

Enova's mission towards a sustainable energy future

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Enova – basics

- The National Energy Agency.
- Owned by the Ministry of Petroleum and Energy (MPE)
- Established in 2002
- Operates on a four year contract with the MPE
- Located in Trondheim
- A staff of almost 80



Enova mandate

- to promote environmentally friendly restructuring of energy end-use and energy production, and to support the development of new energy- and climate technology
- to reinforce security of supply and to reduce greenhouse gas emissions



Enova 2014 – facts and figures

- 1400 projects
- 24 projects in new technology
- Invested 3,1 billion NOK
- Energy result: 1,7 TWh
- Climate result: 0,1 – 0,7 Mtonn CO₂-eqv



Climate



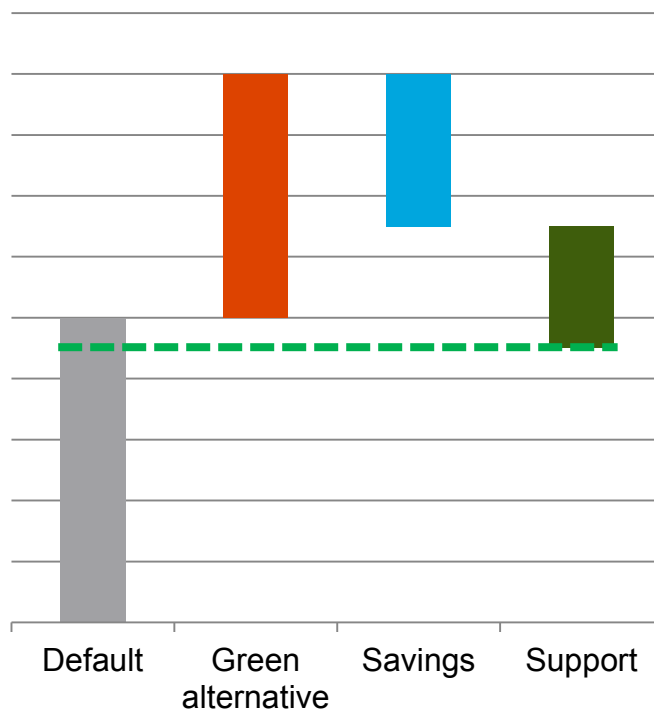
Security of supply



Value creation

The better choice

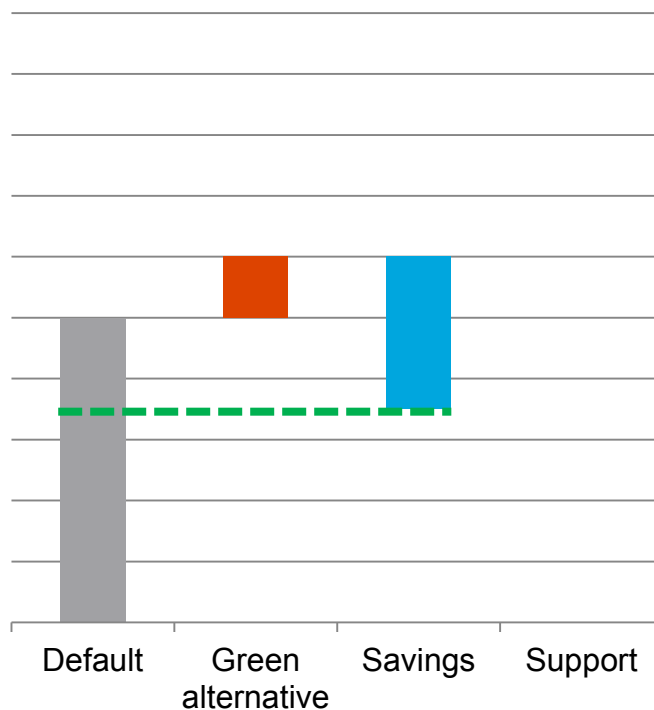
Making the "green" alternative the preferred one



- In the short run:
 - Using financial support and advice to promote green alternatives and make them economically competitive
 - Green alternatives are usually more expensive, and the value of the saving does not fully offset the extra investment costs
 - Financial support from Enova (up to 50%) makes the green alternative competitive

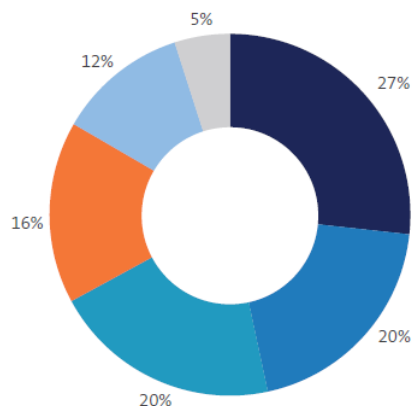
The competitive choice

Green profit



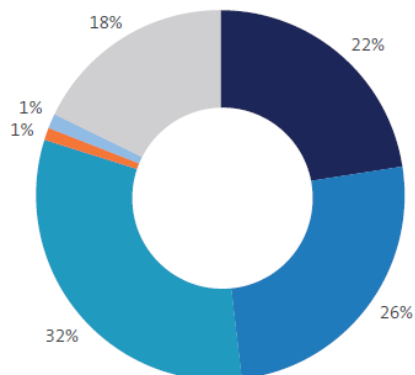
- In the long run:
 - Addressing barriers (market imperfections) through a range of supporting schemes and activities.
 - Decreasing the costs of green alternatives, making them competitive without the need for financial support.

Norway 2013 – facts and figures: Energy end use and GHG emission



Total energibruk 2013, 282 TWh

- Industri, 75 GWh
- Olje og gass, 56 GWh
- Transport, 58 GWh
- Husholdninger, 46 GWh
- Tjenesteyting, 33 GWh
- Annet, 14 TWh

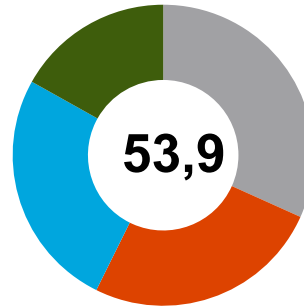


Totale utslipp 2013: 54 mill tonn CO₂-ekv

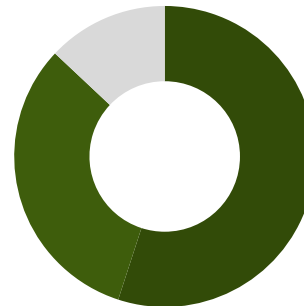
- Industri, 12 mill tonn CO₂-ekv.
- Olje og gass, 14 mill tonn CO₂-ekv.
- Transport, 17 mill tonn CO₂-ekv.
- Husholdninger, 0.6 mill tonn CO₂-ekv.
- Tjenesteyting, 1 mill tonn CO₂-ekv.
- Annet, 10 mill tonn CO₂-ekv.



Climate



- Transport
- Oil & Gas
- Industry
- Other



- Enova ->2015
- Enova 2015->
- Other



Position and role



Politics:

- Political targets
- Instruments
- Coop measures

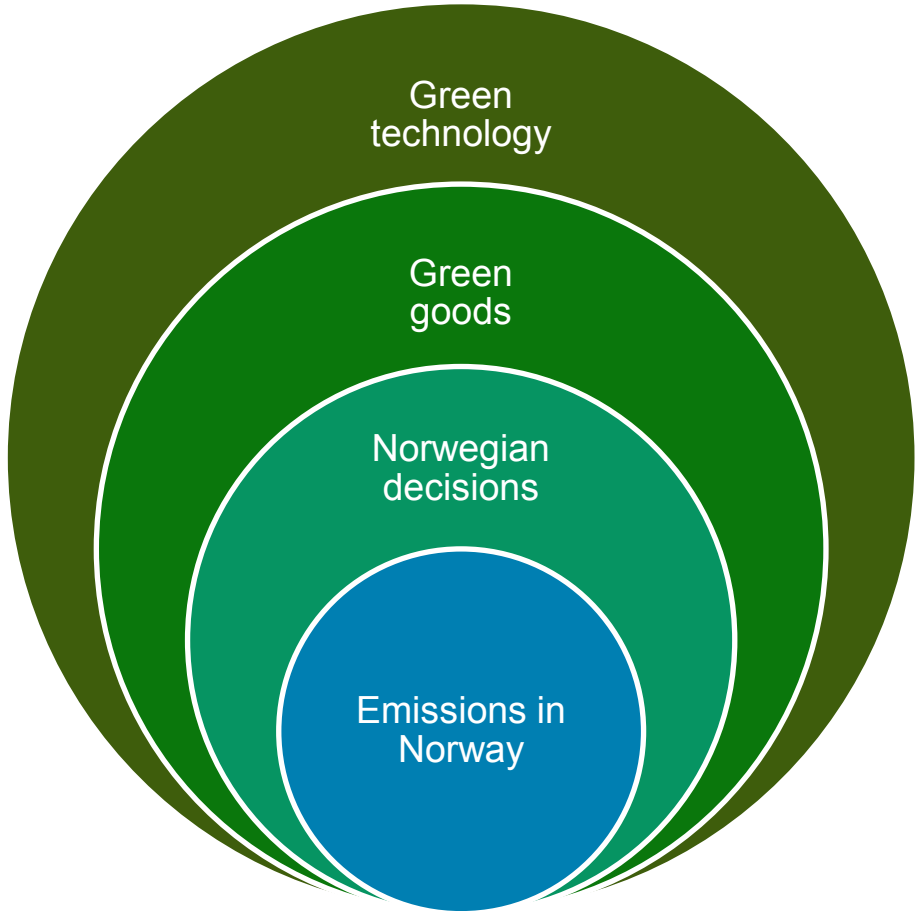
Changing agent:

- Towards a low carbon society with security of supply
- Innovation and green growth

Markets

- Trigger projects
- Create results
- Develop

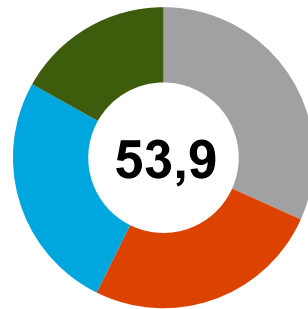




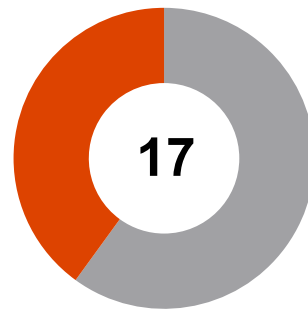
More than climate statistics



Transport



- Transport
- Oil & Gas
- Industry
- Other



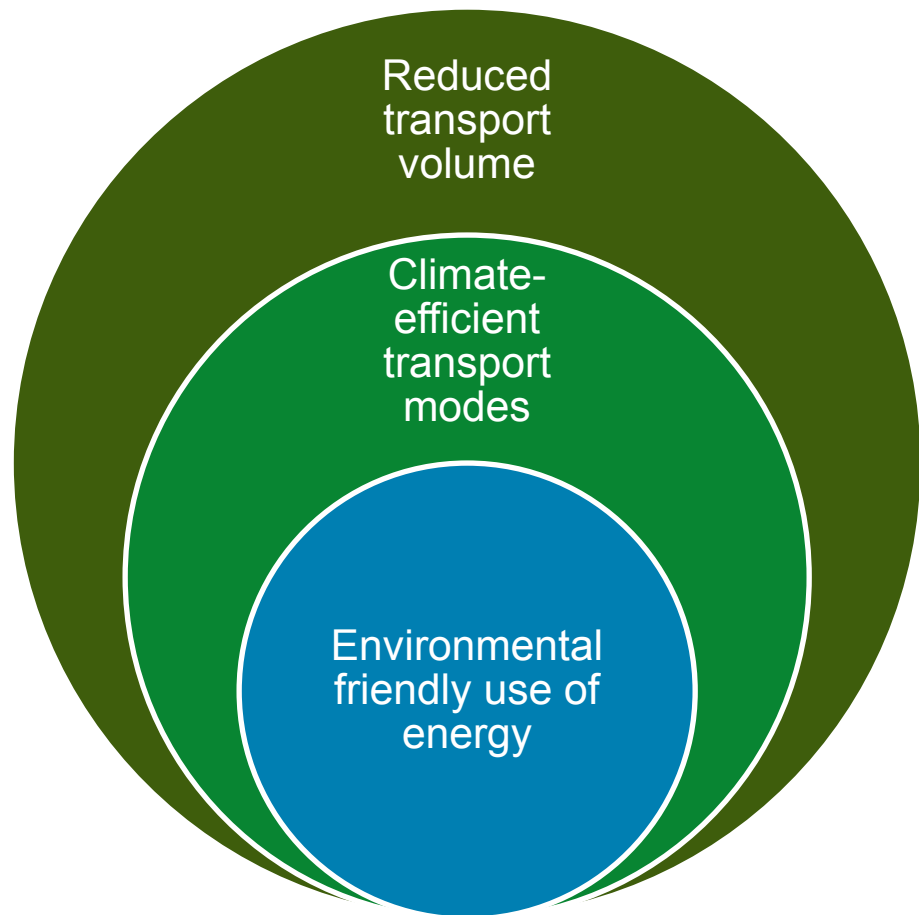
- Passenger transport
- Goods transport



- Private cars
- Public transport



Passanger transport





Reduced transport volume

- Demonstration of area development

Climate efficient transport modes

- Energy management

Environmental friendly use of energy

- Charging station projects
- Biofuel projects
- Hydrogen demo projects

How can we achieve growth in an immature Norwegian market for hydrogen vehicles?

Technology

- Hydrogen production is well known technology
- Hydrogen can be fuel for all kind of vehicles
- Hydrogen buses and cars are proven technology that satisfy technical requirements
- R&D initiatives in several automobile manufacturers
 - Toyota, Daimler, ...

Immature Norwegian market

- Few hydrogen vehicles in Norway
- Limited supply of hydrogen vehicles
- Only 5 hydrogen filling stations in operation
- Operation of filling stations dependant of governmental subsidies
- Limited number of private companies involved in the business

Enova can support the introduction of hydrogen technology in the Norwegian market

- Supporting demonstration of technology and solutions in the Norwegian market
- Financial sustainable projects with solid actors involved
- Demonstration projects for fleets of vehicles of interest





ENERGY
(TWh)

CLIMATE
(CO₂-eqv)