



# Energy and Climate Action Plans in Norway

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- **General situation**
- **Examples from Hedmark County**

**Aasmund Hagen, Hedmark County – Norway**  
**Anyksciai, 3rd of May 2010.**

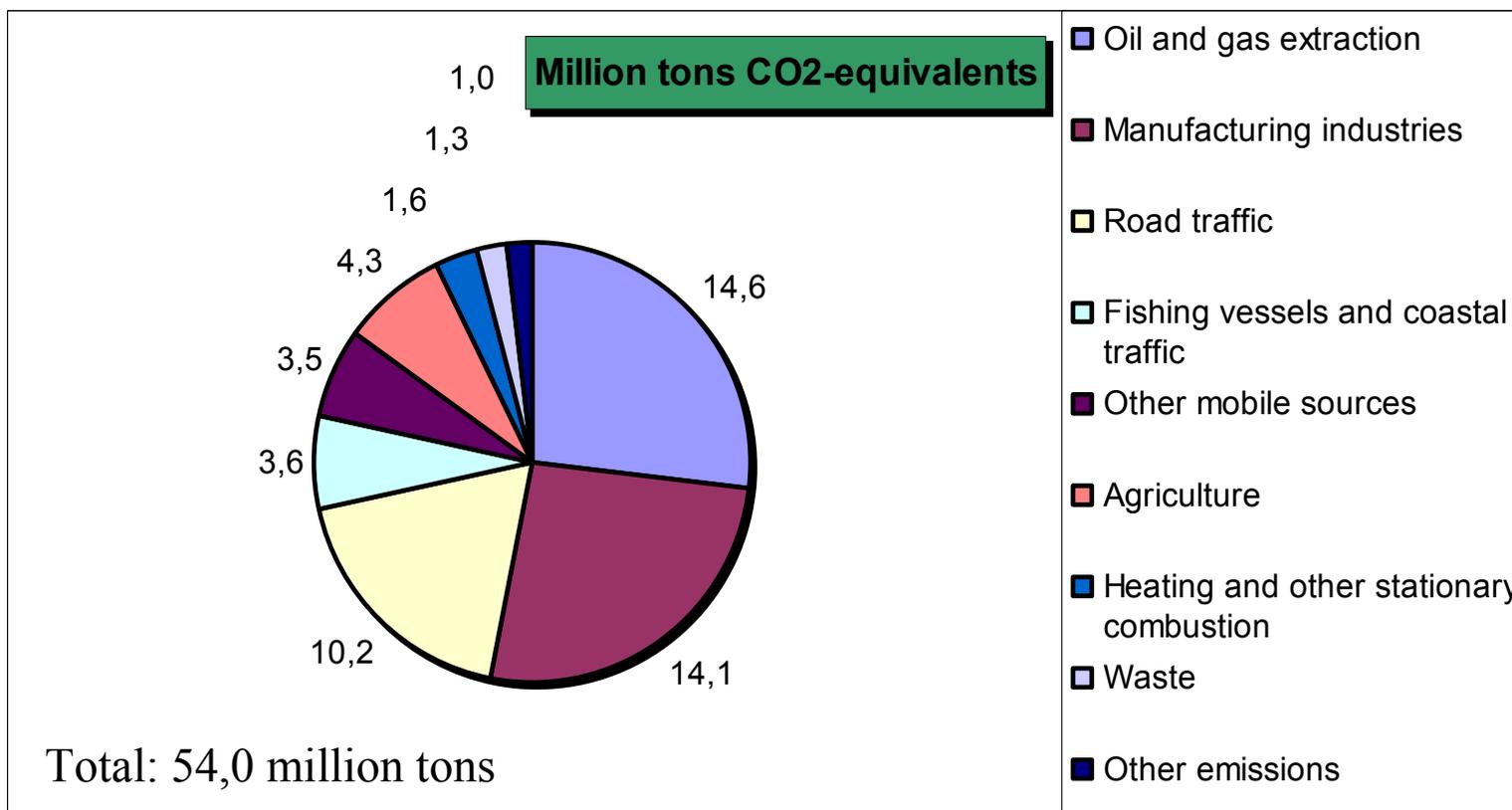


**norway  
grants**

*Project “Transfer of Norwegian experience in promotion of the use of the renewable energy sources to Lithuanian Municipalities”. Supported by a grant from Norway through the Norwegian Financial Mechanism, Project co-financed by Lithuania.*



## Greenhouse Gas Emissions in Norway by source - 2008





## The Parliamentary agreement on climate policy (1)

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**17 th of January 2008 – Prime Minister Jens Stoltenberg:**

*”The agreement on climate policy means that Norway can pursue a long-term climate policy that is not affected by changes of government. The Government’s white paper on climate policy laid a sound foundation which we have now used as a basis for reaching an agreement with the three opposition parties,” said Prime Minister Jens Stoltenberg. The Prime Minister commended the opposition parties for their constructive approach to the negotiations.”*



## The Parliamentary agreement on climate policy (2)

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### Some main elements from the agreement:

- Norway aims to be carbon neutral by 2030
- 2/3 of GHG emission reductions as domestic reductions
- 15 – 17 million tons annually reduction of GHG emissions by 2020
- Norway's financial support to stop deforestation in tropical forests increased by €400 million on annual basis
- Fossil fuel for heating buildings shall be reduced to zero, partly by governmental support, partly by law.
- Strengthening of different kinds of governmental funding arrangements to boost energy efficiency, implementation of sustainable energy systems etc.



## Municipal energy and climate planning

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... as a result of the Agreement on Climate Policy in 2008, local and regional energy and climate planning accelerated, fueled by governmental grants to county and municipal administrations to co-finance the planning processes.

This system works as a "carrot" until 1st of July 2010. The governmental company **ENOVA** looks after the process.





## State of the art in Norway – spring 2010

Website: [www.norskeklimakommuner.no](http://www.norskeklimakommuner.no) gives a national overview on municipal and county level who has energy and climate action plans (148), who is working on it (230) and who has no known decision so far to do so (53). Furthermore links to the planning documents, statistics, news etc.

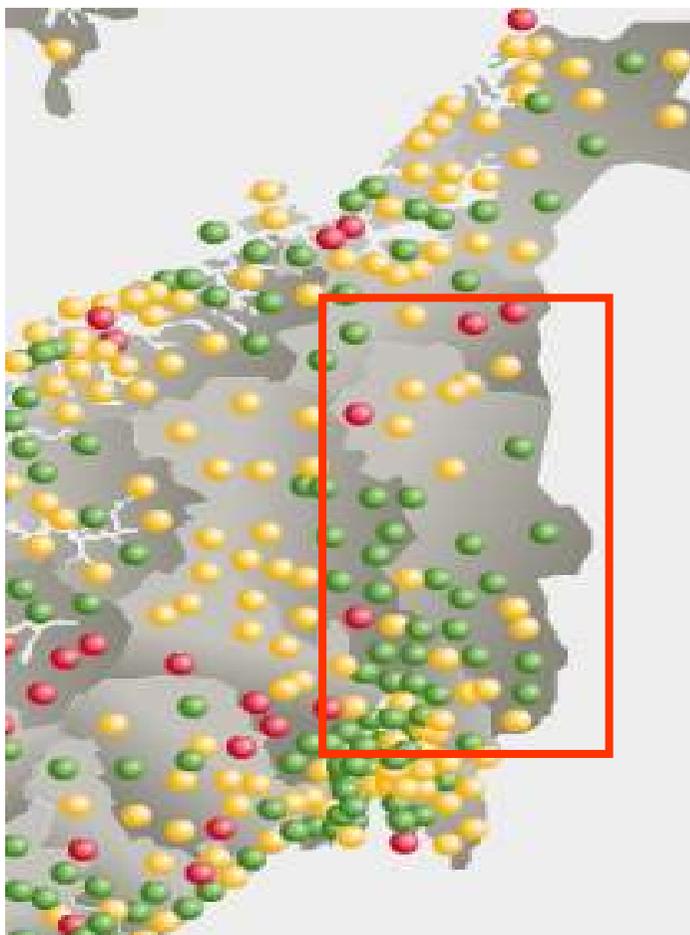
The screenshot shows the website 'KLIMAKOMMUNER' with a map of Norway where municipalities are marked with colored dots. A legend on the right side of the page provides the following data:

Status	Count	Description
Green dot	148	Har utarbeidet energi- og klimaplan
Yellow dot	230	Har gjort vedtak om å utarbeide energi- og klimaplan
Red dot	53	Status ukjent eller uten vedtak om å utarbeide plan

Below the legend, there is a search bar labeled 'Søk din kommune...' and a dropdown menu 'Velg fylkeskommune'. The main content area is titled 'Kommunenes arbeid med klima- og energiplaner' and contains introductory text and links to 'Les om Enovas støtteprogram for kommuner' and 'Skjema for innsending av informasjon av din kommune'. At the bottom, there are three buttons: 'enova svarer', 'enova nettpat', and 'enova støtter'.

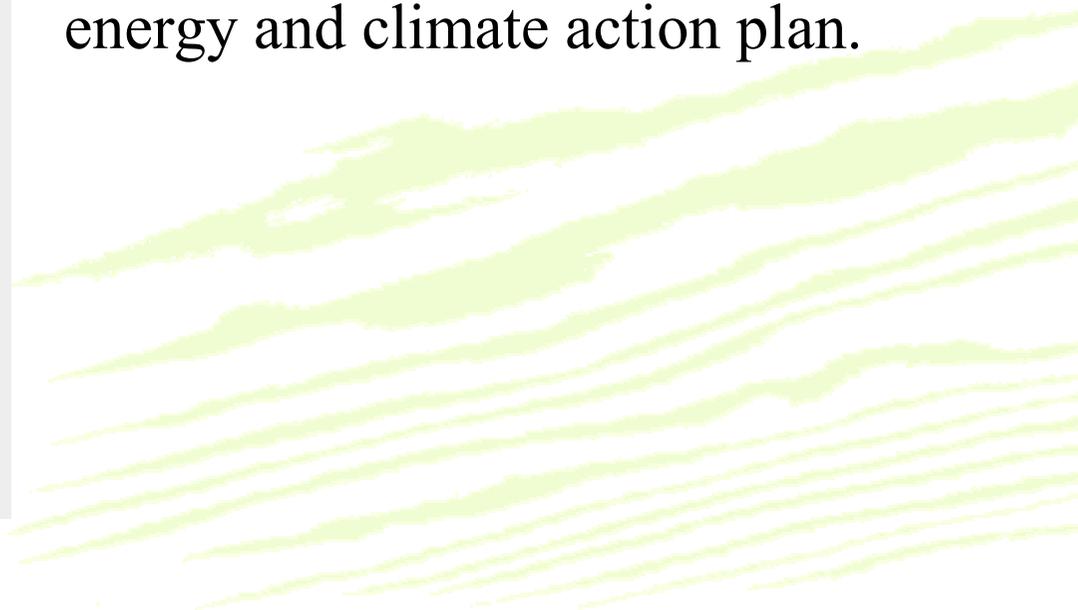


## ...and Hedmark County – spring 2010



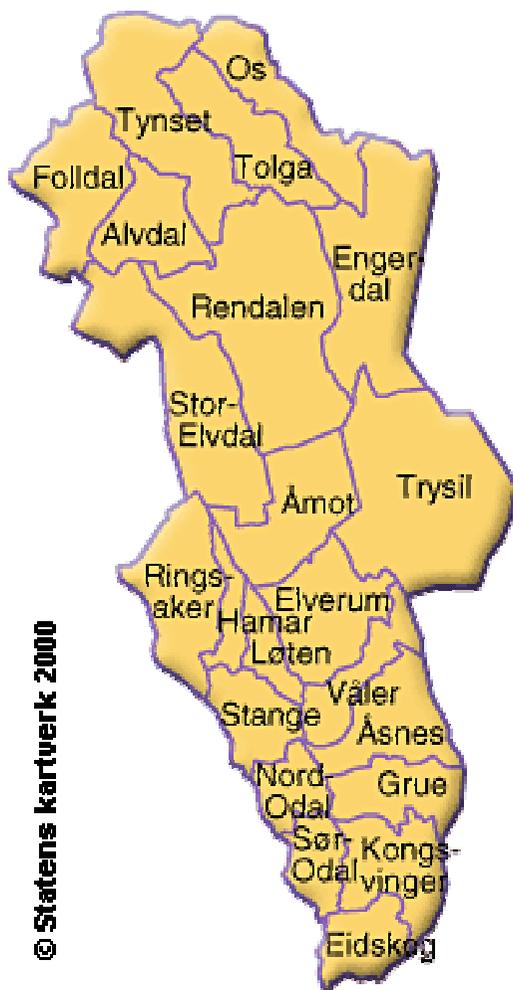
Hedmark County:

- 190.000 inhabitants
- 22 municipalities
- by end of 2010 all municipalities will have an energy and climate action plan.





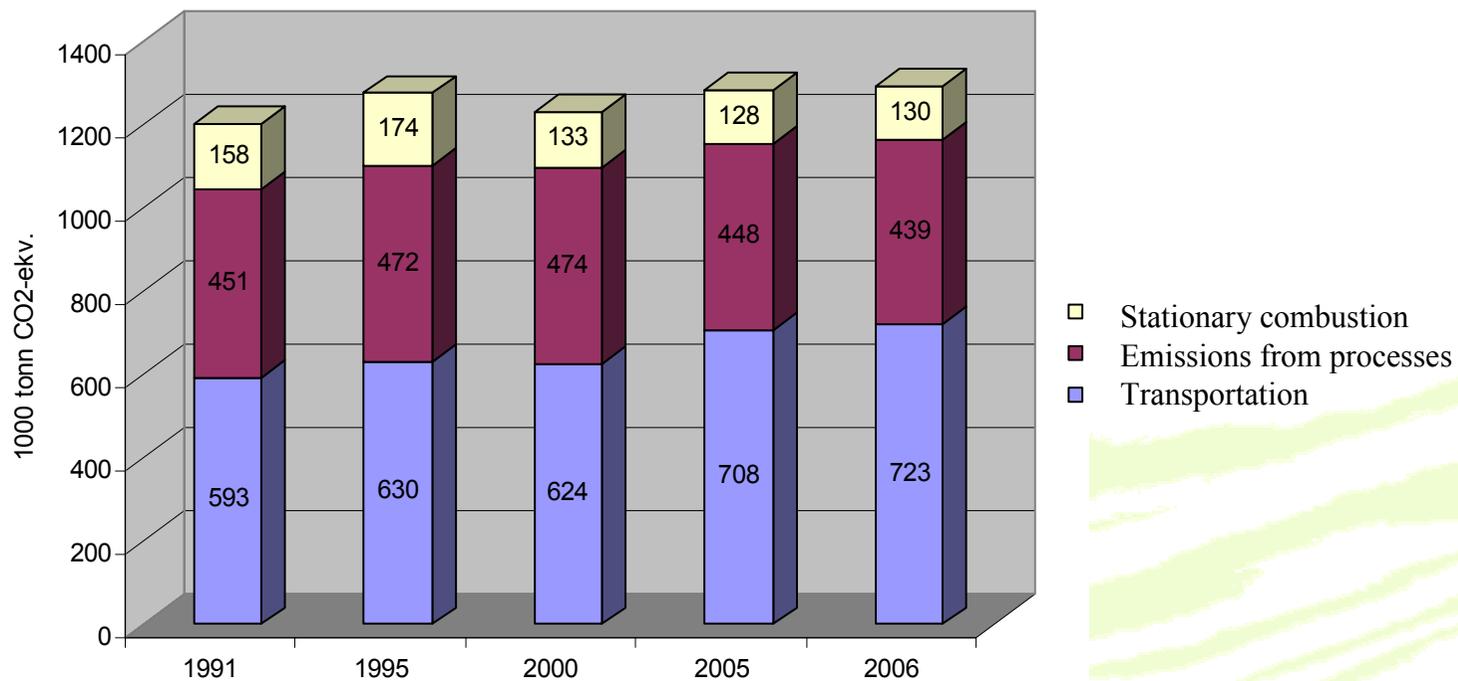
## Hedmark County



- 1 out of 19 counties in Norway.
- Have large areas of mountainous and forested land.
- Agriculture and forestry and connected value-adding industries are important.
- 70 % of population lives in western and midst parts of the county.
- Most of GHG emissions comes from transportation, due to large distances and main highways between south and north of Norway passes through the county.

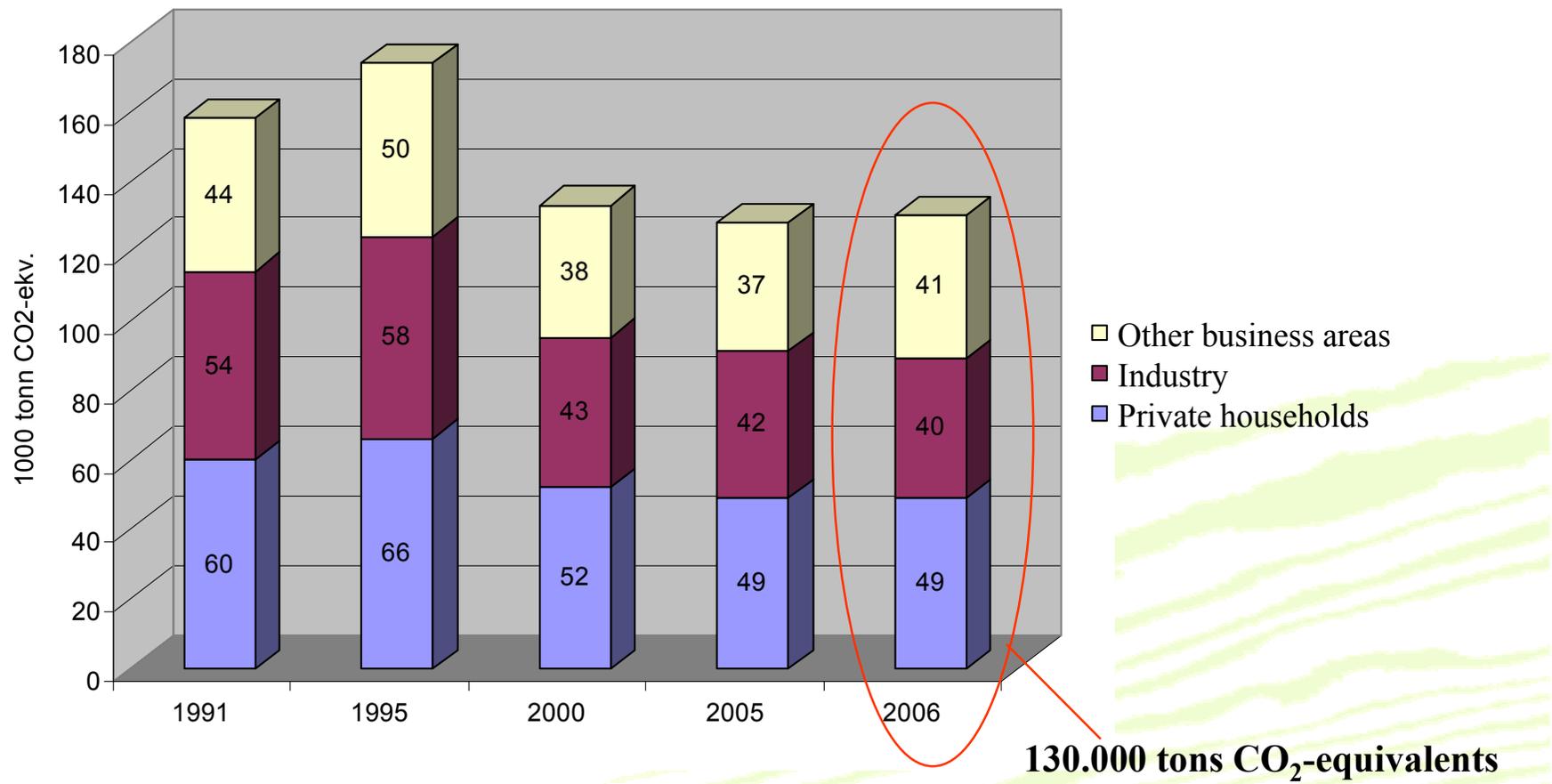


## Hedmark County - Green House Gas – total emissions



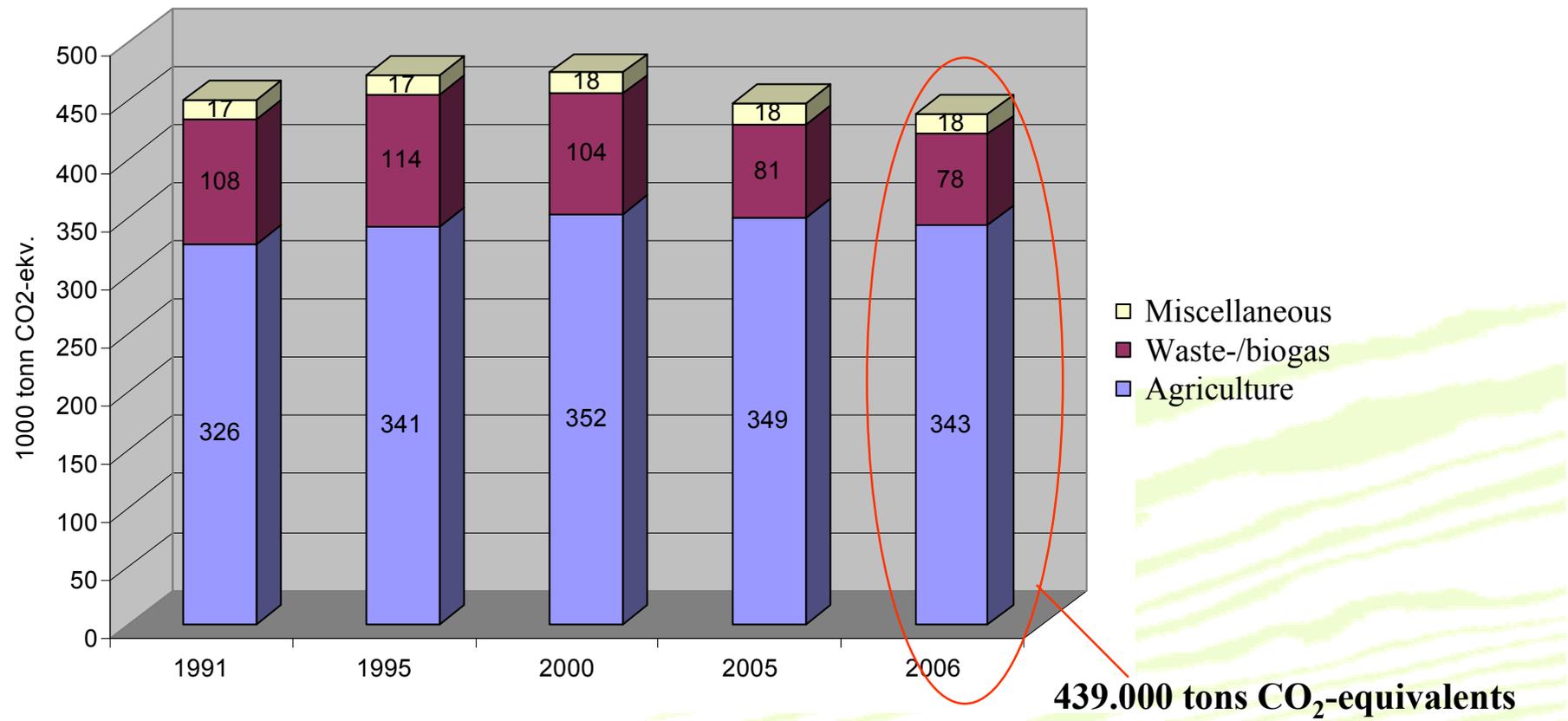


## Hedmark County - GHG emissions – stationary combustion



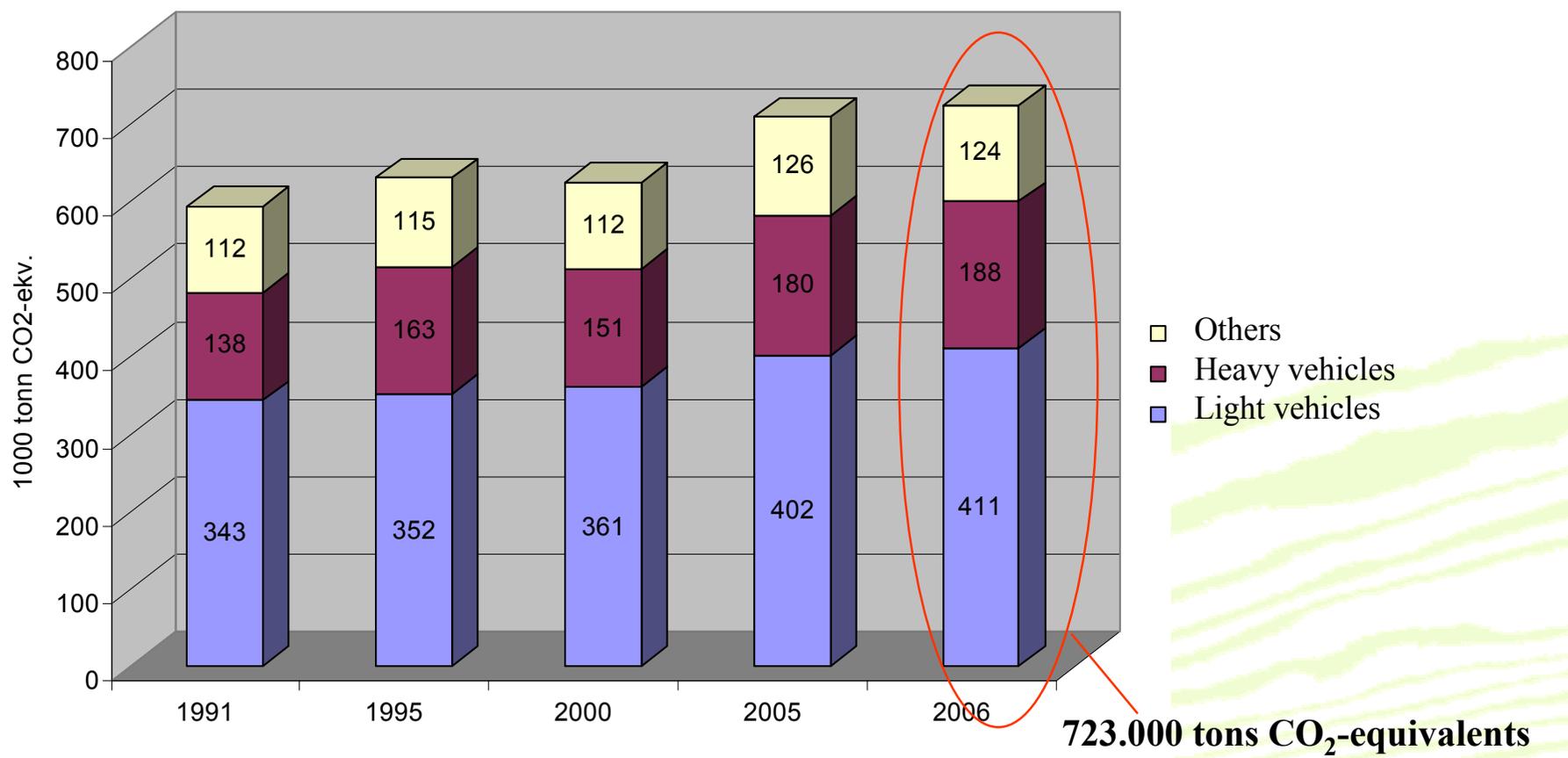


## Hedmark County - GHG emissions – processes





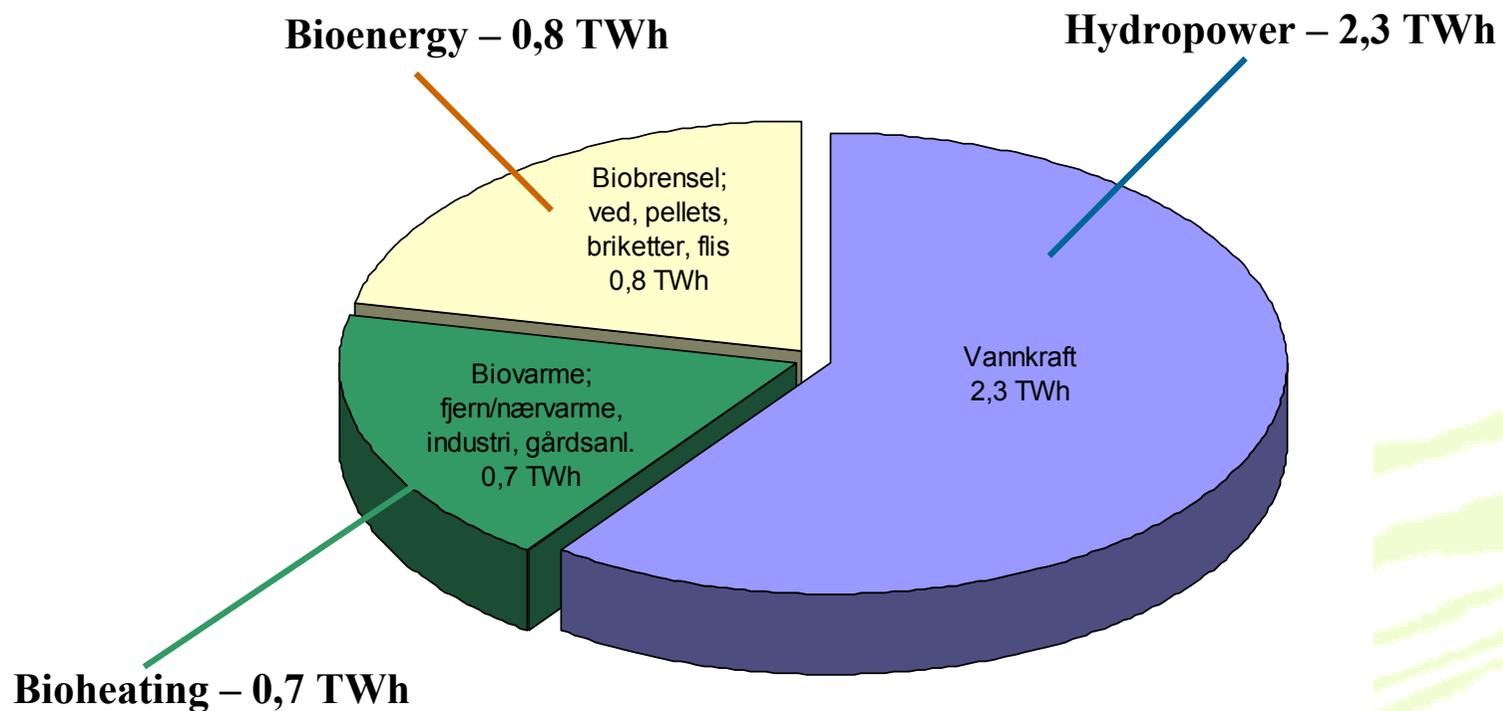
## Hedmark County - GHG emissions – transport





## Hedmark County – internal annual energy production

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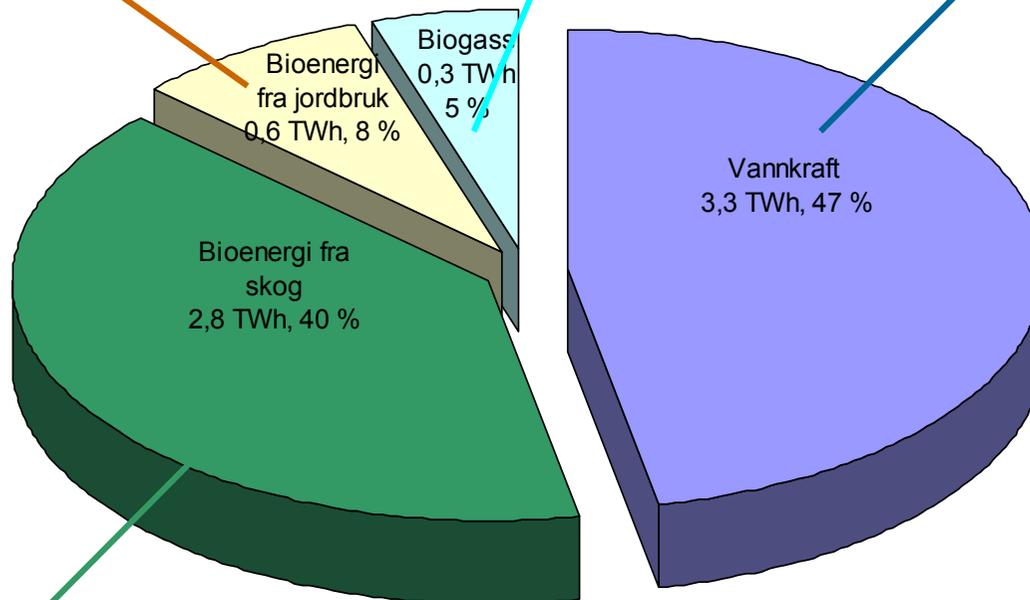


## Hedmark County – production potential – main renewables

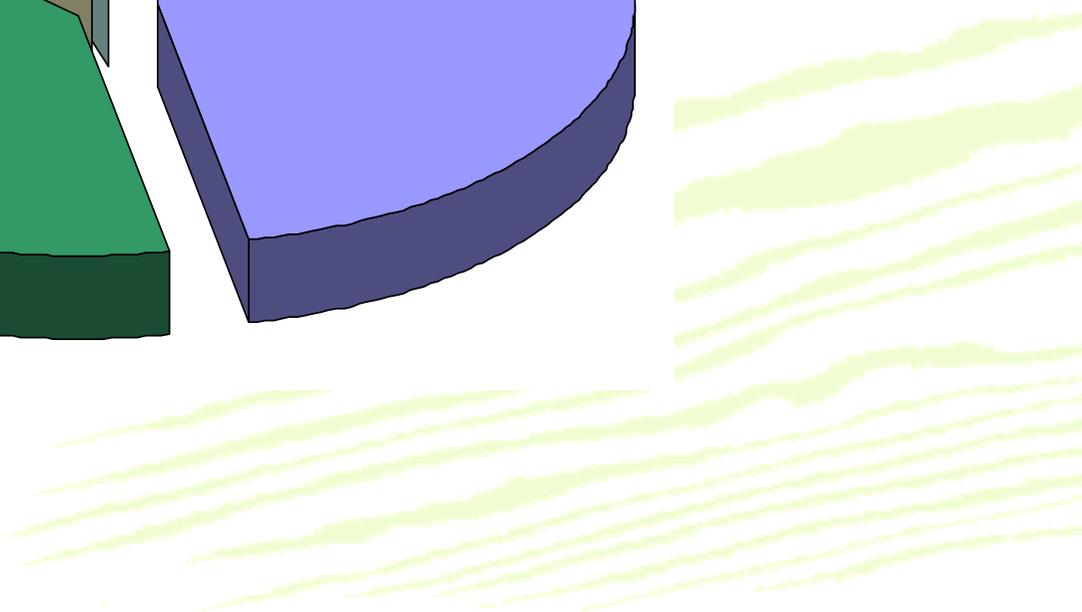
Bioenergy from farmland – 0,6 TWh

Biogas – 0,3 TWh

Hydropower – 3,3 TWh

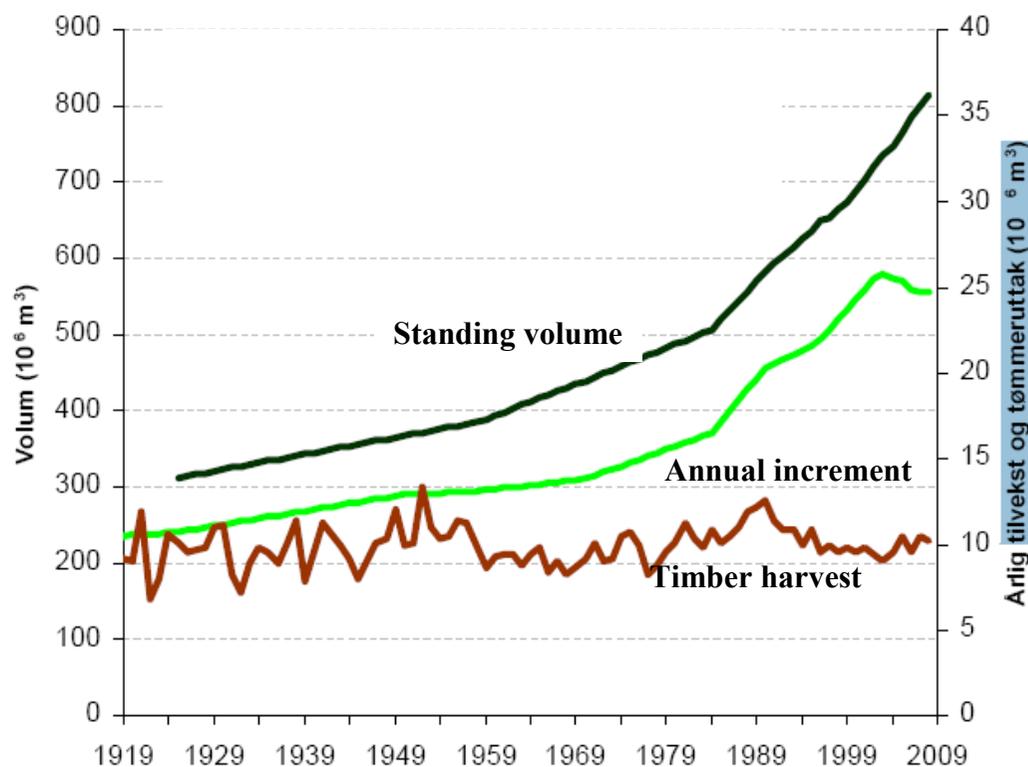


Bioenergy from forests – 2,8 TWh

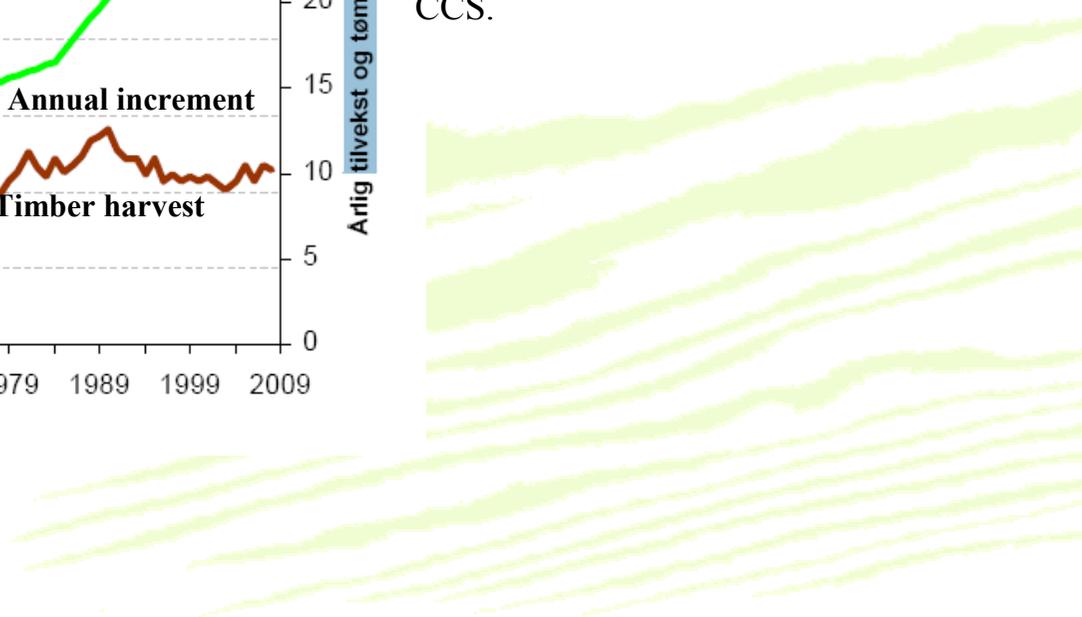




## Norwegian forests – development last 100 years



- Forests of Hedmark County represents nearly 25% of this development
- The forests represents a huge carbon stock
- Additional investments making forests grow more gives additional CCS.





## Hedmark County – Energy and climate action plan

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Main long term goal:

*“Hedmark county shall become climate neutral latest by year 2030. This shall be measured on achieved reductions of GHG (green house gas) emissions and CCS (carbon capture and storage) on a yearly basis, by 2030 compared to 2007 as follows:*

- 300.000 tons CO<sub>2</sub> captured by yearly net wood volume increment in forests as a result of the Hedmark part from Norway's approved contribution from forests according to the Kyoto protocol.*
- 300.000 tons CO<sub>2</sub> from additional CCS in forests achieved by efforts realized in the period up to 2030 (planting, fertilizing etc).*
- 350.000 tons CO<sub>2</sub> equivalents on GHG emission reductions internally in Hedmark County.*

*Additionally one shall in Hedmark county within 2030 use unexploited natural resources for sustainable energy production, especially from forests and water, all together up to a magnitude of 3 TWh – giving yearly GHG emission reductions up to 800.000 tons CO<sub>2</sub> equivalents, if this substitutes energy production from fossil fuel.”*



## Hedmark County – Energy and climate action plan

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Main strategies in Hedmark according to long term goal to neutralize GHG emissions average to 1,3 million tons CO<sub>2</sub>-equivalents annually:

1. GHG emissions reductions within – 350.000 tons
  - Transport sector – 140.000 tons
  - Agricultural sector – 80.000 tons
  - Stationary energy consumption for heating buildings and industrial processes – 130.000 tons
2. CCS by developed forest policy and increased forestry investments to increase forest growth – 600.000 tons

Linked to these strategies comes a lot of practical efforts within each sector suggested to be carried through in the period 2010 – 2030.



**Thank you for your attention**

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