



## An EV fleet operator's experience with EVs Lessons learned & input for improvements

### Municipality of Høje-Taastrup

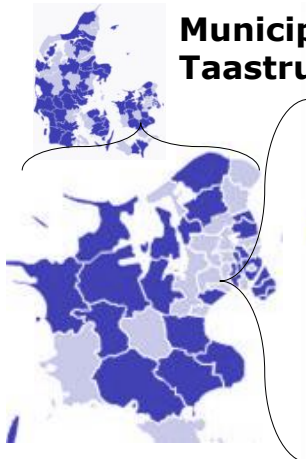
07.03.2013 Steen Olesen, Climate Consultant



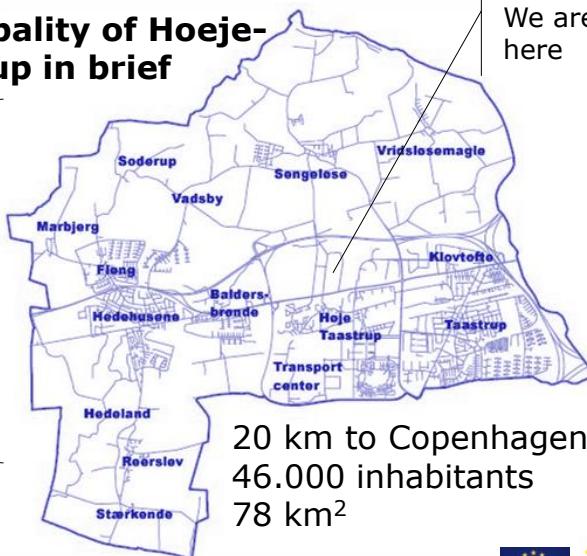
The project is supported by  
the EU Commission



**Høje-Taastrup  
Kommune**



### Municipality of Høje-Taastrup in brief



We are here

20 km to Copenhagen  
46.000 inhabitants  
78 km<sup>2</sup>



The project is supported by  
the EU Commission



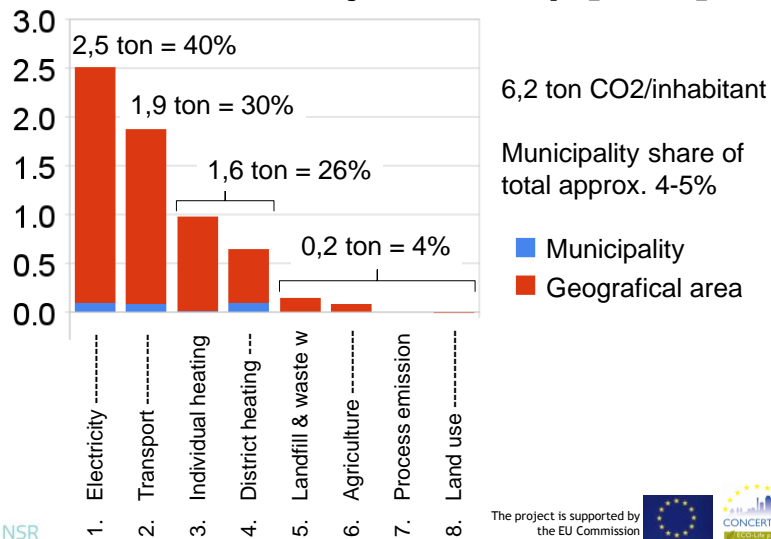


It all started with a vision in 2008  
**Fossil Free Municipality "over time" (2050?)**

...and a short-term goal  
**10% Energy and CO<sub>2</sub> reduction target before 2014**



## CO<sub>2</sub>-emissions in Hoeje-Taastrup [2008]





### Høje Taastrup reducerer energiforbruget og CO<sub>2</sub>-udledningen

I 2008 besluttede byrådet at blive Klimakommune og dermed arbejde for at reducere CO<sub>2</sub>-udledningen med 10 procent i perioden 2009-2013.

Det blev samtidig besluttet at lave en samlet digital klimaplan.

Klimaplanen opdateres løbende med nye initiativer og resultater.

### Igangværende EU-støttede projekter

e-mobility NSR



A-Å | Lav PDF | Sitemap | Søg



Municipality Høje-Taastrup & Federation of Danish Motorists collaborate on E-Mobility (6.6.12)



BYEN



BOLIGEN

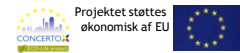


VIKRSOMHEDEN

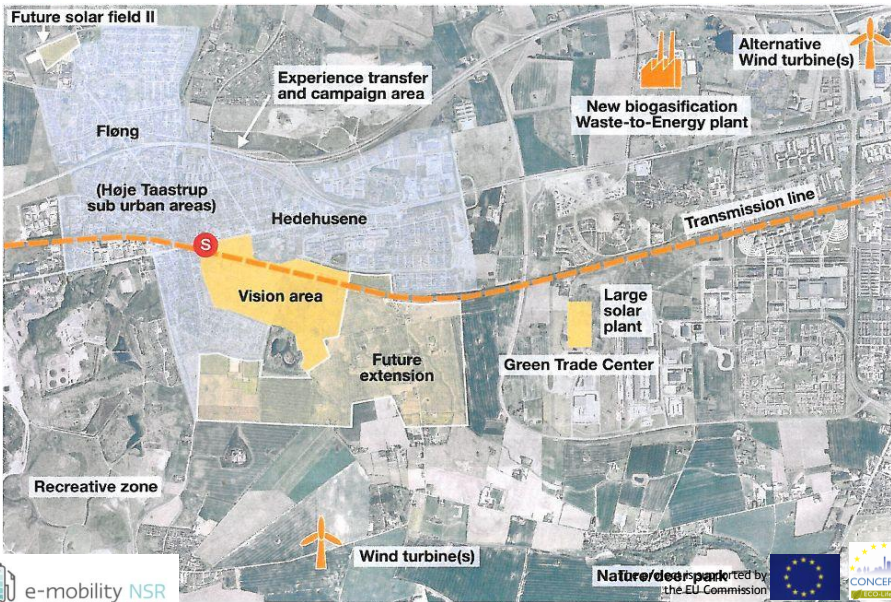


KOMMUNEN

Klimaplanen beskriver, hvordan CO<sub>2</sub>-udledningen kan nedbringes ved at gennemføre tiltag i byen, boligen, virksomheden og kommunen.



Projektet støttes økonomisk af EU



### Høje Taastrup reducerer energiforbruget og CO<sub>2</sub>-udledningen

I 2008 besluttede byrådet at blive Klimakommune og dermed arbejde for at reducere CO<sub>2</sub>-udledningen med 10 procent i perioden 2009-2013.

Det blev samtidig besluttet at lave en samlet digital klimaplan.

Klimaplanen opdateres løbende med nye initiativer og resultater.

### Igangværende EU-støttede projekter

e-mobility NSR



A-Å | Lav PDF | Sitemap | Søg



Municipality Høje-Taastrup & Federation of Danish Motorists collaborate on E-Mobility (6.6.12)



BYEN



BOLIGEN

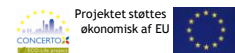


VIRKSOMHEDEN



KOMMUNEN

Klimaplanen beskriver, hvordan CO<sub>2</sub>-udledningen kan nedbringes ved at gennemføre tiltag i byen, boligen, virksomheden og kommunen.



## 2009

- Climate action plan 2009-2013
- Municipal fleet of cars was renewed  
Financial Leasing (2009-13)
- Decided to investigate if the ICE fleet in 2013 could be swapped with EVs (also considering TCO)



## Go' Energi | Høje-Taastrup

(4 minutes video)

[http://www.youtube.com/watch?v=vsfL1lrfnq8&feature=player\\_detail](http://www.youtube.com/watch?v=vsfL1lrfnq8&feature=player_detail)  
[page](#)



## 2009

- Climate action plan 2009-2013
- Municipal fleet of cars was renewed  
Financial Leasing (2009-13)
- Decided to investigate if the ICE fleet in  
2013 could be swapped with EVs (also  
considering TCO)





## Now a little more about what we have done



2009

- First public events  
– AFUTURE EV



- Mega City EV





2010

- First Public EV Infrastructure in place (Better Place)
  - Collaboration agreement
  - Charging stations established in 3 locations
  - Investigations on location of Battery SWAP-station



2010

- Startup of "Test An EV"
  - 8 x 10 families
  - 10 converted ICE C1
  - From 2011 3 C-zero's





2011

- First Fastcharger installed (2<sup>nd</sup> in DK)



2011

- TCO-calculation => Renault Fluence ZE



VS







## 2012

- Renault Fluence ZE (delivered June)
- General Fleet analysis (EVs considered)
- eFleet (awaiting reply)
  - Applied for funding
  - 36 EVs Høje-Taastrup (PL)
  - 36 EVs Fredensborg
  - Targeting 12 Municipalities



## 2012

- 50% EVs in Høje-Taastrup
  - Applied for funding Oct 2012
  - Project startup Jan 2013
- 10 Citroen C-Zero ordered
  - First 5 delivered (Oct)
  - Employee introduction





2013

- Last 5 Citroen C-Zero delivered
  - In minus 5-10°C & running 3 shift
  - Lack of introduction, planning, training
- 50% EVs in Hoje-Taastrup
  - Project startup Jan 2013
  - Test-drive SMART 2<sup>nd</sup> edition
  - Startup GPS-mapping of the fleet in april
  - Complete GAB-analysis and conclude



2013

- In parallel Elbiler.nu has been developed (“EVs.now”)
  - Opens later today
  - Is build on the basis of our experiences with EVs
  - In close collaboration with partners from the e-mobility NSR project and Danish Partners.

# www.elbiler.nu Virtual EMIC

1. About this HP
2. Getting started
3. Are you ready to go electric?
4. TCO-Calculator

## Top menu:

1. EVs & Economy
2. EVs & Environment
3. Opportunities
4. About elbiler.nu

## UK button



2013

- **Calculators (Total Cost of Ownership calculator)**  
Developed in collaboration with The Danish Electric Vehicle Alliance, Technological Institute and The Danish Federation of Motorists. Modified to match EMIC requirements. (Dec-March)
- **Guide (Are you ready to go Electric?)**  
Developed in collaboration with and The Danish Federation of Motorists & Technological Institute. (Jan-March)



The project is supported by the EU Commission





2013

- **EMIC Text & Figures (Production & QA)**  
Thoroughly examined by qualified sources.
- **Additional Material (How to get started)**  
Extra videos, guides and instruction leaflet.  
Lessons learned from EV introduction to HTK employees.



Are you ready to go electric?





## An EV fleet operator's experience with EVs Lessons learned & input for improvements

- Considerations before buying EVs -> plenty
- Information needs -> huge but can be overcome
- Reasons for buying EVs -> required part of the solution and TCO seems to be lower
  
- Actual experiences with EVs in the fleet -> 1 (2012) -> 10 (2013)
- EV plans for the future -> 40 (before 2014 ?)
  
- **Recommendations for EV suppliers and legislators:**
  - Send more types of EVs on the market
  - Faster charging or more with a "swappable" battery pack
  - Cheaper EVs and cheaper infrastructure
  - Common standards for payment cross-border, -supplier
  - More ICT-solutions that can help and guide the users

