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D. 2.1.4. Catalogue of measures in Municipality of Hoeje-Taastrup on households, industry and transportation

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1 Introduction

The catalogue presents measures which are implemented or planned to be implemented under the Hoeje-Taastrup Climate Plan for households, industry and transport.

The catalogue is listing a variety of measures, some of which have already been successfully implemented, and some which are still being investigated.

The catalogue describes the initiatives targeting the different sectors at different stages of the project.

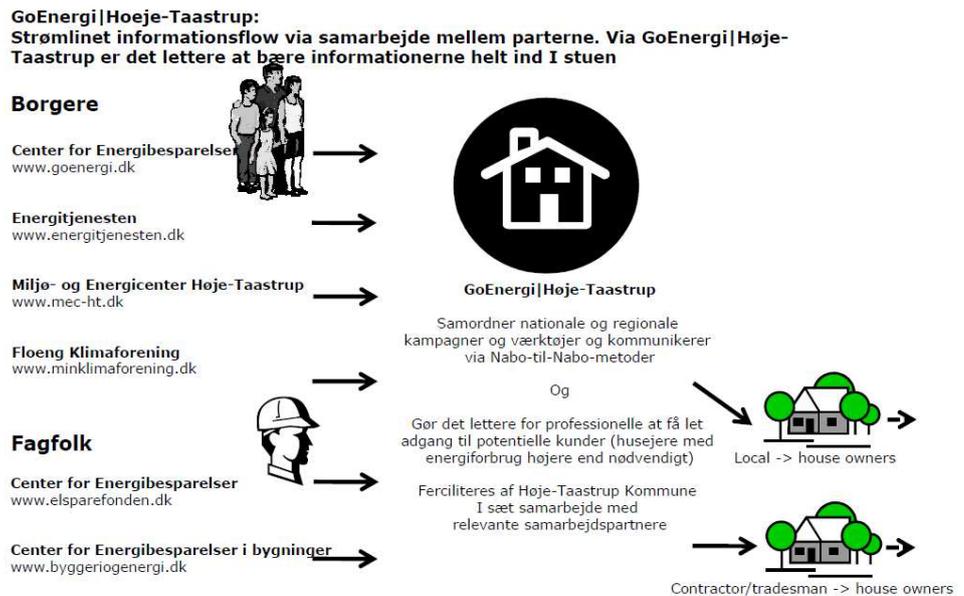
Besides this catalogue of measures a separate document of technologies options is attached.

2 Households

There has been a key focus on starting up initiatives to ensure energy renovation of housing and ensure the correct supply of them (development of district heating) and not least, worked on moving the standard of what is planned for new construction areas, etc.

2.1 A local network that helps households save energy (Go'Energi|Høje-Taastrup)

Høje-Taastrup Municipality is actively working to support local "green growth" by fertilising and actively participating in a bottom-up process where the citizens through an established non-profit community - Go'Energi|Høje-Taastrup - are co-operating with utilities, builders, energy advisors, banks and the "Center for Energibesparelser" on realizing self-financing energy savings in existing homes.



Project plan:

- Pre-project: June 2011 – November 2011
- Start-up: November. 2011 – January 2012
- Energy renovation process: January 2012 – 2014.

Participants in the project:

1. Høje-Taastrup Fjernvarme (up to 1 DKK/kWh realised energy saving for operation of Go'Energi|Høje-Taastrup).
2. Energitjenesten (free telephonic energy guidance in the name of GoEnergi, which is part of the ordinary guidance offered by Energi-tjenesten, as well as paid energy guidance tasks in Go'Energi|Høje-Taastrup).
3. Miljø- og Energicenter Høje-Taastrup (contributes to local media coverage and communication in general, including support to member handling and not least to events on examples of energy renovation of dwellings).
4. Fløng Klimaforening - www.minklimaforening. Neighbour-to-neighbour contact and motivation via neighbour arrangements – assisted by Go'Energi|Høje-Taastrup.
5. Høje-Taastrup Municipality (helps with free accommodation, facilities, etc. - possibly in the station building in Hedehusene). Supports the marketing and publicity measures in Go'Energi|Høje-Taastrup, announcement of initiatives etc. AND, through the ECO-LIFE project, support to the first 15-20 homeowners with up to approx. 2 million. DKK for the realization of their energy renovation tasks.
6. Erhvervsforening (cooperation on the dissemination of good workmen, training of workmen, cf. Videncenter for Energibesparelser i bygninger's training courses etc. for workmen).
7. Videncenter for Energibesparelser i bygninger (co-operation on training of workmen).
8. GoEnergi/Center for Energibesparelser are co-operating on developing/supplementing the GoEnergi.dk platform, to facilitate handling of groups a la Go'Energi|Høje-Taastrup (communities). It should become possible to see the energy consumption and the savings potential in the group and help the group AS WELL AS, where it is easy, to disseminate the good examples).

The project idea is further described here: www.goenergi.htk.dk

One of the pillars of the support for homeowners is the tool BoligTjek from Go'Energi. It is an Internet-based platform that allows:

- homeowners to make their own analysis of dwelling improvements

- following up on the energy consumption and compare with similar dwellings.



Photo from start-up meeting on 24. November 2011, where 50 homeowners participated.

Find the English summary from the start-up meeting [here](#).

2.2 Climate and energy network for housing associations

"Climate and energy network for housing associations" was established on 18 August 2011, with participation of housing associations' boards, property managers etc.

Housing association settlements constitute approx. 40% of the total living space in the municipality and are therefore an important stakeholder group to get hold of.

The meetings are strongly supported, approx. 25 housing associations participating. The associations represent approx. 50% of the housing associations in the municipality.

In 2012, the network will continue. The meetings in 2012 will deal with sparing on measuring and control of energy consumption and related tools.

In 2011, the theme was energy savings in the built-up area, including ESCO as a lever to realise energy savings as well as solar cell solutions for housing estates.



Photo from the meeting in the Klima- og Energinetværket August 2011

Find more on http://mect.dk/index.php?option=com_content&view=article&id=192&Itemid=64

2.3 Rehabilitation of public buildings using ESCO

The municipality has implemented many initiatives for energy conservation through the years. To proceed, larger investments are required, which most municipalities usually have difficulty in finding funds for.

Therefore, the City Council decided in March 2009 to find out if an agreement with an Energy Service Company (see the figure) is a good way to reduce energy consumption and CO₂ emissions even further.

During the ESCO agreement, energy savings of at least 18% are expected. The idea is that the energy savings will pay the investment. The project includes 150 public buildings and 260,000 m², and the investment in energy improvements and indoor improvements are about 74 million DKK.

Approximately 30 million DKK are invested during 2011, including a 4 million DKK PV systems on the City Hall.



Figur som forklarer ESCO konceptet

In connection with implementation of the ESCO project, it is necessary to supplement the schools and institutions with the following elements:

- 1) Training of technical and non-technical staff as well as non-technical senior staff in general knowledge of energy optimization
- 2) Data exchange/benchmarking,
- 3) Progressive incentive structures.

The municipality will take the initiative to work with the ESCO company on this.

2.4 Other energy performance improvement measures in buildings

Elverhuset

The kindergarten Elverhuset, 901 m², is built as passive house. Among the initiatives were 12 m² solar heat and 34 m² solar photovoltaics. The house was completed in 2011 (D.5.1.5).

Private renovations

The municipality and INFO-DK have further worked with identifying private renovations:

- A new passive single-family house of 216 m² will be included as an innovative house. The house is from the company "Passivhus Design" and will be located on Skelvej 1b. The owner is Richard Farina, with whom a third-party agreement has been made.
- Gadehavegård, 4.000 m², Danske Funktionærers Boligselskab smba, division: Gadehavegård, DOMEA.
- Engvadgård, part of 7,500 m² Høje Taastrup Boligselskab division Engvadgård in Fløng, owned by KAB, Vester Voldgade 14, 1552 Kbh. V.
- 15-20 single-family houses participate in the selection process regarding participation in the project.

3 Industry

Like the citizens, a large number of local businesses have already made many initiatives to reduce energy consumption and thus CO₂ emissions.

As in all other contexts, there is certainly a difference in what each company has given priority to tackle first - also as regards climate.

Høje-Taastrup Municipality supports the industry in the efforts to reduce energy consumption and increase renewable energy by arranging networking between businesses and ensure exchange of experience between them.

In practice, this happens on several fronts. Both through targeted supporting craft businesses that want to market energy-saving measures for homeowners and industry, and by establishing networking between companies which in this way can inspire each other to reduce energy consumption.

Further, the municipality offers concrete help to conduct surveys in cooperation with Go'Energi and DONG Energy, and not least the local district heating company Høje-Taastrup Fjernvarme.

3.1 A Climate Partnership with DONG Energy

In December 2010, Høje-Taastrup Municipality made a climate partnership agreement with DONG Energy.

(http://www.htk.dk/Nyheder/Nyhedsoversigt/Pressemeddelelser/2010/November_10/Klimapartnerskab_DONGEnergy.aspx)

With the agreement, the Municipality and DONG Energy will look at among other things energy saving measures in the local businesses - for example by establishing business networks in cooperation with Erhvervsrådet to support companies in achieving energy savings.

The latter effort aimed at local business has already been initiated via networks. At the network meeting on 17/11/2011, Go'Energi and DONG Energy participated with presentations. Together with Høje-Taastrup Fjernvarme, these two partners are selected as information carriers and intermediaries in getting the network to operate.

Høje-Taastrup Municipality has assumed the responsibility for operating the network - this is done in close collaboration with Miljø- og Energi Center Høje-Taastrup.

3.2 A public scheme helping industry save energy

This is a new initiative that has been created on the basis of input and experiences from "Curve Breaker"¹ meetings with the capital's municipalities. Here, among others HTK has advocated Curve Breaker Agreements within the industry.

Go'Energi's new initiative Kurveknækker Erhverv (Curve Breaker Commercial) is communicated and supported by HT Erhvervsråd (Business Council) for all member companies in the next info mail.

See more at Go'Energi's website (Høje-Taastrup's network for companies is not yet listed).

See also <http://www.goenergi.dk/erhverv/kurveknækker-erhverv>, which HTK - with the start of the network in Hedehusene - helps to communicate and thus represents an important step for the industry.

The network is called Go'Energi|Høje-Taastrup|Erhverv and currently has 15 member companies (December 2011).

3.3 A market place for Energy Services

Elsparefonden is behind a solution targeted at marketing and sales of energy-saving services. Together with Go'Energi, Høje-Taastrup Erhvervsråd, Miljø- & EnergiCentret i Høje-Taastrup as well as Høje-Taastrup Municipality coordinate the launch of the Markedspladsen in Høje-Taastrup Municipality.

The idea behind this solution is that companies describe their services, e.g. in the form of Design and Energy Packages for energy renovation of buildings, and that customers subsequently will have easy access to buy the desired solution.

3.4 New industrial buildings using renewable energy in Høje Taastrup

DISA new low-energy office

DISA (the world's leading supplier of foundry equipment and systems for surface treatment of metal) will build a new office in Høje-Taastrup, which is going to be a low-energy building (among other things including a large solar cell panel to compensate for the high energy requirements).

¹ A "curve breaker community" is a community which has agreed to make the energy curve "break" and go down instead of up.

DISA has taken the first sod for their new building in Høje-Taastrup - 350 jobs move to Høje-Taastrup Municipality

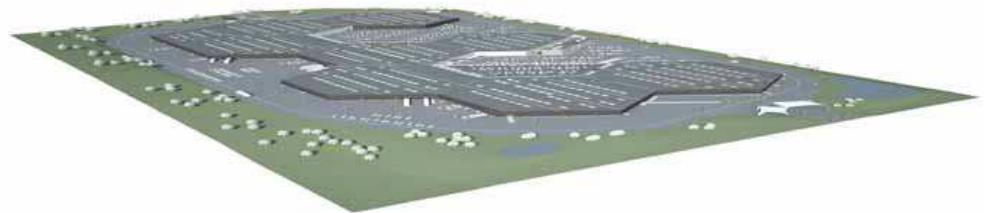
http://www.htk.dk/Nyheder/Nyhedsoversigt/Forsidenyheder/2011/August_11/Ny_virksomhed_i_H%C3%B8je-Taastrup.aspx

Copenhagen Markets 2013. Establishment of a sustainable vegetable market

Copenhagen Markets will become Northern Europe's largest marketplace for food and flowers.

The wholesale market is expected to be ready for opening in 2013 in Høje Taastrup. Copenhagen Markets will replace the existing vegetable market in Valby.

The establishment is supported by examination of sustainability to ensure a sustainable building, which has led to an application for construction of 2 wind turbines near the planned new construction in HTK.



See more about status – take a flight over the future buildings in Høje-Taastrup.
<http://www.copenhagenmarkets.com/Default.aspx?ID=9>

4 Transport

The municipality of Høje Taastrup (in the following HTK) is part of the programme “Test an electric car” (in the following EV) in which 300 EVs are circulating. This is a total of 2400 testing pilots in Denmark. Since December 2010 HTK has participated in the above programme – that is, 10 EVs to be tested by different families during a period of three months. This process has been carried out for the past year.

Earlier this year, HTK has entered into a cooperation agreement with Better Place about infrastructure development to EVs. Today, we have a plan for charging stations in Denmark, and 6 charging stations are positioned in HTK at the Town Hall, at the train station in Høje Taastrup and in the town centre, respectively.

Furthermore, HTK has just inaugurated a Quick Charge station in Hedehusene (no 2 of its kind in Denmark) as part of the network of charging stations which is to be introduced by ChoosEV during 2012. (Supported by ECO-Life)

Recently, HTK (in their role as a company) has purchased a Renault Fluence (incl. of battery changing device) to be delivered with the initial batch, by the beginning of 2012.

As part of The Capital Region, HTK has played a vital role in developing the Region’s Climate Strategy. The Climate Strategy focuses on promoting EVs in municipalities. This is why; HTK is planning (via the E-mobility Project) to draw up a joint platform for the promotion of EVs in the region. HTK aims to become an important player, when it comes to launching EVs, regionally.

Furthermore, HTK cooperates with the other municipalities in Denmark under the auspices of a Society for Nature Conservation.

Another project, the ECO-Life project aims to promote sustainable transport solutions, including EVs in the town area of Hedehusene.

4.1 Electric vehicles in Høje Taastrup

In 2010, a co-operation with Better Place was established regarding extension of infrastructure: http://htk-klima.odeum.com/dk/byraadets_beslutninger/aftale_med_better_place/

At present (2011), charging stations have been set up in 3 places in HTK (town hall, Taastrup urban centre and not least HTK Station where BP and DSB have just launched an inter-modal project with electric shared cars.

TestEnElbil (Test an electric vehicles)

In the summer 2010, HTK was the first to enter **TestEnElbil** and has thus helped to set standards for how municipalities may enter into cooperation in this regard. See for example:

http://www.htk.dk/Nyheder/Nyhedsoversigt/Pressemeddelelser/2011/April_11/Ny_runde_for_testenelbil_dk.aspx

<http://testenelbil.choosev.com/hoje-taastrup-kommune/>

As a result of the experiment, nearly 40 families have participated with their own electric vehicles for 3 months.

Municipal electric vehicles. The first electric vehicles will be delivered to the Municipality and its employees. An electric vehicle has been ordered from Better Place, Renault Fluence. Expected delivery in early 2012. To be used by staff and the Mayor.

Quick-charge charger for electric vehicles (OEMs). October 2011, the first quick-charge charger for electric vehicles (OEMs) was set up. The charger can serve citizens with their own electric vehicles. See references here:
<http://www.choosev.com/nyheder/nu-kan-du-lade-elbilen-op-paa-tyve-minutter-i-hoje-taastrup/>

4.2 A new EU supported project on promoting sustainable transportation in the ECO life area

Høje-Taastrup's effort and prioritization of solving D.2.1.4 in the transport area have resulted in Høje Taastrup now having applied for and received another EU project in the area to ensure conversion to VE-based transport based on the ECO-LIFE field.

Application for participation was sent in February 2011 (Mødesag E-mobility projektet.pdf) and now Høje Taastrup is included in the project.

The project site can be found at www.e-mobility-nsr.eu.

In the folder "transportation" on D.2.1.4, a project presentation from the startup of the WPs is found, prepared by HTK to cover the work for WP6 EMIC (Project Meeting Hamburg.pdf).

4.3 Ensuring more and better bicycling in Høje Taastrup

Cycling should be promoted in the Municipality. This should be done by extending bike paths, creating safe bicycle parking and implement bicycle campaigns in schools. Citizens can participate by creating parent communities cycling children to school, and the business world can push by rewarding employees who cycle.

Therefore, Høje Taastrup plans to attend super bike paths, see also the note in the transportation folder about "*Supercykelstier satsning HTK gennem ECOlife området*":

A super bike path is a bike path, which - in order to attract bicycle commuters - has a number of qualities concerning accessibility (signposting, easy to reach, etc.) passability (width, minimal stops, if necessary. 'Green waves') comfort (smooth lining, cleared of snow etc.), safety and security (minimum intersecting road users, possibly overtaking lanes for fast cyclists). In the project there are quality objectives in these areas, but there are no absolute requirements. Thus, the participating municipalities plan each route based on an assessment of local conditions, taking into account the number of cyclists, other road users, urban space, economy, etc. Currently, 26 Super Bike Paths are planned in the region, including one along Roskildevej to Copenhagen. See more at <http://cykelsuperstier.dk>.

4.4 Possibilities in the future for more sustainable transportation in Høje-Taastrup Green transport supplies

Each year, Høje-Taastrup Municipality puts out to tender a range of transport tasks. As a provider, the Municipality has the opportunity to make environmental and energy requirements, and that possibility should be taken seriously by the Municipality. The task is manageable, because there are now vehicle energy classes and because electric cars really are on the way. Also EU standard requirements can be built into the tenders.

Høje-Taastrup as transport junction

Høje-Taastrup is centrally located with a combination terminal, which allows you to switch freight from lorry to train. But the use of the possibility is minimal, and therefore the Municipality and the business sector should make a concerted effort to ensure a better use of the train capacity via the combination terminal.

Light rail

In a regional cooperation, light rail plans for the area should be developed. There are many new residential areas, such as Gammelsø and the Fløng area, which will greatly benefit from a light rail solution.

This would offer efficient public transportation to many citizens.

Long combination vehicles (debatable CO₂ angle)

Being a goods transportation centre for large parts of the metropolitan area, Høje-Taastrup might be the place where experiments with long combination vehicles are unfolded to the next phase. By collecting large quantities of goods in the same train of carriages, the potential for a better filling degree is increased, and so are CO₂ emissions per kilo cargo. The many issues concerning long combination vehicles can be tested more in Høje-Taastrup area.

Other ideas to continue working with

Business transport

- Registration tax reduced or removed for hybrid vehicles – both passenger cars and lorries
- Environmental requirements to transport companies
- Do business locally and limit packaging
- Intelligent transport / logistics
- Coordination of highway transport
- Compulsory routes for large lorries – gives less traffic through small towns
- Bypass road near Sengeløse
- Flexible working hours – transport hours = working hours
- Home office days - saving transport
- Inform about the possibility of business cards for company paid public transport.

Bicycling

- Fewer cars to/from schools – bicycle campaigns in the schools
- Everybody having less than 10 km to work should use the bicycle instead of car
- City bikes, light rail across the municipalities, bicycle parking with lock and workplaces near the home
- Better bicycle parking, locked, shielded from precipitation
- Promotion of electric bicycles: longer cycling distance
- Wider bike stripe on Taastrup Hovedgade
- Free bicycles near train stations
- Visibility of bike paths / routes / tours
- Bicycle free with trains – better conditions in bicycle compartments

- Stands for electric bicycles, electric cars and electric scooters .

Parking

- Better parking facilities
- Parking for commuters near motorway entrances
- Parking house near Høje-Taastrup
- Preferential treatment of electric cars in car parks.

Public transport

- Reduced fares on public transport
- Extension of railway where needed for commuters => 5. track
- Good work stations in trains with pc tables, Internet etc.
- Local traffic plan for City2 – easier access by public transport
- Light rail near Ring 3 and trams
- Green or CO₂ neutral stations
- Road pricing into town – the proceeds will go to investments in transportation.

The municipality as business company

- The Municipality's vehicle fleet to be converted to electric vehicles and conversion of cars to bikes

General within transport

- Car-free neighbourhoods
- Good architecture / planning / good design
- Shared cars via municipal service centre
- Carpooling, coordinated, special lanes for carpools.

5 Other energy-efficient schemes in Høje Taastrup

Energy savings in lighting

For some years, Høje-Taastrup Municipality has had an agreement with DONG Energy regarding the operation and maintenance of streetlights. The agreement includes a regular replacement and installation of new energy saving streetlights. The utility is investigating the possibilities of accelerating energy renovations in the lighting systems

Energy savings in waste water

Together with DANVA, Elsparefonden has calculated that profitable energy savings of about 25% can be achieved in these sectors.

HTK-Vand is investigating the potential for energy savings in wastewater.

Annual climate award(s) in Høje-Taastrup Municipality

Premiums for those who have completed the largest climate and energy savings. It may be in several categories: villas, flats, businesses, institutions.

Formulation and establishing criteria to be developed by Høje-Taastrup Municipality (the initiator), Technological Institute, Videncenter for energy savings, EnergiTjenesten. It should be investigated if local businesses will sponsor prizes.

Educational material for 7.-9 class on heating/good houses

Web material on the elements making a house energy saving. It should be a collaboration between HTK's educational development centre (initiator), Danmarks Lærereforening, publishers and potential local sponsors. It is estimated that development takes approx. 2 years before it is ready for use.

Other good ideas to continue working with

Apartment buildings

- Energy account for households with savings via property taxes
- Green property taxes

- Thermography of Høje-Taastrup municipality, available on the Internet for the citizens
- All new buildings must be low-energy class 1 or better
- Requirements to existing buildings in the form of renovations etc.

Heating

- Surplus heat from supermarkets to be exploited for e.g. public swimming pools
- Heat pumps in peripheral regions
- Well-insulated district heating pipes
- Høje-Taastrup Municipality participates in the board of the district heating company and can thus participating in changing the basis for payment of district heating.

Electricity

- Support to the Municipality's institutions as regards energy management
- Intelligent electricity and heat meters
- Progressive electricity tariffs in proportion to consumption and share of green energy.

Alternative solutions

- Reuse of rainwater in schools for toilet flushing
- Energy home parties – a la Tupperware parties
- Grow as much food as possible locally
- All energy measures to be financed through the savings
- Dishwashers and washing machines must be connected to district heating network.