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BIOREG 

PRACTIC RESULTS

Helge Midttun

helge.midttun@gran.kommune.no



What has the Hadeland Bio Region achieved in the years 2003 - 2010

The development of a new business sector:

- Bioenergy fuel production and logistics
- Bioenergy plants
- Suppliers of bioenergy plants and equipment
- Competence suppliers
- Bio fuel (liquid) suppliers and biogas development

In addition:

- Ensure the forestry and sales of saw mills biproducts
- Vitalize the research and development cooperation
- National Region of bioenergy development and demonstration



Bio Energy Plants

• Woodchip based Central Heating on farms	15
• Straw based Central Heating on farms	5
• Firewood based Central Heating in homes	35
• Commercial / Public Central Heating	10
• Wood producers, professional	10
• Wood stoves	> 10.000
• Pellet stoves	> 100
• Local Heating system	2
• District Heating system, under construction	2
• Biogas Combined Heat and Power Plant (HRA)	1
• Biodiesel - Company (Habiol)	1
• Biodiesel - cars	100



Wood stoves

We have 28.000 inhabitants, about 10.000 households and almost everyone have a wood stove (or two)



The most important bioenergy heating in Hadeland and Norway so far.



The Energy Farm, Center of Bioenergy



Woodchip based Central Heating, Woodchipping,
Competence, Information and Supervising



Schools and nursery homes heated by CO₂ - neutral bioenergy



Lunner primary school, wood chips central heating installation, operated by the municipality itself.

Marka nursery home (next picture) in Gran, the municipality buys ready produced bioenergy heat from local farmers



Farmers Heating Company

Biovarme Hadeland:

Delivered heat from woodchips from farmer owned forest to municipal nurse home;

1,0 GWh a year



Intentions:

- Give the farmers income from the whole chain from the forest to delivered heat
- Give the buyer the product that he wants, heat in the rooms





District Heating System

District heating pipelines:

- Gran community centre, 7 GWh
- Mohagen industrial park, 6 GWh
- Will be operated by *Miljøvarme and Norske Varmelev.*





Local Heating System



The Nøkleby farm:

- Local heating system to 30 houses
- 0,5 GWh heating to be delivered
- 300 kW boiler



Woodchip boiler in flower nurseries



De Haes ivy nursery: 1,5 GWh a year, boiler: 700 kW

Treholt flower nursery: 1,2 GWh a year, boiler: 500 kW



Farm heating systems, more than 50 boilers



5 straw boilers
15 wood chip
boilers
35 firewood
boilers





Biofuel (Biodiesel) sales and production



Invested 40 million Euro
in a Biodiesel Plant
Could produce 100 million
litres a Year

Based on

- Soya and Rape
- Slaughter house left overs
- Frying oils

