



Heat from pellets The municipality of Karlstad, Sweden

Summary



The municipality of Karlstad in the central part of Sweden is striving to become free from fossil fuels. One of the measures to achieve this, implemented between 2004 and 2007, was to give contribution to households converting from oil to bio fuel (pellets) for heating. The target audience was households in areas where there are no plans for district heating. The measure resulted in a reduction of the use of oil by 391 m³. The measure doesn't involve any new technique or new methods. Cooperation with the University of Karlstad will however create conditions for development of new technique and new working methods for both production and use of pellets. The project is a good way to show people that biofuels is a satisfactory choice to other heating alternatives.

End-user area

- New buildings
- Refurbishment of buildings
- Transport and mobility
- Financial instruments
- Industry
- Legal initiatives (regulations, directives, etc)
- Planning issues
- Sustainable communities
- User behaviour
- Education
- Other

Target Audience

- Citizens
- Households
- Property owners
- Schools and universities
- Decision makers
- Local and regional authorities
- Transport companies
- Utilities
- ESCOs
- Architects and engineers
- Financial institutions
- Other

Technical

- Energy efficiency
- Heating
- Cooling
- Appliances
- Lighting
- CHP
- District Heating
- Solar energy
- Biomass
- Wind
- Geothermal
- Hydro power
- Other

Context

For several years the municipality of Karlstad have been actively working with energy guidance to the public via 'Rådrummet' and the interests for bio fuels is more and more increasing.

In the municipality there are 15 000 small houses of which 9000 are in densely built areas where they have district heating or where district heating is planned in the future. The remaining 6000 small houses are situated at the countryside. About 50 % of them are fully or partly heated by oil. Households converting from oil to bio fuels like pellets are therefore an important contribution towards a fossil fuel free municipality. Since there is a large and expanding manufacturing of pellets in the region the emissions of CO₂ from transports can be minimized.

Objectives

The project aimed to develop and speed up the transition from heating of households by fossil fuels to bio fuel (pellets). This was achieved by giving contributions to households converting from oil to pellets. The aim was that 200 households should convert from oil to pellets which would equal to a reduction of 600 m³ oil. The measure should also create conditions for a further development of the use of bio fuels through cooperation with other actors in the municipality.



Process

The main focus of the project was to give contribution to households converting from oil to bio-fuels for heating. The households got 10 % of the investment costs in contribution for a bio fuel installation at their property. To get the contribution, the households had to fulfil some requirements:

- The contribution was only given to households that exchanged their oil boiler or oil burner.
- Heating with pellets results in bigger emissions of NO_x and PAH than heating with oil, therefore only environmental proved bio fuel burners or bio fuel boilers were entitled to contributions. Contributions were also given to metering equipment, storing rooms and installations.
- The contribution was only given to households outside areas where there were plans for district heating.

Information of the measure and spreading of the results was another important part of the work. This has been done in many different ways:

- Personal contact with the inhabitants in the municipality and exhibitions at 'Rådrummet'.
- Local newspaper "Vi i Karlstad" which is distributed to every household in the municipality of Karlstad.
- Articles and answers to letters to the editors of the local newspaper.
- The website of the municipality
- Participation at the local TV and Radio
- Energy evenings for the public
- Circulars to chimney sweepers and installers.

Financial resources and partners

The 10 % in contribution to the households converting from oil to bio fuels were covered for by the climate investment program "KLIMP" given out by the Swedish environmental protection agency. The households pay for 90% of the cost for the conversion. The project administrative costs were financed by the municipality of Karlstad.

Results

- The conversion from oil to bio fuel resulted in a decrease in the use of oil in the municipality with **391 m³** which was 65 % of the objective.
- The long term environmental effect of the measure is reduced emissions of fossil fuel CO₂, partly because of the conversion from oil, but also due to the shorter transports since pellets is produced locally.
- An increased effect of occupation is reached both locally and regionally among manufacturing and distribution of pellets and also among the manufacturers and installers of boilers and burners.
- Another effect is that companies in the pellets industry, in a larger extent, are working together and offer overall solutions, which considerably simplifies for the consumers.
- Because of the municipality demand regarding P- labeling (or similar) on boilers and burners for contribution granted households, the quality and also the environmental performance on the installations are improved. The P-labeling is a quality labeling that put demand on emissions, efficiency, security and operation.

Lessons learned and repeatability

The preparations for the project worked well. This included development of application forms, reasoning with the legal expert of the municipality so that nothing should go wrong in the money contribution process and to make sure that all decisions were made politically by the environmental committee.

The contact with the applicants worked well. By making it easy from the beginning it is easier further on! The use of media to spread information to the inhabitants was very fruitful. The energy evenings arranged were also a good way to reach the inhabitants.



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Something that didn't work so well at a few occasions was the administration. The applications were received in one place and sent to another place where they were handled. The payment took place at a third place and so on. Sometimes the communication didn't work so well and the applicants had to wait unnecessarily long for their contribution.

One negative side of contributions is that the market for bio fuel installers gets very irregular, but the project was a good way to show people that bio fuels is a satisfactory choice to other heating alternatives

The project can be repeated by other actors. It is important though to prepare everything properly and to put a lot of work into the project.

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