

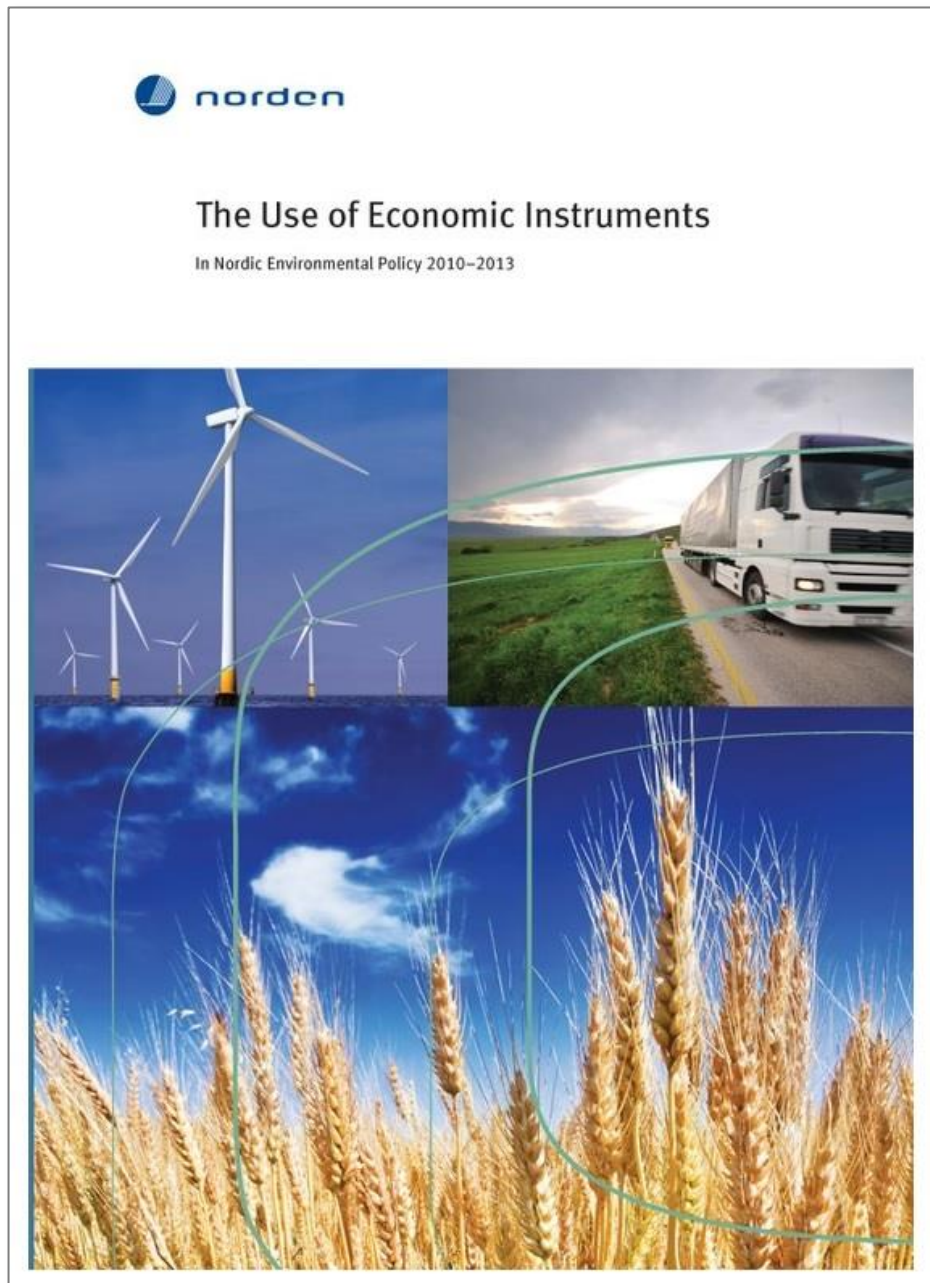
Hard facts. Clear stories.

Copenhagen
Economics

CE

Environmentally Harmful Subsidies in the Nordic Countries

GCET
25 September 2014



Part 1
Overview of Economic
Instruments 2010-2013

Part 2
**Environmentally
Harmful Subsidies in
the Nordic Countries**

Environmentally Harmful Subsidies in the Nordic Countries

Removing environmentally harmful subsidies

Long-standing commitment to remove EHS in the EU

Problems for the Nordic countries:

- *Far-reaching environmental policies and high level of environmental awareness*
→ *occurrence of EHS may not be obvious*

Environmentally Harmful Subsidies in the Nordic Countries

Removing environmentally harmful subsidies



Question:

What are the political possibilities for EHS reform in the Nordic countries?

Two dimensions:

- **Fiscal** impact
- **Environmental** impact of reform

Environmentally Harmful Subsidies in the Nordic Countries

Defining environmentally harmful subsidies

“Any unrequited **financial assistance** provided by a government is harmful to the environment if it **leads to higher levels of waste and emissions**, including those in the earlier stages of production and consumption, **than what would be the case without** the support measure.”

OECD (2010),
“Measuring
Support to Energy”

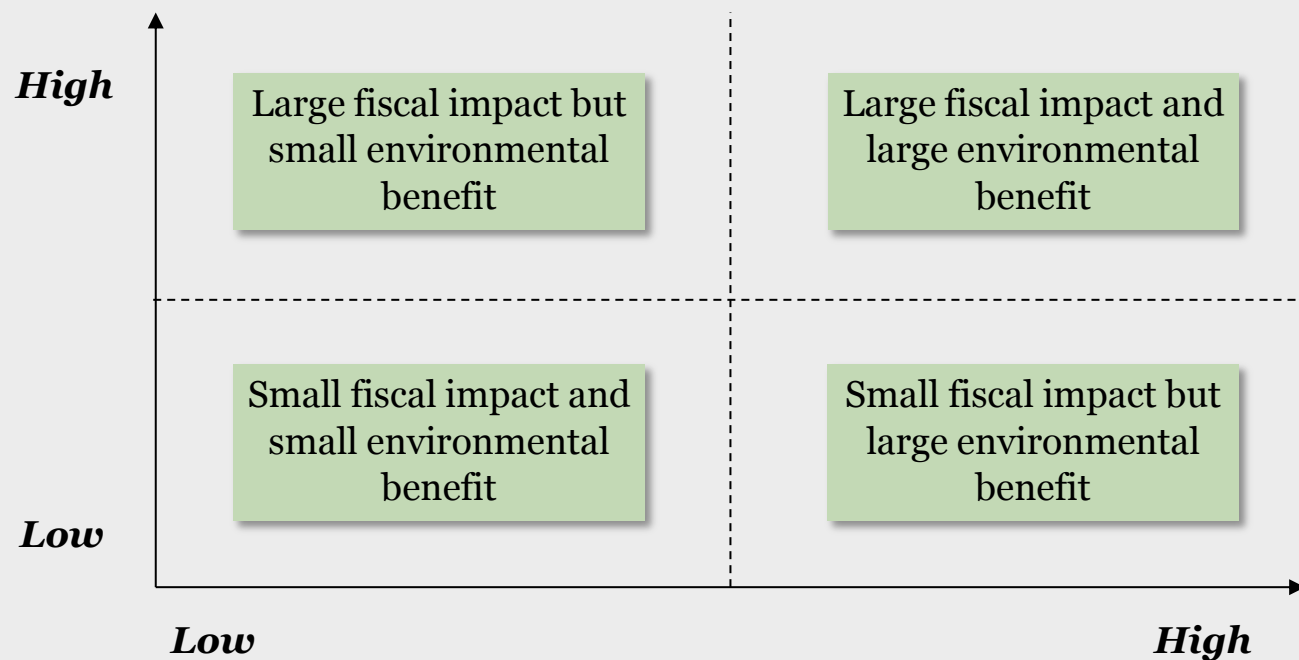
OECD (2005),
“Environmentally
harmful subsidies,
challenges for
reform”

Environmentally Harmful Subsidies in the Nordic Countries

Classifying environmentally harmful subsidies

Illustration

Fiscal impact of reform (€)



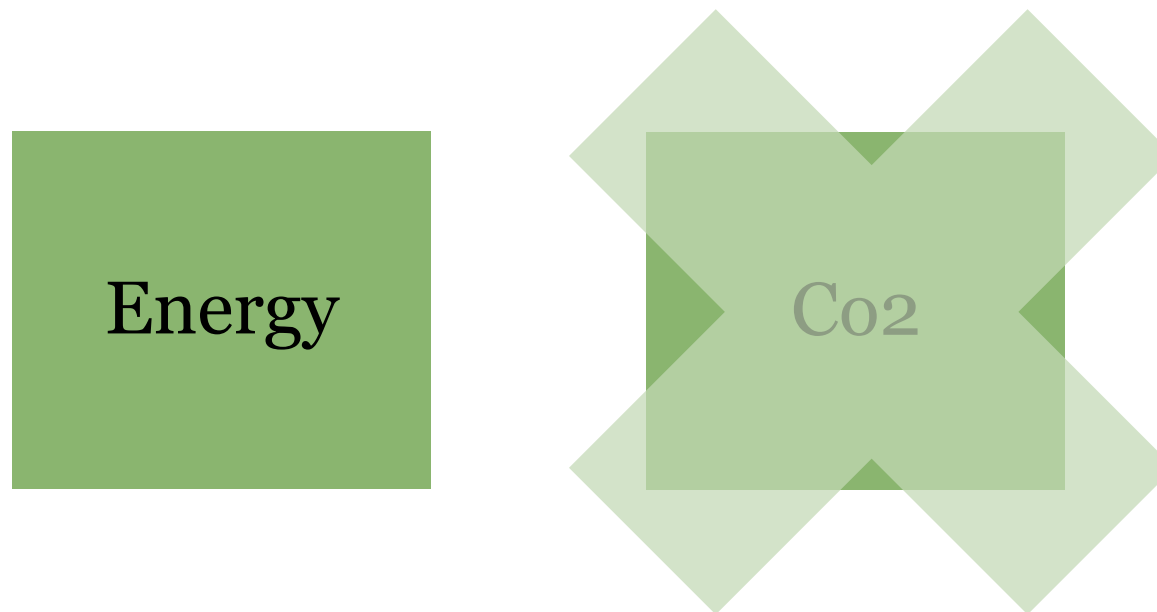
Environmental impact of reform (€)



3 cases

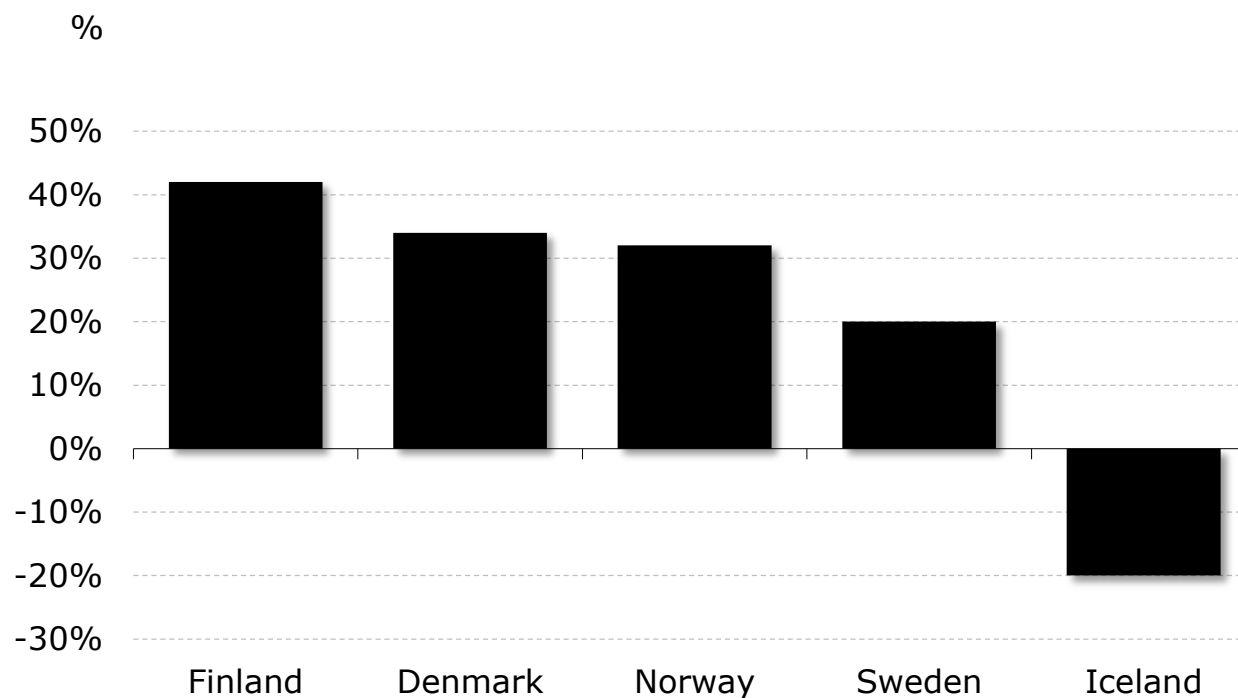
- 1. EU direct payments to farmers*
- 2. Overallocation of allowances in the EU Emissions Trading Scheme*
- 3. Lower energy tax on diesel used in transport compared to petrol***

Case: Lower energy tax on diesel compared to petrol
**Fossil fuel taxes in the Nordic countries generally
consist of at least 2 parts**



Case: Lower energy tax on diesel compared to petrol **Energy tax on petrol is up 42% of diesel tax rates**

Energy tax on petrol relative to diesel per litre, 2012



Source: Europe's Energy Portal, 2013.

Case: Lower energy tax on diesel compared to petrol

Why an EHS?

Fiscal impact: tax expenditure

Environmental impact: “Higher levels of waste and emissions”

- *Removing subsidy would reduce diesel fuel demand*
- *Consumers switch to other transportation*
- *Diesel not an environmentally preferable fuel to petrol from a life-cycle perspective*

Case: Lower energy tax on diesel compared to petrol
Counterfactual scenario

Equalised tax rate per litre between petrol and diesel

But...

- Diesel has around **10% more energy content** per litre
 - Could motivate higher energy tax on diesel
 - Use equalised tax as benchmark as politically easier to reform

Case: Lower energy tax on diesel compared to petrol

Results: Lower energy tax on diesel compared to petrol

Fiscal and environmental impact due to tax harmonisation

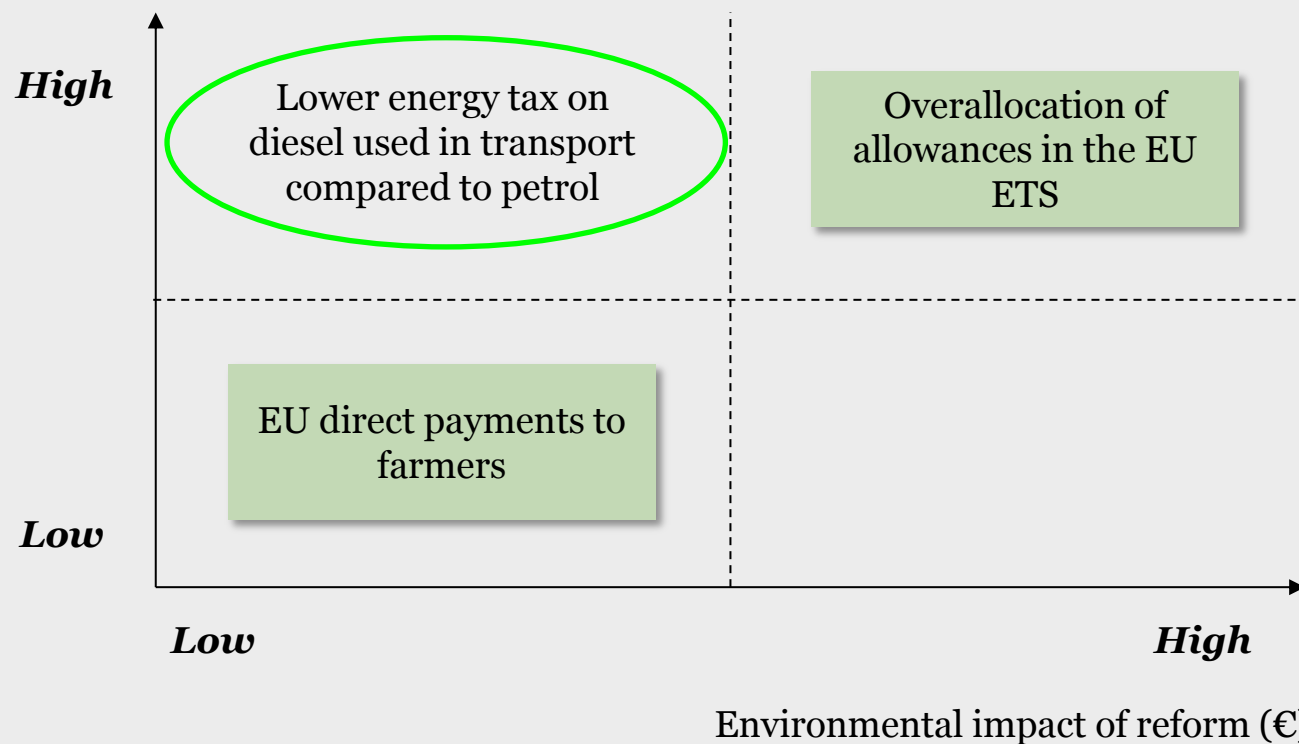
	Yearly environmental impact, EUR million	Yearly fiscal impact, EUR million
Denmark	25 to 62	342 to 451
Finland	31 to 78	257 to 368
Norway	21 to 53	294 to 411
Sweden	12 to 30	173 to 238
Total	89 to 223	1,067 to 1,468

Environmentally Harmful Subsidies in the Nordic Countries

Relative placement of cases investigated

Results, total for Denmark, Finland, Norway and Sweden

Fiscal impact of reform (€)





Thank you!





Additional



Environmentally Harmful Subsidies in the Nordic Countries

Case study: Lower energy tax on diesel compared to petrol

Environmental impact of a tax harmonisation between diesel and petrol

	Change in diesel price	Change in driven distance per year (bn km)	Yearly environmental impact (EUR million)
Denmark	11%	-0.9 to 2.3	24.7 to 61.8
Finland	16%	-1.2 to -2.9	31.2 to 77.9
Norway	11%	-0,8 to -2.0	21.2 to 53.1
Sweden	8%	-0.5 to -1.1	12.0 to 29.9
Total	-	-3.3 to -8.4	89.1 to 222.7

Note: Lower bound is calculated based on estimated long-run price elasticity for diesel of -0.32, and upper bound on -0.8.

Source: Copenhagen Economics based on data from the World Bank, national statistics agencies, Sterner (2006), CE Delft (2008), Konjunkturinstitutet (2012).

Environmentally Harmful Subsidies in the Nordic Countries

Case study: Lower energy tax on diesel compared to petrol

Fiscal impact due to tax harmonisation

	Change in diesel consumption	Yearly fiscal impact, EUR million
Denmark	-4 to -9%	342 to 451
Finland	-5 to -13%	257 to 368
Norway	-4 to -9%	294 to 411
Sweden	-3 to -6%	173 to 238
Total		1,067 to 1,468

Source: Copenhagen Economics based on data from the World Bank, national statistics agencies, Sterner (2006), CE Delft (2008).

Environmentally Harmful Subsidies in the Nordic Countries

Other EHS definitions

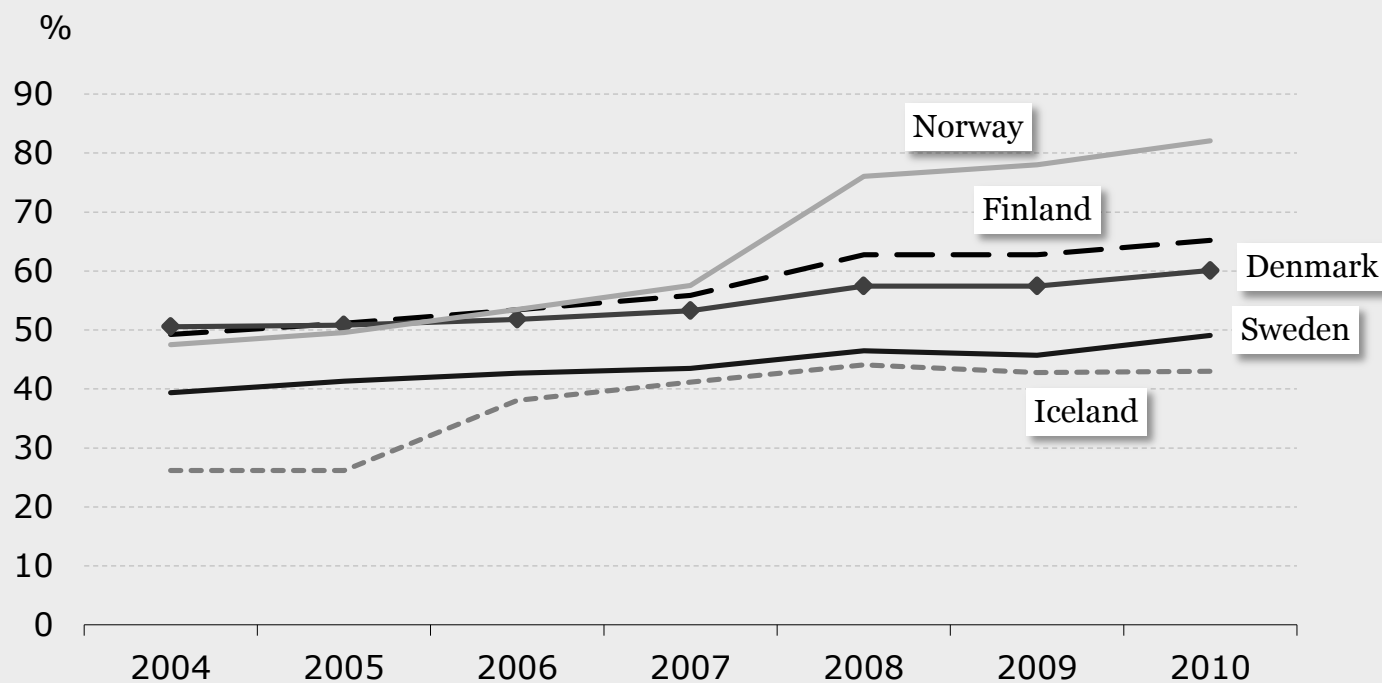
Definitions of environmentally harmful subsidies in the literature

Institution	Year	Definition
OECD	1996	Economic and fiscal measures that have both clear budget impacts and negative side-effects on environmental quality.
OECD	1998	A subsidy can be defined as “environmentally harmful” if it encourages more environmental damage to take place than what would occur without the subsidy.
OECD	2005	A subsidy is harmful to the environment if it leads to higher levels of waste and emissions, including those in the earlier stages of production and consumption, than what would be the case without the support measure.
Danish Environmental Assessment Institute	2005	An environmentally harmful subsidy increases production or use of a product/substance with environmentally harmful effects.
IEEP et al.	2007	A result of a government action that confers an advantage on consumers or producers, in order to supplement their income or lower their costs, but in doing so, discriminates against sound environmental practices.
Valsecchi et al.	2009	All other things being equal, the [environmentally harmful] subsidy increases the levels of output/use of a natural resource and therefore increases the level of waste, pollution and natural exploitation to those connected.
Nordic Council of Ministers	2011	Environmentally harmful subsidies are inefficient subsidies causing (substantial) negative environmental effects. Inefficient subsidies are subsidies other than those that efficiently correct for positive externalities or efficiently correct for distributional issues. For practical purposes inefficient subsidies can be categorised in three main groups: A) subsidies to negative environmental externalities, B) exemptions from taxation of negative environmental externalities, and C) other inefficient subsidies.

Environmentally Harmful Subsidies in the Nordic Countries

Use of diesel fuel for road transport has increased rapidly

**Road sector diesel fuel consumption
(% of total road sector energy consumption)**



Source: World Bank, World Development Indicators.