



## **Hands-on experience of the Hedmark County, Countys municipalities...**

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### **... on preparation and implementation of the Energy and Climate Action plans**

**Aasmund Hagen, Hedmark County – Norway**  
**Anyksciai, 4th of May 2010.**

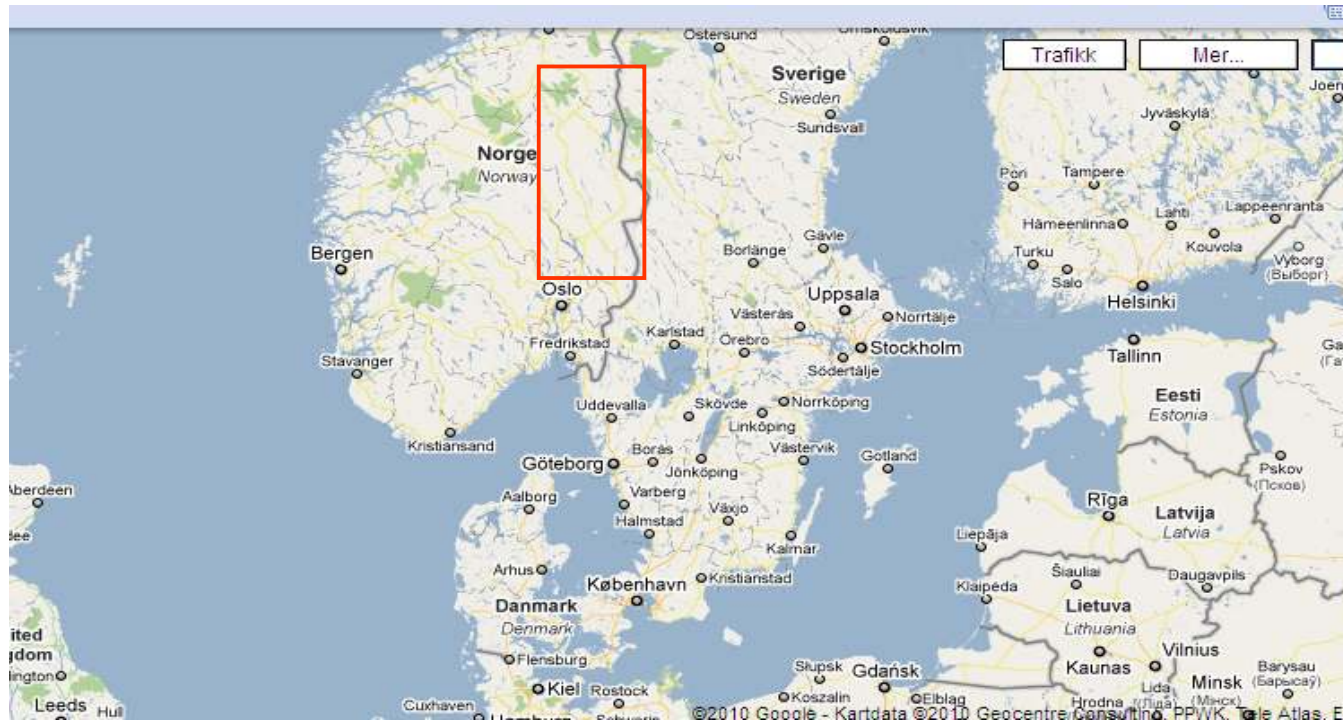


**norway  
grants**

*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.*



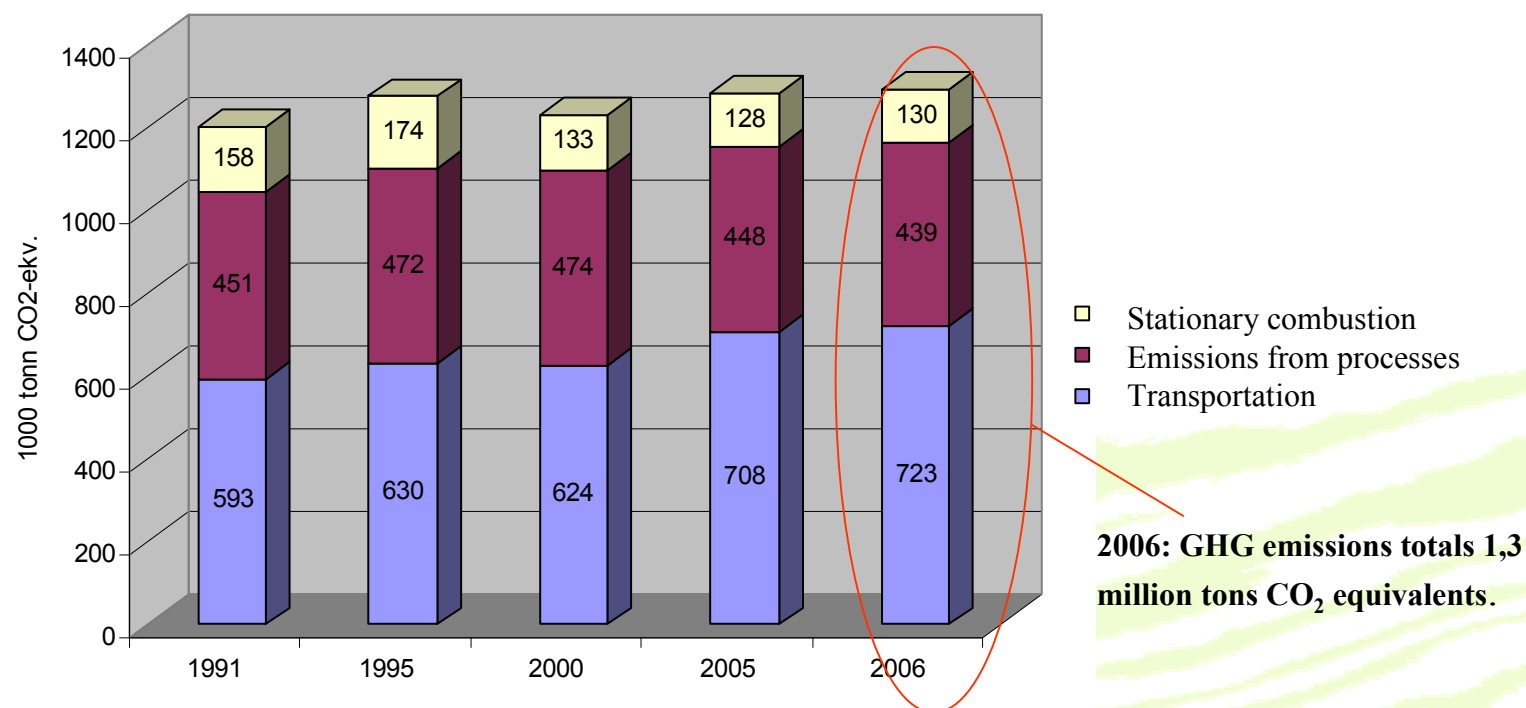
## Hedmark County – a part of eastern Norway



*Hedmark County is situated in the southeast part of Norway, bordering Sweden. The nature varies from beautiful snow-covered mountains in the north, to green forests and wilderness in the east, and productive farmland in the south and southwest.*

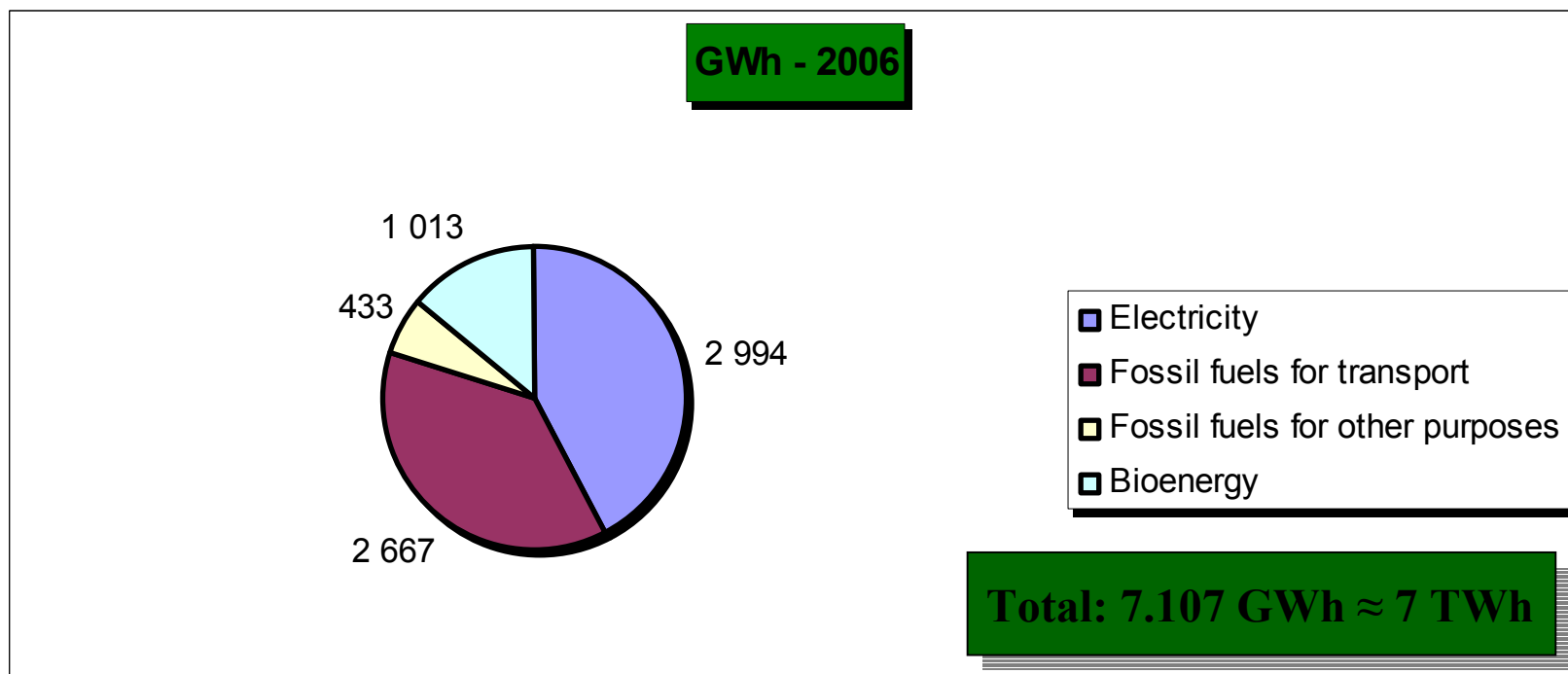


## Hedmark County - Green House Gas – total emissions





# Total annual energy consumption in Hedmark





## **Energy and Climate Action Plan – preparations step by step**

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1. Decision was made by the County Council to start the process – autumn 2007.
2. The steering committee was elected – 4 politicians from different political parties selected from one of the three standing committees of the County Council.
3. The committee was assisted by the administration to start up the process, meaning taking care of all formalities according to law etc.
4. The committee was given a budget, as a part of the County administration budget – totally: 800.000 NOK – € 100.000. (March 2008)
5. The committee selected a project leader, the solution was found within the administration.
6. The project leader, together with the steering committee worked out a project plan on the process all the way to planned adoption by the County Council autumn 2009. (May 2009).
7. The project plan was approved by the steering committee, and according to plan consultancy assistance was sought for (June 2008).
8. Adviser was chosen (NEPAS) and the practical work on the plan was decided to start by 1st of August 2008.

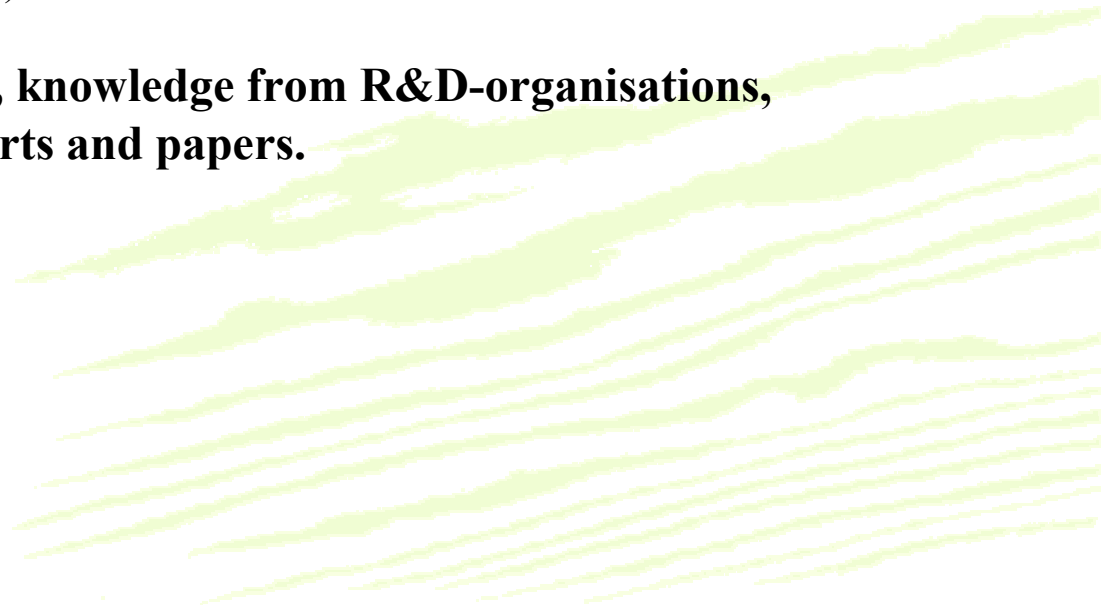




## **Fact finding and collection of data, ideas and opinions**

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- 1. Engagement of all relevant organisations, companies, NGOs – private and governmental – within selected areas through work-shops. This was (according to GHG emission statistics):**
  - Agriculture and forestry (September 2009)
  - Stationary combustion (heating for buildings, industrial processes etc) (October 2009)
  - Transport sector (November 2009)
- 2. Collection of statistics, facts, knowledge from R&D-organisations, business organisations, reports and papers.**





## The Energy and climate action plan – documentation (1)

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**Description of the Energy and Climate Action Plan was divided into two main parts:**

**Part 1: Situation by now and facts** – containing descriptions, statistics and facts on:

- main relevant frameworks
- GHG emissions (statistics)
- Carbon capture and Storage (CCS) – in Hedmark meaning forestry.
- energy resources
- energy production
- energy consumption
- energy distribution
- possible future scenarios (using models and proper tools (REAM)).

*Continuos....*



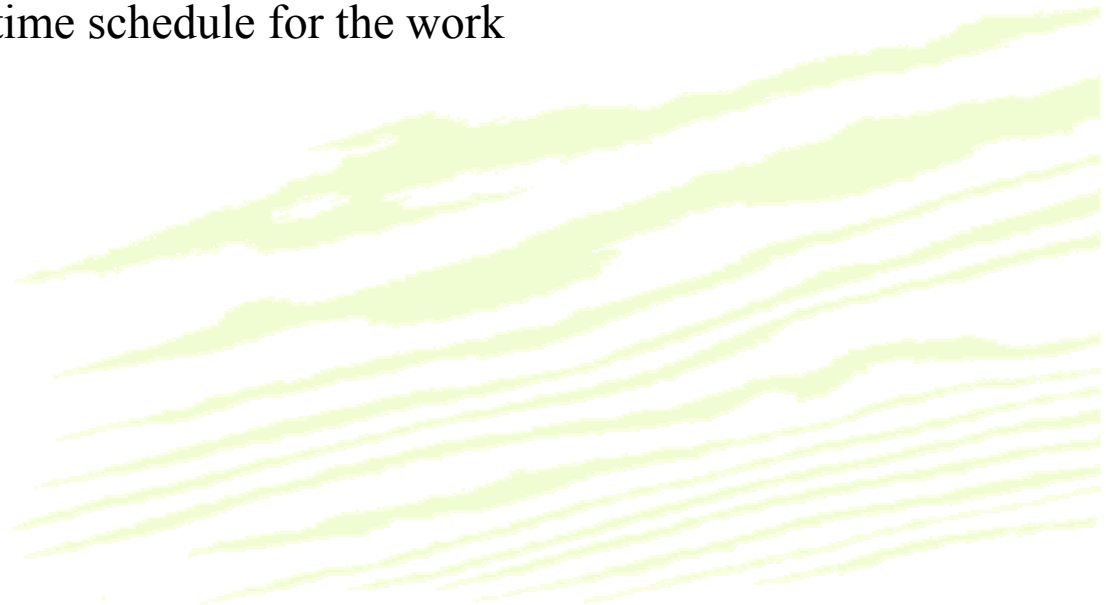
## The Energy and climate action plan – documentation (2)

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**Part 2: Goals and strategies** - containing descriptions on:

- main long term goal (by 2030)
- connection to other relevant plans
- targets, strategies and measures to be made on the selected sectors
- time frames of the plan and time schedule for the work
- organisation of the work
- costs and financing







## The work-shops

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It added a lot of work to prepare, invite, implement and follow up the three selected work-shops. 20-30 participants gathered on each work-shop.

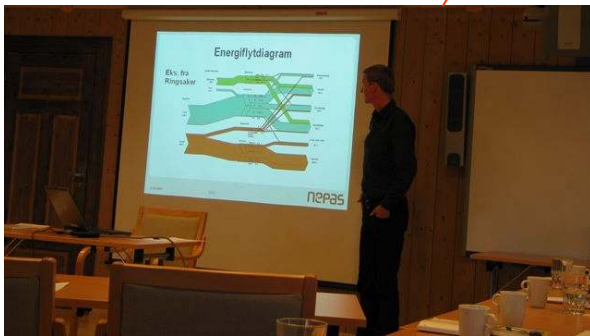


## The work-shops included...



1. Opening session by one of the main politicians.

**Data, ideas, opinions and views was collected and structured according to plan.**



2. An excellent expert lecture on a topic of the work-shop.



3. Introduction to group work by project leader.



4. Different tasks to be discussed and brainstormed by groups of 3-6 persons – lots of “painful thinking”.



## **A working process going on for 12 – 18 months**

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While the working seminars were conducted (autumn 2008)...

- the data from a variety of sources were collected
- the development was discussed within the steering committee
- the structure of the documentation was developed

.. and the first draft of the planning documents were prepared (February 2009)

By mid-February 2009 was Hedmark County Council also informed about the status of the work, the essential relationships and challenges in the work and outline of proposed goals and strategies.



## Public consultation

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In early May 2009, the plan documents were ready to be sent out for public consultation to a variety of businesses and organizations. These were given the opportunity to promote their views and make changes and additional suggestions. The consultation period was determined to be 3 months.

Simultaneously with the start of the hearing was made a comprehensive presentation to the media, a special seminar for municipalities of the County and some other PR-activities.

Hearing statements were presented to the steering committee, assessed and for the most part incorporated in the final plan proposal .





## Some main parts from the plan...

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... trying to be roadmap on how to solve the climate challenges within its geography.





## Main long term goal

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*“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.”*





## Main strategies

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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 and forestry sector – 80.000 tons
  - Stationary energy combustion 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.

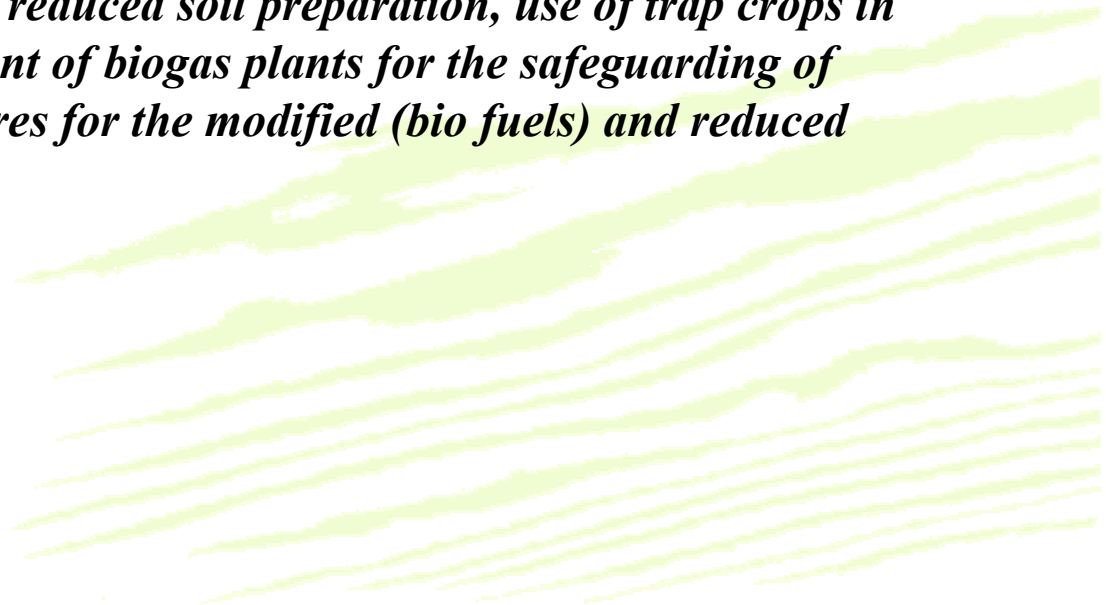


## Main objective – Agriculture and Forestry

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### The plan says:

*“Agriculture and Forestry in Hedmark, included of farming, animal farming and forestry shall seek to reduce their GHG emissions equivalent to 80.000 t CO<sub>2</sub> equivalents by 2030. This will particularly be achieved by reduced and proper use of nitrogen fertilizers, reduced soil preparation, use of trap crops in cultivating of grains, establishment of biogas plants for the safeguarding of animal manure as well as measures for the modified (bio fuels) and reduced fuel use in forestry sector.”*





## Main objective – stationary combustion

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### The plan says:

*“Greenhouse gas emissions from stationary combustion shall be reduced accordingly 130.000 tonnes of CO<sub>2</sub> equivalents in 2030 compared to 2005, which in particular implies that fossil fuel oil for heating and industrial process heat in Hedmark intends to be phased out completely. Hedmark County itself shall complete all mapped energy efficiency measures and finalize the phasing out of oil for heating in their own buildings. The County will continue to encourage all municipalities in Hedmark to do the same for municipal buildings. Private buildings (household and industrial) shall be encouraged to implement energy efficiency measures and to phase out oil heating replaced with energy from renewable energy sources such as bioenergy, geothermal or others.”*



## Main objective – transport sector

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### The plan says:

*“Within the transport sector in Hedmark one shall as a result of the measures being implemented internal in the County, seek to reduce GHG emissions by 140.000 tonnes CO<sub>2</sub>-equivalents in the period up to 2030. This is especially intended to happen as a result of adjustments for efficiency, hybridization and electrification of cars, more public transport, implementation of bio fuels for vehicles, transfer of freight from road to rail, increased focus on transportation efficient land use planning and a persistent attitude campaign to the public. The County Administration shall, in particular through tenders and license awards help to ensure that public transport in Hedmark to a substantially greater extent focuses on energy and climate-efficient solutions.”*



## Main objectives – CCS in forests, buildings and timber structures

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### The plan says:

*“One shall strive to achieve that CCS in forests, buildings and timber structures to a significantly greater degree becomes politically accepted means as a part of climate policy. The Energy and Climate Action Plan takes to credit an annual carbon capture in the forests of Hedmark corresponding to 300.000 tons of CO<sub>2</sub> from the beginning of the planning period; this is in line with the percentage of growth in the forest in Norway found in Hedmark, and thus the share of CCS in forests that are approved for Norway under the Kyoto Protocol. In addition one plans for more activities to create CCS in the forests of Hedmark through specific measures to increase forest growth to a level that captures 300.000 tons more CO<sub>2</sub> annually in 2030 than 2005.”*



## **We have experienced**

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- an academically very challenging and interesting work
- a heavy lot of work
- great need for knowledge and competence and capacity building both among politicians and most people
- need for communication between expert groups
- it is still far between political objectives and practical action

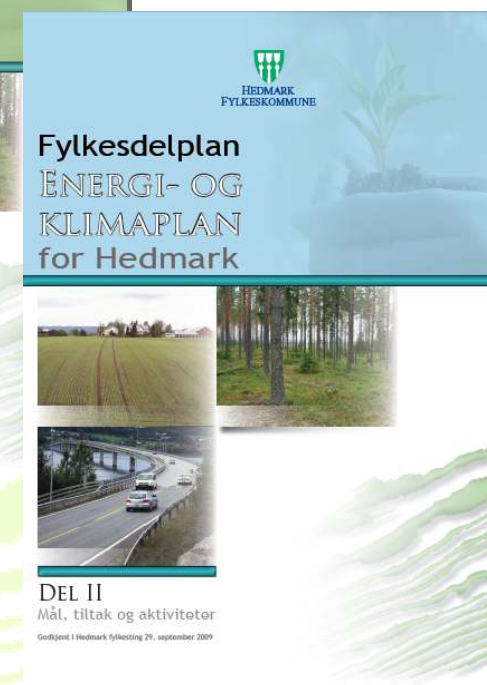
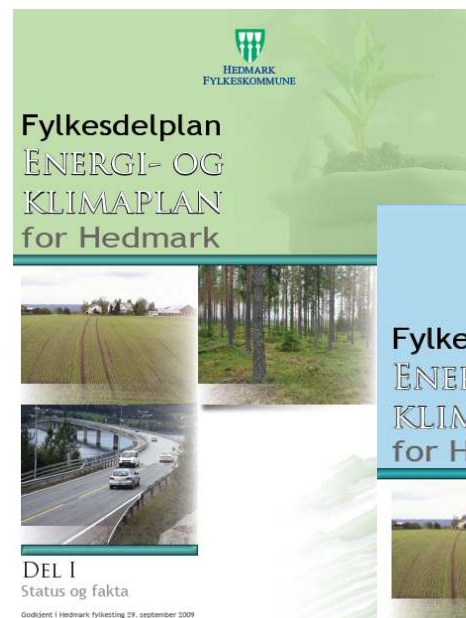




# Finally..

The Energy and Climate Action Plan was presented for, discussed and adopted by the Hedmark County Council at 29th of September 2009.

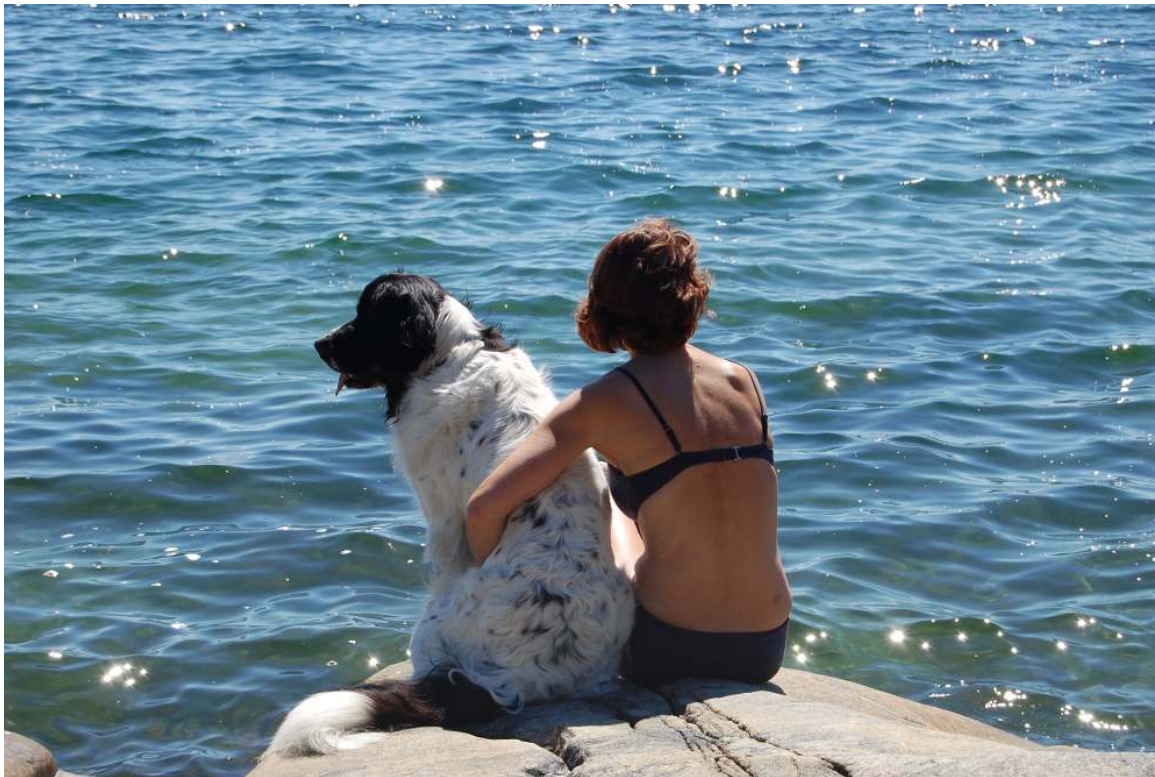
The decision means that the plan gets the formal status as a main plan in accordance with law and prescriptions. The county mans for the implementation and the work starts pr. 2. half of 2010.





**Thank you for your attention**

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**With greetings from  
Norway.**

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