETS)**
 - **Differentiated tax system for purchase of cars**
 - **Funding to increase production and use of renewable energy**
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- **The planning and building Act**
 - **IA required in all major development projects**
 - **Energy and climate plans in all municipalities**
 - **Standards for energy supply and use in buildings**